THE UNIVERSITY OF HULL

Who Owns Renewable Energy?
An Argument for Independent Ownership

being a Thesis submitted for the Degree of PhD

in the University of Hull

by

Paul Fagan MA (Open University)

July 2015

Abstract

‘Who Owns Renewable Energy? An Argument for Independent Ownership.’

As the use of renewable energy becomes more commonplace in the twenty-first century, it will become increasingly more important to ask the question ‘who owns renewable energy?’ Here, it is argued that there exists a human right to own energy *per se* and from this base it is also argued that a human right to own renewable energy exists; additionally, group rights to renewable energy should be accommodated. It is further argued that responsibilities such as domestic energy provision, sustainability and international justice should be addressed. Hence, this research has necessitated a new concept of ownership for renewable energy consisting of a collection of tenets composed of rights and responsibilities. Additionally, an array of potential ownership types derived from differing political philosophies have been applied to an impartial thought experiment and the research reveals instances where renewable energy may be owned by entities ranging from single individuals to whole societies. That said, it is noted that renewable energy offers a unique solution to the question of ownership as it is an unlimited resource and all the technology to harness this resource already exists. These facets allow the recommendation of a type of independent ownership, whereby identifiable entities ranging in size from individuals to communities may harness and use energy by themselves, rather than purchasing energy from centralised supplies such as state-run enterprises or private companies. This ownership type has been influenced by, although not entirely, John Locke’s work concerning property.

Acknowledgements

I acknowledge the judgement exercised by my supervisors, Steve and James, throughout the duration of this work.

Table of Contents

1 Introduction

1. 1 Preamble

As the twenty-first century progresses, the use of renewable energy is likely to become more commonplace. This may be due to the ability of carbon-based fuels to pollute the environment and contribute to climate change.[1] Hence, their usage may become increasingly controlled. However, they are likely to become so depleted as to preclude common usage with their prices rising as they become scarce commodities.[2] Therefore, sources of renewable energy can be expected to be more widely distributed. However, this process may raise philosophical questions such as, *who owns renewable energy?*

The *raison d'être* of this work is quite simply that this question has not been asked yet: certainly not in a formalised academic setting with a view to philosophically justifying ownership. Although the United Nations have started to note the importance of renewables in the future,[3] political theorists have largely remained silent regarding the question of the ownership of renewables. It is possible that the question has been overlooked due to the relatively plentiful and cheap supplies of conventional energy, but the necessity to now use renewables has precipitated the question. Furthermore, the ownership of energy in practice, within western societies, is often seemingly guided by habit or convenience when energy is provided centrally,[4] but this leaves some to ponder why we are not the providers of our own energy when the equipment for this purpose is available.[5] Bearing this in mind, this study attempts to gain a deeper understanding of

[1] An affiliate of the United Nations, namely the Intergovernmental Panel on Climate Change, falls short of directly naming fossil fuels as the cause of climate change but noted that 'Human influence has been detected in warming of the atmosphere and the ocean, in changes in the global water cycle, in reductions in snow and ice, and in global mean sea-level rise; and it is *extremely likely* to have been the dominant cause of the observed warming since the mid-20th century' (IPCC's italics) (IPCC 2014: 12).
[2] BP estimated that using the usage rates of 2011, reserves remaining were: 112 years of coal; 54 years of Oil; and 63 years of gas (BP 2012).
[3] See 2.2.2 'Human Rights' for the recognition of the future importance of renewable energy via the Rio +20 Corporate Sustainability forum.
[4] See this discussion in subsection 7.2.3.2 'The Economic Challenge'.
[5] See 1.3.2 'The Harnessing and Storing of Renewable Energy'.

the ownership of renewable energy and provide a base from which to challenge current ownership practice.

Furthermore, this work contains an expectation that future distributions of energy should be an improvement upon past distributions and thereby counter any inherent unfairness of the previous arrangements. Overall, this study may be viewed as falling within the remit of 'applied philosophy', where applied philosophy may be defined as 'the application of philosophical reasoning to matters of practical concern' (Overgaard, Gilbert & Burwood 2013: 206-7).

It should be further noted that this work has necessitated the introduction of a new concept of ownership specifically for the purposes of owning renewable energy. This concept of ownership encapsulates various attributes. For instance, the concept requires the addressing of what are here considered to be *tenets*; such as the provision of a minimum amount of energy usage for individuals as both a human right and a positive right.[6] Additionally, the concept includes the tenet of accommodating group rights.[7] Furthermore, the tenets associated with the responsibilities of renewable energy generation and usage must be addressed. Here, the tenets associated with responsibilities are considered to be: the provision of domestic energy;[8] sustainability;[9] and international justice.[10]

Furthermore, in the wider world, this new concept of ownership may take time to gain acceptance and may require its underlying tenets to become established first. The concept moves away from a notion where state-run or private companies own resources and generate energy that may be sold on, but instead provides a new view where individual entities may provide for their own energy needs. Nevertheless, its consideration provides the opportunity to avoid the pitfalls that befell previous energy

[6] See 2.1 'Introduction to Rights'.
[7] See 2.2.3 'Group Rights'.
[8] See 7.2.3 'The Provision of Domestic Energy'.
[9] See 7.3.1 'Sustainability'.
[10] See 7.3.2 'International Justice'.

sources such as unsatisfactory distributions;[11] and also the lack of responsibility that led to environmental concerns.[12]

Here various schools of philosophy have been employed to answer the overarching question of ownership and provide a practical solution to a just introduction of renewable energy. Such schools, by way of providing models for ownership, which are here considered to be *ownership types*,[13] are demonstrated via a standardised thought experiment.[14] This process demonstrates the strengths and weaknesses of each ownership type, which are employed in the conclusion to define which ownership type is most suitable for the ownership of renewable energy. Furthermore, the ownership types will be expected to address the tenets of the ownership concept to differing extents. This is because each ownership type will have different notions of: the ownership of resources; the ownership of the means of production for harnessing energy; and specific rights associated with using energy. However, it should be noted that in concluding,[15] the most ideal ownership type should be the one that fulfils the aforementioned tenets the most and therefore provides the most realised variant of any manifestation of the concept of ownership.

Following on from this preamble, the layout of the thesis is described in the second section entitled 'A Description of Philosophical Reasoning'. This description notes the reasons for applying a rights-based approach to this work. This is followed by a justification of the ownership types reviewed. Then, a justification is provided for using a standard thought experiment which regulates the chapters concerning ownership types. After this, the responsibilities of renewable energy are taken into account. In the final part of this section, the conclusion is briefly aired.

[11] See 7.2 'Society's Responsibilities to Ensure Adequate and Affordable Energy' and 7.3.2 'International Justice'.
[12] See 7.3.1 'Sustainability'.
[13] See 1.2.2 'Ownership Types' for a description of how varying political philosophies may provide a model of ownership for renewable energy.
[14] See 1.2.3 'The Desert Island Thought Experiment'.
[15] See 1.2.5 'A Preview of the Concluding Argument'.

In the third section entitled ‘A Description of Informing Concepts’, the notions that inform the overall argument and its premises are described: these are major thoughts that should be borne in mind whilst reading this work. These include a categorisation of the types of renewable energy currently available followed by an acknowledgement of the associated harnessing and storing methods. In addition a brief foray into the workings of the mind is undertaken when the concept of the *desirability of increasing energy usage* is noted; additionally the mental states of an *ethos* and *mindset* are defined.

The final section is the ‘Summary’ which ends by encapsulating the main points and assumptions made here.

1.2 A Description of Philosophical Reasoning

1.2.1 Rights

The second chapter concerns rights and establishes a rights-based approach for humanity to own renewable energy. This is considered to be a logical approach as humanity should be considered as having the right to own energy before the ownership types may be applied to human life. Nevertheless, this chapter argues for *a human right to renewable energy*.

Immediately some may query why a human rights-based approach has been favoured. The answer to this is that concepts of human rights have grown in stature throughout the latter half of the twentieth-century to become adopted by an array of nations espousing varying ideologies; often under the guidance of the United Nations and the European Court of Human rights (Nickel 2012). Furthermore, a rights-based approach allows for its enshrinement in legislation and further assures rights for individuals. Therefore it would be remiss not to use a human rights-based approach:

especially where a *practical solution* to the question of ownership is required.[16] That said, the importance of the rights-based approach must not be underestimated as it effectively constricts the types of ownership that may be applicable to the ownership of renewable energy.[17]

It should also be noted that as energy may be generated by groups of individuals, where such groups may arise out of choice or out of necessity, then group rights have also been reviewed. It is noted that group rights may be accommodated by the rights-based approach.

1.2.2 Ownership Types

A total of twelve different political philosophies, ranging from current notions of left-wing to right-wing and libertarian to communitarian, are used to explore the question of ownership of renewable energy and these are referred to as *ownership types*. The ownership types feature in four chapters with each chapter containing three related ownership types. The chapters are entitled 'Private Ownership', 'Distributed Ownership', 'Egalitarian Ownership' and 'Communitarian Ownership'; and from hereon these titles are collectively referred to as *ownership categories*.

The ownership types contain attributes that are prevalent in current political philosophies and some immediate concerns about this approach will now be considered. One worry may be that if an ownership type existed or exists, that is the most pertinent to renewable energy ownership, then this study may have overlooked it. This is a possibility; but it should be borne in mind that if renewable energy is to be *practically* introduced then it is the most widely understood political philosophies that would be expected to yield a suitable type of renewable energy ownership. Philosophies

[16] See 1.1 'Preamble' for this objective.
[17] See 8.2 'Satisfying Rights and Responsibilities'.

containing novel or overly intricate concepts may not be expected to be as well received or understood as established philosophies.

However, this discussion of ownership types should also provide developing nations with examples to implement if they wish.[18] This should be very relevant if we accept that human beings have a *universality of needs* and human beings have the same basic needs that need satisfying (Higgins 2006: 96-7). Hence, the ownership types expounded here should not provide an imposition on any society but tools which societies may use.

Another concern may be that if renewable energy is being introduced at a time when previous energy sources have purportedly damaged the environment, then should not environmental concerns be privileged when evaluating any theories of ownership? This would prevent humanity exacerbating the potential damage. The next few paragraphs explore some possibilities.

One possibility may be to privilege environmental concerns by merely adjusting existing schools of ethics for the purpose of owning renewable energy and then introducing them into western society. For instance, a variant of deontology that entails that we treat the environment respectfully is provided by a Kantian inspired type of environmental ethics that considers nature to have 'capacity' in its causality, 'ability' in its natural selection and 'purpose' in its evolution and therefore demonstrates nature being an end-in-itself (Gilroy 1998: 141-2). Another school of thought would prefer that we introduce environmental strategies for living our lives and insists that we behave in a virtuous manner to the environment. One advocate would wish to see *environmental virtue ethics* instituted where this philosophy would achieve a condition of 'human flourishing that argues more rigorously for the connection between human well-being and preserving and conserving nature' (Hull 2005: 102). Also a variant of utilitarianism

[18] See 7.3.2.2 'The Transfer of Goods to Developing Societies' for examples of how developing societies may introduce renewable energy.

has been proffered which takes into account the needs of future generations when making decisions concerning the environment (Holbrook 1992: 43-4); this could be used to provide the guidance for the ownership of renewable energy whereby if a renewable scheme damaged the lifestyles of the future inhabitants then it would not commence. Some environmental philosophers have gone further and provided new philosophies by which we may live our lives and many of these encourage a rejection of the dualism between man and nature;[19] and some go as far as providing a manifesto to introduce an environmentally-friendly lifestyle.[20]

With schools of ethics available that privilege environmental concerns, it would seem alluring to adopt their approach to define who should own renewable energy. However, it should be noted that in addition to finding a practical solution to the question of renewable energy ownership, environmental issues that are considered to be pertinent to renewable energy are taken into account in the chapter entitled 'Responsibilities'.[21] Within this chapter environmental responsibilities are noted which the implementers of any ownership types should observe if they wish to provide a sustainable energy source.

1.2.2.1 The Structure of the Ownership Chapters

At this point something must be said of the structure of the four ownership chapters. These represent the four ownership categories entitled 'Private Ownership', 'Distributed Ownership', 'Egalitarian Ownership' and 'Communitarian Ownership'; and it should be noted that they fundamentally differ in their expectations of who will ultimately own

[19] Freya Mathews has described notable aspects of the notion of 'Deep Ecology' and has also acknowledged the major contributors in this area (Mathews 2001:218-32).
[20] Richard Sylvan and David Bennett have provided an effective plan of action, influenced by many ethical schools, whereby modern society may move to an ecological state (Sylvan & Bennett 1994).
[21] See 1.2.4 'Responsibilities'.

renewable energy after it has been harnessed. More specific detail of the four ownership categories' content is given in the following subsection.

For each ownership category there are three sections featuring a particular political philosophy to be investigated, often associated with a particular individual philosopher, where the ownership type is expounded. Each political philosophy has been chosen via a qualitative process of firstly, ensuring that it provides a notable ownership type within one of the categories, and secondly, ensuring that the ownership type yields its own distinct set of attributes. To explain this second constraint, if the total ownership attributes of a particular political philosophy shared too much similarity with those of another political philosophy, then only one would feature here.

A fourth section closes each ownership chapter where each ownership category is evaluated. At this point salient aspects of each ownership category, when viewed *en masse* are noted.

1.2.2.2 Details of the Ownership Categories

Moving to look at more detail provided within the ownership categories. The first, 'Private Ownership', will look at the ownership of renewable energy from the viewpoint of an individual appropriating energy; although it is recognised that this concept could be extended to a legal personage in greater society such as a limited company. Here, the three ownership types are derived from the views espoused by John Locke, Robert Nozick and Michael Otsuka. In this chapter the expectation exists that there are instances where an individual may *absolutely* own the energy that they generate, with no obligation to provide energy to others.

The concept of absolute ownership of energy contrasts with the second ownership category of 'Distributed Ownership'. Here the expectation exists that energy *will be distributed*, in whole or part, after its production. This category derives from

political philosophies that hold that assets within a society are best distributed between society's members for the overall good of society. The three philosophies featured here apply the work of John Stuart Mill, John Rawls and Aristotle.

The third ownership category will examine egalitarian political philosophies and is therefore entitled 'Egalitarian Ownership'. For instance, a Marxist ownership type that distributes energy according to a Marxist concept of individual 'needs' is reviewed.[22] A second ownership type reviewed is based around the work of Jean-Jacques Rousseau, which privileges an *equality of condition* by attempting to equalise the amount of energy an individual may own. The third type espouses awarding individuals the resources to function equally in a liberal society and therefore espouses an *equality of opportunity*; it is based around the 'capabilities approach' and is derived from the work of Amartya Sen and Elizabeth Anderson.

The final chapter focusing upon ownership will expound the communitarian viewpoint. The ownership practised by the religious community of the Hutterites is examined as are the thoughts of the nineteenth-century social reformer Robert Owen. Finally, an ownership type based around the work of American municipalist Murray Bookchin is applied.[23]

1.2.2.3 The Representation of the Political Philosophies

Now something must be said about the *representation* of each particular political philosophy within an ownership type. Some readers may be familiar with the political philosophies employed here but may find them to be represented in a manner that is

[22] Marxist 'needs' and 'abilities' will be referred to in speech marks as they differ from such terms in common parlance. See 5.1.1 'A Marxist Philosophy Defined and Applied' where 'needs' may be expansive but also limited by the amount of energy available; 'abilities' would be expected to be a contribution to society in excess of the level needed to secure one's subsistence.

[23] Similar to Marxist 'needs' and 'abilities' noted above, the municipalists' usage of these terms will also be in speech marks as they also differ from such terms in common parlance. See 6.3.1 'Bookchin's philosophy Defined and Applied' where both terms would be defined by a municipality's culture.

different to their expectations. For instance, some attributes of a particular school of thought may have seemingly been give more prominence here than would have been expected in any other discussion of ownership; however these are attributes that that are considered to be more pertinent to the ownership of renewable energy.[24] It should be further noted that some political philosophies represented are an interpretation of that philosophy. This occurs as the political philosophy may not have been originally designed to be applied to renewable energy and the attributes this entails.[25] Also some ideas have been gained via sources that were not published within the author's lifetime and there is no guarantee that the author would approve of their usage for the purposes here.[26] Additionally, some philosophies are composed of ideas emanating from multiple authors where the philosophy is still developing.[27] Finally, some are the result of philosophies where many primary sources place differing emphasis on differing aspects of a philosopher's work.[28] However, the political philosophy represented in each chapter is the result of an attempt to fairly apply the political philosophy to the problem at hand.

1.2.2.4 The Structure of the Ownership Types

At this point the structure of the ownership types should be described and it should be noted that a regular course of events is followed with an investigation of each ownership type being split into three stages which will be explained in the following paragraphs.

---

[24] See 3.1.1 'Locke's Philosophy Defined and Applied' as an example where Locke's concerns about charity have been considered to be a proviso to the main body of his work. As has an individual's inheritance or purchase of property.

[25] See 5.2.1 'Rousseau's Philosophy Defined and Applied' as an example where Rousseau's philosophising has been adapted from his ownership of land.

[26] See subsection 5.1.1 'A Marxist Philosophy Defined and Applied', where some of the ideas contained within are widely considered to be Marxist, but as they were taken from posthumous publications it would be unwise to attribute the whole section to Marx.

[27] See 5.3.1 'A Capabilities Approach Defined and Applied' where ideas are borrowed from both Amartya Sen and Elizabeth Anderson.

[28] See 6.3.1 'Bookchin's Philosophy Defined and Applied' where Bookchin bequeathed varying publications which may vie for supremacy.

Firstly, a political philosophy is defined and then applied to a standardised thought experiment with any assumptions relevant to that philosophy being noted.[29]

Secondly, this is followed by what has been termed here as 'internal criticism': a stage of review that identifies any readily ascertainable strengths, weaknesses or contradictions when each particular ownership type is applied to renewable energy and the thought experiment. Here wider societal concerns are also noted when considering the possibility of introducing the ownership type into greater society. This second stage is important as it may identify attributes that lead a particular ownership type to be recommended as the ideal for renewable energy: conversely it may prevent this occurring.

Thirdly, the ownership type is subjected to 'external criticism', consisting of major critiques provided by other schools of political thought. These critiques attempt to highlight praise, agreement and dispute which may, in a similar manner to critiques derived from the internal criticism, ultimately decide whether an ownership type is to be recommended as the appropriate one for renewable energy. Overall, the particular ownership type is defended against criticism from other philosophers and philosophies, and this allows for much discourse and counter-arguments to be aired. Nevertheless, the points that may be decisive are focussed upon and the 'external criticism' avoids extensive discussions of differences in ideology.

Where an overall thread of criticism is shared by an ownership category featured here, such as private ownership, this will be acknowledged; and where such criticism arises from a wider school of thought not specifically featured here, such as 'liberalism', this will also be acknowledged. Other criticism may arise from other specific ownership types featured here and they will be acknowledged.[30] Although the external criticism originates outside of each thought experiment in question, the external criticisms may,

[29] See 1.2.3 'The Desert Island Thought Experiment'.
[30] NB. For this purpose, the advocate of Otsuka's work may be referred to as a 'left-libertarian' and the advocate of Bookchin's work may be referred to as a 'municipalist'.

by introducing new concerns, adjust the thought experiment to demonstrate counterexamples.

As a coda to this description of the structure of the ownership types, it should be remembered that there may be instances where any particular ownership type would be the most suitable one for the ownership of renewable energy. This can be explained as the scrutiny to which each ownership type is subjected also reveals its strengths and therefore the environment where it would be most suited. Hence in the conclusion, this aspect of the work is included as a proviso.[31]

1.2.3 The Desert Island Thought Experiment

All of the ownership types noted above are applied to a relatively simple 'desert island thought experiment', which concerns two persons sharing a small desert island.[32] Both inhabitants are independent and have an equal capacity to exploit the island's resources, which apart from renewable energy, are abundant and spread evenly throughout the island; and both parties gained their ownership of the island legitimately. That said, there are enough resources on the island for two persons to subsist**,** but the harnessing of renewable energy would add comfort to their lives by providing energy for cooking, heating and lighting; and it would also allow them to engage in industry in order to make more material goods and improve their lives.

It is also a geographical feature of the island that a type of geothermal energy is present: this is a hydrothermal vent that occurs in the centre of the western half of the island. Additionally, both inhabitants wish to use renewable energy and it is the hydrothermal energy that is their preferred source; although it should be recognised that

[31] See 1.2.5 'Preview of the Concluding Argument'.

[32] This type of thought experiment has been very influential when the egalitarian Gerald Cohen used the characters of 'Able' and 'Infirm', living on an island to demonstrate his view of the impossibility of reconciling self-ownership and equality (Cohen 1995: 96-105). Opposing this, Michael Otsuka used the desert island scenario in his own attempt to reconcile the equality of welfare and self-ownership (Otsuka 2009: 22-40).

other sources of renewable energy are available. However, the appropriator of the western half owns the hydrothermal energy and has set about harnessing this energy via her own efforts; and she will be referred to as 'Powerful'. The character of 'Powerless' lives on the eastern half.

As renewable energy is randomly spread throughout the world, this scenario fairly represents the fact that individuals may not always be able to benefit directly from any particular source of renewable energy although all should have access to some form of renewable energy source.[33] However, renewable energy is an unlimited source;[34] and it is therefore further assumed that the hydrothermal energy produced is unlimited and can potentially be shared.[35] Effectively, for the islanders, renewable energy is an enriching asset and its ownership entails a right to harness, use, store and exchange the asset.[36]

Any other purported essentials for life within a society such as social services, healthcare, food or clothes are not the subject of this debate. Hence, this thought experiment should not be considered to be a metaphor for society; it attempts to isolate one area of life, namely energy supply, and find justice in the distribution of this.

This may bring forth criticisms that in the real world other aspects of life may compensate for those who do not receive a just supply of energy and so this thought experiment is faulted. However, the desert island thought experiment contains attributes that may be expected in established societies in that a person may work upon their own schemes and exchange their produce for energy, or may exchange their labour directly for energy, or gain energy from another renewable resource. The only exception here would be the ownership type based upon Rousseau's ideas where a person's energy and

[33] See 1.3.1 'Energy types' for the expectation that all would have access to renewable energy.
[34] See 1.3.1 'Energy types' for an explanation of why renewable energy may be considered unlimited.
[35] To allow the thought experiments to avoid disputes concerning property rights, it is also assumed that any potential health hazards, eyesores, noise pollution or discomfort caused by the usage of the means of production of any sources of renewable energy do not occur on the island.
[36] See 1.1 'Preamble' for a definition of renewable energy ownership in its widest context.

produce would be controlled to maintain an equality of condition and therefore avoid any notions of compensation to adjust uneven supplies of energy.[37] Hence, the notion of other aspects of life providing compensation for an initial uneven supply of energy has been considered.

Moreover, it should be noted that as the supply of energy is such a fundamental part of life and is essential to human beings' welfare, that just supplies of energy will always be preferable to unjust supplies of energy; furthermore, when used in conjunction with the proposition that renewable energy will become a more important aspect of life in the future,[38] then it is reasonable to assume that renewable energy warrants privileging as the topic of a thought experiment. Additionally, as the opportunity to introduce renewable energy into the real word in a just manner is arising as carbon-based fuels are used less,[39] the forethought gained from a thought experiment such as this should save purportedly just societies from having to make later adjustments to their distributions of renewable energy, should they institute an ill-conceived distribution system.

It is further recognised that a thought experiment of this nature may garner criticism with accusations made that it has been contrived to support a particular result.[40] Countering any accusations that the hypothetical desert island is a contrivance, it should be noted that it has been used for the purposes of applying each ownership type on a *level playing field*. It should be a fair exposition, allowing each ownership type to be accurately depicted without being biased towards any particular doctrine; and furthermore the test should be sufficient to demonstrate the problems each ownership

[37] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[38] See 1.1 'Preamble' for this postulate.
[39] See 1.1 'Preamble' for this postulate.
[40] Henry Shue has compared hypothetical examples and actual accounts and has succinctly noted some advantages and drawbacks of using either. For instance, an actual case cannot be accused of being tailored to fit the problem at hand but if the details of the case are recounted incorrectly, it runs the risk of damaging the overall argument presented. On the other hand, hypothetical examples are less likely to attract criticisms of inaccuracy but may be accused of being contrived to support the argument made (Shue 1980: 305).

type would face. Hence, the island provides a test, which each political philosophy must pass, if it is to be considered as a potential type of ownership for renewable energy in greater society.

Additionally, the inhabitants of the desert island also have a privilege not to use energy.[41] For instance, one or both parties may find the weather to be warm enough not to need fuel and they may also be able to exist on uncooked food. Ascetics such as these, who are of sound mind, would not be considered to have been wronged with regard to any notions of human rights.[42] However, this is considered to be an extremely unlikely situation as persons are expected to desire increasing amounts of energy;[43] hence, the thought experiments continue with the island's inhabitants seeking more comfortable lives.

1.2.4 Responsibilities

After examining the ownership types, the responsibilities attached to the ownership of renewable energy will be reviewed. The responsibilities that should occur within a society are reviewed first. This includes an examination of the problems associated with the current centralised supplies of energy favoured by developed societies and also investigates whether a move to using renewables via a centralised infrastructure would be suitable. Overall, a move to the provision of *domestic energy* is argued for.

After this, the global responsibilities that the usage of renewables will bring will be examined. The responsibilities of ensuring *sustainability* with regard to preserving goods and ensuring that the Earth's environment is not damaged will be considered here. Also, the notion is taken into account that where renewables are widespread, then any problems associated with their usage will increase.

[41] See 2.3.2 'Privileges'.
[42] See 2.1 'Introduction to Rights'.
[43] See 1.3.3 'The Desirability of Increasing Energy Usage'.

It is further noted that renewable energy provides an opportunity to ensure *international justice* is achieved. Overall, it is expected that if adequate responsibilities are applied to the provision of renewable energy then this should improve humanity's position with energy becoming more widespread and individuals gaining an adequate supply.

1.2.5 A Preview of the Concluding Argument

After all the thought experiments have been carried out, the criticisms made and the responsibilities assigned, will come the conclusion. Here an argument will be made that renewable energy should be owned, either by individuals or groups, rather than ownership utilising centralised generation and distribution: hence, a variety of ownership entitled 'independent ownership', whereby individuals and groups may harness and use energy by themselves, is recommended. This is largely due to a combination of two instrumental factors: firstly, renewable energy is both widespread and unlimited and all individuals and groups will have access to renewable energy one way or another;[44] and secondly, the technology to allow individuals and groups to generate, store and transport renewable energy is currently available.[45] This recommendation is reliant upon the ownership type derived from the work of John Locke, which has been able to address the tenets originating in the 'Rights' and 'Responsibilities' chapters to a greater degree than other ownership types.[46]

That said, a major proviso remains as other ownership types will have their niche. There may be specific situations where other ownership types will be suitable: where renewable energy is abundant, a type of private ownership may establish itself unhindered; distributed ownership may be warranted where more coordination is needed

[44] See 1.3.1 'Energy Types'.
[45] See 1.3.2 'The Harnessing and Storing of Renewable Energy'.
[46] See 1.2.1 'Rights' and 1.2.4 'Responsibilities'.

in society; egalitarian ownership types may prevail where a society values equality over other concerns; and those more comfortable with communitarian living will favour communitarian ownership. Hence, the conclusion will acknowledge that there may be a plurality of ownership types operating in the future.

1.3 A Description of Informing Concepts

1.3.1 Energy types

Here, it is considered that seven groupings of renewables exist and these are categorised as: solar power; wind power; hydroelectric power; wave power; tidal power; biofuels; and geothermal power. With the exception of the types of geothermal energy gained from the heat emanating from deep within the Earth's interior,[47] all gain energy from the Sun's action upon the Earth: solar power is from direct heat; biofuels originate in the first instance from flora harnessing light although the waste products of fauna may also be used; wind, waves and hydroelectric power are caused by the weather that the Sun influences. Tidal power is caused by the gravitational pull of the Sun and the Moon; where the orbit of the latter may be considered an indirect effect of the Sun's actions.[48] Hence, as long as the Sun shines and the Earth's inner remain hot, then renewable energy will be available. To this extent renewable energy is considered to be an unlimited resource.

Furthermore, within each grouping there are many methods by which energy may be harnessed. Taking biofuels as an example:[49] woody matter may be burned

[47] These types of geothermal energy should be contrasted with ground source energy. Ground source energy, although considered here to be a variety of geothermal energy, actually originates when the Earth's upper surface is heated by the Sun and absorbs energy. The energy may be harnessed via 'heat pumps' and an explanation of the mechanics used here is provided in 'Solar Thermal Energy' (Everett 2012: 36-7).

[48] For more detail concerning the provenance of renewable energy types See 'Introducing Renewable Energy' (Boyle 2012: 14-7).

[49] For more detail See 'Bioenergy' (Morris & Scurlock 2012: 117-184); but particularly a succinct flowchart summarising the major categories of biofuels (Morris & Scurlock 2012: 127).

directly to produce heat; both animal waste and cellulosic plant material may produce gaseous fuels via anaerobic digestion; whilst starchy and sugary plant material may be fermented to produce liquid fuel. However, this study is not a scientific exposition of the various energy resources. Here the reader should be aware that there is a *multitude* of ways of harnessing renewable energy.

That said, renewable energy is unequally distributed. Some fortunate localities may choose from all of the seven categories whilst some may have only one, such as solar. However, there would be few localities, when provided with the relevant harnessing equipment, which do not have access to renewable energy; and therefore renewable energy may be considered to be widespread. The consequences for ownership are that it is possible for any individual, or group of individuals, to have access to at least one type of renewable energy.

It should also be noted that for those with a variety of choice, renewable energy may be abundant whilst for all, renewable energy should be unlimited. To differentiate between these two states, tidal power, as an example, may be considered to be *unlimited* as it is always present and dependable. An *abundant* supply of energy may occur when a locality has all its energy needs satisfied with a surfeit of energy still available. It should be appreciated that this latter scenario is most likely to occur where a variety of energy sources are present.

Here renewable energy is purely considered to be the above seven categories. It could be argued that employing horses to plough fields is a variety of renewable energy and should therefore be considered within the scope of this work. It is noted that humanity may continue to use animals for energy, as they have done since time immemorial, but for the purposes of this study it is the types of energy that exclude any *direct* energy provided by living organisms that are reviewed. To explain, a horse uses energy directly when producing a ploughed field whereas the energy contained in its

slurry is released indirectly when it is processed in some way such as anaerobic digestion. Humanity's pattern of energy usage has been to reduce reliance upon animals and this is continued here.

Additionally, some may query the wisdom of excluding nuclear energy where it produces a reliable supply of energy; especially when it would not produce the carbon dioxide that is purportedly causing climate change. Furthermore, some may argue that if humanity develops an abundant source of nuclear energy then work concerning renewable energy will become an irrelevance. For instance, some may predict small, neighbourhood nuclear reactors fulfilling this purpose.[50] However, at this point it should be noted that the resource for powering nuclear reactors, namely uranium, is depleting in the same way that carbon-based resources are depleting (Open University 2014a).[51]Overall, this situation may be contrasted with the resources of renewables such as solar and wind, which should remain unlimited.

Furthermore, with regard to radioactive waste, this has to be managed for an indefinite time period by future generations (Open University 2014a). It is an obligation bequeathed to them and this may be considered to be unethical: effectively, the people of the future pay for our energy usage today.[52] In addition, this is where the true cost of nuclear energy may lie as the cost of securing nuclear waste indefinitely, may, in real terms outweigh the cost of the energy produced today. Hence radioactive waste has ethical concerns and a potential unknown monetary cost. Here, it is accepted that humanity will continue to use nuclear power for the foreseeable future, but it is not considered to be the subject of this study due to its pitfalls.

[50] Currently research is being carried out to provide small nuclear reactors and one example is provided by Gen4 Energy (Gen4 Energy: 2014).

[51]The debate rages as to the pros and cons of nuclear power and a typical synopsis of the debate, derived from sources both for and against, has been provided by the Open University (Open University 2014a). The debate discusses areas such as safety, security, economics, environmental concerns, radioactive waste and public acceptability.

[52] The obligations owed to future generations are discussed in more detail in subsection 7.3.1 'Sustainability'.

1.3.2 The Harnessing and Storing of Renewable Energy

It should be noted that all renewable energy sources, harnessing equipment, storage and transportation of energy that decide the outcome of this debate are currently available: no attempt is made to predict the capabilities of future energy generation or storage.[53] Hence, the argument that concludes this work rests upon a major premise, that for all persons, whether individually or in groups, the technology is available to generate, store and transport renewable energy.

Looking at the initial part of the premise and focusing upon the case of sole individuals generating their own energy, then this situation may invoke thoughts of persons with solar panels affixed to the roofs of their home. Now this may be one way where an individual may generate their own energy, but many persons may not be aware that the established infrastructure of supplying conventional energy may be used to facilitate an individual's energy generation. To demonstrate, many readers will be aware that wind farms, for example, can be plugged into a grid system that allows energy distribution via conventional sources. However, it is the existence of grid systems which may be used by individuals when generating their own renewable energy. To explain, a person may own a wind turbine in a remote location and the energy generated may be transported to the person's home as electricity via the grid.[54] Additionally, the individual's storage of energy may also be underwritten by the fact that grid systems may utilise centralised storage systems; the storage of energy in reservoirs allows the energy to be later released via hydroelectric mechanisms (Ramage 2012: 198-201). Here it is accepted that individuals may transfer their personally

[53] An overview of both the current situation and future possibilities is provided by Bob Everett and Godfrey Boyle in 'Integrating Renewable Energy' (Everett & Boyle: 2012).

[54] It is acknowledged that some of an individual's energy may be lost in transmission due to electrical resistance. However, an individual should be able to generate more energy to offset this loss; by investigating in a larger turbine for example.

generated energy to the grid, which may then store this energy centrally and transport it to the individual when needed.[55]

However, the dependence upon pre-existing infrastructure is not intended to belittle the vast potential for solely domestically produced energy. The Energy Saving Trust, a charitable body based in the United Kingdom which advises upon renewable energy, particularly in the home (Energy Saving Trust: 2014a), has noted that the 'average' installation of solar panels will generate a typical household's electricity needs (Energy Saving Trust: 2014b).[56] Therefore, it should be appreciated that greater amounts of energy, covering the notion of self-sufficiency of *total* energy needs, should be possible where a mixture of energy resources is utilised: such as solar energy, wind power and ground source heating.[57]

Apart from the domestic generation of renewables, the energy may also be stored domestically. Currently, domestically generated energy may be stored via batteries, although these are primarily recommended by the Energy Saving Trust for those generating energy off-grid (Energy Saving Trust: 2014c).[58] Overall, the reader should be aware that the availability of renewable energy generation and storage is a current possibility.

At this point the term 'domestic' should be defined. Although this term within the context of generating energy may have connotations of home usage, here it does not merely refer to energy generated for use in one's home, but to renewable energy

[55] It is acknowledged that the individual would have to pay a management fee to an organisation storing and transporting energy; however, where enough individuals share the costs, this would be expected to be a small amount when compared to the value of energy the individual has generated.

[56] 'A 4kWp system can generate around 3,700 kilowatt hours of electricity a year – roughly equivalent to a typical household's electricity needs' (Energy Saving Trust: 2014b).

[57] Research is being carried out to *optimise* systems utilising a few differing types of energy sources simultaneously such as solar, wind and ground source heating, which when combined facilitate more domestic usage. There are examples described as 'combined renewable heating' systems (Haller *et al* 2013: 667); and also 'hybrid' systems (Boukettaya & Krichen 2014: 149).

[58] The widespread storing of one's own energy, although currently less commonplace than generating one's own energy, is available. Currently private sector organisations are leading the way in providing home storage facilities and various worldwide initiatives are featured on the website for the organisation Energy Storage (Energy Storage: 2013). Also a variety of batteries are reviewed in (Suberu, Mustafa & Bashir 2014:502-5).

generated, used and stored by *identifiable entities* primarily to satisfy their own needs. For example, individuals, families, communities, educational establishments and businesses may be considered to be identifiable entities that could acquire their own supply of domestically generated energy (and from hereon *domestic* refers to any identifiable entity that caters for its own renewable energy needs; unless further differentiation is needed from this entity where terms such as 'home usage' or 'individual usage' will be referred to as appropriate).

1.3.3 The Desirability of Increasing Energy Usage

It has already been noted that abundance in the supply of renewable energy should not be an impossible state to achieve, especially where multiple sources of energy are available.[59] However, some reasons as to why this may be an elusive state to achieve will be given. To explain, apart from providing essential energy usage such as heating, cooking and lighting, energy can always be used to ameliorate repetitive tasks in one's life such as food preparation and cleaning; furthermore, the recreational tasks that may employ energy can expect to become more alluring where energy is available to power them. Hence, energy is a very useful commodity and contains, what is referred to here, as the *desirability of increasing usage*.

Furthermore, any developing society, with energy needs that bear a resemblance to the desert island thought experiment,[60] would be predisposed to desire increasing levels of energy. The consequences for ownership are that many individuals or groups may be expected to wish to own more energy than they currently do in order to attempt to satisfy this desire.

[59] See 1.3.1 'Energy Types'.
[60] See 1.2.3 'The Desert Island Thought Experiment'.

That said, it is possible that developed societies may approach a level of abundance by, for example, perfectly insulating their homes and installing equipment that uses energy efficiently; and this would be expected to decrease the intensity of desire. Where a state of true abundance arises, whereby no more energy could possibly be used, it may be assumed that those owning the energy would be able to gift energy, to those who do not live with a condition of abundant energy. Nevertheless this thesis operates by assuming a desire for increasing energy usage operates in societies.

1.3.4 Mindset and Ethos

At various points in this work reference is made to the concepts of mindset and ethos. A *mindset* is associated with the ownership types of Aristotle and communitarianism; whilst an *ethos* would be expected to operate within other ownership types. These concepts are important as their operation and existence in a society support the ownership types and allow them to perpetuate. In order to provide clarity their definitions are now provided.

The concept of a mindset may be interpreted as the lodging of a thought process in an individual, whereby it would be difficult for that individual to countenance any contrary thought processes. The benefit of such a thought process may be realised when they are defined as evolutionary devices which allow individuals to become experts in an environment and efficiently transfer information to fellow individuals inhabiting the same environment (Snyder 1998: 1-3). However, the downside to this arrangement is that it makes individuals 'intrinsically prejudiced' to new ideas (Snyder 1998: 1).

To demonstrate the workings of a mindset, in communitarian societies the opinion of the community is privileged over that of the individual. For the ownership of renewable energy, this would result in a community owning the energy and all individuals within the community unquestionably agreeing to this proposition. This may

be achieved by individuals being inculcated in these values via education and peer group pressure.[61] With regard to the ownership derived from Aristotle, more emphasis would be placed upon the inculcating education to ensure that a person would behave virtuously and share energy where appropriate.[62]

However, the acid test of the mindset's efficacy would occur where the inculcated individual is placed in an environment holding different values. If the individual retained the desire to behave according to their mindset and psychologically suffered if prevented from doing so, then the habituation process may be considered a success.

Turning to define an ethos, Gerald Cohen described how, when discussing distributive justice within liberal societies, individuals have the freedom of choice to change social practices (Cohen 1997: 25). These choices may cause incremental changes in social *ethi* as follows: social pioneers change their attitude, a pathway is laid down, others follow until the majority holds the new attitude, then the majority pressurises the remaining minority to adopt the new attitude (Cohen 1997: 26). From this definition it can be concluded that an ethos should allow persons some individuality in how they behave and they may not even adhere to the prevailing ethos. It is expected that *any society* which allows individuals to change the way they behave, or change their opinions concerning varying goods or situations, would be considered to allow a change in ethos.[63]

Hence, to conclude this subsection, an ethos is a widely held standard that is subject to change, whilst a mindset limits the thoughts that the individual can hold and act upon and this is considered to be a defining difference here.

---

[61] See 6.1.1 'Hutterite Philosophy Defined and Applied' for an example of this process.
[62] See 4.3.1 'Aristotle's Philosophy Defined and Applied' for this process.
[63] Gerald Cohen demonstrated that an ethos may be replaced within the same society when he noted that in post-war Britain, the populace worked for the common good by rebuilding a society and contrasted this with the situation later in the twentieth-century where the huge pay differentials emerged between executives and operatives (Cohen 1997: 27).

1.4 Summary of Introduction

It is notable that this work accepts the major assumption that renewable energy will be an important part of humanity's energy provision in the future. The reader should be aware that renewable energy is very widespread and may be gained from many sources; wind, waves, tides, the gravitational flow of waterways, biological matter, sunlight and the Earth's geology all provide a resource. Almost all human beings have access to one resource or another directly, but as all the technology needed to harness, store and transport renewable energy is available, all human beings *could* have access to renewable energy. These factors denote that renewable energy may be owned under the auspices of many political philosophies from those that would prefer individual private ownership to those that would prefer a whole society to share ownership.

This leaves the way open to review differing ownership types over a standardised thought experiment. However, before the ownership types are reviewed it is argued that the right to own renewable energy is a *human right* and this is the topic of the next chapter.

2 The Right to Own Renewable Energy

2.1 Introduction to Rights

Here the right of humanity to own renewable energy is investigated. It is noted that energy *per se* provides a necessity for human life to which all individuals should be beneficiaries. After reviewing the relevant declarations and conventions concerning human rights that originate from the United Nations, it will be established that the concept of human rights provides a pathway to satisfying this necessity via renewable energy.

It is also noted that energy may be generated not just by individuals but by groups of individuals, where such groups may arise out of choice or out of necessity. Hence, group rights are also reviewed and it is noted that they may be accommodated by the human rights approach.

After this, the chapter demonstrates how the incidents of exercising rights for both individuals and groups usually relate to a supervising society.[64] Then, the critiques of rights-based approaches will be aired before concluding.

2.2 The Case for a Rights-Based Approach

2.2.1 The Prerequisites of Rights to Renewable Energy

Human beings need energy in the same way that they need food and water to survive. Therefore access to energy *per se* may be considered to be a *necessity* for human life. Some assistance as to how this necessity may best be distributed may be gained from looking at human origins in a *state of nature*. Once, human beings were free to make

[64] The role of providing energy, which may fall upon oneself or a group to which one belongs is distinguished from the body which assures one's supply of energy, entitled 'society' for the purposes here. This is elucidated in more detail in subsection 2.2.3 'Group Rights'.

use of the necessity of energy by burning wood to keep warm, washing clothes in the flow of a stream; and drying clothes in the wind. This scenario is interesting as each *individual* would expect to have their necessity catered for within a natural idyll; but it is of further interest as the use of energy is essential to living the most basic of lives.

In this idyll, there would have been no concept of rights guiding the usage of energy as they were not needed. The question may then arise; can the features of a state of nature, with regard to renewable energy, be adequately enshrined within rights legislation? Initially, this may seem impossible as establishing 'rights' removes us further from this state of nature as rights may limit individuals' actions and redistribute individuals' goods;[65] furthermore they also require justification for their implementation. However, here it is believed that a right to renewable energy can be established, but current rights legislation would have to satisfy the conditions of recognising energy as a human necessity and acknowledging renewable energy as a valid type of this necessity.

2.2.2 Human Rights

Following on from the idyll described above, it should be apparent that human beings living within a greater society, are more detached from the direct access to energy that their ancestors enjoyed: certainly the vast majority living in an industrialised society would not be able to gain all the energy they needed directly by their own efforts. Therefore, persons require an institution to ensure that they are in receipt of their energy needs.

Such an institution may be informed by the concept of 'human rights' and the current era acclaims this concept. In fact such rights have grown in stature throughout the latter half of the twentieth-century to become adopted by an array of nations

[65] See 2.3 'The Operation of Rights in Society'.

espousing varying ideologies; often under the guidance of the United Nations and the European Court of Human rights as examples (Nickel 2012). Therefore, it would be remiss not to use a human rights-based approach: especially where a practical solution to the question of ownership is required.[66] Hence, the concept of human rights will be reviewed to assess whether its implementation satisfies the conditions of: recognising energy as a human necessity; and acknowledging renewable energy as a valid type of that necessity.

At this point, a definition of human rights should be provided. For some commentators, the notion of human rights is difficult to define and many writers go about a human rights discourse with the expectation that every reader is familiar with their composition. That said, James Nickel has attempted a definition:

> Human rights are international norms that help to protect all people everywhere from severe political, legal, and social abuses. Examples of human rights are the right to freedom of religion, the right to a fair trial when charged with a crime, the right not to be tortured, and the right to engage in political activity. These rights exist in morality and in law at the national and international levels. They are addressed primarily to governments, requiring compliance and enforcement (Nickel 2012).

The above definition supplies the spirit in which human rights are felt to operate concentrating upon 'political, legal and social' benefits that the individual may enjoy. However, for the purposes here, whereby human rights concepts may be applied to energy supply, more useful guidance is provided by the United Nations' 'Universal Declaration of Human Rights' of 1948. Of particular interest here is Article 25.1:

> Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control (United Nations 1948: 7).

[66] See 1.1 'Preamble' for this postulate.

Hence, human rights may be considered to be a 'positive right' whereby an individual's society would be expected to provide the good in question where the individual could not provide this herself.[67]

Unfortunately, for the purposes here, the right to adequate energy is not mentioned by the Declaration. That said, over half a century later the United Nations had firmly considered energy as a 'basic requirement' and the eighteenth point derived from the 'Johannesburg Declaration' from the World Summit on Sustainable Development is as follows:

> We welcome the focus of the Johannesburg Summit on the indivisibility of human dignity and are resolved, through decisions on targets, timetables and partnerships, to speedily increase access to such basic requirements as clean water, sanitation, adequate shelter, energy, health care, food security and the protection of biodiversity (United Nations 2002: 3).

Hence, the right to energy nestles within other 'basic requirements'; and it should also be noted that this passage acknowledges rights to the other necessities such as water and food mentioned at the start of this chapter. Therefore, discussions concerning human rights may be considered to stipulate a human right to energy. A human right to energy may be considered as important and equivalent to the other rights within the 'Universal Declaration of Human Rights'.

More recently, the United Nations has explicitly acknowledged the future importance of renewables. In 2012, 'The Future We Want' produced for the Rio +20 Corporate Sustainability Forum noted that access to energy is a right integral for human health and wellbeing; it was also noted that as renewables will compose a greater part of world energy in the future, every person should have access to them (United Nations

[67] See section 2.3 'The Operation of Rights in Society' for an explanation of how the various rights concerning renewable energy may manifest themselves.

2012: 5). Following the spirit of the developments of the twenty-first century, it is here assumed that 'the right to a standard of living adequate for the health and wellbeing' from the Declaration of 1948, encompasses the right of an individual to obtain enough renewable energy to do this.

All in all, human rights legislation provides a vehicle by which the conditions stated above, namely recognising energy as a human necessity and recognising renewable energy as a variant of this necessity, are satisfied. Human rights therefore provide a satisfactory approach to securing individuals with rights to renewable energy and may be said to entail a *human right to renewable energy*. Hence, a *human right to renewable energy* may also be considered as important and equivalent to the other rights within the 'Universal Declaration of Human Rights'.

In response to this, some may claim that the sectors of humanity that now enjoy living in industrialised societies have consented and contracted to forsake renewable energy for the convenience of energy generated from other sources. However, it should be noted that the usage of some types of renewable energy has continued since prehistory. For instance, drying one's clothes on a windy day continues where a washing line may now replace the branch of a tree. Additionally, using solar power has changed from siting crops in a sunny place to using the cover of glass in a greenhouse to increase the warmth around them. Moreover, the appliance of modern technology encourages this continuity as gaining one's necessity of energy may be achieved via wind turbines and solar panels. These examples demonstrate that the tradition of using renewable energy has been maintained whilst only the technology has changed.[68]

The concept that the usage of renewable energy has been met by modern technology may elicit the response that only a *few* remnants of old lifestyles remain and

[68] It is noted that according to the logic contained within this paragraph, non-human animals may be feasibly argued as owners of renewables. As examples: a basking reptile benefits from the Sun's energy; whilst a bird may use the wind's energy to glide. That said, this study is purely concerned with anthropocentric ownership; see 2.1 'Introduction to Rights'.

these are irrelevant to the main supplies of energy. However, this statement can be considered to be nonsense when it is realised that renewable energy is vital to humanity's survival: all individuals are beneficiaries of renewable energy as the human facet of vision is useless without the Sun's light; and the heat energy reradiated by the Earth keeps this planet temperate and allows life to thrive (Everett 2012: 25). It must be explained to detractors that renewable energy is so essential to life that it cannot be forsaken but merely overlooked; and this oversight has been facilitated by the availability of temporarily inexpensive and widespread fossil fuels. But with carbon-based fuel usage diminishing,[69] a new paradigm, postulating the necessity of renewable energy for humanity beckons.

2.2.3 Group Rights

Following on from the 'Universal Declaration of Human Rights' of 1948, it should be noted that human rights are often gauged in terms of the individual. However, it should be noted that an individual may gain their energy from a 'group' to which the individual belongs; and the group may consist of a family, a village, a community or feasibly even a city. It should be further noted that some individuals may choose to join a group to exercise their human rights to renewables, as this may allow them to benefit from the economies of scale as one reason; or may join a group out of necessity as their own level of welfare cannot be satisfied by individual generation, to provide another reason. Furthermore, those accustomed to communitarian living may prefer to join a group.[70]

The group may be considered to be the *supplying body* and should be distinguished from the guarantors of the human right to renewable energy: the Declaration of 1948 emphasises the nation state in this latter role although other

[69] See 1.1 'Preamble' for this postulate.
[70] It has been noted that the presence of a communitarian mindset would facilitate this. See 1.3.4 'Mindset and Ethos'.

commentators emphasise this as a government's role (Wenar 2011, Nickel 2012). However, as this role may be guaranteed by a wide range of bodies, including one's region or village, then the overall covering term of 'society' is used here to denote the *assuring body* and its many actors. Here, a group comprises a level of organisation below that of a society and is expected to be answerable to a society: for instance, a coastal city supplying its inhabitants with energy from a tidal barrage may be answerable to a nation state. That said, it is feasible that a supplying body and an assuring body could be the same entity: such as a coastal city supplying and assuring its inhabitants gain their energy from a tidal barrage. However, although the first situation is preferable as the supplying body will be monitored, no contradiction need be present where the city has an internal mechanism that may be invoked by individuals whereby the city's role of supplier may be held accountable to the city's role as assurer. However, if the city was corrupt or inept in its role as a society and did not assure human rights to individuals, then one would hope that the United Nations would intervene and exert pressure to rectify the situation;[71] as would be expected for any established human right.

It should be further noted that ostensibly individualist rights may be applied to groups and this requires some explanation. Within society, the treatment of a group as an individual within law is well known and occurs when groups have a common purpose and it is expedient to grant them both an identity and the same set of rights as an individual. This would include organisations formed to satisfy commercial aims such as limited companies, but may also occur when persons freely join alliances such as partnerships and cooperatives.

The question then arises, how may a group be identified? Two general types of group are categorised by some commentators and they are termed here as a 'purposeful

[71] See 2.4.2 'Countering Opponents of Rights Legislation': where the supply of a sufficient amount of energy would allow the individual enough energy to carry out routine tasks.

conglomerate' or an 'accidental aggregate'. To differentiate, the purposeful conglomerate should have 'internal structure, rules, offices and decision procedures' and be accompanied by a 'shared understanding amongst individuals that they are normatively bound to each other' (Jones 2008). On the other hand the accidental aggregate would not usually meet *en masse*; and would be comparable with groupings such as pedestrians who have a right to safe crossing points on roads (Jones 2008).

Groups generating renewable energy within society would be considered to be purposeful conglomerates (and from hereon *group* refers to a purposeful conglomerate). This would be because the groups would have some administration relating energy generation and its distribution; furthermore the, individuals comprising the group would understand their obligations to each other. However, the smaller generators such as individuals generating energy independently from their respective abodes would comprise an accidental aggregate.[72]

At this point it should be noted that as human rights enshrine individualism, they can be expected to clash with the operations of groups and this will now be demonstrated. Some individuals may find that they inherit a position within a group and the question may be asked, should an individual be part of a group without their consent? Furthermore, if an individual decides to leave a group, it may be asked whether individuals may withdraw from groups and retain their share of the collective holdings. Here defining whether human rights had been satisfied may guide whether society should act to rectify a situation.

For instance, some individuals may find themselves to be part of a coastal city utilising a tidal barrage, but realise that being part of a group does not fulfil their own preferred level of welfare. In this instance, they may find that it would be more beneficial to install a solar panel or wind turbine on their home; or join another scheme

[72] See 7.2.3.2 'The Economic Challenge' where the propensity of renewable energy to be generated domestically is noted.

which would deliver a greater supply of energy. However, provided that the city's tidal barrage satisfies the individual's human right to renewable energy, then society need take no action and leave the individuals to seek other means of energy provision.

However, if the coastal city did not satisfy the human rights obligations, then society would retain the right to intervene and remedy the situation. If the coastal city was at fault in not supplying a sufficient amount of energy to the individual then society may enact either coercive measures or incentives to rectify the situation.[73] If the barrage *itself* could not provide enough energy then the onus would be on society to ensure that sufficient energy was produced.

Overall, the problems between groups and individuals may be forestalled by privileging individuals' human rights over group rights. Hence, individuals should always be free to join a group but should always be assured their human right to renewable energy.

2.3 The Operation of Rights in Society

From the case presented above, it should be noted that human rights would provide both individuals and groups with the rights to own renewable energy. However, the manner in which rights would operate within society requires further explanation.

Here, rights may be understood as an interrelated collection of freedoms and limitations placed upon both individuals and groups; and an exploration of rights developed from liberal societies sheds light upon this. The American legal theorist Wesley Hohfeld defined rights as privileges, claims, powers and immunities. Here, only the first three incidents are considered as immunities generally concern non-materialistic rights: for example, the United States' constitution is often held as an

[73] See 2.4.2 'Countering Opponents of Rights Legislation': where the supply of a sufficient amount of energy would allow the individual enough energy to carry out routine tasks.

example of enshrining immunities such as religious freedoms, a free press, freedom of speech and rights of association; and any laws passed which intrude upon these areas are considered to be invalid (Jones 1994: 24). However, introducing the human right to renewable energy into society will entail the introduction of material goods and therefore the rights addressed by the first three incidents must be elucidated.

In the following paragraphs, rights are demonstrated by showing the relationship between both individuals and groups in receipt of their human right to renewable energy and their relationship with greater society.[74] Positive claim rights are demonstrated first, followed by privileges, negative claim rights, and finally the powers retained by society are demonstrated.

2.3.1 Positive Claim rights

With the establishment of a human right to renewable energy, it has already been noted that it should be society's *sole* responsibility to ensure this state of affairs occurs.[75] This gives a positive claim right to individuals and groups with the corresponding positive obligation upon society. For individuals, this relationship may be expressed thus:

(1) The individual has a claim that society fulfils her human right to renewable energy.

Now where an individual is part of a group, the group becomes the recipient of the positive claim right. This may be expressed thus:

(2) The group has a claim that society fulfils its human rights to renewable energy equal to the aggregated claim of its members.

[74] The statements defining rights are developed from the *Stanford Encyclopedia of Philosophy's* entry for rights (Wenar 2011).
[75] See 2.2.3 'Group Rights'.

Now should an individual cease to be a member of a group then case (1) would reassert itself for the affected individual. Should a group fail to provide their members with sufficient renewable energy to fulfil human rights then society would retain a *power,*[76] discussed below in more detail, to assure that groups provide their members with energy.

2.3.2 Privileges

Once the individual or group has generated or acquired their supply of renewable energy they would be at liberty to use this energy. They would have a privilege and this may be expressed thus:

> (3) The individual or group has a privilege to use renewable energy *if and only if* they have no duty not to use renewable energy.

Applied to renewable energy, in very simple terms, the individual or group has the choice to use the supply of renewable energy or not: unless they have a duty to actually use the energy. A duty may occur where society retains a *power* that obliges an individual to use energy in certain instances:[77] for example, where an incapacitated person may need to be supplied with energy in order to have her human rights fulfilled and the original owner of the energy had no intention of using the energy.

2.3.3 Negative Claim Rights

Renewables usage would also expect to entail negative claim rights. Negative claim rights carry a duty of non-interference, from others and may be described thus:

[76] See 2.3.4 'Society's Powers'.
[77] See 2.3.4 'Society's Powers'.

(4) The individual or group has a claim that others do not interfere with their energy usage *if and only if* others, have a duty not to interfere with their energy usage.

Now the negative claim right would give individuals and groups much freedom over how energy is used, but it should be noted that the result of this may be limited in some instances: society may maintain a *power* to curtail some energy usage:[78] for instance, a person frivolously using energy when others in society are in dire need of energy may expect to have her energy redirected.

2.3.4 Society's Powers

These are an overarching order of rights, which are held by society and may be used to restrict or enhance individuals' or groups' ownership of energy. A power may be defined thus:

(5) Society has a power *if and only if* society has the ability within a set of rules to alter its own or another's privileges or claim rights.

It has already been noted that society would uphold an individual's human right to renewable energy within a group should a group fail to accomplish this and has breached its members' human rights;[79] hence, (5) may be invoked to overrule (2). Where a person owns energy but has no intention of using it and another person is in dire need of this energy then (5) may be used to overrule (3). Additionally, society may curtail individuals' or groups' right to use energy, such as frivolously using energy when others are in need of energy; hence, (5) may be invoked to overrule (4). Hence,

[78] See 2.3.4 'Society's Powers'.
[79] See 2.2.3 'Group Rights'.

society in its role of providing the positive human right to renewable energy may be expected to use its powers to overrule the other rights.

2.4 Countering the Critics of a Rights-Based Approach

It must be noted that the above demonstrations of the operation of rights in society were derived from rights already established in a complex, liberal nation. However, here it is noted that the same rights can be applied to renewable energy over the various ownership types.[80] However, the varying ownership types may place differing emphasis upon differing Hohfeldian incidents and this contributes to giving each ownership type its uniqueness.

That said, the approach can expect to be criticised severely: firstly via ideological differences; secondly by the perceived impracticalities of introducing a rights-based approach supported by legislation; and thirdly by those who would criticise this concept of right as being a temporal anomaly. These feature in the following subsections.

2.4.1 Countering Opposing Ideologies

The opponents of the rights-based approach will range from far and wide and many criticisms are discussed over the following paragraphs.

Some criticism may emanate from schools of thought such as utilitarianism where decisions concerning welfare should be taken to attain the *maximum good for the maximum number of people*.[81] However, the advocates of human rights would defend

[80] See 1.2.2.2 'Details of the Ownership Categories' for an overview of each category.

[81] In attaining the *maximum good for the maximum number of people*, a society may employ various strategies or policies to achieve this ranging from encouraging hedonistic states to making decisions based upon information available; additionally, the outcome may be coloured by a desire to calculate maximum utility in total or on average across a population. See 4.1.1 'Mill's Philosophy Defined and Applied' for a discussion concerning these variables and one demonstration of the maxim applied to the

their own stance, based upon where *they* placed value. For instance, where the utilitarian calculus is derived from both preferences and quantity to yield its only source of value, namely utility, then it could possibly clash with human rights criteria that originate from moral standpoints (Jones 1994: 51-2): the calculation may attempt to adjust the level of human rights to any particular good, possibly by reducing it, if this promised to maximise utility and this would clash with the element of morality contained within a stipulated right. Furthermore, the assignment of human rights to individuals, if upheld as an inviolable principle, should remain sacrosanct and be independent of any calculations of utility (Jones 1994: 52-3). The two sides would seem set to disagree; however, it may be in a society's long term interests to include some aspects of life which may initially appear as 'disutility' (Jones 1994: 55-6): for instance, ensuring all citizens have a minimum quota of energy to preclude whole sections of society suffering due to not being able to heat their homes sufficiently, may address potential problems from disgruntled sectors of society which would impact upon society as a whole. Hence practising utilitarianism and ensuring human rights are fulfilled need not be antagonistic.

Moving to comments from egalitarians, many would be pleased that a human rights-based solution to the provision of renewable energy has instituted a level of egalitarianism. The problem may be that human rights do not go far enough in addressing what egalitarians may feel constitutes equality. If only addressing a human necessity is required by society then this may give society an excuse to assure very meagre supplies of energy. For instance, the capabilities approach's notion of offering widely varying amounts of energy to individuals would offer an equality of opportunity;[82] whilst the Rousseauian notion of giving an equality of condition would

ownership of renewable energy. However, the individual method of attaining the *desideratum* is not important here as all methods may assail notions of human rights which the utilitarian may consider to be an arbitrary concept.

[82] See 5.3.1 'A Capabilities Approach Defined and Applied'.

allow all persons roughly equal shares of energy.[83] The human rights advocate may stress that although their arrangement does not assure equality *per se*, it represents an improvement on previous arrangements.

More ideological problems would originate from socialist schools of thought. The commentator Tom Campbell has provided one such summary of two competing schools of thought with regard to socialists accepting human rights (Campbell 1983: 103-5). One side considers human rights, particularly positive claim rights, as being vital in ensuring equality (Campbell 1983: 103-4): whilst the other side of the debate sees human rights as being related to bourgeois class interests that developed from the egoism originating in theories of natural rights (Campbell 1983: 105).[84]

Similar to this second socialist criticism, stern criticism may be expected from the Marxist, who may argue that awarding rights to an individual encourages isolationism and the pursuit of self-interest (Marx [1844] 1983c: 107-8); Marxists may fear a bourgeois emanation of persons guarding their own holdings of energy when others around them suffer. Nevertheless, this criticism may elicit the response that *all* are enjoined with the overarching right to renewable energy which should introduce an element of fraternity and cooperation in society. The advocate of the human right to renewable energy must therefore stress the overarching right of *all* to the necessity of renewable energy, if all Marxists and socialists are to be convinced that the human rights approach is the way forward.

Now some criticism may also come from those who lead communitarian lifestyles who privilege the community's rights over the individual's: for some, the individual is 'enmeshed' in a community and it is wrong to 'abstract' them (Jones 1994:165). For instance, a community may decide to embark upon an energy generating venture and share the energy between its members, by whatever method its members

[83] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[84] See 3.1.1 'Locke's Philosophy Defined and Applied' for an example of natural rights and its supporting reasoning.

agreed: therefore the community may find the human right to renewable energy to be an imposition upon its own organisation. However, if human rights were not fulfilled by the community then society, considering the community to be a group, would be expected to intervene;[85] as adequate provision of renewable energy would be considered to be a human necessity.[86] Some communities may accept this argument but where they do not, then clashes of ideologies will occur.

Also, the advocates of free markets may feel that positive rights result in tampering in a market: quite simply, if people wish for renewable energy then the market should be allowed to provide this. At the very least, the redistribution of resources, such as energy would be expected to result in an arrangement akin of taxation; for which, the most vehement opposition would come from libertarians.[87] However, positive rights merely satisfy human rights here, which would be expected to cover the condition of a human necessity and not an extravagant amount of energy;[88] and if people wish for more energy production then they are free to engage with the market and buy energy, so the advocate of free trade need not fear the disestablishment of an energy market.

Possible allies of the enthusiasts for free trade, could be those of a liberal bent who may argue that society is becoming too protective. Some may argue that the opportunity for an individual to use their faculty for deliberation and self-determination is becoming restrained; resulting in a lesser understanding of which goods, in this case levels of energy usage, suit them (Kymlicka 2002: 215). Additionally, other liberals may find the concept of assuring a human necessity disagreeable feeling that some societies have become obsessive in calculating amounts of goods that bear no relationship to an individual's actual needs: the more important question to be asked is

[85] See 2.3.4 'Society's Powers' and 2.2.3 'Group Rights'.
[86] See 2.2.2 'Human Rights'.
[87] See 3.2.1 'Nozick's Philosophy defined and Applied'.
[88] See 2.2.2 'Human Rights'.

whether each particular individual has 'enough' resources to lead their lives (Frankfurt 1987: 83-4). Now these types of criticisms would carry weight if relatively large amounts of energy were to be supplied to individuals, however it should remain borne in mind that the spirit of human rights would be to assure only enough energy to provide for human necessities.

After the above discussion, the advocates of a human right to renewable energy may argue overall that society is acting benignly and all should be welcoming of this role. The advocates may attempt to gain a consensus to assure the human right and it is the notion of consensus that features in the following subsection which focuses upon countering the opponents of legislation.

2.4.2 Countering Opponents of Rights Legislation

This chapter has argued for a human right to renewable energy and this rights-based approach presupposes a legislative method of introduction. However, many may say that as human beings hold such widely differing opinions derived from the varied cultures and mores of their societies, anticipating such unanimity is unrealistic (Nickel 2012). Nevertheless, where all are aware that the depletion of traditional fuels represents a distinctly new problem facing humanity,[89] and it is a problem of such severity that it threatens the well-being of humanity in general, then there exists an opportunity for humanity to collectively decide a moral norm to solve this problem; provided *all* are invited to take part in the problem solving process. James Nickel would argue that a precedent has already been set with the 'Universal Declaration of Human Rights' itself being a prime example of humanity attempting to 'create a morality' based upon a mixture of both moral and practical reasoning (Nickel 2012). But questions arise. Could the inherent morality alone, without the legislation, be promulgated? Would only a

[89] See 1.1 'Preamble' for this postulate.

consensus of opinion be needed to introduce a shared morality? The following paragraphs attempt to answer these questions.

Tim Hayward, in his book *Constitutional Environmental Rights*, written for the purposes of establishing human rights to an adequate environment, would maintain that moral rights and legal rights are conceptually related: rights, when they are agreed upon, pass from a moral ideal to constitutionalised practice relatively intact (Hayward 2004b: 19). Hayward further noted that the process of establishing a law, with its inherent discourse, would be instrumental in establishing a consensus within society: such discourse allows potentially new rights a comparison to an 'existing system of rights' and gives them the opportunity to pass tests of 'general validity' from which they may gain their legal status (Hayward 2004b: 15). Hence, by this reasoning, for rights to be compelling and reach a state of consensus, they must fulfil both moral and legal obligations.

At this point some benefits of legal rights, to their beneficiaries, should also be noted. As an example, when rights have been constitutionalised, a process of appeal should exist so that the beneficiaries of a right may remonstrate if they are deprived of that right (Hayward 2004b: 14). The holders of rights can therefore plan their lives in the knowledge of this security as opposed to a situation where rights, when accepted through ethos,[90] may capriciously change. Additionally, providing legislation means that rights to subsistence are recognised as equally as rights to personal security which have traditionally been privileged: practically, this is useful as a person's existence may be harmed as much from an unintentional deprivation of resources as an intentional violation of their security (Shue 2006: 311). To demonstrate, the level of personal injury may be the same for a person unable to find fuel for their fire as a person suffering from a deliberate assault. Legal rights may prevent this situation and the importance of

[90] See 1.3.4 'Mindset and Ethos' for a definition of *ethos*.

coercive measures, such as limiting the amount of firewood any individual may gather, may be acknowledged as ensuring the distribution of rights between individuals that a society considers to be a 'fair' (Hart 1955: 178).

Now, the above methods for introducing legislation to support rights have been devised within developed societies and subsequent questions arise: is this reasoning skewed towards developed societies? Could this reasoning be applied to developing societies? In particular, one commentator namely Roselyn Higgins, has highlighted various practical problems with regard to the introduction of human rights legislation internationally. For instance, in answering the above preconception that varying cultures make unanimity unrealistic, she ironically noted that this argument is never advanced by the oppressed and further noted that all persons have the same basic human needs that require satisfying (Higgins 2006: 96-7). However, with regard specifically to renewable energy and bearing in mind that energy *per se* is a necessity that all societies should agree upon as being needed by all individuals,[91] the introduction of a right to renewable energy should expect to be accommodated within the culture of any society.

Some opponents of a positive claim right to energy would reject the notion that positive societal action is required as it will incur 'substantial costs' (Hayward 2004a: 16). Such critics may maintain that the 'fundamental' rights are those that prevent governments from interfering in individuals' lives and consider socioeconomic rights as merely 'desirable social goals' that should be achieved wherever possible (Hayward 2004a: 15). However, it should be noted that such 'negative rights' need an infrastructure to support them, such as policing and a judiciary, so they cannot be considered as being without cost to society (Hayward 2004a: 16, Shue 1980: 303). Furthermore, once more, it should be noted that society only needs to fulfil energy

[91] See 2.2.2 'Human Rights'.

needs to the condition of a human necessity to energy and so any costs incurred cannot be considered unnecessary.[92]

Further critics may maintain that the poorer regions *cannot* afford costly socioeconomic rights (Higgins 2006: 99). However, with regard to renewable energy, the answer to this is that such societies should firstly aim to establish this right as a *desideratum*. After this, as the sources of renewable energy are multifarious, the *desideratum* could be reached by applying some ingenuity. Take the hypothetical case of a poorly-developed and land-locked tropical society. Although it may not have the resources to build arrays of solar panels and install a grid to transport energy, it may have the resources to supply concave mirrors to its citizens. The concave mirrors can directly harness the Sun's rays and be used to cook food and heat water.[93] Hence, the *desideratum* has been recognised and two uses of renewable energy have been assured; but within this *spirit*, we can further lodge the right for a sufficient amount of renewable energy to be assured to all citizens that would allow individuals to carry out routine tasks such as cooking, washing, maintaining their abode at a reasonable temperature and providing lighting. The exact amount would be expected change with climate, geographical location and culture: for instance, the inhabitant of an industrial society would be expected to require more energy than a nomadic desert dweller. Hence, an exact quantity of energy to be supplied cannot be specified: it is really beyond the scope of this work to define the needs of individuals. Hence, at the very least, all societies would be expected to address the issue of a human right to renewable energy.[94]

[92] See 2.2.2 'Human Rights'.
[93] Examples of such 'passive' uses of solar energy feature 'Solar Thermal Energy' in (Everett 2012: 57-8). See also the examples of solar powered cookers (Yettou *et al* 2014: 288).
[94] Societies would not be expected to stay at the levels of modest energy usage noted here as using more energy is here considered to be desirable; see 1.3.3 'The desirability of Increasing Energy Usage'. With some resourcefulness, societies may address the issue of far greater demand; see 7.3.2.2 'The Transfer of Goods to Developing Societies' for examples of how developing societies may introduce a far greater provision of renewable energy.

There are two other criticisms that may be countered by reference to the United Nations itself. The first is that human rights are vague (Higgins 2006: 99). However, there are various United Nations' agencies that could assist societies in defining what standards comprise a right (Higgins 2006: 100-101).[95] Hence, making reference to the United Nations itself can resolve any difficulties with regards to the potential indeterminacy of human rights. A second complaint may be raised that a growing list of human rights may allow some societies to favour some rights over others and direct resources to their favoured right (Higgins 2006: 102). However, the United Nations' World Conference on Human Rights held in Vienna in 1993 was unambiguous when it stated that '…it is the duty of states, regardless of their political, economic and cultural systems, to promote and protect all human rights…' (United Nations 1993: 6). The same passage noted that 'national and regional particularities' should be 'borne in mind' and some interpreters may recognise this as a slight concession to regional culture (Beitz 2001: 271); nevertheless, the implication remains that all human beings should hold the same rights.

In closing this section, it should be noted that legislation has a proven track record in tackling problems. The benefits of legislation include: providing a discourse during their establishment that takes many viewpoints into consideration in order to reach a consensus; a security of tenure once rights are granted to the beneficiaries; and an attempt to rollout rights globally to all.

2.4.3 Countering Apparent Temporal differences

Further critics may say that, with all the differing options of what constitutes rights, the awarding of human rights merely represents one option which we would be unwise to

[95] As an example, the World Health Organisation has defined 21°C as the temperatures for a main dwelling room in a home (UK Fuel Poverty Strategy Group 2001: 6).

privilege without fully investigating the others. Moreover, the concept of rights changes with time and the concept of human rights inherited from the latter half of the twentieth-century is merely one stage in humanity's view of rights. Two alternative examples of possible views of rights are given here with one harking back to ancient Greece and one anticipating future environmental claims.

Ancient Greece demonstrated that humanity is capable of having differing views of what constitutes rights where the notion of the 'correct structure of human relationships' operated (Wenar 2011): for instance, women generally enjoyed lesser rights than men. Hence differing situations with regard to rights enjoyed are possible, and some may argue that it is not unfeasible that we could to move to a situation where some persons are awarded larger holdings of goods: possibly children could be awarded more energy than adults as their continued existence provides an investment in everyone's future.

However, the historical evidence can be shown to offer an increasing array of rights to all individuals. Firstly, a generation of political and civil rights were acknowledged, largely negative claim rights, borne of enlightenment thinking whereby persons were granted such rights as free political association and freedom of speech (Nickel 2012). Secondly, these have been augmented by social rights within the twentieth-century, largely positive claim rights, whereby the individual should be granted adequate food, housing, clothing, healthcare and an education (Nickel 2012). Certainly, within the western world, the abolition of slavery and the increasing eschewing of racism and sexism would confirm that the situation where any individuals enjoy a lesser status is increasingly unwelcome. It is therefore unlikely that the trend for societies granting increasing levels of human rights to individuals will be overturned.

Opposing this, some environmentalists may envisage that a stronger environmental paradigm may exist in the future and award more rights to animals,

environments and ecosystems.[96] One possible corollary of this is that it may limit the rights that people now enjoy: for instance, if whole ecosystems are awarded rights then persons living within ecosystems may lose the rights they currently have and some persons who privilege human rights may unwillingly have to accept this (Elliot: 2001 186). However, it is possible that environmental rights may be offered as additions to extant human rights (Callicott 2001: 211): to explain, using the example of renewable energy, a person living within a forest may not have the right to fell timber for firewood but they may retain the right to gain renewable energy via hydrothermal power provided that it does not affect the local ecosystem. Here human rights are not expected to be denuded as both human rights and the rights of an environment need not be mutually exclusive.

Hence in countering any perceived accidents of timing, one may say that human rights are enjoying a surge in world popularity that historical evidence supports; and furthermore, we may extrapolate this trend into the future if we accept that human rights will accompany future expansions of rights into environmental areas.

2.5 Summary of Rights

A rights-based approach, utilising human rights and providing the necessity of renewable energy to human beings, should prove to be a boon to humanity. This is because human rights recognise all individuals as having dignity which should be respected and the approach also utilises renewable energy which will become essential. It is also notable that the approach is malleable enough to accommodate group rights. Overall the approach can be demonstrated as practicably introducible within society by

[96] Apart from purely human interests, some may wish to extend the rights people enjoy to animals and their habitats, often recommending legislation and environmental organisations as the arbiters of such rights. The rationale operating here is that the commonality between humanity and nature should be appreciated; and when such commonality is appreciated, it becomes morally wrong to deny rights to other organisms (Passmore 2007: 481-3). There are those who would place value upon whole ecosystems, realising the interdependence of all living things (Passmore 2007: 483-4).

applying it to widely understood incidents of rights interactions such as claim rights, privileges and powers.

Provided that initial critics can be persuaded that a rights-based approach is the way forward, it is possible that a consensus concerning its introduction may emerge. That said, many ideologies may initially disagree with the rights-based approach for their own differing reasons; however for the majority of ideologies, many arguments may be provided to dissuade them from their stance in whole or part and the process of enshrining a right to renewable energy via legislation should encourage a consensus that accepts the rights-based approach. Furthermore, enshrining human rights in legislation will benefit its recipients by being more tenable than merely being recognised by convention or society's mores.

After this, it leaves the way to explore which type of ownership, as espoused by various political philosophies, satisfies this approach. This is the subject of the following chapters where various ownership types are applied to generating renewable energy via a thought experiment. The sections are entitled: 'Private Ownership'; 'Distributed Ownership'; 'Egalitarian Ownership'; and 'Communitarian Ownership'.

3 Private Ownership

In this chapter, the concept of owning renewable energy is scrutinised at the level of an autonomous individual. Although the main question posed in the introduction was *who owns renewable energy?* This chapter allows a subsidiary question to be asked: *why should any individual have a right to appropriate renewable energy?*

Three separate philosophers' works are applied to the generation of renewable energy on the desert island thought experiment.[97] The first looks at the ownership described by John Locke in his *Two Treatises of Government* of 1689; the main focus of attention here is the chapter 'Of Property' although reference is made to other passages concerning the obligations of charity and guidance concerning the inheritance and purchase of property. Subject to certain provisos, the Lockean would uphold that if a person used their own efforts to harness renewable energy then they should *solely* own it. This was revisited and adapted by Robert Nozick in his *Anarchy, State and Utopia* of 1974 and the resulting strengthened theory of individual ownership is referred to as 'self-ownership' here. The third philosopher prescribing private ownership is Michael Otsuka who describes how both self-ownership and equality may be combined. The inclusion of equality should, in Otsuka's account, prevent the potentially vast inequalities of holdings arising that are possible in other types of private ownership.

3.1 Locke

3.1.1 Locke's Philosophy Defined and Applied

An interpretation of Locke's argument regarding individual ownership will be provided; it is derived from when individuals purportedly lived in a 'common state' (Locke [1689] 1993: 129), which according to Locke was a state of nature prior to mankind developing

[97] See 1.2.3 'Desert Island Thought Experiment' for an overview of the thought experiment.

the concept of the nation state. Firstly the relevant sections of the chapter 'Of Property' require review. Locke considered the Earth to be a common asset shared by all:

> The earth and all that is therein, is given to men for the support and comfort of their being […] all the fruits it naturally produces, and beasts it feeds, belong to mankind in common, as they are produced by the spontaneous hand of nature; and nobody has a private dominion, exclusive of the rest of mankind […] (Locke [1689] 1993: 127).

Quite easily for the purposes here, this could encompass renewable energy. And Locke also provided the justification by which renewable energy may be appropriated:

> […] everyman has a property in his own person. This nobody has any right to but himself. The labour of his body, and the work of his hands, we may say, are properly his. Whatsoever he removes out of the state that nature hath provided, and left it in, he hath mixed his labour with, and joined to it something that is his own, and thereby makes it his property (Locke [1689] 1993: 128).

Hence, persons by their own efforts could harness renewables and make the energy their property. Applying this to other material goods a person may own land and property, such as the means of production for renewable energy and its surrounds, provided one had used one's own efforts to achieve this.

Nevertheless, Locke gave provisos to the above description of his ownership type. Firstly, one could own property after labouring to acquire it 'at least where there is enough, and as good left in common for others' (Locke [1689] 1993: 128). A second proviso precluded wastage: 'As much as anyone may make use of to any advantage of life before it spoils; so much he may by his labour fix a property in. Whatever is beyond this, is more than his share and belongs to others' (Locke [1689] 1993: 130). Hence, when applied to renewable energy, any energy in excess of the harnesser's needs should be distributed to others.

A third proviso is provided here concerning the need to act charitably. Locke had previously noted, in his *First Treatise*, that God had given 'his needy brother a right to the surplusage of his goods' (Locke [1689] 1993: 31), and this aligns itself with the second proviso where one should not let any goods go to waste. However, Locke's commitment to charity can be interpreted as stronger than merely giving one's surplus away: he wrote that it is a 'sin in any man of estate, to let his brother perish for want of affording him relief out of his plenty' (Locke [1689] 1993: 31). This may be interpreted as a duty to allow one's property to service the needs of others when one's compatriots find themselves in a dire position.[98]

A fourth proviso would operate where the original owner of property, particularly land, expressly consented to join a political association with others. An individual would need to give express consent to join 'political societies' (Locke [1689] 1993: 177-8); and after this act, for perpetuity, the individual and their property would come under the jurisdiction of the society in question (Locke [1689] 1993: 176-7). For the purposes here, this particular proviso may expect to be extended to the more durable items of renewable energy generating equipment such as hydrothermal plant. This is particularly relevant when property is inherited or purchased: one would be at liberty to bequeath one's holdings to whomever one wished, provided the recipients were prepared to follow the overarching rule of the government that the holdings resided under (Locke [1689] 1993: 150-1); in addition, where one purchases property and enjoys the rule of law associated with that property, one submits to the jurisdiction of the overseeing government (Locke [1689] 1993: 176-7). Hence, Locke has privileged a government's interests when property is inherited or sold.

With regard to hydrothermal energy on the desert island, where Powerful has set about harnessing the energy by her own efforts, Locke's argument can be demonstrated:

[98] Students of Locke's ownership often only recognise the first two provisos given here, although American Philosopher A. J. Simmons, as one example, would concur with this wider view (Simmons 1992: 336).

1. Individuals own themselves and the property that they have laboured upon.
2. Hydrothermal energy is unowned.
3. An individual owns renewable energy after using their effort to harness it.
4. An individual may own a share of renewable energy provided that sufficient energy remains for others' needs; and the energy is not wasted.
5. Underused assets should be used to assist the needy.

Individuals are free to own an amount of renewable energy equating to their own usage needs but any excess energy or spare capacity should benefit the needy.

3.1.2 Locke: Internal Criticism

By supplying provisos, Locke has provided his detractors with approaches to criticism. Regarding the first proviso, it would be hard to justify that Powerless is in receipt of 'enough, and as good' renewable energy. Should she wish to harness hydrothermal energy she would need permission to build the means of production on Powerful's land and this would be dependent upon the whim of Powerful. This is seemingly outside the spirit of the Lockean argument presented above where all should have the chance to better themselves via private ownership.

Nevertheless, Lockeans may have an answer to such criticisms by the fact that Powerful is only exploiting *one* source of renewable energy whilst others are available. Why should the discussion obsessively focus upon hydrothermal energy when other types of energy would be available to Powerless? For instance, solar power and wave power could both be utilised. Powerful should therefore not be punished for her good fortune. The necessity Powerless now feels to acquire energy should be considered her spur for further ingenuity and she should look to the sky and the sea; and only then may it be judged that there is not 'enough, and as good' with regards to energy distribution.

Returning to the second proviso, the concept of waste is examined. Now, should Locke's word be taken literally, any energy not needed by Powerful should really be gifted to Powerless rather than used profligately. However, the energy could feasibly be stored by Powerful to use at a later date when more energy is unexpectedly needed. The energy would be used to acquire a reserve and this would be permissible according to the spirit of Locke's work.

Powerful could also turn off her harnessing equipment, and this would not count as any waste, as according to Locke energy would have to be collected before it could be wasted; in the same way that fruit gathered from beneath a tree becomes property due to the labour involved in gathering (Locke [1689] 1993: 130). However, should Powerless be suffering due to a shortage of energy for any reason, then according to the proviso concerning charitableness then powerful should avail her 'estate' to prevent such distress. Hence, those with the means of production can be expected to generate some energy to prevent the suffering of the less fortunate and this becomes a limitation placed upon one's property. That said, it should be noted that Powerless would be expected to help herself and labour upon the land to 'increase the common stock of mankind' (Locke [1689] 1993: 133); and this would, of course, include generating her own energy; and if generating energy was not a possibility, increasing the 'common stock' would include manufacturing, farming or fishing, which could all be traded for energy.

The inquiry into a Lockean ownership type above, demonstrating its strengths and weaknesses, could perhaps be criticised on the grounds that it is an ownership type relevant only to bygone times when large portions of the world were being discovered and there were seemingly unlimited resources for an individual to exploit. It could be argued that it is irrelevant where most of the world's property is now owned rather than in Locke's day where there were seemingly large tracts of wilderness that went

unowned and unused. Hence, the fourth proviso may be considered to be a far more important controlling factor concerning ownership today, where the buying and inheritance of property is subject to governmental control, such as sales tax and inheritance tax respectively, and therefore the private ownership that Locke envisaged, based upon his view of a fair method of appropriation, is weakened. The Lockean may respond that the first three provisos remain very relevant to energy ownership when renewable energy is the unlimited resource in question and it is merely the means of production that become subject to the fourth proviso on a change of ownership.[99]

3.1.3 Locke: External Criticism

Immediately, Locke's ownership type may be particularly susceptible to a libertarian argument in that if renewable energy is unlimited,[100] and it is accepted that renewable energy should be introduced as a necessity,[101] then why bother with any restrictive provisos? If renewable energy's introduction is inevitable then it is overwhelmingly important to establish renewables as an energy source and let persons freely generate renewables unhindered in the knowledge that energy, the means of production and the generating skills are a growing asset to society; the libertarian would be sure that this process would only benefit society (Nozick 1974: 228). Hence the libertarian may warn that too many restrictive provisos may cause talented persons to exercise their talents in other societies, or not at all, leaving the original society bereft of energy generating talent. This view may be accepted by Lockeans where all have adequate access to renewable energy; but the Lockean would be more likely to remain cautious as this view

[99] See 1.3 1 'Energy types' for an explanation of why renewable energy may be considered unlimited.
[100] See 1.3 1 'Energy types' for an explanation of why renewable energy may be considered unlimited.
[101] See 1.1 'Preamble' for this postulate.

may both encourage wastefulness and discourage charitableness which could negate the concerns enshrined in Locke's provisos.[102]

However, Locke's individualistic stance may raise criticism from others that his views encourage only a secondary concern for greater society. As examples, some political philosophies would focus upon the whole society: Rawlsians would take the whole population into account when exercising the 'difference principle' which would allow the most advantaged to benefit, provided the most disadvantaged also benefited;[103] They would be joined by the utilitarian who would query whether the Lockean arrangement achieved the *maximum good for the maximum number of people*.[104] At the level of the community, for the communitarians, the whole concept of individuals acting alone without recognising both the needs of their community and the benefits of their community would be reprehensible.[105] This body of support for collective decision-making would query whether an individual deciding upon redistribution is superior to a society or community deciding upon a distribution.

To demonstrate this query on the island, Powerful may feel that Powerless has 'enough, and as good' with regards to energy when Powerless has installed her own solar panels: however, Powerless may really be suffering and in dire need of more energy. Powerful could act charitably but if she feels that both have 'enough, and as good' then she would not do so. This may be contrasted with a group decision–making body which could discuss matters and may ensure that all have a minimum quota of energy to prevent suffering. Individuals are capable of making erroneous judgements and this should be lessened, according to those favouring collective decision-making,

[102] See 3.1.2 'Locke: Internal Criticism' for a counter to the 'enough, and as good' proviso where multiple sources of renewable energy may be utilised. See 3.1.1 'Locke's Philosophy Defined and Applied' for Locke's provisos.
[103] See 4.2.1 'Rawls's Philosophy Defined and Applied'.
[104] See 4.1.1 'Mill's Philosophy Defined and Applied' for an example of achieving this maxim.
[105] See: 6.1.1 'Hutterite Philosophy Defined and Applied'; 6.2.1 'Owen's Philosophy Defined and Applied'; and 6.3.1 'Bookchin's Philosophy Defined and Applied'.

when groups make decisions. That said, groups may make equally arbitrary decisions such as condoning meagre distributions;[106] hence, both sides would reach an impasse.

The suffering of Powerless may be exacerbated when persons have a desire to use increasing amounts of energy.[107] If persons do not feel that they have 'enough' they may continue using their harnessing equipment without any spare capacity to be charitable. Here, the Marxist would note that the focus placed upon isolating a person and their interests,[108] would license an individual, to aggrandise themselves in the name of servicing their usage needs. Hence, Locke's ownership type could possibly allow unintentional suffering for some.

However, this unintentional suffering may be prevented where adequate knowledge is available that others need more energy. Therefore, it may be concluded that individuals would need guidance in the decision-making process to avoid the situations where individuals make erroneous decisions. It is possible that concepts such as 'enough, and as good' and charitableness would not be enacted sufficiently without a surrounding culture to ensure their enactment in the manner that Locke intended.

Apart from the guidance given by a surrounding culture, other political philosophies may feel that they have distinct improvements to offer Lockean ownership. As an example, the Aristotelian would note that the Lockean ownership type would not proactively encourage the consideration of another's needs or the planning that an individual should display as a citizen.[109] For instance, the virtuous individual would be expected to produce some energy to specifically share with others. Although some concern for others would be displayed by giving 'surplusage' to a 'needy brother', this would fall short of a virtue such as generosity as it would only be actioned when an a

[106] See 6.1.1 'Hutterite Philosophy Defined and Applied'.
[107] See 1.3.3 'The Desirability of Increasing Energy Usage'.
[108] See 5.1.1 'A Marxist Philosophy Defined and Applied' and also 2.4.1 'Countering Opposing Ideologies' for a Marxist criticism of rights.
[109] See 4.3.1 'Aristotle's Philosophy Defined and Applied'.

surplus exists or another individual is distressed. Locke's ownership type would fall short of the standards required by the Aristotelian.

Allied to this criticism, the communitarian ownership types would consider all persons within distributions and no individual should be marginalised.[110] They would be organised so that concepts such as waste and surplus would be minimised: hence, they would believe that Locke's ownership type allows for inefficiency in production.

To counter any criticism that Lockean ownership lacks planning or is inefficient, the Lockean would inform critics that individuals could feasibly coordinate efforts to increase the 'common stock'.[111] Furthermore, individuals may join groups of their own volition where this benefits the individual. Locke believed that persons would unite under 'commonwealths' guided by consensual law when this provided persons with a 'preservation of their property' better than under a 'state of nature' (Locke [1689] 1993: 178). Hence, individuals coordinating their efforts may negate these criticisms and a Lockean ownership need not be beset by disorder.

Turning to look at the egalitarian ownership types, it should be noted that without exception, their concepts of ownership would avoid the notion of the 'needy brother' or the remedy of charity.[112] The egalitarians would be joined by the communitarians on this topic.[113] Hence, some would note that Locke's ownership type allows for inequality due to the misfortune of acquiring less productive assets than your neighbour; such as the part of an island without easily harnessed renewable energy.

The inequality may result in a very uneven society where the abeyance of societal upheaval may rest merely on the least rewarded persons tolerating the

[110] See: 6.1.1 'Hutterite Philosophy Defined and Applied'; 6.2.1 'Owen's Philosophy Defined and Applied'; and 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[111] See 3.1.2 'Locke: Internal Criticism' for the importance Locke placed upon increasing the 'common stock'.
[112] See: 5.1.1 'A Marxist Philosophy Defined and Applied'; 5.2.1 'Rousseau's Philosophy Defined and Applied'; and 5.3.1 'A Capabilities Approach Defined and Applied'.
[113] See: 6.1.1 'Hutterite Philosophy Defined and Applied'; 6.2.1 'Owen's Philosophy Defined and Applied'; and 6.3.1 'Bookchin's Philosophy Defined and Applied'.

arrangement when they may gain more welfare from other ownership types. It is also noted that those without an adequate share of goods or opportunity may become alienated and this may lead to an unstable society without common values but with resultant criminality (Murphy 1973: 235 & 239-240). Here the Lockean would hope that their concerns for others as embodied in their provisos concerning 'enough, and as good' and charity would provide adequate redistributions to prevent this.

3.2 Nozick

3.2.1 Nozick's Philosophy Defined and Applied

In the twentieth-century, Robert Nozick revisited Locke's work and developed a type of ownership often referred to as 'self-ownership' and associated with the politics of libertarianism. However, Locke had done much to pave the way when he noted that land under private ownership was more productive than common land, estimating that a landholder's 'labour now supplies him with provisions out of ten acres, which were but the product of a hundred lying in common' (Locke [1689] 1993: 133). Additionally, he asserted that a king in the uncultivated lands of America 'feeds, lodges and is clad worse than a day labourer in England' (Locke [1689] 1993: 135). From the chapter 'Of Property', it may be concluded that it was Locke's assessment that an uneven distribution of land may result in sufficient produce for *all* in a nation such as England, provided that sufficient labour had been exercised on that land.

In addition, Locke noted that it was the growth in societies and the increase in stock and trade that ensued, that allowed some to forsake their own 'natural common right' to gain life's necessities from the land (Locke [1689] 1993: 137).[114] In particular, the notion of money allowed people to exchange their produce and avoid wastage,

[114] Although Locke is associated with the concept of natural rights he does not use the expression 'natural right' in this passage; instead he uses 'natural common right' (Locke [1689] 1993: 137).

resulting in some enriching themselves 'fairly' and attaining an 'unequal possession of the earth'; all without the arrangement being injurious to anyone (Locke [1689] 1993: 139). From this we may deduce that Locke condoned highly productive private ownership accompanied by commerce. Following this line of thought, Nozick reinterpreted Locke's 'enough, and as good' proviso,[115] to allow an individual to appropriate enormous quantities of any asset provided that nobody else's position was 'worsened'(Nozick 1974: 178).

Nozick demonstrated that in a series of acts committed by persons A through to Z, the very first person to remove material from the world A, may have left 'enough, and as good' for others such as B and C, but has started a chain of events, whereby if others follow A's example, it could leave Z without 'enough, and as good'. However, it would be impractical to apportion blame solely on Y for the situation as many have unwittingly taken part in this process. Therefore Nozick favoured a less stringent interpretation of the 'enough, and as good' proviso to assess how a loss of 'opportunity' to use a good affects persons, rather than the actual amount of good in question (Nozick 1974: 175-6). Hence, Nozick would reinterpret Locke's proviso to ensure the situation of the dispossessed was not 'worsened':

> A process normally giving rise to a permanently bequeathable property right in a previously unowned thing will not do so if the position of others no longer at liberty to use the thing is thereby worsened (Nozick 1974: 178).

In *Anarchy, State and Utopia* Nozick elaborated on the concept of worsening. For instance, the medic who develops a new drug that would be beneficial to humanity need only sell this drug on his own terms, provided that all the resources are available to others. The medic is free to do as he wishes with the drug as nobody's 'baseline' has

[115] See 3.1.1 'Locke's Philosophy Defined and Applied'.

been worsened (Nozick 1974: 181).[116] However this principle would be limited to avoid natural catastrophe: if a person came to own all of 'the total supply of something necessary for others to stay alive' (Nozick 1974: 181), then this would be permissible provided the owner 'compensates' others (Nozick 1974: 178-9); for instance, if someone, by luck, came to own the only watering hole in a desert, then he would be expected to compensate others (Nozick 1974: 180).

A further kind of distribution within Nozick's ownership type would be an element of philanthropy. Nozick felt that the vast majority of persons would voluntarily contribute to schemes to rid society of an 'evil' such as poverty for example, as people desire to be part of the solution to such problems (Nozick 1974: 267). Nevertheless, Nozick himself noted that within a larger society, some would abstain from making such voluntary contributions to such causes; but as they would be few in number the majority should either persuade them to participate or ignore them (Nozick 1974: 268). Hence, Nozick's ownership type should not be felt to be without benevolence.

Nozick's work can be considered to rest upon the very notion of 'rights' and he introduced *Anarchy, State and Utopia* insisting that 'individuals have rights, and there are things which no individual can do to them (without violating these rights)' (Nozick 1974b: ix). In a Kantian manner, individuals should be recognised as an 'end' rather than a 'means' (Nozick 1974: 32); and to realise this state of affairs, the rights of the individual would be privileged as 'constraints' so that others' actions should not violate them (Nozick 1974: 30-33), based upon the rationale that:

> There is no social entity with a good that undergoes some sacrifice for its own good. There are only individual people, different individual people, with their own individual lives. Using one of these people for the benefit of others, uses him and benefits the others (Nozick 1974: 32-33).

[116] Nozick has used the term 'baseline' to denote an individual's position prior to appropriation (Nozick 1974: 177 & 180).

Nozick's right to own property is based upon reasoning surrounding his concept of the individual. Will Kymlicka has succinctly summarised Nozick's position: if we accept that one owns one's self, then one owns one's talents and therefore one owns whatever one makes with one's talents (Kymlicka 2002: 108-9). Therefore, a person may be considered to be 'entitled to' whatever they have produced with their talents (Nozick 1974: 225). Effectively, one's produce becomes an extension of oneself over which one has full rights; and it follows that one is free to trade or bequeath one's produce as one wishes.

Nozick uses the notion of talent to demonstrate how this will upset any predetermined views concerning distributive justice. He attempts to adduce intuitions along such lines via a celebrated thought experiment where he asks the reader to imagine a situation where the extremely talented basketball player, namely Wilt Chamberlain, charges his own extra fee for the audience to see him, in addition to the ticket price (Nozick 1974: 161).[117] The question then arises, if people are willing to pay the fee and nobody is coerced, then why not allow this particular distribution of resources to occur? Nozick can see no good reason why this distribution should not occur and thereby opposes any distribution of wealth that conforms to any preordained distribution. For many libertarians, it is examples such as these that demonstrate that the free and voluntarily exchange of property will always distort 'patterned' distribution and therefore negates the validity of preordained distributions (Nozick 1974: 157-8).[118]However, the question arises, are such distributions relevant for essentials of life such as energy? It may be permissible to charge extra fees for life's pastimes but it has already been noted that persons must be compensated where one person owns

[117] An interesting ambiguity is noted here. Nozick initially says that 'twenty-five cents from the price of each ticket' goes to Wilt Chamberlain and further says that the spectators, on buying their tickets, drop a 'further twenty-five cents' into a 'special box'(Nozick 1974: 161). Either way it is understood that the spectators know that an extra fee goes directly to Wilt Chamberlain and they are happy to pay this.

[118] Nozick also notes how gambling, gifts and investments all further upset distributions that may be initially patterned (Nozick 1974: 157-8).

something necessary for life. The forms that compensation will take are explored in the internal criticisms below.[119]

Finally, in describing Nozick's view of ownership, it should also be noted that an individual's holdings should always be gained via legitimate initial acquisition or legitimate trade: ideally, using one's talents to gain holdings and then freely trading one's produce; and any injustices arising from theft or fraud, as examples, should be rectified (Nozick 1974: 150-3). Any rectification should be performed by an 'ultraminimal state', from which individuals would purchase such services (Nozick 1974: 26).[120]

Hence, Nozick's ownership type, when applied to the desert island, is summarised as follows:

1. Individuals own themselves including their talents.
2. Hydrothermal energy is unowned.
3. An individual owns renewable energy after using their own effort and talent to harness it.
4. An individual may own renewable energy provided others' positions are not worsened.
5. An individual is free to use their renewable energy as they see fit.

An individual is free to accumulate as much renewable energy as they wish and put it to whatever use they desire as long as others' positions are not worsened.

[119] See 3.2.2 'Nozick: Internal Criticism'.

[120] Nozick's work recognises that other minimal states have allowed minimal taxation to be used to assist the needy in purchasing such services (Nozick 1974: 26-7), but it should be noted that Nozick's work militates against any notions of tacit consent operating to allow taxation; Nozick noted that 'tacit consent isn't worth the paper it's not written on' (Nozick 1974: 287).

3.2.2 Nozick: Internal Criticism

Hence, applying the Nozickian argument to the desert island, Powerful would be able to harness unlimited amounts of hydrothermal energy, and as Powerless had not benefitted from the hydrothermal energy previously, her position cannot be described as 'worsened'. Therefore for Nozickians, Powerful would be free to appropriate all the hydrothermal energy. Now should this appear to be a bleak prospect for Powerless, the Nozickian may use the counter-argument that the Lockean may have previously used; that no one has a complaint where alternative energy sources are available and Powerless should seek to utilise these; and where this option is not available then she may manufacture, farm or fish to gain goods to exchange for energy.[121] However, the problems here are that nobody is compelled to trade as the individual has the right to withhold inessential resources from others.

However, should more inequality occur, for instance, if Powerless could neither generate *any* other type of energy or engage in trade and her subsistence was in peril, then Powerful may now employ Powerless: this would feasibly act as compensation as Powerful is now the sole owner of 'the total supply of something necessary for life' (Nozick 1974: 178-9). However, in this case, it effectively leaves Powerless a choice of potentially unpalatable work or perishing; and many critics would protest that this situation does not provide any true choice. However, the Nozickian would remind critics that in market exchanges, one cannot consider the choice of working or starving 'nonvoluntrary' when others have exercised their rights and taken all the other options for earning a living (Nozick 1974: 263-4).[122]

[121] See 3.1.2 'Locke: Internal Criticism'.
[122] Nozick, in support of his stance and using his own desert island reference, alluded that an inhabitant of a desert island would be forced to work to maintain her survival in any case (Nozick 1974: 263-4).

Effectively, under self–ownership, the opportunities to exercise one's talents may become very restricted due to others being more fortunate. In response the libertarian may announce that it is not impossible to envisage a benign employer with good husbandry, investing in hydrothermal plant and treating employees well; and in these cases, self-ownership may be the best solution for all. This is possible but the critics would wish for certainty of this arrangement before becoming enamoured by self-ownership.

Apart from luckless persons' opportunities diminishing, the commentator Will Kymlicka has noted a further shortcoming of self-ownership: those unable to utilise the land in a state of nature would be unlikely to gain employment and therefore Nozick's ownership type effectively licenses starvation for the least talented (Kymlicka 2002: 119). However, Nozick felt that philanthropy would operate within society and the Nozickian would find this criticism to be uncharitable: however, such benevolence has already been noted to operate imperfectly and some may be reluctant to place reliance upon such an arrangement.[123]

Moving from notions of compensation and philanthropy where resources are redistributed to the less fortunate, it is possibly more worrying for the Nozickian is that voluntary agreements between more equal individuals cannot be guaranteed. Such fragility may be demonstrated on the desert island where both parties may agree to an 'insurance policy' where one party would work for the other where one became ill. However, Will Kymlicka would have his doubts that such voluntary agreements would work in a libertarian setting. Although it may be sensible for persons to enter into contracts it may *not* be sensible to comply with them, where, according to a brief delve into game theory, an individual could 'defect' and gain an advantage (Kymlicka 2002: 129-130). However, this scenario may not even arise as those with more resources have

[123] See 3.2.1 'Nozick's Philosophy Defined and Applied'.

more bargaining power and may shun those with the least resources (Kymlicka 2002: 132-3). The libertarian may hope that individuals would be far-sighted enough to realise that, in a similar vein to the discussion concerning philanthropy,[124] ridding society of an 'evil' such as dishonesty would be beneficial for all: hence, persons would wish to honour contracts; and certainly Kymlicka noted that some scholars emphasise the importance of a collective 'morality' operating within successful libertarianism (Kymlicka 2002: 132). However, as already noted, a principle of rectification should exist to adjust any illegitimate gains by one party over another.[125] Therefore, Nozick's ownership type may need to rest upon the operation of both morality and coercion to assure any agreements.

Apart from Kymlicka's arguments, it should be noted that persons do not always make rational decisions on their own behalf: there may be individuals who cannot see how insurance policies would benefit them and therefore do not join them; and these individuals can be expected to be accompanied by those who absentmindedly forget to insure themselves. Hence, the arguments that libertarian arrangements are unfeasible are quite forceful and a great belief in the beneficence of human nature is needed to believe that libertarianism would not be very disadvantageous to some.

3.2.3 Nozick: External Criticism

As Nozickian philosophy concerning ownership developed from Lockean ownership, then much criticism aimed at Nozick may be expected to bear a resemblance to that addressed to Locke. That said, Nozick's self-ownership allows for a greater degree of individuals attending to their own interests than Locke's ownership type and it would be expected to garner heightened criticism from political philosophies that take groups of

[124] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[125] See 3.2.1 'Nozick's Philosophy Defined and Applied'.

persons into account. For instance, any political philosophies that feel that society was but a secondary concern in Locke's theorising would have such feelings heightened in Nozick's model.[126] In addition, it was noted above that persons do not always see the point of entering into insurance policies or forget to do so.[127] Hence, it would almost certainly be confirmed in the minds of the lobby supporting collective decision-making that a greater amount of individual suffering would be inevitable in Nozick's model.

Now the Lockean counter was that if adequate information was provided that others were in need of more energy and this was supported by a surrounding culture then individual suffering could be prevented. The libertarian may note that a greater collective morality should be instituted here to alleviate any potential problems; and such a greater morality would include the adequate enacting of philanthropy.[128]

Turning to look at the political philosophies that espouse some variant of egalitarianism, many political philosophies would be aghast at the potential for the lack of equality that Nozick licenses, particularly where this is based upon fortune such as the talents a person possesses or the luck a person enjoys in life. It has already been noted that in the Lockean arrangement, the unequal *status quo* would remain where the disadvantaged did not embrace another political system that promised to look after their needs more adequately.[129] Concerns here would once more be heightened where less equality is assured.

The inequality may be further entrenched by the fact that property may be freely bequeathed. With self-ownership the owners would be able to bequeath their assets, such as the means of production for harnessing renewable energy, to whomever they

[126] See 3.1.3 'Locke: External Criticism'.
[127] See 3.2.2 'Nozick: Internal Criticism'.
[128] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[129] See 3.1.3 'Locke: External Criticism'.

wish without concern for the surrounding society.[130] For instance, property remaining within families and being inherited may lead to a class system being instigated. The Marxist, the Rousseauian and the Owenite would be amongst those who would fear that this would be exacerbated under self-ownership.[131] The Nozickian may respond that uneven holdings of energy, where some may enjoy a surplus, provide an opportunity for both trade and philanthropy; and so egalitarian concerns would not necessarily be realised. The problem here is that any actions that may mitigate such fears, such as philanthropy or trade, cannot be assured where persons act of their own volition.[132]

Nozick's claim that talents firmly belong to individuals also attracts criticism. For example, turning to the work of Rawls, it may be noted that one source of disagreement was that the Rawlsian would criticise the Nozickian for basing their stance on the random distribution of natural talents whilst Rawls would only support persons benefiting from their talents provided that the most disadvantaged's position improved: in practice this would result in the majority of production being retained by the talented person to act as an incentive whilst the minority of production would be awarded to the disadvantaged person.[133]

However, Nozick noted that if persons do not deserve their natural talents in the first place, then they do not deserve any of the holdings that later arise from them (Nozick 1974: 224-5): therefore Rawls would be wrong to attribute the majority of holdings generated by a talented individual to that individual. Hence, Nozick has provided a counter to Rawlsian claims that address the unfairness of the random

[130] See 3.1.2 'Locke: Internal Criticism' where Locke's fourth proviso, when emanating as sales tax or inheritance tax may be applied respectively, to the purchase or inheritance of property such as the means of production for renewable energy.
[131] See: 5.1.1 'A Marxist Philosophy Defined and Applied'; 5.2.1'Rousseau's Philosophy Defined and Applied'; and 6.2.1 'Owen's Philosophy Defined and Applied'.
[132] See 3.2.1 'Nozick's Philosophy Defined and Applied'; particularly Nozick's admission that philanthropy would operate imperfectly. See 3.2.2 'Nozick: Internal Criticism' where individuals need not engage in reciprocal trade for inessential resources
[133] See 4.2.1 'Rawls's Philosophy Defined and Applied'.

distribution of talents; a counter that would be seductive to many and both sides would remain in disagreement.

Coming to Rawls's aid, the Marxist may have some very deep-seated criticisms. Recalling the thought experiment concerning Wilt Chamberlain, this may be considered a contrivance of Nozick's in that it unfairly emphasises the basketball player's ownership of his own talents. The Marxist may note that there is a collective ownership of the culture of the game, the rules of the game and the bonhomie generated when attending a game. Without a collective environment in which to exercise his talents the basketball player would not be able to proclaim self-ownership.

Joining the Marxist, the communitarians would deplore the concept that individuals are attached to their talents: focussing upon the Hutterites as one example, the individual is an integral part of a greater, supporting community, which the individual needs to realise their own talents.[134] With regard to the assets a person produces, the communitarian may argue that as a person gains their talents from their community, they have an obligation to repay their community via the fruits of their labour. Therefore, it could be further argued by the communitarian that as talents are so intrinsically linked with the community it should be the responsibility of the community to decide upon the distribution of assets derived from those talents.

However, the communitarian argument is severely weakened when individuals use their own initiative to gain a resource without any prior example being set by their society or community. For instance, a community may have banned their members visiting a hydrothermal vent believing it to be the abode of evil spirits; but when an innovator harnesses the energy without injury then she has rejected her community's perceived knowledge. Consequently, using the communitarian's own logic that individuals have an obligation to repay their community for talents imparted to those

[134] See 6.1.1 'Hutterite Philosophy Defined and Applied'.

individuals, there may be some inadvertent and compelling instances where communities may have difficulty in claiming ownership over an individual's produce.

3.3 Otsuka

3.3.1 Otsuka's Philosophy Defined and Applied

After the discussion of Nozick's ownership type, the observer may be struck that it allows one party to dominate the resources available. Even where it can be logically argued that this is a natural state of affairs, the observer may still intuitively feel that this is unfair. This is a downside to self-ownership that many may feel requires rectification before it can be considered to be a realistic proposition. The final ownership type in this section attempts to deal with this shortcoming.

For those that find self-ownership attractive and also hold a desire for equality, a type of distribution that combines egalitarianism and self-ownership is needed. In his book *Libertarianism without Inequality*, Michael Otsuka attempted to show that this is possible and his work is referred to here as 'left-libertarianism'.

Otsuka tackles his goal by providing another variant of the Lockean 'enough, and as good' proviso,[135] which particularly addressed Nozick's stance that nobody's position should be made 'worse'. Otsuka provided:

> You may acquire previously unowned worldly resources if and only if you leave enough so that everyone else can acquire an equally advantageous share of unowned worldly resources (Otsuka 2009: 24).

Otsuka further explained the meaning of 'an equally advantageous share':

[135] See 3.1.1 'Locke's Philosophy Defined and Applied'.

> Someone else's share is as advantageous as yours if and only if it is such that she would be able (by producing, consuming and trading) to better herself to the same degree as you, where 'betterment' is to be measured in terms of level of welfare understood as the 'satisfaction of the self-interested preferences […]' (Otsuka 2009: 27).

Hence, for Otsuka an 'equally advantageous share' means that all should have an equal chance to better themselves by their own preferences. Otsuka explains that an individual's preference is a neutral measure which all may agree upon when compared to other measures which would cause disagreement: for example, the follower of John Stuart Mill would value the intellectual 'higher pleasures' whereas a libertine would value more sensuality (Otsuka 2009: 110). Otsuka further explains that 'the same degree' means 'to the same absolute level' and thereby defines that all individuals should be able to attain an equal level of preference satisfaction (Otsuka 2009: 28-9).

For his vision to be realised, Otsuka noted that it is imperative that worldly resources would need to be unevenly distributed. To insist that resources are distributed evenly would be:

> to commit oneself to the unfairness of a principle of acquisition which preserves disparities in the absolute levels of welfare of individuals caused by differences in their mental and physical constitution that are traceable to luck (Otsuka 2003: 29).

Hence, parties are not to be given equal resources but an 'equality of opportunity for welfare' that is 'sensitive to choices for which one can be held morally responsible' (Otsuka 1998: 25 n. 39).

Applying this to the desert island, each party could be given their own hydrothermal plant, side by side, on the westerly side of the island. Now, should Powerless now need more warmth than Powerful, after developing rheumatism from initially living without adequate heating, she could be awarded a larger plant that harnesses more energy: it is assumed both parties agree to this to attain an equal level of

preference satisfaction. Both parties are now placed in a position where they have Otsuka's 'equality of opportunity for welfare'.

Also Otsuka has raised the question of how the severely infirm would manage as he is adamant that they should be awarded their 'fair share of worldly resources' and justifies this stance thus:

> [The Infirm's] case for equality of welfare would rest on nothing more than the staking of a claim to a fair share of worldly resources to which nobody else has a prior or stronger moral claim (Otsuka 2009: 35).

To achieve this ideal, one answer would be to appoint the infirm as the owners of valuable resources for which others must trade to obtain those resources (Otsuka 2009: 33). On the island, if Powerless's rheumatism was so disabling that manual work was impossible, she could be appointed as the sole owner of hydrothermal energy: Powerless could therefore support herself by exchanging the energy with goods and services from Powerful. Now where both parties have goods that the other needs, and both have 'equality of opportunity for welfare' with self-ownership rights remaining intact, then the left-libertarian would feel that their task has been achieved.

Another way this problem may be overcome would arise where the infirm receive special assistance to utilise their 'fair share of worldly resources'; for instance, when others, could manage the infirm's resources on their behalf.[136] Now with able-bodied persons managing the infirm's resources, the infirm are placed in a position more akin to the able-bodied, and they should not need to dominate any resource entirely.

Now Otsuka is adamant that political society should be a voluntary association (Otsuka 2009: 90), and to ensure his vision endured, it is possible that much effort would have to be carried out to lodge a new ethos in society. Here it is accepted that the

[136] Otsuka argues that convicts could carry out such work (Otsuka 2009: 42-3).

ethos would value equality over material gain so that although the same amount of effort from one person may result in a lesser material reward than another, this is accepted by the populace.[137] The holdings of future generations should also be distributed in the same spirit of egalitarianism as the initial inhabitants (Otsuka 2009: 148 & 149); and the lodged ethos would be expected to ensure this, provided that all inhabitants had remained in society of their own accord after being given the opportunity to move to other societies enjoying different political and cultural arrangements (Otsuka 2009: 103-4). Additionally, persons may join associations to protect their holdings against mishap; provided this was by the free consent of the individual (Otsuka 2009: 121-2).

The summary for this model of private ownership on the island may be portrayed thus:

1. People own themselves including their talents.
2. Hydrothermal energy is unowned.
3. Individuals are awarded the resources to harness enough renewable energy to allow an 'equality of opportunity for welfare'.
4. An individual owns renewable energy after using their efforts to harness it.
5. An individual is free to use their renewable energy as they see fit.

An individual is free to accumulate as much renewable energy as their individually awarded resources allow and put it to whatever usage they desire.

[137] This ethos would also be expected to support any initial unequal distributions of goods; Richard Arneson has noted the 'responsibilities-for-ends' objection which appeals to the notion that persons should be responsible for actions that lie within their own control. Hence, distributions according to welfare, to those individuals who are very demanding of resources, may be considered unfair by those who hold this objection (Arneson 2007: 493-4).

3.3.2 Otsuka: Internal Criticism

As with the previous private ownership types, a strong argument to refrain from redistributing resources could be made if sufficient sources of renewable energy, such as solar power or wave power, were available to all and it was enough for them to pursue their own ends.[138] But if this was not possible the redistribution of resources would have to be undertaken.

Now the distribution process would attract some stern criticism with some penned by Otsuka himself. Firstly, it has been noted that there are practical problems with the exact levels of initial resources any particular person would need being difficult to calculate. However, given an accompanying administration this could be overcome by later 'adjustments to people's initial shares' (Otsuka 2009: 40).

Now the question arises whether Otsuka's ownership type is practicable. For instance, where all citizens demanded an enormous amount of resources to satisfy their preference-based welfare, then society may not have all the resources available to allow this situation to exist. In the case of the island both parties may desire such enormous amounts of renewable energy that hydrothermal is not enough and other sources need to be harnessed; such as solar, wind and wave power. This is not unreasonable as energy is expected to contain the *desirability of increasing usage* and both parties require more energy to improve their lives.[139] The question then arises, would the island have the surface area available without causing clashes of land use?[140] A society with a limited resource such as surface area would be expected to distribute resources according to availability so that all may have an 'equally advantageous share':[141] however, such distributions may fall far short of an individual's desires.

[138] See 3.1.2 'Locke: Internal Criticism'.
[139] See 1.3 3 'The Desirability of Increasing Energy Usage' and 1.2.3 'The Desert Island Thought Experiment'.
[140] See 7.2.3.1 'Society's Incidental Responsibilities'.
[141] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.

3.3.3 Otsuka: External Criticism

As Otsuka builds upon Nozick's and Locke's thoughts, the comments that are particularly pertinent to Otsuka are emphasised here. The reader will be referred to any criticism featuring in Locke's or Nozick's section where the criticism is similar.

The previous exponents of private ownership may provide some harsh criticism for Otsuka. For instance, the Lockean would have their doubts based upon the amount of apparent taxation that would be needed to institute the arrangement, rather than redirecting resources as a device to alleviate suffering only after individuals had made attempts to improve their own situation. Recalling Locke's view of governments he stated that 'they must not raise taxes on the property of the people, without the consent of the people' (Locke [1689] 1993: 188). The left-libertarian would expect to overcome this criticism by insisting upon the acceptance of an ethos operating in society that values equality over material gain and also noting that persons would have the opportunity to live in other societies that suited them.[142] However, there can be expected to be doubts in the minds of Lockeans that the acceptance of a new left-libertarian ethos would gain the 'consent' to institute such vast redistributions of property.[143]

With regard to criticism concerning undue taxation the libertarian may note that employing the able-bodied to work for the sake of others, such as the infirm, represents an action instituted which is akin to taxation.[144] However, Otsuka has noted that by his understanding of Nozick's work, some taxation is already needed in Nozick's model to fund the military, police and judiciary (Otsuka 2009: 19 n.25);[145] certainly it would

[142] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[143] See 3.3.1 'Otsuka's Philosophy Defined and Applied' for the importance attached to an *ethos* operating in his ownership type.
[144] See 3.3.1 'Otsuka's Philosophy Defined and Applied' and 3.2.1 'Nozick's Philosophy Defined and Applied'.
[145] Nozick describes his ultraminimal state and its justification in *Anarchy, State and Utopia* (Nozick 1974: 26-30) but is adamant that it would not require taxation to fund it and services could be purchased (Nozick 1974: 26-7).

require some philanthropy to be exercised and therefore any type of libertarianism,[146] to be practically realised, would require some work to be done on behalf of others.

Many self-ownership advocates would be adamant that from the initial redistribution of resources in Otsuka's ownership type, that Powerful has been used as a 'means' to an 'end' in a Kantian manner.[147] From the section on Nozickian ownership, if we accept that personal property is an extension of one's self, and we accept that others' actions should be constrained as not to violate another, then Powerful's rights have been violated by an appropriation of her property resulting in an unjust patterned distribution.[148]However, the left-libertarian would appeal to Nozickians that with an initial redistribution of resources, the inherent licensing of fortune, lodged as a criticism in the previous private ownership models has been countered.[149]

In the same way that both Locke's and Nozick's ownership types were criticised for inequalities, which could ultimately lead to an unstable society and the potential disestablishment of the existing political system,[150] the same criticisms could ultimately be levelled at the model based upon Otsuka's work. Although equality has been attempted by a redistribution of resources, individuals through luck and flaw may become very unequal. To demonstrate, on the island, even if Powerless was given superior energy harnessing facilities to account for an initial disadvantage, if she made poor decision after poor decision, then she may find herself without enough energy to satisfy her basic needs: she may look enviously at Powerful who has made more advantageous decisions. Now it is one thing for an ethos to guide initial distributions but it is another thing for it to allay suffering over a long period of time and many egalitarians would maintain that Otsuka's model could not fulfil the latter concept. Two types of egalitarianism, namely the ownership types based upon Rousseau and the

[146] See 3.2.1 'Nozick's philosophy Defined and Applied'.
[147] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[148] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[149] See 3.1.3 'Locke: External Criticism' and 3.2.3 'Nozick: External Criticism'.
[150] See 3.1.3 'Locke: External Criticism' and 3.2.3 'Nozick: External Criticism'.

capabilities approach, would wish for an overseeing government to constantly redistribute resources to ensure that some individuals enjoyed an *equality of condition* and an *equality of opportunity* respectively.[151]

However, the approach based upon Otsuka's work would oppose this. Left-libertarians may attempt to shore up their position by responding that individuals could enter into associations to prevent extreme hardship occurring: although this would have to be of the individuals own accord.[152] Hence, the left-libertarian would maintain that the potential for disruption in society would be diffused by individuals safeguarding their interests. This would be a strong counter provided a person had the acumen to enter into such an agreement.[153] For some egalitarians an initial redistribution followed by joining an association would be too unsophisticated to account for all of life's contingencies.

The previous two private ownership types have been criticised for privileging the individual over society, but paradoxically, even though Otsuka has attempted to include a strong element of egalitarianism within his work, his ownership type may attract criticism that it has inadvertently strengthened individualism.

For instance, the virtue ethicist may say that for some, the redistribution of resources may encourage them to feel that they are absolved from any further sharing or generosity: whereas a virtuous training would encourage a lifetime of giving generously and taking moderately.[154] To demonstrate this point on the island, if Powerless had been awarded a far greater share of the harnessing equipment than Powerful, then Powerful may feel no compunction to assist Powerless should she fall upon hard times;

[151] See 5.2.1 'Rousseau's Philosophy Defined and Applied' and 5.3.1 'A Capabilities Approach Defined and Applied'.
[152] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[153] See 3.2.2 'Nozick: Internal Criticism' where the criticisms attempt to demonstrate that individuals do not always make rational decisions concerning their own interests, such as joining insurance policies.
[154]The relationship between a virtuous education or habituation upon the goods and property one may own is explored in 4.3.1 'Aristotle's Philosophy Defined and Applied'. This includes the virtue of moderation exercised in both ownership of resources and production.

furthermore, Powerful may always act cautiously to preserve her own share in the perceived wisdom that cooperation would not be likely in the future. Hence, isolationism may be encouraged by the initial redistribution.

The left-libertarian may respond that it would always be in the interest of all individuals to cooperate and enter into associations to assist each other should any individual fall upon hard times,[155] and this would effectively enshrine the virtue of cooperation. Hence, left-libertarian ownership should not be completely without virtue. However, the left-libertarian prizing of individuality would emphasise that it is *individuals* who should take any action concerning factors affecting their life after an initial redistribution. That said, it should be reiterated that individuals do not always make rational decisions concerning their own welfare.[156]

The Marxist may also note that after an initial redistribution, individuals may still feel that they are the owners of any talents they display without due regard to the surrounding culture that allows individuals to exercise such talents.[157] In response the left-libertarian may insist that the distribution of resources would be an act so vital in allowing all to exercise their talents, that all would understand that their 'ownership' of any talent was the result of an underpinning ethos. Overall, with regard to any criticism concerning excessive individualism, the left-libertarians would argue that Otsuka's model has gone further than any other private ownership model in seeking conditions where all are productive in society and the dignity of each individual is assured; consequently it should receive less criticism that society's needs have been disregarded.

Moving to criticism from the communitarians, they would be inclined to give left-libertarianism the same criticism as Nozick's model, in that individuals do not recognise, to the fullest extent that they gain their talents from a greater community. The

[155] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[156] See 3.2.2 'Nozick: Internal Criticism' where the criticisms attempt to demonstrate that individuals do not always make rational decisions concerning their own interests, such as joining insurance policies.
[157] See 3.2.3 'Nozick: External Criticism' where the Marxist may argue that an underlying culture is necessary for an individual, such as a talented basketball player, to exercise those talents.

communitarian may argue that as a person gains their talents from their society, they therefore become intrinsically linked with that society and therefore society should be the body distributing any produce such as energy.[158] However, there are stronger arguments to be pitched against left-libertarianism here than the other private ownership arrangements, as the others do not unquestioningly demand that the individual receives any resources from society. Hence, the communitarian may argue that in the case of left-libertarianism, as an individual gains both talents *and* resources from their community they are more indebted to the greater body. A community should therefore have *more* of a say in energy distribution and should retain title over the means of production.

The left-libertarians would hope to deflect such criticism by noting that a community collectively defining 'equality of opportunity for welfare' and distributing worldly resources amongst individuals should be considered to be a communitarian act in its own right; but moreover, as it can be accomplished in greater society surpassing any distributions based upon the usual smaller communities where communitarian living is usually realised, it should be welcomed as a superior arrangement. Hence, some communitarians may be persuaded that left-libertarianism had some merit.

3. 4 The Evaluation of Private Ownership

When Locke published his individualistic view of ownership, it was in the midst of a crumbling feudal system and a nascent bourgeoisie. For many, private ownership may have seemed to be an attractive proposition and a way forward when the Earth's resources seemed limitless. For its critics, Locke's ownership ideas may seem to be archaic. Nevertheless an examination of Locke has helped to answer the question asked at the start of this chapter; *why should any individual have a right to appropriate*

[158] See 3.2.3 'Nozick: External Criticism'.

renewable energy? Certainly, there are instances where private ownership may be the best option: for instance, it is resistant to criticism where other individuals have reasonable alternative sources of energy, by which they may pursue their own ends. This may be a likely scenario as renewable energy is multifarious: if the wind's energy cannot be utilised it is likely that solar power can be; and if not solar possibly geothermal, etc. Furthermore, the example set by private ownership may encourage both ingenuity and self-sufficiency in others, as they strive to produce energy from other renewable sources.

However, if renewable resources were limited within a society, then the individualism inherent within Locke's theorising may have to be tempered by making reference to the culture of that society. For instance, when distributing renewable energy, society itself may be the best judge of whether Locke's proviso concerning whether all have 'enough, and as good' has been implemented, rather than individuals who may be unaware that others need more energy. If this did not occur a very unequal society may occur with the problems of instability.

An examination of Nozick's self-ownership reveals that it is exposed to some very deep-seated criticisms. It should be noted that when one individual completely dominates a resource, a scenario that self-ownership sanctions, then options available to another reduce due to no fault of the latter's. Furthermore, at its most extreme the person without energy and needing energy to subsist may become very dependent upon those owning energy. That said, where an individual brings new and successful innovations into a society, which society previously had prohibited, then this strengthens one's claim to exercise self-ownership over those innovations.

Otsuka's work would provide an alternative to Nozick. In the left-libertarian model, all individuals are given a right to utilise the resources provided by renewables and retain self-ownership of their produce; additionally the disadvantaged's equitable

status is also recognised. The theoretical result is that, all may reach their preferred standard of welfare, although like Nozick's ownership type, great inequalities are possible. Furthermore, with regard to energy usage, Otsuka's ownership type may result in excessive demands placed upon the resources available where individuals demand the usage of large amounts of energy. Hence, Otsuka's ownership type may be untenable where resources are limited.

However, for many, the private ownership of renewable energy may not be considered to be in society's best interests. Private ownership could be very introspective and not necessarily encourage individuals to gain an overview and understand where their production could be pooled to benefit society. Hence, this may lead some to enquire whether there are other ownership types that avoid this shortcoming: for instance, some ownership types expect that society will have a prior claim over some or all of the renewable energy generated and this will be distributed for the purpose of benefiting all. Here such ownership types are entitled 'distributed ownership' and are the subject of the next chapter.

4 Distributed Ownership

In this section, schools of political philosophy that encourage more equality between individuals are given the chance to tackle the imbalance of resources that featured in the section concerning private ownership. Here, the ownership types are entitled 'distributed ownership' as there exists anticipation that energy will be distributed between individuals. Once again the device of the desert island is used to demonstrate how renewable energy would be distributed.

One method that would generally favour distributed ownership is the work of John Stuart Mill where all would be given the chance to harness energy via state-owned equipment; some energy would be shared to increase 'utility', or general well-being, within society. Another method that would favour distributing energy would be the work of the liberal John Rawls. Rawls's 'difference principle' would be exercised within society, whereby the worst off in society should benefit as the wealthier increase their holdings. The third way of redistribution is based upon the work of Aristotle, where individuals would be habituated to be generous with their resources whilst moderately appropriating others' resources as a matter of course.

After reviewing these distributions of renewable energy, views of how the benefits and burdens should be shared, as energy is generated and costs are incurred will be availed. Then an answer will be provided to the question; *why should some energy generated by an individual be redistributed to another?*

4.1 Mill

4.1.1 Mill's Philosophy Defined and Applied

As a utilitarian, John Stuart Mill would have been expected to adhere to the values associated with the utilitarians. In summarising the spirit of utilitarianism it is generally

held to be the view that the morally right action is the one that produces the most good for the most people and therefore the right action is understood entirely in terms of consequences produced. Hence, the goal of utilitarianism may be pithily summarised as attaining the *maximum good for the maximum number of people*.

Now, although Mill may agree with the above tenets, he had his own way of understanding utilitarianism and it is from his publications, such as the *Principles of Political Economy*, *On Liberty* and *Utilitarianism* that an interpretation of his work is gained.

Although utilitarianism is built upon a relatively simple principle, it becomes complicated when put into practise. Some of the drawbacks are briefly mentioned here. For instance, there are various ways that utilitarianism may be calculated and one example relies upon assessing mental states such as 'welfare hedonism' or overall happiness (Kymlicka 2002: 13); for instance, Jeremy Bentham's aim was to privilege 'felicity' (Bentham [1789] 1986: 34), which would readily lend itself to the calculation of utility via the quantity of pleasure gained from any action.

However, if such mental states could be recreated by an 'experience machine', then Robert Nozick argued that most people would not choose this option, preferring autonomy and real experience to a limited man-made 'reality' (Nozick 1974: 42-45). Therefore, a strong argument has been provided that hedonistic mental states alone cannot be the measure of utility, as people would wish for authentic experiences and so 'non-hedonistic mental state-utility', which would entail a variety of experiences both enjoyable and unenjoyable, would be preferred by many (Kymlicka 2002: 13-14).

Furthermore, some may prefer to calculate utility via 'preference satisfaction' (Kymlicka 2002: 14), whereby we may choose our preferences, although it should be noted that ignorance of choice, due to misinformation as one example, may cause persons to limit the scope of utility (Kymlicka 2002: 16). However, preference

satisfaction's shortcomings may be alleviated by making 'informed preferences' (Kymlicka 2002: 16): to this extent, John Stuart Mill's own philosophising may be considered to be a variant of informed preference satisfaction as he would favour the 'higher pleasures' gained through learning and experience (Mill [1861] 1986: 260); these would introduce both values and bias into the calculation of utility gained from any action.

For many observers, one difficulty that accompanies utilitarianism is caused by allowing the consequences of actions to guide our choices. A conundrum is raised when pondering whether a *total* or an *average* amount of utility should be an aim for society to achieve: for example, on the desert island, would a society where Powerful had 100 units of utility and Powerless had 1 unit of utility amounting to 101 units in *total*, be preferable to an island where each had 50 units of utility on *average*?[159]

Further difficulties may be presented as in any society, the majority may feel it is right to discriminate against minority groups if they felt that this maximised utility. Hence, many may fear that utilitarianism would result in immoral consequences. However, such demonstrations of utilitarianism's shortcomings have led its adherents to modify its troublesome aspects and apply rules to prevent them from occurring; resulting in a 'rule-based utilitarianism' where individuals' actions would be judged in accordance with these rules (Rachels 1993: 111-112). However, Mill anticipated this particular difficulty and wished for individuals to enjoy as much freedom as possible and be free from suffering both legal and social pressures that could be asserted by the 'tyranny of the majority' (Mill [1859] 1979: 63). To remedy such suffering, persons would be restrained where they would 'harm' others (Mill [1859] 1979: 68-9).

On the desert island, if Powerful and Powerless agreed to introduce Millian utilitarianism, they would agree upon a 'rule-based utilitarianism' guided by 'informed

[159]This is discussed in more detail by Will Kymlicka in 'Two Arguments for Utility Maximisation' (Kymlicka 2002: 32-7).

preferences'. However, they would have to agree upon more detail to forge a constitution and in doing this further assumptions may be drawn from Mill's work. For instance, Mill opposed individuals owning natural resources when he commented that '[…] it would be the height of injustice, to let the gift of nature be engrossed by individuals' (Mill 1880: 140); hence, he believed that natural resources were effectively the asset of all. When Mill noted that the 'claim of the landowners to the land is altogether subordinate to the general policy of the state' (Mill 1880: 143), he underlined that the state was the effective guardian of land and would decide who may own property.

However, as land *could* be owned by an individual, provided that this arrangement benefitted the majority, Mill noted that 'No man made the land. It is the original inheritance of the whole species. Its appropriation is wholly a question of general expediency. When private property in land is not expedient, it is unjust' (Mill 1880: 142). Hence, if the land's current possessors did not act as 'public functionaries' (Mill 1880: 143), the state could repossess such assets; *provided* that the owners were compensated (Mill 1880: 143).

In his own time, Mill believed that much private property had been gained via 'conquest' rather than 'industry' and later legislation had been constructed to maintain this injustice (Mill 1880: 128). Therefore, on the island, Mill would feel that a great opportunity had presented itself to remove the injustices accompanying the institution of private property: furthermore, he noted that a new community, realising that the then current private property law was plagued with injustice, should either, opt to maintain private property with egalitarian distribution of the resource, or to jointly own the resource and distribute the produce in a manner that the community felt to be just (Mill 1880: 125). Here, following Mill's emphasis upon both land and natural assets being primarily a collective asset for society, it is assumed that the islanders agree that the

asset of hydrothermal energy should be owned by the island's state. Furthermore, the move to state ownership would be supported by Mill's conception that increased utility arose from the economies of scale operating when persons pool their resources (Mill 1920: 119-120).

With regard to the distribution of energy, Mill provided guidance as to how the distribution of produce should occur. In his view, the strongest property claim was derived from one's own 'labour' and excepting where one was to commit evil acts, people would have the power to use and exclude others from their produce (Mill 1880: 143). Here it is assumed that both islanders would work upon the collectivised resource and retain their produce: hence, the energy attributable to Powerful's efforts would belong to her; and likewise for Powerless. However, one area that may inhibit the labourer's full enjoyment of their produce may occur as the owner of the means of production, in this case the state, may enjoy a limited 'profit' from exercising its management skills, using initiative, and investing funds (Mill 1880: 245-6); hence the state could retain a 'management fee' which may be used to maintain the equipment.

Additionally, those who cannot support themselves may expect to be beneficiaries of redistribution provided they accepted conditions attached to their redistributions. Mill noted that in a community that collectively owned an asset, distributions to the poor may be based upon 'necessities' (Mill 1880: 221); and Mill later indicated that a 'guarantee of support' offered should be 'ample in respect to necessities' (Mill 1880: 221). However, when he stated that 'no member of the community need be abandoned to chance' (Mill 1880: 221), he also accompanied this statement with a notion that all should be encouraged to support themselves with a culture of dependence discouraged (Mill 1880: 584). Hence, charity would be kept at a level 'considerably less desirable' than the conditions enjoyed by those who supported themselves (Mill 1880: 585). Furthermore, the recipients of charity could expect to have

some restraints placed upon their freedoms (Mill 1880: 221): for example, the recipients of charity would be expected to refrain from rearing offspring to prevent ‘paupers from breeding hereditary paupers’ (Mill 1880: 220).

Now, provided that the redistributions to the disadvantaged were kept at relatively small levels and the management fee to the state was kept similarly, then persons expending effort to gain hydrothermal energy would keep most of the produce and any criticism that redistributions provided a disincentive to harnessing energy would be mitigated. This would allow Mill’s claim that true ownership is derived from personal labour to remain.

On the island, the utilitarianism ownership type described here may be represented thus:

1. Ownership of the resource of hydrothermal energy and the means of production are state controlled.
2. An individual owns the majority of the renewable energy they have harnessed after using their own efforts.
3. A minority of renewable energy will be redistributed to maintain state-owned equipment and provide for the disadvantaged.

The state will allow renewable energy to be harnessed by individuals who may retain the majority of their produce, whilst the minority of renewable energy would be redistributed by the state to maximise utility.

4.1.2 Mill: Internal Criticism

It is noted that where all parties agree to a Millian ownership type, it may result in uneven distributions of energy with the most capable workers retaining most of the energy and the disadvantaged enjoying a far lesser share. Its continuance would depend upon all parties understanding and desiring the consequence of maximising Millian utility. But how would such an ethos remain intact when it is possibly the most

productive energy producers who may be restrained by the arrangement? In response, it may be argued that this ownership type can produce the best results for all. For instance, on the island where more energy and more goods are required,[160] it could be argued that a redistribution of energy is vital to stimulate a growing economy needed to satisfy the islanders' needs. Furthermore, in greater society it may assure individuals enough goods to have 'a fair go' at life (Kymlicka 2002: 40); and additionally, it would allow the worst off the ability to develop the capacity for meaningful work, and therefore contribute, to society (Munzer 1990: 216). Hence, if this argument was accepted by the majority, then the *status quo* would be maintained by a supporting ethos.

It should also be noted that a society would need an administration to monitor progress and ensure that utility is maximised. For instance, as already noted, a state owning the means of production possibly may not maximise utility where a private enterprise could do better:[161] the likelihood of this situation occurring would have to be monitored and when it becomes certain that the private arrangement would maximise utility, then this would hail the introduction of private production.

However, this would not be the end of monitoring as the private enterprise would be required to be regularly monitored to ensure that it continues to maximise utility; and furthermore, the energy harnessed and distributed would also have to be monitored to ensure that its usage maximises utility. To demonstrate, on the island it may be decided that Powerful should harness all the energy and Powerless be given an initial energy allowance to allow her to establish a productive enterprise, such as farming or manufacturing. The produce could then be traded with Powerful for more energy, and while both parties concentrate upon their strongpoints, a growing economy would emerge due to benefitting from both specialisation and economies of scale. However, as the economy changes, resources of energy may have to be constantly

[160] See 1.2.3 'The Desert Island Thought Experiment' for the premise that more energy and goods would make the islanders' lives more comfortable.
[161] See 4.1.1 'Mill's Philosophy Defined and Applied'.

adjusted to maximise utility (Grunebaum 1987: 100). Hence, a Millian ownership type would require an adaptable but underpinning administration; especially in a changeable economy.

The detractor to the ownership type presented here may say that a Millian ownership type is an unobtainable objective. It clearly does not define who owns the means of production or who owns a definite proportion of the energy. However, one response may be that it remains adaptable to new situations as they unfurl and this should be regarded as a benefit.

Finally, it should be noted that although it may be quite simplistic to have a state-owned central supply of renewable energy such as the hydrothermal vent, it should be borne in mind that renewable energy may be harnessed from a variety of sources.[162] This may make the task of instituting state-owned renewable energy difficult although not impossible: if the principle of state ownership can be adapted to cover a variety of energy sources then this may make Mill's ownership type more adaptable. For instance, on the island the state may own all of the means of production that could possibly be employed including solar panels and wind turbines; and these could be leased out to the islanders. However, it has already been noted that Millian utilitarianism may become bureaucratic and this move may be expected to increase the amount of administration needed.

4.1.3 Mill: External Criticism

The external criticism here is expected to fall into two groups. Firstly, there are those schools of thought, usually supporting the private ownership of renewable energy described in the last chapter, who may be joined by liberals, who would criticise utilitarianism for not granting individuals enough rights. The reader may recall from the

[162] See 1.3.1 'Energy Types'.

chapter arguing for a rights-based approach that utilitarianism is often accused of being prone to eroding human rights, to achieve its own aims.[163] Here the political philosophies cherishing the rights of individuals may be expected to clash with the Millian utilitarianism portrayed here.

The second group that may challenge utilitarianism consists largely of Marxist and communitarian opposition who may oppose a Millian distribution based upon the pretext that it has not considered the concept of an overarching society thoroughly. This may be brought to the fore by deliberating matters of distributive justice, the ownership of the means of production and the retention of inequality. Those that accuse utilitarianism of not taking an individual's rights seriously are reviewed first.

Looking at the rights the islanders would enjoy in a Millian ownership type, the Lockean would note that persons would not be exercising their natural rights with regard to obtaining energy or property:[164] the Lockean may be joined by the Nozickian, where they would note that Powerful has been deprived of her property of hydrothermal plant. These provide particularly resonant violations of the person for Nozickians, where property may be considered to be an extension of one's self.[165]

Nozick's notion of self-ownership would also highlight that once a utilitarian system of distribution had been established, individuals would not be required to consent to redistribution but would be forced to go along with it. Nozick believed that a state had no right to force a person to bear costs that benefit other persons for the sake of a purported 'greater overall good' (Nozick 1974: 32).

Against all of these rights-based criticisms, the Millian would note that the island has agreed to introduce another ownership type with a different concept of rights; underlining the importance of ethos in this arrangement. Natural rights and the rights to self-ownership have been replaced by the right to enjoy the majority of the fruits of

[163] See 2.4.1'Countering Opposing Ideologies'.
[164] See 3.1.1 'Locke's Philosophy Defined and Applied' for the concerns noted here.
[165] See 3.2.1 'Nozick's Philosophy Defined and Applied'.

one's labour and the right not to be excluded from mainstream society. Furthermore, the presence of state-controlled means of production, where all would retain an interest in energy production, would lessen the dire consequences possible where individuals make irrational decisions with their own lives;[166] which in a private ownership type may feasibly include gifting one's property on a whim. Millians would therefore consider their arrangement to be superior.

Looking at the work of John Rawls, the Rawlsian may note how utilitarianism in general can limit a person's 'rights'. Rawls would define 'rights' as agreed, normative principles that apply to everyone in society (Rawls 1999: 393), such as the equality of opportunity and the right to be considered equal in a court of law. Now utilitarians may be expected to be more accepting of losses of individuals' rights: for instance, the island may agree that Powerful retains ownership of her hydrothermal plant and Powerless could work for Powerful for a period of time whilst forsaking any agreed, normative rights over this time period; this may be particularly enticing to both parties if, for example, it ended in an enormous increase of energy available to the island. Rawlsians may have differing viewpoints concerning this situation: some may reject it based upon a Kantian position, which makes such a loss of rights illegitimate (Rawls 1999: 145); although Rawls' would allow persons to make 'substantial sacrifices' and this is acceptable as long as 'such actions are not demanded as a matter of justice' (Rawls 1999: 155). However, the Rawlsian would fear that utilitarianism would be generally too ready to allow the limitation of individuals' rights.

The Rawlsian would also note that utilitarianism does not necessarily respect a person's individuality with regards to 'goods'. By 'goods', Rawls would consider these to be the individual's varied life-choices (Rawls 1999: 392-4). An example of this may occur if Powerless constructed a solar panel to supplement her supply of energy. Now,

[166] See 3.2.2 'Nozick's Internal Criticism'.

although this may seem to contribute to providing more energy, if the Millian ethos decreed that solar panels, along with all renewable energy harnessing equipment, should be state-owned, then such personal 'goods' would be limited. For Rawls, this would reduce the variety and vibrancy in society (Rawls 1999: 393-4).

For the Rawlsian, the Millian society may initially appear to be too restricting for the individual. However, it should be noted that the Millian utilitarianism described here, may operate to support persons' rights by preventing the 'tyranny of the majority' to exist and also allow persons to pursue their own goods provided they did others no 'harm'.[167] All parties could agree to implement a variety of utilitarianism whilst still allowing some latitude for individuals. Hence, Rawlsian criticisms are not decisive.

Moving on to look at the criticisms based around the proposition that Millian distribution does not consider the whole of society as a primary concern, it may, at first glance, be expected that the criticisms derived largely from Marxist and communitarian origins would be more accommodating of the Millian ownership type. The Millian ownership type considers all individuals within society and therefore should not be accused of giving only a secondary concern for society as a whole, as the private ownership types were.[168]

However, those who may wish to see distribution of energy according to a person's 'needs', such as Marxists,[169] would be critical of a person's acquisition of energy according to their abilities. For them, too much inequality would remain licensed by the Millian model. In reply the Millian may respond that their distribution is fair as no one is marginalised and the differentials in gaining energy would be tempered by redistributions to both the state as manager of the resource and the poor as their right. Furthermore, if the majority agreed upon this distribution in the knowledge that it

[167] See 4.1.1 'Mill's Philosophy Defined and Applied' for an explanation of the 'tyranny of the Majority' and the 'harm principle'.
[168] See 3.1.3 'Locke: External Criticism' as an example of an ownership type that may garner criticism for displaying a secondary concern for society.
[169] See 5.1.1 'A Marxist Philosophy Defined and Applied'.

maximised utility with all benefitting, then a distribution based upon 'needs' would be unwelcome.

Marxists may further note that it remains possible that if either party on the island wished to return to the previous arrangement and generate their own energy, then they may suffer alienation and exploitation under the Millian ownership type.[170] However, utilitarian influenced liberalism in the twentieth-century would discount Marxist claims and a detailed summary of the situation has been provided by Alan Ryan. For instance, the modern workplace is not just an exploitative toil as Marx envisaged as the workplace also provides socialising and a structure to one's life (Ryan 1984: 182). Although the work may remain alienating, enduring such alienation for gaining the rewards one places value upon is acceptable for many workers; for instance liberalism has been successful in the rewards of the mass produced goods providing heating and lighting, entertainment and plentiful food (Ryan1984: 181). The Marxist critique of utilitarianism has been strongly countered.

Continuing with the subject of inequality, the advocates of Rousseau would immediately note that the Millian arrangement still allows some individuals to be in economically superior positions to others; a state the advocates of Rousseau would wish to minimise.[171] In reply, the utilitarians may remark that an understanding of the need to maximise utility would yield an overriding interdependence which would preclude any of the excesses in inequality that Rousseau witnessed arising. Nevertheless, to avoid any risk, the advocate of Rousseau would wish to ensure equality.

For those favouring the capabilities approach, as defined in this work,[172] it should be realised that if utilitarianism gave the disadvantaged the resources to compete on an equal footing in a liberal society, then this would satisfy their claims. It should be noted that as Powerless, by owning the eastern half of the island, is only disadvantaged

[170] See 5.1.1 'A Marxist Philosophy Defined and Applied' for definitions of alienation and exploitation.
[171] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[172] See 5.3.1 'A Capabilities Approach Defined and Applied'.

by not being able to generate her own hydrothermal energy, then it would be this aspect of life that the capabilities approach would initially rectify. As the utilitarian ownership type described above accomplishes this, the disagreement from the capabilities advocate would centre round whether both parties could function equally as they could not be expected to have exactly equal abilities to harness energy. If either party could not, then it is this disparity that the capabilities approach would attempt to rectify. In reply, the utilitarians may remark that an understanding of the need to maximise utility would mean that persons would tolerate a limited inequality.

The communitarians may join the critique with their own concerns. Overall communitarians may be more interested in the continuance of stable communities, in the knowledge that individuals are dependent upon their community for their well-being and therefore the community's needs should be placed first.[173] Furthermore, the communitarians would wish to distribute resources as their community sees fit.[174] Hence, the community would decide upon the distribution of goods with the knowledge of who they were supplying and the concept of 'utility' would be both alien and impersonal to residents of communitarian settlements when guiding distributions. The Millian may appeal that attaining the *maximum good for the maximum number of people* is analogous with maximising a community's welfare but just enacted on a greater scale: however, the ardent communitarian is likely to be unmoved.

Additionally the communitarians would expect to be joined by the Marxists in rejecting the Millian ownership type due to it potentially allowing the private ownership of the means of production. All would deplore this stance on ideological grounds. In particular the adherent to Robert Owen's work would wish to improve humanity's future by providing an alternative lifestyle to liberalism, which would include the

[173] See 6.1.1 'Hutterite Philosophy Defined and Applied' as one example of prioritising the community's needs.

[174] All communitarian ownership types would detach the individual's share of energy from their ability to gain that energy: See 6.1.1 'Hutterite Philosophy Defined and Applied'; 6.2.1 'Owen's Philosophy Defined and Applied'; and 6.3.1 'Bookchin's Philosophy Defined and Applied'.

abolishing of individuals owning the means of production as it had proved too divisive.[175] Furthermore, the municipalist would insist upon the communal ownership of the means of production firmly lodged at the level of a municipality: Murray Bookchin opposed both state and private ownership, finding both unsatisfactory as they resulted in class divisions of bureaucrats and entrepreneurs respectively.[176]Once more, the Millian may appeal that attaining the *maximum good for the maximum number of people* is akin with maximising a community's welfare but this type of argument would once more be rejected due to the communitarians' commitment to communally owned assets.

The communitarian may even argue that the state ownership of the means of production may cause disutility. For instance, if an idea for harnessing energy was beneficial for one community then it could be promulgated in further communities. However, if it turned out to be a catastrophic failure then only *one* community has been disadvantaged. In this way, it could be argued that a community acts as a pressure valve by preventing poor ideas being enforced *en masse* by incompetent states.

The utilitarian may retort that as it can be expected that some communities would embrace new ways and some would not, then it would be difficult to maximise utility over a wide geographical area. Now communitarians may argue that this is actually a maximisation of a truer form of utility, with each community tailoring the ideas to suit themselves: however, for the utilitarian, there would be no guarantee that their view of utility would be maximised and for them the arrangement would be unsatisfactory.

[175] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[176] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.

4.2 Rawls

4.2.1 Rawls's Philosophy Defined and Applied

In the late twentieth century John Rawls offered his theory of 'Justice as Fairness' as an alternative to the dominance of utilitarianism. The aim of his work was to place liberalism in a 'well-ordered society as a fair system of cooperation between citizens regarded as free and equal' (Rawls 1989: 166). In describing his theory, Rawls noted that all individuals should have an equal right to an extensive scheme of 'basic liberties', whereby all would enjoy freedoms of speech and political association, freedoms from oppression and arbitrary arrest, and the right to own 'personal property' (Rawls 1999: 53). These basic liberties would be sacrosanct and would comprise the first principle of his work which would be privileged over a second principle he later described (Rawls 1999: 53-4).

The second principle, which concerns social and economic inequalities, is split into two parts. The first part of the second principle is best known as the 'difference principle' and is concerned with distributive justice (Rawls 1999: 53). The difference principle may be understood as a device that allows the most favoured groups to benefit from their talents provided any social and economic inequalities are 'to the greatest benefit of the least advantaged' (Rawls 1999: 266).[177] The second part, prescribes an equality of opportunity whereby 'positions of authority and responsibility must be accessible to all' (Rawls 1999: 53).

The inclusion of a strong element of equality within Rawls's theorising arose because Rawls considered distributions based upon talent as unreasonable and he

[177] The difference principle, being commonly understood by economic benefits, does not readily accommodate intangible goods. In illustrating the difference principle via 'distribution of income' (Rawls 1999: 67-68), Rawls has seemingly encouraged measurement via tangible economic assets which other commentators, such as Grunebaum and Kymlicka as examples, have followed. However, this did not have to be the case as the initial description of the principles of justice describes 'social and economic inequalities' (Rawls 1999: 53), which could have included intangible goods such as leisure time.

justified this position by describing how talent is distributed by a 'natural lottery' and how 'this outcome is arbitrary from a moral perspective' (Rawls 1999: 64).[178] This leads to Rawls's position where all in society should gain, whilst avoiding the situation where the untalented, whom are untalented for no reason of their own, are left impoverished.

In demonstrating the difference principle, Rawls used simple graphical diagrams featuring two parties: one representing the advantaged sector and the other the disadvantaged sector (Rawls 1999: 66-7). However, these also demonstrate two important assumptions which guide his work: firstly, it should be noted that Rawls assumed that economies would grow materially, and secondly, he assumed that the most advantaged sector of society would wish to benefit from this arrangement.

To justify the introduction of his principles, Rawls employed a thought experiment, whereby hypothetical persons would create a society from an 'original position' and from behind a 'veil of ignorance'. Here they would know only the bare minimum about themselves. They would be ignorant of their sex, religion, physical build and skin colour as examples. This device would ensure that any principles agreed were not biased towards any particular party and that rules were suited to the benefit of all: for instance the white, Muslim man may wish to construct rules, which benefited his type, and thereby himself; whilst the black, Christian woman may have her own agenda. Hence, by precluding bias, all would be expected to agree to the principles as they ensure that: all lived a life that suited them individually; all had a fair chance to apply for all positions in society; and the worst case scenario for all was maximised should anyone fall into society's most disadvantaged sector.

Now Rawls's principles would be upheld by redistribution via taxation (Rawls 1999: 245). The taxes would act to: prevent the accumulations of power and property which Rawls felt would undermine his first principle (Rawls 1999: 245-47); and uphold

[178] This principle is explained in great detail by Rawls (Rawls 1999: 57-73).

the second principle (Rawls 1999: 246-7). However, some taxes may be expected to be more rigorously applied when Rawls wrote that the 'unequal inheritance of wealth is no more inherently unjust that the unequal inheritance of intelligence' (Rawls 1999:245): from this we may assume that although the bequeathing of goods would be permissible, it should not give the recipient an unfair advantage in life.

That said, Rawls was a liberal and he believed that the individual should retain the majority of the fruits of their labour as this incentivises production. Hence, any burdensome taxation on an individual's labour would be inhibitive and therefore detrimental to society as a whole:

> […] generally the greater expectations allowed to entrepreneurs encourages them to do things which raise the prospects of labouring class. Their better prospects acts as incentives so that the economic process is more efficient, innovation proceeds at a faster pace, and so on (Rawls 1999: 68).

Turning to look at the ownership of property, Rawls assumed private property would dominate his potential society and it would be a 'property-owning democracy' (Rawls 1999: 242). Now Rawls was not against socialised property *per se* and would condone it if it delivered his principles of justice. In fact he allowed for the socialised means of production in future societies when he noted that it would be difficult to predict an economic system suitable to a society 'in advance', as the most suitable, economic system would depend upon the 'traditions, institutions and social forces of each country' (Rawls 1999: 242). However, Rawls favoured the private ownership of the means of production because he felt that socialised means of production, which were associated with planned economies, were more likely to restrict a person's career choices and therefore restrict the principles of justice (Rawls 1999: 239). That said, once any produce had been created, *either* by a public or privately owned venture, Rawls favoured the market to operate as he felt that market forces were the best

determiner for the processes of supply and demand and also which particular goods to produce (Rawls 1999: 239). Nevertheless, Rawls was well aware that a free market may have failings such as monopolies and diseconomies which would require correction (Rawls 1999: 240). Hence, Rawlsian production would consist largely of private property and a free market.

Here the established liberal concept of owning property is assumed to operate. These have been described by Tony Honoré in *Making Law Bind* and they would be expected to be shaped by Rawls's principles.[179] For instance the owners of property, who find themselves to be in the most advantaged section of society, may expect to gain income from that property where it is rented out to another; however, the rental income would be taxed under the auspices of the difference principle and the taxed portion would be distributed to the least advantaged.

Underlying any ownership type developed from Rawls's work would be an ethos present in society. This may be understood thus: in the 'original position', all persons would agree on the abiding principles that govern their future lives and as all would have to live by them, they would have to be tolerable to all (Rawls 1999: 153); however, when introduced into a society, and publicly known that the principles were a workable and fair system of justice, Rawls felt that persons would wish to abide by them and perpetuate them (Rawls 1999: 154). Effectively, a prevailing ethos would enjoin the inhabitants of Rawlsian society.

It is assumed that on the desert island, both parties agree to set up a Rawlsian economy based upon hydrothermal power with a governing body to ensure that the principles of justice are exercised correctly. Powerful may collect energy using her private property provided that a minor share goes to Powerless. Nevertheless, there

[179] In a legalistic fashion, Honoré describes ten elements operating within the concept of liberal ownership. They are termed as: rights to possess; rights to use; rights to manage; rights to the income; rights to the capital; rights to security; the incident of transmissibility; the incident of absence of term; the duty to prevent harm; liability to execution (Honoré 1987: 161-179).

exists the possibility that the means of production could come into public ownership if this delivered the principles more competently.

Introducing Rawls's ideas to the desert island:

1. Individuals own themselves, but only the majority of the produce produced via their talents.
2. Individuals may own property; including hydrothermal energy.
3. An Individual may own the majority of renewable energy harnessed after using their own efforts to harness it; and individuals are free to trade this energy.
4. A minor portion of the harnessed renewable energy will be redistributed to the least advantaged sector of society.

Individuals may accumulate as much energy as they wish provided that society reserves the right to appropriate the minority of this energy for the least advantaged's benefit.

4.2.2 Rawls: Internal Criticism

A particular problem for Rawlsians would be that Powerful inhabits the side of the island with the hydrothermal energy and therefore benefits from fortune in the same way that talented persons benefit from their talents. Now should this situation remain, Rawls's ownership type would seem to be licensing fortune to a great degree. The spirit of his work may lead one to conclude that a major redistribution of assets should occur when instituting a Rawlsian society, so that all may exercise their rights equally, before the difference principle is allowed to operate. Hence, there may be situations where the device of taxation is not enough to adjust the imbalances in a society and more immediate redistributions are needed to institute Rawls's work.

4.2.3 Rawls: External Criticism

Similar to criticisms of the Millian ownership, the Rawlsian model would come in for criticism from espousers of private ownership that it does not respect the individual's rights. However, as the Rawlsian model favours the private ownership of harnessing equipment it would not be expected to attract as much criticism. Hence, the criticism would be expected to focus upon the fact that persons do not retain *all* of the fruits of their labour.

For the Lockean, Powerful's energy generation is effectively taxed and this may be tolerable provided it constituted a charitable act and the populace consented to such taxation;[180] but the diversion of energy to the least advantaged, when ideally they should be obtaining their own energy, may be considered to be in excess of charity and the Lockean would disagree with this in principle. Additionally, the libertarian camp would find the effective taxation to be disagreeable noting that Powerful has spent some time in a state akin to forced labour to fund Powerless's energy usage;[181] they may also remind us of Nozick's criticism that Rawls erroneously viewed the 'natural abilities' of the individual as a 'collective asset' (Nozick 1974: 228-9).[182] For libertarians, Rawls's redistribution remains a violation of rights. At this point, the Rawlsian might respond that the most disadvantaged individuals' rights to engage with society have more definitely been protected than in the private ownership types: where the least talented individuals would rely upon charity,[183] haphazard philanthropy,[184] or dubious initial distributions of assets.[185]

[180] See 3.1.1 'Locke's Philosophy Defined and Applied' and 3.3.3 'Otsuka: External Criticism'.
[181] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[182] See 3.2.3 'Nozick: External Criticism'.
[183] See 3.1.1 'Locke's Philosophy Defined and Applied'.
[184] See 3.2.2 'Nozick: Internal Criticism'.
[185] See 3.3.2 'Otsuka: Internal Criticism'.

Turning to look at Rawls's promotion of economic growth, a disparate group of political philosophies would have their objections to this. The virtue ethicist would caution against a dependency culture emerging where the disadvantaged are *guaranteed* some of society's gains as its economy grows.[186] This concern would be joined by the Millian who would wish for those without energy to be given an amount to cater for their necessities but would not expect to support the needy increasingly as the economy grows.[187] In response the Rawlsian may attempt to stress the fairness of the arrangement where the disadvantaged are prioritised. However, these concerns would be joined by the municipalist communitarian's desire to see economic growth halted as it had previously caused environmental degradation.[188]

The disparate group above would be joined by those with socialist leanings who may argue that the inequality licensed by economic growth provides a more forceful argument to oppose it. They would maintain that the disadvantaged would be expected to remain in an inferior position which would cause problems in society. Marxists would query whether the least advantaged's position would be tolerable under the difference principle. They would consider people to have the propensity for 'limitless and flexible' 'needs', that they may need to satisfy to make their lives fulfilling;[189] in relatively affluent surrounds Marxists may expect that people would require more goods commensurate with their peers and the worst off cannot be expected to be satisfied with the fact that they are at a comparatively inferior level. Now, if people's 'needs' went unsatisfied due to great differentials in wealth then it is also noted that those without an adequate share of goods may become envious or feel alienated. This may lead to an

[186] See 4.3.1 'Aristotle's Philosophy Defined and Applied': where the quality of 'self-reliance' may be considered a virtue to be encouraged.
[187] See 4.1.1 'Mill's Philosophy Defined and Applied'.
[188] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[189] See 5.1.1 'A Marxist Philosophy Defined and Applied'.

unstable society without common values but with resultant criminality.[190] The Rawlsian may plead that such situations would be defused in a society that rests upon the difference principle that prioritises the worst off. Furthermore, the Rawlsian may respond that with material growth in society, all but the most materialistic of the disadvantaged would remain unsatisfied; which may yield the counter that it would take time to realise this level of affluence and the disadvantaged may remain envious and alienated for some time. For instance, on the island, the left-libertarians would be likely to avoid this delay and instigate a more immediate equality by the redistributions of assets.[191]

The Marxists may also argue that the Rawlsian ownership type encourages unequal parties to manoeuvre to benefit themselves. For instance, the arrangement gives the advantaged the ability to manipulate situations even where they felt that they were operating within the spirit of the Rawlsian ethos. This gives the worst off less control over their lives and may be demonstrated on the island. Supposing Powerful was able to accumulate vast resources due to the excess she has over her daily living needs; then, she would not be as needy for the goods that Powerless desires. She may take a long-term view of energy generation and install solar panels in the belief that they would deliver more productivity over time. Powerful may then decide to keep energy production at a constant level and replace each unharnessed unit of hydrothermal power with a corresponding unit of newly generated solar power. As Powerful has not benefitted by this move, Powerless would still be supplied with the same energy supply decided by the difference principle. Hence, Powerful has more control over her life and may even forsake the option to pursue economic growth.

[190] See 3.1.3 'Locke: External Criticism' for an explanation of how other ownership types may become alluring and the abeyance of societal upheaval would rest merely on the least rewarded persons tolerating an arrangement when they may gain a greater level welfare from other ownership types.
[191] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.

However, there are some instances where the difference principle may not benefit Powerful so clearly. For instance, if Powerless created a supplementary wind turbine, then Powerful may now wish to retain more of her hydrothermal energy, possibly equal to the amount now generated by the turbine. However, as this retention of energy represents an effective gain to Powerful and such moves would be expected to benefit the least advantaged, then Powerless may expect to gain from this retention. Hence, when the least advantaged benefit themselves, they may always expect to be the primary beneficiaries; and this may be irksome to the most advantaged, especially if it appears that the least advantaged are operating outside of the Rawlsian ethos and deliberately acting to benefit themselves: for instance, Powerless may seem to have only installed harnessing equipment at her convenience and not at a prior opportunity when it could have benefitted the whole island.

To these criticisms, where the differing parties seemingly act to benefit themselves, the Rawlsian may respond that, where a society rests upon the difference principle that prioritises the worst off and all are aware of its inherent fairness, all would be inclined to work in support of this fair position. However, where either party may act independently, the desert island has demonstrated how Rawls's model may unwittingly allow the advantaged more control over society's progress. In the worst case scenario, the lack of opportunity for some parties may cause enough tension to encourage societal instability.[192]

The topic of inequality would also trouble the advocate of Rousseau. They may fear that with the licensing of inequality, one party on the island could dominate the other. Following the Marxist inspired reasoning above, such fears could be heightened as Powerful would generally have the upper hand in the relationship by retaining the majority of produce, owning the means of production and controlling the energy supply

[192] See 3.1.3 'Locke: External Criticism' for an explanation of how other ownership types may become alluring and the abeyance of societal upheaval would rest merely on those with the least opportunity tolerating the arrangement.

in an economy. This would remind the advocate of Rousseau of the inequalities that were present in the distribution of resources during the eighteenth-century. Now, Rawls would implore the Rousseauian to see that the extremities of the eighteenth-century had been abolished and a practical solution had been reached whereby society's poorest members enjoyed a much improved situation. Rousseau may agree that more equality had been realised but would also note that even with its current distribution, Powerless could find herself having to work for Powerful if she needed extra energy. Any petitioning that the disadvantaged now shared in greater levels of material wealth would be met with the retort that each individual's independent subsistence was more important. It is likely that advocates of Rawls and Rousseau would remain irreconcilable.

For the advocate of the capabilities approach, the Rawlsian distribution could be expected to be very disappointing. This is because distributions such as that devised by Rawls were too vague in their awarding of resources to the disadvantaged and this was part of the capabilities approach's *raison d'être*.[193]One pioneer of the capabilities approach, namely Amartya Sen, interpreted Rawls's type of equality as being based upon fetishistic notions of persons benefiting from goods, whereas examining a person's 'relationship' with goods and assessing how the individual could then benefit would provide a superior notion of equality (Sen 1980: 216). A particularly salient point for Sen was that extreme cases such as the severely infirm would be 'irrelevant' under Rawls's view of equality and would remain in a very disadvantaged position without any 'urgency' being present to assist them (Sen 1980: 215-6). Effectively, there is not enough accuracy in Rawls's model to remedy the most disadvantaged and the capabilities advocate would wish for each person to be considered uniquely when their resources were awarded and the notion of an improvement in condition, as and when the

[193] See 5.3.1 'A Capabilities Approach Defined and Applied'.

most advantaged improve their conditions, would not be sophisticated enough. However, the application of Rawls's work to the desert island thought experiment, where the sole good of renewable energy is *isolated* and *prioritised*, should demonstrate that a Rawlsian analysis can be carried out with a greater degree of focus than may have been anticipated by the capabilities advocate. Nevertheless, both would disagree in their approach to resolving injustice.

For the communitarians, their criticism would start from the same reasoning as their criticism of Mill's Ownership Type,[194] in that they would require both communal ownership of the means of production and the community's prerogative to distribute resources as it sees fit. Moreover, the difference principle would be seen as too blunt an instrument: for instance, the Hutterites would agree upon different distributions for differing classifications of individuals within their community.[195] It would be imperative for Hutterites to reason at the level of community, where they would feel that all had a common interest and decisions concerning local governance could be best taken. The Owenites would further note that Rawls has adapted liberalism whilst their agenda would be to provide an alternative to this political system. Their system would be one where the least talented are incorporated within working life and part of a community as opposed to being assured an improvement in their condition due to their disadvantage.[196] The municipalists would agree with the least talented being incorporated within a community but they would base their distribution according to persons taking according to their 'needs'.[197]

Any retort from the Rawlsian that the standing of the disadvantaged had been improved socially and would continue to improve materially within a greater society would be met with disdain. Communitarians would work to incorporate all parties

[194] See 4.1.3 'Mill: External Criticism'.
[195] See 6.1.1 'Hutterite Philosophy Defined and Applied'.
[196] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[197] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.

within a community. It is this perceived divisiveness within Rawls's theorising that would ensure that the communitarians remain distanced.

4.3 Aristotle

4.3.1 Aristotle's Philosophy Defined and Applied

Much of the ideas of Aristotle's ownership type featured here come from his *Politics* and *Nicomachean Ethics*. Also, much reference is made to the concept of 'virtue' which is interpreted here as character traits that should be encouraged by society. There are many traits that could be included and this work is largely concerned with the virtues of generosity and moderation.[198] However, within a virtuous person, virtue should become engrained and be manifested in repeated acts: to this effect, a virtue may be defined as 'a trait of character, manifested in habitual action, that is good for a person to have' (Rachels 1993: 163). Overall, it may be argued that society should benefit from encouraging such individualistic traits as direct actions emerging from them, contribute to maintaining cohesive communities (Rachels 1993: 169-170).

Nevertheless, virtuous individuals comprising a virtuous society would need to acquire a many skills gained from the experience of life to reach a state of *phronesis*: which may be translated from ancient Greek as practical wisdom (Hursthouse 2010). For instance, in enacting the virtue of 'generosity', which may be defined as 'expending one's resources for the benefit of others', an individual would give goods in an amount assessed by that individual to be most beneficial to the recipient (Hursthouse 2010). This is because too little assistance may not be enough to benefit the recipient and too much assistance may cause the vice of dependency (Rachels 1993: 164). Hence, a generous act would be gauged to lie at a level between miserliness and extravagance.

[198] James Rachels gives a list of 24 virtues which he describes as a 'reasonable start' (Rachels 1993: 163).

Also the virtuous individual would need to recognise some situations as more important than others; such as prioritising recipients who need the goods the most (Hursthouse 2010).

In applying Aristotle's work to renewable energy some assumptions need to be made and these are developed and explained in the following paragraphs. In particular, it is explained: why an habituated mindset would be needed; how moderation would arise; why private ownership of property is needed; how a *continuum of ownership* of produce develops; and why some surplus in produce would be needed.

For Aristotle an initial problem with encouraging virtues such as generosity in society is that most people do not naturally behave virtuously; for which Aristotle advised the introduction of a two-pronged solution. Firstly, the state should provide a process of habituation so that the virtue of generosity would be instilled in individuals. Now, Aristotle realised that executing some virtues required individual sacrifice and so the habituation process would start early in life, acclimatising individuals so that the consistent execution of virtue caused no conscious suffering later (Aristotle 2009: 199-200). To achieve this Aristotle recommended a common education shared by all, which would encourage solidarity amongst citizens and he praised the model of the Lacedaemonians where education was 'the business of the state' (Aristotle 1999: 181). Secondly, the habituation should be accompanied by deterrents to encourage compliance. Although some would respond to the habituation process, others would respond only to penalties and punishments, whilst 'the incurably bad should be banished' (Aristotle 2009: 200). Now, Aristotle did not supply proportions as to who would comply after the habituation process and who would not: but it may be expected that he felt that the vast majority of citizens would comply; otherwise he would have been expected to place more emphasis upon instituting deterrents. Although, the habituation process was not expected to be completely successful due to the presence of

the accompanying deterrents, if the overwhelming majority of individuals abided by their training, then it can be accepted that the habituation process instils a group 'mindset'.[199]

Turning to look at the effect of the habituation process upon the goods and property one may own, it may be interpreted as a moderating influence. Focussing upon an excerpt from *Politics*, although Aristotle felt that the 'equalisation of properties' was beneficial (Aristotle 1999: 34-5), he was also aware that individuals require different holdings to match their differing levels of welfare. Hence, the habituation process cannot be considered to be a prescriptive force dictating how much or which type of goods to own, but one where the amount of goods that individuals desire would be made more equal:

> Again, where there is equality of property, the amount may be either too large or too small, and the possessor may be living either in luxury or penury. Clearly, then, the legislator ought not only to aim at the equalization of properties, but at moderation in their amount. Further, if he prescribes this moderate amount equally to all, he will be no nearer the mark; for it is not the possessions but the desires of mankind which require to be equalized, and this is impossible, unless a sufficient education is provided by the laws (Aristotle 1999: 34-5).

Apart from believing in the importance of instilling a moderating mindset, Aristotle also promoted the private ownership of property. In one instance, this was based around his perceived weaknesses of communal ownership. For instance, Aristotle noted if workers on communally owned property did not work as hard as each other, the hardworking element of society would raise a complaint against any shirkers gaining a similar share (Aristotle 1999: 27).

Also, Aristotle argued that private property would have the advantage of allowing the individual to attain a virtuous life more easily. Assisted by private property, Aristotle would recommend that the individual should engage in 'household

[199] See 1.3.4 'Mindset and Ethos' for the definition of a mindset.

management' and produce *enough* to live a virtuous life (Aristotle 1999: 16). However, as it is a natural state of affairs that some have 'too little' and others 'too much' it is right for men to engage in barter to fulfil their 'natural wants': where 'natural wants' are contrasted against activity carried out for profit (Aristotle 1999: 14-15). Overall, the concept of private property is accepted here as being integral to the operation of Aristotle's ownership type.[200]

Now although Aristotle believed in the private ownership of property, he also believed in the existence of a shared element in goods and services. Here a *continuum of ownership* of produce is interpreted from a passage from *Politics*:

> For, although every man has his own property, some things he will place at the disposal of his friends, while of others he shares the use with them. The Lacedaemonians, for example, use one another's slaves, and horses, and dogs, as if they were their own; and when they lack provisions on a journey, they appropriate what they find in the fields throughout the country. It is clearly better that property should be private, but the use of it common; and the special business of the legislator is to create in men this benevolent disposition (Aristotle 1999: 28-29).

If we bear in mind the habituation process that Aristotle recommended, it may be assumed here that the 'benevolent disposition' imparted by the 'legislator' would inform individuals on how much they could appropriate and also how much benefactors can expect to donate.[201] Although a donor can be expected to give generously, it is not unforeseeable that the recipient should be able to take modestly. To elucidate, the

[200]In addition to privately owned assets, Aristotle described in *Politics* how he would also wish to see some common assets within society; particularly land. The produce from public lands would be used to both fulfil a city state's religious needs and also provide sustenance in communal meals, to all citizens (Aristotle 1999: 45-6 & 166-7). Of course the communal meal would be more of a boon to the poorer members of society and its role here is interpreted as a social service: a device to prevent the prevalence of malnourishment in society.

[201] In deconstructing this passage from *Politics*, Robert Mayhew has referred to Xenophon's *Lacedaemonian Constitution* and the *Athenian Constitution*, and has identified three distinct types of usage he attributes to Aristotle: private usage where the owner of the produce dictates it to be used privately (Mayhew 1993: 816); usage between citizens where there is agreement present (Mayhew 1993: 816); and an *ad hoc* usage for travellers (Mayhew 1993: 818 n.40). Furthermore, Mayhew argued that an owner would indicate that goods are available to share for *ad hoc* usage, such as unfencing farmland (Mayhew 1993: 819-820).

habituation process should be quite capable of instilling in individuals the following: if someone was part of your family, you could take more produce from them than someone who was not; and if you knew someone well, then you would know how much they would allow you to take; and if you didn't know someone at all then you may take only the bare minimum needed for your subsistence. Hence, a *continuum of ownership* can be considered to be present within the distribution of produce derived under Aristotle's ownership type.

After this description of Aristotle's ownership, there remains an element of contradiction which requires an assumption to be made. One should be independent, own private property and cater for one's own needs as much as is practicable: but then one is expected to be generous. If one is only catering for one's own needs with enough to engage in 'natural' exchange, then one may not have any surplus to be generous with. Either one would have to budget for a potential shared portion or one would only be generous with an accidental surplus. Here, it is assumed that the property owner would produce more than needed for personal usage and it is from this surplus that generous donations would be given.

Moving Aristotle's ownership type to the desert island, we may assume that Powerful owns the hydrothermal vent and as a person owning the means of production she would be expect to be generous with her produce. However, Powerless would be expected to put her resources to good use and generate other varieties of renewable energy wherever possible, such as solar power; and if this was not possible then she would be expected to put her holdings to good use and produce some goods in exchange for energy.

With individuals owning their own property, there may be instances where the *continuum of ownership* is exercised over produce. For example, if Powerless could normally live via solar power, then in an extraordinary spell of overcast weather she

could reasonably expect to plug into Powerful's energy and use the hydrothermal energy moderately until sunny weather resumed. Hence, in this way, an Aristotelian ownership type can be considered to be a type of distributed ownership.

Overall, Aristotle's ownership type when applied to hydrothermal energy may be defined thus:

1. Individuals comprise a virtuously habituated self.
2. Individuals may own property including hydrothermal energy.
3. Individuals may own enough renewable energy to allow them to live virtuous lives.
4. In addition to their own needs, individuals should harness enough renewable energy to share with others who are in need of energy.

Individuals are free to generate renewable energy to allow them to live a virtuous life, which would include generating energy to share with others in need.

4.3.2 Aristotle: Internal Criticism

The application of Aristotle's work to renewable energy may generate some seemingly internal contradictions. It has already been described how its application should lead to the moderate ownership of assets, which in turn allows enough production of goods, to allow one to live a virtuous life and be generous. However, with regard to energy, there are factors that may alter this concept. The comfort provided by increasing energy usage is likely to encourage increasing energy production and thereby redefine any notions of moderate usage.[202] To demonstrate, even if one used the same *proportion* of energy available, usage would increase in terms of any fixed measure in an environment of increasing energy generation. The moderate usage of energy should be recognised as an 'elastic' concept in a likely environment of increasing energy availability.

[202] See 1.3.3 'The Desirability of Increasing Energy Usage'.

4.3.3 Aristotle: External Criticism

Those that would criticise Aristotelians for not upholding the individual's rights, namely the espousers of private ownership and liberals, would be expected to raise less criticism due to the individualistic nature of Aristotle's ownership type. That said, the espousers of self-ownership such as the Nozickians would maintain that one should only distribute goods to the areas one chooses, and the fact that some produce could be taken by another would violate this principle.[203] Now, if an individual had truly donated charitably to another, then this would be a satisfactory arrangement for the Nozickian; but the problem here is that there is an overwhelming expectation of sharing and donation within a virtuous society. The Aristotelian would respond that habituation guides you in this respect and the donor would not suffer in any way when engaging in virtuous distribution. The counter to the Nozickian claim therefore rests upon the widespread existence of a virtuous mindset and this would further trouble the Nozickian: as the acquisition of such a mindset from a Nozickian viewpoint, would treat individuals as 'means'; with the ultimate 'end' being the establishment of a virtuous society.[204]

However, the concept of a virtuous mindset would trouble a wider range of political philosophies than Nozickians as it would result in individuals tempering their own level of welfare. Opposition to this would come from the left-libertarian who would wish to see individuals given an equal opportunity to obtain their own *personal* level of welfare and this would clash with the notion of societally influenced moderation.[205] A problem for the Marxist would be that a virtuous life does not give 'to each according to their needs': many may be expected to settle for a moderate lifestyle

[203] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[204] See 3.2.1'Nozick's Philosophy Defined and Applied' for his view on rights and constraints.
[205] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.

below the level of their 'needs'.[206] Additionally, the advocate of the capabilities approach would wish for all to be able to function in a liberal society and this would require a greater proportion of goods to be redistributed.[207] Hence, for some, a reviled aspect of the virtuous life portrayed here would be that all would be forced to accept a moderate living when they may wish for more out of life.

In response, once more, the Aristotelian would expect that the presence of a virtuous mindset would mean that all would wish for a moderate existence and therefore no one would experience great suffering due to their level of material wealth. However, it has already been noted that moderation is likely to be an elastic concept where energy is concerned, and persons are likely to produce energy in increasing quantities whilst still purporting to uphold the virtue of moderation.[208] Therefore, this notion may mitigate claims that individuals would not have their welfare satisfied; it would also expect to mitigate claims of liberals such as Rawlsians who may claim that there is not enough economic growth in a virtuous society.

However, Rawlsians may also advance that the habituation process would be considered to constrain a person's freedom as they would not have the full ability to choose 'goods';[209] the liberal would maintain that individuals potentially have these faculties and their exercise gives a person a greater self-understanding and the ability to know which goods suit them. In reply, the Aristotelian may add that the individual would be well aware which goods suit them through the natural exchange necessary to live a virtuous life. Furthermore, the Aristotelian may respond that the individual would be well versed in deliberation and an example of this would occur when considering how much energy to donate to the needy; this type of deliberation would also lead to a

[206] See 5.1.1 'A Marxist Philosophy Defined and Applied'. The Marxist may see other strata of society that could be equally unhappy such as those who would wish to give according to their 'abilities', as the moderate lifestyle required of a virtuous society would discourage those with great ability from working at levels that accord with their 'abilities'.
[207] See 5.3.1 'A Capabilities Approach Defined and Applied'.
[208] See 4.3.2 'Aristotle's Internal Criticism'.
[209] See 4.1.3 'Mill's External Criticism' for a definition of Rawls's goods.

different and fuller form of self-understanding whereby the individual would also appreciate their own minimum level of need for goods and their capability to refrain from consuming goods. For the Aristotelian, their way would be superior.

Moving on to look at the utilitarian viewpoint based around the work of Mill, more governmental intervention would be required than is present in the virtuous ownership type: this would be for the purpose of ensuring a natural asset benefitted all and also for controlling the distribution of energy to maximise utility.[210] The utilitarian may also note that Aristotle's mindset is too inflexible to be transferred to distributing energy from larger ventures, such as those that require investors or state-owned ventures, and this would be a disadvantage to a society if such arrangements were ever needed to ensure an energy supply. This would be expected to occur for at least two reasons. Firstly, although individuals may consider that they are acting virtuously, some individuals may take more energy than they need with such actions being masked by an averaging process which makes all appear to take equal shares. Secondly, seemingly abundant supplies of energy may dampen an individual's awareness that they are acting immoderately and they may inadvertently take more energy than they need; especially where it is desirable to use increasing amounts of energy.[211] For example, an enormous hydroelectric dam that constantly produces energy may encourage such excessive energy usage in individuals. Of course the excessive usage could be remedied by the introduction of record keeping, rationing and charging: but such administration negates the Aristotelian spirit where individuals should be responsible for their own actions.

Utilitarians may also query whether individuals would consistently make the correct decisions when enacting distributions. The Rawlsian may join this debate noting that the preferences that benefit oneself may litter any virtuous distribution with inaccuracies and therefore an Aristotelian model cannot produce a fairer distribution

[210] See 4.1.1 'Mill's Philosophy Defined and Applied'.
[211] See 1.3.3 'The Desirability of Increasing Energy Usage'.

than the difference principle.[212] The communitarians would also privilege group judgement over individual judgement when deciding upon distributions of energy and would query whether the concept of individuals deciding upon distributions of goods could be trusted to yield the fairest results.[213] The Aristotelian is likely to respond that the habituation process would be so meticulous as to train persons to give and receive wisely; although this very much depends upon the habituation process being thorough.

Further criticism from communitarians would arise from their promotion of the collective ownership of energy and this would be understood by all members of the community:[214] contrast this with a virtuous society, where only a minority of the energy would be understood as collectively owned. This would be an area where they would ideologically differ.

However, Aristotle's vehement opposition to communal property would also invite questions from the communitarians. Apart from Aristotle's reasons for favouring private property already given above,[215] he felt that private property would allow generosity to be exercised whereby an individual is free to give to friends and the needy, whereas communal property would prevent this (Aristotle 1999: 28). Countering this, the argument has been voiced that the generosity of one individual from communal stock represents the generosity of all (Mayhew 1993: 814); and this would be true where all members of a community agree to this arrangement.

In addition, Aristotle gave three reasons to avoid communally owned property that may be adequately countered by the adoption of community-orientated mindsets. Firstly, he noted that human lives clash already, without having to introduce common property as another layer of potential dispute (Aristotle 1999: 27). Secondly,

[212] See 4.2.1 'Rawls's Philosophy Defined and Applied'.
[213] See 6.1.1 'Hutterite Philosophy Defined and Applied'. This provides an example of the communitarian distribution of energy.
[214] See 6.1.1 'Hutterite Philosophy Defined and Applied'. This provides an example of the communitarian ownership of energy.
[215] See 4.3.1 'Aristotle's Philosophy Defined and Applied'.

communally owned property discouraged persons taking pride in property, as they presume that another would be available to maintain the property in their stead (Aristotle 1999: 24-5). Thirdly, Aristotle considered it a natural instinct to put one's own interests first by owning property, provided one did not act selfishly (Aristotle 1999: 27); therefore, one would be prevented from exercising this instinct under communal ownership.

However, a shared mindset as found in communitarian settlements could teach people to be tolerant of disagreements, take a pride in collective achievements and act selflessly.[216] Furthermore, all members of a community could share energy produced and where all realised it was in their own interest to use the energy virtuously, they may do so. Due to the small scale of communities, an individual could be reasonably expected to assess how much energy was present in total, how much they needed and how much the others would need; hence their drawing upon the resource can feasibly be expected to be virtuous. Overall, strong counters to Aristotle's reasons for entwining the private ownership of property and a virtuous distribution may be found: therefore a virtuous distribution could feasibly occur in communities with communal ownership of the means of production.

That said, the operation of a virtuous distribution with communally-owned property may occur within various incidents in a greater society. To demonstrate: a group of farmers may jointly purchase an anaerobic digester powered by their livestocks' slurry; or a village lying next to a river may jointly purchase a hydroelectric turbine; or the inhabitants of a tower block may jointly purchase solar panels. This would be possible where the participants took enough energy for their own needs whilst considering both the needs of others within the total amount of energy available. Here

[216] See 6.1.1 'Hutterite Philosophy Defined and Applied'. The Hutterites provide an example of a community which tackle Aristotle's concerns.

only an ethos,[217] as opposed to a mindset, would be expected to operate as renewable energy ownership would be part of an agreement that all participants had voluntarily joined.

4.4 The Evaluation of Distributed Ownership

The question posed at the beginning of this chapter may now be answered; *why should some energy generated by an individual be redistributed to another?* The answer is quite simply that according to some political philosophies, the distribution of energy within society promises to yield a better society for all.

The variant of utilitarianism presented here, based upon the work of John Stuart Mill would answer this question by promoting situations that increase overall utility. Renewable energy should be shared by redistributing energy to both the state as an effective management fee and to those who cannot produce energy themselves. However, actual energy producers would be rewarded with the majority of the fruits of their labour so they would not lose the incentive to produce energy that may occur where too much energy is redistributed.

The type of utilitarianism described here requires much monitoring and administration to maximise utility. Now this may appear initially to be a drawback and an extra cost to the ownership type. However, this type of distributed ownership may prove to be very alluring to those societies that wish to directly control both economics and the levels of equality.

This review of the Millian ownership type has revealed that its continuance would rest upon the notion of ethos, whereby the majority would understand the importance of structuring society to attain the *maximum good for the maximum number of people.* The notion of ethos has been used to defend Millian ownership against both

[217] See 1.3.4 'Mindset and Ethos' for their definitions.

internal and external criticism and if it was not present, then the ownership type is likely to be replaced by another.

Looking at the Rawlsian model, it would also depend upon a unifying ethos to be present to fend off criticisms that it supports an unequal society. To recap, with Rawls, the distribution of energy ensures that the position of the most disadvantaged sectors of society is tolerable; whilst the producers of the energy retain the majority of the fruits of their labour to act as an incentive for continued production. Economic growth would be expected from a Rawlsian based economy with the more capable individuals pursuing their own ends to materially benefit themselves, which should create wealth for all strata in society. However, such growth is premised upon the most able wishing to continually benefit themselves and this may not be the case where they have accumulated holdings and may opt for economic stability over growth. As strata-based antagonisms may remain, many left-leaning schools of political philosophy would fear societal upheaval.

For the Aristotelian, the distribution of energy would be decided by individuals as energy would transfer from the harnessers to those without energy. Many schools of political philosophy would query whether individual decision-making is as effective as group decision-making as individuals may make erroneous decisions. A defence against this sort of criticism is that individuals would adhere to the same mindset acquired through an habituating upbringing and would therefore not make erroneous decisions; although this is contingent upon the habituation process being flawless. However, this review of Aristotle's ownership type would reveal that a shared mindset would only be suitable for smaller ventures energy generating schemes and unlikely to provide a virtuous distribution of energy in larger ventures in greater society.

Furthermore, Aristotle was adamant that property should be privately owned when a virtuous distribution *could* be enacted within a community with communally

owned property. Additionally, within greater society it is possible that groups of persons could share the ownership of smaller energy generating schemes and enact a virtuous distribution of energy provided all members of this group shared the same ethos.

Now all three ownership types described in this chapter accept that the product of energy should be distributed within society. However, should a society feel the need to introduce a greater element of egalitarianism then examples of other ownership types are presented in the next chapter entitled ‘Egalitarian Ownership’.

5 Egalitarian Ownership

From the fourth chapter, it was noted that distributed ownership types may contain an element of egalitarianism when renewable energy is distributed in society. However, where individuals own the means of production, inequality in holdings of energy are very likely to remain with the owner of the means of production usually retaining the majority of the energy. In the case of the Rawlsian ownership type, the owner would retain the majority of energy as an incentive to continue production; and in a virtuous ownership type the owner would privilege their own energy needs. It is only in the ownership type based upon the work of J S Mill, where the state may own the means of production that truly equal redistribution *could* occur. However, as the whole point of utilitarianism, of which Mill's ownership type may be considered a variant, is to maximise utility, egalitarianism is not guaranteed.

Now, if a society wished to rid itself of inequality it may choose egalitarian distributions of energy to assist in this task. The three following sections look at different ownership types that enshrine a type of egalitarian distribution and these are demonstrated upon the thought experiment of the desert island. Firstly, distributions of energy are guided by an interpretation of the work of Karl Marx where individuals may take according to their 'needs' and give according to their 'abilities'. Secondly, a situation based upon the work of Jean-Jacques Rousseau is described where individuals' situations are approximately equalised with regard to the ownership of renewable energy and this is referred to here as an 'equality of condition'. Thirdly, a capabilities approach is employed and this is based upon the work of Amartya Sen and Elizabeth Anderson. Here, individuals are provided with the resources to function equally in a liberal society and are thereby given an 'equality of opportunity'. Hence, this chapter will attempt to answer the question, *why should society adopt an egalitarian ownership type for renewable energy?*

5.1 Marxism

5.1.1 A Marxist Philosophy Defined and Applied

In previous sections, it may be noted that the means of production are often privately owned and the owner may employ others to work upon their property. This was largely the situation with industry in the nineteenth-century. However, according to some alive at the time, such as Karl Marx, the inherent clash of interests in the arrangement would cause the *status quo* to be overthrown: a class of persons owning the means of production and protecting their interests would be pitted against an increasingly organised working class also protecting their interests; and this would inevitably result in workers revolting (Marx [1867] 1976: 929). After this, the aim of the workers would be to collectivise and control production (Marx [1875] 1983d: 536-8); and such cooperation would eventually lead to a state of shared material abundance where work became a *desideratum* and not a waged arrangement. In the end, society would distribute resources by the maxim 'From each according to his ability, to each according to his needs!' (Marx [1875] 1983d: 540-1).

For many Marxists, two underlying causes of dissatisfaction would fuel the above process, namely exploitation and alienation. Exploitation may be identified when workers have been paid for less than the value of their work. For instance, when a worker's labour adds value to a product, but the employer pays wages at less than the added value and retains the 'surplus-value'.[218]

However, Marxists would insist that a process of alienation is also active in liberal economies. Much of Marx's views come from the manuscript 'Alienated Labour' which was written in 1844. An interpretation of his thoughts concerning alienation, are presented here.

[218] An example of this process is demonstrated arithmetically in *Capital* (Marx [1867] 1976: 975-8); although Marx ends the exposition by equating 'surplus-value' with 'the appropriation of unpaid labour' (Marx [1867] 1976: 978).

Alienation is manifested when, in order to earn a living, persons work in roles, or produce goods, that are of little use or interest to them. For instance, Marx noted that in his time, many worked upon others' projects in order to earn a living and therefore the act of production was alienating (Marx [1844] 1983a: 136). Moreover, humanity became alienated from its *raison d'être* as Marx believed the essence of humanity was to work upon nature in order to forge a world in which to live: and this process is denied when alienating labour dominates a person's life (Marx [1844] 1983a: 139-140).

When applying Marx to generating renewable energy on the desert island, a specific arrangement of Marx's work is needed and many assumptions must be made.[219] For instance, the harnessing plant and hydrothermal energy would become collectivised assets within a decision-making collective. Harnessing hydrothermal energy would provide an act of working upon nature in order to forge an environment suitable for humanity. These are Marxist tenets that could be easily fulfilled.

However, other Marxist principles may need further explanation. For instance, the inhabitants would work according to their 'abilities' and take according to their 'needs'. Furthermore, the work should not be alienating and no exploitation should be present. The realisation of these attributes is explained in more detail in the following paragraphs.

Now, as already noted, the final stage of a Marxist society would be characterised by individuals contributing according to their 'abilities'. But how would this be realised upon a desert island? Marx noted that people have no choice but to work to secure their own subsistence in a variety of nature's environments (Marx [1845] 1940: 7), therefore *some* work must be required of an individual to ensure their subsistence. This may be considered the amount of work required to sustain the individual but may also be expected to include a contribution to societal needs, such as

[219] In common with many interpretations of Marx, various documents published both within and after his lifetime are drawn upon for this purpose.

support for the infirm. Hence, a minimum amount of work would be expected from an individual which would be expected to provide for more that the individual's bare minimum of subsistence. Then the question arises as to how this greater level of endeavour be achieved? Here it is accepted that an ethos supporting persons working to their 'abilities' would be introduced with the acceptance of a Marxist ownership type.[220]

But the question remains as to how persons would take according to their 'needs'. In *Capital* Marx noted that 'needs' are boundless but paradoxically they may also be limited. He wrote that man 'is distinguished from all other animals by the limitless and flexible nature of his needs' but also 'is able to restrict his needs to the same unbelievable degree' (Marx [1867] 1976: 1068). If it is accepted that 'needs' may be limited, then on the island a person's requirement for energy may be limited by the amount of energy available. This understanding of 'needs' is also expected to be supported by the ethos accompanying the Marxist ownership type.

Immediately, such a limitation of 'needs' may seem like an impossible task when it has already been noted in the introduction that energy distributions entail a *desirability of increasing usage* and its production is likely to increase to allow for more comfort in life.[221] However, it would depend upon the consensus of the island whether more energy was needed or the island should live within its means; and if the consensus decided that more energy was required, then individuals may be expected to increase the minimum amount of energy they produce when they work to their 'abilities'.

With regard to alienation, as the islanders are direct beneficiaries of their harnessed energy, then it could be argued that alienation is not present. Furthermore, it has already been noted that people have had no choice but to work to secure their own subsistence in a variety of nature's environments (Marx [1845] 1940: 7), therefore some work, however unpalatable must be required of an individual to ensure their subsistence.

[220] Please 1.3.4 'Mindset and Ethos' for a definition of an ethos.
[221] Please 1.3.3 'The Desirability of Increasing Energy Usage'.

At this point, the observer may ask, is exploitation occurring? Is surplus-value being created by the diligent and talented which is then redistributed amongst the less endowed? Here it is accepted that surplus-value functions to maintain equality between individuals and this is understood as part of the ethos accompanying the introduction of the Marxist ownership type.[222]

The ownership type for this interpretation of Marxism on the desert island may look as follows:

1. Individuals are independent agents and own their skills and labour.
2. Hydrothermal energy and the means of production are collective assets.
3. Individuals work according to their 'abilities'.
4. Individuals receive shares of renewable energy commensurate with their 'needs'.

Individuals receive shares of renewable energy commensurate with their 'needs' and work to their level of 'ability' to ensure this.

5.1.2 Marxism: Internal Criticism

Now the observer may ask, where is the equality in the arrangement? A situation may arise where those who are capable of working long hours receive less remuneration than those who have worked for their bare subsistence or even the infirm who cannot work. Well the answer is that first, there would be equality in the ownership of the means of production as all can be expected to have a share in the collective. Secondly, persons would be equally exercising their 'abilities' and equality would exist when individual

[222] For some observers, within Marxism any taxation to assist the infirm may be viewed as exploitation (Kymlicka 2002: 180). However, some observers feel that Marxism may require a transfer of surplus-value to improve the lives of those most in need (Kymlicka 2002: 180-1); or remedy undeserved inequalities in wealth or talent, which may be considered the main causes of exploitation (Kymlicka 2002: 183-4).

'needs' are met. It is assumed that the islanders' ethos would uphold this type of equality.

However, once a collectivised plant had been instituted it may be difficult to withdraw from the arrangement. It is feasible that if one party found working within the island's Marxist ownership type to be unenjoyable then they may wish to return to their previous arrangement where they worked upon their own side of the island. For example, on the island, should Powerless decide to return to her former status, and Powerful be unwilling to release Powerless's share of the plant, then Powerless has effectively lost the value of her share of the collectivised plant if she quits. Hence, Powerful has exercised a veto and Powerless may decide to continue with the agreement feeling that she would lose too much of her accumulated contribution even though the arrangement may now be alienating to her.

In greater society it could be argued that this would not be a problem as an individual could leave an arrangement and another could take their place. However, problems may be caused where a group wishes to withdraw from an arrangement and it has been noted that minorities are forced to go along with the choice of the majority when it is impractical to withdraw their stake in society (Kymlicka 2002: 186). However, the aggregate unhappiness could result in the unhappy few spoiling the agreement of the majority.

Additionally, the concept of work becoming a *desideratum* may not be the Holy Grail that it initially seems, according to liberal commentator Will Kymlicka. For instance, if work became so engrossing, it would damage society by competing for the attention of other interests such as relationships with family and friends: therefore work as a *desideratum* cannot be an 'overriding good' and is potentially morally wrong (Kymlicka 2002: 192). For example, on the island, if both parties found energy generation to be engrossing they may neglect the production of other goods making the

ownership type less efficacious in providing a viable society. The Marxist may retort that human beings contain a variety of interests that require nourishing as humanity's essence requires the redesigning of surrounding 'nature' (Marx [1844] 1983a: 139-40). As 'nature' is varied, humanity's need to exercise its own essence will therefore be varied and one interest should never dominate a person's life. Hence, human beings have an inbuilt control mechanism that would provide balance in society.

Furthermore, a review of the Marxist ownership type on the island may highlight a dilemma between Marxist working arrangements and Marxist ends. For instance, the general consensus may require more energy to be produced.[223] However, more energy may be more efficiently achieved by the introduction of a different energy generating plant. But where working upon the hydrothermal plant, via the current arrangement, has already become a *desideratum* for one or more of the islanders, then the introduction of more efficient energy generating plant would be opposed; and the upshot may be that the ultimate state of abundance with regard to energy would not be achieved. Here the Marxist may respond that the consensus would decide upon one option or the other and a society containing the options that citizens valued most would arise.

Some may be expected to take issue with persons giving according to 'abilities' and taking according to 'needs' *prior* to industrialisation; after all the maxim concerning 'needs' and 'abilities' was only expected to operate when a state of abundance had been realised. They would question whether a guiding ethos that encouraged persons to work to their level of 'ability' whilst limiting a person's 'need' for energy would be successful as a device to distribute energy. It is true that the distribution described is often associated with types of socialism that maintain that individuals have moderate 'needs' (Pepper 1993: 146), but here it is assumed to be a viable option for the island

[223] See 5.1.1 'A Marxist Philosophy Defined and Applied' for a discussion of 'needs'.

where a resource is unlimited and inexhaustible,[224] as in the case of hydrothermal energy. To explain, much of the 'work' in creating energy has already been achieved by the Earth as the water is already heated when it escapes as steam on the Earth's surface and it is a bounty that merely requires harnessing. It therefore does not require as much effort to secure as resources such as food, clothing or shelter. It allows persons to work more to their 'abilities' rather than to a level of exertion. Furthermore, safe in the knowledge that the resource will always be present there would be no necessity for individuals to scramble to gain a share of the resource. Under the overarching ethos, all persons could take their immediate 'needs' defined by the amount of energy available in total. Hence, it can be expected that the maxim concerning 'needs' and 'abilities' may be introduced for renewable energy relatively early in the development of a society prior to industrialisation.

5.1.3 Marxism: External Criticism

Overall, the espousers of liberalism and private ownership would feel that the individual's rights had been infringed. In particular, the mechanism of limiting a person's 'needs' whereby society effectively determines how much energy is required by individuals would be considered far too restricting upon a person.[225]

However, the Marxist may consider this criticism to be irrelevant where all live a fulfilled life under the auspices of an ethos that supports collectivisation. In addition, the Marxist may retort that a superior set of rights have been instituted as the uneven bargaining power between employer and employee has now been eradicated. Using the island as an example, the Marxist may retort that Powerless is now in a better bargaining position than in, for instance, a liberal society where Powerful as the owner

[224] See 1.3.1 'Energy Types' for a definition of an unlimited energy supply.
[225] As examples, see 3.2.1 'Nozick's Philosophy Defined and Applied' for an example of rights under a private ownership type and 4.2.1 'Rawls's Philosophy Defined and Applied' for an example of liberal rights.

of the means of production, could more easily define the terms and conditions of Powerless's employment; should Powerless wish to work in harnessing hydrothermal energy. Now, within the spirit of making the workplace less exploitative and alienating, Powerless could be better rewarded materially and could also negotiate to learn more skills. Hence, both sides would disagree concerning what actually constituted rights.

However, the most decisive criticism from the private ownership camp may originate from Nozick's criticism that socialised systems can be particularly susceptible to disruption when one person decides to work for another in order to gain goods that a socialist society may not provide (Nozick 1974: 162-3). In a Marxist society this could occur as Marxism should allow individuals the freedom to work *where* they liked, especially when work should become a *desideratum* under a state of shared material abundance. This would be facilitated by Marxist societies allowing the existence of 'personal property': however the concept of personal property needs explaining. The distinction between personal property and private property is noted in the *Manifesto of the Communist Party* where private property accumulates from the profits from exploited labour and an allusion is made to it being viable for collectivisation due to it containing a 'social' element (Marx [1848] 1983b: 220): personal property differs as it is gained through a person's own effort, is 'self-earned' and therefore exempt from collectivisation (Marx [1848] 1983b: 219-220).

On the island the Marxist ownership type may be subverted in the following way. Powerful may decide to invest her personal property in the development of solar power and she may employ Powerless to do some labouring. Now the Marxist may fear that Powerless will be exploited and alienated by working for Powerful. However, if Powerful pays Powerless the full value of her work she has not been exploited; and if Powerless finds the work more fulfilling than working on the hydrothermal plant, then she has not been alienated. Effectively, a privately owned business can exist apart from

the collectivised plant and this has originated from a combination of allowing both personal property and choice in personal working arrangements. The upshot could be that collectivised hydrothermal production is discarded.

Differing criticisms would come from utilitarians who would query why alienation and exploitation should be condemned. An instance where this would occur would be when everybody's rights were respected to the extent that alienation and exploitation only occurred within a minor part of person's life; *and* everybody received a share of energy above that calculated as resulting from a Marxist ownership type. However, as the returns from exploitative or alienating work may cause more fulfilment via the extra energy and goods it provides,[226] then there is a strong argument for at least relaxing Marxist ideals.

But how could Marxist ideals be relaxed? The desert island provides an example of where this may occur. It is possible that the collectivised plant could abandon the ideal of work as a *desideratum* and pay differing shares of energy; for example, the most alienating work could attract the greatest share of energy. In fact Marx condoned wage differentials based upon skill and effort in an embryonic communist state developing from capitalism: in his *Critique of the Gotha Program*, he felt it would be necessary for work to be paid according to both skills employed and time spent working in the early stages of realising his vision (Marx [1875] 1983d: 539-540). Now, although the remuneration would evoke liberal arrangements, the property of the plant would stay collectivised and a measure of democratic egalitarianism would remain with each islander taking part in deciding future policy. Now, should exploitation or alienation become too dominant a force, then the collective could always decide to limit the ways in which these manifest themselves. Hence, utilitarian-based criticisms of this nature are

[226] See 4.1.3 'Mill: External Criticism' for Alan Ryan's defence of utilitarian influenced liberalism where workers find alienating work acceptable due to the material benefits it provides.

forceful and the Marxist ownership type would only withstand them where the consensus valued egalitarianism over economic growth.

Looking from the communitarians' point of view, they may appreciate Marx's ideals in collectivising ventures but may not be as appreciative of the aim of yielding a state of abundance as such an economic priority would not be important to communitarians. Furthermore, communitarians would see too much active individualism residing in the Marxist society, possibly as a hangover from the liberalism that precipitated it. More decisions concerning where a person would work, generally related to their 'abilities' would be decided communally; as would the distributions of energy.[227]

Here it is interesting as although the municipalist follower of Murray Bookchin would distribute energy according to 'needs' and therefore be expected to share some agreement with Marxism on this point,[228] a stern warning would be issued by the municipalist regarding the Marxist attitude to using nature: the municipalist would wish for more environmental concern to be exercised and this would require working within nature rather than consciously shaping nature.[229] Possibly, bearing in mind the flexibility of 'needs',[230] which may include the requirement for a healthy environment, the Marxist may offer that nature should be taken into account when generating energy so that environmental degradation does not occur: however, for the municipalist, communities should always live harmoniously within nature.

[227] See 6.2.1 'Owen's Philosophy Defined and Applied' as an example.
[228] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[229] See 6.3.1 'Bookchin's Philosophy Defined and Applied' for Bookchin's view on environmentalism.
[230] See 5.1.1 'A Marxist Philosophy Defined and Applied'.

5.2 Rousseau

5.2.1 Rousseau's Philosophy Defined and Applied

Jean-Jacques Rousseau was critical of eighteenth-century society and he lamented society's inherent unfairness in his *Social Contract* and the *Discourse on the Origins of Inequality*. He noted that men would be more equal in a state of nature where they lived similar lifestyles than in a society where the social institutions exaggerated natural inequalities in physicality or intelligence (Rousseau [1755] 2004: 80). To remedy this, it should be society's goal to ensure that each individual's needs are met as 'Every man has naturally a right to every thing he needs' (Rousseau [1762] 2004: 197). Furthermore, when envisaging his view of the future, Rousseau wrote, 'no one will ever be wealthy enough to buy another, and none poor enough to be forced to sell himself' (Rousseau [1762] 2004: 225).

Rousseau applied much conjecture in explaining how the then current state of affairs had come about when delving into history. For instance, he posited that persons had enjoyed much freedom in a state of nature but had become accustomed to servitude in civilisation (Rousseau 1755: 102-3). In part this was due to the convenience living in a society offered (Rousseau 1755: 88). But furthermore, via multiple stages of society's evolution, an advantaged class of persons had manipulated the less advantaged, using contrivances such as civil war, to persuade the latter to relinquish their freedom so that inequality was kept in place by fear of a return to a state of war and chaos (Rousseau 1755: 108-9). Hence, the dominated class were prepared to exchange their liberty for increased bondage accompanied by peace resulting in a 'master and slave' relationship (Rousseau 1755: 109). Rousseau set himself the task of providing an alternative by combining the freedom individuals enjoyed in a state of nature whilst retaining the benefits of society (Rousseau [1762] 2004: 191).

However, the rationale and governance behind Rousseau's objective requires explaining. For instance, *all* of the people would assemble in a legitimate governing body (Rousseau [1762] 2004: 264), with the aim of aligning the state's interest and all of the individuals' interests (Rousseau [1762] 2004: 266); and with all citizens equal under a 'social contract' all would collectively define society's future progress (Rousseau [1762] 2004: 269).

Rousseau firmly believed that the alignment of both an individual's personal freedom and the state's interests was attainable; and this confluence of interests is referred to as the 'general will'. Here the concept of the 'general will' is understood as a body of law decided by citizen legislators which represents their common interest. Although a variety of viewpoints may be brought to an assembly, some effectively negate each other and the remaining group of interests comprise the 'general will' (Rousseau [1762] 2004: 203).

For the 'general will' to be realised, Rousseau felt that divisions in society of any sort should be avoided as they would manifest themselves in 'associations' who would distort the process of government to favour themselves (Rousseau [1762] 2004: 203-4). Rousseau also noted that laws impacted differently upon persons with their naturally occurring differences in strength or intelligence, and furthermore, 'bad governments' had designed laws to keep the poor impoverished: hence, law should therefore be constructed to equalize people (Rousseau [1762] 2004: 199). It is accepted here that individuals would be provided with an equality of condition to prevent groupings of similar interests arising. Hence, persons with differing abilities would be granted differing holdings: the most able would require the least resources whilst the least able would require the most resources.

On initially applying Rousseau's work to the desert island, there are four effective provisos that need to be applied and they originate from Rousseau's view of

land usage. Firstly, land should not have been previously owned (Rousseau [1762] 2004: 197). Here, relocating this consideration to the realms of hydrothermal energy generation, it can be assumed that energy-generating equipment and plant are acquired by the individual legally. Secondly, following the spirit of the proviso that 'a man must occupy only the amount he needs for his subsistence' (Rousseau [1762] 2004: 197), individuals would only need enough production capacity to ensure their own 'subsistence' and this is accepted as amounting to a standard of living that would be decided by the assembly and would require differing amounts of energy for differing individuals. Thirdly, labouring upon the land, or in this case harnessing one's own energy, would strengthen legal title (Rousseau [1762] 2004: 197).

Fourthly, it has already been noted that the operation of the 'general will' would require the state to ensure that inequalities should not occur. Inequalities in energy supply would be adjusted by state redistribution as 'the right which each individual has to his own estate is always subordinate to the right which the community has over all' (Rousseau [1762] 2004: 199). But Rousseau further acknowledged that legislation should repeatedly monitor individuals' assets as the differing strengths and weaknesses of individuals would continue to cause inequality: Rousseau wrote, 'it is precisely because the force of circumstances tends continually to destroy equality that the force of legislation should tend to its maintenance' (Rousseau [1762] 2004: 225). Hence, in this way, the state would also monitor the level of 'subsistence' and adjust an individual's holdings or energy generated to maintain this condition.

In order to construct an ownership type for hydrothermal energy on a desert island, immediately the inhabitants of the island would have to institute an assembly to define the concept of 'subsistence' and decide the exact proportion of energy to be owned by each individual. For instance, if one inhabitant decided to build an enormous plant to benefit from the limitless hydrothermal power, she would only be allowed to

benefit from this to a certain extent lest she became too enriched. That said, a person's holdings would be adjusted to accommodate any natural disadvantage to obtain an equality of condition: as an example, if Powerless had suffered from arthritis due to formerly living on the colder side of the island, then the assembly could feasibly allow her to keep warmer by supplementing her energy needs with a larger plant. It would be understood that some individuals such as the infirm may need more initial resources and differing levels of award would be acceptable, provided that this offset their disability rather than enriching them.

Also following Rousseau's emphasis on individual ownership, it is likely that the island would be split on a north-south divide and each inhabitant would be able to construct a plant in the westerly part of their holdings. Finally, it is also accepted here that a certain shared ethos would develop in society due to the combination of equal voting rights in an assembly and the presence of an equality of condition.[231] Hence, a common understanding of society's aims and purpose would be expected to emerge.

The above could be applied to owning hydrothermal energy and an ownership type could be structured:

1. Individuals are independent agents, as in a state of nature.
2. Individuals own an allotment of hydrothermal energy and the accompanying harnessing equipment.
3. Individuals own renewable energy after using their labour and harnessing equipment to harness it.
4. Individuals own enough renewable energy to allow their subsistence.
5. The state reserves the right to redistribute energy or the means of production, to ensure all individuals have enough energy for their subsistence.

Individuals are free to generate and own an amount of energy defined by the state.

[231] See 1.3.4 'Mindset and Ethos' for a definition of *ethos*.

5.2.2 Rousseau: Internal Criticism

Now the larger a society becomes, there will be less chance of all citizens attending an assembly, and less chance of obtaining a true 'general will'. As self-rule by all citizens is therefore impractical, Rousseau later resorted to recommending the election of 'representatives' in his *Considerations on the Government of Poland*: provided representatives were elected frequently and they were forced to observe the law, then any anticipated corruption would be minimised (Rousseau 1772: 16-7).

The *Social Contract* and the *Discourse on the Origins of Inequality* may also be noted for not emphasising the needs of the most infirm as a subject of attention. This may be considered an important consideration, as the most infirm under the ownership type described above, may require an inordinate amount of resources to attain the assembly's defined level of subsistence. This may prove to be impractical to award where it means that the able bodied would not have enough resources to subsist and therefore provides a dilemma as the spirit of Rousseau is that all should be both independent and have an equality of condition. However, *Considerations on the Government of Poland* gives guidance on charitable giving: 'The needs of hard-pressed families, of the disabled, of widows and orphans, would be considered in detail, and would be proportionately met from a fund formed by voluntary contributions from the well-to-do people of the province' (Rousseau 1772: 44). Hence, the assembly may decide that the most infirm should be supported and given that there would be no 'well-to-do' persons in the ownership type described, they may even decide upon a scheme of taxation where the ablest donate a small amount of energy to the most infirm. This would not necessarily infringe the rights of citizens as the state would retain a right to redistribute energy.

5.2.3 Rousseau: External Criticism

Turning to criticisms from espousers of private ownership, Lockeans and Nozickians can be expected to lament the loss of rights to self-determinations.[232]The advocate of Rousseau would bring the private ownership enthusiasts' attention to their view that the practice of self-determination by the most able has previously effectively enslaved the less talented. Hence, a new type of freedom has emerged with the less able freer to express a greater level of self-determination.

In particular, the left-libertarians may find the notions of 'subsistence' and the 'general will' irksome as they would prevent the individual from being able to gain their own personal level of welfare.[233] The advocate of Rousseau may note that the presence of an ethos that would allow widespread contentment without the need to attain excessive material goods would negate the need for individuals to pursue their own level of welfare. Here the two sides would agree to differ on energy distribution based upon their different conceptions of the welfare of individuals.

At this point it should be noted that a varied group of political philosophies would be concerned that Rousseau's ownership type does not offer economic growth. For instance, liberals such as Rawlsians would be concerned that the islanders would be disincentivised to be productive where they were expected to be satisfied by subsisting.[234] In reply, the advocate of Rousseau may retort that if it was the 'general will' to produce more energy and more goods, then this situation would be realised; this could be achieved if the assembly collectively decided to materially increase the amount of goods that defined the notion of 'subsistence'. The collective ethos behind

[232] See 3.1.1 'Locke's Philosophy Defined and Applied' and 3.2.1 'Nozick's Philosophy Defined and Applied'.
[233] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[234] See 4.2.1' Rawls Philosophy Defined and Applied' for an explanation of the importance he placed upon the incentives entailed by the 'difference principle'.

Rousseau's ownership type could therefore provide a strong response to those desiring economic growth.

At this point the advocates of utilitarianism would argue that Rousseau's ownership type would leave much to be desired. Now should the situation occur where utility would need to be maximised by generating the maximum amount of energy, and this is a realistic scenario as it has already been noted that the islanders wish for more energy and goods,[235] then even if the 'general will' dictated that energy should be maximised by individuals, the utilitarian would note that maintaining individual energy generators loses the opportunity to benefit from economies of scale and the specialisation of roles. Mill would solve this particular problem by placing the ownership of the Means of Production in the hands of those who would be the most productive.[236] However, Rousseau's society would collectively decry a rise in production that could allow vast disparity in holdings between individuals and equality would be valued over maximising energy output. Hence, the utilitarian method would not be accepted and the ideal of maximising energy production would be forsaken.

A further critic of the a shortfall in material growth would be the Marxist who may note that Rousseau's ownership type would lack a device to allow the accumulation of resources needed to allow work to become a *desideratum* whereby all give according to their 'abilities' and take according to their 'needs'.[237] The target of subsistence would risk leaving work as unsophisticated toil whereby people may work hard but only receive relatively modest rewards in comparison with Marxist expectations.

There may be a defence to this claim for the espouser of Rousseau based around Marx's own theorising. As Marx criticised utilitarianism for privileging increased

[235] See 1.2.3 'The Desert Island Thought Experiment'.
[236] See 4.1.1 'Mill's Philosophy Defined and Applied'.
[237] See 5.1.1 'A Marxist Philosophy Defined and Applied' for an explanation of how work may become a *desideratum.*

production over contentment in society where it failed to value the individual's activities and was only capable of witnessing the greater utility generated (Marx [1845] 1976: 436-7). In a similar vein, criticism may be aimed at Marxism's own need for material accumulation. To explain, where an overriding ethos means that individuals appreciate fulfilling their own 'subsistence' over any notion of accumulating resources, a content society may arise with very little material goods. Accepting this line of thought would make the Marxist condition of abundance an irrelevance.

A further Marxist criticism that the communitarians may share is that individuals working towards their own needs discourages cooperation.[238] Potentially, each individual would operate within their own sphere, only coming to the call of the community when summoned by an assembly. The defence of the enjoining ethos would be brought forth again whereby active citizens, looking after their own interest would also understand that they are tending to the collective interest; hence, a different understanding of community would emerge. It may even be argued that in codifying the 'general will' via an assembly a large scale acceptance of the concept of community is enshrined.

However, some support for the Rousseauian may come from the municipalist communitarian, as the focus upon production for 'subsistence' as opposed to rampant materialistic growth would be welcomed. Moreover, as Rousseau's society encourages individuals to take an active role in society's governance, then this would also be condoned. Overall, the municipalist would agree in part with Rousseau's approach.[239]

[238] See 5.1.1 'A Marxist Philosophy Defined and Applied' for an explanation of the importance of cooperation to a Marxist ownership type; See 6.2.1 'Owen's Philosophy Defined and Applied' for an example of the importance of cooperation in a communitarian ownership type.

[239] See 6.3.1 'Bookchin's Philosophy Defined and Applied' for his view on economics, trade and governance.

5.3 Capabilities Approach

5.3.1 A Capabilities Approach Defined and Applied

In his paper 'Equality of What?', Amartya Sen offered the possibility that equality should be measured by an individual's capabilities to carry out certain tasks in life. This was inspired as he witnessed that 'the conversion of goods to capabilities varies from person to person…and the equality of the former may still be far from the equality of the latter' (Sen 1980: 219). This was provided, in part, as a criticism of the then contemporary attempts to provide justice in a liberal society; in particular the work of Rawls and utilitarianism (Sen 1980: 200-2 & 215-6). Sen felt that they were too inaccurate to cater for the individual, as they were based upon groupings of hypothetical individuals in the case of Rawls and whole populations in the case of utilitarianism; furthermore they allowed the disadvantaged to remain in this position. Hence, Sen prescribed an individualistic approach.

Since this time, others have taken up the idea of using capabilities and this process has been concisely described by Ingrid Robeyns (Robeyns 2011). Its flexible nature and widespread use across the humanities, for both normative and analytical purposes, has led to it being labelled the 'capabilities approach'. Robeyns has defined the approach as consisting of 'capabilities' supported by underlying 'functions'; where functions are 'beings' or 'doings' (Robeyns 2011). To explain, the *capability of achieving a healthy life* would need at the very least, to comprise the functions of *being nourished* and *doing exercise*.

The capabilities approach represents a compromise between society's interests and the individual's. To elucidate, the selection of actual capabilities to be supported by society allows for an element of societal control: whilst the individual should be free to choose their own underpinning functions. It should therefore, within society's selection

of actual capabilities, realise an individualistic and diverse approach to equality. However, although some may consider this to be a versatile combination, Robeyns notes that this approach may be unsuitable for those who need their functions chosen on their behalf; and children or dementia sufferers are given as examples (Robeyns 2011).

Elizabeth Anderson, in describing her own egalitarian theory of justice, namely 'Democratic Equality', has provided that individuals should be 'entitled to the capabilities necessary for functioning as an equal citizen in a democratic state' (Anderson 1999: 316). Firstly, people should receive goods due to their equal status:

> Goods must be distributed according to principles and processes that express respect for all. People must not be required to grovel or demean themselves before others as a condition of laying claim to their share of goods. The basis for people's claims to distributed goods is that they are equals, not inferiors, to others (Anderson 1999: 314).

To achieve this, individuals should be entitled to differing amounts of resources to realise their equality:

> What citizens ultimately owe one another is the social conditions of the freedoms people need to function as equal citizens. Because of differences in their internal capacities and social situations, people are not equally able to convert resources into capabilities for functioning. They are therefore entitled to different amounts of resources so that they can enjoy freedom as equals (Anderson 1999: 320).

Additionally, Anderson has noted that the capabilities should be provided throughout a person's life and should not be alienable (Anderson 1999: 318-9).

In interpreting the capabilities approach for the purposes here, many assumptions need to be made and these are now described. Noting that Anderson's viewpoint could work in many types of society, provided that they are *democratic*, it is demonstrated how it would work in a liberal democracy; the political system which Sen originally intended to modify. This approach would expect to gain support from those

agreeing with one prominent capabilities advocate, namely Martha Nussbaum, who has championed the capability entitled 'Control over One's Environment' (Nussbaum 2006: 78), whereby one may enjoy: free political association; free speech; liberal property rights; employment rights equal to others; and also remain free of unwarranted seizure. Additionally, this interpretation of the capabilities approach would also be expected to favour the notion of economic growth as in other liberal societies.[240]

It is also accepted here that if persons are to be considered equal with regards to their claim for goods and if persons are entitled to differing amounts of resources, then a supporting ethos would operate to ensure that both these conditions are satisfied.[241] Accompanying this ethos, it is assumed that a governing body of arbitrators would award individuals their capabilities. With regard to energy, persons would be awarded the *capability to benefit from adequate energy*, where they could not independently acquire this capability. This capability could be underpinned by the functions of: heating the home; lighting the home; cooking; and travelling to and from work etc.

Additionally, as equality is represented by the freedom to 'function as an equal citizen' this interpretation describes an *equality of opportunity*. Furthermore, as the whole spirit of the interpretation of the capabilities approach presented here is to allow a greater amount of persons an equality of opportunity, it is expected that greater numbers of persons would function equally in society. As an example, more of the infirm, with a greater degree of severity, who had previously not engaged fully with society, would be expected to take their place in the workforce.

But how would this manifest itself on the desert island? Well both parties could voluntarily move to accept ownership of renewable energy guided by the capabilities approach and therefore accept its ethos. Powerful could continue to own the hydrothermal plant and produce energy on the westerly side of the island and she would

[240] An example is provided by the Rawlsian ownership type; See 4.2.1 'Rawls's Philosophy Defined and Applied'.
[241] See 1.3.4 'Mindset and Ethos' for a definition of *ethos*.

be free to bequeath her property as she sees fit. However, it would be understood by all parties that energy would be supplied to Powerless if she could not attain her *capability to benefit from adequate energy* from another source, such as solar power.

When moving to the desert island the ownership type would look as follows:

1. Individuals are independent agents with an opportunity to benefit themselves.
2. Individuals may own hydrothermal energy.
3. Individuals own a portion of renewable energy after using their efforts to harness it.
4. Renewable energy will be distributed, via a societally accepted ethos, to ensure that all are provided with the *capability to benefit from adequate energy*.

Persons may accumulate as much energy as they wish provided that society reserves the right to appropriate enough energy to allow all citizens to fulfil a *capability to benefit from adequate energy*.

5.3.2 Capabilities Approach: Internal Criticism

Whatever the purported strengths, there are some general drawbacks to using the capabilities approach. It should be noted that at the time of writing, the capabilities approach is still developing and no particular variant is considered dominant. For instance, Sen has refused to ascribe definite categories of capabilities to the approach as he feels it should be implemented only after employing 'public discussion' and adapting any categories to specific 'social conditions' (Sen 2005: 159-160); which would allow the approach to be introduced differently in different societies. In contrast, Nussbaum describes a list of 10 capabilities under titles such as 'life', 'bodily health', 'bodily integrity' etc. (Nussbaum 2006: 76-8). This is justified by the explanation that capabilities should be applicable to every human being, befitting a theory of

international justice and therefore the capabilities are kept 'abstract' to allow nations to adapt them to their own circumstances (Nussbaum 2006: 78).

However, even when adapting the capabilities approach internationally some difficulties in comparison may arise. For instance, developed nations may consider a basic capability to be receiving an education or access to healthcare, whilst developing nations may only consider the supply of food and clothing; hence, affluent countries may also focus on capabilities 'less necessary for survival' (Robeyns 2011). Bearing this in mind, even within nations, capabilities may vary between cultures as each culture would differ in what it felt was a necessary capability: some cultures may value the capability for religious worship as an example, whilst others may favour the capability to socialise. Hence, the concept of capabilities may not be directly comparable from society to society and even present difficulties when comparing within societies.

Also, many different capabilities with their underlying functions would have to be *aggregated* and then compared to other individuals' aggregates to assess equality (Robeyns 2011). Essentially, different individuals, with different abilities to convert goods to welfare, would therefore require different bundles of capabilities. The process could become very complex.

Even supposing that the above difficulties are solved, the practicalities of introducing the capabilities approach may mean that the extremely infirm need enormous levels of goods to put them into a position where they achieve equality of opportunity. For instance, on the desert island, if Powerless became so infirm that she needed the vast majority of the energy generated by Powerful's plant to enable her to function, then Powerful may tire of supplying the energy and become less productive.[242] Due to the relatively large and constant redistributions of energy within the capabilities

[242] See 4.2.1 'Rawls Philosophy Defined and Applied' for an explanation of the importance he placed upon the incentive of the most talented retaining the majority of their produce as it would benefit society overall.

approach this may be considered to be a risk to its continuance as a viable ownership type.

A further related practical problem may be that if a right to an equality of opportunity is inalienable, and some individuals constantly squander their opportunity to function, then would not he providers of energy, once more tire of supplying the profligate?[243] Hence, it may be more practical to award some individuals a *societally assessed level of welfare*, as a right of being an equal citizen, rather than award them an equality of opportunity; then the capabilities approach would be free to choose the exact capabilities needed by extreme cases.

5.3.3 Capabilities Approach: External Criticism

Similar to the previous critiques from the private ownership camp, the Lockean would see a confounding of natural rights and the Nozickian would see an assault upon self-ownership.[244] In particular, the Nozickian would be quick to underline that the owner of the means of production would effectively surrender her assets for the portions of time that it takes to provide others with the capability to benefit from adequate energy;[245] however, this feeling would be heightened due to the capabilities approach entailing a greater distribution of resources than other ownership types that endorse liberalism.

The supporter of the capabilities approach may say that after an ethos has been introduced, whereby all understand that a high degree of redistribution benefits all, then such vehement opposition would be assuaged: however, the espousers of private

[243]Continued unequal distributions of available goods may cause some persons to become disincentivised. Richard Arneson has noted the 'responsibilities-for-ends' objection which appeals to the notion that persons should be responsible for actions that lie within their own control (Arneson 2007: 493-4). Hence, repeated distributions to give the profligate an *equality of opportunity* may be considered unfair by those who hold this objection.
[244] See 5.1.3 'Marxism: External Criticism' and 5.2.3 'Rousseau: External Criticism'.
[245] See 3.2.1 'Nozick's Philosophy Defined and Applied' for his view on taxation.

ownership may well doubt whether such a strong ethos may be introduced into society and feel that a person's true relationship to their property had been negated.

When compared to the left-libertarian ownership type based upon the work of Otsuka, it may be immediately noted that both may require relatively large transfers of resources and both offer the individual the resources to pursue their ends. However, the redistributions may occur repeatedly in the capabilities approach whereas the left-libertarian would usually require only one major transfer.[246] Hence, the left-libertarian may come to the opinion that the capabilities approach is too complex.

For distributed ownership types such as utilitarianism, awarding individuals the capabilities to give all the equality of opportunity may not maximise utility as much as awarding differing distributions within society. As noted in the external critique of Rousseau, where a society required more energy to maximise utility then the means of production could be placed under the ownership of the most productive party.[247]

Now the supporters of the capabilities approach may respond by saying that the utilitarians have placed too much emphasis upon materialism here. They may argue that attaining a just society lies not with greater production, but with all members of society working and all contributing. More members of society should be exercising their full potential rather than a talented few. This could be achieved by realising that people have differing needs and basing a system of justice on catering for differing needs should be considered superior. The two sides would agree to differ.

Another advocate of distributed ownership would be the Aristotelian who would be concerned that governments would decide upon how much to redistribute with the result that the individual does not learn how to behave charitably. Furthermore, those who receive alms may not learn to take modestly and become dependent upon others.[248]

---

[246] See 3.3.1'Otsuka's Philosophy Defined and Applied' for an example of a left-libertarian distribution.
[247] See 5.2.3 'Rousseau: External Criticism'.
[248] See 4.3.1 'Aristotle's Philosophy Defined and Applied' for a description of the *continuum of ownership* concerning produce such as energy.

In the first instance, the ethos operating behind the capabilities approach would be expected to inform those fortunate enough to become benefactors of the rationale behind the approach, so this criticism would not worry the advocate of the capabilities approach. However, should the second situation arise and society decides that an individual is not behaving within the spirit of the ethos; the solution may be to choose a person's capabilities on their behalf.[249]

In addition, the Aristotelian may argue that people are put into a position where they can compete and therefore non-virtuous notions of greed would be allowed to prevail. Now, the capabilities approach advocates would note that once a person has become materially successful, the prevalent ethos would enjoin them in the redistribution of their material wealth. Therefore, the supporter of the capabilities approach would argue that notions such as greed could not prevail as in other liberal societies.

The left-leaning critics of the capabilities approach such as Marxists and the communitarian followers of Murray Bookchin may note that society would retain the hallmarks of liberalism: although all are given the opportunity to function equally, they would still compete for alienating and exploitative work; all under the auspices of the privately owned means of production. Distribution would not match a person's true 'needs' and a person would not give according to their true 'abilities', as both of these aspects would be dictated by notions prevalent in a liberal economy.[250] Both critics could be joined by the advocates of Rousseau who would fear a class system emerging.[251]

The capabilities approach supporters would note that there would be more redistribution in society and the old class divisions could never be as pronounced as

[249] See 5.3.2 'Capabilities Approach: Internal Criticism'.
[250] See 5.1.1 'A Marxist Philosophy Defined and Applied' for an exposition of the origins of the criticisms listed here; see 6.3.1 'Bookchin's Philosophy Defined and Applied' for similar concerns.
[251] See 5.2.1 'Rousseau's Philosophy Defined and Applied' for Rousseau's view of the origins of class divisions.

they were in the past; furthermore, privileged families would be unlikely to dominate and pass wealth from generation to generation as the competition in society would be heightened by empowering individuals who may have previously been excluded. Nevertheless, this grouping of critics may interpret the capabilities approach as a concession to keep liberalism dominant and disguise the fact that not all share its bounty equally; for such critics, although all would be given the equality of opportunity, not all would benefit as good fortune is never spread equally, and therefore an exploited class would remain.

Moving on specifically to the communitarians, who may welcome the introduction of the concept of all enjoining in society's endeavours as it could encourage a greater awareness of community. However, they would also note that this could be negated by the element of competition. They would be adamant that produce such as energy should be distributed according to a person's communally defined needs to allow the community to endure and not in order to compete with others. Communitarians would also encourage people to work cooperatively within a community.[252]

The advocate of the capabilities approach would respond that their ethos encourages the concept of community at a societal level, to ensure that liberalism works better for all and mitigates the worst excesses of capitalism. Furthermore, the believer in the capabilities approach may exclaim that their ownership type allows the self-determination of all individuals, the less talented of whom may be considered to be inferior in many societies. Furthermore, they may even accuse communitarian ownership types of perpetuating feelings of superiority and inferiority; where some of the less physically exertive roles may be designated for the infirm as one example.

[252] Without exception, the communitarian ownership types reviewed here would discourage competition, encourage individuals to work cooperatively and would wish for a community defined distribution of produce. See 6.1.1 'Hutterite Philosophy Defined and Applied'; 6.2.1 'Owen's Philosophy Defined and applied'; and 6.3.1 'Bookchin's Philosophy Defined and Applied'.

Certainly they may note that some communitarians, such as the Hutterites, designate roles for women and therefore perpetuate sexism.[253] The advocates of the capabilities approach would therefore feel their view of what constituted a community to be the best option.

5.4 The Evaluation of Egalitarian Ownership

Overall, the review of the egalitarian ownership types within this thought experiment concerning renewable energy has revealed their weaknesses. Each will be looked at in turn.

For Marxism to be a going concern, it would need the consensus of the populace. The populace would need to acquire an ethos that meant they believed in the concept of contributing according to 'abilities' and taking according to 'needs'. However, the Marxist ownership type described here remains particularly susceptible to two criticisms. Firstly, that it could create its own type of alienation and this would occur as individuals or minorities would find it difficult to withdraw from a collective arrangement that they found disagreeable. They would either be forced to continue in an alienated condition or if enough persons were unhappy, then antagonism may exist within society. Secondly, as Marxism allows persons the freedom of choice of where to work and also the accumulation of personal property, individuals by their own ingenuity could set up their own working arrangements via their personal property and avoid the collective process.

Now, by combining both criticisms, it may be envisaged that any unhappy minority in a society, could, if they were prevented from withdrawing their investment, invest their personal property in rival schemes and work there. Hence, a Marxist society could be liable to schism resulting in differing competing, energy generating schemes.

[253] See 6.1.1 'Hutterite Philosophy Defined and Applied'.

Turning to look at the egalitarianism of Rousseau, it is noticeable that widespread opposition may unite against Rousseau's approach due to its inability to ensure increasing outputs of renewable energy. The defence against this is that Rousseau's society would contain an enjoining ethos, which although it may not make economic growth a priority, all would understand the importance of prioritising the individual's dignity so that no one individual may dominate another. However, Rousseau's ownership type is unlikely to be accepted where producing the maximum amount of energy is a priority for a society.

Like Rousseau's ownership type, all persons within a society embracing the capabilities approach would be expected to share in an enjoining ethos. However, from the discussion of the capabilities approach it should be immediately noted that the implementation of this ethos would be plagued with practical problems. Firstly, the arrangement would require a complex administration to ensure that the high degree of redistribution, which would be unwieldy and difficult to calculate, is exacted.

Also, there is the risk that the relatively large and constant redistributions required may reduce the incentives of the talented to be productive. Hence, keeping the ownership type operational may require the state to intervene in energy supply to a greater extent than gauging redistributions: where the most extreme cases of redistribution were needed, where individuals were severely infirm, or possibly even profligate with their resources, then the state may decide to introduce assessed levels of welfare for those individuals. Hence, the redistribution according to individuals' capabilities may require exceptions to be made.

At the start of this chapter the question was posed, *why should society adopt an egalitarian ownership type for renewable energy?* In answering this it would appear that an egalitarian ownership type would only be introduced where a society values egalitarianism over material growth. Overall, egalitarian ownership types cannot

promise growth or an abundance of energy but can promise some variant of equality. Hence, egalitarian ownership types are a viable in such circumstances.

Finally, it should be noted that none of the egalitarian ownership types featured here remove the fact that individuals may own property. This fact would remain a point of contention for many communitarians, as a widely held tenet of communitarianism is that both the means of production and the energy produced should be communally owned. Communitarian ownership types that address these points feature in the next chapter.

6 Communitarian Ownership

In this chapter three types of communitarian ownership are reviewed and applied to renewable energy. Firstly, the ownership existing in the religious colonies of the Hutterites of North America is examined where it is noted that communal ownership is integral to their religiosity. This is followed by a review of the ideas of the British societal reformer Robert Owen who devised a theory of ownership as a reaction to the ills he saw in nineteenth-century British life. Finally, the work of American municipalist Murray Bookchin is applied to the problem at hand.

In this chapter, the question posed is: *why should renewable energy be owned by a community*? This is a feasible question if we accept that human beings are necessarily part of a wider community; and communitarians are inclined to accept this proposition. In the following ownership types more consideration is given to the wellbeing of the community rather than the individual and therefore communitarianism provides a step away from the previous ownership types which were more inclined to measure gains and losses in terms of the individual.

6.1 Hutterites

6.1.1 Hutterite Philosophy Defined and Applied

The Hutterites are a Christian sect that originated in Europe and settled on the plains of North America in the 1870s forming agricultural communities. A summary of Hutterite lifestyle, beliefs and history may be found on their website (Waldner & Waldner 2012a). With regard to ownership they are vehemently communal in outlook and this has been influenced by the Bible:

> [44]And all that believed were together, and had all things common; [45]And sold their possessions and goods, and parted them to all men, as every man had need. [46]And they, continuing daily with one accord in the temple, and breaking bread from house to house, did eat their meat with gladness and singleness of heart, [47]Praising God, and having favour with all the people. And the Lord added to the church daily such as should be saved (Acts 2.44-47).
>
> [32]And the multitude of them that believed were of one heart and of one soul: neither said any of them that ought of the things which he possessed was his own; but they had all things common. [33]And with great power gave the apostles witness of the resurrection of the Lord Jesus: and great grace was upon them all. [34]Neither was there any among them that lacked: for as many as were possessors of lands or houses sold them, and brought the prices of the things that were sold, [35]And laid them down at the apostles' feet: and distribution was made unto every man according as he had need (Acts 4.32-35).

The passages from the bible would explain the Hutterites' communal way of living. However, the Hutterites also live a very austere life, which has been incorporated into their religious culture (Bennett 1967: 167). Nevertheless, individual Hutterites are often to be found longing for more goods and the comfort that this brings and they explain this phenomenon by acknowledging that they are imperfect beings and retain 'human desires' (Bennett 1967: 168). However, even with individuals harbouring the desire to own more material goods lurking within the community, the system perpetuates due to a mixture of at least three factors: firstly, there are reminders to observe austerity in sermons (Bennett 1967: 168-9); secondly, individuals are encouraged by peer group pressure to 'observe and watch' each other to ensure that consumption remains controlled (Hostetler & Huntingdon 1967: 50). Thirdly, and possibly most importantly, from an early age, Hutterites are taught to appreciate collective wealth over individual wealth; and one commentator, has asserted that the socialisation of Hutterite children, takes place in communal schools rather than families, overseen by teachers who gain much 'moral control' over their pupils (Pickering: 1977

81-2). Hence, a mindset that supports collective wealth is encouraged to develop from an early age and is reinforced in daily life.[254]

With regard to personal consumption, individuals are expected to live via a system of personal allowances, which would be considered to be meagre in the surrounding liberal society (Bennett 1967: 168-9). That said, the Hutterite may respond that one would not need the level of income that individuals need in the neighbouring liberal society as a Hutterite settlement takes more care of a person's needs: colonies encourage all to enjoy communal meals (Hostetler & Huntingdon 1967: 50); and communal entertainments, such as sports and musical recitals, are often arranged (Waldner & Waldner 2012b).

If it was decided that personal allowances were insufficient, then this would be discussed and voted upon at an assembly.[255] The assembly consists of males, generally over the age of twenty, where each has one vote and a majority in favour of a motion will secure change (Bennett 1967: 151-2).[256] In this way the colony may 'collectively' define needs. It should be further noted that as individual Hutterite colonies decide what constitutes the personal allowances of their inhabitants, the personal allowances would differ between colonies.

Obviously, Hutterite society is sexist by contemporary western standards with women being excluded from voting in the assembly. But this is too simplistic an analysis, as individuals would be expected to adhere to uneven conditions in many aspects of their life such as working roles and goods received. Working roles such as childcare, cooking and cleaning are assigned to women, whilst men are assigned a

[254] Please 1.3.4 'Mindset and Ethos' for a definition of a mindset.

[255] It is noted that individual colonies may exercise some latitude with regards to their decision-making organisations. Some may employ a filtering device of a council that decides which policies the assembly should vote upon; but as the council generally consists of older males who have gained status by adhering to their forbears' religious values, it therefore can be expected to be conservative in nature (Bennett 1967: 147). However, some councils may be subjected to informal lobbying and subcommittees may exist at a level below that of council (Hostetler & Huntingdon: 1967: 29).

[256] Other sources may describe this function as 'The Church' or 'Gemein' and note that only 'baptised men' may vote (Hostetler& Huntingdon: 1967: 29 & 80-1).

variety of other, largely manual roles that befit an agricultural community (Hostetler & Huntingdon 1967: 31-3 & 41). Goods may be distributed unequally and the assembly could decide that single men should receive more goods than single women; or *vice versa*. Housing, furnishings, food, and clothing supplied to an individual may be decided in this way (Hostetler & Huntingdon 1967: 50). The apparent unfairness perpetuates, as individuals accept that the *greater good of the community* is more important than their own requirements (Hostetler & Huntingdon 1967: 12). Again this can be expected as a resultant of the adoption of the mindset noted above.

With regard to any capital equipment such as the means of production, then this is most certainly owned by the colony. This occurs as a result of the formation of new colonies when they branch out from parent colonies (Hostetler & Huntingdon 1967: 44). When a parent colony reaches its maximum population, savings are often used to help settlers of new colonies establish themselves (Bennett 1967: 168 & 174). The new settlement incorporates itself as a business under local law and it is this corporate entity that owns all capital assets, land, buildings and livestock rather than individuals.

It should be noted that the liberal notion of property rights does not exist in Hutterite society and the more durable the good the greater the extent of communal ownership it entails. Individuals may own only minor personal effects bought from personal allowances and these include such items as electric razors or perfume (Bennett 1967: 172 & Hostetler & Huntingdon 1967: 53). Items such as clothes are replenished to individuals via an allotting process (Hostetler: 1967: 50). However, an item that is expected to be long-lasting, such as a bed, may be issued to individuals on the understanding that it will return to a communal store of goods for reissue (Hostetler: 1967: 52); and the notion of *borrowing* goods from the community is the function that is most applicable here. Hence, for larger and more durable goods, Hutterites have the 'right to use but not possess' (Hostetler & Huntingdon 1967: 52).

Now it should be noted at this point that the proliferation of Hutterite colonies is not just attributable to the mindset that is lodged in the individuals. The colonies are profitable ventures within greater society. Their profitability may be succinctly demonstrated thus: they sell their produce to the wider world at market rates (Bennett 1967: 174), whilst effectively paying little more than the bare essentials of life to the workers and collectively retaining the revenue. Hence as business ventures they can easily compete with farms that surround them in a capitalist society and their profitability facilitates their proliferation.

Moving back to the desert island and applying the Hutterite lifestyle, it should be noted that the means of production, in this case the hydrothermal vent and surrounding plant, would be communally owned. Part of the population would be expected to form an assembly for decision-making and it is assumed, for the sake of argument that Powerful comprises this. With regards to work, both can be expected to take part in the energy generating process, along with other tasks such as cooking, farming, and building. Both may have the right to use their own 'borrowed' dwellings and furnishings. Also, the islanders would be allotted both clothing and an energy quota. It is assumed that any surplus energy would be sold to nearby islands.

The ownership type for Hutterite ownership on the desert island would look as follows:

1. Individuals are necessarily part of a greater community.
2. The community owns the means of production and hydrothermal energy.
3. The community owns the harnessed renewable energy.
4. The community, via the decisions of the assembly, may use renewable energy to ensure communal activities ensue.
5. The community, via the decisions of the assembly, may sell renewable energy to outside interests and retain the revenue.

6. The community, via the decisions of the assembly, allots energy to individuals to allow their subsistence.

The community owns all energy produced and the assembly will decide the uses for the energy including ensuring that individuals receive enough for their subsistence.

6.1.2 Hutterites: Internal Criticism

The presence of individuals' desires to possess more material goods, even though it is constrained by a mixture of peer group pressure and an instilled mindset, can be expected to cause tension within the community. This would be expected to be exacerbated where neighbouring Hutterite communities award more generous personal allowances to individuals.

Such tension could possibly cause schism where desires are not met. In answer, the Hutterite may respond that their system has been successful for at least 140 years and they continue to prosper. However, this is prosperity realised at the level of a colony with potentially much dissatisfaction underlying this at the individual level.

It should also be noted that Hutterite communities can be very insular. Hence, any notion of understanding the concept of a just distribution of energy arises from a perspective originating within that community and this brings forth criticisms that the community is steeped in its own 'cultural relativism'; which would effectively prevent the members of a community from recognising the existence of other forms of justice. The defenders of communitarian living may retort that *any* society gains its notion of justice from *within* due to society's shared understandings (Kymlicka 2002: 211); and Hutterites are therefore no different than anyone else. Furthermore, a notion of true justice may be difficult to attain in a society containing heterogeneous viewpoints where the loudest voices or more forceful groups may dominate (Kymlicka 2002: 211). Hence the Hutterites would be likely to fight their corner, but they would note that the

proximity within which individuals exist in their communities would ensure that if any individual was *suffering severely* due to lack of energy, then the distribution pattern of energy supply would be changed: in this way justice would be assured.

6.1.3 Hutterites: External Criticism

Criticism may be expected to come from those who would consider the Hutterite lifestyle as a curtailment of what being an individual constitutes. This may include advocates of distributed ownership such as liberals but the criticism may be expected to be particularly acute from the espousers of private ownership. For instance, the Lockean would be concerned that individuals could not exercise their own natural right to benefit themselves and would query whether the Hutterites adequately compensated persons for their loss.[257] The Nozickian may feel that at the level of Hutterite community, all individuals have been used as a 'means' to an 'end' with the end being the perpetuation of Hutterite values.[258] The advocate of left-libertarianism, following Otsuka, would consider an allotment of energy to be too dictatorial and would not be fine-tuned enough to meet an individual's welfare.[259]

In response, it has already been noted that Hutterites acquire a mindset, which predisposes them to appreciate the collective good over the individual's good.[260] The concept of individualism, above and beyond that needed to function within their community, would be alien to them. Now the critics noted above may find this type of mindset to be pernicious but the Hutterite may feel that the outsider does not truly understand the concept of *the greater good of the community*.

---

[257] See 3.1.1 'Locke's Philosophy Defined and Applied' for the provisos that guide his distribution and see 3.1.3 'Locke: External Criticism' where persons could willingly forsake their natural rights, by joining a 'commonwealth', where it is in their interests to do so.
[258] See 3.2.1 'Nozick's Philosophy Defined and Applied' for his view on rights and constraints.
[259] See 3.3.1 'Otsuka's Philosophy Defined and Applied' for the left-libertarians emphasis upon individuals receiving an 'equality of opportunity for welfare'.
[260] See 6.1.1 'Hutterite Philosophy Defined and Applied'.

Furthermore, overall defenders of communitarianism would also provide arguments cautioning against viewing the individual as isolated entities. Based upon notions of the 'self', the communitarians may argue that: the notion of a 'self' cannot exist on its own as a person needs a social situation to place their 'self' (Kymlicka 2002: 222); furthermore, we perceive ourselves with 'ends' gained from our community (Kymlicka 2002: 225). Along these lines, all communitarians may argue that their community provides the 'self' with an identity and motives.

Additionally, the defenders of communitarianism may maintain that a liberal view of the individual is intrinsically faulted. To elucidate, individuals are detached from the 'common good' and find the demands that their society places upon them, such as funding a welfare state, to be increasingly illegitimate as it seemingly violates an individual's right to pursue their own ends (Kymlicka 2002: 252-3). Opposing this, liberal commentators may maintain that people are capable of pursuing their own conception of the good whilst simultaneously appreciating others' wellbeing (Kymlicka 2002: 253). However, communitarians may remain unconvinced of liberals' views and argue that a society without enough commonality is bound to become undone due to tension within it.

However, the communitarians may have stronger arguments to be pitched against those political philosophies that demand that the individual also receives resources from society. As examples, the left-libertarian model requires a distribution of resources;[261] Rawls's model requires redistribution via the 'difference principle';[262] and to a certain extent Locke's model may require some charitable redistribution in certain instances.[263] Hence, the communitarian may argue that in these cases, as an individual gains both a 'self' *and* resources from their society, then they are indebted to their

[261] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[262] See 4.2.1 'Rawls's Philosophy Defined and Applied'.
[263] See 3.1.1 'Locke's Philosophy Defined and Applied'.

society if not entwined in their community: a community should therefore be included in decisions concerning the distribution of energy.

However, a communitarian argument is severely weakened when individuals use their own initiative to gain a resource without any prior example being set. For instance a community may have banned their members visiting a hydrothermal vent believing it to be the abode of evil spirits;[264] but when a rebellious individual harnesses the energy without harm, using equipment she has improvised without any prior example being set, then her community would have lesser claims, if any, over her energy.

In addition, many political philosophies may query whether an individual Hutterite actually acquires any effective ability for self-determination and the most fervent advocates of this argument may query whether those raised as Hutterites understand any concept of freewill. From the perspective of some political philosophies, the muted ability to act in one's own interest would be considered to be a fault of Hutterite life. For instance, those of a liberal bent would argue that individuals potentially have the faculty for deliberation and exercising this faculty gives a person a greater self-understanding; and in particular the ability to know which goods suit them (Kymlicka 2002: 215). The Rawlsian would be concerned that the acquisition of 'goods' or life-choices, upon which the Rawlsian places value, which are borne of experience and varied to suit the individual would not materialise.[265] Joining this, the Aristotelian would agree with the liberal that persons are not capable of assessing their own needs through never having been given the opportunity to exercise this facet.[266] Hence, with regards to their own energy supply, the advocates of some political philosophies would maintain that the Hutterite individual would not be equipped with

[264] See 3.2.3 'Nozick: Internal Criticism' for the first airing of this particular type of criticism of communitarianism when pitted against the claim that an individual gains their talents from greater society.
[265] See 4.2.1 'Rawls's Philosophy Defined and Applied' for the importance Rawls placed upon individual choice; particularly in his first principle. See also 4.1.3 'Mill: External Criticism' for a criticism of how a variant of utilitarianism may limit an individual's goods according to Rawls.
[266] See 4.3.1 'Aristotle's Philosophy Defined and Applied'.

the skill to define what constitutes a suitable amount of energy to satisfy their own needs.

The Hutterite may counter this with the communitarian argument that poor choices that individuals may make with their lives, that are possible in liberal society, are prevented. In fact, allowing self-determination in some instances amounts to a seemingly callous indifference to those who cannot help themselves (Kymlicka 2002: 213). For instance, an adult with a predisposition to gamble may squander her energy resources in a liberal society, but this would not happen in a Hutterite society where resources are allotted and used sparingly. That said, as only adult males vote at assemblies to provide others with energy, such an exclusive process would seemingly deny self-understanding for many.

Assemblies populated by only adult males would also make advocates of various political philosophies exclaim that some persons unfairly have more democratic rights by birth. For Rawlsians, this would prevent freedoms of speech and political association from being realised.[267]The advocate of Rousseau may note that his equality of condition would allow more freedom of thought to take part in democracy.[268] However, some of the most vehement criticism would come from fellow communitarians: for the advocate of Robert Owen's work, both men and women would have an equal vote in a local council;[269] Bookchin would encourage the maximum numbers to be involved in a decision making processes and take part in governing a community.[270] In general, the majority of political philosophies would disparage a type of division, which leaves control in the hands of one stratum of society, namely adult males, as their birth right.

Where the inhabitants of a Hutterite community found this to be acceptable, its critics would blame the presence of an inculcated mindset for preventing true

[267] See 4.2.1 'Rawls's Philosophy Defined and Applied'.
[268] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[269] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[270] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.

democracy. However, the Hutterites would view their arrangement as a successful one that works for the good of the community. Both sides would agree to differ but the critiques would note that women successfully take part in the democratic processes of liberal societies and could be involved in Hutterite governance.

Many would note that the persistence of unhappiness with the level of personal allowances, would betray a faulted system of distribution. Now, Hutterites may be expected to be suspicious of any solutions offered by liberal society, however they may be more accepting of critiques that come from left-leaning political philosophies that may not necessarily be opposed to all aspects of the Hutterites lifestyle. It has already been noted that Hutterite colonies are profitable ventures within a liberal society;[271] and bearing this in mind, fellow communitarians such as the municipalists favouring Murray Bookchin's work would find that hording profit for the sake of funding other colonies and thereby promoting growth, seemingly for the sake of growth, would be anathema.[272] The municipalist may ask why growth should not be forsaken and the individuals within a community allowed to live more comfortable lives.

The Marxist may cite criticisms of exploitation, noting that individuals do not gain the full value of their work, with any surplus-value being kept by the entity of the community.[273] To demonstrate, if a person's work equated to 3x units of energy but the person received only x then the surplus-value of 2x is retained. Now, if x of this surplus supplied the elderly, infirm and children then this may be acceptable as a fair distribution.[274] But if the remaining x was sold to wider society, there would be little doubt in most Marxists' minds that this represented exploitation. The Marxist may attempt to persuade the Hutterite that allowing the community to use the residual energy

[271] See 6.1.1 'Hutterite Philosophy Defined and Applied'.
[272] See 6.3.1 'Bookchin's Philosophy Defined and Applied' for his view on economic growth.
[273] See 5.1.1 'A Marxist Philosophy Defined and Applied' for a definition of 'exploitation'.
[274] See 5.1.1 'A Marxist Philosophy Defined and Applied' for how some Marxist views may condone surplus-value being used to counter inequality.

represents a move away from the practices of liberal society, which they are inadvertently imitating.

Overall, the Hutterite lifestyle may be immune to many of the external criticisms from other political philosophies no matter how rational they are, or how eloquently they are argued. In fact Hutterites may feel that such criticisms miss the whole point of Hutterite life. Hutterites value the satisfaction of working in a successful colony with all enjoined in an appreciation of the others contribution: when they look out at the surrounding society they are faced with a mass of individuals leading competitive, unfulfilled lives.[275] Hence, this viewpoint provides great difficulty for detractors to lodge criticisms.

6.2 Owen

6.2.1 Owen's Philosophy Defined and Applied

The second type of communitarian ownership is based upon the work of Robert Owen. Owen is often described as a philanthropist and is best known in the British Isles for his successful work in reforming factory conditions in the early nineteenth-century; but less well known for the benevolent running of the cotton mills and accompanying community in New Lanark, Scotland (Barker 2014). In the United States he may be better known for founding the short-lived communitarian settlement of New Harmony in Indiana (Claeys 1991: xvi-xvii).

It should be noted that this interpretation of Owen's work relies primarily upon his theoretical writings and therefore is meant to elucidate his ideals. The sources referenced are: *A New View of Society* published for the first time in its entirety in 1816; *Report to the County of Lanark* from 1820; The *Manifesto of Robert Owen* of 1840; *A*

[275] This situation is elucidated in the chapter 'The Genius of Culture' in (Hostetler and Huntingdon 1967: 50).

Development of the Principles and Plans on which to establish Self-Supporting Home Colonies of 1841; and *The Revolution in the Mind and Practice of the Human Race* of 1849.

However he was a complex character and Elizabeth Barker has summarised him succinctly:

> Owen was often portrayed as benevolent and kind, a defender of factory children and a patron of the poor, all of which paint an essentially accurate picture of the man. But he also attracted considerable criticism, being described by his detractors as a knave, a charlatan and a speculative, scheming, mischievous individual. He had enormous wealth, much of it spent on his propaganda campaigns and, it has to be admitted, on self-promotion. Yet he disclaimed any self-interest. He had considerable charisma, which won him large audiences, including apparently many women. His flirtations with royal dukes and cabinet ministers made him enemies, particularly among political reformers, who ought to have been his natural allies. Owen evidently believed, however, that he was being propelled by some supernatural force to change society. Perhaps blinded by the strength of this conviction he was utterly single-minded in advocating his views, which, he felt, held the solution to the problems of his time (Barker 2014).

Aside from commendations and criticisms, Owen wished to achieve the ideal society by reforming it into self-governing communities. In guidance detailing how the governance of his communities should proceed, they would be introduced into society via joint-stock companies which would initially buy land and erect buildings, and then proceed to lease it to tenants who would eventually come to own the colony (Owen 1841a: 37). Owen described a system of 'townships' operating under a wider structure of a 'federation' (Owen [1849] 1991d: 372). Effectively, the townships would have the 'full power of government' (Owen [1849] 1991d: 373), with all individuals over the age of thirty taking part in 'general councils' (Owen [1849] 1991d: 372); and both sexes were to have equal 'education, rights, privileges and personal liberty' (Owen [1849] 1991d: 369). He also provided existing governments with guidance on social

reorganisation, believing his version of communitarian living would supersede the society of his own time (Owen [1849] 1991d: 375-6).

Owen's early writings, particularly *A New View of Society* expounded the communitarian belief that people we were formed by their environment (Owen [1816] 1991a: 19): however, society mistakenly treated people as individuals with freewill. For Owen, this paradox was aptly demonstrated by the cases of criminals, who, after being brought up in a criminal environment without other role models, turn to criminality to better themselves, and are then punished as individuals (Owen [1816] 1991a: 22). Furthermore, he witnessed a society where a lack of guidance from the rulers resulted in the ruled becoming ignorant and involving themselves in crime (Owen [1816] 1991a: 10-11). Now, Owen believed that if one had the power to remove such ignorance and misbehaviour then one was obliged to rectify the situation (Owen [1816] 1991a: 13). However, the rulers, ignorant of their part in encouraging a culture of crime, now condoned barbaric punishments to deter such crime (Owen [1816] 1991a: 13).

The removal of this state of affairs was to be achieved by adopting a new mindset. Owen was quite forthright in announcing, that children could be 'moulded into the very image of rational wishes and desires' (Owen [1816] 1991a: 19). Accompanying this, Owen noted that 'the happiness of self […] can only be attained by conduct that must promote the happiness of the community' (Owen [1816] 1991a: 14). Hence, Owen envisaged introducing an educational system would be devised to 'train children from their earliest infancy' and 'impress them with an active and ardent desire to promote happiness in every individual' (Owen [1816] 1991a: 16). From this, it may be concluded that working for one's own happiness entails working for one's community's happiness.

The government was the body that was in the best position to introduce Owen's theories and he confidently offered his theory for government scrutiny and introduction

(Owen [1816] 1991a: 62-4). That said, he supplied a convoluted and veiled warning that the class system of his day would provide its own undoing and this is summarised thus: Owen noted that the 'excluded' class had 'no rational motive' for continuing with the nineteenth-century economic system, and it was in the interests of the 'privileged class to co-operate sincerely' and introduce an economic system which did not 'touch one iota' of their own possessions whilst avoiding 'revolution' (Owen [1816] 1991a: 15-6).

Owen believed that one of the causes of the class divisions he witnessed was the way machinery had been introduced into the workplace; Owen noted that this was a cause of society's wealth becoming concentrated in the hands of the owners of the means of production (Owen [1840] 1991c: 264). Furthermore, looking around his society, he noted that wealth was the cause of division within society with the poor becoming envious and the wealthy feeling superior; all accompanied by the wealthy feeling the resultant need to construct laws to secure their higher status (Owen [1840] 1991c: 361-2). His aim was to achieve a stable society and this would entail introducing an 'equality of condition' by ridding society of private property (Owen [1840] 1991c: 362). Certainly, in forming his townships Owen wished for all assets to be communally owned and this would include the means of production (Owen 1841a: 37).

Looking further into the existing working practices, Owen lamented that they required a 'minute division of labour' and he cited jobs such as the 'pointer of a pin' and the 'header of a nail' as prime examples of this (Owen [1820] 1991b: 293). He felt that this was injurious to the worker both mentally and physically and he would remedy this by educating all to be capable of undertaking many roles; and additionally he would insist that workers were ideally rotated in a variety of roles (Owen [1820] 1991b: 292).

But in addition to the specialisation of roles that had emerged, Owen further asserted that working routines akin to slavery had been established with individuals dependent on the newly mechanised working practices (Owen [1820] 1991b: 264). Now

it should be understood that Owen was not against progress *per se*, but the role of mechanisation should be matched to assist the individual in their work; and moreover, the amount of work required by a person would be defined by that person's personal capacity to do the work, so that work would not be injurious (Owen 1841a: 48). That said, although as noted above, Owen wished that both sexes had equal rights in many areas, he surprisingly did not extend this as far as working routines within his communities: women's roles were associated with cooking, cleaning and Childcare; whilst men's roles included agriculture, manufacturing and administration (Owen 1841a: 46-8).

Communities should also be geared to benefit from economies of scale. For instance, communal living would be encouraged and would include communal dining as well as communal recreations such as lecture halls, exercise rooms and gardens (Owen 1841a: 38-40). Overall, the emphasis of Owen was for communal facilities to be provided first.

He further meant for his communities to be self-sufficient. In particular he felt that communities should be self-sufficient with regard to producing their own foodstuffs, clothing and furniture (Owen 1841a: 61); and within the federation they would 'convey surplus produce' and exchange useful technical information (Owen [1849] 1991d: 373). No mention of *quid pro quo* trade is made here and it may be assumed that there would be much sharing between communities: in fact, Owen also noted that commercial competition in society led to people harming each other's interests and resulted in a waste of both capital and labour (Owen [1840] 1991c: 358-9).

With regard to individuals' distributions of produce within a community, in his guide to forming colonies, Owen alluded to all persons receiving the same distribution noting that, 'Every one shall be equally provided' (Owen 1841b: 28). With regard to personal possessions, Owen intimated that one may own what one can 'enjoy' (Owen

[1816] 1991a: 71);[276] but with all of the communal needs of life catered for it is fair to assume he meant this enjoyment to be limited to consumables and personally useful items.[277] Here the spirit of Owen's work is interpreted as being realised when persons receive modest but equal distributions of goods after communal priorities have been apportioned.

Applying these thoughts to the desert island, then all its facilities would be communally owned. All produce, such as renewable energy, would be owned communally and primarily used in communal enterprises. The two inhabitants of the island would be required to rotate the tasks upon which they worked, work to their own level of capacity and utilise machinery to assist them. Individuals would gain their 'remuneration' via the personal satisfaction gained by working for their community. The distribution of goods such as renewable energy to individuals would be both equitable and a very small part of the produce. The inhabitants may exchange their allotted share for items they could enjoy. Surplus energy may be 'conveyed' outside of the island. All of this would be underpinned by the mindset instilled by the elders upon the young.

The ownership type for Owen's work would look as follows:

1. Individuals are necessarily part of a greater community.
2. The community owns the means of production and hydrothermal energy.
3. Individuals generate renewable energy at a level of their own capacity, assisted by mechanisation.
4. Renewable energy is firstly supplied to satisfy communal needs.

[276] Noting how the Native Americans only took from the land what they needed and noting how the same land was now populated by persons who aspired to own more than they could ever need, he asserted that the former occupants were nobler in their aspirations (Owen [1816] 1991a: 71).

[277] Owen's stated that one may save to buy a home for one's old age, but there was no compunction on any one to do this (Owen [1816] 1991a: 59). However, it is not stipulated whether these can be bequeathed to offspring or are held on lease for the duration of one's retirement. Here it is assumed that the latter arrangement applied as this concurs with the spirit of enjoying property rather than accumulating property.

5. Remaining renewable energy is equitably distributed to individuals to allow a level of modest personal usage.

6. Surplus renewable energy may be gifted to other communities.

The community owns the renewable energy, which is firstly supplied to satisfy communal needs, and the remainder is equitably supplied to all individuals to allow a level of modest personal usage, with any surplus gifted to others.

6.2.2 Owen: Internal Criticism

Now it has already been noted that Owen wished for his community to both establish itself and flourish by instilling the value of working to benefit the community in children. But the question remains, would adults moving from other lifestyles need to acquire the correct mindset to live in an Owenite community? It should be noted that the Hutterites do not have this problem when establishing communities as new settlements spring from established ones where the new settlers are of the same outlook.[278]

With regard to the short-lived settlement in New Harmony in the USA, it has been argued that a contributing factor to its failure was due to the lack of a shared mindset with most individuals unwilling to 'submit themselves unquestioningly' to Owen's teachings (Claeys 1991: xvi). Of course, this situation would have been less likely in a community where all had been educated to believe that personal satisfaction is gained through aiding the community; and also where an existing culture of this nature prevailed. However, if it is true that the lack of shared mindset led to the settlement's undoing, then a mindset where individuals find non-communitarian lifestyles reprehensible is needed for a communitarian settlement to perpetuate; especially where a community is surrounded by a non-communitarian host society

[278] See 6.1.1 'Hutterite Philosophy Defined and Applied'.

Bearing in mind the Hutterites, it may be accepted that a communitarian settlement can perpetuate in the midst of liberalism.[279] Possibly Owen's settlement would have worked, but it would be very reliant upon individuals' abilities to jettison the trappings of liberalism such as the prospect of earnings related to ability and greater rights to enjoy material goods.[280] It would appear that Owen underestimated the difficulty in taking the first step when establishing the first generation of tenants in a community.

6.2.3 Owen: External Criticism

In a similar manner to the external criticisms of the Hutterites, many political philosophies would be aghast at the institution of Owen's limited concept of the individual.[281] For the Lockean, an individual may have forsaken their rights without adequate recompense.[282] The Nozickian would find that a person's individuality had been compromised via the installation of a mindset whereby persons became the 'means' to the 'end' of communitarianism.[283] For the left-libertarian, the presence of a mindset that that would prevent a person deciding upon their own true level of welfare, would be considered to be particularly irksome.[284]

Particularly galling for the espousers of individualism, would be that Owen assumed that all individuals would possess equitable desires for welfare. They would find this view to be unsophisticated, as the differences in an individual's predisposition to use energy would go unrecognised. Owenite life would be expected to adequately

[279] See 6.1.1 'Hutterite Philosophy Defined and Applied'.
[280] See 4.2.1 'Rawls's Philosophy Defined and Applied' for an example of the liberal expectation that an individual may retain the majority of the fruits of their labour via the difference principle and are free to make choices with their life.
[281] See 6.1.3 'Hutterites: External Criticism'.
[282] See 3.1.1 'Locke's Philosophy Defined and Applied' for the provisos that guide his distribution and see 3.1.3 'Locke: External Criticism' where persons could willingly forsake their natural rights, by joining a 'commonwealth', where it is in their interests to do so.
[283] See 3.2.1 'Nozick's Philosophy Defined and Applied' for his view on rights and constraints.
[284] See 3.2.3 'Otsuka's Philosophy Defined and Applied' for his views on the importance he places upon persons deciding upon their own level of welfare.

remunerate those that enjoy communal facilities, but those with greater welfare requirements would find their energy usage restrained.

Once more, the Owenites may attempt to rely upon the communitarian defences previously aired in the external criticism of the Hutterites,[285] including that: the outsider does not truly understand the concept of *the greater good of the community*; and a community is necessary to provide the individual with both an identity and motives.

The problem for the Owenite is that individuals are allowed to exercise individuality in that they may own property that they can 'enjoy'.[286] For example Powerful may decide that she would enjoy a heated swimming pool and is prepared to purchase the necessary equipment to allow this.[287] The community council is unlikely to grant planning permission as this is outside the communal nature of Owenite society. Those championing the rights of the individual would see this as a restraint upon the individuals' true nature.

Turning to the particular subject of democratic rights, Owen's communities would garner milder criticism than that of the Hutterites here,[288] as it was Owen's intention that all, after the age of thirty, would join a 'general council' and take part in the governing process.[289] That said, liberals such as Rawlsians would note that the individual would not expect to enjoy the set of rights that could exist within a liberal society,[290] such as rights of political association. Hence, liberals may feel that the residents of an Owenite community are politically restrained and distanced from most strands of political thought.

---

[285] See 6.1.3 'Hutterites: External Criticism'.
[286] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[287] See 1.3.3 'The Desirability of Increasing Energy Usage', where it has been noted that recreational tasks that may employ energy can expect to become more alluring where energy is available to power them.
[288] See 6.1.3 'Hutterites: External Criticism'.
[289] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[290] See 4.2.1 'Rawls's Philosophy Defined and Applied'; particularly his first principle.

Also, with regard to democratic rights, the Rousseauians would note that although Owen has attempted to realise an *equality of condition*, the acquisition of his favoured mindset has been given primacy. They would consider this to be putting the cart before the horse as an *equality of condition* should be realised firstly by giving each individual a material equality; and this equality of material wealth would in turn, allow individuals to take part in politics equally and enjoin in a shared ethos.[291]

Overall, with regard to criticisms concerning democratic rights, the Owenite may note that individuals would appreciate working for the common good and such individualist tendencies would become irrelevant. Both sides would agree to differ.

Furthermore, in the Rawlsian sense, individuals would have less opportunity to find out what 'goods' or life-choices personally suited them; as the goods would be limited to what existed, and were condoned, within one's community.[292] Such criticism would be joined by the Aristotelian who would wish to see individuals able to make judgments concerning what constituted the right path to follow: for instance, in a virtuous society individuals should know how much energy they would need;[293] and for the Aristotelian such basic skills would be underdeveloped at the very least. Similar to the response that the Hutterite might give to justifying the limitation of goods that an individual may acquire,[294] the Owenite may argue that the poor life-choices and wasted effort that besets certain individuals would be negated. Additionally, those not able to make beneficial choices due to infirmity would be assisted. Hence, Owenites would consider their way superior.

Moving to look at the views of the Marxists, they would be perplexed that the initiation of a colony would require financing from bourgeois capital. Depending upon

[291] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[292] See 4.2.1 'Rawls's Philosophy Defined and Applied' for the importance Rawls placed upon individual choice; particularly in his first principle. See also 4.1.3 'Mill: External Criticism' for a criticism of how a variant of utilitarianism may limit an individual's goods according to Rawls.
[293] See 4.3.1 'Aristotle's Philosophy Defined and Applied'.
[294] See 6.1.3 'Hutterites: External Criticism'.

the type of contract agreed, the capitalist may retain the right to adjust the contract such as demanding a greater return on the investment; and this is a distinct possibility where those holding the capital retain a stronger bargaining power. But all this is presuming that capitalists would be interested in a venture in which they eventually lose ownership of their private property. The Marxist may find Owen to be naïve concerning a capitalist's expectations and the Marxist would expect the capitalist to own the all assets including means of production, such as hydrothermal plant, for as long as profit could be made; this may entail reducing the amount of energy used in the township in order to maximise the amount of energy that could be sold elsewhere.

The Marxist may also feel that Owen has been naïve in anticipating the goods that individuals may enjoy. For instance, where a township paid off its investors, then the community's holdings of renewable energy would increase. It is possible that the community council would opt to add new communal facilities using the increased amount of energy, but if this path had been exhausted, then the workers would have a greater proportion of energy to enjoy. If the energy could not be conveyed to other townships, then in this situation a Marxist influenced viewpoint may conclude that an individual's 'needs' and desires may merge and people would wish to enjoy a greater quantity of energy:[295] for instance, a heated swimming pool may complement Powerful's home, whilst Powerless may prefer a heated conservatory. Owen felt that people would need to enjoy only minor items above that provided by their community and would rely upon a person's upbringing to prevent them from indulging in excessive materialism. The supporter of Owen would consider this defence to be feasible noting that as Hutterite communities exist with only *meagre* distributions of goods,[296] greater distributions of energy, whilst still remaining *modest*, should more adequately satisfy a

[295] See 5.1.1 'A Marxist Philosophy Defined and Applied' for Marx's opinion on the human capacity for 'limitless and flexible' 'needs'; which could feasibly be applicable in the scenario described where restrictions are weakened.
[296] See 6.1.1 'Hutterite Philosophy Defined and Applied'.

person's requirements for this good and leave less unfulfilled desire for energy which may cause distress within a community.

6.3 Bookchin

6.3.1 Bookchin's Philosophy Defined and Applied

A third type of communitarian ownership is based upon the work of Murray Bookchin. Throughout his life, Bookchin was involved with various political movements and this is reflected in the viewpoints he held later in life. For instance, he was a communist in the 1930s but became disillusioned with communism's authoritarianism; later allying himself with anarchist viewpoints but by the 1960s had solidly incorporated environmentalism within his ideals (Biehl 2012: 11-12). This interpretation of Bookchin's views originates from various books and pamphlets, notably collected in the *Murray Bookchin Reader*. As the views contained therein came to fruition late in his life they provide a mature synopsis of his standpoint.

Bookchin wished for 'the state' to be removed along with its professional body of 'bureaucrats, police, military, legislators, and the like' to be replaced by 'direct popular control of society by its citizens' (Bookchin 2012b: 614). In particular, he wished to see the majority of people becoming decision-makers in 'face-to-face assemblies'; as opposed to the political systems dominant in western countries, where he felt that the individual was largely detached from political processes (Bookchin 2012b: 613-4). Hence, political power would occur within 'democratic communities'; here referred to as municipalities.[297]

One feature of the communities would be that divisions based upon sex, age or class would be removed as they were considered to be artificial constructs that people

[297] Bookchin's political stance and ownership type are referred to here as 'municipalism', although the *Murray Bookchin Reader* refers to 'Libertarian Municipalism' whilst *From Urbanization to Cities* (1995) refers to 'Confederal Municipalism'.

had become socialised into accepting (Bookchin 1980). Now, although Bookchin championed the individual, whatever their status, this would always occur within the environment of a community: for Bookchin, an individual was so physically and psychologically dependent upon a supporting community, he considered the concept of an autonomous individual to be a 'fiction' (Bookchin 2012b: 696). Bookchin considered an individual to need the 'support systems and solidarity' of a community to achieve any 'self-development' (Bookchin 2012b: 697).

Another feature of Bookchin's municipalities would be their ecological credentials. For Bookchin, past societies had been guilty of both objectifying nature and squandering the Earth's resources.[298] Hence, he envisaged sustainable municipalities existing benignly within the ecosystems in which they found themselves; where they would produce durable goods, engage in recycling and use renewable energy (Bookchin 1980).[299]

To prevent introspection within communities, elected delegates would be sent to a confederation, whose role would be to administer and coordinate policy which would have already been decided from below by the municipalities (Bookchin 2012b: 617-9 & 2012e: 601-2). However, the confederation may be understood as a last resort to rectify deliberate bad practise; for instance, if a community committed 'ecological mayhem' or violated 'human rights',[300] the confederation would prevent any 'malfeasances' as an 'assertion of a shared agreement' (Bookchin 2012b: 618-9).

[298] Bookchin felt that any environmental problems that mankind may face had social origins. A continual process of duality and domination had occurred within past societies and people had become socialised into accepting these states of affairs (Bookchin 1980); it purportedly started with men dominating women, then the old dominating the young and later to be followed by elite classes dominating others. Over the years the 'seeds' were planted for the exploitation of nature by the acceptance of this culture: effectively, if people can become objectified then it is easier to apply this process to non-human nature (Bookchin 2012f: 648-650).

[299] Bookchin viewed his vision of society as providing an alternative to capitalism which threatened to consume resources and cause an apocalyptic dearth in the future (Bookchin 1980). In part, this explains his fervent desire to replace past forms of governance with more radical proposals.

[300] Bookchin did not specify what constituted human rights in the *Murray Bookchin Reader*, as he seemingly rested the concept upon an understanding of what constituted socioeconomic rights within liberal societies. However, the spirit of Bookchin's work should include socioeconomic rights, which are

Turning to look at Bookchin's concept of ownership, for the purposes *here*, it is considered that three principles operate: *municipal ownership*; *personal ownership*; and *shared exchange*. The following paragraphs will describe the three principles in more detail and show how they would affect renewable energy.

Firstly, the principle of *municipal ownership* required everything from farms to factories to be municipally owned, as Bookchin believed that if this were realised, then all members of the community would have an interest in their own municipality's success (Bookchin 2012c: 584-5 & 2012b: 621-2). Bookchin felt that both centralised planning and liberal trade had failed due to permitting 'privileged state bureaucrats or grasping bourgeois entrepreneurs' respectively (Bookchin 2012e: 603); hence, municipal ownership was the way forward.

With regard to the second principle of *personal ownership*, Bookchin argued that 'primitive societies' were superior as the less able individuals were guaranteed the same goods as the able; and noted that in the 'undeveloped economy' the rights of all to the 'scarce means of life' were acknowledged more emphatically (Bookchin 1980). Bookchin would also wish to realise the adage, more often associated with Marxism, 'from each according to his abilities, to each according to his needs' (Bookchin 2012c: 587). However, in following the example of 'primitive societies', it may be assumed that he would differ from many Marxists as the development of a state of abundance would be unnecessary for individuals to gain their 'needs'.[301] Hence, Bookchin has alluded to the notion that 'needs' are relative to a particular society: for instance, where a situation demands that individuals be frugal with energy usage, a culture may arise within a community that defines an individual's 'needs' respectively. Similarly, it may

---

positive claim rights, such as the rights to food, clothing, housing, education, healthcare etc. Here, the concept of rights may also be augmented by other aspects of municipal life such as a right to equally perceived worth in society (Bookchin 1980), or giving according to one's 'abilities' or gaining according to one's 'needs' within a municipality (Bookchin 2012c: 587). For a further definition of various types of rights see 2.3 'The Operation of Rights in Society'.

[301] See 5.1.1 'A Marxist Philosophy Defined and Applied' where a state of *abundance* is also deemed unnecessary for individuals to take renewable energy according to their 'needs'.

be expected that a culture defines an individual's 'abilities' and an expectation that a certain amount of effort to produce material goods is required from individuals would arise. Moreover, the adage would be institutionalised into the operation of the municipality via its political bodies (Bookchin 2012c: 587).

Moving on to the third principle, Bookchin would wish to see a principle of *shared exchange* introduced. Although Bookchin would agree that a 'reasonable measure of self-sufficiency is desirable' (Bookchin 2012e: 602), he also insisted that municipalities would be unable to produce all the goods they required and they would need to be interdependent (Bookchin 2012e: 596-7). Here it is fair to assume that not all municipalities would be self-sufficient with regard to energy in the same way that some may not be self-sufficient in food or technology as resources are randomly spread throughout the Earth.

Bookchin warned that as other systems of distribution from other political philosophies had failed he saw no other 'alternative' to the principle of shared exchange (Bookchin 2012e: 603). Furthermore, he was convinced that distributing resources between communities in a confederation would be realised as a 'pleasure' felt in such an act (Bookchin 2012e: 603); and therefore there should be no hesitancy on behalf of communities when wishing to share energy. However, as the consequences of not sharing may be presumed to be so great a threat to Bookchin's vision, it is fair to assume that the confederation would be charged with monitoring and ensuring that shared exchange takes place. Hence, for Bookchin's vision to be viable then those municipalities with spare renewable energy generating capacity would be expected to produce a quota of energy to be shared with other municipalities.

Although Bookchin placed great emphasis upon communal ownership and governance, he attempted to accommodate much individuality in persons' lives. It should be noted that Bookchin differentiated the 'political sphere' of life set at the

municipal level, as opposed to the 'social sphere' set by the individual (Bookchin 2012a: 170-1). The individual's hobbies, interests, sexuality, relationships and personal gratification were the sole business of the individual and would be distinct from a political realm (Bookchin 2012a: 170). Bookchin's municipalities would therefore formally differentiate communal and individual activities when compared to other communitarians.

On the whole, the realisation of Bookchin's vision would require the introduction of an underpinning mindset, and in this way, he is similar to the other communitarians. He admired the ancient Greek concept of *paideia;* a name which he applied to his own formative process. Although the ancient Greek concept is conceived as a type of education, Bookchin's version would be a 'moral education and character building' process producing 'rational, active, citizenship in a participatory democracy' (Bookchin 2012a: 603-4). It would be a 'deeply formative, life-long process' resulting in individuals living by the highest ethical standards and in possession of a 'critical mind' (Bookchin 1995: 63), with the 'life-long' element enhanced by active debate within assemblies (Bookchin 2012d: 699). The continual training would instil a sense of comradeship within individuals (Bookchin 2012d: 699), and a 'sense of duty' towards the municipality (Bookchin 1995: 63). As an underpinning mindset, the importance of *paideia* is difficult to exaggerate. At the very least, it would be responsible for individuals understanding the importance of: ecology; municipal governance; the collective ownership of the means of production; the distribution of resources within a municipality; sharing resources with other municipalities; and respecting other individuals' privacy.

When applying Bookchin's philosophy to the desert island, both parties on the island would be equal members of a self-governing municipality and could constitute one part of a confederation of other desert islands. A hydrothermal plant would be

communally owned and each would work upon it according to their ‘abilities’ and take energy according to their ‘needs’; although it can be expected that both ‘abilities’ and ‘needs’ are culturally defined. Individuals may use their own energy as they wish. Where possible spare energy generating capacity would be used to share energy with other islands.

The ownership type of Bookchin’s use of hydrothermal energy used on a desert island community would look as follows:

1. Individuals are active and dutiful members of a municipality.
2. The means of production and hydrothermal energy are collectively owned by a municipality.
3. Renewable energy is harnessed at a sustainable level by a municipality.
4. Individuals work according to their ‘abilities’.
5. Individuals take their energy ‘needs’.
6. After individuals have taken their energy ‘needs’, the remaining renewable energy will be shared with other municipalities.

The municipality harnesses renewable energy at sustainable levels and from this supply, individuals take their culturally defined energy ‘needs’ before the remaining energy is shared between municipalities.

6.3.2 Bookchin: Internal Criticism

From the description of the relationship between municipality and confederation described above, the astute reader may expect a clash of interests between the two bodies and even feel that Bookchin is being naïve in his expectation that there would be congruence between municipalities. Differences may be acute between municipalities that are culturally or geographically distanced and renewable energy may be used to

demonstrate this. Assuming that energy has unlimited uses,[302] and pressure builds up from the social sphere whereby individuals desire to use more energy in their lives, then the island would find that their domestically defined 'needs' increase and they require more of the energy that once was shared within a confederation.[303] This process can be expected to exacerbated where communities desire self-sufficiency and place their own 'needs' first.[304] Hence, a dilemma may exist: either fulfil domestic 'needs' and lessen the contribution given to shared exchange, risking a collapse of the confederation; or fulfil shared exchange and leave domestic 'needs' wanting, with the possibility of local dissatisfaction. Seemingly, there would always be tension between the principle of shared exchange and a distribution based upon taking according to 'needs'. In response, some municipalists may argue that the true energy 'needs' of all, within the community would be met by culturally limiting energy 'needs' which would relate to the energy available and concepts influenced by past societal pressures, forcing people to use more energy to fuel consumer goods as an example, would not exist; hence energy *would* be available for shared exchange. Nevertheless, the possibility of tension between the community and the confederation exists.

6.3.3 Bookchin: External Criticism

In a similar manner to the external criticisms of the Hutterites and Robert Owen, the political philosophies of the private ownership types would immediately recoil at the denial of the full concept of the individual.[305] The exercise of Lockean ownership rights would be impossible as many persons would not receive a return of energy commensurate with the effort expended in the harnessing process and Lockeans may

[302] See 1.3.3 'The Desirability of Increasing Energy Usage'.
[303] See 1.3.2 'The Harnessing and Storing of Renewable Energy' for a definition of 'domestic'.
[304] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[305] See 6.1.3 'Hutterites: External Criticism' and 6.2.3 'Owen: External Criticism'.

also consider that some have forsaken their rights without adequate recompense.[306] The Nozickian would once more find that a person's individuality had been compromised via the installation of a mindset from the process of *paideia*, where persons had now become the 'means' to the 'end' state of municipalism.[307] As with other communitarian ownership types, the left-libertarian would note that individuals do not decide their own level of welfare with a person's 'needs' effectively dictated within a municipality[308]

The municipalist would respond that the mindset inculcated by *paideia* would make such selfish concerns an irrelevance as the individual would focus their thoughts upon the wider 'needs' of the community. However, a further grievance for the advocate of private ownership would be that individuals would not just be expected to share the fruits of their labour with others within a municipality, wherever possible they would be expected to produce a quota of energy for *other municipalities* within a confederation.[309] This secondary level of distribution would further irritate the advocates of private ownership and distance them from municipalism.

Moving on to criticisms from other political philosophical schools, some distributed ownership types such as Rawls would note that an individual would have less opportunity to find out what 'goods' or life-choices personally suited them; as the goods would be limited to what an assembly condoned.[310] Related to this, the Aristotelian would wish to see individuals equipped to make judgments concerning how much energy they would need.[311] With regard to the ownership of goods, the municipalist may respond that the social sphere would allow persons to own goods;

[306] See 3.1.1 'Locke's Philosophy Defined and Applied' for the provisos that guide his distribution and see 3.1.3 'Locke: External Criticism' where persons could willingly forsake their natural rights, by joining a 'commonwealth', where it is in their interests to do so.
[307] See 3.2.1'Nozick's Philosophy Defined and Applied' for his view on rights and constraints.
[308] See 3.3.1 'Otsuka's Philosophy Defined and Applied' for his views on the importance he places upon persons deciding upon their own level of welfare.
[309] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[310] See 4.2.1 'Rawls's Philosophy Defined and Applied' for the importance Rawls placed upon individual choice; particularly in his first principle. See also 4.1.3 'Mill: External Criticism' for a criticism of how a variant of utilitarianism may limit an individual's goods according to Rawls.
[311] See 4.3.1 'Aristotle's Philosophy Defined and Applied'.

hence the municipalist would be adamant that individuals would be aware of what particular goods suited them. Hence, this slice of liberalism within communitarian life would make any criticisms that persons do not gain any self-understanding with regards to which particular goods suited them less forceful.

At this point the liberals may add that if individuals are to enjoy goods then why not allow more incentives in a community, whereby the individual keeps the majority of their produce, in order to provide innovation, efficiency and more production.[312] However, the municipalist would not necessarily equate greater production with greater fulfilment; the spirit of Bookchin's work would favour fulfilment being gained through exercising duty and comradery rather than materialism. The advocate of Bookchin may augment their stance by noting that environmentalism has been supported here: Bookchin identified capitalism as a force opposed to environmentalism because it was instrumental in introducing a 'grow or die' mentality, whereby producers of goods had to produce more or expire due to competition from others, so the concept of growth became an 'end' in itself (Bookchin 2012f: 652-3). Less productivity may therefore be considered to be beneficial by the municipalist as it prevents environmental damage.

Looking at the utilitarian's concerns, the presence of unequal distributions of renewable energy between communities may be particularly troubling as this would not be expected to maximise utility: accepting that there would be pressure within a community to retain increasing amounts of energy,[313] some communities may expect to have enough energy to facilitate maximising utility and some may not. Of course, this situation would depend upon how successful a confederation was in coordinating and effectively policing energy distribution between municipalities,[314] but tension between

[312] See 4.2.1 'Rawls's Philosophy Defined and Applied' for Rawls's view that retaining the majority of produce acts as an incentive and promotes economic growth.
[313] See 6.3.2 'Bookchin: Internal Criticism'.
[314] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.

the municipalities and confederation *may* be present.[315] The utilitarian may rue the opportunity to maximise utility that a confederation could facilitate by ensuring that municipalities concentrate upon producing specialist goods and trading. The municipalist and utilitarians are likely to remain at odds whilst municipalities promote self-sufficiency.

Looking at egalitarian schools of thought, some trenchant criticism may come from Marxists that the municipalist would need to address. It would be noted that a portion of the energy produced would be shared with other communities, and to some this may initially look like a type of exploitation:[316] a type of exploitation where the community as a whole is exploited as its produce does not benefit them in the same way that surplus-value does not benefit the proletariats. However, there may be two counters to this argument. Firstly, energy would be shared with other communities; but these communities should reciprocate and share other goods. Therefore, exploitation has been theoretically negated. Secondly, a redistribution of energy may be considered necessary to tackle the inequality that some Marxists believe causes exploitation between individuals;[317] and this reasoning could be extended to cover all communities. Hence, no community would expect to suffer exploitation at the hands of other communities.

However, looking at the prospect of alienation, Marxists may have concerns about the structure of Bookchin's municipalities, as work is unlikely to become the *desideratum* that Marx envisaged.[318] The fact that individuals would live within smaller communities would result in a lesser variety of work being available; leaving some working in occupations for which they have no affinity. In response, this criticism would be countered by the education of *paideia*: one would be brought up to realise

[315] See 6.3.2 'Bookchin: Internal Criticism'.
[316] See 5.1.1 'A Marxist Philosophy Defined and Applied' for a definition of 'exploitation'.
[317] See 5.1.1 'A Marxist Philosophy Defined and Applied' where it is accepted that surplus-value functions to maintain equality between individuals.
[318] See 5.1.1 'A Marxist Philosophy Defined and Applied' for a definition of 'alienation' and the ideal that work should become a *desideratum*.

how one's efforts benefit one's community and therefore alienating work could be tolerated; but if working patterns were unbearably alienating to the majority, then steps would be taken by the assembly, to restructure working routines or find new areas of production.

A further factor concerning the structure of Bookchin's municipalities that would trouble Marxists is that the state of material abundance that Marx anticipated may never arise.[319] The Marxist may feel that the structure of municipalities would not entail the economies of scale needed to approach a level of abundance and may implore a move towards energy generation replicating that of nation states. Here, the municipalist may respond that the levels of energy needed would be stimulated by *true* 'need' from within a community and not a hypothetical state of abundance; and furthermore, the municipalist may remind the Marxist that where energy production is relatively low in a Marxist ownership type, a person's 'needs' may also adjust to the supply available.[320] Moreover, economic growth would not be valued for its own sake and its potential to despoil resources would not be encouraged. The Marxist and the Municipalist would agree to differ from their views on what should constitute humanity's economic conclusion.

6.4 The Evaluation of Communitarian Ownership

All the communitarian ownership types reviewed here promote the existence of the community over the individual. Some communitarians may argue that the individual cannot realise their own identity or motives without the existence of an informing community. However, should a particularly rebellious individual go against accepted wisdom and improvise some technology to harness energy, then the informing

[319] See 5.1.1 'A Marxist Philosophy Defined and Applied' for the anticipation that a state of abundance would arise.
[320] See 5.1.1 'A Marxist Philosophy Defined and Applied' for the reasoning behind 'needs' being flexible.

community may only have a weak claim over the individuals innovation. This may be considered to be a weakness of communitarianism but particularly Hutterite colonies which exact the most influence over individuals within their midst.

The individuals within Hutterite communities also express dissatisfaction with the distribution of goods and this can be expected to be true of distributions of renewable energy. In the case of the Hutterites this criticism would seemingly be encouraged by the existence of a conservative decision-making body, comprised *only* of adult males, that distributes energy to others without fully understanding their needs; this institution also denies some sectors of a community, such as women, democratic rights they would enjoy in greater society.

The ideal of an Owenite community could not be described as unduly undemocratic but may suffer other criticisms. Firstly, it would be difficult to assemble a grouping of persons with similar mindsets to initiate a colony, especially if they came from non-communitarian backgrounds and this is likely to be the case. Even if this first hurdle could be overcome, then it is also likely that Owen has underestimated the amount of energy individuals may be inclined to 'enjoy' as his work advises that modest amounts should be distributed to individuals for their own usage.

Owen's type of personal energy use may be contrasted with the likely energy use in Bookchin's municipalities where individuals would use energy within a social sphere to enjoy their hobbies for example. Although the municipality's culture should define an individual's 'needs' it is unlikely that a municipality's citizens would be content with the meagre personal allotment of the Hutterites or the modest usage of Owenite communities; hence, the average personal level of energy usage would be expected to be higher in a municipality. The result may be that municipalities would need to produce more energy *per capita* and concentrate more resources on producing energy.

However, there would seemingly be constant tension between a municipality providing for its own energy 'needs' and sharing with a greater confederation. Although some energy may be shared, the self-sufficient leanings of municipalities combined with a desire for individuals to use increasing amounts of energy, would mean that the energy generating communities would retain the majority of their own produce.

Leaving potential faults of each individual communitarian ownership type aside for the moment, through all the communitarian ownership types reviewed here, the reader may note a common thread uniting communitarians: that of an acquired mindset. Communitarians would consider mindsets to be benign devices that guide individuals towards leading a worthwhile life and such mindsets are integral to holding communities together by ensuring all members of a community have a similar outlook. Moreover, the presence of a mindset may be used to defend against criticisms stemming from other schools of political philosophy. Focussing upon Bookchin's acquired mindset, then the operation of this may be used in argument, to categorise the concerns of other political philosophies as little more than an irrelevance that would not occur in a municipality. Now it should not be surprising that the concept of an enjoining mindset is used to fend off criticisms from other political philosophies, as the latter evolved from backgrounds praising liberalism or individualism. The communitarians have rejected this notion and therefore operate within a different paradigm.

Now, if the defence provided by the operation of a mindset is not a convincing device to solve the potential problems of communitarian energy supply, then the introduction of modern technology into such lifestyles may be. To explain, often personal distributions of energy within many communitarian settlements may be expected to be relatively small when compared to other ownership types. Now those armed with the knowledge that the technology is available to generate energy via small

wind turbines or solar panels,[321] which could be attached to one's home, may put forth the proposition that individuals or families within communitarian settlements should generate their own renewable energy. This would seemingly provide the solution to the communitarians' energy problem.

Now this proposition may threaten the continuance of another common thread running through the communitarian ownership types reviewed here: that the means of production should be communally owned. Hence, the more conservative communitarians may see this manifestation of individuality as a slippery slope to full liberalism; a sinister development which may undermine their communities. The fact that individuals now learn the skills to help them manage their own lives and gauge how much energy they need, may divert individuals from considering the whole community's interests. Communitarians may respond that the true energy requirements of all within the community would already be met, and the past societal pressures, forcing people to use more energy would not exist.[322]

However, as it would allow individuals to either attain their own level of welfare with regard to energy consumption or complement community-supplied energy, each community's governing body would be expected to vote upon the proposition to introduce small-scale generated energy and some communities may accept it whilst others refuse it. With regard to the Hutterites it could be argued that energy generating equipment, for example solar panels, could be considered as a durable item that could be lent out to an individual or families but ultimately returned to the common stock. Possibly some small-scale generation could be allowed under Owen's theorising under possessions available to 'enjoy'. However, Bookchin's idea of a *social sphere* may be more helpful here. A situation could be envisaged where communities relax the principle of the communal ownership of the means of production and allow individuals

[321] See 1.3.2 'The Harnessing and Storing of Renewable Energy'.
[322] See 6.3.2 'Bookchin: Internal Criticism' for the municipalists defence that there would be no tension between municipality and confederation when supplying energy due to this reasoning.

and families to generate their own energy for home usage within the social sphere. Provided that communal ownership of the means of production was only relaxed in the area of small-scale energy generation and remained robust elsewhere, then it would allow communitarian life to continue unscathed in other areas. Hence, small-scale generation of energy within a communitarian settlement remains a possibility.

However, the fact that Bookchin included an element of individualism within his version of communitarianism raises the possibility that communitarian ideas could be introduced and accommodated within liberal life. Examples of introducing communitarian energy generating ventures into liberal society could include: a group of farmers who jointly purchase an anaerobic digester powered by their livestocks' slurry; or a village lying next to a river which may jointly purchase a hydroelectric turbine; or the inhabitants of a tower block who jointly purchase solar panels. If the means of production remain collectively owned, and the energy is distributed via a group decision, then a communitarian type of energy ownership may be introduced into liberal life.

Hence, it would appear that a full communitarian lifestyle would not be needed to enact a communitarian ownership of renewable energy.[323] But it would certainly help if this was a relatively minor part of a person's life and persons may go about their work, raising families and pursuing interests outside of the project of energy generation. The fact that renewable energy is an unlimited resource and does not have to be hewn or pumped out of the ground as conventional energy sources often do,[324] assists in this process.

[323] For some, the idea of including communitarian ownership of renewable energy may not be surprising. Individualistic, liberal societies are already prepared to tolerate communitarian institutions, such as the family and schools, within their midst (Parekh 2003:241).

[324] See 5.1.1 'A Marxist Philosophy Defined and Applied' where the relative ease of gaining hydrothermal power would assist a Marxist distribution according to 'needs' occurring before industrialisation. Also see 1.3.1 'Energy Types' for a description of the unlimited nature of renewable energy.

In this chapter, the question that was posed in the introduction can now be answered: *why should renewable energy be owned by a community*? The answer is that renewable energy *may* be owned by a community where individuals wish for the arrangement, agree to the arrangement and abide by the arrangement. The communitarians would therefore be right in understanding that the existence of a shared mindset facilitates this.

7 The Responsibilities of Renewable Energy Ownership

7.1 Introduction to Responsibilities

From the second chapter it was argued that humanity has a right to own renewable energy. In the third to sixth chapters various ownership types that humanity may use were applied to a thought experiment concerning renewable energy. Now the task remains to define the responsibilities of renewable energy ownership. The responsibilities are considered to be important, as any ownership type from the third to sixth chapters should ideally be able to address them in order to be considered as a suitable model for the ownership of renewable energy.[325]

It has been suggested that there are three types of responsibility: causal, legal and moral. In turn, these may be understood as an actor being responsible for the cause of an action; an actor being legally bound to carry out an action; and an actor being bound by the mores of society to perform an action. The latter two may be associated with sanctions being placed upon the actor should she fail to perform (Klein 1995: 771-2). However, all these allude to responsibilities being carried out at an operational level within a society where the responsibility may be attached to a single person. Certainly, some responsibilities will be held by individuals, such as those entailed by the sensible usage of energy that should not endanger others' lives. However, these would be expected to be covered by society's civil and criminal law and also the mores that operate in a particular society.

Here, the responsibilities associated with renewable energy are deemed to be held by greater society. This is because the responsibilities associated with renewable energy require analysis and coordination at a higher and wider level than the individual, which will be demonstrated in this chapter. Also, as the introduction of renewables may

[325] See 1.1 'Preamble'.

have global repercussions, societies rather than smaller entities will be the best actors to ensure their responsible introduction due to the resources they may muster to prevent any problematic consequences.

Three responsibilities have been identified here as being important to the spirit of improving humanity's situation with regard to energy supply. The first concerns *The Provision of Domestic Energy,* as opposed to centralised energy provision, so that all identifiable entities may have their own energy supply. It principally uses the case study of the United Kingdom's energy supply to demonstrate the failings of such supplies in a developed society and by doing so, highlights criteria which should be fulfilled in future energy supplies.

The second and third responsibilities identified are *Sustainability* and *International Justice*, and as they are responsibilities that need to be realised globally, by both the developed world and developing world alike, they feature within the section entitled 'Global Responsibilities'. These include taking into account the work of the United Nations' Brundtland Commission and their concept of 'sustainable development'. Furthermore, the Commission's contribution to a concept of international justice is noted. Some criticisms that may arise from drawing comparisons with the Brundtland Report are also addressed here.

This chapter, in common with the 'Rights' chapter, focusses upon providing tenets for the ideal ownership of renewable energy.[326] However, the tenets featured here are tempered by the context of the real world. For instance, *The Provision of Domestic Energy* notes the human rights breaches and social injustices of past centralised energy provision;[327] *Sustainability* notes where the monitoring of environments would be beneficial after actual renewables schemes have been introduced; and *International Justice* recounts instances where developing societies are

[326] See 1.1 'Preamble'.
[327] See 1.3.2 'The Harnessing and Storing of Renewable Energy' for the definition of 'domestic' used throughout this chapter.

currently introducing renewables. Hence the ideal ownership type should accommodate responsibilities that have some provenance in the real world.

In concluding, the salient points uncovered in this chapter will be summarised.

7.2 Society's Responsibilities to Ensure Adequate and Affordable Energy

This section acknowledges that society has responsibilities in providing energy. In particular, it notes the problems of centralised energy supplies and queries whether the problems have been societal in origin or due to market-based economics. Then the question is asked whether these problems would affect renewable energy? After assessing their affect upon renewables, an argument is provided for society to adopt domestic energy provision.

7.2.1 Problems with Centralised Energy Provision

The reader may recall from the second chapter that it has been argued that there is a human right to renewable energy.[328] However, the notion of 'social justice' is also explored here as being a concept of awarding goods above the level of merely having one's rights satisfied: to explain, social justice may be felt to entail an element of social equality whereby all members of a society may relate to each other as equals and its absence may undermine a sense of 'fellowship' within society (Kymlicka 2002: 197). This postulate is upheld here, as uneven distributions of goods risk causing the less well-off to question whether other distributions are possible and may even lead to societal disruption.[329]

The question then arises can both human rights and social justice be satisfied by a centralised supply of energy? For example, electricity is currently generated from

[328] See the discussion in 2.2.2 'Human Rights'.
[329] See 3.1.3 'Locke: External Criticism' where this possibility has been noted.

centralised power stations and supplied via a grid system to the consumer in many parts of the world, and on the face of it, this is a successful arrangement. However, this viewpoint does not acknowledge that centralised supplies of energy have breached human rights and also caused social injustices and this will be demonstrated in the following subsections.

7.2.1.1 Societal Problems

Turning to look at the United Kingdom (UK) during the time it had state-owned energy provision via a centralised supply, the extent and severity of the problems entailed with this distribution may now be assessed. For instance, extensive power cuts limiting energy usage occurred during January and February of 1973. Now, the power cuts may be attributable to societal problems such as industrial action,[330] and the situation was tackled by the government rationing the amount of energy that could be used (National Archives 2013). The result was that citizens suffered deprivations: people were limited with regard to cooking, lighting and heating their homes (BBC 2007). Because of the combination of the duration of power cuts and the intrusiveness into individuals' lives, it is argued here that the state-owned energy provision breached human rights. In times of failed supply, the individuals affected cannot be said to have been provided with a sufficient supply of energy as gauged by their society.[331]

One objection to this position may come from those adopting a broadly utilitarian viewpoint. They may say that as some power cuts must occur for routine maintenance anyway, one may prepare for occasional power cuts by storing reserves of food, candles and fuel. Therefore, they would argue that focussing upon a few weeks of intermittent supply is seeing things out of proportion when the system worked for the

[330] Richard Eden and Nigel Evans give an overview of the complexities of the situation (Eden & Evans 1986: 14).
[331] See 2.4.2 'Countering Opponents of Rights Legislation'.

vast majority of the people for the vast majority of the time. However, this counter is missing the point: the people had an agreement with the energy provider to supply energy to their homes and they paid for this service. Here, the state as the provider broke the agreement; admittedly unintentionally, by not keeping its affairs in order: but it was the populace who suffered.

7.2.1.2 Market-Based Problems

Moving to the second case of ownership concerning the UK's privatised energy supply, it will be asked, whether the private provision has fared any better than the socialised provision? Here it will be noted that the private arrangement has caused social injustices due to the rise in the price of energy and the resultant increase of persons living in what has been called 'fuel poverty'.

During the late twentieth-century the UK's energy supply was privatised and opened to competition. A purported benefit of the privatised arrangement is that the consumer can 'shop around' and gain the best energy deal from a variety of companies; this was privatisation's *raison d'être* and it should be noted that a 'market place', whereby one has a number of suppliers from whom one may purchase energy, is integral to this arrangement.

However, the early twenty-first century saw energy price rises outstripping inflation and a UK parliamentary report has cited various reasons for these increases: 'declining UK output, increased reliance on international markets, increased global demand, links between oil and gas markets, actions of some supplying countries, taxation and policies aimed at cutting carbon emissions' (Bolton 2010). Although a variety of factors may be officially blamed for the rise in prices, the upward trend in price should come as no surprise: as the stocks of all carbon-based fuels are

diminishing,[332] their price will therefore increase as consumers outbid each other to purchase the commodity. But from the consumer's viewpoint, quite simply, this has resulted in severe increases in fuel costs.[333]

Accompanying the rise in energy prices has been an increase in fuel poverty within the UK. Fuel poverty may be defined as a state of affairs in which a household spends more than 10% of its disposable income on heating (UK Fuel Poverty Strategy Group 2001: 3); and this is a condition a previous government wished to end as it represented an unacceptable loss of welfare for many (UK Fuel Poverty Strategy Group 2001: 1). The UK government's statistics for 2010, compiled by the Department for Energy and Climate Change (DECC) calculated that 4.75 million households in the UK were living in fuel poverty and this represents an increase from a figure of 2 million in 2002 (DECC 2012a: 10). Additionally, there is a very strong correlation between fuel poverty and the rise in fuel costs: when reviewing graphical data, the former's track matches the latter's and did so between 2004 and 2009 (DECC 2012a: 20). Hence, fuel poverty increased and was strongly related to the increased cost of energy. Furthermore, fuel poverty affects the poor the most: in 2009, 52% of the unemployed lived in fuel poverty (DECC 2012a: 45). If we accept that the condition of fuel poverty represents an unacceptable loss of welfare for the poorest in society, then society is effectively allowing the poorest to live without an adequate level of welfare and suffer social injustice.

That said, there may be those who would deny that fuel poverty exists. It may be argued that the poor are well looked after in the UK and receive welfare payments,

[332] See 1.1 'Preamble' for this postulate.

[333] For comparison purposes, the Department for Energy and Climate Change (DECC) uses a 1996 index for costs as 100 and adjusts later costs to gain their 'real cost'. The following figures for Gas and Electricity relate to that scale (DECC 2012b: 13): gas costs were valued at approximately 80 in 2003 and valued at approximately 165 in 2011, 80 divided by 165 equals 2.06, hence, 2011's gas costs approximately 2 times the 2003 cost; electricity costs were valued at approximately 73 in 2003 and valued approximately 115 in 2011, 73 divided by 115 equals 1.58, hence, 2011's electricity costs approximately 1.5 times the 2003 cost.

effectively ensuring that they receive a quota of energy. Additionally, they would note that help with heating costs has been provided to pensioners and adults who may be vulnerable to cold weather; along with grants and advice on how to insulate one's home and improve one's energy usage (Energy Saving Trust 2014a). Possibly, armed with this information, there are some who would maintain that society has taken adequate steps to negate fuel poverty.

These counters would be compelling if it were not for the fact that for some, fuel poverty remains inevitable. It has already been noted above that carbon-based fuels are a diminishing resource and as their price increases, persons will have to outbid each other for energy. If greater use is not made of alternative energy sources such as renewables, to cover a shortfall in energy usage, then a future scenario beckons whereby persons outbid each other for increasingly expensive energy generated from increasingly scarce resources. As prices rise, there will still be those for whom the cost of heating will be greater than 10% of their income. Until society takes any or a combination of steps to cover a shortfall in energy, ensure that energy is abundant, ensure homes are perfectly insulated or reduce energy requirements, then society effectively licenses social injustice.

7.2.2 Are Centralised Problems Applicable to Renewables?

Accepting that the centralised supply has not been satisfactory when using a system dominated by carbon-based fuels, the question then arises, would the problems of the past occur if *renewable energy* fed into the centralised infrastructure? By taking the problems that afflict conventional energy generation and supply in turn, it is explained that renewables feeding into a centralised infrastructure could suffer from the same problems and they are reviewed in the following subsections with their counterarguments.

7.2.2.1 Renewables and Societal Problems

Some may argue that as there would be fewer persons working in renewable energy, when compared to previous conventional energy supplies, then any societal failings can be expected to be less problematic. They may note that a process such as hewing coal from the ground had been very labour intensive in the past and therefore there would be a greater chance of some portion of the workforce becoming disgruntled with their terms and conditions of work. However, with fewer people, in more strategic and skilled positions, then *any* failings of the system may have a more magnified effect. This can be demonstrated by remembering the UK's power shortages of 1973 where both miners and power station workers took industrial action: stocks of coal buffered the effects of industrial action by the miners so that it took a few weeks for their industrial action to be felt (Eden and Evans 1986:14); whereas industrial action by power station workers was felt within hours, reflecting the difficulty in operating complex equipment without the full cooperation of highly skilled workers (Eden and Evans 1986:14). Hence, a centralised structure employing modern technology could be more susceptible to a range of failings; which may even include illness, malfeasance, poor maintenance, human error and staff shortages. It can be concluded that renewables when feeding into a centralised infrastructure would not be immune from disruptions.

However, the question arises whether renewables could be generated even further afield: further than one's own society? It is possible, that a variety of different renewable sources from solar, wind, hydroelectric, and tidal at the very least, could be fed into an intercontinental grid.[334] This may expect to avoid or minimise problems with regard to energy generation within any one particular society. However, it is a complex arrangement and would require the cooperation of many nations and the coordination of

[334] The Desertec proposal of 2009 intricately combines concentrated solar power from North Africa and the Middle East, geothermal energy from Iceland, hydroelectric from mountainous regions and wind power from the coasts (Everett 2012: 495-6).

many political agreements. When faced with such complexity many may prefer to generate energy via their own arrangements closer to home.

7.2.2.2 Renewables and Market-Based Problems

Some may feel that renewable energy would be separated from the price increases plaguing a shrinking resource, and it would supply a continuous and constant amount of energy avoiding this conundrum. However, if it is left to market forces and private companies to supply, the companies may attempt to satisfy shareholders by maximising profits: and the most unscrupulous may achieve this by limiting supply. Additionally, even where a steady supply may be achieved, energy is a very usable commodity and is considered here to contain the *desirability of increasing usage*;[335] and the desire would increase demand. Hence, the central infrastructure of a grid system may continue to facilitate a market whereby individuals and organisations would outbid each other for energy. The result may be that the poorest members of society are the least able to afford renewable energy.

7.2.3 The Provision of Domestic Energy

From the above discussions concerning centralised energy supplies, even if detractors are not convinced that such supplies both breach human rights and cause social injustice, then it must be admitted that such supplies *can* contribute to unease in society. The worry such supplies cause to the populace, especially to the most disadvantaged members of society, that the supply may become either unavailable or unaffordable is undeniable. Now, if a superior supply of energy is available then it falls upon society as

[335] See 1.3.3 'The Desirability of Increasing Energy Usage'.

one of its responsibilities, at the very least, to facilitate the introduction of such a superior supply.

This prompts the question, what constitutes a superior supply? From the introduction the reader may recall that renewable energy is widespread and unlimited;[336] and also that all the equipment is available to harness and store renewable energy;[337] and it is from these two premises, combined with the premise from this chapter that central supplies of energy contain inherent problems,[338] [339] that it is now argued that an energy supply, that can benefit from the widespread and unlimited nature of renewable energy, whilst also benefitting from the presence of equipment to harness and store renewable energy, whilst further avoiding the need for centralised supply, should be adopted.

Here it is argued that *domestically* generated energy possesses the benefits whilst avoiding the problems. To explain, any identifiable entity could install its own harnessing and storing equipment whilst simultaneously avoiding the problems associated with centralised energy supply. Hence, domestically generated renewable energy is considered to be a superior energy supply.

After identifying domestically generated energy as the way forward, the question remains as to how society may facilitate its introduction. Certainly society should fulfil its human rights obligations towards energy supply,[340] but it should also aim to fulfil notions of social justice.[341] An argument may now be supplied that society should accomplish this largely by a process of introducing the means of production for harnessing and storing renewable energy. To explain, three categories of human need

[336] See 1.3.1 'Energy Types'.
[337] See 1.3.2 'The Harnessing and Storing of Renewable Energy'.
[338] See 7.2.1 'Problems with Centralised Energy Provision'.
[339] See 7.2.2 'Are Centralised Problems Applicable to Renewables?'.
[340] See 2.2.2 'Human Rights'.
[341] See 7.2.1 'Problems with Centralised Energy Provision' for a definition of *social justice*.

are likely to present themselves to society and these are noted in the following paragraphs.

Firstly, some individuals or groups, for whatever reason, may have their renewable energy needs already fulfilled; or have the capacity to fulfil these. Society may deem that this is the case: for instance, persons with above average incomes may be deemed as those who do not need assistance and society may argue that it has already fulfilled the positive claim right to renewable energy and more besides,[342] by providing an environment in which such persons may flourish. Nevertheless, it would be for society to decide the relevant criteria to determine which persons required assistance or not.

Secondly, for those individuals or groups who do not have their needs to renewable energy fulfilled, then society may fulfil its obligations by providing its citizens with the means of production for generating renewable energy domestically. This would entail providing individuals and groups with whatever equipment they needed: as one example, those individuals with little opportunity to generate energy from their abodes may be assisted in setting up wind turbines at a distance and also installing an energy transportation system if no other method of conveying the energy was available.

A third option occurs for those individuals or groups who do not have their needs to renewable energy fulfilled and who cannot generate energy themselves by any possible means. Society would need to supply renewable energy directly. This may be for an affordable fee where society deems this relevant or it may be supplied without charge, to the incapacitated as an example.

[342] See 2.3.1 'Positive Claim Rights' for a demonstration of the individual's claim right to be supplied with renewable energy.

This leaves the question of how varying political philosophies may consider a domestic type of energy supply.[343] Some socialists may fear the aggrandisement of individuals and the growth of individual rights at the expense of greater society, and therefore they may be expected to provide a body of resistance to this arrangement. Communitarians may complain of interference in their own decision-making whilst utilitarians may decry that utility is not maximised. Political philosophies that espouse economic growth may be apprehensive that this aspect of society may not be assured. However, those political philosophies with an individualistic streak, or even those that accommodate some version of individualised production, may be expected to agree with this proposal.

However, there would also be costs associated with such arrangements which would be feared by opponents of positive claim rights;[344] but it is expected that these would be offset by more affordable equipment and lessening welfare payments. To elucidate, the means of production should become a growing and widespread asset in society and their manufacturing would benefit from economies of scale and their price should therefore become more affordable; furthermore, the presence of a market trading old equipment would make it even more affordable. With regard to welfare payments to the poor, the element that accounts for energy would not be needed as persons become self-sufficient in energy and welfare payments would be expected to decrease. Hence, the costs associated with a gradual move to renewables, via positively assuring the less affluent a supply of renewable energy, should not be prohibitive.

[343] The move to a domestic production and therefore a more individualistic production would expect to cause debate similar to that already aired in 2.4.1 ‘Countering Opposing Ideologies’.
[344] See 2.4.2 ‘Countering Opponents of Rights Legislation’.

7.2.3.1 Society's Incidental Responsibilities

Although the previous subsection has argued for the generation of domestic renewable energy utilising widespread equipment domestically, some vestiges of the former centralised supply would be expected to remain. For instance, the usage of the existing grid systems to transfer energy will remain necessary. Often an energy user will be expected to harness energy remotely as they cannot generate energy where it is needed, and therefore they may expect to transport their energy via a grid system. Aside from the transportation of energy, the grid would also be expected to upkeep its current obligations in providing a reserve of energy. For instance, in the case of a hypothetical local emergency, where the domestic production of wind energy is curtailed due to placid weather, then the energy reserves held in hydroelectric dams could be used.[345]

Although the grid system is a centralised structure and may fall foul of the problems associated with the centralised generation of energy,[346] it should be appreciated that the societal and market-based problems would all be of far lesser importance. Firstly, with a greater proportion of domestic energy generators harnessing and using energy *in situ*, the incidence of needing to transport energy would decrease. Market-based problems would also decrease as domestic generators would use the grid primarily to supply their own energy. Hence, a complimentary arrangement would be expected, whereby if domestic energy supplies fail, the grid would supply the shortfall; and where the grid fails, domestic energy producers would have their domestic generation and storage. Nevertheless, for those primarily reliant upon a grid system to transport their energy, a few problems associated with central supply would unfortunately remain.

[345] The UK's national grid holds energy reserves in dams, referred to as 'pumped storage', primarily to meet fluctuating demands for energy (Ramage 2012: 198-201).
[346] See 7.2.1.1 'Societal Problems' and 7.2.1.2 'Market-Based Problems'.

Accompanying the increased presence of harnessing equipment would be society's obligation to ensure that health and safety regulations remain in place. Any large scale generators would be expected to adhere to the regulations applicable to existing industries: however, on a small scale, the use of renewables may provide some danger to individuals that governments may wish to limit. For instance, a contraption that harnesses solar power by utilising concave mirrors and magnifying lenses may be outlawed in the home due to its risk as a fire hazard. Less apparent would be prohibiting small hydroelectric or tidal ventures for those individuals fortunate enough to be able to harness such energy: these may be prohibited due to the risk of individuals becoming entangled in the apparatus and drowning. Hence, governments will be expected to act parentally and some energy generating methods should be controlled due to their inherent danger.

Accompanying the parental role, society would also be expected to perform a monitoring role. For instance, society may measure individuals' levels of usage and ensure human rights obligations are met; especially where individuals are part of a larger group.[347] Also, by measuring energy usage geographically and seasonally and compiling this information, society would also be expected to provide a strategy for future energy generation. Society may also record which schemes succeeded and failed; and thereby provide guidance in advising generators which method to use. A further result of the compiled body of knowledge would be that society could provide a coordinating role for investment and research. Additionally, a *society* as opposed to individuals or smaller commercial entities, is in the position to invest relatively large amounts of resources and ensure a return on its investment by licencing the end products. Hence, much societal monitoring of renewable energy generation and usage may be expected.

[347] See 2.2.3 'Group Rights' where the potential remains for society to intervene in a group to ensure the individual's rights are upheld.

Society may also be expected to manage competing uses for land. A clash can be expected to be particularly poignant where a renewable may occupy land that could be profitably used for another purpose. The most obvious example of this is provided where crops are grown for biofuel which reduces the land available to grow food. Furthermore, leisure interests and national parks can be expected to provide a guide to where renewables *may not* be sited (Everett & Boyle 2012: 471). In addition, some schemes may require the disturbance of cultural, historical or religious sites that have a value to people greater than that of energy. It will, therefore, fall upon society to choose between goods required.

At this point it should be noted that the problem of land management is likely to be exacerbated as renewables, in general, will require more of the surface area of the Earth to be utilised when compared to fossil fuels. Taking a hypothetical example, a coal mine may occupy a few hectares of the Earth's surface but be able to access millions of square hectares of underground coal seams. The most efficient renewable sources cannot reasonably be expected to produce as much energy when occupying the same few hectares on the surface.[348] However, it is noted that the area of land needed by renewables could be offset by current man-made structures; as an example, a solar panel placed upon one's roof would not impact upon anyone in a physical manner and therefore there exists a large scope to use renewable energy that does not inconvenience anyone. It has been noted that in densely populated countries, any developments should optimise the space available and pursue 'multifunctional land usage'; and such usage may already be familiar to many, such as the placing of car parks under buildings as one example (Boersema & Bertels 2000: 89-90).

Where 'multifunctional land usage' is not possible, choosing sites for renewables may plausibly be based upon overarching calculations of utility. For

[348] One possible exception is geothermal energy which may need to occupy only as much surface area as a conventional mine but provide unlimited energy if managed carefully; See 7.3.1.3 'Sustainability – Environmental Issues' for the principle that geothermal energy is 'mined' but may replenish itself.

instance, a tidal barrage may affect great geographical areas, disrupt river flow and upset ecosystems: but if it would also benefit huge numbers of people with plentiful supplies of energy, then society is likely to be more inclined to allow such a venture.[349] As another example, an array of wind turbines in a local park may mitigate the leisure facilities of an area, but if it is the only way of satisfying the human rights requirements of those not able to generate their own energy, then society may allow this scenario. There can be expected to be many clashes of interests and the society in question will have to resolve this by establishing which particular interest provides the greatest utility when actioned.

Societies should also maintain their duties towards each other. As an example, where a society is the sole owner or guardian of a resource that it wishes to use to generate renewables, which other societies depend upon in some way, then there is also an obligation that the initial society does not ruin this resource for others. For instance, a society should not dam a river at the expense of societies downstream.[350] Hence, a society should be aware of the obligations to other societies with regard to renewables.

Additionally, it should be noted that the introductions of renewables *per se* may change some societies radically. For instance, some communities may have to move closer to the energy source: those dependent upon biofuels as an example, may be forced to live closer to the productive areas lest too much energy is expended in transport rather than energy generation.[351]

The above examples demonstrate that there would be obligations placed upon society to coordinate the introduction of renewable energy. Furthermore, where any

[349] An example of overarching utility may be provided by China's Three Gorges Dam where over one million people were relocated in associated developments although fifteen million were estimated to benefit from enhanced flood control and increased supplies of electricity (Ramage 2012: 223).

[350] At the time of writing, the Grand Ethiopian Renaissance Dam was being built on the Blue Nile in Ethiopia. The construction will provide Ethiopia with its power needs and be the largest hydroelectric scheme in Africa. However, as Ethiopia is the source for 86% of the Nile's water it is understandable that the nations downstream, namely Sudan and Egypt, are concerned over the control Ethiopia could exert over water supply (Rao 2013).

[351] Some biofuels, such as grasses grown for burning, are estimated to be uneconomic when transported for 80 kilometres (Open University 2011a).

strategy is needed based upon monitoring and research, society would be the best body to accomplish this by setting widespread standards and benefitting from economies of scale. This could all be realised in a societal policy. Although the operations to introduce and ensure that any policy was implemented could be delegated to groupings, corporations or agencies, the policy would ultimately be society's responsibility.

7.2.3.2 The Economic Challenge

The main challenge to the introduction of renewable energy that is identified in this subsection is an *economic challenge*, which is derived from renewable energy's propensity to favour domestic generation with the result that governments retain less control over taxation revenue gained from energy.

For the time being, let us assume that the widespread domestic generation of renewable energy, as described above,[352] is realised in society and both individuals and groups generate renewable energy for domestic purposes; and the corollary of this assumption would be less need for the commercial production of energy for resale. However, some commercial production should remain and this will be explained in the following paragraphs.

Some individuals may solely prefer the convenience of energy supplied via a grid and may depend upon commercial suppliers for this purpose. Others, after having their human right to energy fulfilled, may choose to purchase additional energy to achieve their desired level of welfare. A further reason that would prevent commercial production vanishing is that although many manufacturing concerns may be able to domestically generate enough renewable energy to heat and light their premises, and this is a likely course for them to follow as carbon-based fuels deplete and become more

[352] See 7.2.3 'The Provision of Domestic Energy'.

expensive,[353] the actual processes of manufacturing or production within industry may take further amounts of energy that they have to purchase from others. It can therefore be expected that the commercial production of renewables would continue.

However, the question remains, who would be the commercial providers? For some time there may be expected to be producers reliant upon fossil fuels; but as their raw materials diminish, it is presumed that there would be large corporations dedicated to generating renewable energy on an industrial scale by maintaining arrays of turbines or solar panels, as two examples. However, smaller organisations that hold land incidentally, such as railways, educational institutions and healthcare providers may be able to provide power. Additionally, national parks, often based in upland areas may be able to provide hydroelectric energy; and docklands may be able to provide tidal energy and wave power. However, any entity with surplus energy could be a potential energy supplier and this could include individuals selling energy to their neighbours. Hence, commercial suppliers could range from individuals to large organisations.

Therefore, the move to renewables will challenge current ways of thinking with regard to the economics of energy provision. However, the proliferation of domestic generation would limit the overall control industrialised societies have over energy supply and production; and they may expect to gain less taxation revenue to provide traditional services such as government, healthcare and education.

This may be demonstrated by comparing an established variety of carbon-based energy, namely North Sea oil, with the generation of renewables domestically. For the purposes here, let energy acquisition and usage be split into three stages: ownership of the resource; converting the resource; and using the energy.

With regard to the first stage, *ownership of the resource*, a sovereign state has the rights to explore and exploit the resources of a continental shelf. The state may

[353] See 7.2.1.2 'Market–Based Problems' where the upward trend in price of all carbon-based fuels should accompany their diminishing supply as consumers outbid each other to purchase the commodity of fuel.

license a company to drill offshore but the company owns the oil *only* at the well head within international law (Higgins 2006: 137-8). Society therefore exerts much control over gaining initial revenue from granting licences to exploit an area. However, taxing the right to exploit the resource of domestically generated renewables is more difficult: possibly governments may require individuals and groups to purchase a licence to become an energy generator.

Moving to look at the second stage, *conversion of the resource*, oil has to be transported via pipeline and possibly sold to a refiner. Society controls where the refining takes place and also taxes any sale of oil. This may be contrasted with domestic renewables, where conversion takes place *in situ*, and provided other parties are not harmed by its generation it lies outside of further societal control.[354]

For the third stage, *using the energy*, the oil would have to be sold on after refining; this again would create revenue for society via a sales tax. This may be contrasted with domestic renewables where much of the energy would be used *in situ* and would lie outside of societal control:[355] although any sold on would undoubtedly be subject to taxation.

Hence, the shift from conventional fuels to domestically generated energy will result in society losing opportunities for revenue via taxation from the stages of converting natural resources to energy and the usage of energy. An expected consequence would be pressure on society to maintain centralised, commercial generating facilities for renewable energy. This pressure may present itself as governments encouraging wind turbines to be sited at sea, where a government may attempt to gain revenue at all stages of centrally generated energy: with regard to the

[354] With regard to generation, current restrictions would be expected to remain the same; for instance, in liberal nations one would be allowed to generate energy provided one did not contravene criminal and civil law.

[355] With regard to operational usage, current restrictions would be expected to remain the same; for instance, in liberal nations one would be allowed to use the energy provided one did not contravene criminal and civil law.

ownership of the resource, licences for such ventures are currently granted by the Crown Estates in the United Kingdom (Taylor 2012: 337 & 353); with regard to *conversion of the resource,* society may control the location where the conversion occurs and may tax the energy when it feeds into a grid system; with regard to *using the energy*, commercial energy when supplied to the user can be taxed.

Differing schools of political philosophy would be expected to offer problems or assistance to the prospect of maintaining current centralised arrangements with regard to renewables. A wide variety of political philosophies from private ownership types to communitarian ones would prefer to own their own energy generating schemes for their own ideological reasons: Nozickians would uphold the principle of *self-ownership*;[356] whilst communitarians would wish to see communities owning the means of production.[357] In support of centralised generation, some such as those with a liberal bent favouring economic growth, may be in favour of large centralised schemes that provide both an income and incentives to innovators. They may also argue that society needs taxation as a way of modifying behaviour. For instance, should the usage of plentiful renewable energy cause an economy to overheat, then a society should have the right to discourage its use via taxation. Although such discouragement is appreciated as a societal tool, society may still tax sales of the means of production, replacement parts and maintenance costs with the result that taxation will not disappear completely. In addition, remnant commercial production would be taxed as would the sales of the surplus energy of domestic producers: it has been noted that a grid system would be maintained and a government would find it expedient for all energy movements to occur

[356] See 3.2.1 'Nozick's Philosophy defined and Applied'.
[357] See 6.1.1 'Hutterite Philosophy defined and applied', 6.2.1 'Owen's Philosophy Defined and Applied' and 6.3.1 'Bookchin's Philosophy Defined and Applied'.

via a grid for the purposes of tax collection.[358] Society will therefore retain enough influence to modify the behaviour concerning renewable energy usage.

Finally, to further support centralisation, utilitarians may argue that larger ventures can expect to benefit from economies of scale as they can share infrastructure; and the specialised staff required would not need to travel to a variety of distant locations. However, support for centralised arrangements may also come from the socialist camp for the reason of preventing personal aggrandisement and isolation. Hence, overall, some parties can be expected to tenaciously hold the view that energy should be supplied centrally.

However, the Marxist may see an elite of producers colluding with governments to develop the centralised technology and attempting to maintain their own business interests.[359] They may predict tension between this bloc and domestic producers as an enormous amount of economic independence may be gained by those who choose to maximise their domestic energy production. In fact, one type of Marxist analysis would see the combination of acquired knowledge and improved technology, which comprise the 'productive forces', clashing with the established 'economic structure' resulting in the restraint of the productive forces.[360] In response, supporters of the *status quo* may argue that more utility is gained in society by privileging commercial enterprises that assure long-term energy generation and the accompanying societal stability. However, in fairness, the persons who prefer the convenience of centrally produced energy, would need to be convinced of the efficacy of domestic energy production and they may experience intransigence when moving over to a new arrangement. This would aid the

[358] See 7.2.3.1 'Society's Incidental Responsibilities' above, for the societal benefits of retaining a grid system.
[359] This may be confirmed in the mind of many Marxists as large corporations based upon fossil fuels have invested in renewables to enable their businesses to continue. The world's largest offshore wind farm, the London Array, has interests held by the energy providing companies E.On and Masdar; the latter being funded by oil-rich Abu Dhabi (London Array: 2013).
[360] A description of this type of 'fettering', based upon Marx's 1859 preface to his *A Critique of Political Economy*, is expounded by Jonathan Wolf (Wolf 2010).

maintenance of the *status quo* and the move to a condition where the majority are domestic producers of renewable energy may be a prolonged process.

7.3 Global Responsibilities

The above discussion looked at responsibilities within a society when introducing renewables, but if the concept of responsibilities is to be thoroughly considered then global responsibilities should be reviewed. One of the attributes of renewable energy is that it is a *sustainable* energy source and here this is considered to be one of its advantages that should be promoted. The responsibilities of a relatively new energy supply are important contemplations as it may be considered that the conventional energy supplies, particularly carbon-based fuels, have not taken their responsibilities seriously.[361] They have provided a source of energy to those nearby whilst polluting the atmosphere: this is likely to have contributed to climate change which unfairly causes those at a distance to suffer. If lessons are to be learned, then renewables users should consider their responsibilities carefully. Apart from taking responsibilities seriously, there are those who would argue that human beings have a human right to an adequate environment,[362] and they would be likely to support the actions condoned here.

Furthermore, the spirit informing this work is that renewable energy is widespread and all of humanity may gain an adequate supply;[363] this will facilitate the global realisation of human rights but also allow social justice to be enacted internationally.[364] These factors therefore represent an improvement upon previous energy supplies and allow for *international justice* to be instituted as a global responsibility.

---

[361] See 1.1 'Preamble'; particularly footnote 1.
[362] See 2.4.2 'Countering Opponents of Rights Legislation' for Tim Hayward's standpoint.
[363] See 1.3.1 'Energy Types' where it is considered possible for any individual or group, to have access to some type of renewable energy.
[364] See 2.2.2 'Human Rights'; and also see 7.2.1 'Problems with Central Energy Provision' for a definition of *social justice*.

It should also be noted that this section acknowledges the work of the United Nations' Brundtland Commission in 1987 and the resulting report entitled *Our Common Future*; often referred to as the 'Brundtland Report'. In particular, it notes how the Report's notion of 'sustainable development' may contribute to a concept of sustainability for renewable energy and also notes the Report's contribution to the concept of international justice featured here. However, the Brundtland Report has been criticised for a purported bias towards developed nations; and the opportunity will be taken here, to defend any criticisms that may arise should comparisons be drawn with this work and the Brundtland Report.

The responsibilities of sustainability and international justice, with a defence of global responsibilities, are reviewed in the next subsections.

7.3.1 Sustainability

In 1987, the United Nations' Brundtland Commission was one of the first international organisations to define the term 'sustainable development' and bring such a concept to the forefront of environmental thought. *Our Common Future* defined it as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (United Nations WCED 1987: 43). The United Nations' guidance, with its emphasis of refraining from mitigating the needs of future generations, would indicate that humanity should adopt a path that preserves the goods that people enjoy today for the enjoyment of future humanity.

However, for any philosophically based project, the prospect of considering future generations is fraught with difficulties. One commentator, Ernest Partridge, has summarised how various moral philosophies would deal with the concept of responsibility for future generations; but poignantly noted that this is a new phenomenon as people have only recently realised that they have the capacity to

seriously damage this planet with 'chemicals and radioactive substances unknown to nature' (Partridge 2001: 378).

Partridge is candid in describing the problems current persons face in dealing with the concept of future generations and some are noted here. For example, future persons do not have rights and cannot as they do not exist (Partridge 2001: 379). Furthermore, we cannot possibly anticipate who the future people will be as any actions we take now will cause a different set of persons to be born in the future (Partridge 2001: 379),[365] which logically confounds any planning we may make on their behalf. Additionally, the consideration of future persons forces us to deal with an abstract, unnumbered and undifferentiated concept (Partridge 2001: 379). Also, the question arises, who matters more, ourselves or future generations? There seems to be no justification for favouring one generation over another: for instance, if an attempt is made to spread resources evenly over generations, then it might not leave current persons with the resources they need to prosper (Partridge 2001: 380). Finally, we cannot know where future people will place value (Partridge 2001: 380), and therefore cannot plan for this: future persons may prefer desert to rainforest and would implore us to act to bequeath this situation.

Hence, there are problems with anticipating the needs and wants of future generations. Some may conclude that it is an impossibility to cater for future generations and therefore we should not attempt to do so. However, most people wish to have children and grandchildren, and wish for them to live in decent conditions. Therefore, on balance, the concern for future generations should include both our own descendants and the descendants of others. Looking into the near future, as immediate offspring would wish to procreate and leave decent conditions to their descendants it

[365] At this point Partridge acknowledges his debt to Derek Parfit. See the *non-identity problem* (Parfit 1987: 35-37).

may be concluded that considering future generations should be an essential and ongoing part of being human.

With regard to leaving decent conditions for future generations, varying authorities have differing opinions. Many measures of sustainability focus upon debates of whether 'weak' or 'strong' sustainability is preferred; and a *very simplistic* definition is provided for the purposes here. To define both types of sustainability the debate is often split into notions of 'natural capital' and 'human capital', where natural capital consists of naturally occurring goods such as ecosystems and raw resources; whilst human capital consists of goods such as infrastructure, expertise and knowledge gained from using natural capital. Weak sustainability may be defined as a policy that allows natural capital to be converted into human capital with the purported total amount of capital passed on to future generations; and this *could* include depleting a naturally occurring good. Strong sustainability may be characterised by denying the interchangeability of both types of capital and placing natural capital above any notions of substitutability; for some, natural goods, such as climate-regulating oceans and rainforests, may be crucial to humanity's survival and therefore not subject to bargaining.[366]

In forming a specific notion of sustainability applicable to renewable energy as opposed to a wider definition of sustainable development, if we know that we should consider future persons' needs but we cannot know what future persons will need, then we should err on the side of caution and preserve all goods for them. Hence, if a natural asset is to be used it should only be used to the extent that it will replenish itself; and if it cannot replenish itself an attempt should be made to leave enough of the resource for future generations' usage but ensure that all products derived from its current usage are recyclable and reusable. But to augment this, if we accept that human beings can gain

[366] Connelly *et al* discuss the differences between strong and weak sustainability in greater detail (Connelly *et al* 2012: 238-241).

more comfort, entertainment and health benefits when a greater quantity of goods is provided, or there is a greater chance of this occurring when a greater quantity of goods is provided, then we should leave the maximum amount of resources to increase the possibility of future generations attaining their *desiderata*. Hence, a *cautious sustainability* is recommended that attempts to accommodate unexpected situations for future persons by preserving the maximum variety and amount of resources.

Now, should this type of sustainability initially seem onerous, the reader is reminded that all persons should have access to a source of renewable energy and some would have access to many types.[367] Hence, this allows much manoeuvring in reaching this goal.

But the question may be asked how would the varying political philosophies consider the responsibility of sustainability? It is unthinkable that in the present age, where climate change is considered to be an unwelcome consequence of previous energy supplies,[368] that a political philosophy that cannot accommodate notions of sustainability would be considered to be a going concern. Hence, those that consider environmental matters directly should be more accommodating; whilst others that may be able to adjust their principles to accommodate sustainability may be suitable. However, sustainability remains a strict responsibility to uphold, and requires the accommodation of three main aims noted below.

Three aims have been identified here that should be employed when introducing this notion of sustainability. Firstly, the importance of preserving all current goods is considered. Secondly, a policy to improve the current and future environment should be employed. Thirdly, the direct environmental impacts of introducing renewables are briefly reviewed to gain a method for their environmentally-friendly introduction. By

[367] See 1.3.1 'Energy Types'.
[368] See '1.1 Preamble'; particularly footnote 1.

employing these elements, renewable energy can expect to be an energy source that entails sustainability.

7.3.1.1 Sustainability – The Importance of Preserving Current Goods

It was noted above that we cannot know where future people will place value, and therefore cannot plan for this and here it has been argued that the maximum variety and amount of resources should be left for future generations for them to decide which resources they need.[369] Reasoning is now provided to exercise a cautious sustainability over goods that do not replenish themselves and those that do, respectively.

With regard to mineral resources, the importance of this concept should not be lost upon current advocates of solar power. For instance, the metals indium and tellurium are both are used in solar panels (Boyle 2012: 107), and are therefore useful to modern persons and will presumably be useful in the future. Now, if previous generations had found a use for these resources and depleted them, then we would not be able to utilise solar energy in the same way as we do today. Hence, it is important to use non-replenishing goods in a recyclable and reusable manner.

With regard to resources that may replenish themselves, arguments have been put forth that it would be possible to remove areas of natural habitat, such as ecosystems, and put them to other uses. To explain, accepting that the flora of an ecosystem contains most value for humanity, then their anthropocentric value need not be lost as the seeds of plants could be stored cryogenically and the properties of the plants retrieved at a later date (Lee 2000: 39). Apart from this being a gargantuan task of collecting and cataloguing, it would seemingly be an impossibility to restore flora in a state in which they may flourish; especially if they needed the fauna they evolved alongside and exactly the same soil conditions as before. Should whole ecosystems be

[369] See 7.3.1 'Sustainability'.

needed in the future with all the minutiae they contain, then they would be highly unlikely to be replicated. Hence, relying upon future technology is taking a risk and it may be best to allow nature to preserve ecosystems on our behalf. At the very least a substantial portion of an ecosystem should to remain and be allowed to replenish itself if needed.

7.3.1.2 Sustainability – Improving the Environment

Another certainty that would be required by future generations is an environment in which they can live and based upon the requirement of preserving current goods this should obviously be left for future generations in a condition in which they can flourish.[370] However, it should also be *improved*, if an improvement is necessary; and this may be necessary where carbon-based fuels are proved to have polluted the environment and contributed to climate change.

Where used correctly, renewable energy would not be expected to contribute to the problem of damaging the environment as the energy used is absolutely sustainable with little pollution. This would immediately include solar, wind, tidal, hydroelectric and wave power. Biofuels may be strictly grown, harvested and replanted in a cycle so that they never deplete. The only possible exception to the unlimited nature of renewable energy is geothermal energy, which involves 'mining' heat from the ground, whereby more energy may be taken out than is replenished; however, the amount of heat present will replenish itself over time.[371] Overall, renewable energy has the potential to preserve the environment.

Possibly a weak point in the harnessing of renewable energy may be the initial manufacturing of renewable energy's means of production. For instance, take the

[370] See 7.3.1.1 'Sustainability – The Importance of Preserving Current Goods'.
[371] See 7.3.1.3 'Sustainability – Environmental Issues' for the principle that geothermal energy is 'mined' but may replenish itself.

example of a wind turbine: even where the apparatus was constructed from recycled material, it should be noted that the origins of the recycled metals were from blast furnaces powered by carbon-based fuel. If it is accepted that the pollution derived from the manufacturing process will enter the Earth's atmosphere and contribute to climate change and this will compromise future generations from meeting their needs, then such renewable energy generating equipment will always contain an element of this non-sustainability.

However, any pollution saved from being emitted by using the new equipment may be offset against that emitted by generating energy via the old methods and a crude cost-benefit analysis would note that the *continued* use of a wind turbine would *continually* offset any detrimental aspects attributed to its construction.[372] Of course, maintenance should be carried out in a sustainable manner and all the replacement equipment used should be reusable and recyclable also. But compared with the old generating methods it could be argued that renewable energy contributes to the notion of sustainability favoured here.[373]

However, the question may be asked, is it enough that renewable energy merely contributes to sustainability? For instance, the environment may be improved when all energy generating equipment is constructed to offset detrimental environmental effects caused during its construction and then operate beyond this threshold.[374] This would be achieved by ensuring that renewable energy's apparatus is built to endure the maximum possible lifetime. This extra operational time may be considered as a boon to improve

[372] If the most sustainable renewable energy source produced 0 units of damage to the environment for every kw/h of electricity produced and the least polluting conventional source produced x units of such damage, then, after the renewable source has produced a million kw/h of electricity, x million units of damage have been saved from being produced. If the renewable energy source required x million units of damage during its construction then it has effectively 'broken even' and contributed to sustainability.
[373] See 7.3.1 'Sustainability'.
[374] If the most sustainable renewable energy source produced 0 units of damage to the environment for every kw/h of electricity produced and the least polluting conventional source produced x units of such damage, then, after the renewable source has produced two million kw/h of electricity, 2x million units of damage have been saved from being produced. If the renewable energy source required x million units of damage during its construction then it may be said to contribute to improving the environment during its lifetime.

the environment; and it should be noted that a relatively new technology such as renewable energy has the chance to achieve this.

7.3.1.3 Sustainability - Environmental Issues

On the face of it, renewable energy would not be expected to damage the environment over long term usage as it is a resource that replenishes itself and its usage may even improve the environment.[375] That said, any hypothesis that renewable energy does not affect the environment when it is operating will now be challenged to see how much truth it contains. This challenge will be facilitated by two factors. Firstly, it was noted that renewable energy can be expected to occupy a greater proportion of the Earth's surface than conventional fuels,[376] and it can therefore be expected to impinge more readily upon existing ecosystems. Secondly, it was also assumed in the 'Introduction' that the situation would arise where renewable energy becomes an increasingly important source of energy,[377] and therefore any slight concerns associated with its usage, however small, would be magnified to result in a far greater problem.

However, some may be concerned that renewables harness energy from an original environment, a *source environment* and redirect it elsewhere, to a *destination environment*. For instance, the energy harnessed by a solar panel as one example, would have originally been reflected into space or absorbed by the Earth and reradiated (Everett 2012: 25); but when the energy is harnessed, it is redirected and therefore the energy is removed from its source environment and may potentially harm that environment due to it now possessing less energy: for instance, the fauna and flora may not have enough energy to survive and the ecosystem may be damaged. A corollary may be that the destination environment, where the harnessed energy is used, may

[375] See 7.3.1.2 'Sustainability – Improving the Environment'.
[376] See 7.2.3.1 'Society's Incidental Responsibilities'.
[377] See 1.1 'Preamble' for this postulate.

possess more energy and cause the formation of new ecosystems. Hence, on the face of it, attention would need to be directed to detecting any harm caused by using renewables at a local level. That said, great aggregations of renewable energy generating equipment may have the capacity to affect neighbouring environments even where local monitoring indicates that damage is negligible; and these affected neighbouring environments may be termed *secondary environments*. With this in mind, two categories of renewables, hydroelectric and geothermal, will be investigated to see how they affect their source environments,[378] before destination environments and secondary environments are discussed.

Looking at hydroelectric schemes, it is noticeable that they have not had an ecologically sound track record. But more specifically with regard to ecosystems, they have been associated with raising water tables before a dam and lowering water tables after and therefore alter the ecology both upstream and downstream (Ramage 2012: 219 and 225).[379] However, the scholarly opinion is that constructing a series of smaller hydroelectric dams rather than a single large dam, has a less harmful effect upon the local ecology (Ramage 2012: 195-6), and this should be the course to follow to prevent dire environmental damage. That said, a series of dams introduces multiple environments to monitor rather than a larger single environment and this complicates matters.

Nevertheless, smaller schemes that utilise weirs may expect to avoid raising water tables over great areas. Additionally, they may also be expected to cause fewer problems with regard to the criticism that hydroelectric schemes interfere with the migration patterns of fish. For instance, a 'fish pass' with a constant turbulent, flow of

[378] Discussions concerning the environmental impact from other sources of renewables may also be considered. As examples: tidal barrages (Elliot 2012: 256 & 269); wave power (Duckers 2012: 400); solar power (Boyle 2012: 106-7 & Everett 2012: 66-8); wind turbines (Taylor 2012: 326-9 & 331-3); and biofuels (Morris & Scurlock 2012: 163-169).

[379] An extensive list of environmental advantages and disadvantages of hydroelectric power has been supplied by Janet Ramage; along with social and economic considerations (Ramage 2012: 225-6).

water can be constructed to attract fish and guide them past danger (Halton Lune Hydro 2015). Even fewer problems may be anticipated by installing turbines that are designed to freely allow fish to swim through (Whitby Esk Energy 2015).

Turning to consider geothermal systems, they may be initially expected to encroach upon ecosystems by taking up land, but as they are akin to mining energy, the majority of their workings should be situated underground (Garnish & Brown 2012: 409). One authority notes that the environmental impact of geothermal systems include noise, potential subsidence and the release of a negligible amount of noxious gases into the atmosphere (Garnish & Brown 2012: 444-5). However, a major drawback is that it is possible for the geothermal energy to become depleted where the heat is removed too quickly; however, if a geothermal venture is managed carefully the heat removed should replenish itself over time (Garnish & Brown 2012: 457).

Other sources of geothermal energy, such as energy gained from the non-invasive harnessing of hydrothermal energy or volcanic energy would not be expected to become depleted in this manner as the energy is absorbed and removed when it would normally be released into the atmosphere and therefore does not remain *in situ* for long.

Of all the geothermal sources, ground source heat pumps are expected to have the least detrimental effect upon the environmental as they can be installed on land already used by humanity. An example is provided by an American university which is installing a complex of over 3,000 boreholes which will provide both heating and cooling for over 40 buildings (Ball State University 2014). As this type of energy relies upon the Sun's ability to heat the surface of the Earth, it merely redirects the energy that would have been absorbed and reradiated *in situ*: consequently there would not be expected to be any environmental degradation.

From this brief review of two types of renewables, it should be noted that depending upon their introduction, they will have differing capacities to affect the source environment. Hence, care should be taken to limit any damage that harnessing may entail. If current goods are to be preserved,[380] then the type of renewable that does not damage the environment should be sought and if this option is not available then the next least damaging option should be employed. It is possible that as there are many types of renewable energy then a combination of energy types should be used in order to limit environmental damage.

Apart from monitoring the source environments at a local level, the destination environments should also be monitored in a similar manner. Some destinations, such as urban environments, which have previously been the destination for conventional energy, may not be expected to be substantially affected by the introduction of renewable energy. However monitoring would be pertinent when greater quantities of renewable energy are introduced into environments that have previously held less energy. These two instances may be demonstrated by the use of geothermal energy in Iceland. An example of the first instance is provided by the heating of swimming pools in Iceland (Orkustofnun 2014a); where the energy is redirected to areas of existing human habitation that have previously been heated in some way, or the swimming pool is built over a warm spring, then additional problems cannot really be anticipated. This may be contrasted with instances where energy is redirected to a location which would not normally receive geothermal energy: an example is provided by offshore fish farming in Iceland where warm water is redirected to locales which would normally remain cooler (Orkustofnun 2014b). As a consequence, the greater quantities of energy in the locality may favour certain types of fauna and flora over others, or even exotic species and this may play havoc with the local ecosystem. Hence, the local monitoring

[380] See 7.3.1.1 'Sustainability – The Importance of Preserving Current Goods'.

of destination environments is required where it may be anticipated that the introduction of renewable energy is likely to disrupt ecosystems.

Nevertheless, it should be borne in mind that some destination environments cover a wide area and therefore make monitoring a very complex procedure. However, some clues as to whether a destination environment may be adversely affected may be gained from noting how the source environment is affected. For instance, if the energy of a geothermal source becomes depleted, then the process whereby energy would have made its way to the Earth's surface slowly, before being released into the atmosphere, has been hastened. Hence, a destination environment depending upon this source of energy may have received more energy than would occur normally.

Although this review, so far, has concentrated upon monitoring environments, where many problems associated with renewables may be observed and remedial action taken, it is possible that renewables used on a larger scale will have the capacity to affect neighbouring environments; previously noted as *secondary environments*. This is expected to be caused where energy is harnessed from source environments by multiple harnessing schemes that result in a *series* of harnessing events and is an important concern as the local monitoring of any stage of such a series may not reveal any detrimental effects to the environment. Examples of energy sources that may be affected include wave power and wind power. To explain, in a series of arrays of wind turbines named A to Z that are monitored locally, the loss of wind energy, downwind of A may be negligible when compared to the energy upwind. The same may be true of B, C and D. However, the cumulative effects of a series of arrays may only be noticed in a region downwind of Z, when the energy is compared to what it had been before the construction of the series. Hence, the aggregated effect of multiple arrays may only be noticed behind the last array in a series but not the first array or intermediate arrays.

Overall, the current advocates of renewables may not have considered the situation where renewable energy is the largest producer of energy and the problems associated with its usage become magnified. Therefore, apart from the local monitoring of environmental affects it is important that more widespread monitoring of environmental effects is also anticipated. Hence, it is further suggested that renewable energy schemes should never be allowed to affect secondary environments.

7.3.1.4 The Cost of Sustainability

At first glance, sustainability may be expected to incur much cost to society. However, it will be explained in this subsection that the costs of sustainability need not be exorbitant.

The actions of preserving current goods would expect to be more expensive than using the most convenient arrangement.[381] For instance, the action of preserving an ecosystem may cause harnessing apparatus to be situated at a distance incurring more transport costs. However, where an element of longevity is built into the apparatus, in the same way that longevity may be built into items of equipment to recover any element of damage to the environment caused in the equipment's construction,[382] the original costs of introduction may expect to be recovered by extra energy generation from equipment being constructed to endure the maximum possible lifetime. Hence, any extra cost incurred in preserving current goods may expect to be recovered via careful planning.

That said, the monitoring of environments to prevent damage,[383] may be expected to be an ongoing cost of renewables usage. However, as already noted, the incidental roles of society would include compiling information concerning energy

[381] See 7.2.3.1 'Society's Incidental Responsibilities' where care may have to be taken to preserve cultural and natural goods that hold value and this may incur cost.
[382] See 7.3.1.2 'Sustainability – Improving the Environment'.
[383] See 7.3.1.3 'Sustainability – Environmental Issues'.

generation via monitoring and research to provide guidance to potential energy generators.[384] This would be expected to encourage siting harnessing equipment where it causes the least damage and therefore requires the least monitoring costs. Hence, once more by careful planning, monitoring need not be an onerous expense; and as an affordable expense may be funded by either a maintenance cost or as a minor item of taxation.

7.3.2 International Justice

In order to provide an argument for the exercising of international justice, various previously noted aspects of this work are now called upon. For instance, it has already been noted that the spirit informing this work is to seek an improved energy supply for humanity where access to energy is more widespread.[385] Certainly, it has already been argued that all persons should have a human right to a sufficient supply of energy as defined by one's society.[386] Additionally, it has already been accepted that if a society is fair and just, then all members of that society should receive an adequate share of the goods that the society possesses for their wellbeing.[387] Furthermore, it has been accepted that energy contains a *desirability of increasing usage* and the availability of more energy allows for more comfort in life?[388]

Now, although a sufficient supply would expect to be an *improvement*, would this be enough of an improvement where persons desire increasing amounts of energy to make their lives more comfortable? This is unlikely to be the case; and in those societies that live via meagre amounts of energy, the temptation may remain to use fossil fuels or burn forests to gain the energy to fulfil the desire to use increasing amounts of energy;

[384] See 7.2.3.1 'Society's Incidental Responsibilities'.
[385] See 1.2.4 'Responsibilities'.
[386] See 2.4.2 'Countering Opponents of Rights Legislation'.
[387] See 7.2.1 'Problems with Centralised Energy Provision'.
[388] See 1.3.3 'The Desirability of Increasing Energy Usage'.

furthermore, some may engage in unfair distributions of energy and deny others sufficient energy as defined by human rights. But an answer to this conundrum may be found by extending notions of social justice globally,[389] whereby in a fair and just world, all human beings should have access to more adequate amounts of energy. Hence, notions of social justice may provide energy in quantities large enough to fulfil the improvement entailed in satisfying human rights but also attempt to improve the situation enough to provide more desirable levels of energy usage for all. Therefore applying notions of social justice internationally is the preferred option here.

The United Nations' Brundtland Report has made various observations and would be expected to agree with the overall objective here when it noted that the developing world 'will need much more energy' (United Nations WCED 1987: 14). Moreover, it is governments who should be responsible to effect this change (United Nations WCED 1987: 15). To achieve these aims, one mandate of the Brundtland Commission was 'to propose new forms of international cooperation on those issues that will influence policies and events in the direction of needed change' (United Nations WCED 1987: 3).

Replacing 'governments' as the responsible body with the concept of *society* as the assuring body for a supply of renewable energy,[390] it is envisaged here that individual societies should devise strategies to implement the introduction of renewable energy before international cooperation ensues: for instance, individual societies would be expected to have the knowledge to manage land use with regard to cultural sensitivities more ably that foreigners,[391] as one example. However, the reasoning behind devising universal strategies is noted in the following subsection.

[389] An argument provided by Nigel Dower to tackle world poverty (Dower 1996: 274).
[390] See 2.2.3 'Group Rights' for a definition of society, as the body assuring human rights and supervising the other bodies providing renewable energy.
[391] 7.2.3.1 'Society's Incidental Responsibilities'.

Additionally, it is also noted that there may be situations where a society does not wish to have its human rights fulfilled.[392] Although this would be expected to be a *very rare* occurrence as persons may be expected to desire more energy due to the comfort it may bring to their lives.[393] Nevertheless, should this situation occur, there would be no obligation on other societies, or overarching bodies such as the United Nations, to ensure that human rights are fulfilled.[394] Hence, international justice of the type described in the second following subsection entitled 'The Transfer of Goods to Developing Societies' may be held in abeyance; but should remain assured should any society relinquish ascetic practices.

Finally, it should be noted that those political philosophies with an international outlook, such as Marxists and egalitarians, may welcome the tenet of international justice: but the more individualist philosophies, such as advocates of private ownership, may be expected to provide some resistance to realising international justice. Hence, this tenet may expect to receive a mixed welcome.

7.3.2.1 Strategies to Introduce Renewable Energy

Where the introduction of renewables is an *inevitability*,[395] it would be irrational for any society to omit the consideration of renewables and it would undoubtedly need a strategy to ensure their introduction. A society may be helped in drawing up a strategy by noting that traditional fuels are depleting and also have a propensity to pollute.[396] Furthermore, this project may be assisted by noting that all the equipment to harness a

[392] See 1.2.3 'The Desert Island Thought Experiment'; See also 2.4.2 'Countering Opponents of Rights Legislation' for a suggestion of particular energy uses that might comprise human rights.
[393] See 1.3.3 'The Desirability of Increasing Energy Usage'.
[394] See 2.2.3 'Group Rights' for the suggestion that the United Nations may intervene where a society fails to assure *a human right to renewable energy*.
[395] See 1.1 'Preamble' for this postulate.
[396] See 1.1 'Preamble'.

store renewable energy is present,[397] and also by noting that renewable energy is widespread and unlimited.[398] This combination of carbon-based fuels' shortcomings and the practicality of renewables would make it difficult for the detractors of renewables to argue that persons have the same right to continue using traditional fuels when compared to renewables; and this should be reflected in the contents of a strategy. But underlying any strategy a society may wish to commission a detailed survey of potential renewable energy generation and usage to assist with planning.

Such a survey may consist of both qualitative and quantitative data and therefore would be expected to be administratively burdensome and costly. Within the survey, some business skills would be particularly pertinent to the initiation of individual renewable energy generating schemes: such as compiling the data assembled in devices such as cost-benefit analyses where renewable schemes have a quantifiable life-cycle of investment and returns (Bergman & Hanley 2012: 61).[399]

A further factor to be considered that would be particularly pertinent to renewable energy would be the technology available to a society. For instance, if a society gained access to a new technology such as *carbon capture and storage*,[400] then it could arguably use conventional fuels for far longer into the future without having to account for potential environmental damage and pollution.

However, despite the difficulties of developing a strategy, societies would be advised to introduce some strategy however informal. This approach may provide an embryonic stage but as time goes on the strategy could be amended: a strategy should therefore be ongoing and subject to monitoring. Strategies are expected to be

[397] See 1.3.2 'The Harnessing and Storing of Renewable Energy'.
[398] See 1.3.1 'Energy Types'.
[399] Two examples of cost-benefit analyses for wind farms, showing the investment and returns over 15 years have been demonstrated (Bergman & Hanley 2012: 125-6).
[400] The Intergovernmental Panel on Climate Change has detailed three main techniques which are: sequestering carbon dioxide in geological formations (IPCC 2005: 199-200); introducing carbon dioxide into deep ocean basins (IPCC 2005: 279-80); and combining carbon dioxide into solid matter (IPCC 2005: 321). Although such technology is in its infancy, it is technically and theoretically possible and is believed to be able to stabilise the atmosphere, although it would require some momentum garnered within nation states to enact the institutional and socio-economic changes needed (IPCC 2005: 3).

particularly important for developing societies that wish to enjoy more adequate supplies of energy over and above the levels of the sufficient distributions satisfying human rights.[401] The strategy may entail inviting the transfer of resources from developed societies and three examples are demonstrated in the following subsection.

7.3.2.2 The Transfer of Goods to Developing Societies

If it is accepted that in a fair and just world, according to notions of social justice, all human beings should have access to adequate goods,[402] then this would be expected to entail a transfer of goods from the developed world to the developing world so that all may enjoy renewable energy. For renewable energy this would include the physical goods to harness, store and use renewable energy as well as knowledge and expertise.

Immediately, the developed world may fear a new element of taxation creeping upon them via increasing aid budgets: however, with cooperation and ingenuity the process of transferring resources should not be a painful one for the taxpayers of the developed world. It will be demonstrated that such a transfer is likely to take many forms and not all would involve great financial transactions.

Although the process of transfer would be varied, in order to explain how the process would work for renewable energy, three types of transfer are anticipated here: firstly, transfers that require no direct financial funding; secondly, transfers that attract investment; and thirdly, transfers that would require great financial investments over a period of many years. These three types of transaction are now demonstrated.

Firstly, some developing societies may allow the market place to supply renewable energy needs (Jackson 2014). To this effect, developed societies may produce the equipment to harness renewables that can then be transported to developing

[401] See 7.3.2 'International Justice' for the argument that more desirable levels of energy usage may be achieved via extending notions of social justice globally.
[402] See 7.3.2 'International Justice'.

societies where individuals may purchase it. An example is provided by small solar panels sold in many sub-Saharan African societies where much of the populace may be described as ‘off-grid’ and the portability of solar powered equipment allows them to generate energy *in situ*. Realising the benefits of this distribution system, governments often offer incentives such as reducing sales taxes to stimulate supply.

To the outside observer, governments have borrowed the tried and tested strategy of *laissez-faire* and have the option of further introducing the most applicable economic policies to add a measure of control to the situation. Additionally, it should be noted that such societies are indirect beneficiaries of research, development and expertise that has arisen in the process of producing the equipment. However, it should also be noted that this transfer has cost the developed world nothing in excess of the development costs; and possibly nothing at all if sales of equipment recoup such costs.

With regard to the second type of transfer, an example of this type of development is Costa Rica where an increasing proportion of its energy, currently between 90-100% of its electricity consumption nationally, is gained from renewables (Fendt 2015). A considerable part of this achievement has been due to liaison between the Costa Rican government and foreign business ventures, whereby energy gained from wind power and hydroelectric sources has been aided by the injection of much private capital (United Nations Framework Convention on Climate Change 2014). Hence, Costa Rica has rigorously applied a strategy that would favour policies such as enacting regulations that favour renewable sources; but it should also be noted that this second type of process need not be too burdensome upon the taxpayers of developed societies.

The third type of transfer, which would require the greatest assistance financially, would initially seem to place the greatest burden upon taxpayers of the developed world: however, certain facets particular to renewables should be borne in

mind that would alleviate this process. It should be appreciated that many developing countries lie in the tropics and would benefit from renewable generating equipment to a far greater degree than many developed countries that lie in more temperate latitudes. An example is provided by Bangladesh which has recently received financing from the World Bank to supply solar panels for home usage (World Bank: 2014). Previous schemes of this type have been considered to be successful by the World Bank and this addition will increase the amount of solar panels for use in Bangladeshi homes to nearly 3.5 Million. As Bangladesh will repay the loan over a forty year period, many aid programmes to developing countries would not be as costly as many in the developed world would initially anticipate.

Where a developing society, has devised a strategy and requires much capital from abroad, the importance of large international organisations may be underlined. For example, a large scheme such as a hydrothermal dam may not attract investment from private firms as it may take many years to become profitable and provide a return for their shareholders. Hence, organisations such as the World Bank that do not require an immediate return on their capital have their role to play.

Hence, with ingenuity the transfer of equipment need not be too expensive for the developed world. The three types of transfer of resources noted above demonstrate that expertise and equipment has been transferred from the developed world to the developing world without an undue burden being placed upon the taxpayers of the developed world.

Now some detractors may remain unconvinced and feel that the efficacious development of renewables remains applicable only to developed societies where the infrastructure such as a grid system is available to allow for individuals and groups to gain their energy via remote generation.[403] The problem for this criticism is that we

[403] See 7.2.3.1 'Society's Incidental Responsibilities'.

cannot be sure of its validity; we do not know the consequences of the provision of expertise and equipment to a developing society: such provision may facilitate the development of infrastructure such as a grid system.

Hence, it may be possible to consider the three types of transfer noted above as intermediate steps towards the most desirable condition of domestic generation safeguarded by a grid system. To explain, the distributed types of energy generation, demonstrated by sub-Saharan Africa and Bangladesh may be considered to be at a stage prior to the introduction of a grid system. Also Costa Rica, which has, to all intents and purposes, state-run electricity generation and transmission (B N Americas 2015), may be subject to problems of centralised supply due to societal problems or market-based problems;[404] hence, it may also be considered to be at a stage prior to reaching an ideal condition. Nevertheless, all the examples may be considered as progressing towards reaching the most desirable type of energy generation and distribution.

As a finishing note to this subsection, although its spirit encourages the transfer of resources from the developed world to the developing world, two factors should be borne in mind. Firstly, many developing societies have plentiful resources of renewable energy and secondly, a successful transfer of energy generating equipment and expertise is currently ongoing. Hence, it may be possible that developing societies are truly carrying out the practical experiments of introduction; and from this position they may be able to pioneer strategies for introduction.[405] Furthermore, from a position of authority, they may advise the developed world in such areas. A turnaround of fortunes may transpire and the transfer of goods may turn out to be a two-way process.

[404] See 7.2.1.1 'Societal Problems' and 7.2.1.2 'Market-Based Problems'.
[405] See 7.3.2.1 'Strategies to Introduce Renewable Energy'.

7.3.3 Defending Global Responsibilities

The global responsibilities noted here have concurred with some concerns from the Brundtland Report and therefore may be expected to be subject to similar critiques. One notable critic of the Report, Keekok Lee, has voiced a trenchant critique and some of her concerns are addressed here with regard to renewable energy.

For example, there are complaints that the Brundtland Commission has devised a plan which allows the industrialised nations to enjoy their developed status, whilst undeveloped countries do not gain a chance to utilise their resources (Lee 2000: 41-3). When considering renewable energy, it would seem likely that the developed world would lead the way by gaining the goods of strategy, technology and expertise.[406] However, it is noticeable that many of the poorer regions would have plentiful resources to generate renewable energy at a level above that of many areas of the developed world.[407] Hence, this criticism is not expected to be particularly durable with regards to renewable energy as many developing areas may be able to attract investment to harness the renewable energy that their geography allows.

The Brundtland Report has further been criticised for placing faith in a dependence upon economic growth to deliver its aims. In particular Lee warns of the ecological disaster that would occur if the 'developing nations' became 'developed' along the same lines as the developed world and replicated the latter's carbon dioxide emissions exacerbating climate change (Lee 2000: 41). Now renewable energy should be a mainstay of economic growth as it is unlimited and should be an asset continuously feeding into an economy.[408] Furthermore, it may have the ability to stimulate

[406] It may be queried whether this hierarchy will remain as more developing societies advance strategies and policies. See 7.3.2.2 'The Transfer of Goods to Developing Societies'.
[407] See 7.3.2.2 'The Transfer of Goods to Developing Societies'.
[408] See 1.2.3 'The Desert Island Thought Experiment' for the premise that renewable energy is the effective lifeblood of the desert island where energy may be traded, used or stored and is therefore a growing asset allowing economic growth. See also 1.3.1 'Energy Types' for the premise that renewable energy is unlimited

developing economies.[409] Hence, renewable energy should contribute to providing economic growth; but furthermore its correct implementation should also assure sustainability and avoid the dangers of climate change.[410]

The Report was also criticised for failing to protect the natural environment and only respecting nature where this allows for humanity's sustenance (Lee 2000: 39). At this point, the spirit of Lee's criticism may be augmented by the work of another critic, namely Andrew Dobson, who may query whether attaining international justice would halt environmental degradation as the relationship between both concepts is poorly understood (Dobson 2000: 48-50); and he further poignantly noted that the some of the world's poorest people live the most environmentally sustainable lives of all (Dobson 2000: 53). However, if future generations are to be bequeathed both the maximum variety and quantity of assets, that *should* include replenishing natural environments.[411] Furthermore, if an adequate monitoring of environmental degradation, both locally and at a more widespread level occurs,[412] then the natural environment should be protected. Hence, if renewable energy is introduced wisely then the natural environment should be preserved.

A final criticism comes from the presence of a seemingly risky expectation that technology will continue to advance in order to reconcile sustainability with growth (Lee 2000: 38-9 & 44). However, with renewables both the resources and the technology are already present.[413] Technology with regard to renewables is likely to improve in the future but this is not necessary for its introduction globally.

[409] See 7.3.2.2 'The Transfer of Goods to Developing Societies'.
[410] See 7.3.1 'Sustainability'.
[411] See 7.3.1.1 'Sustainability – The Importance of Preserving Current Goods'.
[412] See 7.3.1.3 'Sustainability - Environmental Issues'.
[413] See 1.3.1 'Energy Types' for the premise that renewable energy is unlimited; and 1.3.2 'The Harnessing and Storing of Renewable energy' for the premise that the current technology is sufficiently well developed to introduce renewable energy.

7.4 Summary of Responsibilities

The above examples of centralised supplies of energy demonstrate that it satisfies the majority for most of the time. However, it may be prone to breaching human rights; and with the allowance of a market place it is more readily susceptible to allowing social injustice. Therefore, a fairer method of supplying energy, via domestic supply is needed. Grafting renewable energy sources onto a centralised method for distribution would not be suitable as it would be subject to the same problems as the old energy supplies.

That said, society should retain the centralised distribution method as one of its incidental roles to supply energy to those who cannot generate energy at a close proximity to where they need to use the energy; and it could also provide energy to varying localities in case of emergencies. Furthermore, society must largely forsake the taxation gained from central supplies of energy and this will provide an economic challenge it will experience upon its transition to renewables.

To satisfy the needs of sustainability, whilst armed with the knowledge that future generations will require a level of resources that we cannot yet know, we should err on the side of caution and bequeath the maximum variety and amount of resources for their benefit. This will involve the management of the usage of the greater surface area demanded of any territory when using renewables. Also, one positive aspect of the operation of renewable energy generating apparatus is that it should contribute to a decrease in pollution that is attributable to the use of carbon-based fuel. However, one drawback of renewable energy is that when the varying renewable energy sources are widely operational, they would need monitoring on a local level in the environments where energy is both harnessed and utilised to ensure that they do not affect the Earth's environment detrimentally. Furthermore there are instances where monitoring on a wider scale may be anticipated.

With regard to international justice, it is a characteristic of renewable energy that its introduction may benefit poorer, developing nations as much as, if not more than, developed nations. Consequently, this should counter criticisms from detractors who may consider initiatives to introduce renewable energy as ones that would primarily benefit developed nations. That said, international cooperation would need to be a major force operating within the transfer of strategy, expertise and equipment; initially this may occur from the developed world to the developing world although a two-way process may be anticipated. But if such cooperation emerges we may to expect a fairer world with all of humanity gaining adequate renewable energy.

8 Conclusion

This conclusion provides a recommendation for 'independent ownership' and is influenced by, although not entirely, Locke's variant of private ownership. This conclusion attempts to define the most suitable ownership type in four stages.

After a recap of the contents of the rights and responsibilities chapters,[414] the ownership types from previous chapters will be reviewed to define which ownership type would fulfil the rights and responsibilities the most adequately:[415] hence, a discourse will be provided which identifies the most appropriate ownership type. After this, a justification for independent ownership will be provided.[416] Finally, an end note summarises the discussion here and ends the thesis.[417]

8.1 The Considerations of Rights and Responsibilities

In defining the most suitable ownership type for renewable energy the considerations of the 'Rights' and 'Responsibilities' chapters are recounted over the next two subsections to remind the reader of their content. These represent tenets that the ownership types should fulfil if they are to be considered to be suitable for the task of providing a model for renewable energy ownership.

8.1.2 The Considerations of the Rights Chapter

It has been argued that individuals have both a *human right* and positive right to renewable energy.[418] However, as many individuals would gain their renewable energy from a group to which they belong, society also must accommodate *group rights*; and

[414] See 8.1 'The Considerations of the Rights and Responsibilities'.
[415] See 8.2 'Satisfying the Rights and Responsibilities'.
[416] See 8.3 'The Justification of Independent Ownership'.
[417] See 8.4 'End Note'.
[418] See 2.2.2 'Human Rights'.

the group may consist of a family, a village, a community or even entities feasibly as large as a city.[419] That said, in satisfying the human rights obligation, this approach will require a society to assure a sufficient amount of energy for each individual, whether they exist on their own or reside within a group.[420] However, the amounts of energy assured to individuals would differ between societies due to culture, climate and geography;[421] although it is noted that the ultimate aim of human rights is to ensure that all individuals should be treated consistently.[422]

8.1.3 The Considerations of the Responsibilities Chapter

It is notable that centralised energy provision, favoured by developed nations, contains both the possibilities to breach human rights by allowing breaks in energy provision and allowing social injustice by not providing affordable energy to all when an energy market operates.[423] Furthermore, renewable energy when transferred via a centralised system would be prone to the same problems.[424] At the very least, centralised energy supplies cause worry to energy users concerning both the supply and affordability and this has precipitated the need to rethink the actual process of energy generation and distribution.

An argument has been supplied that as central supplies of energy are not ideal, a way of energy generation that benefits from renewable energy's ubiquity, and also takes advantage of all the necessary technology being available to harness renewables, is needed; hence, an argument has been provided in favour of *domestic energy* generation.[425] [426]

[419] See 2.2.3 'Group Rights'.
[420] See 2.2.3 'Group Rights' for the rationale that society should be the 'assuring body' for a sufficient amount of energy to be supplied to individuals.
[421] See 2.4.2 'Countering Opponents of Rights Legislation'.
[422] See 2.4.2 'Countering Opponents of Rights Legislation'.
[423] See 7.2.1 'Problems with Centralised Energy Provision'.
[424] See 7.2.2 'Are Centralised Problems Applicable to Renewables?'.
[425] See 7.2.3 'The Provision of Domestic Energy'.

The aforementioned responsibility concerns an individual society but it is noted that renewable energy has global implications if the concept of responsibilities is to be thoroughly considered.[427] It was further noted that one benefit of renewables includes their propensity to support *sustainability*; a benefit which previous energy supplies did not deliver and should now be promoted.[428] With regard to sustainability: the maximum variety and amount of resources should be left for future generations;[429] equipment and technology for renewable energy generation should increasingly be derived from materials that do not damage the environment during production or maintenance;[430] and additionally, the usage of renewable energy should be organised so that it does not damage the environment and it will require monitoring to ensure this.[431]

Renewables should also allow *international justice* to be realised with regard to energy supplies: this is important if humanity's overall position is to be improved.[432] To facilitate this, societies should anticipate devising strategies to implement renewable energy.[433] Furthermore, it should be anticipated that knowledge and equipment should be transferred from developed societies to developing ones to ensure that international justice is fulfilled.[434]

8.2 Satisfying Rights and Responsibilities

It should be noted that any ownership type is faced with five tenets to address before it can be considered as a contender for providing a suitable model for renewable

[426] See 1.3.2 'The Harnessing and Storing of Renewable Energy' for a definition of 'domestic' used throughout this chapter.
[427] See 7.3 'Global Responsibilities'.
[428] See 7.3 'Global Responsibilities'. See also 1.1 'Preamble'; particularly footnote 1.
[429] See 7.3.1 'Sustainability' and 7.3.1.1 'Sustainability – The Importance of Preserving Current Goods'.
[430] See 7.3.1.2 'Sustainability – Improving the Environment'.
[431] See 7.3.1.3 'Sustainability – Environmental Issues'.
[432] See 7.3 'Global Responsibilities'.
[433] See 7.3.2.1 'Strategies to Introduce Renewable Energy'.
[434] See 7.3.2.2 'The Transfer of Goods to Developing Societies'.

energy.[435] These being: 'Human Rights'; 'Group Rights'; 'The Provision of Domestic Energy'; 'Sustainability'; and 'International Justice'.

Each of these is now taken in turn and reviewed to see how well the ownership types fare in an attempt to identify which is the most suitable.

8.2.1 Human Rights

A review of the ownership types here, would expect that the vast majority provide the human right to renewable energy to the inhabitants of their societies with a sufficient amount supplied: lodged as enough to 'allow individuals to carry out routine tasks such as cooking, washing, maintaining their abode at a reasonable temperature and providing lighting'.[436] To quickly recap: Locke would require all to have 'enough, and as good';[437] although individuals within a society may need to be educated by a surrounding culture as to what comprises 'enough'.[438] Mill would require provision made to the poor which should be 'ample in respect to necessities';[439] for Rawls, any gains made by the advantaged would be 'to the greatest benefit of the least advantaged';[440] for Rousseau and the capabilities approach, the disadvantaged would benefit from equalities of 'condition' and 'opportunity' respectively;[441] For the ownership types based upon Marx and Bookchin, all persons would take according to their 'needs';[442] and for Owen's

[435] See 8.1.2 'The Considerations of the Rights Chapter' and 8.1.3 'The Considerations of the Responsibilities Chapter'.
[436] See 2.4.2 'Countering Opponents of Rights Legislation' for the definition of what would comprise a sufficient amount.
[437] See 3.1.1 'Locke's Philosophy Defined and Applied'.
[438] See 3.1.3 'Locke: External Criticism'.
[439] See 4.1.1 'Mill's Philosophy Defined and Applied'.
[440] See 4.2.1 'Rawls's Philosophy Defined and Applied'.
[441] See 5.2.1 'Rousseau's Philosophy Defined and Applied' and 5.3.1 'A Capabilities Approach Defined and Applied'.
[442] See 5.1.1 'A Marxist Philosophy Defined and Applied' and 6.3.1 'Bookchin's Philosophy Defined and Applied'.

ownership type, energy would be distributed communally firstly and then the remainder distributed equally.[443]

However, the remaining ownership types cannot be expected to fulfil human rights concerns adequately. For instance, the communitarianism of the Hutterites encourages its adherents to lead very austere lives.[444] If Hutterite communities are considered to be groups within a society, and this is a fair assessment as they are communities that lie within larger nation states, then it is likely that Hutterite communities may not always satisfy the human rights requirements of society. To explain, where human rights requirements are defined by greater society and are provisions in excess of the meagre Hutterite provision, then the greater society would be expected to act to assure human rights.[445] Hence, in some instances Hutterites may fall foul of accepted societal standards of a human right to renewable energy.

Also the distribution based upon the work of Aristotle, cannot be expected to satisfy human rights requirements. Any distributions of energy would be heavily reliant upon *individuals* making decisions concerning how much energy to distribute to others. If an individual has been inculcated to make distributions that fall short of human rights requirements, such as denying human rights to others in the belief that it would result in them becoming better persons, then human rights may not be upheld.[446]

Turning to the private ownership camp, it should be noted that the ownership types of Nozick and Otsuka, like the Aristotelian arrangement, may fall short of satisfying human rights, due to individual decision-making. Although Nozick would expect philanthropy to operate in society, it should be noted that persons need not necessarily act benevolently.[447] With regard to Otsuka's work, an initial redistribution of resources may be expected to cover an individual's human rights *expectations*, but it

[443] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[444] See 6.1.1 'Hutterite Philosophy Defined and Applied'.
[445] See 2.2.3 'Group Rights'.
[446] See 4.3.3 'Aristotle: External Criticism'.
[447] See 3.2.1 'Nozick's Philosophy Defined and Applied'.

should be noted that any poor decision making that an individual may make could lead to vast inequalities, which could portend breaches in human rights as others would not be obliged to help.[448] All libertarians may advise individuals to enter into insurance policies or associations to cover life's emergencies; but one would need the acumen to anticipate all eventualities and this facet may not be possessed by all;[449] furthermore, there may be the danger that it is not in the interests of stronger parties to honour such agreements.[450]

8.2.2 Group rights

The importance of group rights has already been noted, as this may: allow some persons to benefit from the economies of scale; allow some persons to more easily attain their own level of welfare; or may be preferred by those accustomed to communitarian living.[451] A review of the ownership types here would expect the vast majority to provide the group rights to renewable energy. For any of the communitarian ownership types, where individuals are necessarily part of a larger grouping and consideration is given to the wellbeing of the community over the individual, one would not expect problems in supporting group rights: and unsurprisingly this is the case.[452]

With less enthusiasm for group rights, the private ownership types would *allow* individuals to form groups. Locke's ownership type does not preclude persons living in groups as he believed that persons would unite under 'commonwealths' when this provided a better arrangement for protecting one's property.[453] Nozick would allow persons full freedom over how to dispose of their property and this would be expected

[448] See 3.3.3 'Otsuka: External Criticism'.
[449] See 3.2.2 'Nozick: Internal Criticism' and 3.3.3 'Otsuka: External Criticism'.
[450] See 3.2.2 'Nozick: Internal Criticism'.
[451] See 2.2.3 'Group Rights'.
[452] See 6.1.1 'Hutterite Philosophy defined and applied', 6.2.1 'Owen's Philosophy Defined and Applied' and 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[453] See 3.1.1 'Locke's Philosophy Defined and Applied'.

to include forming groups;[454] and Otsuka would encourage persons to form 'political Associations'.[455] Also those of a more liberal bent, such as the ownership types based upon Rawls and the capabilities approach,[456] would be expected to *allow* individuals to form groups when enacting their privileges or negative rights.[457]

Turning to look at the distributed ownership type of Aristotle, it could feasibly countenance group ownership. His work provides a template that groups may use although this is seemingly only viable for small ventures that could share energy amongst persons with similar interests: persons would be expected to take energy for their own needs whilst simultaneously considering the needs of others.[458]

For the remaining distributed ownership type, namely of Mill, it may be noted that it can accommodate groups within its midst in a limited manner. Although Mill would wish for state ownership of renewable energy,[459] it may be argued that group generation is not impossible as harnessing equipment, could be state-owned whilst loaned out from a central stock.[460] It could be further argued that Mill's theorising may be expected to be sympathetic to groups as it should prevent the 'tyranny of the majority' being realised,[461] and therefore allow group generation. Hence, group initiatives may be possible under Millian ownership: however, this may be ultimately decided on whether it maximises utility.

However, there are two egalitarian ownership types who may resist the formation of groups within their midst for their own reasoning; these being the Rousseauian and Marxist ownership types.

---

[454] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[455] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[456] See 4.2.1 'Rawls's Philosophy Defined and Applied' and 5.3.1 'A Capabilities Approach Defined and Applied'.
[457] See 2.3.2 'Privileges' and 2.3.3 'Negative Claim Rights'.
[458] See 4.3.3 'Aristotle: External Criticism'.
[459] See 4.1.1 'Mill's Philosophy Defined and Applied'.
[460] See 4.1.2 'Mill: Internal Criticism'.
[461] See 4.1.1 'Mill's Philosophy Defined and Applied' for an explanation of the 'tyranny of the Majority' and the 'harm principle'.

For Rousseau, with the emphasis placed upon attaining the equality of condition for individuals, it is unlikely that his philosophising would accommodate groups. He noted that groupings led to division in society whereby associations would conspire to further their own interests.[462]

A Marxist ownership type would be expected to attempt to benefit from economies of scale with the long-term aim of achieving a state of abundance and therefore centralise production in order to do this.[463] Now, although individuals or groups should have the freedom to set up their own generating schemes, they may face practical difficulties from withdrawing from a centralised scheme:[464] firstly, they may be reluctant to withdraw from a scheme where they had invested much time and effort, and secondly, the opposition to their withdrawal by the rest of society may be strong enough to provide an effective veto. For these reasons, a Marxist ownership type may discourage the formation of groups.

8.2.3 The Provision of Domestic Energy

As already noted the definition of domestic energy here is 'renewable energy generated, used and stored by *identifiable entities* primarily to satisfy their own needs. For example, individuals, families, communities, educational establishments and businesses may be considered to be identifiable entities that could acquire their own supply of domestically generated energy […] '.[465]

All private ownership types would expect to support domestic generation, as they espouse individuals appropriating their own renewable energy; and would allow them the freedom to form larger entities.[466] For instance, there is much individuality

[462] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[463] See 5.1.1 'A Marxist Philosophy Defined and Applied'.
[464] See 5.1.2 'Marxism: Internal Criticism'.
[465] See 1.3.2 'The Harnessing and Storing of Renewable Energy' for a definition of 'domestic'.
[466] See 8.2.2 'Group Rights'.

prescribed by Locke's theorising and this represents an advantage when satisfying the tenet to supply domestic energy.[467] Immediately, it allows individuals to own the readily available technology and benefit from the widespread nature of renewables.[468] Nozick would be expected to follow suit by allowing persons to exercise control over their assets.[469] Whilst Otsuka's redistribution of resources would give individuals the chance to make their own energy plans which would expect to accommodate domestic arrangements.[470]

Other advocates supportive of domestic provision would be the ownership types of Aristotle and Rousseau. The reasoning of Aristotle is based upon the principles of ownership via independent households,[471] and for Rousseau, individuals would be allotted roughly equal amounts of energy generation facilities.[472] As both of these gauged the principles of ownership via identifiable entities in their own right, it is unsurprising that they are already suitable to the generation of domestic energy.

At first glance, the freedoms offered by ownership types espousing liberalism, such as those based upon the work of Rawls or the capabilities approach should allow persons and larger entities to generate energy.[473] Persons' privileges and negative claim rights would be expected to allow individuals to generate energy as individual entities or join larger entities.[474] On the other hand, whilst not necessarily striving for centralisation, many liberals may wish for economic growth to provide for more material distribution in society:[475] and this may feasibly be achieved by allowing centralised production to be controlled by the most productive parties. Additionally,

[467] See 3.1.1 'Locke's Philosophy Defined and Applied'.
[468] See 1.3.1 'Energy Types' and 1.3.2 'The Harnessing and Storing of Renewable Energy'.
[469] See 3.2.1 'Nozick's Philosophy Defined and Applied'.
[470] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[471] See 4.3.1 'Aristotle's Philosophy Defined and Applied'.
[472] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[473] See 4.2.1 'Rawls's Philosophy Defined and Applied' and 5.3.1 'A Capabilities Approach Defined and Applied'.
[474] See 2.3.2 'Privileges' and 2.3.3 'Negative Claim Rights'.
[475] See 4.2.1 'Rawls's Philosophy Defined and Applied' and 5.3.1 'A Capabilities Approach Defined and Applied'.

liberals may see the benefits of centralised taxation as a way of controlling an economy lest it overheat.[476] Hence, the ownership types of Rawls and the capabilities approach may not be most fervent supporters of domestic supply.

However, for many of the ownership types, it is questionable whether they would even consider the notion of domestic production to the same extent as the liberals. With regard to Millian ownership, it would prefer state ownership and may be expected to ideologically oppose the institution of domestic energy generation, where it was felt that maximising utility would occur via centralised generation. Although the state may feasibly own distributed energy generating equipment and lend them to any identifiable entities,[477] Mill's ownership type could not assure accommodating domestic provision.

With regard to a Marxist ownership type, the pressure to keep centralised energy generation and benefit from economies of scale may be supported by a Marxist reticence to offer effective rights of ownership to individuals lest they aggrandise themselves at the expense of others.[478] However, some advocates of Marxism may realise that the ability to gain renewable energy from a variety of sources, with all the technology now available,[479] has now superseded traditional Marxist collectivisation and may relinquish control over this aspect of life.[480] Hence, a bifurcation in Marxist thought may emerge with the supporters of centralisation opposed by those Marxists favouring domestic energy production. Hence, for ideological reasons, Marxism cannot assure eschewing centralised control.

It would be expected that any of the communitarian ownership types which exist as settlements or colonies, would be able not only to support, but encourage, a domestic

[476] See 7.2.3.2 'The Economic Challenge'.
[477] See 4.1.2 'Mill: Internal Criticism'.
[478] See 2.4.1 'Countering Opposing Ideologies'.
[479] See 1.3.1 'Energy Types' and 1.3.2 'The Harnessing and Storing of Renewable Energy'.
[480] See 7.2.3.2 'The Economic Challenge' for a description of a Marxist view of how the established economic system contributes to preventing the economic independence of domestic generators.

energy supply. At first glance, all communitarian settlements, often spread far and wide, would naturally use local sources of renewable energy.[481] Generally, they would strive for self–sufficiency and would therefore be independent entities. Hence, they should quite easily satisfy the criterion of being domestic producers.

However, there would be doubts as to how well communitarians would cope with domestic generation for home or individual usage. This is because a common principle of all communitarians is the communal ownership of the means of production,[482] which may militate against small-scale usage. For instance, if a situation arose where a community needed to maximise its supply of renewables, after suffering harsh winters as an example, and could only do this by allowing entities as small as individuals or families to harness their own energy, then this prospect may not be welcomed. Hence, communitarianism may not be flexible enough to benefit from renewable energy's full potential.

That said, it is possible that some communitarian ownership types have room for renewable energy generation at a level lower than the community. For example, some individual or family generation could be allowed under Owen's theorising if the energy generating equipment were considered to be possessions available to 'enjoy';[483] or possibly small-scale generation could be considered to be an aspect of one's personal possessions within Bookchin's 'social sphere'.[484] However, some communitarians may fear that persons would seek more activities involving their own energy supply. With this latter possibility in mind, it may be envisaged that those staunchly holding communitarian beliefs would not even risk the undermining of established communitarian practice.

[481] See 6.1.1 'Hutterite Philosophy Defined and Applied', 6.2.1 'Owen's Philosophy Defined and Applied' and 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[482] See 6.1.1 'Hutterite Philosophy Defined and Applied', 6.2.1 'Owen's Philosophy Defined and Applied' and 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[483] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[484] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.

8.2.4 Sustainability

Faced with the fact that the previous energy supplies have caused pollution,[485] combined with the fact that future generations now must be considered,[486] then any way of owning renewables must accommodate the responsibility of sustainability. The problem for many of the ownership types reviewed here will be the fact that the concept of sustainability, as described here, is stringent,[487] and ideologies may have to be stretched to accommodate it.

However, it is expected that the majority of ownership types would be rational enough to realise that they cannot use the Earth's resources *ad infinitum* and must adjust their *modus operandi* to address this. Furthermore, sustainability will entail additional administration and associated costs: however, the overall cost need not be exorbitant and may be funded by maintenance costs or taxation.[488]

The political philosophies that already entail a type of environmentalism, such as that of Bookchin's communitarianism, would be expected to be quite accepting of the above prospect of additional administration and costs in order to fulfil their aim of living benignly within the environment.[489]

The work of Mill, whereby the state would be expected to plan for its future would necessarily consider future generations.[490] Furthermore, it would enshrine the state as the guardian of a natural resource, and would therefore be expected to ensure that natural assets were not depleted. By this process, state ownership could limit individuals' expectations with regard to the total amounts of energy they may acquire and it could thereby limit the amount of the Earth's resources dedicated to energy

[485] See 1.1. 'Preamble'.
[486] See 7.3.1 'Sustainability'.
[487] See: 7.3.1.1 'Sustainability – The Importance of Preserving Current Goods'; 7.3.1.2 'Sustainability – Improving the Environment'; and 7.3.1.3 'Sustainability – Environmental Issues'.
[488] See 7.3.1.4 'The Cost of Sustainability'.
[489] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.
[490] See 4.1.1 'Mill's Philosophy Defined and Applied'.

generation. Additionally, the state, with the resources it can muster, is in a good position to both improve and monitor environments. State ownership may therefore be a boon to notions of sustainability.

However some ownership types may be expected to adjust their principles for the purpose at hand. For Locke's ownership type, the device of persons owning only 'enough, and as good', may be extrapolated to consider future generations and should prevent excessive usage of the Earth's resources.[491] This device alone may prevent excessive despoliation provided all receive guidance in exactly what constitutes 'enough'.[492] Furthermore, any profligate usage of the resources today may be considered *wasteful* when it is realised that persons of the future will require them. Bearing all this in mind, the proviso concerning the taxation of property may be levied to monitor environments and to ensure energy generating equipment considers environmental improvement.[493] Hence, Locke's *ethos*, with some modification, would be expected to accommodate sustainability.

For the Owenites, as communitarians they would be expected to work for their community's future existence and this should underline the importance of sustainability. However, this type of communitarianism provides an example of the introduction of a mindset from an early age,[494] whereby individuals may appreciate the common good over individual good, and this may act as a device to appreciate the needs of future generations; and all the concerns for sustainability that this entails. When initiated, such a device may expect to preserve current goods such as environments and ensure that they are monitored for any potential degradation when used to generate energy; and also ensure energy generating equipment is built with an element of environmental

[491] See 3.1.1 'Locke's Philosophy Defined and Applied'.
[492] See 3.1.3 'Locke: External Criticism'.
[493] See 3.1.1 'Locke's Philosophy Defined and Applied'.
[494] See 6.2.1 'Owen's Philosophy Defined and Applied'.

improvement. Hence, it is possible that Owenite communities would act in accordance with the tenet of sustainability.

Aristotle, as the encourager of moderation, may be expected to provide a limit to the amount of renewable energy needed in society.[495] However, the reader may recall that energy contains a *desirability of increasing usage* that makes the Aristotelian notion of moderation 'elastic' as persons use increasing amounts.[496] However, it is expected that if Aristotle's mindset lodges the importance of environmental issues then physical restraint may be assured.

An example of an ownership type that may accept sustainability, largely by default, may be provided by the ownership type based upon Rousseau's work. His emphasis upon 'subsistence',[497] would expect to leave ample resources for future generations without exacerbating any current damage sustained by the Earth. A person's desire to own increasing amounts of renewable energy would be effectively tempered by an agreed level of energy usage and it should therefore be possible to place a limit on the amount of the Earth's resources used in energy production so that excessive environmental damage should not occur. That said, if the consensus of 'general will' contained an element of conscience, it would expect to monitor and improve environments also; hence sustainability is not an impossible circumstance for Rousseau's ownership type to support.

An ownership type that could use physical resources wisely is the one based upon the work of Marx. Although it would seemingly wish for an abundance of produce underwritten by the increased usage of the Earth's resources,[498] the possibility remains that individuals' 'needs' would be dictated by the amount of resources available, even

[495] See 4.3.1 'Aristotle's Philosophy Defined and applied'.
[496] See 4.3.2 'Aristotle: Internal Criticism'.
[497] See 5.2.1 'Rousseau's Philosophy Defined and Applied'.
[498] See 5.1.1 'A Marxist Philosophy Defined and Applied'.

where levels of resources are quite moderate.[499] Those Marxists accepting moderate levels of materialism may also accept the notion of sustainability: whilst those who believe that humanity should pursue realising a state of abundance may be less accepting. Hence, Marxism may *possibly* exercise notions of sustainability.

With regard to liberals, the imposition of more costs and the institution of activities that would reduce economic growth could bring resistance from them. For instance, for the advocates of both Rawls and the capabilities approach,[500] increased development may be essential where the focus is upon economic growth and this would almost certainly lead persons to desire more energy requiring increased usage of the Earth's resources. However, if it can be argued that increased growth damages a good upon which all depend, then liberals may be persuaded to temper their usage of these assets. That said, there may remain the temptation to increasingly use resources and so, the liberalism of Rawls and the capabilities approach may not wholeheartedly support the notion of sustainability as described here.

Apart from those ownership types that may need to modify their principles, others may offer some resistance to incorporating the notion of sustainability. At first glance, the Hutterites' frugal lives within self-sufficient communities would be expected to support sustainability.[501] Furthermore, with a constant concern for the continuance of their communities they would expect to consider the notion of future generations. However, as they are insular in outlook and may not consider themselves to have damaged the environment, there may exist doubts as to how willing they would be to ensure an element of improving the environment or monitoring when generating energy.

[499] See 5.1.2 'Marxism: Internal Criticism' where some may argue that taking according to 'needs' may occur *prior* to industrialisation.
[500] See 4.2.1 'Rawls's Philosophy Defined and Applied' and 5.3.1 'A Capabilities Approach Defined and Applied'.
[501] See 6.1.1 'Hutterite Philosophy Defined and Applied'.

For Otsuka's ownership type, it is *possible* that the concept of sustainability could be taken into account when distributions of resources are enacted.[502] But notions of sustainability would be expected to reduce individuals' distributions: this may be found to be acceptable where abundant resources are available, but where resources are finite, the restrictions upon energy usage may be enough to make Otsuka's notion of *preference-based welfare* unrealistic;[503] and there can be expected to be disagreements between the perceived needs of the present and the needs of future generations.

Additionally, opposition may come from the libertarianism of Nozick. Nozick would consider that persons had the right to dispose of their assets as they please: provided that nobody's position is 'worsened'.[504] A situation may arise where, if one took the point of introduction of widespread renewable energy sources as a 'baseline', the Nozickian may argue that restoring any environment is an irrelevance as nobody's position *has been* worsened from this point: hence, Nozickians may not always be keen to enact improvements in the environment. Furthermore, if it could be proved that using renewables *is actually* worsening others' positions then there would be a need to 'compensate' others, but this does not necessarily entail refraining from any energy generation that may be detrimental as other goods may be provided in lieu. Hence, although opinions would vary between individuals, some libertarians may be expected to be amongst the least welcoming concerning notions of sustainability.

8.2.5 International Justice

It has been accepted that in a fair and just world, according to notions of social justice, that all human beings should have access to adequate goods; and this will entail instituting a method of international justice whereby the wealthier societies transfer

[502] See 3.3.1 'Otsuka's Philosophy Defined and Applied'.
[503] See 3.3.2 'Otsuka: Internal Criticism'.
[504] See 3.2.1 'Nozick's Philosophy Defined and Applied'.

goods to the less developed.[505] All in all, this will be facilitated as the necessary equipment to harness and store renewable energy is already present,[506] and also by noting that renewable energy is widespread and unlimited.[507] Furthermore, many of the less developed societies lie in tropical areas where they have plentiful renewable energy, from solar power as one example.[508] Hence, as already noted, the transfer of goods need not be *too costly* for the developed nations.[509] Where a modest amount of resources is needed to ensure that international justice is enacted, then the task remains to find out which political philosophies can accommodate this.

An ownership type with an international outlook is the one based upon Marxism and it would wish for international justice to be delivered;[510] and it is unquestionable, that cooperation, with this end in mind, would not follow. Hence, the provision of equipment, expertise and knowledge should ensue. Although a Marxist ownership type could not be expected to be the most productive materially with persons needing only to work to the level of their 'abilities', it still should be expected to assist here.

The communitarian settlements envisaged by Bookchin would supply goods outside of those communities by a process of *shared exchange*.[511] The process would be supported by an underlying mindset collectively lodged in individuals and then monitored by an overseeing confederation. However, due to citizens needing only to work to the level of culturally defined 'abilities', in a similar manner to the preceding Marxist ownership type, it may not be the most productive model and consequently will have less goods to share when compared to other ownership types. However, it would still be expected to accommodate international concerns.

---

[505] See 7.3.2.2 'The Transfer of Goods to Developing Societies'.
[506] See 1.3.2 'The Harnessing and Storing of Renewable Energy'.
[507] See 1.3.1 'Energy Types'.
[508] See 7.3.2.2 'The Transfer of Goods to Developing Societies'.
[509] See 7.3.2.2 'The Transfer of Goods to Developing Societies'.
[510] See 5.1.1 'A Marxist Philosophy Defined and Applied'.
[511] See 6.3.1 'Bookchin's Philosophy Defined and Applied'.

Turning to the communitarianism of Owen, it should be noted that Owenite communities should lie within a federation that has a mechanism for distributing surplus goods and expertise.[512] Hence, they would be expected to readily accommodate a notion of justice which lies outside of their communities: feasibly a type of international justice.

Regarding those ownership types that may possibly support international justice, the work of Locke,[513] with its proviso concerning charitableness, if extended internationally, could be interpreted as offering developing societies the expertise and equipment they need to generate renewable energy and contribute to international justice. This could certainly be enhanced by utilising the proviso concerning the taxation of property when it changes hands: an element of this taxation may be used to fund charitableness internationally. Locke's work therefore holds the possibility of satisfying the requirements of international justice.

It should be noted, that although Mill's work does not contain a specific mechanism for ensuring international justice; possibly, the redistribution system contained within could be adjusted to account for international concerns in the same way that it may fund the needs of the disadvantaged. However, it would mean that assiduous individuals retained less of the fruits of their labour and if not carefully managed, may infringe Mill's claim that true ownership lies in a person's labour.[514]

Similar to the Millian ownership type, adaptations may be made to Rawls's philosophy to account for considerations of international justice; for instance, the most advantaged sectors of society, who may be expected to support the disadvantaged via taxation,[515] could potentially fund international justice via this method: however, the

[512] See 6.2.1 'Owen's Philosophy Defined and Applied'.
[513] See 3.1.1 'Locke's Philosophy Defined and Applied'.
[514] See 4.1.1 'Mill's Philosophy Defined and Applied'.
[515] See 4.2.1 'Rawls's Philosophy Defined and Applied'.

level of taxation would have to be relatively low so not to provide any disincentives to the talented.

One other ownership type with an international outlook is the capabilities approach.[516] Hence, it would be readily expected to support the notion of international justice. However, the Achilles's heel of the capabilities approach may be that it would already require a constant redistribution of substantial resources to ensure that all achieve an equality of opportunity.[517] If an *additional* cost was added to support international justice, then as a liberal ownership type, this may risk causing disincentives for some of the most able. This taxation, as in the ownership types based around the work of Rawls and Mill, would need to be managed carefully within society lest disincentives ensue.

Looking at the egalitarian ownership type of Rousseau, it would be expected to exercise some concerns for the most disadvantaged within society and provide them with contributions from the more endowed.[518] Possibly this principle could be exercised internationally: however, as the focus of attention would be upon providing an equality of condition whereby individuals *subsist*. Depending upon how *subsistence* was defined by the 'general will', it is questionable whether enough resources could be available for transfer to other societies: although a level of transfer is not impossible.

However, there are those ownership types that may have more difficulty in providing enough resources to support international concerns and this will be elucidated over the following paragraphs. With regard to the libertarians, the ownership type of Nozick operates with what may be termed an 'imperfect philanthropy' that may not stretch as far as international concerns.[519] The reader should appreciate that even where only a small transfer of funds would be needed; this relatively small amount cannot be

[516] See 5.3.1 'A Capabilities Approach Defined and Applied'.
[517] See 5.3.2 'Capabilities Approach: Internal Criticism'.
[518] See 5.2.2 'Rousseau: Internal Criticism'.
[519] See 3.2.1 'Nozick's Philosophy Defined and Applied'.

assured. For Otsuka, international concerns may be foiled as persons find that their own preferred level of welfare is reduced by contributions going abroad: where resources are finite, resistance to such contributions may emerge.[520] Hence, although international justice *may* be exercised within Otsuka's ownership type it once again cannot be *assured*. It should be further noted that no individual need be benevolent within Otsuka's type of libertarianism after an initial redistribution of assets has occurred:[521] further reducing the possibility of enacting efficacious international justice.

The tenet of international justice may face other problems from the communitarianism of the Hutterites. With their mindset predisposed to focus upon their own communities,[522] they may be too insular to enact any wider type of justice. Therefore they cannot ultimately be relied upon to contribute to international justice.

Finally, the matter of *physical distance* would affect the efficacy of supporting international justice from the Aristotelian ownership type. As it is gauged to operate between persons where a relationship exists, then only a token relationship may operate between persons at a great distance from each other, according to the spirit of the *continuum of ownership*.[523] Internationally, this relationship *may* manifest itself merely as a token concern for others.

8.3 The Justification of Independent Ownership

The ownership type that has satisfied the requirements of the rights and responsibilities noted above, better than the others, is one based around the work of John Locke. Locke's theorising would expect to readily fulfil three of the tenets and by adjusting its principles, would accommodate two of the tenets. These will be explained in the following paragraphs.

[520] See 3.3.2 'Otsuka: Internal Criticism'.
[521] See 3.3.3 'Otsuka: External Criticism'.
[522] See 6.1.1 'Hutterite Philosophy Defined and Applied'.
[523] See 4.3.1 'Aristotle's Philosophy Defined and Applied'.

Some tenets would be expected to be readily fulfilled. With regard to *human rights*, Locke's ownership type would be very likely to provide a sufficient amount of energy to members of a society.[524] Locke's theorising would definitely support *group rights* when persons join commonwealths.[525] The individuality prescribed by Locke's theorising, allowing individuals to appropriate their own renewable energy accompanied by allowing individuals to form larger entities,[526] would allow the *domestic provision* of renewables.

Two tenets may be accommodated with some adjustment to the principles of Locke's ownership type. With regard to the tenet of *sustainability*, the emphasis Locke placed upon individuals only providing for their needs and owning only 'enough, and as good' should provide a device to prevent the excessive usage of the Earth's resources.[527] Accompanied by his proviso concerning 'waste', which may be extrapolated to consider future generations and discourage the profligate usage of resources in the present when it is known that future generations will need them.[528] Also the proviso concerning taxation could levy the funds required to monitor environments and also ensure that any generating equipment considers the notion of environmental improvement.[529]

With regard to *international justice*, if the proviso concerning charitableness is extended internationally, it could be interpreted as offering developing societies the expertise and equipment they need to generate renewable energy and contribute to international justice.[530] Again the proviso concerning taxation may help here by levying funds.[531]

[524] See 8.2.1 'Human Rights'.
[525] See 8.2.2 'Group rights'.
[526] See 8.2.3 'The Provision of Domestic Energy'.
[527] See 8.2.4 'Sustainability'.
[528] See 8.2.4 'Sustainability'.
[529] See 8.2.4 'Sustainability'.
[530] See 8.2.5 'International Justice'.
[531] See 8.2.5 'International Justice'.

Therefore *on balance*, this review of Locke's work demonstrates that it will fulfil the needs of the tenets derived from rights and responsibilities more ably than the other ownership types.[532] However, it would be wise to view it through Lockean eyes to see if it is truly Locke's theorising being employed here. After all, it introduces topics such as sustainability and international justice which did not concern Locke.

Firstly, looking at the global responsibility of sustainability,[533] ardent Lockeans may add that Locke's work was meant to contain such provisos only to guide our actions in the *present*; they may ask is it not unfair on the memory of Locke to extend his remit into the future without his permission? Possibly it *is* extending his remit and therefore the resulting ownership type may only claim *influence* from Locke.

Secondly, with regard to international justice, it may also be claimed that the provisos were only measures devised to ensure the continued operation of a *discrete society*, and once more Locke's remit is being unfairly extended. To which the reply would be that Locke remains influential here and the *spirit* of his work is being extended.

Overall, as the ownership type portrayed here extends what are traditionally understood to be Locke's provisos it would not be wise to label it 'Lockean'. However, it does favour a private type of ownership for individuals and groups whereby the energy generated remains privately owned by the individual or group largely for their own usage. The ownership type encourages individuals or groups to look after their own

[532] This argument is aided by the analysis which would indicate that other ownership types are *very unlikely* to fulfil some of the tenets. For instance, the ownership types based upon the principles of Nozick, Otsuka, the Hutterites and Aristotle do not adequately address the needs of Human rights; see 8.2.1 'Human Rights'. The ownership types based upon the principles of Rousseau, Marx and Mill do not adequately address the needs of group rights; see 8.2.2 'Group Rights'. The ownership types based upon the work of Owen and Bookchin cannot assure that they will benefit from the domestic provision of energy to its full potential; whilst the liberalism of Rawls and the capabilities approach may wish to see centralised production to both encourage economic growth and exert control over taxation; see 8.2.3 'The Provision of Domestic Energy'. The ownership types based upon the principles of Rawls and the capabilities approach may be tempted to increasingly use the Earth's resources in pursuit of economic growth and cannot assure that sustainability is maintained; see 8.2.4 'Sustainability'. The ownership type based upon the work of Bookchin cannot assure that international justice will be fulfilled as satisfying internal demand may displace the desire to share with others; see 8.2.5 'International Justice'.

[533] See 7.3 'Global Responsibilities'.

energy affairs primarily without dependence upon a greater society; hence this type of private ownership may be more aptly entitled *independent ownership*.

That said, after concluding that an adaptation of Locke's work provides the most suitable ownership type, this study must allow for a strong pluralist element of ownership to be present in societies. It has already been noted in the ownership chapters that there is a variety of circumstances in which differing ownership types may be suitable for the ownership of renewable energy. Private ownership is suitable where all have access to an adequate supply of renewable energy that allows them to pursue their own ends.[534] Some variants of distributed ownership are suitable where control of an economy is imperative for the wellbeing of society as a whole.[535] Egalitarian ownership is suitable where the population values equality over economic growth.[536] Communitarian ownership would be suitable for those who favour sharing energy generating facilities but is preferred by many raised in such an environment.[537] Therefore, there can be a variety of ownership types that may be suited to the ownership of renewable energy, dependent upon the situations in which human beings find themselves.

Moreover, there may be societies who voluntarily wish to live at levels below the standards of what may be considered sufficient to satisfy human rights concerns. They may be happy to live simpler lives, without energy, although this would be expected to be a rare occurrence due to the benefits that energy brings.[538]

[534] See 3.4 'The Evaluation of Private Ownership'.
[535] See 4.4 'The Evaluation of Distributed Ownership'.
[536] See 5.4 'The Evaluation of Egalitarian Ownership'.
[537] See 6.4 'The Evaluation of Communitarian Ownership'.
[538] See 7.3.2 'International Justice' and 1.2.3 'The Desert Island Thought Experiment'.

8.4 End Note

An answer may now be provided to the question posed at the beginning of this work: *who owns renewable energy?*[539] But this will be facilitated by briefly restating the argument of this thesis. It has been argued that:

1. For an ownership type to be suitable it should satisfy the tenets of rights and responsibilities.[540]
2. Locke's ownership provides the 'most ideal ownership type' as it realises the tenets the most.[541] [542]
3. From 1) and 2), Locke's ownership type is preferable.
4. But this is really extending Locke's remit.[543]
5. From 3) and 4), independent ownership is applicable.
6. Due to situations where each ownership category would be found to be preferable to independent ownership,[544] and also recognising peoples' propensity to hold values such as Asceticism,[545] other ownership types will be practically applied.
7. From 5) and 6), independent ownership is applicable as the most suitable type for the ownership of renewable energy where conditions allow.

Hence, the answer is that a *variety of entities* may own renewable energy; via a variety of ownership types. That said, as independent ownership satisfies the tenets of ownership to the greatest extent, this thesis would promote *identifiable entities* owning renewables. However, as *identifiable entities* may take many forms within society, such as individuals, families or communities, a complete disagreement between the

[539] See 1.1 'Preamble'.
[540] See 1.1 'Preamble'.
[541] See 1.1 'Preamble' where it was noted that 'the most ideal ownership type should be the one that fulfils the aforementioned tenets the most and therefore provides the most realised variant of any manifestation of the concept of ownership'.
[542] See 8.3 'The Justification of Independent Ownership' for a summary of how Locke's ownership type addresses the tenets.
[543] See 8.3 'The Justification of Independent Ownership'.
[544] See: 3.4 'Summary of Private Ownership'; 4.4 'Summary of Distributed Ownership'; 5.4 'Summary of Egalitarian Ownership'; and 6.4 'Summary of Communitarian Ownership'.
[545] See 1.2.3 'The Desert Island Thought Experiment'.

requirements of the real world and the reasoning supplied here should not be expected. Nevertheless, as it is an impossibility to introduce the most suitable ownership type universally; it is therefore a *recommendation* that the ownership type that should accompany renewable energy's propagation should be independent ownership.

9 Bibliography

Anderson, Elizabeth, S. 1999. 'What is the Point of Equality', *Ethics,* 109, pp. 287-337

Anon. 1972. *The New English Bible* (Oxford: Oxford University Press)

Aristotle 1999. *Politics*, Trans. by Benjamin Jowett (1885) (Kitchener: Batoche Books), <http://socserv.mcmaster.ca/econ/ugcm/3ll3/aristotle/Politics.pdf> [accessed 6 December 2012]

___ 2009. *The Nicomachean Ethics*, trans. by David Ross (1925), (Oxford: Oxford University Press)

Arneson, Richard, J. 2002. 'Equality', in Robert L. Simon (ed.), *Social and Political Philosophy* (Oxford: Blackwell), pp. 85-105

___ 2007. 'Equality', in Robert E. Goodin, and Philip Pettit (eds.), *A Companion to Contemporary Political Philosophy* (Oxford: Blackwell), pp. 489-507

B N Americas. 2015. 'ICE (Instituto Costarricense de Electricidad)', < http://www.bnamericas.com/company-profile/en/instituto-costarricense-de-electricidad-ice> [accessed 4 April 2015]

Ball State University. 2014. 'Going Geothermal', <http://cms.bsu.edu/about/geothermal> [accessed 19 November 2014]

Barker, Emma. 2014. 'Robert Owen and New Lanark', <http://www.open.edu/openlearn/ocw/mod/oucontent/view.php?printable=1&id=1658#section0> [accessed 3 September 2014]

BBC. 2007. 'Your 1970s: Strikes and Blackouts', *BBC News Channel*, <http://news.bbc.co.uk/1/hi/magazine/6729683.stm> [accessed 13/7/13]

Beitz, Charles. 2001. 'Human Rights as a Common Concern', *American Political Science Review*, 95, pp. 269-82

Bennett, John, W. 1967. *Hutterian Brethren* (Stanford: Stanford University Press)

Bentham, Jeremy. 1986. *An Introduction to the Principles of Morals and Legislation*, in Mary Warnock (ed.), *Utilitarianism* (Glasgow: William Collins Sons & Co), pp. 33-77, (first published in 1789)

Bergman, Ariel and Nick Hanley. 2012. *The Costs and Benefits of Renewable Energy in Scotland,* <http://www.ems.expertgrupp.se/uploads/documents/7-jan-2013/ems_2012_5.pdf> [accessed 15 November 2014]

Bertram, Christopher. 2010. 'Rousseau', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/rousseau/> [accessed 18 May 2012]

Biehl, Janet. 2012. 'Murray Bookchin Biography', in Janet Biehl (ed.), *The Murray Bookchin Reader,* <http://www.anarchyisorder.org/CD%234/Lay-outed%20texts/PDF-versions/Bookchin%20Murray%20-%20Reader.pdf> [accessed 20 September 2012], pp. 8-13

Blackburn, Simon. 2008. *The Oxford Dictionary of Philosophy* (Oxford: Oxford University Press)

Bolton, P. 2010. 'Energy Price Rises and Fuel Poverty', *Key Issues for the New Parliament 2010,* <http://www.parliament.uk/documents/commons/lib/research/key_issues/Key%20Issues%20Energy%20price%20rises%20and%20fuel%20poverty.pdf> [accessed 23 July13]

Bookchin, Murray. 1980. 'Toward an Ecological Society*'*, <http://logica.ugent.be/philosophica/fulltexts/13-6.pdf> [accessed 20 September 2012]

___ 1995. *From Urbanization to Cities* (London: Cassell)

___ 2012a.'Comments on the International Social Ecology Network Gathering and the "Deep Social Ecology" of John Clark', *Murray Bookchin Reader,* pp. 164-224, <http://www.anarchyisorder.org/CD%234/Lay-outed%20texts/PDF-versions/Bookchin%20Murray%20-%20Reader.pdf> [accessed 20/9/12]

____ 2012b. 'Libertarian Municipalism: An Overview', *Murray Bookchin Reader,* pp. 611-629, <http://www.anarchyisorder.org/CD%234/Lay-outed%20texts/PDF-versions/Bookchin%20Murray%20-%20Reader.pdf> [accessed 20/9/12]

____ 2012c. 'Municipalization:
Community Ownership of the Economy1', *Murray Bookchin Reader,* pp. 579-590, <http://www.anarchyisorder.org/CD%234/Lay-outed%20texts/PDF-versions/Bookchin%20Murray%20-%20Reader.pdf> [accessed 20/9/12]

___ 2012d. 'Libertarian Municipalism: The New Municipal agenda', *Murray Bookchin Reader,* pp. 685-725, <http://www.anarchyisorder.org/CD%234/Lay-outed%20texts/PDF-versions/Bookchin%20Murray%20-%20Reader.pdf> [accessed 20/9/12]

___ 2012e. 'The Meaning of Confederalism', *Murray Bookchin Reader,* pp. 591-610, <http://www.anarchyisorder.org/CD%234/Lay-outed%20texts/PDF-versions/Bookchin%20Murray%20-%20Reader.pdf> [accessed 20/9/12]

___ 2012f. 'What is Social Ecology', *Murray Bookchin Reader,* pp. 579-590, <http://www.anarchyisorder.org/CD%234/Lay-outed%20texts/PDF-versions/Bookchin%20Murray%20-%20Reader.pdf> [accessed 20/9/12]

Boukettaya, Ghada and Lotfi Krichen. 2014. 'A dynamic power management strategy of a grid connected hybrid generation system using wind, photovoltaic and Flywheel Energy Storage System in residential applications', *Energy*, 71, pp. 148-159

Boersema, Jan, J. and Joeri Bertels 2000. 'Sustainable Development in the Developed Countries', in Keekok lee, Alan Holland and Desmond McNeill (eds.), *Global Sustainable Development in the 21st Century* (Edinburgh: Edinburgh University Press), pp. 77-96

Boyle, Godfrey, Bob Everett and Gary Alexander. 2012. 'Introducing Renewable Energy', in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 1-20

Boyle, Godfrey, 2012. 'Solar Photovoltaics', in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 75-116

BP. 2012. *BP Statistical Review of World Energy June 2012*, <http://www.bp.com/assets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2011/STAGING/local_assets/pdf/statistical_review_of_world_energy_full_report_2012.pdf>[accessed 18/February 2014] (p.9, p.23 & p.33)

Callicott, J. Baird. 2001. 'The Land Ethic', in Dale Jamieson (ed.), *A Companion to Environmental Philosophy* (Oxford: Blackwell), pp. 204-217

Campbell, Tom. 1983. *The Left and Rights* (London: Routledge and Kegan Paul)

Christman, John. 1991. 'Self-Ownership, Equality, and the Structure of Property rights', *Political Theory*, 19, pp. 28-46

Claeys, Gregory. 1991. 'Introduction', in Robert Owen, *A New View of Society and Other Writings* (London: Penguin), pp. xii-xxxii

Cohen, Gerald, A. 1995. *Self-Ownership, Freedom and Equality* (Cambridge: Cambridge University Press)

___ 1997. 'Where the Action is: On the site of Distributive Justice', *Philosophy and Public Affairs*, 26, pp. 3-30

Connelly, James, Graham Smith, David Benson and Clare Saunders. 2012. *Politics and the Environment: From Theory to Practice* (Abingdon: Routledge)

Daya, Arvind A. 2012. 'Gravity Energy Storage and Generating Device US 20120085984 A1', <http://www.google.com/patents/US20120085984> [accessed 7 October 2014]

Department of Energy and Climate Change (DECC). 2012a. *Annual Report on Fuel Poverty Statistics 2012*, <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66016/5270-annual-report-fuel-poverty-stats-2012.pdf> [accessed 5/7/13]

Department of Energy and Climate Change (DECC). 2012b. *Fuel Poverty Monitoring Indicators 2012*, <https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/66017/5272-fuel-poverty-monitoring-indicators-2012.pdf> [accessed 5/7/13]

Dobson, Andrew. 2000. 'Sustainable Development and Defence of the Natural world', in Keekok lee, Alan Holland and Desmond McNeill (eds.), *Global Sustainable Development in the 21st Century* (Edinburgh: Edinburgh University Press), pp. 48-60

Dower, Nigel. 1996. 'World Poverty', in Peter Singer (ed.), *A Companion to Ethics* (Oxford: Blackwell), pp.273-283

Driver, Julia. 2009. 'The History of Utilitarianism', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/utilitarianism-history/>[accessed 7 May 2011]

Druckers, Les. 2012. 'Wave Energy', in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 363-408

Dworkin, Ronald. 1970. 'Taking Rights Seriously', in Robert E. Goodin and Philip Pettit (eds.), *Contemporary Political Philosophy: An Anthology* (Oxford: Blackwell), pp. 289-301

Ecotricity. 2013. 'Fen Farm Lincolnshire' <http://www.ecotricity.co.uk/our-green-energy/our-green-electricity/the-sun/sun-parks-gallery/fen-farm-lincolnshire> [accessed 20/9/13]

Eden, Richard and Nigel Evans. 1986. *Electricity Supply in the UK* (Aldershot: Gower Publishing Company)

Elliot, David. 2012. 'Tidal Power', in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 241-296

Elliot, Robert. 1997. *Faking Nature: The Ethics of Environmental Restoration* (London, Routledge)

Elliot, Robert. 2001. 'Normative Ethics', in Dale Jamieson (ed.), *A Companion to Environmental Philosophy* (Oxford: Blackwell), pp. 177-191

Energy Saving Trust. 2014a. 'About Us', <http://www.energysavingtrust.org.uk/About-us/About-us> [accessed 6 October 2014]

Energy Saving Trust. 2014b. 'Solar Panels PV' <http://www.energysavingtrust.org.uk/Generating-energy/Choosing-a-renewable-technology/Solar-panels-PV> [accessed 6 October 2014]

___ 2014c. 'Getting the most out of your solar PV or wind turbine system' <http://www.energysavingtrust.org.uk/Generating-energy/Choosing-a-renewable-technology/Solar-panels-PV/Getting-the-most-out-of-your-solar-PV-or-wind-turbine-system> [accessed 6 October 2014]

Energy Storage, 2013. <http://www.energy-storage-online.com/> [accessed 21/5/13]

Everett, Bob. 2012. 'Solar Thermal Energy', in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 21-74

Everett, Bob and Godfrey Boyle. 2012. 'Integrating Renewable Energy', in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 461-526

Favor, Christi, and Julian Lamont.2007. 'Distributive Justice', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/justice-distributive/> [accessed 17 April 2010]

Frankfurt, Harry. 1987. 'Equality as a Moral Ideal', in Derek Matravers and Jon Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology* (London: Routledge), pp. 82-99

Fendt, Lindsay. 2015**. '**The Truth behind Costa Rica's Renewable Energy', Climate Change, < http://www.theguardian.com/commentisfree/2015/mar/30/truth-behind-costa-rica-renewable-energy-reservoirs-climate-change> [accessed 4 April 2015]

Freeman, A. Myrick. 2001. 'Economics', in Dale Jamieson (ed.), *A Companion to Environmental Philosophy* (Oxford: Blackwell), pp. 277-290

Freeman, Samuel. 2008. 'Original Position', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/original-position/#StrCom>[accessed 7 June 2011]

Garnish, John and Geoff Brown. 2012. 'Geothermal Energy', in Boyle, G. (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press) pp. 409-459

Gen4 Energy. 2014. <http://www.gen4energy.com/> [accessed 9 October 2014]

Gilroy, John Martin. 1998. 'Kantian Ethics and Environmental Policy Argument: Autonomy, Ecosystem Integrity, and Our Duties to Nature', *Ethics and the Environment*, 3, pp. 131-155

Green Energy News. 2005. 'Home Heat and Power: Fuel Cell or Combustion Engine', <http://www.green-energy-news.com/arch/nrgs2005/20050081.html> [accessed 21 May 2013]

Grunebaum, James, O. 1987. *Private Ownership* (London: Routledge & Kegan Paul ltd)

Gutman, Amy. 1985. 'Communitarian Critics of Liberalism', in Derek Matravers and Jon Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology* (London: Routledge), pp. 182-194

Haller, M.Y., R. Haberl, T. Persson, C. Bales, P. Kovacs, D. Chèze and P. Papillon. 2013. 'Dynamic whole system testing of combined renewable heating systems – The current state of the art', *Energy and Buildings*, 66, pp. 667–677

Halton Lune Hydro. 2015. 'Halton Lune Hydro',
< http://www.haltonlunehydro.org/> [accessed 26 May 2015]

Hart, H. L. A. 1955. 'Are There Any Natural Rights?', *The Philosophical Review*, 64, pp. 175-91

Hayward, Tim. 2004a. 'Constitutionalizing the Right to an Adequate Environment: Challenges of Principle', *Constitutional Environmental Rights*, <http://oxfordsholarship.com> [accessed 23/5/13]

___ 2004b. 'The Case for a Human right to an Adequate Environment' in Tim Hayward, *Constitutional Environmental Rights*, <http://oxfordsholarship.com> [accessed 23/5/13]

Higgins, Rosalyn. 2006. *Problems and Processes* (Oxford: Clarendon Press)

Holbrook, Daniel. 1992. 'Utilitarianism on Environmentalism Reexamined', *International Journal of Applied philosophy*, 7, pp. 41–6

Holland, Alan. 2001. 'Sustainability', in Dale Jamieson (ed.), *A Companion to Environmental Philosophy* (Oxford: Blackwell), pp. 390-401

Honoré, Anthony. 1987. *Making Law Bind* (Oxford: Clarendon Press)

Hostetler, John Andrew and Gertrude Enders Huntingdon. 1967. *The Hutterites in North America* (London: Holt, Rinehart and Winston)

Hull, Robert. 2005. 'All About Eve: A Report on Environmental Virtue Ethics Today', *Ethics and the Environment*, 7, pp. 87–110

Hunold, Christian and Steven Leitner. 2011. '"Hasta la vista, baby!" The Solar

Grand Plan, environmentalism, and social constructions of the Mojave Desert', *Environmental Politics*, 20, pp. 687-704

Hursthouse, Rosalind. 2010. 'Virtue Ethics', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/ethics-virtue/> [accessed 6 December 2012]

Inoue, Akira. 2007. 'Can a Right of Self-Ownership be Robust?', *Law and Philosophy*, 26, pp. 575-587

Intergovernmental Panel on Climate Change (IPPC). 2005. 'Carbon Dioxide Capture and Storage', <http://www.ipcc.ch/pdf/special-reports/srccs/srccs_wholereport.pdf> [accessed 15 November 2014]

___ 2014. 'Climate Change 2014 Synthesis Report', <http://ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_LONGERREPORT.pdf> [accessed 2 November 2014]

Ivanpah. 2014. 'Ivanpah Solar Electric Generating System', <http://www.ivanpahsolar.com/about>[accessed 9 November 2014]

Jackson, Tom. 2014. 'Africa's new breed of solar energy entrepreneurs', *News*, < http://www.bbc.co.uk/news/business-30805419> [accessed 4 April 2015]

Jamieson, Dale (ed.). 2001. *A Companion to Environmental Philosophy* (Oxford: Blackwell)

Jones, Peter. 1994. *Rights* (Basingstoke: Palgrave)

___ 2008. 'Group Rights' *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/rights-group/> [accessed 30 October 2013]

Judkins, Roddie, R., William Fulkerson and Manoj K. Sanghvi. 1993. 'The Dilemma of Fossil-Fuel Use and Global Climate Change', *Energy & fuels*, 7, pp. 14-22

Kamenka, Eugene. 1983. *The Portable Karl Marx* (Harmondsworth: Penguin)

Klein, Martha. 1995. 'Responsibility', in Ted Honderich (ed.), *The Oxford Companion to Philosophy* (Oxford: Oxford University Press), pp. 771-2

Kymlicka, Will. 2002. *Contemporary Political Philosophy* (Oxford: Oxford University Press)

Lee, Keekok. 2000. 'Global Sustainable Development: Its Intellectual and Historical Roots', in Keekok lee, Alan Holland and Desmond McNeill (eds.), *Global Sustainable Development in the 21st Century* (Edinburgh: Edinburgh University Press), pp. 30-47

Lemons, John. 1983. 'Atmospheric Carbon Dioxide: Environmental Ethics and Environmental Facts', *Environmental Ethics*, 5, pp. 21-32

Locke, John. 1993. *Two Treatises of Government* (London: Orion Publishing Group) (first published in 1698)

Lomasky, Loren. 1987. *Persons, Rights and the Moral Community* (Oxford: Oxford University Press)

London Array. 2013. <http://www.londonarray.com/> [accessed 13May 2013]

Martinich, A. P. 2005. *Philosophical Writing* (Oxford: Blackwell)

Marx, Karl. 1976. *Capital Volume 1* (Harmondsworth: Penguin) (first published in 1867)

___ 1983a. 'From the First Manuscript: "Alienated Labour"', in Eugene Kamenka (ed.), *The Portable Karl Marx* (Harmondsworth: Penguin), pp. 131-146, (first written in 1844)

___ 1983b. 'Manifesto of the Communist Party', in Eugene Kamenka (ed.), *The Portable Karl Marx* (Harmondsworth: Penguin), pp. 203-241, (first published in 1848)

___ 1983c. 'On the Jewish Question', in Eugene Kamenka (ed.), *The Portable Karl Marx* (Harmondsworth: Penguin), pp. 96-114, (first published in 1844)

___ 1983d. 'A Critique of the Gotha Programme', in Eugene Kamenka (ed.), *The Portable Karl Marx* (Harmondsworth: Penguin), pp. 533-555, (first published in 1875)

Marx, Karl and Friedrich Engels. 1940. *The German Ideology: Parts I & II* (London: Lawrence & Wishart) (first written in 1845)

Mathews, Freya. 2001. ‘Deep Ecology’, in Dale Jamieson (ed.), *A Companion to Environmental Philosophy* (Oxford: Blackwell), pp. 218-232

Mayhew, Robert. 1993. ‘Aristotle on Property’, *Review of Metaphysics*, 46, pp. 803-831

Mill, John Stuart. 1880. *Principles of Political Economy* (London: Longmans, Green and Co)

___ 1979. *On Liberty* (Harmondsworth: Penguin Books Ltd) (first published in 1859)

___ 1986. *Utilitarianism*, in Mary Warnock (ed.), *Utilitarianism* (Glasgow: William Collins Sons & Co), pp. 251-321, (first published in 1861)

Miller, Richard W. 2002. ‘Marx’s Legacy’, in Robert L. Simon (ed.), *Social and Political Philosophy* (Oxford: Blackwell), pp. 131-153

Morris, Dick and Jonathan Scurlock. 2012. ‘Bioenergy’, in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 117-184

Mulhall, Stephen, and Adam Swift (eds.). 2008. *Liberals and Communitarians* (Oxford: Blackwell)

Munzer, Stephen R. 1990. *A Theory of Property* (Cambridge: Cambridge University Press)

Murphy, Jeffrie G. 1973. ‘Marxism and Retribution’, *Philosophy and Public Affairs*, 2, pp. 217-243

National Archives. 2013. ‘British Economics and Trade Union politics 1973-1974’, <http://www.nationalarchives.gov.uk/releases/2005/nyo/politics.htm> [accessed 13/7/13]

Nelson, William. 2002. ‘Liberal Theories and their Critics’, in Robert L. Simon (ed.), *Social and Political Philosophy* (Oxford: Blackwell), pp. 197-227

Nickel, James. 2010. ‘Human Rights’, *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/rights-human/> [accessed 30 October 2013]

Nozick, Robert. 1974. *Anarchy, State and Utopia* (Oxford: Blackwell)

Nussbaum, Martha. 2006. *Frontiers of Justice: Disability, Nationality, Species Membership* (London: Belknap)

___ 2011. *Creating Capabilities: The Human Development Approach* (London: Belknap)

O'Neill, Onora. 1986. 'The Power of Example', *Philosophy*, 61, pp. 5-29

Open University. 2011a. 'Biofuels', <http://www.open.edu/openlearn/science-maths-technology/science/biofuels/content-section-4> [accessed 12 May 2013]

Open University. 2011b. 'Energy Resources: Wind Energy', <http://openlearn.open.ac.uk/mod/oucontent/view.php?id=398828&section=1> [accessed 12 May 2013]

___ 2014a. 'Nuclear Power: Friend or Foe?' <http://www.open.edu/openlearn/society/politics-policy-people/sociology/nuclear-power-friend-or-foe/content-section-0> [accessed 25 September 2014]

___ 2014b. 'Why Sustainable Energy Matters' <http://openlearn.open.ac.uk/mod/oucontent/view.php?id=397932&section=1.1.1> [accessed 20 November 2014]

Orkustofnun. 2014a. 'Bathing and Recreation', < http://www.nea.is/geothermal/direct-utilization/bathing--recreation/> [accessed 28 December 2014]

___ 2014b. 'Fish Farming', < http://www.nea.is/geothermal/direct-utilization/fish-farming/> [accessed 28 December 2014]

Otsuka, Michael. 2009. *Libertarianism without Inequality* (Oxford: Oxford University Press)

Overgaard, Soren, Paul Gilbert and Stephen Burwood. 2013. *An Introduction to Metaphilosophy* (Cambridge: Cambridge University Press)

Owen, Robert. 1841a. *A Development of the Principles and Plans on which to establish Self-Supporting Home Colonies* (London: Home Colonization Society)

___ 1841b. *A Development of the Principles and Plans on which to establish Self-Supporting Home Colonies - Appendix IV* (London: Home Colonization Society)

___ 1991a. 'A New View of Society', in Robert Owen, *A New View of Society and Other Writings* (London: Penguin), pp. 1-92, (First published in 1816)

___ 1991b. 'Report to the County of Lanark', in Robert Owen, *A New View of Society and Other Writings* (London: Penguin), pp. 250-308, (First published in 1820)

___ 1991c. 'The Manifesto of Robert Owen', in Robert Owen, *A New View of Society and Other Writings* (London: Penguin), pp. 358-364, (Fifth edition published in 1840)

___ 1991d. 'The Revolution in the Mind and Practice of the Human Race', in Robert Owen, *A New View of Society and Other Writings* (London: Penguin), pp. 365-376, (first published in 1849)

Parekh, Bhikhu. 2003. 'Contemporary Liberal Responses to Diversity', in Derek Matravers and Jon Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology* (London: Routledge), pp. 239-247

Parfit, Derek. 1987. *Reasons and Persons* (Oxford: Oxford University Press)

___ 1997. 'Equality and Priority', in Derek Matravers and Jon Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology* (London: Routledge), pp. 115-132

Partridge, Ernest (ed.). 1981. Responsibilities to Future Generations (New York: Prometheus Books)

___ 2001. 'Future Generations', in Dale Jamieson (ed.), *A Companion to Environmental Philosophy* (Oxford: Blackwell), pp. 377-389

Passmore, John. 2007. 'Environmentalism', in Robert E. Goodin, and Philip Pettit (eds.), *A Companion to Contemporary Political Philosophy* (Oxford: Blackwell), pp. 471-488

Patt, A., Komendantoya, N., Battaglini, A. and Lilliestam, J. 2011. 'Regional Integration to Support Full Power Deployment for Europe by 2050', *Environmental Politics,* 20, pp. 727-742.

Pepper, David. 1993. *Eco-Socialism: From Deep Ecology to Social Justice* (London: Routledge)

Pickering, W. F. S. 1977. 'Hutterites and the Problems of Social Control in religious Communities', *Archives de Sciences Socials des Religions,* 44, pp. 75-92

Rachels, James. 1993. *The Elements of Moral Philosophy* (London: McGraw-Hill)

Ramage, Janet. 2012. 'Hydroelectricity', in Godfrey Boyle (ed.) .2012. *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 185-239

Rao, Pavithra. 2013. 'Africa Watch',
<http://www.un.org/africarenewal/magazine/august-2013/africa-watch>
[accessed 8 November 2014]

Rawls, John. 1989. 'The Domain of the Political and the Overlapping Consensus', in Derek Matravers and Jon Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology* (London: Routledge), pp. 160-181

___ 1999. *A Theory of Justice* (Cambridge MA: Harvard University Press)

Redfern, Rob. 2014. *Tesco PLC*, 'Leading Innovation in Energy Efficiency and Carbon Reduction'
<http://www.tescoplc.com/mobile/index.asp?pageid=2&newsid=1008> [accessed 16 November 2014]

Roark, Eric. 2012. 'Applying Locke's Proviso to Unappropriated Natural Resources',
<http://www.davidschmidtz.com/sites/default/files/future_readings/EricRoark.pdf>_
[accessed 7 April 2014]

Robeyns, Ingrid. 2011. 'The Capability Approach', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/capability-approach/> [accessed 2 August 2012]

Rousseau, Jean-Jacques. 1772. *Considerations on the Government of Poland* (Zurich: International Relations and Security Network) <http://www.isn.ethz.ch/Digital-Library/Publications/Detail/?id=125482> [accessed 29 January 2015]

___ 2004. *The Social Contract and Discourses* (London: J. M. Dent Orion Publishing Group), (*Social Contract* was first published in 1762 and the *Discourse on the Origins of Inequality* was first published in 1755)

Ryan, Alan. 1984. *Property and Political Theory* (Oxford: Basil Blackwell Ltd)

Sagoff, Mark. 2000. 'Can Technology Make the World Safe for Development? The Environment in the Age of Information', in Keekok lee, Alan Holland and Desmond McNeill (eds.), *Global Sustainable Development in the 21st Century* (Edinburgh: Edinburgh University Press), pp. 115-143

Sandel, Michael. 1985. 'Liberalism and the Limits of Justice', in Derek Matravers and Jon Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology* (London: Routledge), pp. 140-159

Sen, Amartya. 1980. 'Equality of What?', in Sterling M. McMurrin (ed.), *The Tanner Lecture on Human Values* (Cambridge: Cambridge University Press), pp. 197-220

___ 2005. 'Human Rights and Capabilities', *Journal of Human Development*, 6, pp. 151-166

___ 2010. 'Sustainable Development and Our Responsibilities', *Notizie di Politeia*, 98, pp. 129-137

Simmons, A. John. 1992. *The Lockean Theory of Rights* (Chichester: Princeton University Press)

Shue, Henry. 1980. 'Basic Rights', in Robert E. Goodin and Philip Pettit (eds.), *Contemporary Political Philosophy: An Anthology* (Oxford: Blackwell), pp. 302-316

Slote, Michael. 2003. 'Agent-Based Virtue Ethics', in Stephen Darwall (ed.), *Virtue Ethics* (Oxford: Blackwell), pp. 203-226

___ 2007. 'Virtue', in Robert E. Goodin and Philip Pettit (eds.), *A Companion to Contemporary Political Philosophy* (Oxford: Blackwell), pp. 645-650

Snyder, Alan W. 1998. 'Breaking Mindset', *Mind and Language*, 13, pp. 1-10
Suberu, Mohammed Yekini, Mohd Wazir Mustafa and Nouruddeen Bashir. 2014. 'Energy storage systems for renewable energy power sector integration and mitigation of intermittency', *Renewable and Sustainable Energy Reviews*, 35, pp. 499–514

Sylvan, David and Richard Bennett. 1994. *The Greening of Ethics* (Cambridge: White Horse Press)

Taylor, Charles. 1985. *Philosophy and the Human Sciences* (Cambridge: Cambridge University Press)

Taylor, Derek. 2012. 'Wind Energy', in Godfrey Boyle (ed.), *Renewable Energy: Power for a Sustainable Future* (Oxford: Oxford University Press), pp. 297-362

Taylor, Robert S. 2004. 'A Kantian Defense of Self-Ownership', *The Journal of Political Philosophy*, 1, pp. 65-78

Temkin, Larry. S. 1986. 'Inequality', *Philosophy and Public Affairs*, 15, pp. 99-121

UK Fuel Poverty Strategy Group. 2001. *The UK Fuel Poverty Strategy*, <http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file16495.pdf> [accessed 16 July 2013]

United Nations. 1948. 'Universal Declaration of Human Rights', <http://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf> [accessed 7 March 2013]

___ 1993. 'Vienna Declaration and Programme of Action', <http://www.unesco.org/education/nfsunesco/pdf/VIENNA.PDF> [accessed 30 October 2013]

___ 2002. 'Johannesburg Declaration', <http://www.unescap.org/esd/environment/rio20/pages/Download/johannesburgdeclaration.pdf> [accessed 30 July 2013]

___ 2012. 'The Future We Want', <http://www.unglobalcompact.org/docs/news_events/upcoming/RioCSF/partner_deliverables/OxAn_The_Future_We_Want.pdf> [accessed 31 July 2013]

United Nations Framework Convention on Climate Change. 2014. 'Costa Rican Office on Joint Implementation (OCIC)', *Activities Implemented Jointly (AIJ)*, <http://unfccc.int/kyoto_mechanisms/aij/activities_implemented_jointly/items/2087.php > [accessed 4 April 2015]

United Nations WCED. 1987. *Our Common Future* (Oxford: Oxford University Press)

Vallentyne Peter. 2010. 'Libertarianism', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/libertarianism/ > [accessed 7 April 2014]

Waldner, Mark and James Waldner. 2012a. *Hutterian Brethren*, <http://www.hutterites.org/>[accessed 23 July 2014]

___ 2012b. 'Recreation', *Hutterian Brethren*, <http://www.hutterites.org/day-to-day/recreation/>[accessed 23 July 2014]

Waldron, Jeremy. 2004. 'Property and Ownership', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/property/>[accessed 10 May 2011]

___ 2007. 'Rights', in Robert E. Goodin and Philip Pettit (eds.), *A Companion to Contemporary Political Philosophy* (Oxford: Blackwell), pp. 575-585

Wall, Steven. 2007. 'Perfectionism in Moral and Political Philosophy', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/perfectionism-moral/>[accessed 10 August 2011]

Walzer, Michael. 1990. 'The Communitarian Critique of Liberalism', *Political Theory*, 18, pp. 6-23

Wellman, Christopher Heath. 2002. 'Justice', in Robert L. Simon (ed.), *Social and Political Philosophy* (Oxford: Blackwell), pp. 60-84

Wenar, Leif. 2011. 'Rights', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/rights/> [accessed 18 January 2013]

Whitby Esk Energy. 2015. 'Whitby Esk Energy',
< http://whitbyeskenergy.org.uk/> [accessed 26 May 2015]

Wolf, Jonathan. 2010. 'Karl Marx', *The Stanford Encyclopedia of Philosophy*, <http://plato.stanford.edu/entries/marx/> [accessed 27 September 2013]

World Bank. 2014. ‘Bangladesh Receives $78.4 Million to Install an Additional 480,000 Solar Home Systems’, *News*, <http://www.worldbank.org/en/news/press-release/2014/06/30/bangladesh-receives-usd-78-million-to-install-an-additional-480000-solar-home-systems>[accessed 4 April 2015]

Yettou, F., B. Azoui, A. Malek, A. Gama and N. L. Panwar. 2014. ‘Solar cooker realizations in actual use: An overview’, *Renewable and Sustainable Energy Reviews*, 37, pp. 288–306

Young, Iris Marion. 1989. ‘Polity and Group Difference: a Critique of the Ideal of Universal Citizenship’, in Derek Matravers and Jon Pike (eds.), *Debates in Contemporary Political Philosophy: An Anthology* (London: Routledge), pp. 219-238