

Towards a circular disruption: On the pivotal role of circular economy policy entrepreneurs

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Abstract

The shift towards sustainable development is argued to be achieved by a circular disruption triggered or supported by circular economy (CE) policies. CE policies can pressure the disruption of currently predominant linear socio-technical systems across sectors towards a circular paradigm. Knowledge on how these policies appear on the agenda is essential to accelerate the circular disruption. Several works highlight the importance of policy entrepreneurs as agenda setters. However, they were not explored by the scholarly community on CE yet. Therefore, this article analyses the characteristics and strategies of CE policy entrepreneurs in Portugal as a circular frontrunner in the European Union (EU). Two groups of policy entrepreneurs were distinguished based on their different characteristics and strategies. Successfully driving the adoption of national CE policies required ambitious, tenacious and perfectionist CE expert(s) who create a CE vision, derive concrete solutions and gather support for their ideas, the CE initiator. Influencing CE implementation and evaluation required politically savvy CE implementers who openly and tenaciously develop projects and secure the continuous development of the policy.

KEYWORDS

circular economy, disruption, policy entrepreneur, policy making, stakeholder, sustainable development

1 | INTRODUCTION

The predominantly linear economic system of today is not sustainable (Kirchherr et al., 2017). Especially, the Covid-19 crisis revealed the current systems' exposure to a variety of risks and demonstrated among others the fragility of global supply chains and resource availabilities (Ellen MacArthur Foundation, 2020). Facing these issues,

circular economy (CE) appears as one strategy towards more sustainable development (Geissdoerfer et al., 2017; Schroeder et al., 2018). Kirchherr et al. (2017) summarised in an analysis of 114 CE definitions that CE aims at ‘accomplish[ing] sustainable development, thus simultaneously creating environmental quality, economic prosperity and social equity, to the benefit of current and future generations’ (Kirchherr et al., 2017, p. 224). Currently, the circularity of the global economy is decreasing (Circle Economy, 2020). This shows that incremental change towards CE is too slow and a more radical system-wide circular disruption may be needed. Inspired by the concept of disruptive innovation by Christensen (1997), a circular disruption leads to a new paradigm, that is, ‘an interference occurring in the elements of a

List of abbreviations: AT&T, American Telephone and Telegraph Incorporation; CCDRC, Comissão de Coordenação e Desenvolvimento Regional do Centro; CE, circular economy; CE Action Plan, Action Plan for the CE in Portugal: 2017–2020; EU, European Union; ICT, Information and communication technology; PAEC Portugal, Plano de Ação para a Economia Circular em Portugal 2017–2020.

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socio-technical system and how they relate to each other which causes the systemic, widespread, and rapid change from “take-make-use-dispose” systems to socially and environmentally desirable and sustainable systems that address structural waste - e.g. seen and unseen types of waste - through the strategic deployment of circular strategies’ (Bauwens et al., 2021).

The past shows that policies can drive disruptive innovation in established industries or deepen the advantages of innovative technologies (Christensen, 1997). For example, in the United States in 1982, the breakup of the American Telephone and Telegraph Incorporation (AT&T) as well as the Telecommunications Act of 1996 opened up the telecommunications market to new entrants, freed old entrants to engage in related industries and opened access to interconnectivity within the existing communication infrastructure (Crandall, 2007). In addition, newly developed disruptive technologies or business models need to be accompanied by policy changes (Bohnsack et al., 2014). Disruptive technologies or business models can profoundly affect the functioning of existing industries (Schaltegger & Wagner, 2011). One example is internet-based sharing services that are disrupting conventional taxi and hotel markets. Policy makers need to find ways to turn the disruptive innovations into positive change, by encouraging adoption and development of those technologies that are most relevant to their economies and that actually result into sustainable development (García-Quevedo et al., 2020). Facing issues such as poor working conditions, the example of internet-based sharing services shows how difficult it is to provide an adequate regulatory framework that actually results in sustainable development (Martin, 2016).

Societal transformations, disruptive change and policy innovations underpin the importance of policy entrepreneurs as a source of change (Currie et al., 2008; Kingdon, 1984; Loorbach, 2010; Roberts, 1998; Roberts & King, 1991). Policy entrepreneurs are ‘people who are willing to invest their resources, such as energy, time, reputation, and sometimes money, to realise policies they favour’ (Kingdon, 1984, p. 123). They can contribute to opening as well as exploiting policy windows (Boasson & Huitema, 2017; Meijerink & Huitema, 2010). Therefore, they are able to foster change by convincing decision makers in the public sector to provide the regulatory framework driving and supporting circular innovations (Maurya & Mintrom, 2020). Various efforts have been made to interpret and analyse their role in different contexts, and there is a growing body of literature on policy entrepreneurs driving climate and sustainable governance (Boasson & Huitema, 2017; Mintrom & Norman, 2009). Authors such as Mintrom and Luetjens (2017) or Mintrom and Thomas (2018) argue that policy entrepreneurs can be key actors in triggering and supporting disruptive responses towards sustainable development.

The topic of CE is already on the political agenda and several countries formulated all-encompassing CE strategies with clear priorities (European Economic and Social Committee, 2019; Whicher et al., 2018). To accelerate the circular disruption, knowledge on how CE policies appeared is essential (Linder & Williander, 2017). However, while there is a nascent body of research on the content of CE policies and their likely impacts (e.g., Calisto Friant et al., 2021;

Ferronato et al., 2019; Hartley et al., 2020), the questions of how the topic emerged on the agenda and how it is implemented remain open. Actors who are capable of pushing CE policies, such as policy entrepreneurs, have also not been analysed in this context yet. Therefore, this article aims at describing and analysing the role of policy entrepreneurs in the agenda setting and implementation of CE policies focusing on their characteristics and strategies. We study CE policy entrepreneurs in Portugal as one of the CE frontrunners with the Action Plan for the CE in Portugal: 2017–2020 (CE Action Plan) (Portuguese Ministry of the Environment and Energy Transition, 2017).

2 | UNDERSTANDING POLICY ENTREPRENEURSHIP

2.1 | Policy entrepreneurship

Kingdon's (1984) work introduced policy entrepreneurship as a theoretical concept about the individual's role in policy change. The role of policy entrepreneurs in the policy process is supported by its importance in several theories seeking to explain policy change (Baumgartner & Jones, 1993; Kingdon, 1984; Sabatier, 1988; Sabatier & Jenkins-Smith, 1993). Since its introduction, the concept of policy entrepreneurship has been further developed and refined in the context of the different change theories, including disruptions (Arnold, 2020). A synthesis of these works can be found in, for example, Boasson and Huitema (2017) or Jarvis and He (2020).¹ In the disruptive change and innovation literature policy entrepreneurs are depicted as agents of radical broad system change framing the policy problem in a way that promotes their views and their preferred solution (Timmermans et al., 2014). Furthermore, policy entrepreneurs can take advantage of disruptions in the political system or market (Beeson & Stone, 2013).

When businesses are taking the decision to innovate, they are influenced by internal (e.g., resources and capabilities) and external factors (e.g., public policy and stakeholder impacts) (Kiefer et al., 2018). Within businesses scholars explored how entrepreneurs can advance sustainable innovations (Parrish, 2010; Schaltegger & Wagner, 2011; Lüdeke-Freund, 2019). Schaltegger and Wagner (2011, p. 228) observed ‘sustainable entrepreneurs strive for business success through sustainability solutions for the mass market’. They highlight that, through such efforts, entrepreneurs can catalyse broader social and political change (Schaltegger & Wagner, 2011). This observation emphasises the relations between markets, society and politics. Mintrom and Thomas (2018) derive that strategic

¹A literature review has been conducted via Scopus, to understand the key characteristics and strategies of policy entrepreneurs. The search was focused on journal articles or book chapters published in English with no limit regarding the time of publication. Two searches have been executed including the ‘title’, ‘abstract’ and ‘keywords’. The first search included policy entrepreneurship in the context of sustainable development and the second search included literature on characteristics and strategies of policy entrepreneurs as well as on their barriers and success factors. The titles and abstracts of the identified articles were screened and included the ones that seemed most relevant to this research.

entrepreneurial actions in any institutional setting can drive change across other institutions. Thus, policy entrepreneurs who drive policy making can influence practices of businesses in markets and the choices of citizens across society and the other way round (Mintrom & Thomas, 2018). Furthermore, the literature highlights that sustainable innovations are more dependent on policy support than 'regular' innovations (Smink et al., 2015). Findings suggest that CE policies lead to a substantive change of decision making behaviours of businesses (Su et al., 2013). Thus, a multifaceted policy strategy is needed to advance CE across diverse businesses (Awan et al., 2021).

Policy entrepreneurs are present across different political systems and geographical areas (Frisch-Aviram, 2019; Mintrom & Norman, 2009). Other key findings of the literature are that it is rarely only one policy entrepreneur acting but rather a small team driving the force for action (Mintrom & Norman, 2009). Policy entrepreneurs can operate from a range of positions both inside and outside government; they include, for example, government officials, think tank scholars, interest group leaders and members of the mass media (Brouwer, 2015; Jarvis & He, 2020; Tang et al., 2020; Zhu & Xiao, 2015). Policy entrepreneurs, thus, often connect the perspectives of businesses and policy makers. This is important because policy effectiveness in the field of sustainable development depends in part on how well policy makers understand business managers' beliefs (Cohen & Naor, 2017). Research on how policy entrepreneurship drives and supports sustainable development covers the local and regional (e.g., Brown & Cohen, 2019; Solecki et al., 2019; Wejs, 2014), the national (e.g., Brouwer, 2015; Carter & Jacobs, 2014; Reimer & Saerbeck, 2017) and the supra- and transnational level (e.g., Boasson & Wettestad, 2014; Bocquillon, 2018; Braun, 2009; Corbett et al., 2020).

Policy entrepreneurship literature in the field of sustainable development Boasson and Wettestad (2014) introduced distinctions between different kinds of entrepreneurship directed at opening and exploiting policy windows. They distinguish two groups based on differing motivations and commitments to perform entrepreneurship: Tortoises, that is, deeply committed actors who are slow and steady with a long term horizon creating and shaping a policy window, and Carpe-diemers, who have a shallower commitment, a more short-term approach and are more active in exploiting policy windows. However, they do not further detail the characteristics of these two types of policy entrepreneurs. Findings show that policy entrepreneurs have already been successful in driving sustainable development, for example, by pushing policies for sustainable material management, climate action plans or climate financing mechanisms and, thus, pressuring industry and businesses to innovate. (Boasson & Wettestad, 2014; Brown & Cohen, 2019; Drummond, 2010).

2.2 | Characteristics of policy entrepreneurs

Literature highlights several characteristics of policy entrepreneurs departing from Kingdon's definition given in the introduction. The characteristics distinguish them from other actors and help them in

pursuing their actions (Kingdon, 1984, 1995). Their characteristics help policy entrepreneurs identifying the problem and gives them opportunities to put their topic on the agenda, form the policy, drive and keep it relevant, implement as well as follow up on it (Frisch-Aviram, 2019; May & Wildavsky, 1979). The work of Mintrom (2000) suggests the entrepreneurial characteristics of ambition, social acuity, expertise, sociability and tenacity. Other authors add analytic ability and openness (see Table 1) (e.g., Brouwer, 2018; Frisch-Aviram, 2019; Mackenzie, 2010; Mintrom & Thomas, 2018; Timmermans et al., 2014).

Driving a major policy disruption, policy entrepreneurs ambitiously drive their bigger vision for the future (Collins, 2001; Mintrom & Norman, 2009; Quinn, 2000). They discover how other people think about problems (social acuity) to find ways to convince them and investigate which alliances will serve best in promoting their policy ideas (Dewulf & Bouwen, 2012; Mintrom & Luetjens, 2017). To expand their networks and build coalitions they use their sociability

TABLE 1 Overview of characteristics to identify policy entrepreneurs

Characteristic	Description	Exemplary sources
Ambition	Great commitment, motivation and energy to drive a bigger goal	Arnold, 2020; Brouwer, 2018; He, 2019; Neff & Edgell, 2013; Wallis & Dollyer, 1997
Social acuity	Understanding the ideas, motives and concerns of others in their policy context (political savviness)	Bakir, 2019; Cohen, 2012, 2016; Mintrom, 1997; Mintrom & Norman, 2009
Sociability	Trustbuilding; outgoing and extraverted behaviour; ability to inspire	Binhas & Cohen, 2019; Timmermans et al., 2014
Tenacity	Willingness to keep working towards a bigger goal, even when that goal seems nowhere in sight	Mintrom, 2000; Mintrom & Thomas, 2018; Zahariadis & Exadaktylos, 2016
Expertise	Draw on past accomplishments and knowledge to achieve credibility	Anderson et al., 2019; Arnold, 2020; Brouwer, 2018; Liebe & Howarth, 2020
Analytic ability	System thinking, problem structuring and abstract thinking	Loorbach & Rotmans, 2006; Timmermans et al., 2014
Openness	Being on alert for policy opportunities and new impulses; flexibility in adjusting targets; creatively come up with new ideas and/or creativity for editing existing impulses	Boasson & Wettestad, 2014; Frisch-Aviram, 2019; Mackenzie, 2010; Mintrom & Thomas, 2018

(Mintrom & Vergari, 1996). Connected with this, but neglected by many authors, they acquire expertise in the policy area or surround themselves with coalitions of credible supporters (Hird, 2005; Mintrom, 2013; Timmermans et al., 2014). They are willing to pursue their ideas even if the success of implementation seems very unlikely (tenacity) (Mintrom, 1997; Mintrom & Norman, 2009). In persistently pursuing their goal they are open and on alert for new ideas and opportunities to adapt and push their solutions (Timmermans et al., 2014). Finally, they have the analytic ability to consider a system perspective on the system change, the policy makers' role and the different stakeholders (Lu et al., 2020). The expectation is that successful policy entrepreneurs have these characteristics at least to some extent as policy entrepreneurs who show these characteristics are more likely to achieve success in driving policy adoption than those who do not (Mintrom & Norman, 2009).

2.3 | Strategies of policy entrepreneurs

Characteristics may not translate into actions in all situations and at all times (Boasson & Huitema, 2017). Therefore, in this research the focus is also on entrepreneurial strategies (Navot & Cohen, 2015). In policy entrepreneurship literature there is often not a clear separation between characteristics and strategies (Mintrom & Norman, 2009).

For example, whereas Frisch-Aviram (2019) highlights social acuity as a characteristic, Mintrom and Norman (2009) include it as a strategy. However, they are two different aspects of entrepreneurship (Gartner, 1988). Characteristics pertain to the policy entrepreneurs' individual personality profile and strategies look at acts of entrepreneurship (Boasson & Wettestad, 2014; Timmermans et al., 2014).

Extensive work on policy entrepreneurs' strategies has already been done including single cases and studies involving a large number of policy entrepreneurs across different areas (Boasson & Huitema, 2017). These studies can throw important light on successful strategies and conceptualisations. Frisch-Aviram (2019) summarised in a meta-analysis of 229 articles the existence of 20 policy entrepreneur strategies. However, existing analyses of policy entrepreneurship use fewer strategies, such as Mintrom and Norman (2009) who argued that four strategies are necessary for successful policy entrepreneurship, or Roberts and King (1991) highlighting nine strategies. One reason for the reduction is that strategy descriptions can be hybrid types (Frisch-Aviram, 2019). For example, Frisch-Aviram (2019) mention strategic use of symbols, using media coverage, strategic information dissemination as three separate strategies, while Roberts and King (1991) imply all three in one strategy of disseminating information. Recurring and prominent strategies identified in the literature have been selected and main findings under these strategies have been summarised in Table 2 (Dixon-Woods et al., 2005).

TABLE 2 Conceptualisation of commonly identified policy entrepreneurship strategies in the literature

Policy stages	Strategies	Description	Exemplary sources
Agenda setting	Generating a policy vision	Creating the overall aim and direction; generating new ideas for improvement	Baumgartner & Jones, 2002; Cohen & Naor, 2013; Loorbach & Rotmans, 2006; Mackenzie, 2010; Mintrom & Thomas, 2018; Timmermans et al., 2014
	Problem and solution framing	Identifying and articulating the problem; providing solutions for a problem; scaling up ideas	Anderson et al., 2019; Kingdon, 1984; Mintrom & Luetjens, 2017; Roberts & King, 1991; Tang et al., 2020
	Policy venue shopping	Finding and creating (shop) institutional locations where authoritative decisions are made	Brouwer, 2018; Faling & Biesbroek, 2019; Mackenzie, 2010
Policy formation	Teamwork	Forming groups with internal and external partners for execution	Chatfield & Reddick, 2018; Maurya & Mintrom, 2020; Mintrom & Vergari, 1996; Rabe, 2004; Sabatier, 1988; Woo, 2020
Policy implementation	Execution strategy	Forming the political/execution strategy; developing a long term plan	Cohen & Naor, 2013; Frisch-Aviram, 2019; Mintrom & Luetjens, 2017
	Pilot projects	Demonstrating the value and feasibility of a solution	Faling & Biesbroek, 2019; King & Roberts, 1992; Lu et al., 2020
Policy evaluation	Evaluation	Supporting policy administration and evaluation	Chatfield & Reddick, 2018; Mintrom, 1997; Mintrom & Norman, 2009
Across all policy stages	Communication	Disseminating strategic information targeting different stakeholders (e.g., within government, private sector, NGOs and citizens) to shape the political debate using, for example, events, social media and conversations with leadership	Anderson et al., 2019; Brouwer, 2018; Pralle, 2009; Timmermans et al., 2014; Zahariadis, 2014
	Timing	Including context knowledge, for example, salami tactic only giving out some information at once	Brouwer, 2015; Chatfield & Reddick, 2018; Mintrom & Norman, 2009
	Networking	Activating and making use of broader (policy) networks; ensure internal and external support	Arnold, 2020; Mintrom, 1997; Mintrom & Norman, 2009

Executing successful policy entrepreneurship is not so much about detecting the single most effective strategy, but rather about establishing the most effective strategy mix (Brouwer, 2018). Conceptualising policy entrepreneurship strategies helps identifying the right mix. First, strategies can be conceptualised along policy stages, such as generating visions to the agenda setting stage (e.g., Frisch-Aviram, 2019). This concept of policy stages dates back to Lasswell (1951) as well as May and Wildavsky (1979). The stages are agenda setting, policy formation, policy adoption, policy implementation and policy evaluation. In the literature most authors focus on policy entrepreneurs in the context of policy initiation (agenda setting and policy formation) and much less attention is devoted to policy entrepreneurs driving implementation and securing action by evaluating the policy (Kingdon, 1995; Zahariadis, 2014; Zahariadis & Exadaktylos, 2016). The policy adoption stage is said to be less influenced by the policy entrepreneur as this is a procedure only including decision makers themselves. The stage-model is criticised for oversimplification. However, most authors acknowledged that 'the stages provide a useful conceptual disaggregation of the complex and varied policy process into manageable segments' (Sabatier & Jenkins-Smith, 1993, p. 177).

Second, strategies such as communication, are transversal and executed constantly throughout the policy making process in line with Westley (2002), who conceptualises and visualises strategies as juggling balls and argues that, in order to be effective, policy entrepreneurs must constantly juggle all of the balls and cannot neglect or drop a single one. Combining the two conceptualisations for selecting a strategy mix means that during different policy stages, successful policy entrepreneurs use different strategies while some strategies are executed across all policy stages (see Table 2). Combining the two conceptualisations is not common in the policy entrepreneurship literature.

In practice, this strategy mix unfolds starting with the policy entrepreneur communicating a policy vision to generate visibility for the topic and highlight the innovative character (Baumgartner & Jones, 1993; Boasson & Huitema, 2017). To gain the attention of decision makers, policy entrepreneurs concretise the policy vision by providing an appropriate solution to a problem. This solution is then well placed within relevant policy venues to anchor it on the policy agendas (Mintrom & Norman, 2009). When the solution is successfully placed on the agenda, policy entrepreneurs build teams of individuals with different knowledge and skills, who can offer mutual support to form the execution strategy by developing a long-term plan (Davies & True, 2017; King & Roberts, 1992; Mintrom, 2000). To drive policy implementation, policy entrepreneurs usually conduct small-scale experimentation (pilot projects) to gain experience and demonstrate the workability of the policy (Faling & Biesbroek, 2019; Mintrom & Norman, 2009). Lastly, policy entrepreneurs drive evaluation and continuous adaptation of the policy (Timmermans et al., 2014). Timing, communication and networking are crucial strategies throughout the entire policy process, as they determine the ability to open and exploit the windows of opportunity (Brouwer, 2018; Mintrom & Norman, 2009).

3 | METHODOLOGICAL APPROACH

3.1 | Case selection

Our aim for this study is to gain in-depth knowledge of policy entrepreneurship via a single case of successful CE policy making (Flyvbjerg, 2006). In the European Union's (EU) member states, CE policies have been under development in the last few years (European Economic and Social Committee, 2019). The EU's first CE Action Plan (2015–2020) has been implemented and the EU Commission confirmed its importance by making CE a key policy objective in their new Green Deal roadmap to more sustainability (European Commission, 2015, 2020a, 2020b). Under the EU approach, member states vary considerably in their CE aspirations and approaches. Only a small but growing number of member states are CE frontrunners, for example, Portugal, Finland or Denmark. They developed all-encompassing strategies with clear priorities (European Economic and Social Committee, 2019; Mcdowall et al., 2017). Others developed local, regional or national CE strategies which are not promoting broad system change but focus on a specific sector, for example, the United Kingdom's strategy focusing on packaging and waste (UK Environmental Agency, 2018).

Out of the purposefully identified countries with an all-encompassing CE strategy Portugal and its Action Plan for the CE in Portugal: 2017–2020 was selected as a case based on convenience sampling (Given, 2008). Part of the research team was thoroughly familiar with the Portuguese public administration and existing CE and sustainability policies as they have been working together in other research projects. Including convenience sampling ensured context knowledge and access to the CE policy making elite in Portugal which was the target group for the interviews. However, convenience sampling can have impacts on reliability and validity of the data (Basurto & Speer, 2012; Berry, 2002). In Section 3.2 selected methods and limitations are detailed.

3.2 | Methods

This research follows a data triangulation approach (Lewis-Beck et al., 2004). The results from semi-structured interviews have been supplemented and triangulated with findings from press articles (e.g., Dolan, 2019; Kaefer et al., 2015). The triangulation approach is common practice in policy entrepreneur research on new fields such as CE (e.g., Cohen & Naor, 2013; Liebe & Howarth, 2020; Lu et al., 2020). The amount of included data was determined by theoretical saturation. Data collection terminated when no additional information to develop and connect the characteristics and strategies of the policy entrepreneurs were found (Glaser, 1992).

This research includes semi-structured in-depth interviews as the main method of primary data generation (Liebold & Trinczek, 2009). Characteristics and strategies were initially identified based on the answers of the policy entrepreneurs themselves as well as the observations of the other interviewees. Exemplary interview questions to

the policy entrepreneurs can be found in Appendix A. A total of 24 CE policy making experts in Portugal were selected in a two-stage sampling process. First the Ministry of the Environment and Energy Transition nominated participants. We purposively selected the interviewees based on the following criteria: (i) their CE expertise; (ii) their ability to represent a variety of organisations in Portugal (i.e., not all interviewees should work in the same organisation); and (iii) their ability to drive CE policy making in Portugal (Patton, 1990). Second, we utilised snowball sampling (Kirchherr & Charles, 2018). This involved asking each interviewee to suggest participants with the mentioned features. All interviews were carried out in English between July 2019 and May 2020 and lasted between 45 and 90 min (an overview of the interviewees' roles and their organisational belonging at the time of the interview can be found in Tables 3 and 4). The interviews were recorded, subsequently transcribed and coded based on the frameworks explored in Section 2 using the NVivo software (Berg, 2001; Denzin & Lincoln, 1998). Some of the interviews also provided insights to another academic contribution by Droege et al. (2021b).

Even though the criteria allowed the selection of interviewees within and outside of Portuguese public sector organisations, all

TABLE 3 Overview of interviewees and their roles

#	Role
1	Specialist on circular public procurement
2	Specialist resources and consumption within Portuguese public administration
3	Member of the environmental lab engaged with the implementation of standards such as ISO and EMAS
4	Member of the environmental lab engaged with the implementation of standards such as ISO and EMAS
5	Expert on materials and waste streams
6	Expert on CE and eco-innovation
7	Expert on CE and the environment
8	Expert for green public procurement
9	Expert on strategic planning
10	Expert on CE and food waste
11	Expert on the environmental impacts within national defence
12	Expert on CE and climate change
13	Expert on environmental statistics and planning
14	Expert on environmental planning and strategies
15	Expert on CE and industrial ecology
16	Expert on CE and health
17	Expert on CE and macro economics
18	Expert on CE and micro economics
19	Expert on environmental strategies
20	Expert on CE and micro economics
21	Expert on environmental management of the sea and ports
22	Expert on CE statistics
23	Expert on CE statistics
24	Expert on CE statistics

TABLE 4 Overview of organisations involved in the interviews (in alphabetical order)

Organisation
Central Administration of the Health System of the Portuguese Ministry of Health
Directorate general of economic activity of the Portuguese Ministry of the Economy and Digital Transition
Directorate general for environment and climate action of the Portuguese Ministry of Environment and climate action
Directorate general for marine resources of the Portuguese Ministry of the sea
Directorate general for programming and policy Services of the Portuguese Ministry of agriculture
Directorate general for National Defence Resources of the Portuguese Ministry of National Defence
Portuguese entity for public procurement and shared Services of the Ministry of finance
Portuguese environmental Agency of the Ministry of environment and climate action
Different directorate generals for the Portuguese Ministry of the Environment and climate action
Statistics Portugal of the presidency of the Council of Ministers

Note: The names of the ministries changed during the time of the research. We included the names of the current government (*Governo XXII*).

selected interviewees were employees of the public sector at the time of the interview.

The elite interviewing approach entails potential validity and reliability issues (Berry, 2002). Berry (2002, p. 680) also remarked about elite interviewing that 'it is not the obligation of a subject to be objective and tell us the truth'. Therefore, to mitigate these issues, interview data has been triangulated with findings from the press review. Including news articles can be a valuable source of information to supplement the interview results by an additional data source (Kaefer et al., 2015). Press articles can establish links with the society and provide an insight on the actual societal impacts (Holt & Barkemeyer, 2012). The search was conducted in the Google News Archive with the keywords '*Plano de Ação para a Economia Circular em Portugal 2017-2020*'² and '*PAEC Portugal*' (e.g., Dolan, 2019; Kaefer et al., 2015). No limit was set for the time period. The search yielded 182 results; all were reviewed regarding their relevance for CE policy making in Portugal. Based on these criteria, 21 articles were selected. In different contexts, some authors argue that media representations are exaggerated and inaccurate (Bubela & Caulfield, 2004). However, the empirical data shows similar instances over and over again and, thus, increased confidence that the categories were saturated (Glaser & Strauss, 1967, p. 61).

We aim at ensuring the interviewees anonymity in this research. Therefore, interviewees and their roles were separated from their organisational belonging (see Tables 3 and 4). In addition, we do not provide references to direct quotes from the interviews. Lastly, some

²English translation: Action Plan for the Circular Economy in Portugal: 2017–2020

Context

- EU CE legislation
- Portugal's presidency for the Council of the European Union (Jan.-July 2021)
- Innovative and open decisionmakers in Portugal

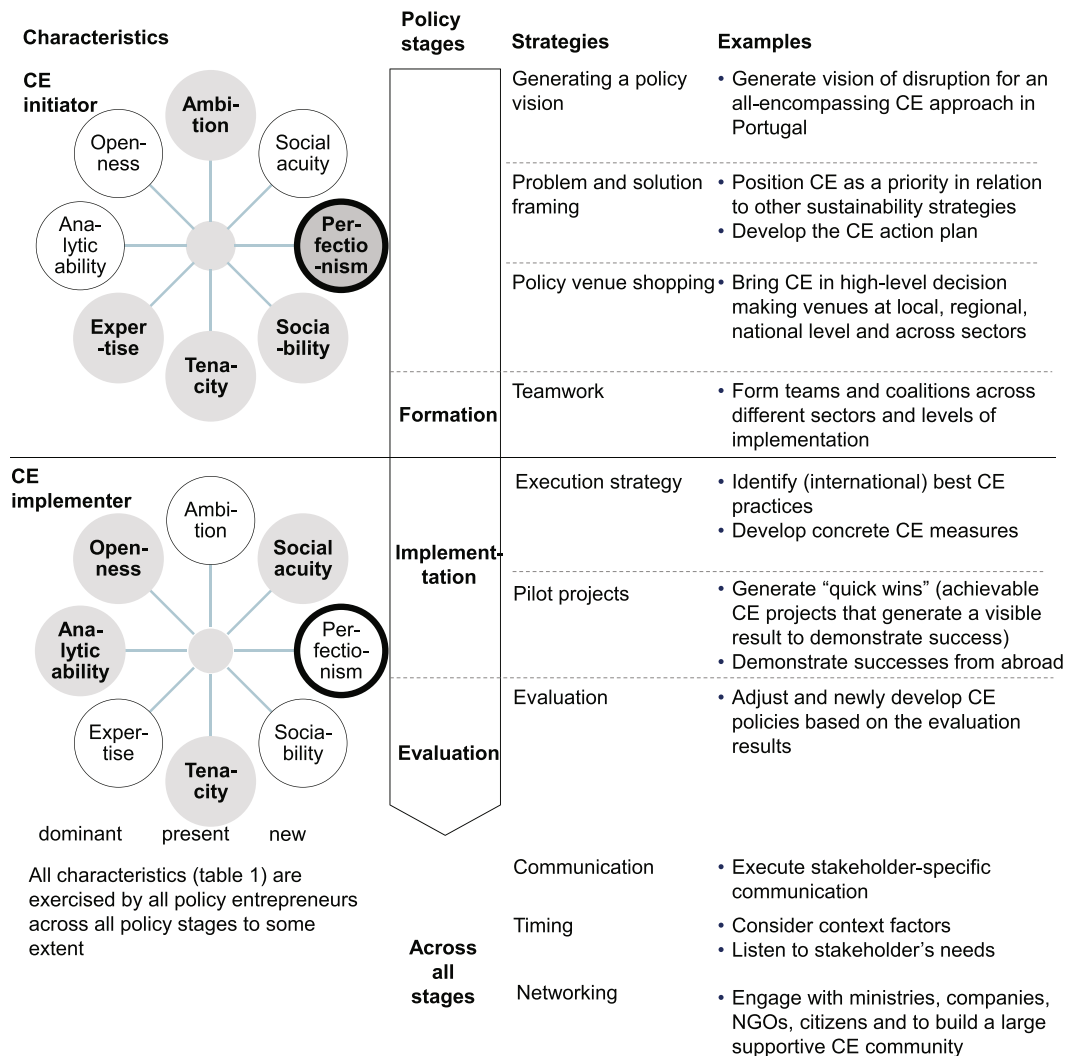


FIGURE 1 Overview of circular economy (CE) policy entrepreneurship

press article references cannot be directly provided in the text to protect the identity of the interviewees; instead, they are used indirectly. Details regarding the interviewees and press articles are provided whenever possible.

4 | RESULTS

CE policy entrepreneurs were identified based on direct referral by the interviewees and their presence in press articles. The referral of the people during the interviews was clear, and each policy entrepreneur has been pointed out by multiple sources. Among the identified policy entrepreneurs, two types of CE policy entrepreneurship could be classified. There was one policy entrepreneur clearly dominating

the CE agenda setting and policy formation stage, the CE initiator. A second group of policy entrepreneurs kept the issue on the agenda and accelerated the CE policy implementation and evaluation stages, the CE implementers. The observations were summarised in Figure 1. Along the policy stages we will describe the actions of the CE policy entrepreneurs and how they influenced CE policy making in Portugal. Resulting main findings are discussed as well as some conclusions are drawn in Section 5.

4.1 | The CE initiator

An expert who worked outside of the Portuguese public administration was identified as the initiator of CE policy making in Portugal

based on the interviews and press articles (e.g., interviewees # 7, 13, 14, 17, 20). The CE initiator gained influence as a policy entrepreneur due to expertise in CE and industrial symbiosis. Before becoming a policy entrepreneur, the CE initiator worked as an academic researcher and consultant in the field of CE in Portugal. During advanced training in CE-related topics and many small projects with the Portuguese government the CE initiator gathered credible CE expertise. Combined with the effective use of sociability it led to an authority as a CE expert in Portugal (interviewees # 7, 13, 14, 17, 20). As a result of this reputation, the Minister of Environment and Energy Transition approached the CE initiator, who mentioned: 'I got a call from the Minister (of Environment and Climate Action). He was looking for someone to work with him on how to develop CE to public policy'. This marked the starting point of CE policy entrepreneurship in Portugal in 2016.

All characteristics outlined in Table 1, ambition, social acuity, sociability, tenacity, expertise, analytic ability and openness were observed by the interviewees. However, the characteristics of expertise, ambition and tenacity were highlighted as more dominant than others. During the policy initiation, the CE initiator mainly differed from other (political) actors through ambition and tenacity. The CE initiator and other interviewees also identified the dominant characteristic of perfectionism. According to the existing literature, perfectionism is not discussed as a key characteristic of policy entrepreneurs yet. Therefore, it has been included as a new contribution in Figure 1.

4.1.1 | CE agenda setting

Context factors

The empirical data suggest that three contextual conditions were of importance for the success of CE policy making in Portugal (Boasson & Huitema, 2017). First, the EU included CE as a key priority in their CE Action Plan and for future policy making (European Commission, 2015, 2020a). The interviewees and press articles confirmed that the momentum of the European Commission was a driver and it pressured the Portuguese government to also take action in the field of sustainability policies (e.g., Diário de Notícias, 2019). Second, this was accelerated by the fact that Portugal will take over the presidency of the Council of the European Union January–June 2021 where according to the interviewees CE will play a role, and thus, Portuguese policy makers have an interest to gain CE knowledge, expertise and reputation (Council of the European Union, 2020). Lastly, the interviewees mentioned that the current decision makers themselves, such as the Minister of the Environment, are very open and are willing to experiment and innovate. These three factors were favourable context factors to CE policy entrepreneurship (Boasson & Wettestad, 2014). They were not directly influenced by the policy entrepreneurs themselves (see Table 2). The case of the CE Action Plan in Portugal illustrates that policy windows are a result of external forces (context factors) in combination with deliberate creation by the entrepreneurs. This is highlighted in the following paragraphs.

Generating the policy vision

The first strategy of the CE initiator to place CE on the policy agenda was to advocate for a system-wide circular disruption. The CE initiator's ambitious vision entailed the development of the Portuguese approach to CE that integrates and frames CE within the Portuguese context. This was specified 2 months later in a report: 'We are talking about dematerializing with great potential of information and communication technology (ICT) and industry 4.0; fostering cooperative/collaborative use or creating business models; designing products for repair and remanufacturing; optimizing and streamlining processes, products and services; complementary industrial networks in materials, energy and water; extracting materials and nutrients from waste streams; and new products or the use of non-toxic or polluting materials' (Portuguese Government, 2017, p. 2). Confirming previous analysis, the primary purpose of the vision was to raise awareness and show an overall direction reducing scepticism and uncertainty around the CE concept among decision makers and supporting stakeholders (Cairney, 2018; Jornal de Negócios, 2018; Mackenzie, 2010). The characteristics of ambition and tenacity supported the development and dissemination of the vision. In line with the literature, the two characteristics were observed together (Brouwer, 2018; Mintrom & Thomas, 2018). During the interviews the CE initiator described: 'We need to transform the entire system. I constantly repeat myself, but I feel like I need to say things again'. The ambition for a circular disruption supplied the reason for the policy initiator's actions (why) and tenacity ensured continuous execution (how).

To communicate the vision, citizens and representatives of the industry were targeted with educational approaches about the CE concept and its potential benefits (Hipersuper, 2017; Jornal de Negócios, 2019). A variety of communication channels were used: for example, the CE initiator drove the development of an online platform—<https://eco.nomia.pt>—that is managed by the Ministry of the Environment and Climate Action and aims to provide information on the CE concept, events and policies as well as funding opportunities. One expert argued that the major success factor of the platform was to inform about 'public funding for corporations, start-ups municipalities, local parishes'. Furthermore, the CE initiator launched and participated in CE events such as 'Let us discuss PAEC' or 'Societal Challenge Climate Action: funding opportunities on the theme of circular economy' (Portuguese Ministry of the Environment and Energy Transition, 2020). Lastly, the CE initiator pushed a CE vision in social media networks, mainly via the platforms Twitter and LinkedIn, for example, >1400 Tweets (status: September 2020). To members of the public staff the CE initiator sent emails: 'For example there are couple of CE movies that I recommend, and TED talks as well... there are a lot of Netflix shows, television shows. I share a lot to demonstrate CE is something that is really possible'. Some CE interviewees reflected that they found the CE initiator's approaches inspiring and motivating (interviewees # 7, 13, 14, 17, 20).

Problem and solution framing

Giving the favourable timing of awareness for the CE vision, the initiator framed the idea of the CE Action Plan as a concrete policy

solution. Perfectionism guided multiple content iterations of the CE Action Plan and included the input from different stakeholders between January and October 2017 (Participa, 2017). During the interviews the CE initiator highlighted 'I am always perfectionist'. The CE initiator added that even when the decision makers were satisfied with an outcome: 'It is not enough. We need to continuously work on this'. The CE initiator presented the first version of the plan in June 2017 after a public consultation has been conducted (Portuguese Government, 2020; Portuguese Republic, 2017). Based on CE expertise and experience from CE projects, the CE initiator drove the inclusion of the policy vision, an extensive explanation of the concept and its benefits as well as concrete CE measures and corresponding goals and indicators (Portuguese Republic, 2017). However, there were competing proposals to solve sustainability related problems in Portugal (interviewees # 5, 7, 12, 15, 20, 21, O Jornal Económico, 2019). In 2014, the former government developed and adopted a Green Growth strategy in Portugal. This strategy was a broad approach to sustainable development covering a large variety of different topics and involving multiple stakeholders (Ellen MacArthur Foundation, 2015; Portuguese Ministry of the Environment, Spatial Planning and Energy, 2014).

Policy venue shopping

The CE initiator launched the Action Plan as a proposal when it was most likely to be adopted. Since the development of the Green Growth strategy, a parliamentary election in 2015 led to a new government. The ruling conservative electoral alliance *Portugal à Frente* lost the majority to the socialist party *Partido Socialista*. The newly appointed Ministers aimed at establishing new approaches and policies for their legislature (interviewees # 5, 12, 15, 21, Jornal de Negócios, 2018). Thus, the CE initiator was ready to promote the CE Action Plan as an innovative, more feasible, comprehensive solution creating concrete output. To achieve binding decisions on the idea of a CE Action Plan the CE initiator went shopping for policy venues. The CE initiator brought the idea of the CE Action Plan to local and regional meetings as well as industry association meetings and ensured binding decisions of the present stakeholders (e.g., a workshop dedicated to the acceleration of circularity principles in the construction cluster in October 2017) (Portuguese Ministry of the Environment and Energy Transition, 2020).

At national level, the CE initiator used the method of a short and clear pitch presentation of the policy vision, as often highlighted by the literature on policy innovation (e.g., Mintrom, 1997). Three key elements of this pitch were the communication of the policy vision as a clear goal, evidence that CE policies have created positive impact in other countries, such as the Netherlands, and the provision of a short report (Portuguese Government, 2017), which could be further used by decision makers to argue in decision making venues. The CE initiator concluded 'I brought CE into the every-day speech'. This brought the idea of a CE Action Plan to the Council of Ministers (Jornal de Negócios, 2018). The idea of developing a CE Action Plan was discussed and approved by the Council of Ministers in November 2017 (Resolution 236/2017, 2° Suplemento, Série I de

2017-12-11) (Portuguese Presidency of the Council of Ministers, 2017). The CE initiator summarised that: 'the whole (agenda setting) process took around one year from concept to being approved'.

4.1.2 | CE action plan formation

Teamwork

The CE initiator formed and led teams including public servants and external actors to advance the advocacy of the plan (Diário de Notícias, 2019; interviewees # 2, 5, 7, 9, 15, 17, 18). Members from five ministries, according to the interviewees the nucleus of the plan, involving, for example, the Ministry of the Environment and Energy Transition, the Portuguese Environmental Agency and the Ministry of the Economy, the General Directorate for Economic Activities, as well as industry experts and regional and local stakeholders (e.g., cork producers, hotels, Portuguese Association for Urban Rehabilitation and Heritage Protection [APRUP]) were gathered to work on each sub-topics of the plan, such as CE fiscal instruments or CE packaging and waste (Portuguese Ministry of the Environment and Energy Transition, 2017; interviewees # 1, 2, 3, 4, 6, 12, 13, 14, 16, 18, 20, 21, 22, 23).

As highlighted in the literature, the CE initiator's strength did not come from the force of the ideas and individual power alone but by gathering a support network (Mintrom & Thomas, 2018). All interviewees and the press review highlighted the emergence of a support-network, involving a wide range of actors, such as the Portuguese Foundation of Science and Technology, National Laboratory for Energy and Geology or the logistics company Luis Simões (Diário de Notícias, 2019; Portuguese Ministry of the Environment and Energy Transition, 2020). In line with the literature the characteristics of ambition and tenacity allowed the CE initiator to convince important stakeholders to continuously support CE policy making efforts (interviewees # 7, 8, 13, 14, 17, 20). One expert mentioned: '(The CE initiator) knew what s/he wanted, so I supported'. The teams concretised the CE Action Plan, which was fully approved in December 2017 (Resolution 190-A/2017) (Portuguese Presidency of the Council of Ministers, 2017).

4.2 | CE implementers

Driving the successful implementation and evaluation of the CE Action Plan required different dominant entrepreneurship characteristics and strategies than its agenda setting and formation. From within the teams (see Section 4.1.2 *Teamwork*) a small group, the CE implementers, took over the role as policy entrepreneurs. They were male and female, between 26 and 50 years old. All CE implementers were members of staff from the Ministry of Environment and Energy Transition and the Ministry of the Economy across different levels of hierarchy (operational and management level) (e.g., interviewees # 7, 13, 14, 17, 20, Portuguese Government, 2017).

The CE implementers gained relevance over the CE initiator due to their social acuity and in particular their political savviness. As members of staff in public administration CE implementers understood the social and political context in Portugal which allowed ‘the relationships with relevant stakeholders to be friendly and trustworthy’, as one of the CE implementers highlighted. Understanding existing procedures and power structures enabled a successful CE policy implementation (Boasson & Huitema, 2017). Again, the CE implementers presented all characteristics mentioned in Table 1 to some degree. Their dominant characteristics of analytic ability, openness and tenacity helped the policy implementers adapting to the changing situations in CE policy implementation and evaluation (Figure 1). Exploiting the three key characteristics, policy implementers openly looked out for ways to continuously drive CE implementation, by analytically deciding for implementation options in the Portuguese context and tenaciously following them.

4.2.1 | CE implementation

Strategy execution

After the CE initiator developed the CE Action Plan as a guideline, the CE implementers identified and drove concrete projects. First, driven by their openness, the CE implementers initiated a trip to the Netherlands to exchange ideas and get inspired by their experience (interviewees # 7, 12, 15). An identified best practice which was translated to the Portuguese context was the operationalisation of the plan at regional level (Comissão de Coordenação e Desenvolvimento Regional do Centro, 2020; Dutch Ministry of Infrastructure and Water Management, 2016). One of the CE implementers highlighted: ‘the best measures were the regional agendas. Because they had a lot of impact’. Second, interviewees mentioned that the governmental work on CE was stopped multiple times, for example before and during the national elections in 2019 (interviewees # 5, 6, 9, 10, 11, 12, 16, 21, 23). Analytic ability and tenacity led the CE implementers to continue driving CE. For example, they established the Coordination Group in June 2018 as the official governance body of the Action Plan (O Jornal Económico, 2019; Portuguese Ministry of the Environment and Energy Transition, 2017). The Coordination Group includes policy makers appointed by each ministry of the Portuguese government. Their task is to continuously spread the principles of the CE and formally ensure the progress of the Action Plan (Portuguese Ministry of the Environment and Energy Transition, 2017). Third, the CE implementers ensured and allocated funding to innovative CE initiatives. In the first year of the plan, the government budgeted 1 million Euros for new explicit CE projects and 4.5 million Euros for sustainability initiatives in general (Eco Economia online, 2020; interviewees # 7, 12, 18). One CE implementer mentioned: ‘we signalled particular sectors that we thought are most important at the time and we tried to launch calls with the environmental fund that provided financial support to develop circular economy projects for those particular sectors’.

Pilot projects

The first facilitated projects aimed at gaining CE experience and demonstrating a system-wide workability of the CE Action Plan across different areas (Jornal de Negócios, 2018). Analytic thinking helped the CE implementers to find projects that were rather easy to implement and that generated quick successes addressing multiple facets of the CE as suggested by authors such as Frisch-Aviram (2019) or Mackenzie (2010). Within the Portuguese public administration, the CE implementers pushed for resolution (141/2018) and decree law (37/2018) which commit all public sector organisations to reduce their paper and plastic consumption (Portuguese Presidency of the Council of Ministers, 2018b, 2018a). Towards citizens the CE implementers supported, for example, the ‘Plástico Circular’ laboratory. It is a public space where the conscious use of plastics is advertised via 3D printing of new resources from waste (Circular Economy Portugal, 2017). In the industry the CE implementers facilitated projects, for example, in the field of CE construction by launching an online material repository for materials coming from demolishing works (Público, 2017). An overview of some CE projects in Portugal can be found at the Portuguese governmental Web platform on CE—<https://eco.nomia.pt> (Portuguese Ministry of the Environment and Energy Transition, 2020).

4.2.2 | CE evaluation

Evaluation

Within the CE Action Plan each action has clear goals and complementary indicators which assess the output and outcomes (Droege et al., 2021a). The assessment is executed by the Coordination Group (Portuguese Ministry of the Environment and Energy Transition, 2017). In addition, the CE implementers insisted on a formal evaluation plan as a whole which is scheduled to be published at the end of 2020. In line with an argument by Pralle (2009) and Timmermans et al. (2014) the CE implementers are open and on alert for new ideas and opportunities, and thus, aim at using the evaluation as a starting point for an improved version of the CE Action Plan that is adapted to the newest advances. During the interviews the first results were highlighted by the interviewees (interviewees # 12, 13, 15, 20, 21). One interviewee argued: ‘in the fiscal area measures such as incentives for repairs like in Sweden are necessary (...) but that got shut down on the discussion at the parliament level on the state budget because each party had a proposal and they kind of annulled one another’. Furthermore, an implementation policy entrepreneur highlighted: ‘we want to discuss CE actions with other countries, that are working on the same subjects and usually we are not brought in the discussion because they assume that we are not doing anything’. According to the CE implementers the development of a new CE Action Plan is targeted for 2021.

5 | DISCUSSION AND CONCLUSIONS

This article highlights that even though we do not know how circular futures may look like (Bauwens et al., 2020), policy entrepreneurs can

be important actors to drive CE policy making for a circular disruption. The empirical data shows that CE policy entrepreneurs, with their inherent characteristics, strategically influenced decision makers and implementers to pass the CE Action Plan as a national policy and implement corresponding measures in Portugal. Successfully driving the adoption of national CE policies required highly ambitious, tenacious and perfectionist CE expert(s) who create a bigger CE vision, derive concrete solutions and gather strong support for their ideas. In contrast, influencing CE implementation and evaluation required politically savvy policy entrepreneurs who openly and tenaciously develop strategies, projects as well as secure the continuous development of the CE policy. Even though the empirical data is only based on one case study, this research suggests theoretical and practical lessons for CE policy entrepreneurship to be further explored by future research.

First, the categorisation of policy entrepreneurs in two groups based on common dominant characteristics and strategic actions along policy stages is new to policy entrepreneurship research. The categorisation helps to understand which characteristics and strategies are most important in the different policy stages. Existing studies often observe policy entrepreneurs as a homogenous group (e.g., Brouwer, 2018; Corbett et al., 2020; Renner & Meijerink, 2017). The few approaches that group policy entrepreneurs based on similarities categorised them according to differing commitment levels (Boasson & Wettestad, 2014) or different entrepreneurship strategies (Mintrom, 2017). Variations in their characteristics are not further elaborated. A reason for the lack of analyses could be that it is harder to identify characteristics in an objective way. However, the data show that in CE policy entrepreneurship in Portugal the CE initiator had different dominant characteristics than the CE implementers who shared common dominant characteristics. Timmermans et al. (2014) confirmed a strong relation between entrepreneurial characteristics and activities. However, the details of the relationship between characteristics and strategies remain underdeveloped. Overall, characteristics played an important role in CE policy entrepreneurship. The relationship between characteristic and strategy determined that the CE initiator lost influence after policy adoption to the CE implementers.

Second, we found that the characteristic of expertise was particularly important in enabling CE policy entrepreneurship in Portugal. Different case studies on policy entrepreneurs mention their expertise especially in areas of technical complexity such as sustainable development (e.g., Anderson et al., 2019; Brouwer, 2018; Pralle, 2009; Rabe, 2004). Most of these authors argue that expertise can support the execution of entrepreneurship strategies, for example, by feeding expert information into policy venues to facilitate decision making (Anderson et al., 2019; Mintrom & Norman, 2009). Due to this supporting function, policy entrepreneurs do not necessarily need to be experts themselves. They can also draw on external expertise or compensate lacking expertise with other characteristics such as social acuity or tenacity (Loorbach, 2010; Timmermans et al., 2014). In contrast, the case of CE policy making shows the CE initiator gained relevance before strategically using the expertise just due to the

reputation as a CE expert in the Portuguese industry networks and the characteristic itself became a key factor in influencing the policy making. In line with the business strategy literature, this stresses the importance of understanding the topic and the industry for successful CE policy making (Cummings, 2008; Ervin et al., 2013).

Third, we add the characteristic of perfectionism as described in Section 4.1 as a key characteristic enabling CE policy initiation. The CE initiator as well as the other interviewees highlighted the importance of this characteristic shaping the content of Portuguese CE Action Plan. Continuous iterations of the CE Action Plan led by the CE initiator's perfectionism contributed to a development of a policy that was politically accepted and feasible to policy makers. Some might argue perfectionism can be a facet of ambition emphasising the 'why' that explains policy entrepreneurs' actions or that it can be an expression of tenacity, driving the 'how' of CE policy making. However, the empirical data showed perfectionism needs to be seen as a separate characteristic as it influenced the content of the CE policy, and thus, the 'what'.

Fourth, it was a key success factor for CE policy entrepreneurship in Portugal that after CE policy adoption, CE policy implementation was also driven by policy entrepreneurs. The role of policy entrepreneurs in implementation is only analysed since Bakir (2009) extended the relevant actions of policy entrepreneurs beyond the governmental agenda setting. In line with Frisch-Avram et al. (2018), we found that a high level of political savviness enabled internal policy entrepreneurs to successfully drive CE policy implementation. This highlights why the efforts of 'outsiders' to make change often come to nothing and emphasises the importance of the internal CE implementers for successful CE policy making (Cohen & Naor, 2013). Internal implementation entrepreneurs are argued to be high in bureaucratic hierarchies because lower-level bureaucrats with limited political capital are unlikely to become policy entrepreneurs due to limited resources and political capital (Tang et al., 2020). In the case of CE entrepreneurship, however, we observed CE implementers across all levels of hierarchy. Higher-level implementers could steer implementation efforts and reach agreement across ministries, lower-level CE implementers succeeded based on their on-the-ground expertise.

Fifth, the CE policy entrepreneurs operationalised existing CE approaches from abroad to push their ideas in Portugal. Policy innovation and diffusion literature already argues that very few actors will develop (policy) ideas from scratch, and they tend to be inspired by impulses from other places or sectors (Faling, 2018; Rogers, 1995). Thus, in CE policy entrepreneurship in Portugal the EU Green Deal and other existing CE policies, such as the regional CE approaches from the Netherlands served as a favourable context and an inspirational source to CE policy entrepreneurs. However, beyond this, the CE entrepreneurs presented foreign approaches as demonstration projects to the policy makers to demonstrate feasibility and increase acceptance. Furthermore, CE policy entrepreneurs framed CE policy making as a chance to gain a reputation as a sustainable role model among other EU member states. This operationalisation of international CE approaches was a key success factor for CE policy entrepreneurship.

Lastly, CE policy entrepreneurs positioned CE policies as a priority in relation to existing strategies for sustainable development, such as the Green Growth commitment in Portugal to foster disruptive change (Portuguese Ministry of the Environment, Spatial Planning and Energy, 2014). Circularity is often seen as one of several options to foster the sustainability of the system (Bocken et al., 2014). The challenge that arises for CE policy entrepreneurs is the competition of disruptive CE policies with other more incremental concepts tackling the multi-faceted issue of sustainable development (Matten, 2004). CE initiators need to position policies as new feasible solutions that create concrete output. We do not argue that the CE policy entrepreneurs are heroic figures that were able to reframe the situation all by themselves or that the CE Action Plan has been able to achieve a circular disruption in Portugal yet. However, it seems clear that entrepreneurship contributed to amplify sense of urgency for the CE Action Plan and drove its adoption.

The limitations of this research need to be noted here. CE policy entrepreneurship is still an underexplored research topic. Selecting one case study has the advantage of describing one case in depth but does not allow to generalise all results. In that sense, the theoretical framework in Figure 1 and methods are generalisable; that is, they can be applied to any country, sector, and government type by any researcher willing to identify characteristics and strategies of policy entrepreneurs. Results are specific to the Portuguese context, that is, not fully transferable. Literature also stresses that in policy making for sustainable development there is no 'one size fits all' approach (Kiefer et al., 2018). The unavoidable limitations of this article, however, point to paths for further research. New theory-driven empirical studies of CE policy making are urgently needed to further drive and support the circular disruption. For example, more single case studies can portray and discuss differences of CE policy entrepreneurship and the analysis of non-successful cases of CE policy entrepreneurship would provide relevant insights. In addition, large-n CE policy entrepreneurship studies can explore patterns across different institutional, cultural and geographic contexts. Lastly, this article highlights the importance of an international approach for a circular disruption. Therefore cross-boundary CE policy entrepreneurship would be a relevant field to explore. Building from what is already known about policy entrepreneurs offers a good place to start.

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CONFLICT OF INTEREST

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APPENDIX A: INTERVIEW GUIDELINE (EXEMPLARY)**A.1 | General introduction (5 min)**

- Introduction of myself:
- The aim of the interview
- Data treatment and confidentiality

A.2 | Introduction of the interviewee (5 min)

- What is your background?
- Which organization do you work for?
- What is your role in the organization?
- How long have you worked for this organization?
- Since when are you working in the field of CE?

A.3 | The action plan for the CE in Portugal 2017–2020 (10 min)

- How did the action plan come on the agenda? Why was the problem of CE on the agenda? How was the idea generated?
- Who are the key actors involved in the CE action plan from the initiation to implementation?
- What were the key milestones in its development and implementation?
- What has been your role in the idea generation, development and implementation of the CE action plan?

A.4 | Strategies and activities (15 min)

- What are your/their key activities/strategies in driving CE in Portugal?

- How did you/the key actors contribute to the CE action plan, for example, writing chapters, engaging with stakeholders, social media work, organizing events?

A.5 | Characteristics and motivations (10 min)

- What are key characteristics you/the key actor(s) have that help you in driving the CE action plan?

A.6 | Barriers and drivers (10 min)

- What are the major successes regarding the CE action plan?
- What were the barriers preventing a successful work on the CE action plan?
- Did you/key actors encounter any failures during your initiative for the CE action plan? Why and/or how?

A.7 | Finishing (5 min)

- Are there any other key actors who were essentially involved in the problem framing, agenda setting and implementation of the CE action plan?
- Is there anything else you want to add?