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# Territory, ecological transition and the changing governance of ports

Caitriona Carter <sup>a</sup> and Florian Drouaud<sup>b</sup>

## ABSTRACT

Territorialization and ecologization are deeply entwined processes. But what role do infrastructural actors such as ports play in governing their interconnections, especially following the liberalization of port governance? Focusing on La Rochelle in south-west France, we examined how this port developed a proactive governing strategy mutually conditioning ecological and territorial change. We applied an 'interdependency' approach to analyse port governing practice, understanding that the grasping of interdependency is a major challenge for effective transition governance. This approach drove research to investigate, of all possible interdependencies experienced by port actors, which ones were being selected and promoted by them for governance? We found that territorial interdependencies were being prioritized for governance in line with a narrative of climate, rather than biodiversity, transition. Further, by making connections between policy decisions taken at precise points along a land–sea gradient, actors greatly extended the territorial scope of port public action. But whilst political work over territorial interdependencies opened new spaces for climate governance (politicization), work over public/private interdependencies, essential for the construction of the port as a collective actor, depoliticized otherwise 'efficiency value-laden' policy choices. Consequently, our 'interdependency' approach both revealed the conditions under which a port can influence a complex territorial climate politics, and the extent to which its own internal port governance can influence certain transition choices over others and, potentially, certain territorial futures over others.

## KEYWORDS

climate transition; depoliticization; ecological transition; interdependency; politicization; port governance; territory


**HISTORY** Received 4 May 2021; in revised form 15 November 2021

## INTRODUCTION

Numerous publications have stressed the importance of analysing interconnections between processes of territorialization and those of ecologization (Ginelli et al., 2020). On the one hand, studies on territorialization have shown how actor mobilizations around new ecological paradigms can alter economic and spatial dynamics in a given territory (Banos et al., 2020). For

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example, the decentralization of energy policy can result in new forms of territorial politics over alternate territorial energy futures (Poupeau, 2013). On the other hand, scholarship on ecological and energy transition has stressed the importance of analysing transition as a ‘space-making’ process, one which, to be effective, requires wider territorial change beyond the sector (Bridge & Gailing, 2020).

Whereas this literature has produced important results on the role played by a wide range of public and collective private actors in the (re)shaping of territorial and ecological futures (including state actors, industries, non-governmental organizations (NGOs) and citizens), the potential for infrastructural actors such as ports to influence the linkage between processes of ecologization and territorialization has been little studied from this perspective. Rather, ports’ more classic role shaping territorial economic development has essentially been analysed by a specialist social science literature dedicated to port governance (Debie & Lavaud-Letilleul, 2009; Foulquier & Lamberts, 2014). The latter has emphasized that port governance has recently changed following the liberalization and decentralization of European ports (Gueguen-Hallouët, 2014). Yet, whereas the territorial dimension of port governance is clearly demonstrated by this type of research, the issue of ecological transition has not been addressed by these authors.<sup>1</sup> Consequently, even when a port’s low carbon strategy has been shown to increase socio-ecological flows between ports and cities, we lack detailed knowledge on how the reformed governance of a port might be re-regulating such processes (Mat et al., 2016).

This article aims to bridge these debates by focusing on the definition and implementation of a port’s competitiveness and ecological transition strategy from a territorial governance perspective. The port in question is La Rochelle, a medium-sized *Grand Port Maritime* (GPM) in the south-west of France. This port is politically connected, having been previously identified as having a high level of port representation on extra-port bodies in proportion to the volume of its traffic (Foulquier & Maugeri, 2014). Like other French GPMs, it has come under increasing pressure from successive French governments and local economic actors to generate new port traffic and consolidate itself as being both ‘competitive’ and ‘attractive’ (Comité interministériel de la mer (CIMER), 2018, 2019; Cour des comptes, 2017; National Port Strategy, 2013; Philippe, 2018; Sénat, 2019). It must also draw up multi-annual plans for port development in line with sustainability and develop green energy and eco-industry projects (Regional economic, social and environmental committee ‘CESER’, 2017). Indeed, it has elaborated a succession of five-year strategies to attain these multiple goals – the most recently completed one being from 2014 to 2019: the specific object of our empirical research.

To analyse the port as a potentially proactive and intermediary political actor – and not just an interface – we applied an analytical approach in terms of ‘interdependency’ to study its governing practices (Carter, 2018; Carter et al., 2021). Understanding that interdependency is a major issue for effective policy tackling global environmental change (Kissinger et al., 2011; Smith et al., 2007), this approach drove research to examine how key interdependencies were chosen to be governed in actor ecological transition strategies, and the consequences of these choices. We first focused our attention on any territorial interdependencies being selected and promoted by port actors for governance in the definition of their strategy, drawing on documentary analysis and interviews with public and private actors.<sup>2</sup> This analytical focus enabled us to grasp how actors were defining ecological transition as ‘climate change transition’, in line with an imagined future form of territorial development. It further explained the extended scope of port public action beyond the port area. Our general line of questioning on interdependency, however, also revealed other forms of interdependency at play, and this because the implementation of the port’s strategy was also recasting existent relations between public and private actors as important interdependencies to be governed bringing about transition. Public/private actor relations had already been shown to be essential in the social construction of the port as a collective actor (Foulquier & Lamberts, 2014). When selected for new types of transition governance,

these were having a significant impact, not only on the port as a collective actor, but also on its choice of transition policy instruments.

In what follows, we first explain our interdependency approach in more detail and how we applied it in this case. Then, drawing on case study findings, we describe which territorial interdependencies were selected and promoted for transition governance by actors in the case of the port of La Rochelle. We then proceed to analyse the wide range of new governing practices implemented by port actors at different spatial scales to give effect to these choices. As we will show throughout, not only has the port engaged politically in a range of governing spaces to make linkages between policy decisions taken at different points along a land–sea gradient (port area, port–city, port–foreland, port–hinterland); it has also sought to build new (and/or renewed) actor alliances around a particular vision of climate change transition. Yet, whereas political work over territorial interdependency resulted in practices to politicize transition placing it on the policy agenda, regulatory work at the heart of the public/private interdependency depoliticized policy choices through arguments made in the name of green economic ‘efficiency’ (Smith, 2016, p. 59). For all these reasons the study ultimately reveals how medium-sized ports as intermediary political actors can, in the name of ‘ecological transition’ and under certain conditions which the interdependency approach guides research to elucidate, significantly reshape territorial governance through both ‘opening up’ and ‘closing down’ (Barry, 2002) ecological politics.

## INTERDEPENDENCY, ENVIRONMENTAL CHANGE AND GOVERNANCE

Research has consistently shown that ‘interdependency’ is at the heart of global change emergencies (e.g., climate change, biodiversity loss, environmental health risks) and related ecological transition solutions (e.g., transformations in energy or food production) (Intergovernmental Panel on Climate Change (IPCC), 2019; Smith et al., 2007). This interdependency narrative denotes a specific understanding of fundamental relationships that make up the world and exists when change in one component (e.g., economy) causes change in another one (e.g., ecology), or vice versa (Hay, 2010). The realization that interdependency was a critical factor explaining species loss dominated Rachel Carson’s book, *Silent Spring* (1962). Not only were US government-sanctioned chemical treatments altering the natural environment in which they were sprayed, but they also affected flora and fauna (and human) health in far-distant places. In this manner, Carson put the spotlight on non-contiguous ecological change (see also Swanson, 2015). Two decades later, and as has been well documented, the idea of interdependency was taken up, this time on an international scale, in the classical definition of sustainable development endorsed by the Brundtland Report (1987) (Langhelle, 2000). Enlarging to include ecological, economic and social interdependencies, ‘sustainable development’ defined at this time acknowledged the major shift in thinking that not only was human action causing ecological damage, but also that the reverse was also true: namely, that the environment was setting its own limits on the economy (Brooks, 1992). Since then, scholarship has increasingly sounded the alarm on environmental change as a problem of interdependency. Indeed, although any one environmental issue on its own (e.g., biodiversity loss, climate change, ocean acidification) presents a major challenge for society, it is in their very interdependency and mutual conditioning that they could cause Earth systems to collapse on a global scale (Rockström et al., 2009).

Taking this interdependency narrative of environmental change as our starting point, in the rest of the article we adopt what we term an ‘interdependency approach’ to analyse governing solutions. We understand that for any transition governing response to be effective, actors too must acknowledge that ‘interdependency’ is at stake and develop their governing practices and policy tools accordingly (Kissinger et al., 2011). The challenge is by no means straightforward. On the one hand, past integrated environmental policy (Lafferty & Hovden, 2003) and

ecosystem approaches, both designed to reduce negative interdependencies between ecological, economic and social phenomena, have been heavily criticized for failing to meet multiple objectives equally (Giddings et al., 2002; Waylen et al., 2014). On the other hand, recent research has shown that ecological, economic and social interdependencies are not the only ones at stake governing industrial transition (Bouleau et al., 2020; Carter, 2018). This is because the reconfiguration of the nation-state over recent decades has, through a redistribution of political power and authority, created new forms of political interdependency both between actors and between regulation (Hay, 2010). These connect ecological transition to wider processes of political change and are relevant to governing responses (Asara et al., 2015; Carter, 2018). More specifically, and as we have argued in more detail elsewhere (Carter, 2018), political interdependencies shaping environmental governance have been shown to have emerged between territories (following globalization/regionalization and rescaling of political power) (Salles, 2011), between public and private domains (following liberalization and changing relations between states and markets) (Arts et al., 2006), and between different forms of knowledge use in regulation (following the democratization of reglementary science) (Wesselink et al., 2013). Moreover, it is precisely through seizing these broader interdependencies that public and collective private actors have both opened new spaces for alternative governing approaches and, critically, positioned themselves politically with authority to take transition decisions (Carter, 2018).

Conceived in this way, the interdependency approach adopted here therefore starts with actors and their governing practices in the light of global environmental and political change. Do actors acknowledge interdependency to be a major challenge for governance (i.e., in addition to a challenge for logistical or business strategies)? Which interdependencies matter for them developing governing strategies? What are the consequences in terms of any territorial (re)definitions? This approach is highly relevant when analysing a port as a potentially proactive and intermediary political actor governing ecological transition (although it can also be applied to other categories of actors). In the case of ports, they experience different types of interdependency daily. Not only are they places where industries collide, they also hold a unique territorial position at the land–sea interface (Cerceau & Mat, 2015; Debie & Lavaud-Letilleul, 2009). As a rich literature has shown, ports are often positioned in territorial socio-economic development networks (Duszynski et al., 2015; Foulquier & Lamberts, 2014) (especially in industrial ecological projects; we return to this point in our case study) (Alix et al., 2015).

Yet, even if ports experience interdependency daily, this does not mean they choose to govern it (Bosman et al., 2018). There is nothing automatic about their governing strategy. For example, in the case of the port of Rotterdam, Bosman et al. (2018) explain how their research-action project was a necessary and critical vehicle for reframing the minds of port actors to reimagine an alternative ‘shadow track’ of port transition governance. Consequently, we need to ask first which interdependencies are selected and promoted by the port as fundamental ones for transition governance (if at all); and second, how do these selections in turn influence the institutionalization of specific types of governing practice. Such practice may include the taking of any or all of the following actions: (1) defining ecological transition as an interdependency problem to be governed, including the selection and promotion of some interdependencies over others and the (re)definition of the territorial scope of governance; (2) building alliances with other public and private actors around this definition; (3) building new spaces for public action and designing new policy tools; (4) participating in existing decision-making bodies; and (5) advancing arguments in public arenas to explain actions taken. Proceeding in this way, our aim is to identify which interrelationships are viewed as fundamental ones in the definition and implementation of a port’s ecological transition strategy, and also to produce precise knowledge on political actions taken to institutionalize any such interdependencies prioritized.

## COLLECTING AND ANALYSING DATA: FROM TERRITORIAL TO PUBLIC/PRIVATE INTERDEPENDENCIES

To find answers to our questions in the case of the port of La Rochelle, we gathered numerous types of qualitative empirical material covering the period 2013–20. This material was specifically regarding the definition and implementation of the port's competitiveness and ecological transition strategy during this time. Different methods were used to acquire data, including documentary analysis of an assortment of grey literature (e.g., public policy documents, speeches, industry articles, port documentation, social media, news) and semi-structured interviews with selected categories of public and private actors involved in the governance of port activities (the port; local and regional public bodies; private port operators; state bodies; marine park; energy; interviews conducted in 2019). Once collected, this material was analysed with a view to, first, identifying which interdependencies had been selected and promoted for governance; and second, how these choices were structuring governing practices. Methodological tools of geographical mental mapping coupled with NVivo 11 software were used to help us in this work. Geographical mental mapping was used in interviews to map actors' spatial visions of those interdependencies which mattered most to them. NVivo 11 enabled us to code actors' selection and promotion of interdependency and categorize governing practices.

As we have explained, a central line of enquiry running throughout was to understand mutual influences of ecological transition and territorialization. Consequently, in a first instance when analysing our data, we specifically examined actor political usages of territorial interdependency shaping their ecological transition governing strategy. To do so in a systematic way, we established a working definition of 'territorial interdependency' drawing on theories and concepts of territory as mobilized in both political geography and political sociology. From political geography, we drew on insights that delink 'territory' from 'state sovereignty' (Sassen, 2013) and have defined territorial construction as an intersubjective and continuous process shaping and reshaping interrelations between people, nature and economic activity over time (Healey, 2013; Lussault, 2007). Hence, territorialization connects and reinforces interdependencies between economic activity and a totality of components which make up a territory, including biophysical and climate processes (Banos et al., 2020; Smith et al., 2007). From political sociology, we drew on research that has studied territorialization as a reassignment of political authority, linked to the transformation of the nation-state (Douillet, 2003; Poupeau, 2013). Accordingly, the decentralization of public power creates new forms of territory (administrative, ecological) and the potential for new interconnections between public actors operating at different spatial scales (Rumford, 2008). Putting these two accounts of territory together, and in line with Carter et al. (2021), we defined territorial interdependency as dynamic tensions between:

- infrastructure, industry, nature and people within a given territory; and
- administrative jurisdictions and ecological territories at different spatial scales.

We then worked with this definition to sort our empirical material (see below).

Importantly, although we initially focused our attention on territorial interdependency, it soon became clear from our material that interdependency between public and private actors was equally important explaining the port of La Rochelle's transition governing choices. Understanding why this might be the case became critical for the interpretation of our findings. As we state in the Introduction, the port of La Rochelle is a *Grand Port Maritime* (GPM). GPMs were established in France via a port reform in 2008 within a wider process of European port liberalization unfolding at that time (Gueguen-Hallouët, 2014). This reform created the GPM as neither entirely a 'state' actor nor a 'local' actor nor a purely 'public' actor (Foulquier & Maugeri,

2014) – and opened the possibility for an ‘enlarged’ form of port governance (Gueguen-Hallouët, 2014). Yet, although, in legal terms, reform changed the role of the port from a ‘technical’ to an ‘enlarged territorial’ actor, in practice newly created port bodies have had to find ways to both forge and stabilize their sense of community to become a ‘collective actor’ implementing enlarged port governance (what Foulquier & Maugeri, 2014, call ‘communalisation’).

It soon became clear in the treatment of our data that the defining and implementing of a competitiveness and ecological transition strategy was fundamentally intertwined with this process of communalization. This mattered especially because, as argued by Gueguen-Hallouët (2014), in this changing environment, GPMs have had to develop new strategies of governance to fit with their new situation, including designing appropriate policy instruments fulfilling both local actors’ and French government actor expectations. In this light, the ecological transition strategy had the potential to influence the construction of the port as a collective actor at the same time as influencing its construction of territorial interdependency and political positioning (Duszynski et al., 2015; Foulquier & Maugeri, 2014, p. 79). Furthermore, as others have shown, actor conflicts have been at the heart of port communalization, with consistent tensions observed, for example, between public and private actors in port governing bodies, between port industries, between ports and cities (noise, disturbance, pollution), and between ports and local territories (e.g., over spatial development and land-use conflicts) (Guillaume & Guineberteau, 2014). For all these reasons, the selection and promotion of interdependencies between public and private actors would turn out to be a key factor shaping ecological transition strategies. In particular, this finding further directed our attention to question whether tensions at the heart of the public/private interdependency were being opened up to political controversy by actors (i.e., politicized; Kauppi et al., 2016), or, on the contrary, being closed down (i.e., depoliticized; Barry, 2002) in a deeper process of communalization.

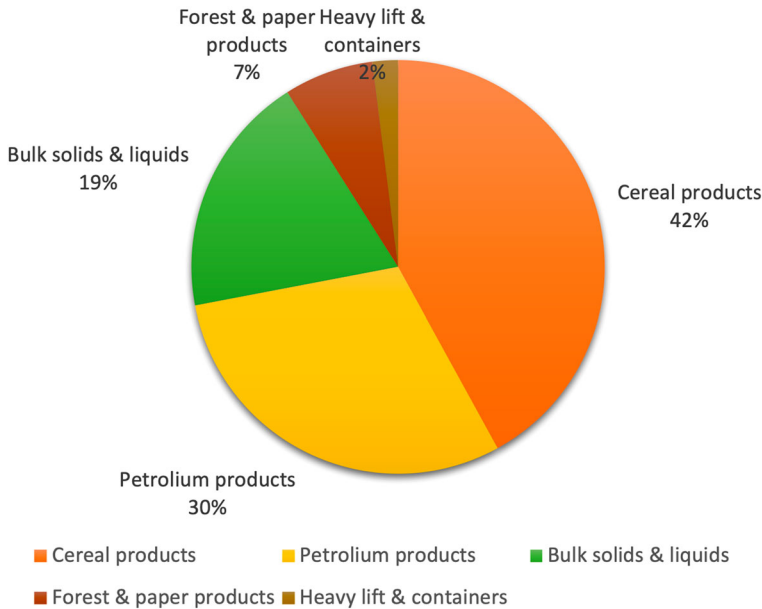
## RESULTS

### Selecting territorial interdependencies for governance

In 2013, the French government published a state-wide initiative to ‘relaunch’ GPMs. This initiative has been strengthened over the years, with the expectation that GPMs make changes to position France as a leading player on the maritime geopolitical scene (Macron, 2019; Philippe, 2018). In line with such mandates, port actors developed and implemented the port’s multi-annual strategy 2014–19, mobilizing different port boards, their respective working groups and stakeholders. The 2008 port reform left the port authority of La Rochelle with public service missions and landlord functions but transferred cargo-handling functions to private terminal operators. A reformed port governance reflected these changes, separating public and private interests (Foulquier, 2016). A supervisory board with decisional powers was created whose members represented the French state as a central authority; state nominees from the private sector (e.g., transport, cruise shipping, maritime economics, nautical industry); ‘state in the region’ administrative bodies; locally and regionally elected public bodies; and port staff. A development board was also established with advisory powers bringing together representatives of port traffics and industrial activities; representatives of regional and local public bodies and other stakeholders from science, business and environmental organizations. Port traffic representation included cereals (La Rochelle is a specialist in cereal exports, the second port in France), petroleum products (main import traffic), forest products (the first import port in France), bulk goods, aggregate products and shipping (Figure 1) (CESER, 2017; Port Atlantique La Rochelle, 2019).

The definition and the implementation of the 2014–2019 strategy evolved over five years, engaging port decisional and advisory boards and their members. Importantly for our study, it revealed actor awareness of interdependency as a governance challenge meeting multiple objectives. As reported by different actors on interview, an actor work was embedded in a local politics





**Figure 1.** Port traffic in 2019.

Source: Authors created from statistics provided by Port Atlantique La Rochelle (2019).

of sustainable development, influenced by a particular view of the economic positioning of the port and a ‘proactive’ approach entwining port competitiveness with ecological transition. Although port growth has been dynamic (e.g., traffic in 2019 was 9,781,268 t) and the port in a good financial position compared with other ports on the Atlantic seaboard (Cour des comptes, 2017; Sénat, 2019), actors were aware of its vulnerability. Ranked sixth in France, for them the port operated on a competitive regional and global trading scene (port strategy, 2014–19; interview material). Yet, this did not lead them to adopt a passive approach. For example, when the French government published energy transition legislation in 2015:

It is the first time that there is an ecological transition law ... before the USA, or other European countries ... it is important to make use of this legislation. Either you see the law and public policy as a constraint; or you see it as an opportunity. We turn every piece of legislation into an opportunity. (interview with a public/private port actor; present authors’ translation)

A first step was to define the contents of ecological transition. An environmental evaluation of the port’s activities was launched in 2013. This quantified the port’s climate change impacts and presented these in terms of trade in hydrocarbons (30%) and greenhouse gas (GHG) emissions in accordance with regulatory assessment rules (547 kT CO<sub>2</sub> eq.). It also evaluated local environmental impacts including those connected with port discharges and wastewater treatment, port water quality, dredging and piling; impacts from industrial activities in port place; heavy metals, hydrocarbons, polychlorinated biphenyls (PCBs); diffuse local pollution from shipping, air quality; and noise pollution (*Environmental Evaluation Report*, 2014).

This evaluation presented many possible interdependencies between the port, nature and society which could have been problematized as priorities for transition governance at this stage. It especially presented environmental impacts highlighting (negative) interconnections between the port, marine ecosystems and local residents. However, these biodiversity interdependencies were not prioritized by port actors for governance in 2015 (nor in 2020 when defining the

next strategy). Rather, biodiversity impacts were considered as already extensively regulated, with many impacts judged compliant with regulatory thresholds. As stressed in interview, this was not to claim that port activities had zero environmental impact, nor that no conflicts existed with local residents (indeed, there are ongoing conflicts over port conversions). Rather, it was to assume that these impacts were already monitored on a routine basis. Like other ports (Hossain et al., 2019), La Rochelle had already acquired triple ‘Quality, security, environment’ certification (ISOs 2600, 9001, 14001; OHSAS 18001). Working with the Maritime Union (collective private operators), port bodies had additionally drawn up a Sustainability Charter promoting social and environmental responsibility for companies in and around the port place (both major flow companies and non-port-related activities). Both management tools were cited by port actors as important for communicating the port’s regulatory commitment to integrated environmental management.

Instead of biodiversity transition, actor selection of territorial interdependencies to govern was consistent with a narrative of alternative possible port industrial and competitive strategies going forward (many years into the future) (interview material). Actors wanted the port to shift from a ‘landlord’ to a ‘port entrepreneur’, that is, not only to improve environmental management of existing traffic, but also to critically gain new traffic (CIMER, 2018). The importance of this temporality for defining transition governance was repeated on interview. When actors considered this question, they were focused on potential new traffics for decades to come (‘respond to tomorrow’s challenges developing value added for the port’; port strategy 2020–24). Thinking about what transition meant for them included a reflection on how to govern for future alternative modes of production, and emergent industries, as much as developing sustainability measures governing existing traffic and activities.

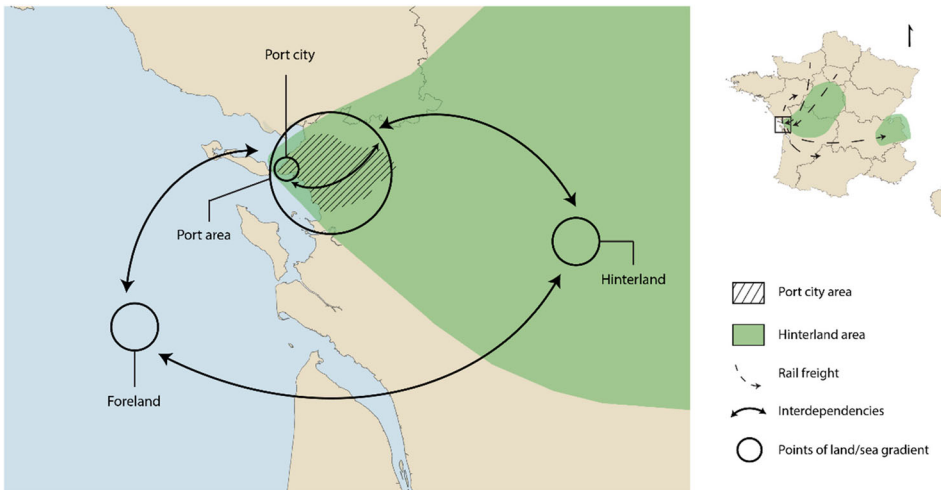
Consequently, that first set of territorial interdependencies which were problematized by port actors as priorities to be governed was within a narrative on climate change transition. More precisely, these were interdependencies between port growth, industry carbon emissions/energy efficiency, atmosphere and society. A central concern was how any change in one component, for example, port growth, would affect change in the others, and vice versa. But this was not all. Actors did not limit their reflections on how to govern climate change interdependencies to the port area. Rather, a second set of territorial interdependencies governing port activities at different scales can be identified. These were linkages made by actors between governing bodies and their policy decisions at different points along a land–sea gradient of port area, port–city, port–foreland and port–hinterland (Figure 2). Whereas the first set of climate change interdependencies helped to determine fundamental relationships to be governed by port bodies, it would be the second set of land–sea interdependencies which would ultimately determine the scope of port public action to do so. Let us examine these points more closely.

## Port governing practices implementing interdependencies selected

### *Port area*

Fundamental territorial relationships to be governed would first be done so in the port area. At this spatial scale, we found that port actors attempted an integrated spatial conversion of the port to allow for emergent industries, elaborated public/private policy tools of a circular economy and created a new space of political action.

First, a GPM must generate income renting its real estate to business (80 companies in the port area) (Duszynski et al., 2015). In the case of La Rochelle, which is described by different actors as compact, squeezed between the ocean and the city (interviews with private port actor, port authority and city actor), it has quite limited space for development (233 + 35 ha). Different port actors evoked the challenge of how to integrate the environmental dimension to grow (interview material). This mattered not least because the French ‘relaunching ports’ initiative (2013) stipulated that ports adopt integrated approaches to port conversion, managing



**Figure 2.** Territorial interdependency as linkages between policy decisions along a land–sea gradient. Source: Authors.

interdependencies between port industry, logistics, nature and urban components. The integrated governing response in La Rochelle took the form of a stakeholder project, ‘Horizon 2025’, in which port actors sought to manage any potential tensions arising between port growth, industry carbon emissions/energy efficiency, atmosphere and society. A decision was taken that conversion would occur through the rationalization of existing space, not the acquisition of additional land (i.e., no further development on natural spaces). On the one hand, the port authority wanted to manage tensions between port activities and urbanization in neighbourhoods adjacent to the port. As stated on interview, there were several ‘things that have to change’ (port public/private actor). This included plans to change the placement of port locomotives creating noise pollution or moving cereal handling away from residential areas minimizing air pollution. On the other hand, port conversion sought to anticipate new traffic and ‘green’ industrial projects in a way which would both increase the competitiveness and ‘attractiveness’ (Cerceanu & Mat, 2015) of the port, and reduce traffic in hydrocarbons. Additionally, new industrial projects were actively encouraged that would reduce transport carbon emissions, for example, projects for a liquefied natural gas station to power ships and lorries; new space for renewable energies, biomass, wood compounds, photovoltaic components, wind turbine components; a heavy lift platform dedicated to stocking wind turbine components; rainwater retention tanks, electric cars (Environmental Declaration, 2014; Port Horizon 2025; interview material).

Spatial planning was only one part of port area governance, however. The port authority, second, sought to create synergies between port companies (and with those outside the port area) bringing about transition via a circular economy (CE). CEs aim to replace unsustainable linear ones through a more sustainable circular flow of materials and energy (Korhonen et al., 2018), and have been favoured by French GPMs governing towards competitiveness (Alix et al., 2015; Buclet, 2015). CEs have also been promoted as important tools for ports’ ecological transition in regional (New Aquitaine) reports and planning instruments, as well as by local maritime consultants, (CESER, 2017; in the Regional management, sustainable development and territorial equality scheme, SRADDET 2020 New Aquitaine, obj. 12: *Odysée* Development). In the case of La Rochelle, what started as a project emerging from discussions between the port authority and the Maritime Union (and financed by the region and the French environmental and energy agency, ADEME), soon stabilized as a network of operators and

industrialists in the port area (and beyond) (Matter and Energy Rochelaise Association MER). For port actors (as for other commentators), CEs are viewed as capable of producing material synergies between companies optimizing energy efficiency, that is, engaging ‘traditionally separate activities in [...] physical exchanges of materials, energy, water and/or by-products’ (Chertow, 2000, p. 313). Rather than viewing climate change transition as an individual company problem (seen by many interviewees as a ‘thing of the past’), the putting in place of a CE has been focused on finding collective solutions for resource use and energy efficiency (e.g., recuperation of rainwater, recycling of waste, energy use, solar panels on hangars, building insulation). Yet, similarly to discussions over port conversion, arguments in favour of a CE were not just couched in terms of emission reductions of current industry. Rather, they anticipated an increase in water and energy consumption in the future growth of port activities which would need to be governed (larger vessels, new industry) (interview material; Environmental Declaration, 2014).

Critically, the implementation of a CE was not only directed towards governing climate change territorial interdependencies, but also those between public and private actors. Indeed, the ‘out of silo’ reasoning underpinning a CE already embodies a vision of company relations as potentially interdependent (Duszynski et al., 2015). As well as promoting industrial symbiosis, the implementation of the CE also had a governance function, namely to weave relationships between economic actors through accompanying the ecological transition of companies via exchange, federative practices and the creation of a culture of confidence (Cerceanu & Mat, 2015; Georgeault, 2015). When exercising this governing function, the port authority positioned itself as a custodian, drawing on the MER initiative as providing new institutional resources to accompany the change of private companies:

if you tell a company that they are an actor of ecological transition but you don’t accompany them then they either don’t sign up or they don’t watch what they are doing and there is no follow up on change. (interview with a port public/private actor; present authors’ translation)

In summary, the implementation of the strategy in the port area resulted first in new projects and spaces for governance of defined territorial interdependencies, as well as public/private ones. However, when working within these new governing spaces, effort has been made to depoliticize any tensions arising between components and instead work to find synergies between both actors and objectives encouraging communalization (especially in the light of local opposition to the port conversion project).

### *Port–city*

Port action to govern territorial and public/private interdependencies was not limited to the frontiers of the port area. Instead, port actors made linkages between decisions taken in the course of implementing the port’s strategy and those made by the city of La Rochelle developing its own territorial projects. Working together around these linkages, port and city actors created a new port/city governing space and designed new public/private policy tools. These actions extended the influence of port actors over a wider coastal territory (170,000 inhabitants). La Rochelle is a coastal town ‘built on the seafront’ (interview with a public city actor, 2019). Like other cities in France, it has recently acquired new legal and political competences under territorial reform legislation (Loi Notre). Within these changing responsibilities, the city has embarked on a new political dynamic in the name of energy transition and ecological resilience. Political momentum has its roots in the development of a new project at the scale of the wider urban agglomeration based on three pillars establishing a ‘territory of tomorrow’: ‘creativity, solidarity and sobriety’ (interview with a public city actor).

As reported by both port and city actors, although the port and the urban community have not always had good relations, in the last few years they have both come to realize that they share similar objectives which would be easier to achieve if they worked together. Both sets of actors described common governance arrangements as constructive: ‘we do not want to do anything to harm these relationships’ (interview with a public city actor). Port–city interdependency has especially been forged around the design and governance of a territorial innovation project called ‘La Rochelle: a zero-carbon territory 2040’ (TIGA project):

we replied to a Project Call which has led us to reduce carbon emissions and do this as a voluntary and positive interdependence around a strategic common objective’ (interview with a public city actor; present authors. translation)

As at the port area, project design and implementation promotes not only territorial port–city interconnections, but also public/private ones via the creation of a new partnership between the port authority, La Rochelle agglomeration, the University of La Rochelle and the Association Atlantech. This partnership has elaborated a new decarbonization strategy for the territory of the urban agglomeration (28 local authorities), including the port area. Its intention is to reduce the carbon footprint of the territory by 30% (by 2030) and achieve full carbon compensation through sequestration by 2040.

Like the MER Association initiative, this zero-carbon project provided a framework for the emergence of a new governing space, in this case a transversal port–city one. This is because governing at the port–city interface not only enabled the sharing of ideas and experience, but also provided a joint port–city platform for lobbying on behalf of a common zero-carbon policy. Governing practice has sought to seek synergies (rather than promote tensions) between (local business) growth, energy efficiency/carbon emissions, atmosphere and society, especially through promoting numerical and market-based approaches to meet actors’ goals. For example, within the project, a territorial numerical platform will collect urban community carbon emission data and monitor change in emissions. Linked to this, a territorial ‘carbon aggregator’ has been designed as a mechanism for issuing and selling carbon credits, open to citizens, businesses and community associations (Lerivain, 2019). A newly created cooperative will evaluate emission reductions as proposed by individuals, social groups or businesses, valorize them as carbon credits and sell them to support companies in a ‘local ecosystem’ (Anne Rostaing, Atlantech, cited in Lerivain, 2019). Synergies have also been sought by actors between the growth element of the project and conservation. They anticipate that conservation actions on adjacent coastal wetlands can enhance biomass photosynthesis and hence carbon capture (blue carbon). To produce new knowledge on these processes, research projects are investigating the capacity of freshwater and salt marshes to absorb carbon, including how conservation actions can be developed to these ends improving their carbon efficiency (i.e., not only biodiversity restoration) (interview material).

In summary, as at the port area, the implementation of the strategy has included the building of a new space for governance, this time linking political choices made at the scale of the agglomeration with those made in the port area. The recognition of these interconnections, and the putting in place of a cooperative and associated market mechanisms to govern them, has allowed the political authority of the port to extend beyond the port area influencing policy choices over a wider territorial community (e.g., on finance and land-use change). Once again, port governance of this interface has been supported by narratives seeking positive synergies between interdependencies. This matters because, as the examples above make clear, actors expect that, by playing down any possible tensions at the heart of territorial and public/private actor interdependencies, the zero-carbon project will support not only future territorial growth, but also will enhance port attractiveness, that is, through paving the way for port applications for new projects under the carbon aggregator scheme.

### Port–foreland

Port actors' understandings of which land–sea interdependencies to govern to implement their strategy did not stop at the frontiers of the urban community. To achieve their goals, port actors have further recognized the importance of influencing choices 'out to sea'. At this scale, port actors have not created new spaces for governance, but have instead engaged in already existing regulatory and decisional frameworks of those public policies governing the seas (e.g., European Union (EU) and French maritime public policies).

the sea is not an empty space or institutional void, even if it looks like it is. There are maritime routes which we don't see, because all we see is water and boats arriving into the port, unlike roads on land which we can see. The sea is blue, it is magnificent, I can see the horizon, yes, but it is extremely regulated and zoned. (interview with a state-in-the-region public actor, 2019; present authors' translation)

This has raised different challenges. But these notwithstanding, port actors have still been able to influence the setting of new policy objectives at this wider marine scale.

Whereas carbon emissions from shipping would be an ideal issue for port governance 'out to sea' (Gibbs et al., 2014) (about 74.1% of total emissions in La Rochelle), the port authority has little influence on their regulation. There are also limits to a GPMs' fiscal powers (Berrier, 2019). Instead, the main area where the port authority has sought governance influence 'out to sea' has been over the issue of renewable marine energies. Of central concern has been the proposal to create a marine energy park in nearby coastal waters (Isle d'Oléron; Isle d'Yeu; Noirmoutier) – a project initially led by the energy company WPD Offshore (in partnership with the agency for hydrographic and oceanographic services SHOM, the electricity transmission network, RTE, and France Energie Eolienne) and more recently by the French Ministry for Ecological Transition (within the framework of its energy policy). Port actors support this project, viewing the port area as a potential base and receiving terminal for equipment (e.g., stocking equipment for constructing wind turbines; deploying its recent heavy lift sector for placement and maintenance of wind turbine components; and managing ship transportation for turbine installation). Yet, although a key supporter, the port authority does not lead on decisional processes determining whether the project will go ahead. The French state coordinates the project through maritime, regional and county 'prefects', who along with the 'state in the region' administration on energy and climate (Directorate General Energy and Climate, DGEC) and following a public debate (commenced in July 2021), will ultimately rule on the marine energy park.

Consequently, the port authority, acting on behalf of port bodies, has sought instead to influence the contents of local marine regulation and especially the setting of those regulatory objectives which embed the project on the local policy agenda. This matters because the marine energy park, as with many such parks in France (Benvegna, 2019) is heavily contested. First, the port has engaged to influence the contents of a recently developed 'Atlantic Seaboard Strategy' for the Bay of Biscay (Document Stratégique de Façade – DSF). The DSF is a powerful public policy instrument. Its objectives are legally binding, holding primacy over local (terrestrial) planning documents, such as the regional one (SRADDET). Grasping the reglementary potential of this document, the port authority engaged over its contents and as much as 'state in the region' officials from the interregional directorate of the sea (DIRM), responsible for its final contents, allowed, advising on those DSF objectives that most concerned its activities (interview material). Critically, this contributed to the eventual elaboration in the DSF of a public commitment to accompany the growth of marine renewable energy in the adjacent sea region (objs 2.2, 2.4).

Second, the port authority also engaged in the elaboration of the charter and accompanying orientations of the recently created 'Gironde Estuary and Pertuis Sea' marine nature park (2015), whose jurisdiction (6500 km<sup>2</sup>) covers the area of the proposed wind energy park. Seizing the

potential of the marine nature park to influence the governance of the sea (marine parks are a central tool of the French Biodiversity Agency), as one of many stakeholders, the port authority has worked to align its interests with those of the park, influencing, for example, the 37th aim of the park which states that ‘marine renewable energy is compatible with main ecological issues concerning the protection of species, habitats and ecological functions’.

This aim notwithstanding, however, not all park members agree with the marine energy project and port influence on park interests has certainly not been settled through written aims. Conflicts over the park’s borders and its hierarchy of biodiversity and economic objectives have been omnipresent since its inception (Lafon, 2017). Even though economic activities can take place in the park area, this is an unstable compromise. Indeed, the very wording of the 37th aim of the park has since been called into question:

it should not say that marine energy is compatible, but that it should be made compatible. (interview marine park official)

In short, whereas the port authority has engaged over park rules and port actors consider the nature park as an important governing arena, actor interdependencies therein, unlike those at the port–city interface, are described as ‘negative ones’ to be overcome. Not all stakeholders on the marine nature park management committee select and promote the same territorial interdependencies as the port.

In summary, when seeking to make linkages between port–sea decisions, the port authority encounters several public policy challenges implementing the port’s collective competitiveness and ecological transition strategy, and which it has sought to turn into opportunities as far as possible. Yet in this work, port actors have been confronted by other stakeholders and social groups who, rather than seeking synergies between port growth, industry carbon emissions/energy efficiency, atmosphere, society, are opening these up to controversy by confronting them with what they consider as an alternate territorial narrative on biodiversity protection (port development, marine ecosystems, coastal communities). These wider politicizations are currently playing out in the framework of an ongoing public consultation on the marine energy park organized by the French national committee for public debate (*Commission nationale du débat public* – CNDP), with some stakeholders pitching the marine energy park as potentially against biodiversity protection (e.g., through evoking social representations of wind turbines as constituting collision risks for migratory birds).

### Port–hinterland

Port actors’ understandings of which land–sea interdependencies to govern did not only extend ‘out to sea’, but also ‘into the hinterland’:

The port strategy was built with perfect knowledge and desire to develop interior aspects, territorial aspects, because a port cannot just be orientated towards the sea. (interview with a port private actor; present authors’ translation)

It will suffocate itself if it does not think about the hinterland. (interview with a port private actor; present authors’ translation)

Port actors’ definition of what constitutes ‘the hinterland’ is fundamentally connected to port traffic and disproportionately large compared with the size of the port: during interviews, actors often stated that the map we provided was not large enough to capture their representation of this territory. Actors spoke of Charente county (cereals) as the direct hinterland (80% of harvest passes through the port via companies SICA or Soufflet), and the Centre region of France

(soft wheat) as a more distant one. Import traffic further extends the frontiers of the hinterland to the north and south of La Rochelle (agro-food supply chain, e.g., fertilizers, protein plantmeal), to the Dordogne or Rhone corridor (wood pulp imports from Brazil and Uruguay) to the Auvergne (heavy cargo, wind turbines). Reducing the carbon emissions of these traffics is a central part of the port's strategy, shared by the port authority and transport companies alike.

However, unlike at the other gradients, port actors have neither been able to create new spaces of political action nor design policy instruments to link port–hinterland decisions. An absence of regional governance arrangements, in which land–sea transport and energy choices could be made to join up, has resulted in governing practice being limited to actions of problematization and politicization. Of course, logistical actions have affected a modal shift from road to rail transport, whereby the port authority and private port logistical companies have worked together to increase the percentage of rail transport (from 7% to 15% over 10 years, and setting a target of 25% by 2020), including the creation of a private freight railway operator, OFP Atlantic, as a business lever (the first French operator of this type) (CESER, 2017; Port strategy 14/19). At the same time, logistical efficiency has been sought, for example, by not letting lorries leave the port empty. Another possibility evoked to gain new traffic has been to promote the modal shift of already existing industry, for example, cognac (produced in the Charente and currently transported via container lorry directly to the port of Rouen).

In the absence of governing arrangements, port actors have engaged instead to define the port's conditions as public problems to be addressed and open them up to debate – voicing them in the port strategy and in discussion with regional actors. In this, port actors rely on public scrutiny reports which state that legislation on transport orientation is not being implemented and government promises not forthcoming (Sénat, 2019; Cour des comptes, 2017). They have also argued that effective governance depends on many actors at different scales acknowledging wider port–hinterland connections:

there is an important political and investment issue for local and regional government ensuring that freight railway becomes the life blood of our economy. (interview with a port private actor; present authors' translation)

Working on behalf of the port's strategy, the port authority has contributed to reports on the regional development of ports (CESER, 2017) and planning documents (SRADDET) and also, as we saw in the previous section, to the DSF, this time over the setting of an objective to improve port access and favour the modal shift (2.4). The CESER report highlighted that weak hinterland industrialization was in part caused by a lack of rail access and a fragile economic model and poor state of the capillary network, despite recent investments by the French national railways' operator, SNCF. It called upon public actors to support railway infrastructure, whilst recognizing that the rail network requires millions of euros in investment. Evoking logistical challenges, such as the need to concentrate freight to run full trains, it concluded rather pessimistically that: 'taking account of the current rules of the game, the rail system has no chance of developing in proportion to what is at stake and the challenges needed to be overcome' (CESER, 2017, p. 41; present authors' translation). In the meantime, the port authority has built on its political work in the port area and at the port–city interface (objective 12 of its Sustainability Charter; 1.5 SRADDET), and port actors have sought EU funding for an EU TEN-T network enhancing hinterland rail transport links in partnership with the agglomeration of La Rochelle.

In summary, making linkages between decisions at the port–hinterland has been the hardest governance challenge both due to a lack of regional governing arrangements and decisional arenas, as well as difficulty accessing decisional processes at French-wide scales. Where land–sea governing arrangements do exist, they are mainly devoted to water quality and biodiversity (within the frameworks of EU water and marine directives), rather than trade and transport



issues linked to climate change transition. For these reasons, port governing practice here has been limited to defining and politicizing the problem to be addressed, building alliances and advancing arguments explaining and legitimating port actions.

## DISCUSSION AND CONCLUSIONS

In this article, we have shown how a port has worked to position itself as a proactive, intermediary political actor, influencing a mutual conditioning of ecologization and territorialization through port governance. This happened when different types of interdependency were selected and promoted by port actors for this governance. First, in the elaboration of their strategy, port bodies selected and promoted specific territorial interdependencies understood as interrelations between port growth, carbon emissions/energy efficiency, atmosphere and society. Their governance of these interconnections was supported by a climate transition narrative seeking positive synergies between multiple objectives of increased growth, low emissions, high efficiency, cleaner atmosphere, healthier society, coupled with a depoliticization of any potential tensions arising. Second, port actors also recognized territorial interdependencies understood as interconnections between political decisions taken at different points along a land–sea gradient. These were viewed as critical ones to politically influence either the design of new policy tools, the setting of policy objectives or definition of public problems. As these determined the scope of the port’s public action, the port’s political influence was neither restricted to the port area nor even the port–city interface, but extended both ‘out to sea’ and ‘into the hinterland’.

Although its reach has been wide, the port has had varied influence, as not all types of governing practice were mobilized at each point along the land–sea gradient (Table 1). Port bodies have had most political influence over actions at the port area and least at the hinterland. Port–city governance has sought to promote positive actor interdependencies, whereas governing out to sea has had mixed results, given that not all stakeholders select and promote the same territorial interdependencies as the port. Additionally, whereas in the port area and at the port–city interfaces port actors were able to influence the development of new policy tools governing transition, ‘out at sea’ the port authority had to engage in newly established decisional bodies where it was one amongst many actors shaping objectives, mandates and politics. Finally, inability to influence at the port–hinterland interface was in part explained by an absence of regional governing arrangements linking land and sea over trade and transport

**Table 1.** Summary governing practices linking political decisions made at different points along a land–sea gradient.

Land–sea interface/governing practice	Port area	Port–city	Port–sea	Port–hinterland
Defining climate transition as an interdependency problem to be governed	×	×	×	×
Building alliances with other public and private actors around this definition	×	×	×	×
Building organizations as new spaces for public action and designing new policy tools	×	×		
Participating in existing decision-making bodies setting new policy objectives	×		×	
Problematization and politicization: advancing arguments in public arenas to explain actions taken	×	×	×	×

issues in line with climate transition. This was important for hinterland actions and also for the successful implementation of those at sea or in the port area. For, as our interdependency approach makes starkly clear, the capacity of ports becoming ‘entrepreneurs’ boosting French geopolitical maritime strategy depends too on terrestrial transport policy effectiveness. As communicated on interview by different actors, governing the maritime–terrestrial interdependency becomes ever more complicated once public action goes beyond the simple question of the coastline.

Jurisdictional interrelations between public actors at different scales were also in evidence in our case study. First, through their governing practices, port actors brought the port authority into relation with different scales of the city, the marine park, the sea region, the seaboard and the land region. Second, as we have argued throughout, although the port is a state public body and the state holds ultimate authority over GPM activities (and this authority was not questioned by actors: on the contrary, it was actively defended), in reality ‘the port’ refers to a number of different port bodies composed of a range of public actors representing different administrative tiers of government. Many of these individuals also wear multiple hats and adopt multiple positioning strategies. Consequently, even if the state retains an important authority overseeing decisions, port policy is not the preserve of the state.

It follows that governing territorial interdependencies also affected ongoing processes of port communalization (Foulquier, 2016; Foulquier & Lamberts, 2014), and was neither disassociated nor exogenous to the ongoing social construction of the port as a collective actor. As discussed, port bodies are not only composed of multiple public actors, but also private ones representing corporate and civic society interests. Our analysis revealed another type of interdependency at work behind governing choices, namely between the economic and the political and between public and private actors (Foulquier, 2016), whereby existing relations between these public and private actors were recast as relevant interdependencies to govern for transition. Time and again, the finding of positive synergies between climate territorial interdependencies and public and private actors were worked on together – not just in relation to current port activities, but in anticipation of developing new traffic (the recently published port strategy to 2024 continues this trend). This was done within a spirit of depoliticizing any potential tensions arising within these interrelationships, important because, as others have shown, when subject to conflict these can work against the potential power of the port as a collective actor (Foulquier & Maugeri, 2014). Although beyond the scope of this paper, our results raise a question about how much the communalization of the port as a collective actor ultimately locks the port into a particular form of depoliticized governance which influences certain climate transition choices over others – and hence certain territorial futures over others.

Overall, our study revealed the port of La Rochelle engaged in a complex climate politics whereby both strategies of politicization and depoliticization were in evidence. These twin political processes have been shown in other contexts to be an inherent feature of contemporary environmental politics (Anshelm & Haikola, 2018). In the case of La Rochelle, the full effects of such practices have yet to be realized. On the one hand, port bodies have worked politically to open new spaces for climate transition governance and a reallocation of resources, contributing to the placing of this issue on the local agenda and the political recasting of social relations, especially between the port and the city. New spaces for transition politics have thereby been created, either through organization-building (e.g., the creation of the MER Association; the port/city zero carbon project) or through influencing regional regulatory commitments (e.g., objectives 2.2 and 2.4 of the DSF; the 37th aim of the Charter of the Marine Park; see sections above). On the other hand, once engaged in these new political spaces, the port working with other actors, has been keen to depoliticize any potential tensions arising therein. This has resulted in the ‘naturalization’ (Darling, 2016) of otherwise value-laden policy choices and an absence of discussion over hierarchies of ‘winners’ of policy implementation. For example, we

need to know more about the carbon credits' aggregator being established in the zero carbon territorial project as a compensatory and 'territorial marketing' (Bognon et al., 2020) tool to fully understand its political choices and outcomes governing the port/city interdependency. Similarly, many scholars have argued that there is nothing 'intrinsically green' or 'inevitably sustainable' about a CE (Korhonen et al., 2018; Zink & Geyer, 2017) and many questions have been raised over how to measure CE environmental performance. As argued by Buclet (2015), actors often seize CEs to enhance competitiveness and hope that this will reduce their environmental impact. Because CEs are linked to production, to have less impact, actors must show that they have reduced production overall, and that CE products and materials offer true market substitutions (Zink & Geyer, 2017) and are not simply produced in addition to primary ones. Uncertainties can and have been raised too over their redistributive effects and their relation to social equity (Kirchherr et al., 2017).

As far as our case study is concerned, it is too early to judge whether the port's public action will ultimately have what Barry has termed political or anti-political territorial effects (2002), that is, whether the territorial politics surrounding these choices have been foreclosed. As we have stated, there is already evidence of territorial opposition over some objectives, for example, some stakeholders have contested the port conversion project and others the marine energy park. How this will play out in the long run is unclear, but worthy of future study, in particular concerning those sectors whose transition will ultimately be affected (at the moment, energy and transport industries appear more affected than agrifoods; additionally, cruise shipping is absent from our analysis).

For all these reasons, our approach can complement the existing specialist literature on port governance, either through extending analytical attention to ecological transition or through producing empirical results on the port's engagement in multiple political processes shaping both ecological and territorial outcomes. In particular, our study has shown that public policies and governing strategies deserve greater attention when assessing a port's sustainability than they have been given hitherto in the specialized literature on green ports. As our results make clear, public policies matter first because they establish legislative and political frameworks which can either facilitate or inhibit policy options in the port area and beyond it. They matter second because they can create decisional structures in which port actors may choose to engage, thereby potentially shaping the contents of local rules and regulatory commitments affecting port strategies. For both these reasons, the very notion of port sustainability effectiveness and performance, often focused on measures in the port area, could usefully be extended to include consideration of a port's political engagement in governing processes at several wider scales.

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## NOTES

1. Green ports are discussed in a separate literature focused on port area performance, tools and logistics, raising a set of issues outwith the scope of this paper (Hossain et al., 2019; Lawer et al., 2019).
2. This case study was undertaken as part of a larger European Union H2020 project examining coastal/rural dynamics in sustainable territorial development (COASTAL no. 773782; <https://h2020-coastal.eu/>). In line with its aim to inspire long-term coastal-rural synergies, COASTAL helps highlight how ports can promote new territorial interdependencies.

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