

## **Territorial dimensions of energy transition and new spatial inequalities in peripheral regions: the case of Sardinia, Italy**

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“Energy needs space”. This statement is at the core of *Energy as a spatial project*, the book by the MIT architect and urban designer Rania Ghosn (2010, p.7), in which she shows the longstanding relationship between energy, space, capital and technology. Oil wells, pipelines, dams, nuclear plants, high voltage cables, wind farms, thermoelectric power plants are just some of the tangible manifestations of energy in space. From the first power plant created in 1882 to today several changes have been occurring with respect to methods of production, distribution and use of electricity. As a consequence, energy flows have been moving across larger territories, leaving on the ground a wide range of artifacts. Traditional power stations have been moving away from urban centres, while electricity transmissions and transformation infrastructures have almost disappeared from the view in most European cities. Such infrastructures have been re-emerging in the peripheries of “planetary urbanisation” (Brenner & Schmid, 2012) constituting those “operational landscapes” (Brenner, 2014) allowing the functioning of major cities.

As energy historians have been showing, the multiple energy transitions occurred in the last century have been achieved through a mix of technological innovation (and interests) promoted by energy firms and public policies (Rubio-Varas & Muñoz-Delgado, 2019). Europe is currently undergoing a particular “critical juncture” (Collier & Collier, 1991) with respect to energy transition, enshrined by the introduction of the *European Green Deal* (2019) and anticipated in the previous years by numerous policy indications both at the level of the Union and of the single states. Moreover, the EU budget adopted on December 2020, composed by the EU’s long-term budget and the *NextGenerationEU* tool for the post-pandemic recovery, will be “the largest stimulus package ever”, aimed at promoting a digitalisation, resilience, preparedness and a just energy transition.

Therefore, urban and regional scholars are currently in a privileged position to observe such critical juncture and to investigate the ways in which it unfolds in a variety of territorial contexts, including peripheral regions characterised by structural socio-economic, political and environmental fragilities (Pessina, 2019). While on one hand multiscalar public policies promote de-carbonisation and emissions’ reduction, on the other hand major energy utilities - often turned in multinational companies as a consequence of the EU energy liberalisation process (Geroldi & Pessina, 2019) - have been investing large amounts of capital in research both on technological and on financial innovation to comply with the new policy requirements and to take advantage from them.

As a matter of fact, the financial dimension has been gaining increasing importance for the energy firms (Lohmann & Hildyard, 2014), currently competing on international stock exchanges through promises of de-carbonisation, emissions’ reduction and involvement of local communities. On one hand, the energy firms seem to lose touch with the real territories, dematerialising in the universe of finance. On the other hand, space is still at the core of contentious practices of re-territorialisation (Brenner 2004; Raffestin 1984) of energy firms and policies. In order to grasp the complexity of the current socio-economic and energy transition, it is necessary to overcome strict disciplinary boundaries (Szeman & Boyer, 2017), also through the underdeveloped energy ethnography approach (Smith & High, 2017; Goodman, 2018). Such approach can fruitfully complement geographic and territorial analyses used by regional planners through a specific focus on the social and material dimensions of apparently invisible energy infrastructures and transition processes.

Elaborating on policy documents, data collection, in-depth interviews and ethnographic observation, the present research investigates the territorial dimension of energy transition in a specific region of Southern Europe. Sardinia, the second biggest island of the Mediterranean, is undergoing deep transformations in its local governance structure due to the current energy transition, promoted by national and supra-national de-

carbonisation policies. Traditionally a peripheral region in the Southern European context, Sardinia's economic and territorial development has long been bound to its coal-mining past, which resulted in the transformation of former mining areas in metallurgical industrial poles or in areas devoted to the international war industry.

Nowadays, Sardinia presents high degrees of unemployment in the heavy industrial sectors, high levels of soil, air and groundwater pollution in the former mining and industrial areas and a strong dependency from seasonal touristic activities (mostly concentrated along its fragile coasts). On the other hand, the region presents ideal climate conditions (solar/wind availability) for a successful de-carbonization process (Alves Dias et al. 2018), resulting in strong policy recommendations towards the transition to renewables (Osti, 2018) and in studies on future landscapes of energy (Podda, 2019). In reality, two large scale coal-fuelled power stations are still operating in the island, in the localities of Fiume Santo, in the North-West, and Portovesme, in the South-West of the region. Moreover, the main energy and oil&gas firms traditionally operating on the island are developing controversial large scale wind and solar farms on farmlands, despite the availability of vast and polluted empty former industrial (e.g., in Porto Torres and in Porto Vesme) or mining areas (in the Sulcis-Iglesiente region). The investment by large multinational energy/oil&gas companies on renewable energy, while continuing the operation of polluting plants, shows the existence of a contentious energy politics, formally in line with EU requirements for energy transition.

Moreover, the island is in a strategic position in the Mediterranean and is on the way to become an LNG gas hub. While on one hand the introduction of gas on the island is contested by parts of the local population which considers it an outdated (fossil) energy option, on the other hand such transition is already highlighting ongoing processes of territorial rescaling. The proposed paper will investigate the rescaling process and the role of international oil&gas companies or energy utilities in the local territorial governance, in the framework of the current EU energy transition policies. Eventually, the paper will highlight the rise of new socio-economic inequalities related to the energy transition in Sardinia and beyond.

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