



**ENTRANCES**

ENergy TRAnSitions from Coal and carbon: Effects on Societies

# POLICY BRIEF

July  
2023

## Sulcis Iglesiente, Italy



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This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n° 957751

## ENTRANCES PROJECT

ENTRANCES (ENergy TRANSitions from Coal and Carbon: Effects on Societies) is a three-year project funded by the European Union's Horizon 2020 research and innovation program. The project addresses the Social Sciences and Humanities (SSH) aspects of the Clean Energy Transition (CET) through the development of a theoretically based and empirically grounded understanding of cross-cutting issues related to social aspects of the transition in European coal and carbon-intensive regions and the formulation of a set of recommendations able to tackle these issues. To that end, 13 coal and carbon-intensive transition regions in Europe were studied using the same Multidimensional Analytical Framework (MAF), resulting in 13 case studies and an equal set of recommendations that reveal the complexity of the transition process and the impact in the daily life of local communities in its various dimensions.

## EXECUTIVE SUMMARY

This policy brief was developed under the Entrances Project and focuses on the results of the Sulcis (Sardinia, Italy) case study. The policy brief starts with an overview and an analysis of the challenges faced by the Sulcis Coal and Carbon Territory, i.e. saving the metallurgic sector, diversifying the economy, ecological conservation and remediation, and combating peripheralization.

Based on a cross challenge analysis we have raised two fundamental questions. The first question is about why Sulcis has not significantly progressed in its challenges, despite the local commitment and the availability of resources. The second one is about what role the clean energy transition is playing in the de/re-territorialization of Sulcis. To answer the first question, based on the research results, we have singled out a set of factors that hinder the activation or the effectiveness of a territorial action. Such factors, if reversed, may also be thought of as additional challenges that should be faced to activate a process of “territory-making”, in our view it is an essential condition for any future policy or plan of territorial development. To answer the second question, we have analysed some impacts that the clean energy transition is having or might have on the territory. It is clear, the clean energy transition is disjointed from the objectives of territory-making of the Sulcis CCT. We suggested that developing an inclusive energy transition strategy for the territory is a further challenge to be addressed by Sulcis.



# INTRODUCTION TO THE CASE STUDY

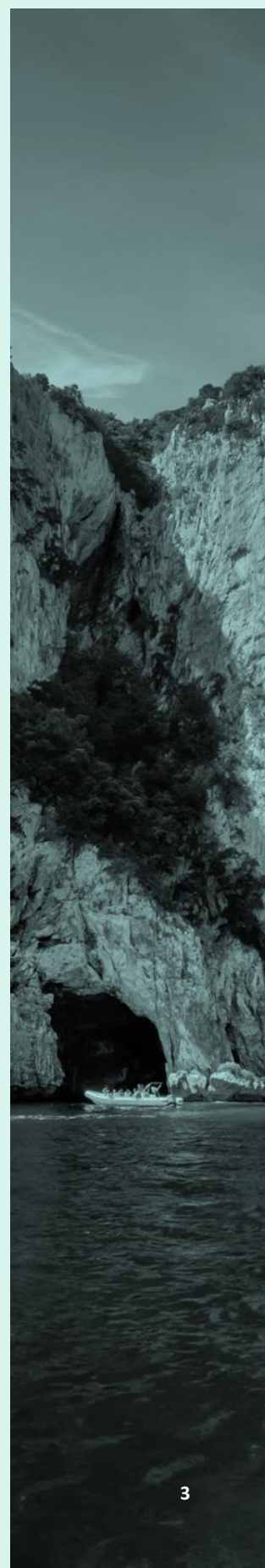
The Sulcis Case study was centred on the Sulcis “coal and carbon territory”, the portion of Sulcis territory composed of nine municipalities that has a strong identification with coal mining and that is dependent on carbon-intensive industries. This is the area that historically hosted the only Italian coal mine (that stopped production in 2015), where the non-ferrous metal industries proliferated, and where one of the two main coal-fired power plants of Sardinia is based. The area is relatively small (534.6 sq Km) and with a limited population (64474 inhabitants), a good part of which lives in the Sulcis capital, Carbonia (26,813 inhabitants), a city founded in the 30s by the fascist regime and whose name means “city of coal”.

The Sulcis coal and carbon territory has been subjected to significant and ongoing economic restructuring since the 90s when the publicly owned aluminium companies were privatised. In the period 2008-2012, following the economic crisis, two out of three of the biggest employers in the local non-ferrous metal industry closed or stopped production. It has been estimated a loss of 3000 direct and 10000 indirect jobs in the area. In the same period, following an infringement investigation on competition rules by the EU, the extractive activities of the local coal mine stopped, with a further loss of jobs. In this critical context, further pressure on the territory arrived with the decision of the Italian government to phase out coal in Italy by 2025, and with the energy crisis started before the Russian war in Ukraine. The combined effect of these events endangered the other two main employers in the area, the coal-fired power plant and the Portovesme Srl, the only non-ferrous metal industry still active after the economic crises of 2008-2012

## Key questions

**Key Question1.** What are the challenges faced by coal and carbon transition regions in different dimensions of change?

**Key Question2.** What are the emerging coping strategies and what policies could be more effective to address the identified challenges?



# METHODOLOGY:

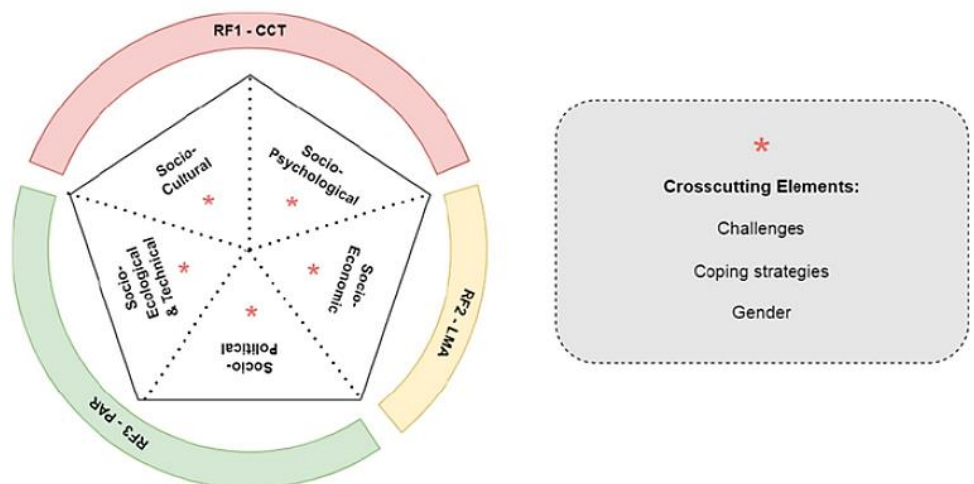


The ENTRANCES case studies were structured into multiple foci (Territorial Change, Structural Change and Clean Energy Transition) and respective units of analysis (Coal and Carbon Territory, Labour-Market Area and Political Administrative Region) to better address the scope of research. Additionally, a comprehensive Multidimensional Analytical Framework (MAF) consisting of five components: socio-cultural, sociopsychological, socio-economic, socio-ecological, and technical component, was adopted to study the complex and multidimensional dynamics in place.

Each component of analysis is supported by specific concepts and methodologies, as well as three cross-cutting elements: challenges, coping strategies, and gender dimension. The resulting challenges, as well as the gender dimension analysis, provide a very clear picture of the real situation in the region of analysis, accurately highlighting the problems related to the demographic, economic, social, cultural and political configuration. The initial results obtained from the different coping strategies generate new avenues for the discussion and recommendations presented in this policy brief.



## Overview of the Multidimensional Analysis Framework: Research foci, components and crosscutting elements





## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 1



### Saving the metallurgic sector

#### Current situation

The Sulcis CCT economy has been driven over the last 50 years by the non-ferrous metal industries and in particular by the industrial Pole of Portoscuso. The local aluminium industry is in a state of crisis as all the industrial activities involved have been either stopped, dramatically reduced or are currently at risk. The closure of two of the main companies operating in the sector has already led to an estimated loss of 3000 direct and 10000 indirect jobs, and other thousands of jobs are at stake with the planned phase-out of the Grazia Deledda Power Plant and with the current crisis of the PORTOVESME Srl due to rising energy prices. This crisis determined a dramatic social and economic situation within the territory. Among other effects, the economic and employment crisis is considered among the factors inducing people to leave the territory and a key factor for a reduced attractiveness of the territory for job-related immigration.

#### Desired outcome

The desired outcome is the re-launching of local industries with the capacity to create new employment opportunities in the area and to preserve the jobs that are at risk while preserving the “industrial vocation” of the territ.

#### GENDER DIMENSION

The current economic crisis has affected men and women in different ways. As for men, most of the workers of the Portovesme industries are men, and they have been directly impacted by the crisis, losing their jobs, or stopping working with compensation or subsidies. The research has registered that some of the workers who lost their jobs decided to emigrate to find new jobs while waiting for the situation to improve in Sulcis. This reportedly resulted in increased care work for women who remained in Sulcis with their families. As far as we are concerned, the challenge has not been addressed from a meaningful gender perspective yet.

## 1

### Coping strategies: public incentives for private investors

The main strategy adopted to cope with this challenge was the adoption of public incentives for private investors so that industries might re-open and jobs preserved. Among the actions pursued, there is a long-lasting negotiation engaged by the workers with the Italian government and the Sardinia Region for support and incentives for the aluminium companies, and ongoing plans and funds for re-activating the sector through LNG supply also to substitute the power generated from coal after the coal phase-out. More than a decade of negotiations allowed the creation of some favourable conditions for the investments, such as more favourable energy prices for carbon-intensive industries, and the plans for synergies between the Aluminium industries and the Grazia Deledda Power Plant. Among the obstacles faced, there is the spread of an anti-industrial attitude of the local population; the increasing difficulties due to high costs of production in Sardinia compared to other locations; the predatory attitude of the international companies, which quit the territory when it is not profitable anymore; the increasing difficulties in delivering state support to the industries in a regime of fair concurrency in the European market; widespread conflicts on energy production and industrial investments in the area. Despite this strategy being one of the main points of the Sulcis Plan, and despite the support of the institutions, the two closed businesses have not restarted production yet.





## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 2



### Diversifying the local economy

#### Current situation

The dependency of the Sulcis Coal and Carbon Territory economy on the metallurgic industries is still very high. The crisis of this sector has shown the vulnerability and susceptibility of the territory to change in the energy and metal markets, as well as to national and international decisions.

#### Desired outcome

The desired outcome is that of diversifying the local economy and going beyond what has been called the “mono-economy”, thus making the territory more resilient and less exposed to the markets and national and supranational decision-making.

#### GENDER DIMENSION

The diversification of the local economy may have a positive impact on women’s employment opportunities in the sectors of tourism, agriculture and fisheries and the R&I sector. However, as far as we know, the active role of women is not explicitly addressed both in the formulation and in the pursuit of this challenge.

### 1 Coping strategy: Promoting Tourism, Agriculture, Farming and Fisheries

Among the actions pursued, there is the development of the National Museum of Coal; plans for developing a touristic port for Sulcis (Porto Solki), proposals for improving mobility infrastructures and for eliminating polluting structures; the attempt to commercialise local food and wine productions. Among the obstacles faced there is the lack of accommodation facilities; poor transport infrastructure (both roads and trains); a weak territorial tourism system; lack of adequate training for local entrepreneurs; a gap in digital skills and infrastructure; portion of the territory are polluted and are forbidden to produce food; competition on limited resources with other more established tourist areas in Sardinia; the closeness to Cagliari that makes Sulcis as a weekend residential area of the city dwellers; a stigma on Sulcis as an industrial and polluted creates a bad reputation for tourism.

### 2 Coping strategy: Making Sulcis a Research and Innovation Hub

This strategy is based on the idea that the coal mine infrastructure offers a unique opportunity for research and innovation, giving to Sulcis a competitive advantage in the production of innovative products, technologies and materials. This strategy is based on the ongoing conversion of the Nuraxi Figus coal mine to an R&I HUB. CARBOSULCIS, the regional-owned company that is the owner of the coal mine, is already working on several R&I projects that are already ongoing in the Nuraxi Figus coal mine. Among the obstacles faced there is the lack of appropriate public support –also in financial terms –by public actors (for instance by Sardinia Region) to fulfil these plans. The political support for the project is also fading.

### 3 Coping strategy: Developing a pole for shipbuilding and innovation

Deploying existing infrastructures and facilities, industrial synergies, and local competencies in the manufacturing sector, this strategy aims at developing a shipbuilding and innovation pole in the Portoscuso Port. The strategy wants to intercept the growing request worldwide for luxury boats, and the strategic position of Sulcis in the Mediterranean Sea.. The project foresees different activities: refit & repair of yacht boats, research, and innovation on green energies for boats, and touristic activities in the territory. So far, a project was presented to INVITALIA (national funding agency), worker reskilling plans were developed, and contact with partners to fund the company were activated. Among the obstacles faced, there is the plan to install an FRSU in the Portoscuso boat which is perceived as a direct threat to the development of the pole.<sup>6</sup>



## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 3



### Ecological remediation and conservation

#### Current situation

The Sulcis CCT is disseminated with “environmental scars” of its coal mining and industrial history. Many polluted and contaminated sites need environmental remediation interventions. Some parts of the coast are also contaminated and hazardous to health. The territory is also endowed with some ecological treasures that need to be conserved and valorised.

#### GENDER DIMENSION

We have not identified gender-specificities for this challenge.

#### Desired outcome

The remediation of all the polluted sites and the conservation of biodiversity in the area.

1

#### Coping strategy: Industrial and mining remediation

Many interventions are in place to reclaim former industrial or mining sites in the area. Some of these interventions were managed in the past by individual municipalities while now the interventions are funded and implemented by a regional agency. Among the obstacles identified in the research, there are huge impasses on established and already funded remediation interventions and some conflicts over the remediation techniques.

2

#### Coping strategy: Environmental conservation

This strategy is based on the idea that the coal mine infrastructure offers a unique opportunity for research and innovation, giving to Sulcis a competitive advantage in the production of innovative products, technologies and materials. This strategy is based on the ongoing conversion of the Nuraxi Figus coal mine to an R&I HUB. CARBOSULCIS, the regional-owned company that is the owner of the coal mine, is already working on several R&I projects that are already ongoing in the Nuraxi Figus coal mine. Among the obstacles faced there is the lack of appropriate public support –also in financial terms –by public actors (for instance by Sardinia Region) to fulfil these plans. The political support for the project is also fading.





## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 4



### Combating peripheralisation

#### Current situation

The Sulcis CCT is perceived as “the periphery of the periphery” as it is in one of the most peripheral areas of Sardinia island which, in turn, is considered a periphery of Italy. The territory lacks adequate transport infrastructures, including roads, trains and public transport. Besides the train Cagliari-Carbonia, the Sulcis CCT has a poor connection with the other centres in Sardinia. Moreover, Sulcis has a poor internal road and public transport network. On another note, the territory is also poorly and unstably connected with internet infrastructure, marking a digital divide with more connected zones in Sardinia and with the Italian mainland. This is also an obstacle to the competitiveness of local businesses in the digital market.

#### GENDER DIMENSION

Even though it is well known that mobility is a gender-sensitive issue, we have not found traces of gender differentiation either in the formulation of the challenge or in the strategies devised to pursue it. However, it is worth noticing that such an issue should be better investigated as it was beyond the scope of the case study.

#### Desired outcome

An increased connectedness of the territory both for transport and mobility and online.

### 1

#### Coping strategy: Infrastructural intervention in Sant’Antioco

This strategy was based on the vision to promote a large-scale touristic development of the Sant’Antioco island by improving the transport infrastructures and developing a new commercial port on the island. In this vision, such development is seen as a key to the development of the whole Sulcis area and for fighting its peripheralisation. Among the actions undertaken, there was the project to substitute the existing bridge connecting Sant’Antioco with the mainland with a new bigger bridge to be funded within the Sulcis Plan. This plan resulted highly divisive and following an opposition of local citizens, associations and local municipalities the plan was stopped during its implementation phase. However, an alternative plan for the large-scale touristic development of the Sant’Antioco island was promoted by “Comitato Porto Solky”. Such an alternative plan foresees focusing on the improvement of the existing road network in the Sulcis mainland, and the development of the new poly-functional port in Sant’Antioco (including the reclamation of the brown field zones in the surrounding areas). Despite such an alternative plan being discussed with different stakeholders and authorities in the area, at the moment of writing this policy brief, the plan is still only a proposal of the committee.

### 2

#### Coping strategy: Improving the territorial transport network

Another strategy is built on the vision of improving the internal transport network to make it easier, safer and more environmentally sustainable both for citizens and tourists to move through different areas within the territory. The actions undertaken in this strategy include a plan for improving the already existing road network, and the submission of project proposals for the development of the “South West Green Virtual Railway”, i.e. a system of electric buses connecting the different towns of the territory, to be funded with the Just Transition Fund (JTF). At the moment of drafting this report, the plan for improving the road network was not implemented yet, and there is no information available on whether the “South West Green Virtual Railway” proposal was approved or not.



## DISCUSSION

- i) The challenges have been recognised by the local community since the formulation of the Sulcis Plan in the early 2010s and even before. The research has shown that there is widespread awareness of the above-mentioned challenges in the local community.
- ii) Several strategies have been developed and pursued to cope with the four challenges presented above, indicating that the challenges, not only have been identified but also addressed in the last 15 years.
- iii) To implement these strategies, a large amount of private and public financial resources have been deployed in terms of both developmental projects and investments. The social community is mobilised and engaged in the pursuit of the strategies as well.
- iv) However, almost all the strategies developed so far to achieve the challenges, have been slowed down, hindered or even obstructed and blocked by different kinds of strains, including endogenous and exogenous conflicts, impasses and situations of uncertainties.
- v) Despite the presence of a plan dedicated to the development of the Sulcis territory, i.e., the Sulcis Plan, there is a lack of coordination of the challenges toward clear and shared territorial objectives. The challenges and related coping strategies are often experienced in competition or even in conflict with each other.
- vi) Despite the steps undertaken so far and some results achieved, there is not a clear horizon on how and when such challenges will be solved. The fact that the challenges faced today are approximately the same as those identified in the Sulcis plan that was drafted almost 10 years ago indicates a de facto lack of progress in achieving the challenges.
- vii) The clean energy transition offers potential further resources (e.g., the JTF) and space for rethinking territorial development. However, the transition process as it is taking shape in Sardinia has not been implemented from a territorial perspective. While the planned interventions for the clean energy transition will contribute to some of the challenges, they are creating several additional strains and conflicts in the territory.
- viii) Based on the information collected in the research, all the challenges have been addressed with a gender-neutral perspective, thus making invisible the differentiated needs of men and women, as well as the different potential that men and women bring for territorial development.

## New key questions

This overview allowed us to formulate some final questions for the case study:

**New Question 1.** “Why, despite community commitment, resources availability and strategic planning, the situation of the Sulcis coal and carbon territory has not significantly improved over the last 15 years?”

**New Question 2.** “What role the clean energy transition is playing in the de/re-territorialisation of the Sulcis coal and carbon territory?”

The research helped us to articulate some tentative – and certainly not exhaustive – answers to these questions. We will summarise such answers in the next sections. These answers represent the original contribution of this research to policy-making.





## Why has the Sulcis coal and carbon territory not advanced in its challenges?

### A Territorial ambivalence unaddressed

The Sulcis coal and carbon territory has an ambivalent interpretation of its territorial trajectory: on one side the territory is still largely interpreted in continuity with its mining and industrial path, but, on the other side, there is a widespread desire to have a rupture in this trajectory, reject the industries, and to move toward other kinds of territorial vocation. The research has recorded how this ambivalence is still latent, i.e., it has not been recognised, addressed and managed. This lack of acknowledgement of the co-presence of different claims for the territory's future is one of the main factors hindering communication and even blocking the development of an appropriate territory-oriented decision-making process.

### B Lack of institutional negotiation spaces

The research has highlighted the lack of an institutional space where the territory, which is fragmented into several municipalities and different interest groups, can discuss, negotiate and develop common visions and strategies. The reform of the province institution further exacerbated this problem, while some existing spaces, such as the Union of Municipalities of Sulcis, are weak and scarcely used.

### C Reliance on “outdated” governance practices

Another factor is the lack of effectiveness of the established governance practices, based on multilateral dialogue among a pre-defined set of stakeholders, such as trade unions, companies, public institutions, etc. These actors seem no longer able to represent the multiplicity of viewpoints and needs of the citizens in the territory. While the established practices of “territory making” seem to fail their task –i.e., creating convergence among citizens on territorial directions and priorities –, new practices of territorial governance have not been established yet.

### D Reliance and dependence on the central state

Sulcis has a well-rooted culture of reliance on external intervention by the state. The reliance on the state is twofold: in one way it has given the territory the capacity to mobilise relevant resources from the Italian government, on the other side it created a culture of dependence and inaction, as the solutions always came from the outside.



## Why has the Sulcis coal and carbon territory not advanced in its challenges?

E

### The symbolic trap

Territorial representations around Sulcis are at the same time very high – a high sense of self derived from the mining past – and very low – as a strong territorial stigma is attached to Sulcis. Both extremes may lead to inaction. On one side, in the current crisis, it is almost impossible to match such a high symbolic standard attached to the territory. On the other side, the cancerous representations fastened to the territory are certainly not an enabling factor for action. Countering territorial stigma and recontextualisation of the Sulcis positive symbols are both essential moves to exit the “symbolic trap” and mobilise local actors toward common territorial goals.

F

### Gender neutral approach

The territorial challenges have not been addressed from a meaningful gender perspective, as they adopt a gender-neutral approach. As currently formulated, the challenges are implicitly focused on men models and do not appropriately consider the needs, orientations and potentialities of women. To enhance the contribution of both men and women to achieve the territorial challenges, it is thus pivotal to adopt a gender-sensitive approach.

G

### Lack of a vision of energy transition for Sulcis

A vision of the energy transition for Sulcis is simply missing. The research has shown that the more recent policy on the energy transition in Sardinia –i.e. the decree-law on energy in Sardinia –has been developed mostly at the national and regional level, without the effective participation of the territory. Paradoxically, the draft of a Territorial Just Transition Plan dedicated to Sulcis (foreseen by the EU Just Transition Fund) is being managed at the national and regional levels. Sulcis stakeholders have been asked in 2021 to submit some project proposals but without proper territorial consultation or a co-design process. The results have been that the territory has participated in submitting several projects in a fragmented and divided way, without a shared vision of the transition in the territory.

H

### Divisive effect on the territory

The research has shown that the clean energy transition is forming new constituencies of actors that groups according to ideological or interest lines. Thus, the transition is not producing an alignment of the actors in Sulcis to achieve common territorial goals, but rather it is further dividing them. Not surprisingly, the measures associated with the clean energy transition have already produced profound conflicts at the territorial level (e.g. FRSU, offshore windfarms, etc.).



## Why has the Sulcis coal and carbon territory not advanced in its challenges?

I

### Decreased autonomy

The research has shown that the clean energy transition as it is displayed in Sardinia is characterised by "centralisation" in the management of technology, as Sardinian energy production is conceived as more integrated with the Italian grid. This results in a decreased autonomy of the Sardinian energy system, but also a reduced autonomy of Sulcis in territorial economic and industrial strategies connected with energy production.



J

### Lack of retribution and asymmetric costs

The focus on wind energy in the planned intervention in the clean energy transition does not foresee, at least from what is known so far, distributive advantages for those territories that will host the plants. Moreover, Sulcis will bear the cost of hosting the FRSU in Portoscuso which will supply also the Gulf of Cagliari.

## CONCLUSIONS: TWO UNADDRESSED CHALLENGES

The six points reported in the previous pages (A-F), altogether, might be thought of as an additional challenge for the territory that, so far, has not been adequately addressed, i.e., **strengthening and updating the territorial organisation**. Activating a process of "territory-making", in our view, is an essential condition for any future policy or plan of territorial development.

Similarly, points G-J can be interpreted altogether as an additional challenge for the territory, that so far has remained unexpressed and unaddressed, i.e., **the development of an inclusive energy transition strategy for the territory**. This challenge should be addressed not only from a perspective of environmental sustainability and economic development but also in terms of territory-making.







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This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement n° 883947. The document represents the view of the author only and is his/her sole responsibility; it cannot be considered to reflect the views of the European Commission and/or the Innovation and Networks Executive Agency (INEA). The European Commission and the Agency do not accept responsibility for the use that may be made of the information it contains.