



# ENTRANCES

ENergy TRAnSitions from Coal and carbon: Effects on Societies

## POLICY BRIEF

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# Port Talbot, South Wales, United Kingdom



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## 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 considers the results of the South Wales case study, focusing on Port Talbot and the surrounding area. This area was chosen owing to the significance of the TATA Wales steel plant both as an economic actor and as a source of significant carbon emissions. It follows the common approach adopted for each Case Study.

The dependence of the Port Talbot economy on the TATA Wales steel plant is well-documented, as is the significance of the Port Talbot plant to steelmaking in Wales and the UK. It is estimated that around 47% of 2018 industrial emissions in Wales emanated from the CCT area, with 15% of overall emissions in Wales emanating from the TATA Wales UK steel plant. The TATA Wales UK steel plant directly employs some 4,000 workers (out of 24,000 steel industry jobs across the UK). It is estimated that a further 3-4,000 agency and contract workers are employed at the plant and that up to 4,000 jobs in the Port Talbot area might indirectly rely on the steel works. As such, the gains from the decarbonisation of steel production are substantial, but the potential costs should the plant be forced to close are equally significant.

Current approaches to fostering an energy transition focus on tackling the potential socio-economic costs. The narrative remains steeped in traditional economic development practices. The adoption of a narrow 'challenge-led' approach, and 'coping' with change, risks replicating this same narrative. Whilst coping strategies are valuable in the short-run, in the longer-term active transformational narratives are required that can offer new pathways for development that reflect alternative societal values.



# INTRODUCTION TO THE CASE STUDY

Consideration of the policies or combination of policies that would be most appropriate to recover the ties of the territory and community in carbon-intensive regions, while fostering their transition toward clean energy is complex. Steel will continue to be required in the construction of both low-carbon energy infrastructures and infrastructure investments for climate adaptation. Transitioning to net-zero carbon steel production and ending the use of higher-carbon steels is thus essential if the UK is not to simply 'export' its current carbon emissions.

The commitment to achieve a net-zero economy is one of the primary uncertainties faced by Port Talbot, both economically and socially. The implications of the commitment to decarbonisation for steel production in the area is currently ambiguous, throwing a shadow of uncertainty over the future, that acts to intensify the pre-existing vulnerabilities of the area. Current strategies towards decarbonisation are broadly aligned to an overall desire to maintain employment opportunities and support the economic prosperity of the local community. Our research highlights the fragmentation of approaches towards achieving the goal of decarbonisation by 2050 and the focus of individual actors on achieving their organisational targets/goals rather than a holistic and strategic approach. The division of governance responsibilities between Welsh Government and UK Government contributes to this fragmentation.

At the community level, acceptance of the desirability of reducing carbon emissions is notable. There is an acknowledgement of the responsibility for doing so locally. A finding of the study has been the strength of place attachment amongst the local community, coupled with a move towards self-narrated identities. Similarly, there is a strong finding of support for the environmental benefits of the energy transition and an apparent willingness to bear the cost of this. This suggests that socio-psychological socio-cultural variables are equally influential in determining the re-territorialisation of place. Local communities value the quality of the local environment and the strength of community, in contrast to more negative external perceptions of Port Talbot.

The challenge of promoting net-zero carbon steel production is illustrative of the wider challenges facing society as it grapples with the implications of a more widely-defined sustainability transition. Crucially, greater consideration must be given to the distributional effects of an energy transition, with explicit focus on themes of gender and cultural identity (including language).

## 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:

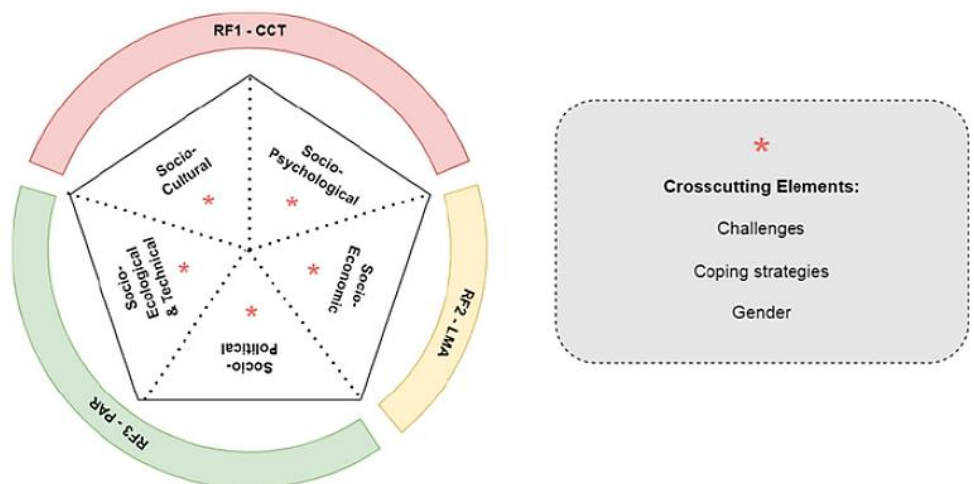


The ENTRANCES case studies were structured into multiple foci (Territorial Change, Structural Change and Clean Energy Transition) and respective units of analysis (Coal and Carbon Territory, Labour-Market Area and Political Administrative Region) to better address the scope of research. Additionally, 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



### Achieving the Net-Zero carbon emission reduction targets

1

#### Adopting technology-led solutions

Technology-led solutions, such as the adoption of new steel-making processes or investment in carbon-capture and storage, form a major element of the proposed response to the challenge of attaining Welsh and UK net-zero goals, particularly in the case of the steel industry. It is anticipated that investment in new technologies will enable steel production to continue, whilst limiting associated carbon emissions.

2

#### Societal acceptance of the need for emissions reductions

Survey responses suggest that opposition to the need for decarbonization is limited in the Port Talbot area. Indeed, there is a strong consensus amongst respondents that the environmental benefits of decarbonisation outweigh the potential damage this may have for people living within the region.

3

#### Developing strategies for decarbonisation

Positive narratives of decarbonisation dominate the socio-political landscape in South Wales, with an economic narrative focusing on opportunities for growth rather than decline. The narrative of decarbonisation strategies centres the local - people and community, emphasising social well-being and quality of life. Critical observers note that published strategies are strong on aspiration but lack detail as to how this is to be achieved.

#### RECOMMENDATIONS

- Enhance support for innovation initiatives promoting the development of low-carbon steel.
- Develop mechanisms to penalise the import of materials or products containing high-carbon steel.
- Develop a roadmap and financing plan for the decarbonisation of the Port Talbot Steel Works by 2045.
- Consider the development of novel financial instruments such as 'decarbonisation bonds'.

#### DISCUSSION

Technology-centred net-zero narratives dominate the narrative in discussions of Port Talbot and steel decarbonisation. This highlights a positive momentum for change and can deliver the net-zero goals set out in Welsh and UK Government strategies. An overly dominant focus on technology has the potential to limit the extent of transformative change that will be embraced. Wales may 'hit the target' but risks missing the wider opportunity that is presented by the decarbonisation expenditures. The limited economic complexity of the Neath Port Talbot economy, with a reliance on steel as an employer, poses a risk to achieving a "just transition" that addresses structural inequalities.



## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 2



#### Uncertain futures for steel-making

### 1

#### Investing in new low-carbon steel technologies

The need for substantial investment in low-carbon steel technologies has been highlighted by many. TATA Steel UK highlights the effect that ‘green subsidies’ offered by governments in different countries may have on the location of future investment decisions and the comparative competitiveness of the Port Talbot steelworks. Decarbonisation of the steel making process may have implications for the coalmines currently supplying Tata Steel, one of which is located in the wider case study area.

### 2

#### Promoting economic diversification

The energy-transition associated with a net-zero carbon future provides opportunities for new economic activities. There are proposals to develop the port facilities to deliver carbon capture and storage facilities and to support offshore wind generation. Award of freeport status also promotes additional opportunities for economic diversification that may reduce dependency on steel.

#### RECOMMENDATIONS

- Develop Enhance support for innovation initiatives promoting the development of low-carbon steel.
- Develop mechanisms to penalise the import of materials or products containing high-carbon steel.
- Develop a roadmap and financing plan for the decarbonisation of the Port Talbot Steel Works by 2045.
- Consider the development of novel financial instruments such as ‘decarbonisation bonds’ to support investment in low-carbon economic activities.

#### DISCUSSION

There remains much uncertainty as to the future of the Port Talbot steel plant. Achieving the net-zero goals set out in the UK’s climate change strategies requires substantial decarbonisation of the existing steel manufacturing process. The cost of the investment required is substantial. Discussions are ongoing as to the level of financial support that might be offered by the UK government. Crucially, there is no suggestion that the demand for steel will decline, with some estimates suggesting that new infrastructure investments could increase steel demand. It will be important to prevent the use of imports of cheaper high-carbon steel if the UK is to avoid claims that it is simply ‘exporting’ carbon emissions.



## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 3



#### Low economic complexity

1

#### Promote new economic activities

A key challenge for the Port Talbot area is the limited economic opportunities available to residents. This reduces its resilience to economic change. This is the result of economic restructuring that has been underway for several decades, which decarbonization may now exacerbate. The shift to a low-carbon economy offers opportunities to promote new economic activities that may transition the area to a new development pathway.

#### RECOMMENDATIONS

- Promote alternative low-carbon economic activities.
- Exploit natural and cultural heritage assets as a place-making initiative.
- Develop a national gallery of popular art, film and music as a centrepiece of rebranding Port Talbot.

2

#### Promote alternative economic activities

In promoting new economic activities, policymakers should also seek to promote alternatives to existing activities. This can assist in strengthening the economic complexity of the economy over time. Recent initiatives promoting the cultural economy and the leisure-based economy demonstrate the potential for this. The transition to a green economy offers additional opportunities but may need support as markets develop.

#### DISCUSSION

The complexity of an economy influences its ability to navigate economic shocks. More complex economies tend to be more resilient and offer a wide range of opportunities to residents. Together, this can assist in retaining the workforce in the area. Successive waves of deindustrialisation and economic restructuring have adversely affected the complexity of the Neath Port Talbot economy over many decades. The move towards a net-zero society offers an opportunity to radically reshape the economy of Port Talbot and promote new investment.



## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 4



#### Skills gap and low take-up of training opportunities

1

#### Developing a skills and training offer for the low-carbon economy

The transition to a net-zero carbon economy offers new employment opportunities. This will require new skill sets and qualifications. Welsh Government, Higher Education Institutions and Further Education Institutions are engaged in discussions shaping a new skills agenda. There is a need to ensure that local residents have access to training opportunities that provide access to higher value employment opportunities.

2

#### Encouraging take-up of training offers

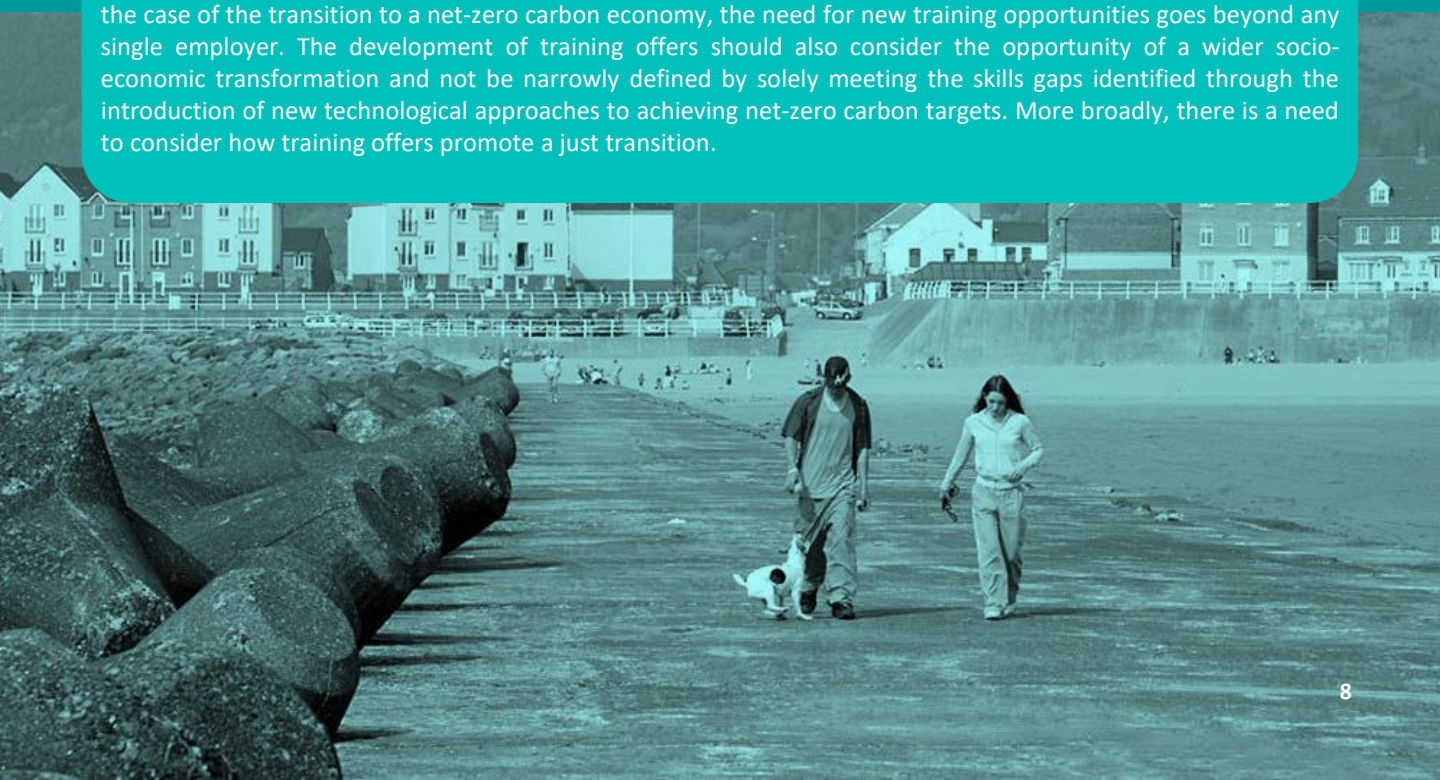
Our research demonstrates that the take-up of existing training offers remains low. Encouraging local employees to update their skill sets to maintain their employability in a rapidly changing economy should be a key priority for the future. This may require the introduction of new incentive structures.

#### RECOMMENDATIONS

- Co-design a skills agenda for a net-zero economy.
- Enhance training for educators to update their skills.
- Work closely with local employees to develop opportunities for work-based learning.

#### DISCUSSION

Encouraging retraining and the acquisition of new skills is a traditional tool in tackling economic restructuring. In the case of the transition to a net-zero carbon economy, the need for new training opportunities goes beyond any single employer. The development of training offers should also consider the opportunity of a wider socio-economic transformation and not be narrowly defined by solely meeting the skills gaps identified through the introduction of new technological approaches to achieving net-zero carbon targets. More broadly, there is a need to consider how training offers promote a just transition.







## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 5



#### Risk of an energy transition that exacerbates socio-economic disparities

1

#### Retrofit homes to counter fuel-poverty and reduce carbon emissions

Although not directly related to the decarbonisation of steel production, the scale of socio-economic deprivation in the area provides a strong justification to support energy efficiency measures for poorer households. This would involve extending existing measures supporting the installation of air-source heat pumps and associated infrastructures to those with low incomes, including supporting those in rented housing.

2

#### Competitive bidding for 'levelling-up'

Current approaches to regeneration are based on a competitive bidding basis. Port Talbot has had some success, with the recent award of freeport status one example. Competitive bidding is also used to determine the selection of projects supported through the City-Region approach. Whilst this may result in well-founded projects it does not encourage collaboration nor does it promote a more comprehensive approach to developing a transition strategy for the region. Place-based approaches based on agreed strategic priorities should be adopted in place of competitive bidding.

#### RECOMMENDATIONS

- Promote activities that counter existing socio-economic disparities.
- Consider gender dimensions of the energy transition in all activities.

#### DISCUSSION

The strong technological narrative to the net-zero agenda has been remarked upon. Similarly, the economic development response is broadly traditional. Whilst neither is inappropriate they risk continuing, and potentially exacerbating, current patterns of socio-economic development. The net-zero transition offers an opportunity to deploy new approaches. Ones that explicitly consider gender dimensions of the transition and offer opportunities to develop alternative economic opportunities associated with diverse metrics of success. Explicitly committing to securing a just transition, as is a stated objective in numerous policy documents, opens up the potential for a national conversation as to what this may imply.



## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 6



### Fragmentation of government policies and activities

1

#### Minister and Deputy Minister for Climate Change

A key challenge identified in our research has been the fragmentation of policies and initiatives. Given the reach of the energy-transition agenda this is no surprise. One means of coping with the challenge of multiple policy spheres has been the appointment of a Minister and Deputy Minister for Climate Change in Welsh Government. However, this Welsh approach has not been wholly successful in presenting a common roadmap.



2

#### Multi-agency approaches to promote socio-economic development

The value of joined up actions has been amply demonstrated in the 'taskforce' approach adopted in the face of major industrial closures (such as MG Rover in the West Midlands). The development of a city-region approach to economic development offers a possible framework for taking developing a similar multi-agency targeted action, but remains untested.

#### RECOMMENDATIONS

- Adopt a place-based 'task-force' led approach to tackling the socio-economic implications of the energy transition in Port Talbot.
- Promote the inclusion of local voices in determining local priorities for action

#### DISCUSSION

The sheer scale of the actions required to deliver the net-zero carbon targets established by the UK and Welsh Government lead to risks of fragmentation in approach. Timescales for change will also be challenging, with visible actions being too slow for some and too swift for others. Across Wales a wide range of voices have been included in the discussions on the net-zero approach and an inclusive approach adopted. Not all have the same capacity to engage however and there are suggestions that local voices, discussing local implications have been less heard compared to national discussions. This risks losing local support for the practical actions needed to deliver the decarbonisation agenda, which in itself is broadly accepted. Finding ways to bridge the various policy communities required to deliver the net-zero carbon agenda has been an important response to the challenge of fragmentation at the national and governmental scales. The challenge of doing so at the local level remains.



## CHALLENGES AND COPING STRATEGIES

### CHALLENGE 7



#### Establishing agreed pathways

1

#### Mobilising commitment

Welsh Government is addressing its net-zero commitment through a series of actions. These include announcing that no new permits for coal mining will be issued and seeking to encourage increased tree-planting in Wales through amending agricultural subsidy regimes. Each of these is proving contentious as the distribution of costs begins to be realised. For some, Welsh Government is not moving quickly enough, for others it is moving too quickly. The position of the UK Government provides further uncertainty. The politics of the energy transition cannot be avoided and a fuller conversation is required.

#### RECOMMENDATIONS

- Build on the Wellbeing of Future Generations Act to co-create a joint vision for the future development of Port Talbot.

2

#### Debating devolution by proxy

Much of the debate on responsibility for securing the positive decarbonization of the steel-based economy in Port Talbot is undertaken in the context of the devolution agreement between Welsh Government and UK Government. This risks steel decarbonization becoming a proxy for wider debates about the appropriate devolution of powers and which Government is responsible for what action. There is no doubt that the scale of the investment required makes steel decarbonization a UK level interest, as its strategic significance might also suggest. Developing a common interest partnership – such as through a Task Force approach – might offer one way forward.

#### DISCUSSION

It is notable that the steel works continues to be at the focus of attention, with Tata Steel engaging with the UK Government to seek support for the decarbonisation process. The plant in Port Talbot is important in the UK steel industry, but has a proportionally larger role in the Welsh Economy. This highlights the multiple scales that must engage with decarbonisation. With relation to the region, this technocratic approach and desire to continue solely with primary steelmaking introduces a series of risks that will likely not be resolved in the short term. However, resident's appetite for decarbonisation is apparent, as well as their significant attachment to place. Wales was a global frontrunner with the publication of the Wellbeing of Future Generations Act, it now needs to develop the implications of this more fully as part of a national conversation.



# ENTRANCES

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