

Churchill Fellowship to understand how countries have transitioned from mining to low carbon options and protected jobs

**Empowering Coal Regions in Australia –
Delivering an Enduring Legacy from the Clean Energy
Transition**



Awarded by the Winston Churchill Memorial Trust

Report by Dr Simon Wright, 2022 Churchill Fellow

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INDEMNITY CLAUSE

THE WINSTON CHURCHILL MEMORIAL TRUST

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Signed

A handwritten signature in black ink, appearing to read 'Simon', is written over a light blue rectangular background. The signature is cursive and fluid.

Date 07/01/2025

ACKNOWLEDGEMENTS

It is important to acknowledge the participants of this research who gave so freely of their time to host me and respond unreservedly to innumerable questions. Without them, this research would not have happened and I remain forever appreciative.

Similarly, I am grateful to my loving family who supported my trip at a ridiculously busy time of year for them.

Finally, I am indebted to the Winston Churchill Memorial Trust for their generosity in deeming my research worthwhile and providing financial support for my endeavours. The Fellowship is truly a unique opportunity to indulge and share a passion and I urge everybody to apply.

SDW.

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EXECUTIVE SUMMARY

Ageing coal fired power stations, extreme weather events, international political pressure and the dramatic reduction in renewable energy costs are forcing governments globally to prioritise the transition away from polluting fossil fuels towards a clean energy future.

Blessed with an abundance of natural resources and talent, Australia is supremely well positioned to take advantage of the opportunities afforded by this transition. Yet our economy depends heavily upon the royalties generated by fossil fuel exports primarily to China and India. At a regional level, many communities hitherto reliant on coal are similarly concerned about their future and the absence of a clear and agreed transition plan.

This Churchill Fellowship research calls for urgent action from both Commonwealth and State Governments to address this critical deficit and catalyse the creation of regional transition plans led by local communities. To inform this conversation, this research shares the collective wisdom of more than 60 actors from coal regions in Canada and the European Union (EU) already immersed in the energy transition, albeit at different stages.

Recommendations

The key insights for Australia's coal transition are as follows:

1. Government must act urgently and at scale to support a coordinated transition process in each of Australia's coal regions.
2. The major output should be a transition plan for each region that is holistic in nature – the energy transition and regional economic development go hand in hand.
3. The nature of place-based innovation necessitates leadership and governance from a regional governing entity – in Europe this was always regional government.
4. Trust building takes time and money. Hence, an exponentially larger investment is required than currently allocated by Federal and State Governments to implement this plan.
5. Industrial investment needs to support SMEs as much as it does large corporations, alongside industrial diversification, community infrastructure and workforce development.
6. Transitions must be community led - local communities must be at the forefront of the process, co-creating the vision, owning the plan and shaping the outcomes.
7. Transitions must also be government enabled - communities need to be supported by government throughout the entire process to give them the knowledge and power to engage equitably at the negotiating table.
8. Collaboration is the most cited determinant of transition success due to the complexity, urgency and scale of the transition opportunity.
9. Young people emerge as perhaps the most important stakeholder group. Programs need to be developed to engage and support them through the transition, retain them in their home communities and acknowledge that they have the biggest stake in the planet's future.

10. Communication about the transition must be frequent and constant, to educate and inform all stakeholders, remove uncertainty and ambiguity and retain transparency.
11. Technical assistance at key junctures of the transition from the EU's START program has proven invaluable to the regions and should be replicated.
12. Government must acknowledge and celebrate the industrial heritage of the coal regions by incentivising the re-usage of former mine and power station sites for energy generation, industrial development or environmental remediation.
13. Post-mining land use emerges as a key economic opportunity – there exist [130,000](#) hectares (ha) of mining land to be rehabilitated in the Hunter Valley alone - and a post-mining regional land restoration plan should be created as part of the transitions process, overseen by a public authority.
14. Regulatory change is urgently required to support the long-term transition and ensure that communities are endowed with enduring benefits from his transition.
15. Government and industry must provide a safety net for workers that is customised to the needs of each region and provides financial and training support while removing regional uncertainty and encouraging investment.
16. Governance approaches have proven to be a key determinant of successful transitions. Better practice suggests a multi-level approach comprising levels of government, community, industry and unions.
17. A mechanism for monitoring and evaluation of the regional transition plans needs to be established from the outset, ensuring that objectives realised, and industry is held to account, either by government or NGOs.

There are also examples of best practice in regional transitions closer to home, most notably the [#Better Together Wimmera Southern Mallee Regional Energy Collaboration](#) in Victoria and the [Hay Shire's principles for successful renewable energy development](#) in NSW. The underlying principles of these approaches align with the research insights outlined above.

Implementation of these best practice insights will set us on a more rapid pathway to energy transition and deliver greater economic certainty to coal regions. It is imperative that government, industry, unions and coal communities build on the significant work already undertaken and come together to agree on vision, action and implementation.

KEYWORDS

Coal regions – clean energy – just transitions - community engagement - regional development – Canada - European Union.

INTRODUCTION

The world is in the midst of an energy revolution fuelled by the need to rapidly decarbonise to avert catastrophic climate change. This poses both an enormous opportunity and challenge to the global economy that remains reliant predominantly on fossil fuels. Coal mining communities have particular concerns that relate to the impact of the energy transition on the local economy and jobs but also extend to post-mining land remediation and re-use and long-term community cohesion. Globally, the concept of a ‘just transition’ (JT) has evolved to reinforce the need for equity for all impacted stakeholders especially mining communities.

The past two years have seen an explosion in renewable energy activity in Australia, most notably in the planning and development of assets and infrastructure in regional communities. Led by the private sector and enabled by government, much of the focus has been on investment and growth, underpinned by the urgent need to meet carbon reduction commitments under the United Nations (2016) Paris Agreement. In the ‘dash for cash’, the concerns of individuals and communities have in some instances been neglected and occasionally ignored – recent media coverage of the opposition from farmers and rural communities to transmission infrastructure highlights the need to engage communities early and often in the conversation.

It was out of this need for greater focus and prioritisation of the ‘people’ aspects of large-scale energy transitions that this research was born. The impending closure of Australia’s coal fired power stations and the resultant impact on coal regions specifically has only served to prioritise the need to accelerate the energy transition. In New South Wales (NSW) alone, four of the State’s five existing coal fired power stations are expected to close within the next 15 years; these power stations currently provide around three quarters of NSW’s electricity supply, and two thirds of the firming capacity required to meet peak demand.

The establishment by the Australian Prime Minister of the Net Zero Economy Agency (NZE) in 2023 is an indication of the importance placed by the Federal Government on an orderly and positive economic transition to clean energy or what is sometimes referred to as a ‘just transition’. The creation of similar entities at a state level such as the NSW Future Jobs and Investment Authority (FJIA) should provide more customised support in specific regions such as the Hunter Valley. While the economic and technological aspects of transitions are occurring at pace, understandable concerns remain about the social and environmental aspects, particularly in communities that have hitherto relied upon coal and gas as the primary source of employment and wealth creation. Governments at all levels need to move quickly to address these concerns and enable a holistic transition planning process in each region that creates and implements a long-term vision for regional economic development.

This research aims to inform this process, exploring how coal regions in Canada and the EU, affected by the transition, are positioning themselves to benefit from the transition to clean energy. Through a series of more than 60 semi-structured interviews with key stakeholders from industry, academia, non-governmental organisations (NGOs) and all levels of government (local, regional, federal and international), data collection was conducted *in situ* over a period of seven weeks in November and December 2023 across six countries and nine cities, eight of which were in coal mining regions. Interviews typically lasted for 1-2 hours, included several site visits and invariably evolved to cover a broad range of topics related to the transition process. Supplementary data was collected from Australia in January and February 2024.

While the emphasis of this report is on the social or people aspects of transitions, the findings touch upon many of the economic, environmental and technical aspects that arose in conversations and are inextricably linked to the realisation of successful and smooth socio-technical transitions. These insights from overseas can accelerate Australia's transition to a low economy while creating new industries and sources of employment and sustaining coal communities.

ITINERARY AND PARTICIPANTS

Country	Cities/Regions	Dates	Participants
Canada	Edmonton, Alberta	Nov 6-8 (2023)	<ul style="list-style-type: none"> • Brendan Boyd/Marielle Papin, McEwan University • Jess Thomson/Nancy Milakovic, Women Building Futures (WBF) • Kendall Andersen, Pembina Institute • Ian Hussey, Alberta Federation of Labor • Laura Kilcrease, Alberta Innovates • Philip Gass/Laura Cameron, IISD*
	Calgary, Alberta	Nov 9-11	<ul style="list-style-type: none"> • Stephen Cardon/Jeanette Sutherland, Alberta Economic Development • Ana Marin, Iron & Earth* • Ganesh Doluweera/Matthew Hansen, Canada Energy Regulator (CER) • Kathryn Graham, Alberta Innovates • John van Hamm, Pembina Institute • Sara Hastings-Simon, Calgary University
Belgium	Brussels	Nov 14-16	<ul style="list-style-type: none"> • Mags Bird, WWF • Veronique Marx/Eva Srnova, EU Directorate General Energy • Paul Baker, Ecorys (EU-START) • Katharina Hartman, German Agency for International Cooperation (GIZ) • Joanna Jakubowska, Bankwatch
Germany	Berlin	Nov 20-22	<ul style="list-style-type: none"> • Diana Suesser, The Institute for European Energy and Climate Policy (IEECP) • Rainer Quitzow/Fran Meyer, Research Institute for Sustainability (RIFS) Potsdam • Andrea Furnaro/Nora Stognief, Europa University Flensburg • Emma Krause, Guidehouse Consulting • Tobias Bihler, Federal Ministry for Economics and Climate Action • Timon/Jannis, Wuppertal Institute • Johannes Staemmler, Brandenburg Technical University
	Leipzig	Nov 23-25	<ul style="list-style-type: none"> • Markus Meier, Leipzig University • David Blazek, Spinlab
Germany/ Poland	Goerlitz/ Zgorzelec, Upper Silesia	Nov 27-28	<ul style="list-style-type: none"> • Joanna Tokarczuk, Zgorzelec Energy Cluster • Christoph Scholze, Tragwerk
Poland	Bytom/Katowice, Lower Silesia	Nov 30- Dec 2	<ul style="list-style-type: none"> • Anna Dudek/Dariusz Stankiewicz, Marshall's Office, Regional Authority of the Silesian Voivodeship • Grzegorz Trefon, KADRA Association of Trade Unions • Janusz Olszowski, Chamber of Commerce (GIPH) • Marta Pogrzeba/Piotr Cofalka, Institute for Ecology of Industrial Areas (IETU)

			<ul style="list-style-type: none"> • Bartożs Polnik/Jacek Korski/Dariusz Prostanski/Krzysztof Stankiewicz, KOMAG Institute of Mining Technology • Mariusz Stepien, Silesian University of Technology
Slovakia	Nitra, Trencin	Dec 3-6	<ul style="list-style-type: none"> • Lenka Ilcikova, Priatel'ia Zeme CEPA (Friends of the Earth) • Martina Lamackova /Magdalena Svorcova, Department of Regional Development, Trenčín Self-Governing Region • Dominika Belanska, Greens4Teens • Alojz Vicko, Municipal Office of Prievidza • Karsten Ivan, HBP Mining
	Bratislava	Dec 7	<ul style="list-style-type: none"> • Ondrej Seban, PwC
Spain	Oviedo, Asturias	Dec 11-14	<ul style="list-style-type: none"> • María Belarmina Díaz Aguado/Mauro Rodríguez Piedra, Directorate General Energy and Mining, Asturias Regional Council • Monica Oviedo/Irene Schiavon, Iberdrola • Maria Lorenzo/Pablo Fernandez, Hunosa • Cesar Valmaseda/Carlos Garcia/Indalecia Gonzalez, FAEN • Patricia Zapaco, ITJ • Jose Manual Perez/Maria Casares. EDP

*Indicates an online interview; all others were face to face.

RESEARCH RESULTS

i. Canada ([Alberta](#)) – Head in the Tar Sands?

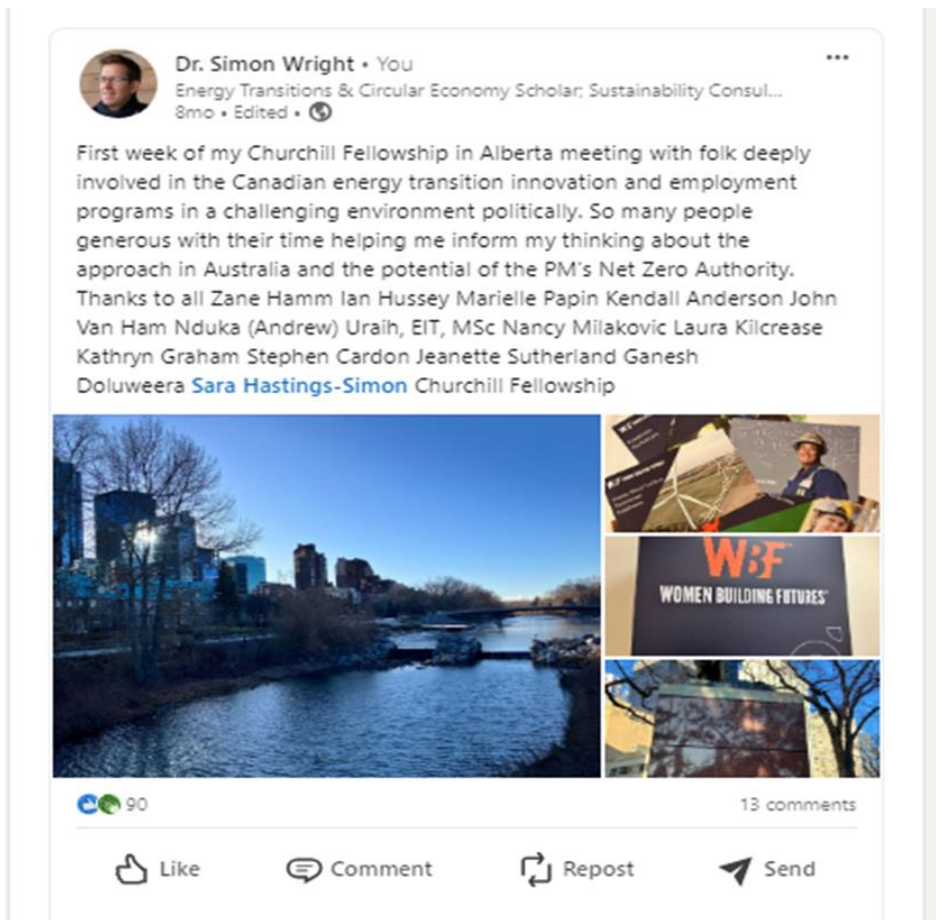


Figure 1 – LinkedIn Post, Canada (November 2023)

Canada is currently undergoing a fragmented transition to renewable energy. Reminiscent of Australia a decade ago, some provinces are leading the charge, while others lag badly. A recent study by [Clean Energy Canada \(CEC\)](#) confirms this mixed picture of progress (see Figure 2). With support for Electric Vehicles (EVs) and heat pumps and a growing battery supply chain, Quebec stands out as the innovator. In contrast, both Alberta and Saskatchewan fall well short of the activity required to enable Canada to reach its 2030 goal of 90% of electricity from renewable sources. The most telling statistic from the CEC report is that since 2016, 80% of Canadian climate spending has been at the federal level.

Home of the oil and gas industry, [Alberta also accounts for 28% of Canada's thermal and metallurgical coal production](#). Impressively, electricity generation from coal in Alberta will cease later this year, six years ahead of schedule. As a nation, Canada has committed to end coal-fired electricity generation by 2030. In the wake of unprecedented wildfires, political pressure from the centre left is mounting to discontinue coal exports by this same date. Although the Federal Government has launched initiatives to support skills development and infrastructure investment in coal regions affected by the transition, the coal industry in Canada is dwarfed by its oil and gas counterparts both in Alberta and nationally.

Alberta accounts for 97% of Canada's total oil stores. [The oil and gas industries generate more than 20% of GDP and 5.9% of employment in Alberta \(ca. 35,000 people\)](#). Worryingly, emissions

from the oil and gas sector remain high and are back at pre-pandemic levels. Of greater concern is that industry actions are not aligned to the Province’s goal of carbon neutrality by 2050. Although some progress has been made on methane intensity, targets and limits are largely absent, with carbon capture and storage (CCS)¹ and nuclear power continuing to form key components of the industry’s decarbonisation strategy. With the threat of a federally-imposed emissions cap, a recent report by Deloitte Canada² suggests that the prohibitive cost of CCS will lead the industry to reduce output and hence employment rather than adopt low carbon production solutions.

To complicate the situation, the Albertan Government imposed a moratorium on new solar and wind developments in August 2023 in response to concerns raised by landowners and municipalities about the scale and pace of project proliferation. This followed a flurry of renewable energy activity over the past decade - Alberta has the second highest installed solar energy capacity in Canada and ranked third in Canada for total installed wind capacity in 2022. The resulting proposals for regulatory change will significantly restrict new renewable energy development in the province. While Alberta may well achieve its 30% renewable electricity by 2030 target by the end of this year, the current government’s policy has caused investment in renewables to taper off dramatically.

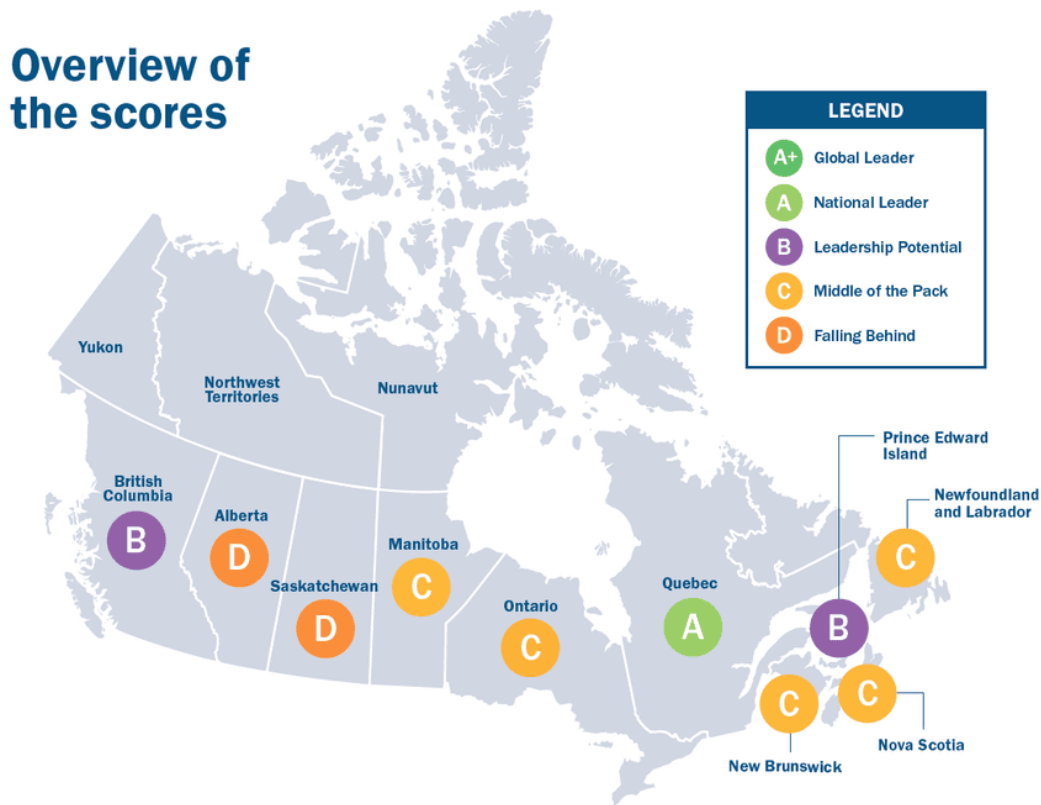


Figure 2 – Overview of Provincial Sustainability Scores (CEC, 2024)

My week in Alberta largely reflected this operating environment. There exists an array of initiatives such as clean technology and grid modernisation, either emerging or in place, to support the transition away from fossil fuels. However, without overt government support for the

¹ <https://www.pembina.org/pub/albertas-progress-reducing-oil-gas-emissions>

² <https://open.alberta.ca/publications/potential-economic-impact-of-the-proposed-federal-oil-and-gas-emissions-cap>

transition and in the absence of clear goals, these initiatives will struggle to realise their full potential.

Conversations with regional government, NGOs, universities, regulators, unions and industry generated a revealing snapshot. At an industry level and consistent with other territories, the incumbent companies are largely resisting the transition away from fossil fuels. Unproven or expensive solutions such as CCS and nuclear dominate the discourse, with little talk of net zero commitments or targets or evidence of the adoption at scale of proven, cost-effective technologies such as wind, solar or storage.



Figure 3: Alberta’s Energy Mix (Creator: Larry MacDougal | Credit: The Canadian Press Images)

In contrast, unions such as the [Alberta Federation of Labour](#) (AFL) appear to be taking a longer-term view; indeed, the notion of a ‘just transition’ was borne out of the Canadian labour movement. By supporting the recently enacted [Sustainable Jobs Act](#), unions unsurprisingly view jobs, skills training and employment development for the green economy as the major priorities. From the AFL’s perspective, these issues have been made more pressing due to labour shortages, greater reliance on overseas workers, and the loss of ca. 50,000 oil and gas jobs across Canada in the last decade due to automation and digitisation in an already mature industry. Consequently, unions are keen to see a more supportive regulatory environment that builds digital skills in the workforce and creates construction jobs for renewable energy development. This is especially true of the wind sector which operates under a heavily unionised workforce, in contrast to the solar industry where a non-unionised workforce is consistently seen as compromising OH&S issues.

Government and government-supported organisations are playing a key role ‘on the ground’ in Alberta in re-shaping the innovation eco-system through job creation and reskilling. With a strong focus on [energy and environment](#), [Calgary Economic Development](#) (CED) is harnessing the power of the digital transformation to drive new low carbon solutions and investments and

position Alberta as a primary cleantech hub in North America. Forecasting 170,000 new jobs in the sector by 2050, CED is concentrating its efforts on ag-tech (the application of technology to farming operations to optimize operations, reduce carbon footprint, and increase yields); carbon capture, utilization and storage (CCUS); digitalisation; electrification; energy efficiency; and hydrogen production and utilization, with special emphasis on energy efficiency, digitalisation, and electrification to reduce the carbon impacts of the sector and build a foundation for CCUS and hydrogen development. Despite policy and investment challenges, CED is running several programs to enable workers to transition into cleantech. One example is the ‘[Edge-Up](#)’ program designed to help older and experienced workers from the oil and gas industries who have lost their jobs to build the digital skills required for the new economy. The goals of the program are to help these workers find work but also entice them to remain in the region. One of the unintended outcomes is that having completed the program, many of the 300+ participants have accepted roles back in the oil and gas industries.

In a similar vein and again funded by the Albertan Government, [Alberta Innovates](#) (AI) plays a leading role in supporting general and applied research and innovation across a broad range of industries including agriculture, cleantech and energy. With a similarly strong focus on digitalisation, AI partners with industry to send more than C\$250m per annum on research, commercialisation, start-ups, scale-ups and the broader innovation ecosystem, with ca. 20% of this investment being channelled into low carbon and cleantech solutions, such as:

- Supporting agriculture and food innovations to move toward net-zero greenhouse gas emissions; increase sustainability through soil, crop and animal health as well as disease management; increase value-add food production; and address food security issues.
- Continuing to drive the development of a hydrogen economy by offering programs and services to discover, develop, test and use hydrogen technologies. Showcase, through the Hydrogen Centre of Excellence (HCOE), the opportunities presented by leveraging hydrogen technologies. Utilize HCOE’s systems capacity stream to support the development of non-technology related hydrogen initiatives such as the development of codes and standards.
- Supporting the development of sustainable materials in priority areas such as bio-industrial materials, bioenergy and circular economy for plastics.

More detail on these and other programs are available in [AI’s annual report and business plan](#).



Figure 4 – Women Building Futures’ Skills Programs

Canadian and Alberta-based NGOs are also playing an important role in shaping the energy transition, both as advocates for change and innovators in their own right. Women Building Futures (WBF), an Edmonton-based not for profit working across Alberta, Ontario and Saskatchewan, provides free skills training and support services for women and gender-diverse individuals. The aim of the programs is to deliver both employment opportunity and economic security to women who have historically been marginalised or disadvantaged in some way. While the programs straddle all industries, many such as power engineering and construction are targeted at delivering skilled workers for renewable energy. During my visit, I heard many inspiring stories of how the organisation has helped individuals secure ongoing employment while also removing instability and economic uncertainty. WBF's industry partnerships ensure these work transitions are smooth and that employment opportunities are forthcoming.

[Iron and Earth](#) (I&E) is another NGO creating pathways to employment opportunities in the net-zero economy for fossil fuel workers, Indigenous Peoples, and their communities. Based in British Columbia and with firm roots in the fossil fuel industry, I&E works closely with fossil fuel communities, advocating for those who may be left behind by the JT. In many of these communities, the entrenched industries with some involvement from the labour unions are dictating the pace of the transition to clean energy, tending to over-focus on CCUS. At the same time and in what many describe as a 'legislative mess', communities remain concerned about jobs and affordable energy. The high salaries paid in the oil and gas sectors contrast markedly with the low income of solar installers, for example, and remain a major obstacle to attract workers to these clean energy jobs. In the face of tight timeframes and ambitious targets, I&E's [Community Pathways](#) program lobbies for a focus on people and communities rather than just energy, building trust in these communities and fighting to ensure that communities themselves are involved in shaping their own JTs. I&E partners with local training organisations to run programs in community wind and solar skills through its [Renewable Skills Initiative](#). One of the organisation's primary goals is to lower barriers to building community-led climate solutions through engagement, training programs, infrastructure projects, and career platforms.

From a research, education and advocacy perspective, the [Pembina Institute](#) (PI) is one of the most prolific NGOs in Canada supporting the JT. A clean energy think tank advocating for 'strong, effective policies with a multi-faceted and highly collaborative approach to support Canada's clean energy transition', PI's six pillars of action or [programs](#) revolve around buildings, electricity, oil and gas, remote communities, transportation and equitable transition. A recent piece of research undertaken into equitable transitions aimed at supporting policy solutions that support all workers to thrive in a net zero economy forecast that net zero jobs in Canada will number close to two million by 2050³. Other [recent research reports](#) have touched upon rural perspectives on the energy transition; a provincial scorecard on emissions performance; and policy guidance to support the recently-legislated Sustainable Jobs Act.

My conversations with the [Canada Energy Regulator](#) (CER) were confirmatory rather than enlightening, largely because of their limited role which revolves predominantly around cross border pipelines and power infrastructure. Similar to Australia, energy policy is largely driven at a provincial/state level, although CER undertakes national [net zero forecasts](#) and planning.

³ <https://www.pembina.org/pub/sustainable-jobs-blueprint-summary-report>

Key Insights from Alberta, Canada

While Canada presents a mixed picture in terms of progress towards a JT, Alberta's historically rapid development of wind and solar has stalled badly, mired in political and regulatory uncertainty and hesitancy on the part of the fossil fuel industry to embrace the low carbon future. Despite this, a range of intermediaries are continuing to undertake programs to reshape the local ecosystem and ensure that Alberta can take advantage of the many opportunities arising from renewables as demand for oil and gas abates in the coming decade (see <https://www.policyalternatives.ca/news-research/heads-in-the-sands/>

1. The importance of a *well-structured, supportive local innovation ecosystem* facilitated by government and closely aligned to diverse industries.
2. The *important roles played by NGOs and think tanks* in providing quality, peer-reviewed research to inform policy debates and challenge mis-information; and by NGOs in plugging gaps in the labour market that might not ordinarily be covered by traditional providers, such as the provision of reskilling programs for women and First Nations Peoples.
3. The need to *align renewable energy and carbon reduction goals across all sectors of the economy* and at all levels of government and support these with a detailed action plan.
4. The time and financial investment required *to involve affected communities in conversations about their own future* and to allow time for trust building, co-creation and grassroots innovation.
5. *Shaping the discourse and busting myths and misinformation* are all critical if communities are to be convinced of the need for change. Alberta provides a case in point – talk of CCUS and nuclear is a distraction from the real work that needs to be undertaken.



ii. Brussels – Powering Europe’s Just Transition

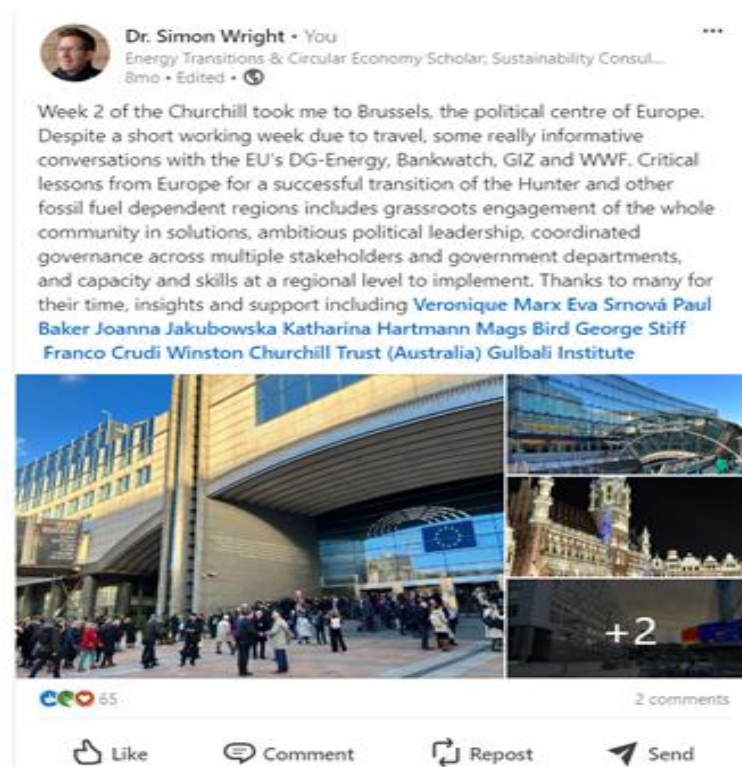


Figure 5 – LinkedIn Post, Brussels (November 2023)

The objective of my stopover in Brussels was to meet with actors representing the European Parliament, NGOs and academia to build a better understanding of the impact of the EU’s Just Transition Mechanism (JTM) in the first 18 months of implementation. Brussels provided a high-level insight into the sheer scale of the coal transition in the EU and the level of commitment from the European Parliament to both funding and in-kind support. It also set the scene for the following weeks of travel to coal regions across the EU.

The Role of the EU and the Just Transition Mechanism

The level of support from Brussels for European coal regions is quite staggering. Part of the broader [European Green Deal](#), the [Just Transition Mechanism](#) (JTM) forms the EU’s key support tool to alleviate the socio-economic impacts in these regions, mobilising ca. €55bn between 2021-2027. In many instances, national governments are supplementing this with additional funding. The JTM comprises three pillars:

- (i) The Just Transition Fund (JTF) of €19.7 billion, expected to mobilise around €7.3 billion of national co-financing, amounting to a total of €27 billion.
- (ii) Invest EU ‘Just Transition’ scheme providing a budgetary guarantee and an Advisory Hub, a central point for support requests mobilising €10-15 billion in private sector investments.
- (iii) A new Public Sector Loan Facility combining €1.5 billion of grants financed from the EU budget with €10 billion of loans from the European Investment Bank, mobilising €18.5 billion of public investment.

Central to the JTF are the Territorial Just Transition Plans (TJTPs) that each region is compelled to define and agree with their national government and with Brussels before funds start flowing. These plans set out the challenges in each territory, as well as the development needs and objectives to be met by 2030. They identify the types of operations envisaged and specify governance mechanisms. Once approved, they form the basis for action in that region. Importantly, these local-level strategies must be developed in public consultation with all relevant stakeholders, including civil society and local community representatives as set out by the [European Code of Conduct on Partnership](#). One of the minor ironies of this process is that it is notoriously difficult to access many if not most of these TJTPs as regions are neither obliged to make them available nor to translate them into other European languages.

The Directorate General Energy ([DG-Energy](#)) and the Directorate General Regional and Urban Policy ([DG-Regio](#)) are responsible for driving the JT process across the EU. DG-Energy is leading this process and is responsible for the EU's energy policy, namely, to provide secure, sustainable, and competitively priced energy for Europe. DG-Regio's role is to ensure that the JTM funding is spent appropriately and effectively across the different regions.

Based on conversations with DG-Energy amongst others, it is apparent that the transition in Europe is still at a relatively early stage, with JTM funding entering only its second year and set to run until 2027. DG-Energy's role is to provide leadership across the EU. Teams located in the regions are responsible for supporting the definition of TJTPs and facilitate access to JTM funding. For example, there are now ca. 70 regions across the EU with TJTPs. Perhaps the single biggest achievement by DG-Energy to date has been its role in transforming the transition narrative from scepticism to a more positive story, supported by the prioritisation of energy poverty as a key political issue by the European Parliament.



Figure 6 – European Parliament, Brussels

While transition initiatives in the former communist countries in Eastern Europe are proving challenging, Asturias in Northern Spain is cited as one of the more positive case studies. With the help of DG-Energy, the Spanish Government established the Just Transitions Institute (JTI), a tripartite arrangement between government, industry and the trade unions. Spain was forced to

move early - Iberdrola, the owner of a series of uneconomic coal mines in Asturias, decided that closure was the only option back in 2020. Because of Asturias' strategic importance as a major industrial region and its desire to retain its position as an influential energy hub, DG-Energy together with the regional government moved quickly to bring stakeholders around the table to discuss the future transition. The Spanish government invested significantly in community trust building, while regional government played a critical role providing a direct link between the EU and the community. Asturias was my last port of call and is covered in more detail in a later section of this report.

While still early days in the European transition, DG-Energy highlighted some **key principles and learnings** from projects to date. These include:

- The disproportionately *important role played by NGOs* or broader civil society in some regions such as [Jiu Valley](#) in Romania where a governance deficit persists.
- The *emergence of local champions* as key actors in the transition, often from regional or local government, who are needed to take the lead in the process, particularly in an administrative capacity to manage project funding.
- *Constant and frequent communication* of the benefits of the JT to regional communities is important in sustaining local engagement and support.
- *Listening to local stakeholders* takes time but is the only way to build trust and share and discuss ideas in the community.
- *Education and reskilling* are both important - 'we need to refocus away from 'just' mining;' higher education institutions are also proving to be key partners in the JT (e.g. [Ireland](#)⁴ and Slovakia).
- [Exchange programs](#) between regions have been important for *sharing knowledge and building partnerships*.
- Despite best efforts, it is almost inevitable that [some people will be left behind in this transition](#); *it is how they are supported that is important*. The [Social Climate Fund](#) represents one attempt by the EU to address these gaps and support the most affected vulnerable groups, such as households in energy or transport poverty.
- Local communities need to understand '*what's in this for us?*'

Specific examples cited of other successful initiatives included the [Jiu Valley](#) for progress with job creation and reskilling; the [Czech Republic's employment pact](#) with a strong focus on green jobs; the [jobs bank in Spain](#); and the key [role of technical universities in the Midlands](#) in Ireland, for example, where they created a new university to retrain the workers affected by the closure of the peat cutting industry.

⁴ Higher Education Institutions, Community Engagement and Just Transition - START technical assistance (2023)

The Secretariat's Technical Assistance to Regions in Transition (START)

A critical component of DG-Energy's offering to regions is the oft commended Secretariat's Technical Assistance to Regions in Transition (START) program. START provides tailored, short-term support to coal regions to decarbonise energy production and usage, diversify economic activities, and progress social development. It can be used to fill knowledge or capacity gaps and to complement other technical assistance and capacity-building instruments. Support typically spans 50-100 'person days' delivered over a 6-10-month period and is provided by external consultants such as [Ecorys](#).

To date, 15 regional teams have received technical assistance to support their JT work spanning 10 EU countries, generating more than 30 outputs and knowledge products, guidance and reports. Deliverables from the program span an array of topics and include transition governance and strategy design in Asturias, Spain; the role of social enterprises in the energy transition in Eastern Wielkopolska, Poland; and prioritising and supporting transition project development in Jiu Valley, Romania.

A comprehensive list of transition projects is available on the [START](#) homepage.

The Role of Civil Society – Holding Government and Industry to Account

Participants repeatedly emphasised the important role that NGOs play in the JT process. Not only do they have a seat at the table in many regions, but they perform a key function in monitoring and evaluating whether regions are delivering on their TJTPs. Implicitly, they take a more critical view of the JTM, both positive and negative, which is extremely valuable, particularly for project evaluation.

[WWF](#) is one such organisation attempting to ensure that environmental and social issues are considered as part of the JT, and that countries and regions are held accountable as they implement their respective TJTPs. Along with its broader advocacy work, WWF produces a scorecard or assessment of 13 TJTPs. In its [most recent assessment](#) published earlier this year, WWF concluded that all TJTPs could be improved, with no plan receiving the highest rating overall and most plans only covering some aspects of the JT (see Table 1 below). While some aspects of the plans were deemed to be working well – fossil fuel phase out, economic diversification and skills, and other localised initiatives – the plans themselves tended to overfocus on economic or technological investments and workforce skills, rather than improving quality of life and addressing existing inequalities. WWF concludes that '*most plans miss the opportunity to act as the roadmap to guide a complete social, environmental and economic transformation of the region to a fairer and more sustainable future*⁵'.

⁵ Summary Report, TJTP Scorecard Assessment (Feb 2023), available at https://wwfeu.awsassets.panda.org/downloads/wwf_tjtp_v03_final.pdf

Table 1 – Summary Overview of the TJTP Scorecard (WWF, 2023)

Principle	1 Climate ambition	2 Fossil fuel phase-out	3 Sustainable economic diversification	4 Addressing inequalities	5 Supporting environmental objectives	6 Polluter Pays	7 Adequate public and private funding	8 Participatory processes	9 Place-based, local approach	10 Review and indicators	Total score
Austria	2	2	3	2	2	1	2	2	2	1	19
Czechia - Karlovy Vary, Moravia Silesia and Usti	2	1	2	1	2	2	2	2	2	2	18
Germany - Northern Ruhr	2	2	2	2	2	3	2	2	2	1	20
Germany - Rhenisches Revier	3	1	3	2	2	2	2	2	2	1	20
Germany - Lusatian Region	2	1	3	2	3	2	2	2	2	1	20
Estonia - Ida Virumaa	3	2	2	2	2	1	2	2	3	2	21
France - Hauts- de-France	2	2	2	2	2	1	2	2	2	2	19
France - Bouches-du-Rhone	2	2	2	2	2	1	2	2	2	1	18
Greece - Aegean Islands and Crete	2	2	3	2	3	1	2	2	2	2	21
Greece - Megalopolis	2	2	3	2	3	2	2	2	2	2	22
Greece - Western Macedonia	2	2	3	2	3	2	2	2	2	2	22
Slovakia - Trencin	2	2	3	2	2	1	2	2	2	1	19
Sweden - Norbotten	2	2	2	2	2	1	2	2	2	1	18
Total score by principle	28	23	33	25	30	20	26	26	27	19	257
Principle score as a percentage	72%	59%	85%	64%	77%	51%	67%	67%	69%	49%	66%

WWF recognises strengths in the TJTP approach, most notably leadership from the EU commissioner; and the strong local focus, breadth of the grassroots engagement and deep buy-in from communities. The START program is also recognised as providing high-quality, tailored technical expertise to the regions.

However, the European Commission is criticised for ‘not joining the dots’ in terms of economy, society and environment and needing to link the JT with broader societal change in these regions. One suggestion is for stronger alignment and collaboration with trade unions who typically have a strong voice and can protect the workers’ interests; and for investments to extend beyond new jobs and include reskilling, education, worker attraction, energy affordability, housing and other social aspects including protecting the coal heritage of these communities. Importantly, climate ambition must be increased and accelerated, and NGOs need to retain a strong focus on monitoring and evaluation of TJTP implementation. The JT in Belgium was cited as a positive case study in stakeholder engagement, albeit complicated by the internal layers of government, harnessing the power of citizen and NGO forums and bringing them together with scientists and other academics at a national conference to build and agree an action plan.

In its most recent publication entitled ‘[The Fair Way Forward](#)’ (WWF, 2024) and consistent with earlier recommendations to government, WWF again calls for a strengthened JT policy framework to deliver a wider-reaching and more inclusive transition. This would include increased and coordinated investment in JT measures based on thorough analysis of wider socio-economic impacts; urgent improvements by Member States to socioeconomic impacts analysis and corresponding policy responses; revisions to ensure a strong legally-binding framework for long- and short-term climate and energy policy planning integrating socio-economic and JT aspects; align EU funding instruments to the principles of a JT; support greater citizen participation in policy development at EU, national and local levels, to enable informed and fair policy which empowers and protects citizens; and strengthen social policy implementation as a foundation for a JT.



Figure 7 – Solidarity Esplanade, European Parliament, Brussels

Another influential NGO working to shape the JT in Europe is [Bankwatch](#). Based in Prague and focusing primarily on Central and Eastern Europe, Bankwatch plays a similar role to WWF in advocating for the inclusion of social and environmental aspects in the energy transition, as well as [monitoring investments of public funds](#) made by means of the JTM. Bankwatch differs from WWF in that they have strong representation in many of the coal regions themselves representing the concerns of these communities. In [Romania](#), for example, Bankwatch has sought to represent the diversity in the local community and argue for energy justice for families and children, broader multi-stakeholder engagement and community-based solutions. Bankwatch has also ensured that up to 70% of local JTM funding flows down to SMEs, a contrast to the situation in Western Europe where most funding is typically awarded to large corporations. Two [particularly informative initiatives](#) from Bankwatch – analysis of the EU’s Cohesion Open Data Platform and the resulting analysis of the EU’s JT funding – scrutinise EU investment by policy area (economic, social and environmental) and country and reveal the key areas of focus for the JTM.

In its broader critique of TJTPs, Bankwatch observes that transitions progress well when locally driven and supported by active NGOs (e.g. Poland and Estonia). Both [Wielkopolska](#) in Poland and [Ida-Varuu](#) in Estonia have pursued successful employment and training initiatives as a direct result of such an approach together with investment in community infrastructure and other enduring social benefits. Observing that this tends to be the exception rather than the norm, Bankwatch argues that some TJTPs are founded on weak partnerships due to poor communication and ambitious funding deadlines – lack of climate ambition and lack of stakeholder diversity are also identified as challenges to the process. With specific reference to Poland, in particular Upper Silesia and Wielkopolska, Bankwatch applauds the Polish Government’s ‘[Jobs after Coal](#)’ package for miners which guarantees income, incentivises workers to stay in the region and offers vocational training and bridging courses to new careers; while again lamenting the tight deadlines for project funding submissions, resulting in only the ‘simplest’ projects being selected, and the lack of investment in cultural support and initiatives for young people.

Meetings with other actors reiterated many of the same strengths and challenges experienced in the JT. The Government-owned German International Development Agency or [GIZ](#) has broad involvement in the JT, most notably through the GIZ/EU co-funded [IKI-JET](#) program, an international network of coal regions. By linking regions and sharing knowledge, IKI-JET aims to support and accelerate just energy transitions away from coal to renewable energies and other sustainable economic activities in Chile, Colombia, Indonesia, Mongolia, South Africa, Thailand, and Vietnam.



Figure 8 – IKI-JET Climate Initiative in Vietnam (Source – IKINEWS)

Reflecting on the European experience, GIZ echoes the importance of capacity building by government at a local community level, with responsibilities for the transition distributed clearly and inclusively to people with deep local knowledge and networks – sufficient time and money for planning and skills development in the local community emerge as key concerns. Stakeholders need to know what’s happening at all stages of the transition, so ongoing communication plays an important role. Multi-level, clear governance is important and will be for Australia, given the absence of regional government. Although some local monitoring committees do exist, lack of ongoing monitoring and evaluation was again seen as a major challenge across the EU. So too is the need to spend 60% of the JTF by 2026, the tight timeframe proving problematic for many regions to identify, specify and deliver truly transformational projects. Consequently, the larger, simpler projects tend to be selected over smaller, complex projects both for ease of expenditure and impact.

Some of the more positive outcomes of the JT process include the huge change in the coal narrative from threatening to optimistic, with coal communities generally accepting the new reality as a result of deep and ongoing engagement and discussions. The Green Deal has helped, as has the regionally-focused planning process. The levels of EU investment are adequate, particularly in Eastern Europe, while the social climate fund will help the financially-disadvantaged in the JT regions. While aligning requests to the plethora of funding streams is often confusing for communities, it has forced national and regional authorities to work together. Some of the successful European case studies from GIZ’s perspective include the work of the START program in [Poland](#) in supporting the development of a multi-level governance

system between the regions and the national government; high levels of youth engagement in [Estonia](#); and economic development and START in [Greece](#).

[The Institute for European Energy and Climate Policy \(IEECP\)](#) is another EU-based NGO providing independent expertise and insights for policy makers and other actors in the public and private sector. Conversations with IEECP largely echoed the strengths and challenges of the JTF through the following key insights:

- There is a need for more holistic, locally developed TJTPs co-designed with all actors; this requires investment in regional and local capacity building.
- Key areas for improvement by the EU include the need for deeper stakeholder engagement and ongoing communication.
- History is holding back regions in Eastern Europe - the EU needs to better understand their needs and better communicate the potential benefits of the JT.
- START plays an important role in providing technical assistance.
- Multi-level governance involving grassroots organisations is essential – ‘top down’ structures don’t work!
- A clear vision is important beyond energy; focus on economic development, tourism (e.g. Katowice, Poland).
- TJTPs tend to over-focus on jobs and need to broaden the narrative to include broader societal impacts and benefits such as education, infrastructure, digital skills, diversity, social and cultural aspects.
- Funding is problematic and hard to access for many (smaller) groups such as SMEs– need different funding schemes for different groups.

Key Insights from Brussels

The views from the heart of Europe provide valuable insights for the Australian transition. There is a mixed picture of progress across Europe, unsurprising given the JTF is still at a relatively early stage. Countries such as Spain and Germany were forced to move early and close uneconomic mines, while some countries in former communist Eastern Europe with a long history of coal mining such as Romania and Poland are struggling to transition large workforces.

1. The scale of investment and support from the EU is undoubtedly an enormous catalyst for innovation and activity in the coal regions.
2. The TJTPs are a key instrument in terms of engaging meaningfully with local communities and building commitment and transparency.
3. Spain's JTI and tripartite 'social agreement' between government, unions and industry are frequently cited as creating a best practice platform for local action.
4. DG-Energy identified several [critical principles](#) for approaches to energy transition.
5. The [CINTRAN](#) research project (see below) provided complementary insights, most notably the importance of workers' compensation and JT policies; and understanding regional capacity to adapt and notions of energy justice.
6. START's technical assistance program plays a pivotal role in catalysing local projects swiftly by bringing consulting capacity and expertise to coal regions.
7. Large and influential NGOs like WWF and Bankwatch are key stakeholders in regional transitions as honest brokers, ensuring funds reach the appropriate target actors, monitoring and evaluating TJTPs and holding government and industry to account.
8. JTF is tending to overfocus on the economic aspects of transitions and neglecting to varying degrees the opportunity to address social and environmental issues.
9. Tight timeframes and misalignment in funding streams are tending to encourage support for 'simpler' projects that are undertaken by larger corporations.
10. A consensus emerges that transitions generally succeed when communities are engaged at an early stage of the process in a deep and meaningful manner are co-design solutions for their own future economic development.



Carbon Intensive Regions in Transition (CINTRAN)

Another important research initiative by DG-Energy that concluded last year that lay the groundwork for the JTM was a program entitled Carbon Intensive Regions in Transition or [CINTRAN](#).

Focusing on four regions in Greece, Estonia, Germany and Poland, the project studied the patterns and dynamics of decarbonization at a regional level, as well as measuring the capacity of a coal region to adapt to the related structural changes. The lead authors of the report observed that due to their different starting points, no transformation of a carbon-intensive region will necessarily be like any other; hence it can be challenging to extract lessons from one case and apply them to another.

Key conclusions from this [in-depth research](#) were as follows:

- In terms of government policy, while destabilization policies may be important in the early phase of decline to break technological lock-in, compensation and JT policies become more important in later phases to manage backlash from actors and support regional renewal;
- Regional capacity to adapt declines as the share of income from carbon-intensive industries increases in terms of regional GDP. This may enhance regional capacity to resist. Regional capacity to adapt may increase with investment from outside the region. Better understanding the regions' capacities to resist and recover from decline can help inform strategies for feasible decline pathways;
- In terms of energy justice, a multitude of injustices are identified relating to regime optimization, regime destabilization and niche acceleration. Better understanding the justice implications of low-carbon transitions can inform transition policies with the aim of addressing these injustices.



iii. Germany – Fuelling a Rapid Switch to Renewables



Figure 9 – LinkedIn Post, Germany (November 2023)

My time in Germany was divided between high level stakeholders in Berlin and key actors in and around the coal region of Lusatia, as well as other actors involved in reshaping the regional innovation ecosystem to create new opportunities and enable a transition away from coal.

Embodied in the *Energiewende*, Germany remains committed to shutting down all its coal fired power stations by 2038 and to move towards a climate-neutral energy system by 2045, with an interim goal of 80% of its electricity sourced from renewables by 2030.

Germany forms the centrepiece of the EU’s JT initiative, if only because of the sheer scale of investment. In addition to the €2.5 billion of EU funding in the coal mining regions most impacted by the green deal - North Rhine-Westphalia, Brandenburg, Saxony and Saxony Anhalt - the Federal Government in Germany has dwarfed this investment with funds for ambitious regional economic policy support and large-scale investment in these regions. This has been underpinned by the strong support already provided to coal workers through the German social security system⁶. According to [Clean Energy Wire](#), it is estimated that the German Government’s financial support for coal regions already stands at more than €40 billion.

According to the Foundation for European Studies (FEPS, 2023), Germany directs 45% of its TJTP budget towards economic measures, 29% towards environmental and 26% to social programs. Of the overall budget, large corporations receive 10% for energy efficient and climate neutral investments and an additional 6% for ‘other’ research and innovation activities focused on low-carbon investment; SMEs receive 14%; and incubators 15%. In terms of environmental investments, the TJTPs directs money into renewable energy infrastructure (3%); increasing energy efficiency (3%); and investments in decontamination, flood and heat measures, and biodiversity (7%). Much of the budget for social programs is being spent on upgrades to broadband - German regions hope that the combination of broadband internet with co-working

⁶ Furnaro, A., Herpich, P., Brauers, H., Oei, P. Y., Kemfert, C., & Look, W. (2021). German JT: A review of public policies to assist German coal communities in transition. *Environmental Research Fund*. URL <https://media.rff.org/documents/21-13-Nov-22.pdf>.

spaces will make remote work easier and encourage young people to stay in the regions. The remainder funds vocational training and education in disadvantaged neighbourhoods.

A National Perspective on the JT

In Berlin, the impact of the first three years of the JT has been more positive than expected with limited redundancies, assisted by early access to pensions for existing workers, a national labour shortage and the creation of new public sector jobs in research and education – the German constitution limits the investment of public funds directly into private sector companies. Some existing coal-fired power stations have been converted to gas or hydrogen, thus minimising the short-term impact of the JT. Generally, the JT has been easier for workers in Western Germany which has been undergoing a longer-term phase out of coal, hence most of the current effort is on the promotion of longer term, structural economic change which poses challenges in spending short term funds. Regions and municipalities remain the key channels for implementation of the JTF in Germany.

The Federal Government characterises the early stages of the JT as inclusive, gathering knowledge from local communities and building trust which all takes time and requires limiting the circle of engagement. Expectations of the JT are high, and communities want change rapidly, hence it is important to have some quick wins in what is essentially an 18-year long process. Governance models and funding channels also take time to establish, and working with Brussels can be complex and slow. Interactions between national and state governments have worked well for the most part, although there needs to be greater focus on supporting labour programs in the future rather than solely investing in infrastructure.

Importantly, different strategies are required in each region to address local idiosyncrasies – contrast the approach to transition in the Ruhr which has been ongoing for decades compared to issues in Lusatia which is in decline and struggling to attract new workers and younger families. For example, the Jiu Valley in Romania has a clear strategy to entice people back to their home region through the creation of new social infrastructure, digital innovation hubs and other incentives.

A Chill Wind From the East – Transitions in Former Communist East Germany

The region of Lusatia in the state of Saxony is one of the proving grounds for Germany's JT. Bordering Poland, this economically fragile coal mining region was a powerhouse in the former East Germany, thanks primarily to job security under the communist regime and reliable income from the coal industry.

More recently, the region has struggled to develop a coherent economic vision for a post-fossil fuel world. Demographic decline presents a major obstacle to economic transformation in the region - Lusatia faces a shortage of skilled workers for companies ready to invest in renewable power generation and other future technologies. Aside from the weak economy, the recent successes of the far-right parties in local elections raises concern for many, hence worker attraction and social cohesion form the major priorities for the region.

The Federal Government and the states have sought to address transition challenges in the region by allocating billions of euros to establish Lusatia as a modern clean energy powerhouse, and incentivising investments from the private sector. However, a lack of integrated planning to improve transport and grid infrastructure to better connect Lusatia to other regions has drawn criticism and is seen as a key prerequisite to trigger growth and slow the 'brain drain'.

In the context of the Lausitz locality, once the TJTP had been signed and a local plan agreed, it took considerable time and countless interactions with the Federal Government to transform the JT funding into projects related to energy infrastructure, tourism and innovation. Echoing the views from Berlin, local actors characterised the early stages of the transition as highly participatory with much stakeholder interaction and dialogue to determine a priority action plan. There was a constant tussle between the federal and regional governments and much compromise to ensure that the funding was spent on JT-related projects – of the €4 billion made available, 60% of the funding was provided by Berlin. The states contribute a further 10% to help the municipalities establish a special purpose vehicle to distribute the funds.



Figure 10 – A Disused Coal Mine in the Heart of Lusatia

The municipalities are the only entities permitted to spend the funding. For example, the Brandenburg Municipality adopted a workshop process to determine the funding priorities around five key pillars which appears to have been effective in allocating funding to priority areas. With 20 people working on each pillar, the workshops generate ideas for projects which they then qualify and submit proposals to the state governments who make the ultimate funding decisions. To date and two years into the process, government has supported every recommendation of the workshop streams resulting in 70 new projects currently in train, with additional projects funded federally. The funds need to be acquitted rapidly which has proven problematic in many instances.

Away from Lusatia, there remains a degree of scepticism about the JT and its relevance in addressing the priority concerns of the former East Germany. Issues abound related to funding streams which are competitive, hard to access and are perceived by many to be directed towards infrastructure rather than people. The JT is viewed by many as a repeat of the reunification process, mandated from the top down with little grassroots engagement. In contrast, the coal transition in former West German states has been far more participatory.

These issues of local engagement and the need for multi-level governance occur repeatedly in conversations and in the academic literature⁷, as does a tendency to over-focus on transitions to energy rather than considering other industry sectors.

The Role of Universities

The local universities have profited enormously from the JT, receiving 5% of the total investment or ca. €500 million in exchange for technical and project management skills to create an energy regime, as well as attracting other research partners. In total, €2.5 billion of the €10 billion available for JTs in Germany is supporting structural economic change rather than JT.

One example is the [Centre for Hybrid Electric Systems](#) at the Brandenburg Technical University, a testbed for research and new technology. It is hoped that the 250m euros of investment from public funds will attract private investors and trigger the creation of an entirely new innovation system – already Rolls Royce has shown interest in the project.

The [SMILE](#) entrepreneurship program at the University of Leipzig provides another example of how innovation and jobs growth are being addressed in the region through a ‘whole of system’ approach to change. The program focuses on research and knowledge intensive businesses in the fields of biotechnology, healthcare and technology and on the promotion of culture and the creative industries, communication, sustainability and social issues. Young entrepreneurs, start-ups and existing companies who have entrepreneurial ambitions receive support in the form of individual and tailor-made approaches including assistance with grant funding. The initiative works with participating universities and research institutes, technology transfer centres, the private sector (banks, venture capitalists) and regional interest groups beyond the immediate network including business chambers and government departments such as employment centres. SMILE is funded through the European Social Fund (ESF) and Free State of Saxony and is mostly free of charge for business users.



Figure 11 – A Former Coal Facility Now Innovation Precinct in Leipzig

Over 15 years, the program has supported more than 600 start –ups, with 23,000 people attending their training workshops. The program is now moving into the coal regions creating on-

⁷ Furnaro, A., Herpich, P., Brauers, H., Oei, P. Y., Kemfert, C., & Look, W. (2021). German just transition: A review of public policies to assist German coal communities in transition. *Environmental Research Fund*. URL <https://media.rff.org/documents/21-13-Nov-22.pdf>.

the-ground start up hubs in an old chemistry factory and a co-working space with one of the local councils to attract start-ups. The university itself is planning to build a green chemistry research centre in the city to attract investment and business, funded by the Federal Government which accepts that these types of activities are speculative and prone to failure and that a multi-pronged multi-industry approach is needed. A lot of time and money goes into communication of the programs which is a critical success factor for SMILE.

The program has many success stories including a 65% survival rate for SMES after five years; a strong positive profile in the University working closely with the Business School and connecting researchers with SMEs and *vice versa*; solid funding means the service is free for end users and gives enough time for a full business review. Key factors for success include a high degree of autonomy from government, customisation of services to the needs of SMEs, transparency, and being allowed to fail. The key challenge has been short term funding cycles which makes it more challenging to attract staff.

‘We want people to come to us with stupid ideas’ (SMILE Program Coordinator)

Representatives of the university echoed the sentiments of other actors in terms of their perspective on the coal transition in Brandenburg and the Lausitz. German reunification still casts a long shadow over the coal transition with a legacy of job losses, uncertainty and migration to the west. While money was invested to boost employment, many of the jobs created were relatively mundane operational roles within large MNCs such as Amazon, with little money flowing into research and development.

The Role of Other Actors – Innovators, Incubators, Consultants

Spinlab in the northern suburbs of Leipzig provides a tangible example of the extent and benefits of SMILE’s strategic partnerships. Housed in a former industrial facility and partnering with the Leipzig Business School (HHL) amongst others, Spinlab provides a free of charge accelerator that supports the growth of start-ups looking to scale up their businesses. Identified by the Financial Times as one of the top 15 start up hubs in Europe⁸, SpinLab is recognised particularly for its mentoring, infrastructure, legal support, funding advice, and network, assisting 116 start-ups since 2015 and achieving an 86% survival rate. Renewable energy and energy technology represent key areas of focus and are integrated across [SpinLab Group’s](#) five pillars of start-up and high-tech accelerators; an agrifood and bioeconomy innovation hub; an innovation and digitisation hub; and a smart infrastructure hub. Critical to SpinLab’s success has been a diverse network of partners including more than 25 corporations, research institutions, universities, and industry experts.

⁸ <https://www.spinlab.co/news/leading-startup-hub-financial-times>



Figure 12 – Visiting David Blazek at the Spinlab Accelerator in Leipzig

Christoph Scholze at **Tragwerk** represents another important actor in the local innovation ecosystem. Based in Goerlitz and raised in Lusatia, Scholze positions himself as a ‘transformation architect’ or change agent within the local ecosystem focused on rejuvenating the local economy after the challenges of Covid19, reunification and the ensuing economic and social challenges. With low levels of community trust in politicians and scepticism in the region towards the JT, Scholze is keen to see greater local political unity focused on regional economic stimulation in infrastructure, clean energy and health as a focus for improved community engagement. Citing the collective success in preserving the Siemens factory in Goerlitz and the subsequent establishment of the local innovation campus through the Goerlitz Future Pact, Scholze wants stronger incentives to attract innovators and businesses to the region; a greater focus on SMEs that account for 90% of the local economy; a stronger culture of collaboration; and an improvement in the knowledge transfer process between organisations.

The scale of the challenge and breadth of expertise required has necessitated the recruitment of consultancies and academics to assist in the delivery of knowledge and on-ground projects in coal regions. One such consultancy is **Guidehouse** working with DG Energy and DG Regio to support the design, development and implementation of **JT Peers**, a knowledge exchange program between the regions; and **JTP Groundwork** providing tailored technical assistance to JT regions to support the implementation of their TJTPs. JTP Groundwork supports regional and local public authorities, national managing authorities, and socio-economic partners, such as NGOs, universities, unions, and private businesses across Europe through project identification and development; capacity building for regional and local administrations; development of transparent, inclusive, and efficient governance mechanisms; stakeholder engagement and mobilization; and project promotion. Within this program, specific toolkits for SMEs have been developed along with vocational toolkits for young people and women.

Understanding the JT in Germany

While there is an abundance of funding available to support the JT in Germany and across the EU more broadly, challenges exist for actors, not least the high expectations of the regions for large scale change based on political promises made by all levels of government. This mismatch is creating tension, particularly in coal regions in Eastern Germany, which is hoping for major improvements in the provision of social services and living conditions generally.

Importantly, the coal debate in these regions is closely linked to the relatively recent experience of national reunification where many workers were traumatised through job losses and where high levels of suspicion and mistrust remain. Several academics and other actors reiterated the need for greater focus in these regions on people and social infrastructure rather than just jobs.

Many observed either directly or indirectly that the JT remains an experiment in large scale economic transformation and as such is fraught with uncertainty. The JT is context specific, with each region facing unique challenges and requiring different solutions yet needing to identify and build on its key strengths as witnessed in Asturias in Northern Spain. Cross border projects pose particular challenges in terms of management and funding, while the politics of local funding are complicated by a reliance upon national funding often with different priorities. The funding process itself tends to favour the stronger regions with the skills and capacity to respond, while tight deadlines and limitations of the funding make innovation challenging in many instances. Multi-level coordination of funding between Brussels and national, regional and local authorities can be cumbersome.

While the SMILE initiative in Leipzig is closely aligned to the EU's desire to support the growth of SMEs, many other regions have been keen to invest JT funds into larger established companies in the hope of quick wins and at scale. To date, reskilling programs in Germany have been few and far between and are often minority focused, largely because many miners are taking early retirement due to the attractive financial incentives – Norrbotten in Sweden provides a positive example of how existing steel workers have been retrained and reskilled and new workers attracted.

Governance is again cited by many as a key dependency for success. In the European context and by way of comparisons, Greece has adopted a 'top down' approach, needing to move quickly to spend large sums of money. In contrast, both Silesia in Poland and Upper Nitra in Slovakia have integrated NGOs and local government into a 'bottom up' approach to governance. Hungary has taken a similar approach, partly because of the national government's reluctance to support the JT more broadly. Ostrava in the Czech Republic provides another good example of a grassroots driven approach informed by research and innovation into emerging low carbon technologies.

Key Insights from Germany

There is evidence of a two-speed transition between Western and Eastern Germany due primarily to their political histories. Regardless, Germany is investing more heavily than any other EU country to ensure the JT is a success and transforms regional economies and ecosystems.

- Led from the Federal Government in Berlin, all levels of government are collaborating and investing heavily to ensure the JT is a success. Multi-level governance remains key.
- The *Energiewende* and the Federal Government's Social Contracts with miners in each coal region underpin the JT and provide certainty to industry and workers alike.
- Investment is shared between economic (45%), social (26%) and environmental (29%) initiatives.
- Again, we see a holistic approach on restructuring regional economies and ecosystems rather than overfocusing on just clean energy.
- Universities are making a critical contribution supporting start-ups/SMEs and adopting a 'whole of system' approach.
- Similarly, start-up hubs like Spinlab are supporting budding young entrepreneurs.
- Expectations of the JT are high, especially in the East, so quick wins are needed to engage communities.
- Worker attraction and retention is challenging in Eastern Germany and especially of the younger generation, with many employees still heading west.
- Federal Government would like to see a greater focus on labour programs rather than favouring infrastructure.
- Time and money was spent 'up front' talking with communities, building trust and understanding needs and priorities which is now yielding rewards.
- EU-funded technical programs like JT-Peers and JT-Groundwork have provided valuable support on the ground and enabled useful knowledge exchanges.
- Trade-offs have been made in longer terms projects relying on short term funding; Brussels is sometimes slow to process submissions; and funding seen to favour infrastructure not people.



iv. [Poland](#) – Building on the Coal Legacy

Poland's transition away from coal started in the early 1990s with the rapid closure of mines in Lower Silesia, driven largely by concerns around profitability and safety, with only minimal support provided to affected workers. According to [Resources for the Future](#), coal production has since decreased by 63% and employment in the mining sector has declined by 80% to ca. 80,000 jobs.

To avoid a recurrence of the 1990's upheaval in the industry, the Polish Government and trade unions concluded a Social Contract for mine workers. With coal mining set to conclude by 2049, miners affected by closures will have the right to transfer to mines still in operation or receive an early retirement package equal to 80% of their salaries along with a severance payment of €26 500. The contract also includes investments of more than €3.5 billion in 'clean coal' technologies.

The funds allocated to the regions under the JT process are reflective of the scale of the task. As the largest coal mining region in the EU, Upper Silesia receives €2.4 billion from the JTF which will support investment into SMEs working in renewable energy, clean mobility and other green sectors. The JTF will also invest in rehabilitation and decontamination of 2,800 ha of land to rectify environmental damage from past mining activities. In neighbouring Western Małopolska, which will also be severely impacted by these mine closures, the fund will support investment in home insulation, rooftop solar, and heat pumps to improve energy efficiency in public housing. Finally, the JTF will support the reskilling of more than 100,000 coal workers to transition to low carbon industries and aims to create 27,000 new jobs. In total, 40% of JT funds are being invested into economic programs (R&D, SMEs, mining services, etc); 36% into environment initiatives (DER, transport, low carbon industry); and the remaining 24% into social programs (education, justice, quality of life, restructuring). The emphasis of the JT in Silesia remains on the next generation of workers and building a new identity for the region.

Spotlight on Silesia

Talking to an array of stakeholders across the Silesian region, it is apparent that the Polish JT remains at an early stage and is relying heavily on funding from Brussels. Local and regional authorities are struggling to find the capacity needed to manage the JT process, hence are choosing to support smaller, simpler projects rather than large scale, complex investments. A general perception exists that while thorough planning has been critical but probably taken too long, there is now a need to move much more quickly to implementation at scale.

Silesia's TJTP identifies the key focus areas for JT funding which are listed below.

- Digital technologies and services.
- Tourism, the cultural and creative sector, and cultural heritage.
- Modern business services sector development projects.
- Development of the MICE industry.
- Investment in research and innovation activities toward a low-carbon economy, supporting the transfer of advanced technologies.
- Investments in the development of hydrogen technologies and other alternative fuels.

- Investments in strengthening a circular economy, including through waste prevention (CE investments).
- Energy and transport infrastructure projects, including district heating systems and electricity grids, as well as comprehensive projects for decarbonization (RES, energy efficiency).
- Reclamation of industrial sites (including contaminated ones) and the restoration of such sites to sustainable use, especially for private entities.
- Sustainable development of urban and rural areas (including revitalization, development of educational, social infrastructure), implemented by public and private entities.
- Activities to preserve the identity and cultural heritage of the mining region, among others, for the commercial development of unique industrial heritage resources, supporting diversification into creative industries.
- Water infrastructure activities, including drinking water supply and wastewater management.
- Support for industries that build competencies for national and international competitiveness.
- Development of start-up companies; nanotechnology; and creative industries (architecture, design and computer games).
- Support for educational infrastructure, particularly in the field of lifelong and higher education for green and digital transformation.

Across Lower Silesia, plans for energy clusters and hydrogen hubs are emerging where local municipalities are collaborating with their counterparts across the EU to learn and prepare for the low carbon transition. The [energy clusters](#) resulted from a collaboration between business, government and NGOs and are essentially brokering agreements with municipalities to strengthen cooperation on renewable energy generation, storage, investment and distribution. The clusters revolve around local government but can include research and development organisations, universities, generators, network service providers and prosumers. Similarly, the hydrogen hubs comprise a lead business working closely with government to develop manufacturing facilities in 5-6 locations across the country.



Figure 13 – A Visit to KADRA and the Mining Museum with Grzegorz Trefon and a former mineworker

In Walbrzych for example, the [Green City Action Plan](#) as part of the W-Cluster is driving investment in green infrastructure such as solar and wind as well as efficiency upgrades of the local electricity network and town heating system. Collaboration with government, industry, NGOs and the local energy clusters is proving a key ingredient to success, including working with local development agencies to overcome ubiquitous labour shortages.

A very broad range of strategic projects are beginning to materialise in Upper Silesia funded by the JTF including university research centres, technology districts such as the [gaming hub](#) in Katowice and [green economy hub](#) in Tychy; [renovation of post-mining buildings](#); and reclamation of mining land. An EU-funded '[regional observatory](#)' has also been created between three mining organisations including the union (ZZG), the chamber (GIPH) and the central mining institute (GIG) and overseen by the Marshall's Office involving knowledge exchanges and building a network through to which to exchange data about the JT with a view to informing and shaping government policy.

Marshalling the Transition

The Marshall's Office in Katowice is at the centre of the coal transition in Silesia, responsible for the governance of the [regional transition plan](#) and the distribution of EU funds. These funds will support measures aimed at strengthening and diversifying the regional economy and improving the quality of life in the region, including projects specifically focused on the green transition, as well as supporting reskilling and revitalisation of post-industrial areas. A major challenge has proven to be the post-communist legacy, particularly in terms of the high regard for mining during that time and the continued influence of the trade unions in negotiating many of the benefits enjoyed through the social contract and job guarantee. Despite policy challenges at a national level in the last 10 years and varying legal frameworks at a regional level, the JTF and the EU's social cohesion funding have been especially important for the region in funding positions and building capacity.

Key to the recent rapid progress in the region have been the multi-level governance structure, the granting of power and decision-making to the regions, and the time spent conducting local workshops in the initial stages of the project. More than 3,000 people were involved in 33 workshops over an 18-month period in a process of social dialogue mandated by the EU. Existing professional networks and organisational channels were used to engage institutional stakeholders in a process supported by the World Bank and PwC and with the involvement of the relevant government ministry.

One major challenge has been to involve ordinary citizens in the communities affected. Local participation was led by the Marshall's Office in conjunction with local universities and research organisations, reinforcing the importance of investing in local capacity building and knowledge in the regions. Another key element was to identify strategic investments and approach potential investors to enable economic diversification, particularly in IT, medicine, and broader healthcare as part of the innovation strategy and economic development plan already agreed with Brussels, sending clear policy signals to investors. Smart specialisation has formed a key pillar of this innovation strategy, as has investment in mining-related industries to maximise potential across the entire mining value chain. Another example is a recent investment in a local IT hub to attract younger entrepreneurs and keep them in the community.

Other actors playing a key role in the transition to a low carbon economy in Poland include the Institute for Ecology of Industrial Areas (IETU), a research organisation under the Ministry for Climate based in Katowice. The research and services offered by IETU focus on environmental challenges posed by industrialised and urbanised areas in the context of the circular economy, resource efficiency, adaptation to climate change and mitigation of its effects. Many of its [programs](#) support the JT either directly or indirectly. Similarly, [KOMAG](#) or the Institute for Mining Technology is another research and development organisation working closely with the Marshall's Office to provide innovative new solutions for mining that support the JT and preserve the proud industrial heritage of the region. KOMAG's current project range from innovative transportation systems to environmental management in industrial areas and technologies and methods for environmental protection. Finally, KADRA or the Federation of Mining Unions plays a key supporting role in the JT, not least preserving former mining buildings and promoting the industrial and cultural heritage of mining regions.

Key Insights from Poland

- Stakeholder participation took time and money but produced results - Investing dollars into the ongoing community engagement process is critical.
- Awareness of the JT remains low in the broader communities, need for ongoing communication and explanation.
- Many local businesses and the business chamber remain sceptical about the transition to renewables.
- Implementation has proven daunting for many.
- Regional government involvement is critical – a nationally-led program would undoubtedly fail.
- The quality of projects is variable.
- Need to promote the outcomes and successes to the community on an ongoing basis.
- Policy inconsistencies between federal and regional government have deterred investment; supportive policy settings and alignment are critical.
- JT has forced the creation of a vision, but the community is still unclear about its purpose.
- Government's conflict of interest as both policy maker and business (mine) owner needs to be resolved.
- Retraining and reskilling programs are being targeted at young people, partly due to low interest from the mining sector.
- There is strong local pride in the mining heritage and a desire to preserve and celebrate its contribution (see St Barbara's Day below).



Celebrating Barbórka: Honouring Poland's Mining Tradition on St. Barbara's Day

'December 4 marks a significant day in Poland, especially for those entrenched in the country's esteemed mining industry. Barbórka fondly referred to as Miner's Day, is a time-honoured celebration steeped in tradition and reverence, paying homage to the resilience and dedication of miners. On the feast day of St. Barbara, the patron saint safeguarding those confronted by the perils of sudden, perilous work-related incidents, this celebration takes centre stage. Beyond miners, geologists, and professionals tethered to the fossil fuel sectors also partake in commemorating St. Barbara's Day.

The day commences with a solemn morning mass, a poignant tribute held either in the church or the *cechownia*—an integral part of the mine where miners convene and fulfil their duties before delving into their shifts or upon resurfacing. Here, the figure of Saint Barbara stands as a symbol of protection and solidarity. Following the religious observance, the spirited strains of miners' orchestras resonate through the towns, proudly performing their anthems while parading along the streets. The celebrations encompass an array of events, including gatherings, concerts, and jovial balls, inviting miners and their families to partake in the festivities. Notably, each mine boasts its own distinctive orchestra and anthems, fostering a sense of identity and unity within their respective communities.

For miners, whose daily rhythms unfold within the depths of the earth, time takes on a distinct cadence, and the realities below ground sculpt their lives. Their customary greeting, "Szczęść Boże" or "God Bless," echoes a wish for safety akin to a heartfelt "Have a good day" offered under the sunlit skies above. Barbórka isn't merely a celebration; it's a testament to the courage, camaraderie, and enduring spirit of those who brave the inherent dangers of mining, honouring their heritage while embracing the challenges that come with their noble profession.'

(Poland Daily 24, 04/12/23)



Figure 14 - St Barbara's Day 2023 organised by the National Mining Institute (GIG) which I attended as a guest of KOMAG.

v. Slovakia – From Citizen Engagement to Action



Figure 15 – LinkedIn Post, Poland & Slovakia (December 2023)

Slovakia's decision in 2018 to transition away from coal occurred in an incredibly short period of six years in the face of poor-quality coal, ageing power plants and consequently a relatively unproductive coal industry. As a modest producer of coal and an electricity backbone built on nuclear power, the country's last coal fired power station at Novaky in Upper Nitra closed six years ahead of schedule at the end of 2023. A special law was passed in 2019 to protect miners affected by the shutdown, with the national government guaranteeing income for 24 months post mine closure and providing education and training, legal and financial advice and social support. Like many coal regions, Upper Nitra has an ageing population and is experiencing a 'brain drain' of younger people moving to the cities; it does however have a reasonably diversified economy (automotive, food, construction, etc).

The TJTP 2021-27 provides €459m for Slovakia and is built on three pillars – economic diversification to create new businesses; low carbon transition and brown field revitalisation and smart transport, including the creation of a new [industrial park in Handlova](#) and the conversion of a power station to Slovakia's largest solar array; and reskilling and retraining for workers. For example, the mining company's (HBP) employees were mentored in CV writing, offered free training courses while employed, and ongoing financial and in-kind support all funded by the JTF. Education levels are generally low, and labour is scarce, so training is critical especially for young people, hence the plan to build an EU-funded training centre in Prievidza along with equipment to enhance existing training facilities at schools and hospitals.

In addition to starting the process prior to the existence of the JTF, collaboration between all levels of government and other key local actors has been at the core of this speedy transition, supported by the wealth of knowledge created and shared across the EU.

“The Upper Nitra region is a great example of public authorities actively bringing together public institutions from all levels with entrepreneurs, residents and NGOs like Friends of the Earth-CEPA to collectively plan a timely coal exit. It's hard to overstate the benefits that this has for

Slovakia. Not only is it great news for people’s health, but it also provides an economic dividend, saving up to 605 million euros,” said Mr Alexandru Mustață of Beyond Fossil Fuel.

Supported by the EU Social Fund, the region took a highly participatory approach to the transition, engaging constantly with the community and working groups, led by the city council and the then mayor and overseen by PwC, ultimately creating their own vision and plan.

The first project selected by the community was the conversion of the municipal heating system from coal to geothermal water from the mine, solar and biomass (see images below). Gas will be used only as a back-up for winter peaks. The facility is a joint venture, majority-owned by the City (51%) in conjunction with the mining company HBP (49%). Despite ambitious deadlines, the project led by HBP’s Chief Engineer Karsten Ivan went live on schedule in December 2023. HBP is planning other related projects, currently investing in renewable energy generation and water recycling for fish-farming, hydroponics and fruit farming leveraging transition funds.

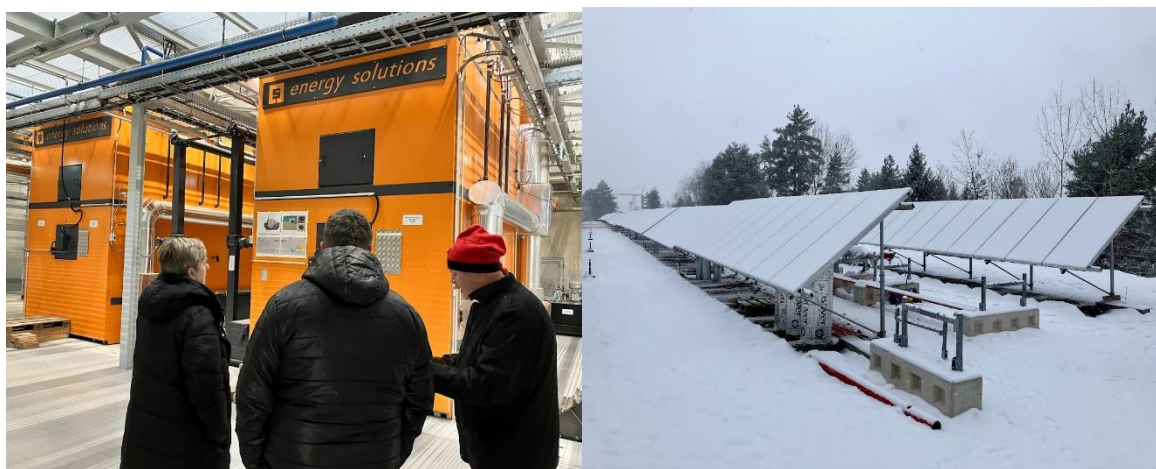


Figure 16 – The Former Coal Mine Now Geothermal Plant in Handlova

Discussions with local stakeholders echoed a theme from other regions, namely frustration with the excessive amount of time spent on engagement and conversations and a lack of focus on implementation and action, particularly across the three levels of government. Similarly, NGOs and others felt that too much emphasis was placed on the mining industry at the cost of other sectors of the community, especially since many miners are approaching natural retirement age and the industry has in global terms been relatively unproductive. At a community level and similar to other regions, the understanding of the JTF and its benefits are not well understood by the community.

Other key challenges identified include the challenge of tight funding deadlines and definitions which precluded ambitious, creative project submissions and limited the number of submissions, hence communication between the EU and target communities must be improved and simplified. Finding co-funding locally also proved problematic. At a broader level, the national government has not been particularly visible in its support of the JTF, and this has created policy problems regionally. From the city council’s perspective, there is a need to prioritise two or three key projects rather than spreading resources too thinly.

Three projects consistently emerged out of conversations with local stakeholders – the town district heating conversion in Prievidza; the regional [Sustainable Energy Centres](#), a national ten-year project responsible for identifying DER opportunities and mapping data, working closely

with municipalities to create a transition plan for the regions; and the [EU Teens4Green initiative](#) in Upper Nitra celebrating the coal heritage and history of the region.

The Role of Innovation Intermediaries – PwC in Eastern Europe

Funded by the JTF, PwC Slovakia has been involved in facilitating seven research projects across Eastern Europe starting with Upper Nitra in Slovakia in 2018. A stakeholder participation plan was developed and launched in 2019 which attracted interest from HBP and the Federal Government and resulted in a local action plan. PwC then assisted with the development of the TJTPs for Slovakia and other territories, ultimately attracting JT funding for implementation locally including the municipal heating system conversion.

Government support is seen as critical to the success of the JT across Europe, but the action itself needs to start from the grassroots community. The engagement process in Nitra worked well, partly because the Federal Government uncharacteristically stepped up to support the initiative at a relatively early stage. Working groups were formalised across all levels of government and community and the holistic conversations took place focused on sustainable regional economic development, although engaging young people proved challenging, partly because of the ongoing brain drain. Experts joined at key junctures to enable the creation of a robust and detailed strategy from diverse groups within the community, ensuring the funds were channelled into grassroots projects and were not just distributed to large corporations, as has happened in other parts of Europe. In the early days of the process, there was an absence of data, lots of emotion and hence procrastination. Formalising the process brought the focus onto the action plan which resulted in an engaged and efficient stakeholder process (see <https://bankwatch.org/blog/will-europe-s-just-transition-pilot-support-locals-in-slovakia>). Action planning included many public hearings which were open to everyone, with more than 200 people participating actively and constructively in the process. The key learning was the importance of involving local people at all stages of the engagement process and especially in shaping the action plan.

Negotiating with the EU for funds was a lengthy process, especially after the successes of the stakeholder engagement and action planning. The strategy itself was informed by the database of 500 projects collected by the Federal Government for inclusion in the TJTP. There was also a need to attract private sector finance to supplement the EU funding which has proven challenging, partially because people are used to applying successfully for government grants. Also, the local community lacked the technical capacity to prepare submissions in a detailed and timely manner, hence support for this from the JTF was critical.

Bulgaria provides a stark contrast and experiences a very different outcome when compared to the successes in Slovakia. The large scale of the coal industry and the resultant power of the mining companies resulted in a reluctance by the Bulgarian Federal Government and local communities to support the transition unless it was fully funded by the EU. Consequently, the participation process was challenging and poorly attended, and the result was a less detailed TJTP.

Key Insights from Slovakia

Though modest in size, the JT in Slovakia has prompted an ambitious response and a high degree of innovation from government, industry and community.

- Engage with community early and constantly in the visioning and planning process.
- Collaboration is critical, solutions must come from the grassroots.
- Government support and leadership is essential.
- Early wins/actions are important to sustain community engagement.
- Communicate constantly the detail and benefits of the transition to the local community.
- Think holistically at an innovation ecosystem level.
- Communities need support, especially with the technical aspects of project funding submissions.
- Intermediaries can play critical coordination, networking and leadership roles in the transitions process.
- Multilevel project governance is fundamental to success.



vi. [Spain](#) – Recharging the Coal Regions

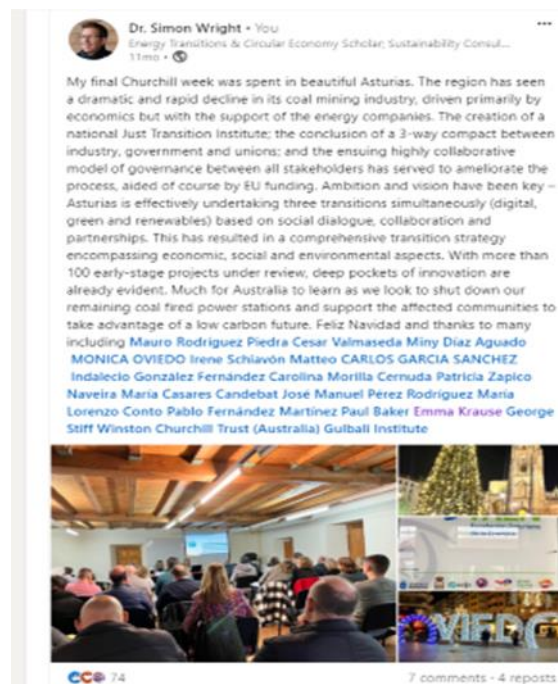


Figure 17 – LinkedIn Post, Spain (December 2023)

If Europe is at the heart of the global JT, then Asturias is oft-cited as the poster child or exemplar of a region terminating its dependency on coal. Two elements in particular have characterised this recent part of Asturias’ industrial history – the rapid speed of the transition; and the multi-level governance or close working relationships between the different governing entities.

The coal companies were also keen to move quickly to distance themselves from the sullied image of fossil fuel and take advantage of cheap, plentiful renewables. Asturias’ green image of national parks and dramatic countryside has certainly helped, as has a relatively diversified economy. At the same time, it was important to acknowledge coal’s substantial, proud and enduring contribution to the local economy, hence miners impacted by closures were well-remunerated and received generous pensions. The fact that [mining jobs in the region plummeted from 26,000 in 1985 to 960 in 2022](#) gives a sense of the scale of the transition in Asturias.

A key enabler of the JT in Spain has been the sectoral tri-partite Framework Agreement for a Just Transition for Coal Mining and the Sustainable Development of Mining Regions for the period 2019-2027 concluded between government, industry and the unions. The agreement guarantees financial support for mine workers and regions. A second Agreement for a Just Energy Transition for Thermal Power Plant Closures signed in April 2020 between the owners, unions and government supports the relocation of displaced workers and the search for alternative employment in the affected areas, implemented by the companies and government and overseen by the unions. These agreements have underpinned the JT in Spain and provided a springboard for dialogue, planning and innovation.

Regional Government Leading the Charge

Asturias decided to embrace the transition opportunity and build a strategy around three pillars – Digital Asturias; Green Asturias; and Renewable Energy Asturias. The war in Ukraine and the resultant spiralling of fuel prices has accelerated the transition to cleaner cheaper energy.

Similar to the approach taken across the EU, the Regional Government of Asturias was appointed to lead the transition and in 2017 a Director General (DG) of Energy and Mining was appointed in the Ministry of Ecological Transition, Industry and Economic Development. This was a key appointment which has brought leadership and focus to the JT project and contributed to the region's success thus far. The DG placed social dialogue at the heart of the transition's process, built on collaboration and partnerships. A committee of 60 people was convened from unions, industry, government and community organisations and association and spent many months and more than 30 meetings identifying the likely impacts of the JT.

Eighteen areas of opportunity such as energy security were identified and documented individually and this resulted in a 2020-2050 strategy paper and ultimately a TJTP. The committee has evolved into the JT Observatory which oversees the transition process in the region, continuing to foster a broad multistakeholder dialogue and take an opportunity-centric perspective to the process using smart specialisation to build on the region's strengths and capabilities. Transparency and communication have proven to be critical elements in the success to date of the process.



Figure 18 – Oviedo, the Regional Hub of Asturias

Asturias received €263m for its JT or 30% of the total allocation for Spain. An initial call in 2022 resulted in proposals for 113 projects of which 21 related to carbon reduction for large companies. These were prioritised in the hope that SMEs would be engaged through their supply chains. The array of projects is impressive, ranging from solar, biomass, onshore and offshore wind, battery storage, [green hydrogen](#) at a former mining facility, CCUS, across the entire energy value chain including manufacture of components. Other projects relate to decarbonisation, circular economy, critical minerals, sustainable mining, energy efficiency and mobility, all of which will bring more than 2,400 jobs to Asturias by 2030. EU money (ca. 103m euros) is also available solely to fund projects for regional and local councils. START has provided invaluable technical input to this process.

The scale of investment is also significant, with more than €248m for next generation renewable energy from both the EU and the national government, as well as €38m for infrastructure including mine reclamation and remediation. A separate fund also exists solely for social and cultural projects. The biggest challenges for the region remain using the funds appropriately in a relatively tight timeframe; collaboration and coordination; slow corporate commitment to the process; and the bureaucracy of dealing with many levels of government.

A Network of Collaborators

A broad range of intermediaries have contributed to the region's positive transition story. [FAEN](#) is Asturias' Energy Foundation, funded by government and industry with a mandate to ensure the region's energy needs are met in a socially equitable and environmentally responsible manner. [Projects](#) range from energy efficient heating and cooling, storage of pumped hydro, inter-regional collaboration on green hydrogen to building network flexibility and security. One program works with small to medium-sized councils who lack the skills and capacity to run their own energy projects. Education is key and young people in these smaller towns form the main focus, largely because many are leaving for the cities and are unaware of the opportunities being created through the JTF. The closure of the mines in 2018 left many unemployed, so job creation remains a primary focus, with FAEN convening a regular forum with local mayors to discuss job creation. There is plenty of funding available through the JTF, the challenge is to identify projects in a very tight timeframe, hence FAEN has been lobbying for a community innovation fund, an ideas bank and employment programs in the schools. In the absence of new ideas and approaches, they remain concerned that JTF funding will continue to flow primarily to the large corporations.



Figure 19 – Community Engagement in Action, Asturias

Learnings from FAEN's grassroots programs with councils include listening to the people, they know their region, but not all at once; co-creation is fundamental to the JT process; be nimble; programs and measures need to be customised to each context; there is plenty of funding, we need more ideas; and help councils build capacity and skills.

The large energy companies based in the region such as Iberdrola, EDP and Hunosa are also playing a major role in the energy transition. Working closely with the municipal government and community in the initial phase of engagement and partially supported by EU funds, these

companies generated a list of initiatives of most relevance and impact. Guided by the University in Madrid, [Iberdrola](#) decided to build a photovoltaics manufacturing facility locally, creating 100 jobs and reskilling former mine workers and young people by partnering with suppliers to offer green skills training programs. The University also taught Iberdrola how to work more collaboratively and innovatively with other actors in the energy ecosystem. A key element of this process was the use of a local partner to facilitate and mediate the sessions.

Similarly, [EDP](#) crafted individual transition plans for each of ITS coal-fired plants which are set to close by 2025 and customised energy projects for each site such as storage (battery, sodium, air); renewables (PV, wind, mini-hydro); network flexibility (microgrids) and [hydrogen hubs](#). Each site is deploying a unique combination of these technologies to enable EDP to reach its goal of 100% renewables by 2030. Impact on employee numbers has been negligible, with EDP hoping to transition all workers into renewables through reskilling programs with partner companies. EDP has been well-supported by the JTF financially, but they need more technical expertise, large scale funding (especially for hydrogen) and more a supportive regulatory environment that transcends state boundaries and accelerates national and EU funding support.

As a major owner of land and good access to water, [Hunosa](#) is adopting a similar strategic approach built on solar, wind, geothermal and biomass alongside some CCUS projects with the University of Oviedo. Much of this activity will take place on remediated land i.e. former mining sites and will catalyse other new projects such as district heating systems fuelled by warm water pumped from former mine sites; restoring old mine buildings to house the new biomass and heating plants; and converting a former mine site into a [green hydrogen plant](#) using a range of renewable technologies. Much of this work was funded by both the JTF and the Municipality. Like EDP, Hunosa hopes to reskill and redeploy those miners who want to transition into new jobs, although many have already received generous pensions as a result of the national agreement and have decided not to return to work.



Figure 20 – Christmas in Asturias

Key Insights from Asturias

Asturias is effectively undertaking three rapid transitions simultaneously (digital, green and renewables) based on social dialogue, a clear vision and close collaboration or partnerships. This has resulted in a comprehensive transition strategy encompassing economic, social and environmental aspects. With more than 100 early-stage projects under review, deep pockets of innovation are already evident.

- The creation of a national Just Transition Institute and the conclusion of a three-way compact between industry, government and unions has provided certainty and robustness to the JT process in Spain.
- A highly collaborative model of governance between all stakeholders has served to ameliorate the process.
- Ambition and vision have been key to the early successes.
- Government leadership and support is seen as a major strength of the JT process.
- Money on public forums to allow for discussion and trust building was well spent.
- Collaboration and mutual respect are critical components.
- EU must be more agile and adaptive to change and more accessible – business wants a ‘one stop shop’ for all JT-related issues.
- The EU’s funding administration process is lengthy and slowing innovation.
- Land use and planning are complex and proving a major hurdle.
- Application windows for funding are too tight, especially for complex projects.
- Local councils lack skills and people and are delaying progress on the ground.
- Regulations are lagging innovation and need to accelerate (e.g. green hydrogen).
- Companies are collaborating which is valuable.
- One size does not fit all when working in different locations and communities.
- Quality projects tended to garner government support which was encouraging.



CONCLUSIONS

The aim of this research was twofold. Firstly, to explore how regions in Canada and the EU affected by the transition out of coal and other fossil fuels are positioning themselves to benefit from the move to clean energy; and secondly, to harness those insights of greatest relevance and inform and accelerate our own approach to transitions in Australia's coal regions.

Many similarities in challenges and opportunities were observed during the research, with regions in Europe such as Silesia and Lusatia bearing a striking resemblance to the scale and nature of the situation in the Hunter Valley, Bowen Basin and Collie for example.

Important lessons were learned from representatives from industry, government, academia and NGOs that can improve and accelerate Australia's approach to energy transition and avoid a repetition of past mistakes in other parts of the world.

Like all research, there are limitations in the data arising from time, the limited availability of participants and a host of other factors including subconscious bias. Measures were adopted once the results were collated to address these issues including verification using alternative data sources.

This value of the Fellowship is derived from both the timeliness and relevance of this data and the resultant findings. Confronted by a need to reduce Australia's carbon emissions and transition to cleaner, more affordable sources of energy, government at all levels is looking for guidance as to how these twin objectives can be addressed. It is anticipated that this research will provide a valuable input into these conversations.

DISSEMINATION, IMPLEMENTATION

The primary audience for this report is all levels of government who will need to fund many of the recommendations – Commonwealth, state, the various guises of informal regional government (RDAs, Joint Organisations/ROCs), and ultimately local government who often have to manage the ‘on ground’ manifestation of economic development in regional communities.

Additionally, there are many other organisations who have an implicitly regional focus and a strong interest in local development such as Regional Australia Institute, Farmers for Climate Action, Business Chambers, Universities, NGOs and community groups such as RE-Alliance, Lock the Gate, Hunter Renewal, Hunter Jobs Alliance and Voices of the (Latrobe) Valley by way of examples.

Finally, industry has an important role to play in bringing investment and employment to Regional Australia to facilitate the transition, in conjunction with the unions who want to protect existing jobs and ensure there are new opportunities for workers in ageing industries. It is anticipated that they too will have a strong interest in the findings.

In addition to disseminating this report, a roadshow of presentations is already underway, sharing the findings with key actors such as the Net Zero Economy Agency (NZE) in the Department of Prime Minister and Cabinet in Canberra (July 2024); the Future Jobs and Investment Authority (FJIA) of the NSW Government in Sydney (August 2024); the Next Economy Regional Leaders Forum (August 2024) the Regional Australia Institute’s Research Team nationally (November 2024) to name but a few.

In the next six months, it is planned to present the findings to more than 25 organisations nationally, some of which are cited above, in anticipation that the research will shape their approach to coal transitions.

Once released, I will work with university and other partners such as The Climate Council to finalise a communications plans and leverage relationships with existing channels including The Conversation, ABC and local radio and other regional and metropolitan media with a strong interest in energy transitions.

My next appointment of significance is on December 17 2024 to give evidence to the NSW Government’s Standing Committee on State Development’s inquiry into beneficial and productive post-mining land use in Sydney.

In terms of next steps, more work needs to be done to test the robustness of these findings to the Australian context. To this end, I will be seeking research funding from the Australian Research Council’s Discovery early Career Research Award in March 2025.

GLOSSARY/ ABBREVIATIONS/DEFINITIONS

AFL	Alberta federation of Labour
CER	Canada Energy Regulator
CCS	Carbon Capture and Storage
CCUS	Carbon Capture Usage and Storage
DG-ENERGY	Directorate-General, Energy
DG-REGIO	Directorate-General, Regional and Urban Policy
FJIA	Future Jobs and Investment Authority (NSW)
IKI-JET	Innovation Regions for a Just Energy Transition
JT	Just Transitions
JTF	Just Transition Fund
JTM	Just Transition Mechanism
JTP	Just Transition Platform
NGO	Non-governmental Organisation
NZEA	Net Zero Economy Agency (Federal)
RDA	Regional Development Australia
ROC	Regional Organisation of Councils
SME	Small to Medium-sized Enterprise
TJTP	Territory Just Transition Plan
WBF	Women Building Futures (Canada)

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