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Citation: Kiernan, S., Krawchenko, T. (2026), Transitioning Oil and Gas Producing Regions: A Comparative Analysis of Regional Approaches in Denmark, New Zealand and Scotland, *IESVic Energy Briefs*, No. 14

Published: June 2026

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ISSN 2818-159X (Print)

ISSN 2818-1603 (Online)

Transitioning Oil and Gas Producing Regions: A Comparative Analysis of Regional Approaches in Denmark, New Zealand and Scotland

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Key messages

- Durable and adaptive oil and gas transitions are most likely where there is broad political consensus, stable long-term policy signals, and institutionalized public–private–academic partnerships, as exemplified by Denmark’s Esbjerg case.
- Abrupt, top-down transition decisions that lack early regional engagement and a clearly articulated economic pathway—such as New Zealand’s initial offshore exploration ban—generate resistance and are vulnerable to policy reversal, undermining just transition objectives.
- Institutional innovation around just transition (e.g. commissions, funds, participatory planning), as seen in Scotland’s Aberdeen case, can strengthen governance capacity, but without policy durability and visible place-based economic diversification, community skepticism and perceptions of instability persist.

Importance

While there is a substantial literature and practice base on coal transitions, pathways for phasing down oil and gas remain relatively under-explored, despite the sector’s centrality to global emissions and its political and economic power (Grasso 2019; Diluiso et al. 2021). Oil and gas industries have historically resisted decarbonization through climate denial, lobbying and greenwashing, contributing to “political lock-in” that constrains reform (Green and Gambhir 2019; Aronczyk, McCurdy, and Russill 2024; Green et al. 2022).

The three cases examined concentrate offshore oil and gas activities in specific regions, where they are major sources of employment and revenue, and where transition trajectories are necessarily place based. Each country has made net-zero commitments and incorporated elements of just transition into its climate policy architecture, but with divergent governance designs, transition narratives and institutional durability.

We frame these transitions through polycentric governance and transition management perspectives, emphasizing multiple decision centres (state, industry, civil society, communities) operating under shared rules, and the need for institutional transformation to enable socio-technical change (Bauwens 2017; Loorbach 2010; Meadowcroft 2009; Burch et al. 2014). The paper asks how regional approaches to transitioning oil and gas producing regions are developed, governed and implemented, and what lessons can be drawn for just and durable decarbonization.

Methods

The study employs a comparative case study design across three advanced-economy regions: Esbjerg in Denmark, Taranaki in New Zealand, and Aberdeen in Scotland. Oil and gas activities in these regions constitute significant shares of national GDP and local employment, and each jurisdiction has, at least at some point, formally integrated just transition principles into policy (International Energy Agency 2023a, 2023b; Government of Scotland 2023; Venture Taranaki 2019). Data collection combines: academic and grey literature review; policy and planning document analysis; 14 semi-structured interviews with government officials, industry representatives, civil society and academics (five Denmark, five New Zealand, four Scotland); and descriptive statistics on socio-economic and sectoral indicators.

Key comparative insights

Esbjerg, Denmark: durable transition underpinned by stability and economic narrative

Denmark is widely regarded as a leader in climate policy and has legislated climate neutrality by 2050, supported by broad cross-party coalitions and repeated Energy Agreements that lock in long-term direction (Danish Energy Agency 2018; OECD 2019). In 2020, Parliament cancelled all future oil and gas exploration licensing rounds, with significant implications for Esbjerg, where a large share of the working-age population is tied to offshore industries (Sperling et al. 2021, 2026).

The Esbjerg transition is characterized by:

- Early strategic reorientation toward energy sovereignty in response to the 1970s oil shocks, later reframed around renewables and economic efficiency (Pierson 2000; International Energy Agency 2023a);
- Strong, stable policy signals and cross-party agreements that reduce investor uncertainty and support long-term planning by firms and ports;
- Robust public–private–academic partnerships, including climate partnerships across 14 sectors and institutions such as State of Green, which co-develop transition solutions and recommendations (State of Green 2020; OECD 2019); and
- Active support for workforce transition through retraining, CCUS and electrification projects, and targeted investments in offshore wind infrastructure (Port Esbjerg 2022; International Energy Agency 2023a).

These elements together position Esbjerg as a “wind hub” and demonstrate a relatively durable, adaptive transition in which the economic case for renewables is central to coalition building.

Taranaki, New Zealand: ambitious but politically fragile transition

New Zealand legislated net-zero by 2050 through the Climate Change Response (Zero Carbon) Amendment Act and, in 2018, announced an end to new offshore oil and gas exploration permits, with Taranaki as the focal region for transition (International Energy Agency 2023b; Ministry of Business, Innovation and Employment 2024).

The government created a Just Transitions Unit in the Ministry of Business, Innovation and Employment and supported the co-development of the Taranaki 2050 Roadmap, led by Venture Taranaki in partnership with iwi, local authorities, businesses, unions, educators and communities (Venture Taranaki 2019; Ministry of Business, Innovation and Employment 2024). The roadmap identifies 12 “transition pathways” and emphasizes resilience, skills, and economic diversification.

However, the case also reveals significant governance risks:

- The initial exploration ban was framed primarily as a moral obligation under the Paris Agreement and was announced with limited prior engagement with industry and the region, undermining trust;
- Governance arrangements replicated existing power imbalances, with Māori participants reporting marginalization until later efforts in Southland shifted to community-led oversight structures (Respondent 6); and
- The subsequent change of government led to termination of the Just Transition Programme, removal of associated information from official websites, and legislative reversal of the exploration moratorium via the Crown Minerals Amendment Bill (New Zealand Parliament 2025; Ministry of Business, Innovation and Employment 2025).

Interviewees also highlighted a “time mismatch” between job losses in oil and gas and the slower growth of new green sectors, with offshore wind and hydrogen unlikely to replace employment one-for-one. Overall, Taranaki illustrates both the potential of participatory, place-based planning and the vulnerability of transitions that lack durable political and economic foundations.

Aberdeen, Scotland: institutional innovation amid political and social uncertainty

Scotland operates within the UK’s Climate Change Act 2008 architecture but has adopted a more ambitious 2045 net-zero target, despite hosting 82% of UK oil and gas production and heavy regional dependence in Aberdeen (Stern 2006; Government of Scotland 2023; Climate Change Committee 2025).

Key institutional innovations include:

- establishment of a Just Transition Partnership (unions and NGOs) and, in response, a Just Transition Commission with a strong advisory and oversight role, later made permanent and statutory (Government of Scotland 2022; Healy and Barry 2017);
- a national Just Transition Planning Framework and a Draft Energy Strategy and Just Transition Plan, which set quantitative goals for additional renewables (>20 GW by 2030) and employment stability in the energy production sector; and
- targeted funding instruments such as the £75 million Energy Transition Fund (with a substantial share for Aberdeen), participatory budgeting for local just transition projects, and the Scottish National Investment Bank to de-risk net-zero investments (Government of Scotland 2023; World Energy Council 2023).

Despite this architecture, the case reveals community scepticism and transition fatigue, partly due to economic downturns in the oil and gas sector and uncertainty arising from electoral cycles. Respondents emphasize a desire for stability, basic services and employment over long-term climate targets, and note that long-term goals have not always translated into equally durable policies.

Policy implications

Across the three regions, five interrelated lessons emerge for designing just and durable oil and gas transitions.

Policy durability and cross-party consensus are foundational.

Long-term, legislated targets and multi-party agreements, as in Denmark, provide credible signals that survive electoral turnover and create space for industry and communities to plan (Danish Energy Agency 2018; Pierson 2000). Scotland and New Zealand highlight the fragility of transitions where key policies can be reversed after a single election (New Zealand Parliament 2025; Government of Scotland 2023).

Economic narratives matter as much as moral arguments

Transitions are more politically resilient when framed as economically efficient pathways to competitiveness, energy security and diversification, not only as climate obligations (Stern 2006; Atteridge and Strambo 2020). Denmark's emphasis on renewables as the superior economic choice contrasts with New Zealand's morally framed, but economically under-specified, exploration ban (International Energy Agency 2023a).

Polycentric, inclusive governance and social dialogue underpin legitimacy

Horizontal coalitions of government, industry, unions, academia, Indigenous peoples and civil society enable shared problem definitions and joint development of solutions (Burch et al. 2014; Heinen, Arlati, and Knieling 2022). However, inclusiveness cannot be assumed; Taranaki demonstrates how "participatory" processes may reproduce power asymmetries unless governance design explicitly addresses them.

Early institutional design shapes long-term pathways

Historical institutionalism suggests that moments of crisis can open windows for institutional "reconstellation," as seen in Denmark's response to the 1970s oil crisis and subsequent evolution of DONG/Ørsted into a global renewables leader (Thelen 1999; Sperling et al. 2021). Creating specialized agencies, partnerships and financial instruments aligned with transition objectives can lock in supportive feedbacks.

Place-based diversification and workforce measures are essential for a just transition

Transition policies must be embedded in regional development strategies that mobilize existing capabilities and infrastructure to build new sectors—offshore wind in Esbjerg, offshore renewables and hydrogen in Aberdeen, and diversified clean technologies in Taranaki (Atteridge and Strambo 2020; Venture Taranaki 2019; Government of Scotland 2023). Without credible replacement opportunities and active labour-market policies, communities perceive transitions as de-industrialization rather than transformation (Harrahill and Douglas 2019).

Note: This Energy Brief summarizes research from the following thesis: Kiernan, Sophie, 2024, A just transition for oil and gas regions? A comparative analysis of just transition policies in Denmark, New Zealand and Scotland, University of Victoria, <https://dspace.library.uvic.ca/server/api/core/bitstreams/c560357a-b1d5-473f-a67c-22860c23e778/content> and research article: Kiernan, S. and Krawchenko, T. (2025) Transitioning Oil and Gas Producing Regions: A Comparative Analysis of Regional Approaches in Denmark, New Zealand and Scotland, Environmental Policy and Governance, Special issue on Policy, Politics and Governance for Net Zero, 1-13.

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