

Perspective

The political economy of actively phasing out harmful industries: Lessons from resource-based sectors beyond fossil fuels

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ABSTRACT

The growing urgency of reducing fossil fuel consumption has spurred interest in the political economy dimensions of policies that aim to phase out existing industries. Much of this growing literature has focused on previous energy transitions and phase-outs. In this perspective article, I highlight the value of looking at cases beyond energy and fossil fuels to understand the dynamics of industry phase-out. To illustrate the point, I provide three short empirical case studies of industries in which policymakers have taken active steps to phase out or reduce specific industries. The cases are asbestos mining, tobacco cultivation, and cod fisheries in the UK's Humber region.

The cases highlight the potential for economic diversification policies to both soften the blow faced by communities that are dependent on industries at the heart of phase-out policies, and to undermine the advocacy coalitions opposing phase-out policy. All three also suggest that cultural identity issues can play an important role in the politics of industry decline. The paper concludes by highlighting four avenues for future research into the political economy of actively phasing out harmful industries.

1. Introduction

There has recently been an upsurge in interest in the long-term policy questions posed by the need to transition away from economically significant but high-carbon activities. The literature on 'phase-out' policies [1] and deliberate 'destabilisation' [2,3] has been growing fast. This literature has focused empirically on coal [4–6], oil [7] and on other energy technologies such as incandescent light bulbs [8]. Relatively few recent studies have explored analogous destabilisation or phase out experiences in other sectors (for an exception, see [9]). This *perspective* paper seeks to highlight the benefit of looking beyond energy in order to study phase-outs.

Looking beyond energy provides a broader pool of cases through which to understand some of the dynamics of phase-outs. It also enables analysis of longer time horizons. Policymakers have only relatively recently sought to phase-out fossil fuels. In other sectors, there is a much longer history of policy action that has destabilised or phased-out specific industries. Looking at analogous case studies of policy-induced decline from beyond energy enables examination of the sequencing of policy and political developments in phase-out processes that may unfold over decades. Sequencing has been a focus of theoretical discussions

of industry destabilisation and phase-out [10], with various models of the stages of destabilisation (e.g. [3]).

Moreover, many of the transitions examined in the literature—especially those relating to coal—in large part took place because underlying economic drivers made the industries unprofitable. While government support for the industries often continued long after the industry was unprofitable (as predicted by Cassing and Hillman's model of industry decline [11]), the ultimate removal of policy support resulted in a transition away from coal. In contrast, the transitions examined here are those in which policy has taken active steps that directly result in declines in the industry.

All three cases explored in this paper are focused on resource-based industries. These cases are:

- Tobacco farming in the South Eastern USA.
- Asbestos mining in Quebec
- Long distance cod trawlers in Hull and Grimsby, UK.

These case studies are exploratory, aiming to highlight important possible mechanisms for change and questions for future research. Each focuses on the co-evolution between the policies implemented by

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governments and the political moves from the industry and the wider advocacy coalition supporting the industry. In this regard the case studies loosely follow the logic of the political analysis in Oei et al. [6] and Kungl and Geels [10], which are focused on the ‘socio-political’ dimension of Geels’ triple embeddedness framework [12].

The paper also makes use of a simple conceptual framework for thinking about the kinds of policy action—and hence sequencing of policy action—that is relevant for transitions in resource-based regions. First, it is useful to distinguish between policies that act on the demand for the resource and those on the supply side (highlighted by [13]). Second, there is the extent to which policy is focused on promoting new alternatives or undermining incumbents (which Kivimaa and Kern [14] memorably described ‘niche support’ and ‘regime destabilisation’). Combining these two dimensions generates a simple typology of policy action (depicted in Fig. 1), the sequencing of which is explored in each case.

Each case study has been conducted based on secondary and primary text sources, with no direct field work or collection of new primary data. As case studies, they are not intended to generate findings that can be understood to be generalizable in the same way as large-N approaches. The first two case studies (on asbestos mining and tobacco production) were selected because of the policy context for decline. In both cases, the industry came under policy pressure because consumption of the industry’s products was revealed to cause significant harm – analogous to the pressure faced by high-carbon activities. The third case study (long-distance cod trawling in Hull & Grimsby) was selected because it provides a useful insight into the long-term political after-effects of a policy-induced decline.

In each case, I note how the political economy dynamics of the case interact with the sequencing of policy choices by government.

2. Asbestos mining in Quebec

Asbestos mines operated in Quebec throughout the 20th century, and the last mine (in the town of Asbestos,¹ Quebec) closed only in 2011. Despite the relatively small number of employees, and the long obvious health concerns associated with asbestos products, successive Quebecois and Canadian governments supported the industry and campaigned

	Supporting alternatives	Undermining incumbents
Supply	Economic diversification policies	Strict permitting and regulations on resource extraction; high resource taxes
Demand	Niche creation; innovation in alternatives	Pollution pricing; regulatory restrictions on consumption

Fig. 1. Typology of transition policies from the perspective of resource-dependent regions.

¹ In 2020, the town of Asbestos changed its name to Val-des-Sources, in an effort to remove the stigma associated with asbestos. I retain the old name here, since this was the name during the events described.

against international bans on asbestos. This policy support at both Federal and Provincial level continued up to 2012. Following changes in policy, the industry became unviable, and the mines closed.

The continued government support for asbestos mining until very recently is perhaps surprising. Here is a material with very significant health risks, which had become of vanishingly small economic significance after decades of policies that restricted use of asbestos in recognition of its health effects. Since the 1980s, only two small communities relied on asbestos production (Asbestos, population ~ 6000; and Thetford Mines, population ~ 25,000), with the larger of the two having considerably diversified its economy. For Canada to defend the interests of these small communities in the face of international pressure and obvious domestic health concerns seems surprising. The answer to the extended policy support lies in the cultural and political dynamics of those communities, Quebec, and Canada itself.

Much of this account is drawn from Van Horssen [15], and her account of the history of the town of Asbestos, Quebec. The Jeffrey Mine in Asbestos once produced the overwhelming majority of the world’s Chrysotile asbestos, producing 30,000 t per day in 1960 [15]. One might think, naively, that the town would be only too happy to rid itself of an industry that caused such sickness. Much like fishing and coal mining communities however, the risks of the industry become intertwined with the sense of identity and pride. The people of Asbestos knew that that asbestos mining was harming their health by 1949 at the latest, and probably earlier – but they largely chose to accept these risks, in return for the economic benefits and the cultural identity conferred by asbestos. While the health risks associated with asbestos were a contributor to a workers strike in 1949, the community increasingly accepted those risks, and was active in promoting the idea that asbestos was not harmful.

By the 1970s, it was clear that asbestos exposure was very harmful to health. Asbestos consumption in richer countries began to decline in response (Fig. 2), in part due to growing regulatory restriction on asbestos use [17]. Policymakers also introduced and tightened regulations aimed at controlling health risks for workers. Yet Van Horssen reports that mine workers typically refused the respirators that were provided by management, despite their knowledge of the associated risks. In 1997, four mine workers from Asbestos ran in the Paris marathon, with the aim of highlighting that their health was not compromised by long-term exposure. The cultural identity of the town now included willingness to accept the risks associated with the material. It is notable, though, that much of the information received by the community was mediated through the mine owners – not least because much of the medical literature was in English, which was little spoken in Asbestos [15].

Certainly mine owners and the wider asbestos processing industry attempted to hide the full extent of the health risks that workers were

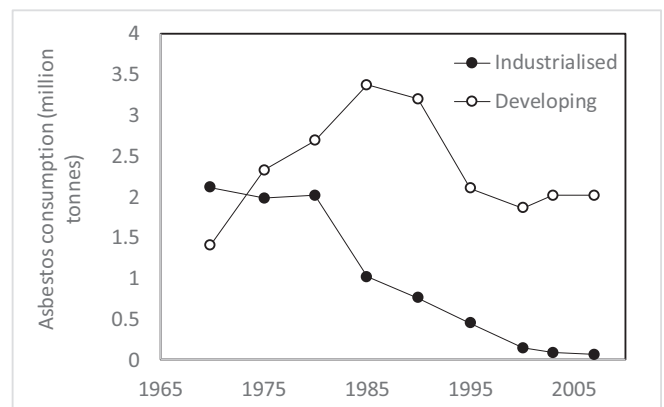


Fig. 2. Global asbestos consumption in industrialised and developing countries. Adapted from [16].

exposed to [18]. As early as 1920, the company that owned the mine knew of the health risks associated with asbestos, and was attempting to conceal this information from workers and the general public [15]. This pattern continued, with the mine owners repeatedly concealing information and providing inaccurate reports on the health of mine workers.

Rising litigation costs, and a declining market as regulations tightened, resulted in the bankruptcy of the owning company, JM, in 1983. However, the community in Asbestos remained largely committed to the industry. The provincial government nationalised the mine, despite the poor long-term economic prospects [19], and according to Van Horssen continued the dishonesty that had been shown by JM: downplaying risk and limiting communication of hazards in exports [15].

Successive provincial and federal Canadian governments remained supportive of the asbestos mining industry. In 1984, faced with increasing demand-side regulatory restrictions in the developed world, the Federal and Provincial governments together with the asbestos mining companies and the union representing asbestos miners jointly founded the “Asbestos Institute”, which was (according to [20]) directly modelled on the Tobacco Institute (a lobbying organisation). The organisation lobbied globally to maintain access to markets – particularly in the developing world. In 2005, Canada brought a case at the WTO against France, which had banned asbestos imports, claiming that France was discriminating against one of Canada’s “cultural industries” [15].

It was not until 2016 that Canada banned asbestos, following the 2012 decision of the Parti Quebecois provincial government to withdraw subsidy support for asbestos mining. Mining of Asbestos had ceased almost immediately after the withdrawal of support [21].

Cultural forces were important here. Just as asbestos the material was central to the cultural identity of the communities of Thetford and Asbestos, the asbestos miners had an important role in Quebec’s cultural and political history: the strikes of 1949 had played a significant role in the development of modern, secular Quebec [22] – and asbestos miners thus had an important cultural significance for the province as a whole [21].

Quebec, in turn, plays an important role in Canadian politics. The province’s strong sovereignty movement and sense of cultural identity distinct from Anglophone Canada has tended to mean that federal governments are cautious in interfering in politically sensitive issues in Quebec – particularly when matters of perceived cultural identity are in play. According to Ruff [21], the fact that the asbestos industry was located in Quebec is essential to understanding the federal government’s willingness to support the industry. As Ruff puts it “until the asbestos industry was defeated in Quebec, there was no possibility of the Canadian government banning asbestos” [21] (p. 2).

But by 2010, this had shifted. Quebec’s role in promoting asbestos around the world was starting to be seen as a source of embarrassment rather than pride [21], and the campaign against asbestos was increasingly led by Quebecois activists [20]. A campaign that showed the impacts of asbestos on communities in India did much to shift Quebecois public opinion, as it revealed the human suffering caused by asbestos exports. At the same time, the workforce directly dependent on the mines had dropped substantially since the 1980s, and neither Thetford Mines nor Asbestos were viable without subsidy [23].

Since closure of the mines, the Provincial government has attempted to support economic diversification and regional development, with a \$50m programme launched in 2012. This has been successful in attracting and enabling some new industries (such as poultry processing and brewing [24,25]), and unemployment has fallen since the initial shock of mine closure [26]. Nevertheless, it is notable that efforts to facilitate diversification did not begin until after policy support for the industry had been withdrawn, in contrast to the tobacco case.

Summary of key points:

- Since the 1970s, the dominant policy instruments appear to have been focused on limiting both consumption and production through

regulations focused on exposure of workers and consumers, while supporting production for export markets through subsidies. Innovation to develop alternatives to asbestos was stimulated by regulations controlling asbestos use [27], rather than a large public support programme for the development of alternatives.

- Policy support for economic diversification was not introduced until after the (sudden) withdrawal of policy support for export-oriented mining. The tight coalition supporting continued asbestos mining was unable or unwilling to support measures to reduce the vulnerability of the communities that were dependent on asbestos.
- The politics of cultural identity played a central role in determining policy support for industries. This can take place at multiple scales: producers can have a strong cultural identity bound up in the resource; but producers can have a wider cultural significance that affords protection from control policies.

3. Tobacco farming in the South Eastern USA

Tobacco’s decline as a major US crop, illustrated in Fig. 3, was partly due to growing international competition and imports. But it was also driven by increasingly strong policy pressure to reduce tobacco consumption in recognition of the health impacts of smoking, with tobacco consumption falling from a peak in 1963 (Fig. 2).

US tobacco farming was concentrated in the Southeastern USA, in particular in Kentucky, Tennessee, Virginia, and North and South Carolina (see Fig. 4). It was an important crop in some regions: in Kentucky in the mid-1990s, tobacco accounted for nearly a quarter of all agricultural receipts [30].

Much like fossil fuels, tobacco was a powerful industry under threat because of a set of scientific findings about the impacts of use of the product, with policy action largely focused on restricting consumption. The attempts by the tobacco industry to cast doubt on the scientific case for reducing smoking are well documented [31]. This case highlights that, in addition to casting doubt on the science linking smoking to ill health, tobacco lobbyists also highlighted the potential for tobacco control policies to result in unemployment in tobacco producing regions. As a Kentucky newspaper reported in 1995 “The farmer’s wrath probably was enough to kill the cigarette-tax increase proposed by President Clinton...” (cited in [32] p. 192).

Many tobacco producing regions saw the emergence of a strong advocacy and policy coalition [33] in favour of weaker tobacco control policies [34]. Growers were a core part of this advocacy coalition: an internal Philip Morris government relations briefing document in 1985 referred to growers as the “backbone” of the tobacco lobby (cited in [34] p. 327). Imagery of tobacco growers, and emphasis on the economic importance of tobacco production, was often used in corporate lobbying

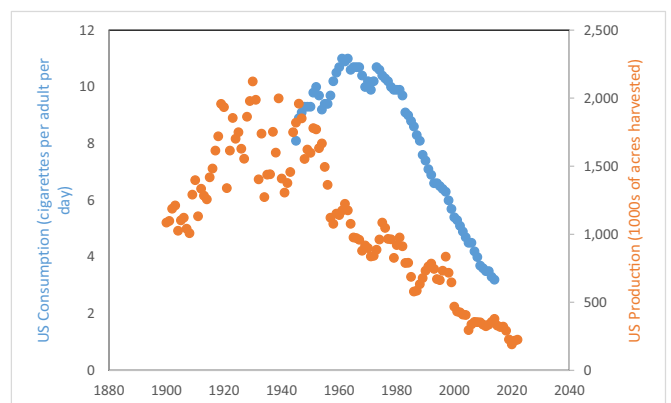


Fig. 3. Production and consumption of tobacco in the US. Orange circles show acres planted with tobacco in the US (data from [28]); while blue circles show cigarette consumption (data from [29]).

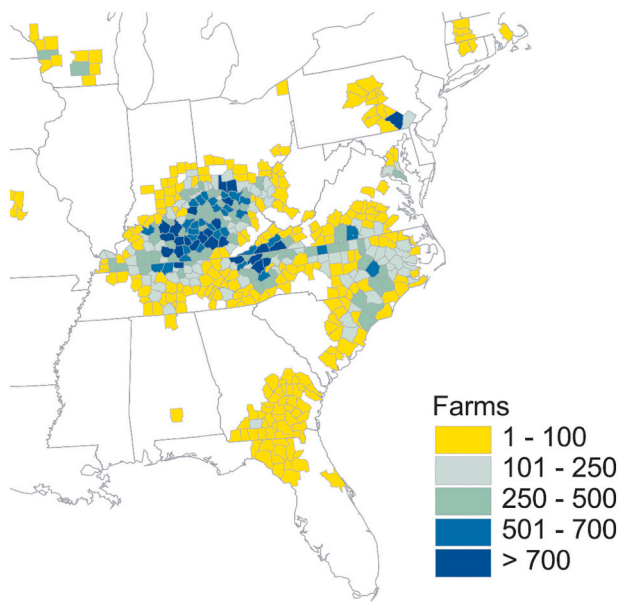


Fig. 4. Distribution of tobacco farms in the US in 2004. Source: [59].

materials [35].

Scholars studying tobacco dependence have postulated that the policy environment can be characterised as an “iron triangle” of legislators, bureaucrats and businesses, all of whom have an interest in maintaining the status quo. As Sullivan and Glantz [36] (p. 1527) describe it: “*Within an iron triangle, interest groups lobby key legislators and bureaucrats, while bureaucrats administer programs with interest group input and provide support to constituents of key legislators, and legislators push legislation favorable to the interest groups and provide budgets and political support for bureaucrats*”. Associated with these dynamics, it has been observed that tobacco-producing US states tend to smoke more, have lower cigarette taxes, and weaker policies to reduce smoking [36].

Tobacco farming in the US had been subsidised since the 1938 Agriculture Adjustment act [37] through a quota programme, which was finally eliminated from 2004, in a process lasting a decade. Tobacco production subsidies went alongside policy efforts to reduce tobacco consumption for decades.

As tobacco companies began to rely increasingly on cheaper imports, the alliance between growers and tobacco companies weakened [9]. Farmers increasingly started to see alternatives beyond tobacco, and this resulted in a split within the tobacco ‘regime’ [36]. In some cases, tobacco farmers even formed alliances with tobacco control lobbyists, to campaign for greater government support for crop diversification away from tobacco [38]. Altman et al. [32] found that 73% of tobacco farmers would support higher cigarette taxes if the proceeds were used to help farmers transition out of tobacco.

Subsidy support for tobacco growers was phased out in a decade long system of ‘transition payments’, which gave farmers a clear timescale over which to either diversify or manage their tobacco growing crop without subsidy. This programme, which ended in 2014, included estimated total payments direct to growers of around \$3bn [39]. As pressure against tobacco grew, some states (e.g. Kentucky) had initiated programmes to support farmer diversification away from tobacco [37], including as part of a 1998 bargain with tobacco companies to drop litigation for health costs in exchange for tobacco company funding [40].

Early evidence suggested that the unemployment impacts arising from the decline of tobacco farming in producing regions in the US were modest, and much lower than had been predicted by the industry [41] – though there were also suggestions that negative impacts could have

been avoided by more proactive diversification policies [42]. Since 1998, evidence from Kentucky suggests that the agricultural diversification programme has supported successful diversification [43] and growth of the state’s agricultural productivity [40].

As with the case of asbestos, the role of the cultural identity of tobacco farmers also emerges from this case. Altman et al. [44] (p. 160) note that many tobacco farmers and communities described tobacco as “a way of life” rather than a crop. Some of the resistance to change from producer communities was based not only on direct economic self-interest, but also on a desire to defend a culture and identity.

Summary of key points

- The producer community had been an important in political resistance to tobacco control policies, both as active participants in an advocacy coalition, and as a prominent part of a narrative about the economic, social and community benefits of tobacco production.
- As with asbestos, producer subsidies co-existed with policy efforts to control consumption for several decades.
- Diversification away from tobacco by farmers, both because of market changes and supported by policy, was important in limiting the economic impacts of declining production, and in destabilising the political coalition that had resisted tobacco control policy.
- The case also notes the importance of cultural identity in sustaining regional support for the industry; but it also shows that the economic self-interest of farmers was also highly relevant. Both interests and identity are important: from a ‘just transitions’ perspective, this highlights the role of both redistributive justice, but also recognition justice – i.e. recognising the value of cultures and identities that are bound up with the production of goods that have been revealed to be unsustainable [45].

4. After decline: cod fishing in Northeastern England

The final case is that of the cod fisheries of Hull and Grimsby around the Humberside region of Northeast England. Following the Cod Wars in the 1960s–1970s, Britain implemented restrictions on cod fisheries, which accelerated major losses to fishing fleets and jobs particularly in Hull and Grimsby.

This case is interesting because of the suddenness and unexpectedness of the change in policy. It is also a case that illustrates a) the challenges for post-collapse regeneration policies; b) the political consequences that result from policy-induced industrial decline; and c) the potential importance of related industries (in this case, fish processing) in mitigating the economic impacts of loss of a resource-based industry. It is also clearly very different from the asbestos and tobacco cases: fish consumption itself was not seen as problematic – it was only the supply side that was the focus of policy action.

In the early-1970s, Hull and Grimsby were the leading UK ports for landings of fish. In Hull in particular, the majority of landings were fish caught in distant waters and frozen at sea, by a fleet of 90 large trawlers of >140 ft [46]. Just over ten years later, only three of those large trawlers were left – the fishing sector of the Humber region had collapsed.

The most significant event leading to this decline was the series of cod wars with Iceland. In a series of increasingly tense stand-offs, often involving Royal Navy frigates and Icelandic coastguard vessels, the UK and Iceland negotiated and fought over access to fish in Icelandic waters. Two factors were critical in Iceland’s ultimate victory. The first was geopolitical. In the 1960s, during an earlier stage of the cod wars, the British Foreign Secretary made clear that “*NATO’s defences in the North-Atlantic and the balance of power were more important than the interests of the Humber trawler owners and fishermen*” [47] (p. 101). The importance of Iceland within NATO remained a key factor throughout the subsequent cod wars. In particular, US pressure to resolve the dispute, after the breakdown in UK-Iceland diplomatic relations in 1976, was a factor in Britain’s ultimate capitulation. But Britain’s eventual acceptance of

Iceland's exclusive fishing rights were also partly driven by the wider strategic and economic need to establish a universal 200-mile exclusion zone in international law – critical for the UK's North Sea oil and gas rights, but also important for the UK's other fisheries [47].

The extreme measures that the UK had taken to resist Icelandic demands (deploying the Royal Navy against a key NATO ally) clearly indicate the significant costs the UK was willing to bear to support the Humberside fishing fleet. Yet the case illustrates that geopolitical concerns and other emerging industries can result in the withdrawal of support for an industry facing potentially devastating but geographically concentrated losses.

Britain's policy decision to accept Icelandic demands was the key factor that led to the decline of industry. In addition to the cod wars, entry into the European Economic Community gave access to European fleets to the UK's waters. Having lost access to Icelandic waters, the long-distance fleet was unable to adapt to the new competition, and went into an immediate decline.

Since the cod wars, both Hull and Grimsby have maintained large fish processing sectors, though most of the fish is now imported rather than landed by local boats [48,49]. Indeed, the fish processing sectors have been very resilient to the decline in the domestic fishing fleet. In 2020 the region was reported to be the largest cluster of fish processing in Europe [50]. There have been spillovers beyond fish, with other food processing firms locating in Grimsby [49].

Governments responded to the fishing industry collapse in two ways. First, there have been efforts to foster regional re-training or employment growth in the wake of the collapse of the Humberside fishing fleets. A 'Fishing communities regeneration initiative' was launched by the labour government in 2001 (more than 15 years after the collapse of the fishing industry), though questions were raised about its efficacy [51]. A European initiative, PESCA, aimed to support fishing communities across the continent, and ran from 1994 to 1999 [52], and there have also been subsequent European initiatives to support diversification of fisheries-dependent communities. At least some of this money has been invested in the fish processing sector, with funding for the Grimsby Fish Market and Seafood Village from the European Fisheries Fund [49]. As the EC [49] puts it "A key factor mitigating increased unemployment due to the loss of the capture industry is the role of the local and national government in spending monies to increase the competitiveness of sectors which employ people in the area."

Second, direct compensation was granted to some trawlermen at the time of the closures, and a further round of compensation was granted by the British government 35 years later: 2500 fishermen were offered £1000 each for each year at sea. The compensation scheme was poorly implemented [53], and was seen by recipients as "too little too late" [54].

In spite of these efforts by governments, Grimsby and Hull both remain economically disadvantaged, with high levels of long-term unemployment and deprivation [55,56].

The social and psychological damage inflicted by the loss of the fishing industry has also been noted as significant: people in Grimsby are reported to feel that the town has lost its 'purpose' [49]. Like the tobacco and asbestos cases, industry decline has cultural and identity impacts in addition to the job losses and economic impacts.

Despite the efforts of European and UK policymakers to support regeneration and economic diversification of Hull and Grimsby, both areas voted strongly to leave the EU. Many people blame Europe for the decline in the region's fishing industry and blame what are seen as London-centric politicians for doing too little to support the region to move away from a reliance on fishing. Long-term trust in the political process has been badly undermined by both the decision to prioritise other sectors and national interests, and by the subsequent perceived failure to adequately compensate or support the region.

Summary of key points:

- Much like the cases of coal decline observed by Caldecott et al. [5], it was governments that bore the costs associated with industry decline, including both costs associated with efforts to support post-collapse economic diversification, and the costs associated with long-term high unemployment.
- Policy-driven industry decline can have a substantial and long-term impact on trust and political engagement.
- The case again illustrates the role of culture and identity, with a strong sense in the region that the concerns and issues have not been recognised or taken seriously.

5. Conclusions across the case studies

This *perspective* article has sought to highlight the potential value in looking beyond energy for examples of policy-induced industry decline, in an effort to broaden the range of cases informing our understanding of low-carbon transitions. The three brief case studies explored here echo some of the findings of the existing literature on fossil fuel phase-out and destabilisation, and they also suggest some new avenues for research.

Unsurprisingly, the cases highlight that the political interests of producer communities matter. This is not only because the communities themselves are enrolled in advocacy coalitions that resist policy change; it is also because narratives about the livelihoods of producers are deployed as part of the political debate as reasons to oppose policy efforts to destabilise the industry. As a result, policy sequencing can be messy: in both the tobacco and asbestos cases, policy support for producers (which tends to lower costs and thus sustain high demand) was maintained for decades alongside policy action that aimed to reduce consumption.

The cases thus highlight the potential of policy efforts to enable economic diversification for producer communities at an early stage of phase-out policies. Economic diversification policies soften the economic and social hardship associated with industrial decline, contributing to a 'just transition'. As observed in the tobacco case, early diversification reduces the long-term costs for government, which is otherwise typically left to 'pick up the pieces' (Caldecott et al. [5]) following industry phase-out.

Early diversification policy is also part of a political strategy for enabling the transition, by reducing the dependence of producer communities, and thus limiting the extent to which their livelihoods are part of the political battle over phase-out policies. The tobacco case exemplifies how early diversification helped undermine the political coalition that opposed tobacco control. For climate change policies, this implies identifying regions with a high economic dependence on high-carbon activities, and prioritising such regions for economic development investments in sectors that reduce the regions' dependence on those activities. However, as Oei et al. observed, diversification policies are sometimes resisted by incumbent interests [6].

Finally, the issue of cultural identity emerges from these cases as an important force in the politics of industrial decline and support in resource-based sectors. The sense that the local industry is part of "who we are" has played an important role in the cases in terms of both political durability of support for the industry (in particular in the tobacco and asbestos case), and the challenges post-decline (in the cod case). The cultural symbolism of the communities is also deployed as part of the discursive repertoire of interests seeking to prevent change.

6. Questions for future research

The three short cases examined above aim to illustrate that there is value in looking beyond energy for cases of policy-induced industry decline, in order to better understand the policy and political processes associated with low-carbon transitions. The cases suggest elements for a broader research agenda on policy-induced decline, that draws on both energy and non-energy experiences. At least four questions emerge as useful avenues for future research.

- 1. Under what conditions does the deliberate destabilisation of established industries become possible?** This question builds on recent work by Normann [9], who also explored tobacco in the US. Key questions include the role of external events, the maturity of alternatives, and the policy and political context. Asbestos could be an interesting case for further analysis here, exploring how the conditions for deliberate destabilisation took such a long time to result in closure of the mines, despite increasing evidence around health effects of asbestos, and the shrinking role of asbestos as an employer.
- 2. To what extent do attempts to diversify economies away from fossil fuels (and create a ‘just transition’ for workers and communities) play a role in the politics and outcomes of destabilisation policies?** Existing typologies of transition policy have tended to either overlook the supply-side diversification policies (the top left quadrant of Fig. 1), or frame them as damage limitation (e.g. the focus of Kanger et al. [57] on “addressing the broader repercussions of regime destabilisation”). Yet the tobacco and asbestos cases suggest that early diversification could play a role in re-shaping the political coalitions that prevent more rapid phase-out policies of harmful products. A key question for further research is to examine the socio-political conditions that enable or inhibit diversification policies for producer communities.
- 3. The politics of cultural identity in declining industries, and the issue of ‘recognition justice’ [45].** All three cases show that a resource community's sense of identity can play a role in resistance to change. This was also noted by [58]. More research on this is needed, including: how are resource-identities mobilised as part of the politics of decline? Are harms to cultural identity significant? Can those harms be recognised and mitigated by sensitively-designed policies and policy processes?
- 4. How do policy-induced industry declines shape the long-term politics of an area?** In the case of cod in Grimsby/Hull, this is widely seen as having had long-term political impacts, in particular an antipathy towards the EU. Further research on this and other similar cases can help shed light on how future policies of deliberate destabilisation might affect the politics of specific high-carbon regions, and whether policy design can mitigate those effects.

As attention increasingly focuses on the need to phase out high carbon goods and services, there is an urgent need to better understand the political dynamics and repercussions of such moves. The cases explored here highlight the value of exploring historical analogies, alongside energy-focused industry declines.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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