BC Political Economy and the Challenge of Shale Gas: Negotiating a Post-Staples Trajectory

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Abstract. Shale gas, a type of natural gas extracted from shale rock deposits deep underground, is poised to become the latest in a long history of staples industries in the British Columbian economy. However, its development poses challenges for the future trajectory of BC's economy and society. BC's economy, values, and political imaginary have increasingly turned towards a post-staples trajectory based on economic diversification and a cultural shift towards environmental and cosmopolitan values. In considering what is at stake in the development of shale gas, we locate the industry in the historical context of BC's economic, regulatory, and political transitions toward a post-staples society, and assess what political, environmental, and economic challenges arise from the disconnect between a staples industry and a post-staples society. We conclude that for shale gas development to be viable and profitable for BC's economy, the industry must be regulated to ensure the benefits that accrue from shale gas development (in terms of revenue, sustainable employment, and stable northern development) further BC's nascent post-staples trajectory of development.

Keywords. post-staples; shale gas; British Columbia; resource management.

Résumé. Le gaz de schiste, un type de gaz naturel extrait de dépôts de schiste en profondeur, est en passe de devenir le dernier dans une longue histoire d'industries de matières premières, dans l'économie de la Colombie Britannique (C.B.). Cependant, son développement suscite des défis pour la trajectoire future de l'économie et de la société de la C.B. L'économie, les valeurs et l'imaginaire politique de la C.B. se sont tournés de manière croissante vers une voie post-matières premières, basée sur une diversification économique postindustrielle et une mutation culturelle incluant des valeurs post-matérialistes, environnementalistes et cosmopolites. En prenant en compte ce qui est en jeu dans le développement du gaz de schiste, nous situons l'industrie dans le contexte historique des transitions économiques, régulatrices et politiques de la C.B. face à une société post-matières premières, et évaluons quels défis politiques, environnementaux et économiques se présentent par la suite, liés au fossé qui sépare une société de matières premières et une société post-matières premières. Nous concluons que, afin d'être une ressource durable et profitable pour l'économie de la C.B., l'industrie doit être régulée dans le but que les bénéfices tirés de son développement (en termes de revenus, d'emplois durables et de développement et d'emploi au nord) puisse être utilisé afin d'approfondir cette trajectoire de développement

Mots clefs. société post-matières premières; gaz de schiste; Colombie Britannique; gestion des ressources.

Introduction

Since 2010, shale gas[1] has emerged as a pressing issue in British Columbia (BC). With extensive gas discoveries throughout the northeast corner of the province, it appears that a lucrative new staple could soon be playing a major role in BC's economy. If shale gas is to be a new staple industry in BC, it will be part of a long history of natural resource industries that have fuelled development since the early days of province-building. Indeed, staples – including forestry, fish and minerals – played a driving role in the provincial economy in the post-war era, creating jobs and royalty revenues that drove the provincial economy, leading to secondary job creation in the service and manufacturing sectors, as well as financing a steadily increasing amount of public spending on infrastructure and public institutions. Its proponents promise that shale gas could continue this legacy of staples fueling the BC economy: BC is thought to have large reserves of shale gas and is in the process of rapidly developing the resource. Located in the north-eastern Peace River and

Northern Rockies regions of the province, four shale gas reserves, or plays, have been discovered thus far: the Montney Play, the Cordova Embayment, the Laird Basin and the Horn River Basin. The BC Energy Plan cites "undiscovered resource estimates" of 250 trillion cubic feet (tcf) of shale gas in BC; by comparison, it estimates only 98 tcf of conventional gas (BC Ministry of Energy, Mines and Petroleum Resources, 2007: 32). Currently, exploitation of shale gas in BC is just getting under way, with 425 billion cubic feet, or 39 percent of all natural gas production in BC coming from unconventional gas in 2008 (Adams 2010). However with several large-scale LNG-related infrastructure projects already approved, in addition to rapid growth in royalties generated from the sale of drilling rights,[2] it appears that a major commercial production boom is underway.

However, this shale gas boom coincides with a changing economic and political imaginary for BC – one which will change what is at stake for the province in the development of a new staple. Today, BC is characterized by an economic base increasingly rooted in the service sector; a new type of regulatory regime, with the state-centric Fordist-Keynesian model replaced by neoliberalism; and a shifting normative political landscape animated by environmental, urban, and post-material concerns that are often antithetical to traditional staples industries (Hutton 2008; Harrison 1996). Poised in this way to embark on a post-staples trajectory of economic development,[3] BC has already undergone a normative shift towards a post-staples political imaginary—whereby post-material, urban, global, and cosmopolitan values destabilize and even transcend the leading role once played by staples within dominant narratives of BC economy and society (Hutton 2008; Harrison 1996; Rayner and Howlett 2008)[4]. In this altered context, the impact of shale gas on the political economy of BC is unclear. Politically. framing shale gas as an industry that coheres with that political imaginary will be different and more challenging than in previous staples booms during which staple industries not only fitted within, but defined the political imaginary of the province. Contrasted with the post-war Keynesian era, when a vibrant forestry sector drove the economy, the province is no longer highly dependent on the vitality of one industry, and may now possess greater agency to set the terms of engagement for development of a particular resource. At the same time, in its transition away from Fordist-Keynesianism, BC has also moved away from a willingness to enact regulatory regimes that set robust terms of engagement for staple industries.

We argue that a new regulatory model is needed to ensure that resource development is consistent with the nascent post-staples trajectory of the province: development must be economically, socially and environmentally sustainable. In the absence of such a regulatory regime, we anticipate significant resistance to the development of the industry that may in turn affect the industry's competitiveness. We begin by locating shale gas in the historical context of BC political economy, examining BC's transition away from an earlier era of staples-led economic development, a Fordist-Keynesian regulatory regime, and a staples political imaginary. We observe how structural conditions have constrained or catalyzed certain trajectories of development in the past, and how both the state and civil society have transformed those structures. This analysis enables us to anticipate structural constraints that will evolve out of provincial decisions on shale gas, producing economic and political realities that will either frustrate or reinforce a post-staples trajectory for the province. We conclude with a consideration of both challenges to and potentials for shale gas development to compliment the province's post-staples trajectory.

Shale gas and the historical development of a post-staples society

Economic history

The past half-century has seen a dramatic shift in the structure of BC's economy. Although they remain important today, natural resources—traditionally wood and minerals, more recently oil and gas—have declined as a proportion of provincial employment and Gross Provincial Product (GPP)[5] (Ministry of Finance 2010; Thorpe and Sandberg 2008). While the early era of classical staples development involved an economy heavily centered on raw staples extraction without much of a role for the service sector or value-added industries, this changed by the end of the Second World War. The finite nature of BC's resources, coupled with the expansion of the service sector, drove the staples economy into a new era. Howlett and Brownsey (2001) argue that by the mid-1960s, the provincial economy had entered a new staples phase marked by depleted resource endowments; increased capital-intensiveness in resource extraction; the development of secondary processing of resources; economic diversification, particularly with the growth of manufacturing and the service sector; and growing pressure from the environmental movement against unbridled resource extraction. This shift marked both a development of the staples industries, as they became more technologically advanced and knowledge-intensive, and the growing importance of other economic sectors. Overall, the shift can be understood as both the advancement – into a more knowledge and technology-intensive phase that cohered with other elements of late-capitalism – and the decline – through the shrinking relative importance of staples industries to the economy – of the traditional staples economy (Howlett and Brownsey 2001).[6]

Despite its early and continued importance, the staples economy has endured adversity since the 1980s, as a series of negative global market and local environmental conditions have severely compromised the forestry and mining industries. Forestry and mining employment declined by 25 and 50 percent respectively between 1980 and 1999 (Young 2008: 10). However, just as forestry faltered,[7] BC's oil and gas exports began to grow substantially: the value of BC's exports of natural gas and oil approached $4 billion by 2005, up from half a billion in 1996, with much of this growth a consequence of the development of new (predominantly shale) natural gas fields in the Peace River area (Barman, 2007: 363).

Clearly, shale gas holds the potential to fill the void left by the decline of forestry. However, insofar as BC's economy has transitioned into a mature or even post-staples state, it is unclear how – or even whether – that void needs be filled. BC is moving into a post-staples phase, where its economy is increasingly dominated by the service sector (Howlett and Brownsey 2001). Consequently, and in tune with a post-staples political imaginary, the province is witnessing growth in tourism, information technology, and other high-tech and service-sector jobs characteristic of a post-staples economy. Both the normative and structural transformations taking place potentially give the province greater agency in charting the course of shale gas development.

Regulatory history

While comparisons between the post-war forest economy – which helped drive a prolonged period of accumulation and province-building until the 1980s – and shale gas today may be enticing, shale gas is developing within a fundamentally different regulatory regime. Specifically, the regulatory structure of BC's political economy has undergone a shift from Fordist-Keynesianism to neoliberalism, as indicated by the political ideologies of governing parties who have embraced global shifts away from embedded liberalism towards neoliberalism. The 1950s-70s marked an era of Fordist-Keynesianism under the Social Credit regime (with a brief period of NDP governance under David Barrett from 1972 to 1975). Their approach was pro-business and anti-labour, yet relied on a large state that invested heavily in public infrastructure and implemented comprehensive regulatory policies to ensure profitable conditions for business; ensure stable, prosperous conditions for workers; and prioritize resource development in the provincial hinterlands to industrialize the North of the province (Howlett and Brownsey 1996).[8] The use by Social Credit governments of a variety of regulatory policies to ensure that staples industries would fuel province-wide development and growth in the past garnered sufficient support from civil society to ensure that its reach did not extend beyond the normative political imaginary.

The Social Credit regulatory regime succeeded in industrializing parts of the resource hinterland of BC, but only precariously. In mandating resource companies to invest in community development, this approach created dependancy on single resources and individual companies (Howlett and Brownsey 1996). The extensive regulation needed to achieve ongoing development proved to be a significant burden, as BC was forced to deal with many of the same problems plaguing other Fordist-Keynesian regimes in the early 1980s[9], spurring change. Beginning with the "restraint program" of the Social Credit party in 1982, and continuing through today with the neoliberal regime of the Liberal party, BC has shifted to a regulatory regime that involves decreased public expenditures, minimal regulations, privatization, and liberalization. In the forestry and mining sectors, the Liberal government has utilized a comprehensive strategy of liberalization, along with the shift to "'results-based' environmental regulation" (Young and Matthews, 2007: 181).

This regulatory history of BC staples does not provide us with an appropriate regulatory precedent for the shale gas boom. The Fordist-Keynesian regime of the Social Credit era benefited from conditions that are not present today: apparent resource abundance; the post-war boom; ever-growing demand; an economic upswing, in terms of the rate of profit, and an economic context that meant that the Keynesian welfare state was still profitable. Moreover, it was located within a different political imaginary, wherein province-building, wealth creation and industrialization overshadowed other concerns based on post-material, cosmopolitan, global, urban, and environmental values (Hutton 2008; Rayner and Howlett 2008). Without these conditions today, it is clear that such a regime is not viable. Rather, this history reminds us that regulatory regimes and structural constrains have both constrained and catalyzed development trajectories in the past. How we choose to regulate shale gas will likewise impose a series of structural constraints that condition future trajectories of economic development in the province.

Political history

While the historical context demonstrates the structural constraints posed by a staples paradigm to BC's economy, the history of land- and resource-use struggles in BC suggests that shale gas development could be beset by problems if it fails achieve a social licence to operate. In the past, resistance to certain land-use decisions and forestry practices has been strong and sustained, drawing international attention, and often forcing the hand of provincial governments.[10] The provincial state has used both coercion and persuasion to settle these matters, but the overarching issues have never gone away and will re-emerge if the concerns of key groups – in particular First Nations and environmentalists – are not addressed in the decision-making process.

For example, we can look to several key junctures in BC politics that have had significant implications for the economic trajectory of the province, such as the Solidarity Coalition's struggle against the Social Credit "restraint program" of the early 1980s, and the "war in the woods" conflict over logging rights in the late 1980s and early 1990s (Carroll and Ratner 1989; Wilson 1998; Hayter 2003). Resistance to Social Credit policies of restraint in the early 1980s marked the starting point of an era of political turmoil in BC. During this struggle, the Solidarity Coalition was largely animated by the pursuit of material gains. Later struggles have driven the province in a post-staples direction, fighting for post-material values, rather than the material basis of labour politics. In the aftermath of the 1980s recession, BC was rocked by a new era of politicized resource development struggles, known as the "war in the woods" in which government, forestry companies, and forestry unions came to be "increasingly in conflict both with a rapidly growing environmental movement, and also with BC's First Nations, who began to challenge the provincial government over its rights to grant harvesting leases over what they regarded as tradi-

tional communal tribal resources" (Jackson and Curry, 2004a: 29). The war in the woods galvanized support for post-material, non-economic values and concerns, and thus played a significant role in BC's transition toward a post-staples political imaginary.

Understanding the political responses to such resistance will help us identify how resistance to shale gas development might emerge, and might be managed in a way that is consistent with a post-staples political society. For example, we can learn from how, in mediating the "war in the woods" following its return to power in 1991, the NDP sought to institute democratic, participatory, devolved, and consensus-based decision-making practices around land-use issues. This was done most prominently with regard to the Comission on Resources and Environment (CORE) process that emerged out of the Clayoquot Sound conflict. The CORE process "[went] beyond mere consultation with competing interests and actually devolve[d] some authority over policy-making to a group of stakeholders. Rather than the majority rule common to legislatures, these new bodies operate[d] under a decision rule of consensus" (Hoberg 1996: 275). CORE negotiations were unable to deliver the far-reaching consensus-based reform that many hoped, but indicate the potential of breaking with traditional regulatory and management processes – in this case, pursuing consensus-building rather than the adversarial politics that had characterized disputes between logging companies and environmentalists in past decades. Moreover, the CORE process signalled the prominent role environmental groups and First Nations were to play in provincial politics and land-use negotiations. It thus marked an institutionalization of the post-staples political imaginary into BC politics and the policy-making process, further entrenching the normativity of this growing political current.

The BC Liberals (since their return to power in 2001) have revised strategies for making overtures to First Nations and environmental groups, trading this deliberative democratic approach to land and resource issues (Carroll and Ratner 2005) for a neoliberal policy turn that has sought increasingly market-oriented relations with local communities and First Nations. For example, they have sought to advance a neoliberal discourse within First Nations treaty negotiations, as evidenced in the (much maligned) 2002 referendum, which Wood and Rossiter see as "a neo-liberal political-economic discourse that aspires to recast Aboriginal citizenship in British Columbia in such a way as to render the historical geographies of colonialism that frame it irrelevant and to instead envision First Nation's full inclusion in BC society as centred on participation in the 'free' market economy" (2005: 353). This approach has drawn criticism, especially where it has resulted in government overriding First Nations communities on land use decisions: for example, in 2004, the Liberal government overrode the will of Tlingit First Nations, and a pending Supreme Court appeal to allow mining company Redfern to build gold, zinc, and copper mines in an endangered wildlife zone in Atlin, Northwest BC (Smith 2005). However, in their second term the Liberals have advanced a new brand of neoliberal pro-environmental policy again framed against BC's post-staples political imaginary. For example, Hoberg notes that "in February 2007, the province released a new energy plan whose spirit is significantly different from its predecessor's. The 2002 plan was focused on privatization and regulatory reform; the 2007 plan was focused on environmental leadership through climate mitigation and self-sufficiency in energy supply" (2010: 346). Moreover, the Liberals have said they intend to substantially reduce GHG emissions over the next forty years, through such measures as a carbon tax, a clean energy fund for green development projects, a carbon offset mechanism called the Pacific Carbon Trust, and an ambitious 2010 target of carbon neutrality in all public buildings (Smith 2010). Nonetheless, the shale gas boom appears poised to raise significant challenges for this neoliberal environmentalism of the BC Liberals. While the Liberals have gained from pursuing a green agenda with the support of some environmental groups, and have quelled some of the tension between state and civil society over resource issues, shale gas development risks reinvigorating resistance (for reasons we explore in the following section).

The political history of BC shows us how the agency of key groups in civil society has played a role in shaping the trajectory of BC's political economy in recent decades. The struggles of environmentalists and First Nations have been both causes and consequences of the growing normativity of a post-staples political imaginary.[11] Insofar as BC is increasingly constituted through post-material, environmentalist, and urban political narratives, their struggles will only serve to reinforce the notion that the structural and ideological mechanisms behind staples economies are out of tune with BC society. Moreover, as First Nations realize increasing amounts of agency and political legitimacy with regard to land claims (Tollefson *et al*, 2008: 170), the legal and political consequences incurred by government resistance to the institutionalization of these rights will only increase. The regulatory approach to shale gas must, therefore, formulate a decision-making process for shale gas development that fosters, rather than frustrates cooperation between government and the environmental and First Nations resistance movements.

Challenges of staples development in a post-staples society

If the above discussion shows how the province has transitioned away from the structural economic, regulatory, and normative political conditions that together constituted a staples society, it also shows how that shift has been actively shaped by political movements. The problem of a resource industry suited to historical social, political, and economic conditions that are no longer present can only be overcome if the industry coheres with the new contexts it seeks to inhabit. Consequently, if the industry is to cohere with BC's post-staples trajectory, it must actively respond to the political, environmental, and economic challenges it faces. Otherwise, the industry will find itself pulled into the ideological struggle over BC's identity, facing a resistance movement that has already shown its capacity to force the hand of industry and

government, for example through the war in the woods. By working towards a robust regulatory regime capable of meeting the specific political, environmental and economic challenges the industry poses to BC's post-staples trajectory, the province can avert this political struggle. The following section considers the specific political, environmental, and economic challenges it must overcome, and how the industry might be managed so as to ensure that it reinforces BC's post-staples trajectory of development.

Political challenges

Shale gas faces a number of political issues that must be addressed if its development is to take place in a way that coheres with BC's post-staples political imaginary. The waning strength of organized labour mitigates the extent to which this could be the sort of struggle that "splits the left" between labour on one hand, and environmentalists and First Nations on the other. Both the growing concern about climate change and the province's declining dependence on natural resources play into the hands of the latter two groups. Unless government is accountable to these concerns, groups that have helped push BC society into a post-staples normative paradigm will feel cheated by a government that has otherwise been responsive to this normative shift. Already, there are signs of discontent from independent MLAs Vicki Huntington and Bob Simpson, who have voiced the environmental, political, economic and health concerns of local communities, environmentalists, public institutions, and First Nations, calling for a "comprehensive inquiry into the public policy and cumulative impact implications of this development" (Simpson and Huntington 2011).

First Nations challenges

Specifically addressing concerns for First Nations rights, Huntington and Simpson's letter states that "First Nations rights and title issues still need to be addressed, especially now with the expiry on March 31 of [2011] of Consultation Process Agreements between the Oil and Gas Commission and First Nations in the Peace Region." In addressing this problem, the BC Oil and Gas Commission [OGC] intends to: "continue to actively engage First Nations in consultations on oil and gas development," further seeking to develop "agreement implementation strategies through regular meetings with Chiefs and Councils and collaborative activities with community land offices," and "examine innovative solutions for the effective participation of First Nations in the review and assessment of projects" (OGC 2011: 12). With regard to environmental concerns, the OGC intends to "continue the development and coordination with First Nations, producers, and appropriate stakeholders, of basin-specific environmental stewardship plans, operating protocols and value maps" (OGC 2011: 13). While these overtures may be good politics, it is unclear whether they will be enough to quell opposition to shale gas development, and its environmental, health, and infrastructural implications, among First Nations throughout the province. For the industry to expand, it must build pipelines to the west coast through the unceded traditional territories of First Nations. Resistance to oil pipelines is mobilizing solidarity from First Nations across the north of the province (Coastal First Nations 2010; Tait and Vanderklippe 2011), although it remains unclear whether similar resistance will emerge to gas pipelines.[12] If it does, this resistance coupled with the deterioration of positive relations between First Nations and the provincial government and the growing normative legal paradigm indigenous rights globally make it possible that First Nations' opposition could be a significant obstacle to the industry. Even if resistance to pipeline development does not emerge, however, given the extensive impacts the industry is having on First Nations' territory, it must find a way to more effectively engage First Nations in the decision-making process.

Environmental impacts

Environmental leadership makes up an important component of BC's post-staples political imaginary, and the industry will have to overcome major challenges to quell growing opposition from BC's environmental community. Shale gas poses unique environmental problems at both the local and global scales. Managing locally groundwater contamination, water consumption, and cumulative landscape-level and health impacts could be problematic for both industry and government (Osborn et al 2011; Parfitt 2010, 2011). Major shale producing regions elsewhere have experienced groundwater contamination from spills of fracturing fluid containing known carcinogens (Lustgarten 2001), and anecdotal reports of direct contamination by methane or fracturing fluids from the fracking process have been a cause for widespread concern. The magnitude of risk remains contested and little peer-reviewed research has investigated concerns. However, early findings have not alleviated concerns: a recent peer-reviewed scientific study published in PNAS found that methane contamination of groundwater increased with proximity to shale gas hydrofracturing operations in test sites in New York and Pensylvania, and was chemically consistent with a thermogenic origin in deep shale formations but inconsistent with biogenic surface decomposition (Osborn et al 2011). Such contamination poses a range of health and safety hazards including explosion (Osborn et al 2011). BC's shale gas fields are remote, and contamination concerns are not equivalent to those experienced in regions like the New York City watershed, where fracking has been heavily debated and is currently under a moratorium. However, the health concerns associated with hydraulic fracturing have been enough to prompt a study by the BC Ministry of Health (Hume 2011). Water consumption also remains a major concern, as the hydraulic fracturing process uses massive quantities of water. Parfitt (2010: 26) found that BC shale gas producers hold permits to withdraw 274,946 cubic meters of water daily, more than double the capital city Greater Victoria's daily level of consumption (132,282 cubic meters). Water issues in relation to shale gas extraction in the northeast arose in 2010, when the region experienced a serious drought and many of the water sources used by industry experienced low water levels (Parfitt 2010: 19). Where sufficient water is available, it will still

become high volumes of toxic waste upon the completion of its useful role in fracking, posing additional risks for surrounding ecosystems. If these landscape environmental impacts cannot be mitigated sufficiently, shale gas development may incite resistance from northern communities, who already experience resentment and alienation from the metropolitan south of the province (Markey et al 2007; Brownsey et al 2010), not to mention a growing coalition of local, provincial, and global environmental groups (Hume 2011).

Shale gas and the climate challenge

Beyond local concerns, shale gas development poses a major challenge to the values of a province accustomed to identifying itself as a leader on climate change mitigation policy, with robust emissions targets and a continent-leading carbon tax. To fit within this environmental leadership narrative, the industry must be capable of contributing to – rather than hindering - the BC government's pledges to substantially reduce CO2 emissions, with binding targets of 33 percent by 2020 and 80 percent by 2050 (British Columbia Ministry of Environment 2010). Shale gas is not naturally positioned to further BC's emissions reductions plan: according to Jaccard and Griffin, "shale gas development would increase provincial emissions by almost 10 percent relative to where they should be in 2020 under the legislated emissions target", meaning that "if BC is to achieve its GHG emission target while pursuing shale gas development, it will need to reduce emissions throughout the economy by almost 50 percent from where they would otherwise have been in 2020" (2010: 5). If shale gas is to be developed further, the province must mandate use of the best available emissions reductions technologies, including carbon capture and storage, if it is to meet its emissions reductions targets (Jaccard and Griffin 2010).

While direct greenhouse gas emissions of production are raising environmental concerns, the lifecycle emissions of shale gas may ultimately generate greater resistance and undermine the sustainability-oriented focus of BC's post-staples political imaginary. Although the development of a fossil fuel industry is usually tied to an increased carbon impact, recent declarations that natural gas could be a clean alternative to coal and oil (IEA 2011) suggest that the industry could potentially be part of the green economic development strategy mandated by BC's post-staples political paradigm. However, the climate impacts of shale gas remain deeply contested. The IEA report also noted that shale gas contributes to 3.5% - 12% higher greenhouse emissions than conventional gas (2011, 64). The only peer-reviewed academic report on lifecyle shale gas emissions available at the time of publication, by Howarth et al (2011), suggests shale gas emissions could be comparable to coal over a 100 years time scale and worse than coal over a 20 year time scale. While there remains great uncertainty over the greenhouse gas impacts of shale gas, even a significant downward revision may not mitigate emissions concerns stemming from BC shale gas development. There is little potential for domestic consumption of the resource, and the two likely export destinations – Alberta and East Asia[13] – exacerbate emissions concerns. Exporting to East Asia would require liquification, oceanic shipping and regasification, which can significantly increase the emissions profile of natural gas, compromising the credibility of cross-Pacific export as a sustainable option. Exporting BC shale gas to Alberta to fuel oil sands development would be the worst case scenario for GHG mitigation, with unconventional gas (which entails increased emissions over conventional gas) fueling development of unconventional oil (which entails increased emissions over conventional oil). This option may generate significant resistance from the already well-entrenched anti-oil sands movement. Shipment to the Pacific Northwest could offer benefits in offsetting coal for electricity generation, but BC suppliers would face stiff competition from domestic American producers (Terasen 2010). With no natural path for BC's shale gas to be consumed in a way that clearly mitigates (rather than exacerbates) climate change, the shale gas industry may face significant resistance on the grounds of entrenching a fossil-fuel paradigm inconsistent with British Columbians' contemporary vision for their province.

Economic challenges

Finding a profitable market for shale gas that will not incur significant resistance on environmental grounds is one challenge, but so too is finding a profitable market. Investors and producers face localized geographical and technological constraints to development alongside non-local price and market instability. The economic return on shale gas, a relative newcomer to the international energy market, remains ambiguous, and natural gas has always been seen as a riskier investment than coal because of price fluctuations (Kitasei 2011). While proponents believe the current low price of natural gas will help maintain high demand, weak commodity prices have forced operators to work with small margins. Some analysts have questioned whether the economic competitiveness of the shale gas industry is overblown, amounting to "a logistical, geological, environmental, and financial pipe dream" (Hughes 2011: 1). A recent New York Times investigation turned up hundreds of emails and internal documents raising the question of whether the American shale gas industry is "inherently unprofitable," a major departure from promises of abundant cheap energy (Urbina 2011: A1). We do not yet know whether such questions represent real risks to the shale gas boom, and cannot anticipate how such concerns will play out in the BC industry. However, they do indicate sources of uncertainty.

Most notably, it remains unclear whether BC will benefit from stable market access for its natural gas exports. Shale gas is being discovered all over the world, and although demand seems to be enormous – particularly as countries shift away from coal, which still accounts for almost 30 percent of global energy output (Kitasei 2011) – supply may be equally vast, especially in some of the heaviest coal-using jurisdictions, such as China and the United States (EIA 2010). Advances in technology and changes in policy direction will also impact the appeal of shale gas. Given the limited demand for natural gas within BC, the province will be

reliant on energy policies in other jurisdictions to render BC natural gas profitable in the long term. If BC or its export partners suddenly face strong resistance to shale gas development or use, this will further destabilize the industry. These economic challenges and risks to industry will be externalized onto the province, through lower revenue streams, lost investment, and decreased or destabilized employment.

This reliance on exports risks entrenching or renewing an era of dependency in which low-value raw staples designed for export (for which the province has little domestic use) dominate the economy. This economic profile could push the province into a "staples trap," whereby dependency on the vitality of the industry structures a wide range of social, political, economic, and environmental policies, and the strength of the provincial economy is tied to economic conditions in a small number of export markets, such as China or Japan. For example, the oil sands have brought Alberta thousands of jobs and hundreds of billions of dollars of investment; the province's GPP per capita is now far greater than that of any other province. Yet Alberta has grown dependent on the oil sands, a resource that faces its own risks, including price fluctuations, if the price of a barrel of oil drops as it did by more than 75 percent in the second half of 2008[14]; the risk of unpredictable demand, if export markets enact emissions standards affecting investment; and changing regulatory patterns, if the state takes a different approach to environmental policy that would make some investments unprofitable. In Alberta – and consequently in Canada as a whole – the state and society have grown dependent on this resource, and the particular risks that plague bitumen have become risks for Canada as a whole, including the risk of the currency becoming a petrodollar tied to the price of a barrel of oil (Smith 2011). Moreover, bold measures that challenge the industry, such as drastically reducing emissions at the national level, have become much more complicated, and environmental regulation has become increasingly difficult. We see the challenges this poses with the rise of resistance to the oil sands, including efforts on the part of the EU to ban oil sands products (McLellan 2011; Harvey 2011). The rigidity of the industry is inherently problematic, not only for the environment and residents, but for the industry itself.

Economic opportunities

To mitigate the economic risks of (and to) the industry, BC urgently needs a comprehensive regulatory regime. A regulatory approach that settles for minimal royalties and low regulatory standards – like that taken with respect to the Alberta oil sands – would be both irrational and irresponsible for a province that has managed well without a large fossil fuel industry and is seeking to become a leader in climate change mitigation. Yet BC appears poised to embark on just such an approach to its shale gas industry. For example, its natural gas royalties closely match Alberta's, and indicators for royalty maximization must take Alberta as BC's main competitor (OGC 2010: 6-7). Given the early stages of this industry and decline in dependence on staples, BC may have an increased capacity to set the terms of engagement before it is too late, and the province is already "locked in" to development through fixed infrastructure, investment and production conditions. Developing a comprehensive regulatory regime may stifle investment in the short term, but it will ensure long term stability, environmental and political responsibility, and widespread public benefits. However, those benefits must cohere with the post-staples paradigm which BC inhabits, bringing public revenue, sustainable investment and development, and advancing economic diversification and independence, rather than staples dependency. This section will consider the potential for a robust regulatory regime to achieve such a trajectory by supporting revenue, sustainable investment, and sustainable northern development and employment growth. If these benefits can be realized, then the industry may yet play a role in fostering the expansion of BC's post-staples trajectory, and may consequently enjoy the normative political legitimacy that comes with it.

Despite BC's history of relatively low royalty rates (see, for example, Thorpe and Sandberg 2008: 194), shale gas has the potential to be a major source of revenue for the province. Given that this resource belongs to all of British Columbia – it is located in Crown lands – the citizens of BC have legitimate claim to a fair share of revenues generated through royalties that can be cycled through the provincial state, enabling investment in social programs, green technology and infrastructure development, or even tax cuts. Indeed, while provincial royalties have never been high, they were necessary to fund the province-building of the Social Credit era. Yet the province faces a dilemma in ensuring that shale gas can be a revenue boon without scaring off investment, a concern that is further complicated by other geographical and infrastructural constraints facing the industry, such as its extreme distance from export markets. Moreover, the province must consider how much investment it is willing to sacrifice for a fair share of royalties.

BC should carefully examine its regulatory options and seek inspiration (and cautionary tales) from other jurisdictions. Some energy-producing states have reaped enormous revenues from oil and gas, whilst ensuring that the resource remains appealing for investors. For example, Norway's offshore oil industry has made a significant contribution to the overall economy without undermining the country's post-staples political imaginary, or complicating the development of a diversified, post-industrial economy. According to Thurber et al, "Norway has made a point of administering its petroleum resources using three distinct government bodies: a national oil company (NOC) engaged in commercial hydrocarbon operations; a government ministry to help set policy; and a regulatory body to provide oversight and technical expertise" (2010: 4) Norway's heritage fund, set up in 1990, had generated over $570 billion by 2010.[15] Conversely, Alberta has generated little of its own revenue from oil and gas development, yet this has enabled the oil sands to be developed at unprecedented speed and levels of investment (Nikiforuk 2010). Set up in 1976, Alberta's heritage fund had only generated 15 billion dollars in revenue for the

province by 2010 (Finn 2008; Government of Alberta 2011). Clearly, Norway has found a way to ensure its offshore oil can be both a profitable investment for industry, and a major source of revenue for the public good, providing a vast pool of wealth for when the oil runs out.

If shale gas holds as much promise for the BC economy as its proponents advertise, it would be wise to learn from such examples, to see what elements of their regulatory and royalty approach BC might benefit from. Abrupt shocks to BC's forestry and mineral sectors in the early 1980s – and the sporadic, slow decline witnessed since – have demonstrated the value of an insurance policy to deal with the eventual decline of a resource, and a regulatory regime that borrowed from the Norwegian model would do much to provide that insurance, as well as provide a steady stream of revenue with which to fund the further development of BC's post-staples economy and society. Updating and enacting a royalty plan could be an important next step for BC, given the current state of royalties from natural gas. Even though oil and gas investment has grown from $1 billion in 1997 to $3.4 billion in 2000 to a high of $7.3 billion in 2005 ($5.9 billion in 2007), royalties have gone from $1.25 billion in 2000/01 to $1.9 billion in 2005-06, to $1.1 billion in 2007-08 ($406 million in 2009-10) (BC Stats 2010a, 2010b; Ministry of Finance 2010: 72). That marks nearly a fifty percent decline in royalties as a percentage of investment during the Liberal Party's tenure, from 37 percent in 2000 to 19 percent in 2007.

In addition to provincial revenue, shale gas presents an opportunity for inward investment in the industry and in the BC economy. To avoid relations of dependency on large transnational corporations, and promote sustainable investment, the province must regulate investment so as to promote economic diversification and sovereignty, rather than re-entrench staples dependency. Major foreign corporations have begun investing in BC shale gas, including South Africa's Sasol, Japan's Mitsubishi and Chubu Electric, Malaysia's Petronas, and China's PetroChina[16] (CBC News 2011a, 2011b; Jones 2011; Japan Today 2011). While this may be indicative of the perceived profitability of the industry and will likely bring stable investment, given the size of these corporations we must be concerned as to whether it will it bring another chapter in the long history of foreign investment undermining sovereignty by limiting the state's capacity to impose stricter regulations (Gill 2008). The increased mobility of these TNCs enables them to "vote with their feet" (Sassen 1996: 42), moving large sums of investment out of one political jurisdiction, thus disciplining the regulatory regime by withdrawing investment and jobs. While this is less of a concern in industries that require a large amount of fixed capital investment, including shale gas, BC could enact policy to sustain development. While BC is unlikely to pursue such an option at present, it is worth noting that many energy-exporting states – including Norway – maintain control over their resources through state-owned corporations to ensure stability and greater agency with regard to regulation and revenue generation.[17]

If it lives up to its full potential, shale gas development holds the potential to bring important regional economic benefits to Northern communities and First Nations who have been hit hard by the recent decline of other staples industries. According to Markey et al, "restructuring of both resource production and public service provision have meant that the past 20 years have been marked by accelerating instability, change, and job losses" (2006: 23). Both the economic impacts of the 1980s recession and the political implications of the neoliberal restraint policies that went with it had transformative effects on the political economy of Northern BC, abruptly ending what had been a multi-decade period of stable population growth and economic expansion. These communities have concurrently faced political hardship: "rural places have suffered the increasing burden of decentralization and the off-loading of responsibilities to local governments by more senior levels of government without a concomitant transfer of fiscal resources to deal with those responsibilities" (Markey et al 2006: 26). Consequently, Markey et al have argued that "communities increasingly feel like they are 'on their own,'" as "northerners speak nostalgically about the large-scale industrial investments witnessed across the region during the 1950s and 1960s. These investments built the communications, economic, and transportation infrastructure to support regional development, and northerners wish to see a contemporary equivalent of this economic vision and investment commitment" (2007: 214-215). Northerners also felt that made-in-the-North approaches offer greater potential for sustainability, given the active public interest in ensuring long-term economic and environmental sustainability, and the value of local knowledge of ecosystems that could be transmitted to the decision-making process. Consequently, shale gas holds the potential to put an end to decades of rural decline and dissatisfaction from Northern communities, but only if it is developed in a way that incorporates "made in the North" decision-making processes, and puts the needs of Northern communities ahead of business (Markey et al 2007: 218).

Alongside investment, shale gas could bring jobs to the North of the province, compensating for earlier job losses brought on by the decline of forestry and facilitating economic revival in hard-hit resource communities. However, to do so would require a regulatory regime that promotes local job growth and investment under a sustainability- and democracy-oriented framework. It remains unclear whether shale gas will bring significant employment opportunities to the North. Unlike Alberta, which has the option to start expanding bitumen upgrader facilities in Edmonton to create value-added jobs (Vanderklippe 2010), there are few potential areas of investment for value-added activity beyond natural gas liquification in Kitimat. This raises concerns: is a potentially rigid and immature industry that offers little value-added economic potential appropriate for BC at its current stage of post-staples development? This concern must be adressed through local, democratic decision-making relating to industry development, and through a regulatory regime that prioritizes sustainable investment and employment prospects to the North of the province.

The potential for northern development and job creation, sustainable investment, and provincial revenue suggests that shale gas could play a positive role in reinforcing and ad-

vancing the post-staples development of BC's economy, if regulated adequately. The Norwegian example reminds us that it is possible for a post-staples society to develop a staples industry without undermining the post-material and environmental values of large constituents in society, or frustrating the development of other economic sectors. Nonetheless, BC faces many challenges in balancing these positive goals with the plethora of risks identified above, which, although disparate, all embody the problem posed by an industry that represents a development trajectory inconsistent with a post-staples era.

Conclusion

Today, BC appears poised to embark on the development of a new staples resource in shale gas just as the province is beginning to locate a post-staples economic trajectory that coheres with its dynamic post-staples political imaginary. With strong tourism, film and high-tech sectors, it is unclear how or whether shale gas fits into this new economic picture that has evolved over the course of the past few decades through the political and normative challenges of resistive groups. Insofar as shale gas is deemed to mark a backward step in the economic, social, political, and environmental development of the province, it will incur staunch resistance from groups that have fought for the society which we now inhabit. To be a viable industry, shale gas must present itself as capable of delivering the same normative principles that flow from a post-staples imaginary. It must be developed in a way that advances the deliberative democratic process of a post-staples society, and the environmental stewardship and responsibility of a post-materialist axiology. It must generate economic benefits that reinforce sustainable growth and economic diversification, rather than economic dependency and a new staples trap. This will be a challenge, but for inspiration the province can look to other states that have more successfully reconciled a staples industry with a post-staples trajectory. It can be done, but more importantly, it must be done. The alternatives will only bring the province economic regression, political conflict, and environmental shame. Averting this struggle is in the interests of the province, British Columbians, and indeed industry, which will otherwise struggle to reap long-term stable profits in a toxic political context. Important decisions now rest with the province: develop a sound regulatory regime capable of overcoming the disparate challenges associated with a staples industry situated in a post-staples society, or risk creating an industry that will lock BC into unstable economic dependency and a new staples trap; political resource-use struggles; First Nations resistance; local environmental degradation; and reputational damage to BC's climate change leadership. Whatever choices the province makes, its decisions on shale gas will play a decisive role in articulating the future of BC.

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Endnotes

1 Shale gas is a type of unconventional natural gas extracted from shale deposits 500 to 1500 metres below the earth's surface. The gas is usually extracted through a process called hydraulic fracturing ("fracking"), where water, sand and chemicals are pumped into wells with extreme pressure, cracking open the shale rock and releasing natural gas molecules. Shale gas has recently been discovered in large quantities in the American Midwest and Southwest, the Northeast of British Columbia, Northern Alberta, and in many other places including China, France, Poland and the UK, and is expected to account for a growing proportion of global natural gas output over the coming decades.

2 As of 2009, 90 percent of royalties generated from the sale of drilling rights were related to shale gas, to a total of $2.4 billion in 2008, up from $885 million in 2007. However, the level fell drastically in 2009 and 2010 (see British Columbia Ministry of Energy and Mines, 2009; Adams, 2010).

3 We remain agnostic on the question of whether the structural changes in the economy definitively render it "post-staples." The changes are uneven, and their impacts difficult to assess at this point. See, for example, hesitations within Howlett and Brownsey (2008: 25-27) about how to characterize BC's economy. However, we do think the trajectory of these changes bears con-

sideration. We are more persuaded by the claim of a shift to a post-staples imaginary, as described below.

4 According to Hutton, Canada is "at the advent of a post-staples state, in which resource extraction is increasingly seen by policy-makers and the broader public as a *residual* of the national economic structure, a vestige of a historical development path that sustained many Canadian regions and communities" (2008 : 47). This post-staples state is characterized by the emergence of a metropolitan, post-Fordist, and transnational economy embedded in a wider structural reality of neoliberal globalization, yet further characterized by a growing concern for environmental, cosmopolitan, and post-material values. Consequently, both these shifting normative and structural-economic realities have come to be internalized by policy-makers at multiple levels of government as a post-staples political economic paradigm. Again, we are intrigued by this paradigm, particularly insofar as analysis of it is rooted in the *perceptions* that shape public and policy responses to staples development.

5 Forestry, for example, has declined as a proportion of provincial GPP, from 2.6% in 1998 to 1.2% in 2009, while the number of people employed in the industry has fallen by more than half, from 30,000 to 14,000 in that time span. (British Columbia Ministry of Finance, July 2010).

6 BC's progression from a staples to a mature staples to a post-staples economy generally fits with the narrative of staples evolution developed by Howlett and Brownsey (2008: 5-7), although it is also different in that it has maintained a large export-base of traditional staples despite seemingly being in transition from a mature staples to a post-staples economy.

7 This was due to both the softwood lumber disputes and the destruction of forests by the mountain pine beetle.

8 Fordist-Keynesian policies were most evident in the forestry sector, and were characterized by enormous public investments in roads; the appurtenancy condition, which mandated that resources be processed in the same region where they were extracted; minimum logging requirements, which ensured that there would be work for loggers, even when market conditions alone might require layoffs; and partnerships between the provincial government and resource corporations to jointly build the infrastructure for new settlements, or communities, around these resource bases (Young 2008).

9 The falling rate of profit was the overarching problem that caused a crisis of under-accumulation in many Northern economies in the mid-1970s, leading to inflation and economic stagnation. In structural terms, capital was unable to remain profitable, partly because it was paying labour too highly (leading to lower profits that were worth less and less with inflation), but also because there was too much constant capital involved in production. Neoliberalism "solved" this problem from a market perspective. Supply-side monetary policy, deregulation, privatization and anti-labour policies seen in Britain, the United States and elsewhere enabled wages to fall, inflation to halt, and conditions of profitability to be restored (Harvey 2005). However, the consequence was the sort of regulatory regime that had driven the BC economy forward in the Fordist-Keynesian era was no longer profitable.

10 Examples of this would include struggles over Clayoquot Sound (Magnusson and Shaw 2003) and the Great Bear Rainforest (Shaw 2004).

11 This is not to presume that environmental movements and First Nations consistently work in concert, of course. There are considerable differences in values, vision and strategy both between and within environmental movements and First Nations.

12 The Enbridge Northern Gateway Pipeline will transport bitumen from the Athabasca oil sands to the port of Kitimat for export to East Asian markets, and transport condensate chemicals back to Edmonton in return. See, for example: http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/first-nations-dig-in-against-enbridge-pipeline/article2021928/page3/ for documentation of resistance to the Enbridge pipeline.

13 Recent investments by Mitsubishi, Petronas and KOGAS, both in shale gas development and in LNG infrastructure, indicate that there is interest for BC's natural gas in East Asian markets (CBC News 2011a; Japan Today 2011; Byers 2011).

14 Oil fell from $134.44 in July 2008 to $31.84 per barrel in December 2008 (Energy Information Association, 2011).

15 According to the Norges Bank of Investment Management, which manages Norway's Government Pension Fund – Global, the fund was worth 3,077 NOK by 2010, which was worth $572 billion US on June 7th, 2011. http://www.nbim.no/en/press-and-publications/News-List/736/femte-beste-resultat-i-fondets-historie/

16 PetroChina has since withdrawn from a $5.5 billion deal with EnCana (Bellinski 2011).

17 See for example Statoil in Norway as well as SOE's in the Gulf States, and Petronas in Malaysia.