Energy independence

As the independence Referendum approaches, there is much debate about the role of oil in an independent Scotland. Revenues from North Sea oil & gas form a major pillar of the mainstream economic argument for Scotland's economy post-independence. Meanwhile the Westminster government is downplaying the future value of tax receipts, threatening that Scotland will be left with budget shortfalls. But both plans promise to continue the status quo and defend the interests of oil companies.

Yet the current market-driven energy regime is failing to achieve basic economic, social and environmental needs, let alone justice. Instead, it delivers massive profits – mostly unearned – to private and mostly foreign multinational corporations. Since Thatcher, the profits of oil were used by a ruling elite in London to dismantle the welfare state and buttress their power, inflicting great harm on Scotland and much of the rest of the UK in the process.

But what happens when we choose to prioritise democracy, social equity and environmental sustainability, rather than corporate profit and maximum extraction rates? This paper will examine policies that an independent Scottish government could pursue to ensure North Sea oil supports long-term economic sustainability.

Fossil fuels are a finite and declining resource. It is vital Scotland is able to transition away from dependence on North Sea reserves. Scotland could be the first nation state to be powered entirely on renewables, and position itself as a powerful electricity exporter to Northern and Western Europe. Decentralized economic decision-making could be combined with an industrial renewal focused on renewables industry and technology. Oil and gas resources could be focussed on non-fuel use such as plastics, electronics, medicines, fertilizers and green chemistry.

First-mover advantage could enable Scotland to recalibrate itself as the world centre of decommissioning the fossil fuel industry. A just transition is possible, in which comparable jobs are created in the new energy and industrial sectors to those lost in fossil fuels. Important infrastructure sites like Grangemouth can be retooled and maintained, and reinvigorated around models of workplace democracy.

The proposals made in this paper aim to promote the following policy objectives.

- strengthening Scotland's economic diversity and independence;
- ensuring the creation of well-paid and secure jobs;
- positioning Scotland as an energy exporter for the rest of the century;
- achieving long-term, reliable and affordable energy supply for Scotland itself;
- taking Scotland’s climate change responsibilities seriously;
- enhancing the redistribution of income from rich to poor and eradicating fuel poverty;
- decentralising and democratising economic decision-making;
- boosting local economies across Scotland including in rural communities.

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The full references quoted in this report are available at: http://goo.gl/68Cb8O

Business as usual

The current regulatory, fiscal and political structures that govern North Sea oil do not serve the people of Scotland. Private interests and the short-term demands of the government in London shape policies in a manner inconsistent with present wellbeing or the needs of future generations. Decision-making takes place behind closed doors and has been captured by corporate lobbyists. As a result, disproportionate revenues are accumulated by distant investment firms as well as the oil companies themselves.

The windfall foregone by the Westminster government in only six years prior to 2008 totalled £74 billion, compared to Norway's fiscal regime. As a result, oil companies are using the cash flow from the north Sea to subsidise drilling in other parts of the world, leading to the UK's North Sea model being described as intellectually bankrupt and "a form of corporate welfare". (Boué & Wright 2010)

The oil industry is in decline. As the North Sea becomes increasingly focused on ultra high pressure, high temperature and frontier fields, scraping the bottom of the barrel will become less and less efficient.

Extracting a barrel of oil is already five times more expensive than it was in 2002. (The Economist 2014) Costs are expected to continue rising, with ever greater operating expenditure and energy inputs required in parallel with lower extraction rates.

Each barrel will demand more subsidies and bring with it greater carbon emissions. In 2013-4, George Osborne handed out new tax breaks worth up to £2.7 billion (Monaghan 2014), responding to lobby group Oil & Gas UK claims that companies like BP and Shell needed tax incentives and field allowances to continue drilling (Kavanagh 2014).

The industry will become increasingly capital intensive while using proportionally less labour - benefitting only the investor. Climate change regulation will ultimately transform oil reserves into stranded assets. There's a risk of building dependency on the sector, distracting resources away from ensuring a just transition and long-term guarantees of jobs outside the fossil fuel sector.

What to do with the oil?

An independent Scotland has the potential to harness oil policy to a rapid transition and build a future out of decommissioning. From the Westminster government's Wood Review on Maximising Recovery to the numerous grassroots calls for change, it's clear that the oil sector is in urgent need of reform. Achieving the best public good - whether following independence or a fully devolved energy policy - will require significant state investment, intervention, democratic engagement and accountability and an end to 'light touch' regulation. (Wood 2014) It will also require bravery, as companies in the North Sea have a history of resistance and corporate bluster when faced with moves that threaten their profit margins. (Marriott and Muttitt 2002)

Beyond the immediate step of ending tax loopholes and breaks for the oil barons, transformative policy pathways could include:

Nationalised oil production

In setting up a national state-run oil company, Norway ensured a public stake in much of its oil & gas resources. The economic benefits were shared throughout Norwegian society, through skills transfers, development of indigenous expertise and technical capability, local content guarantees and the astute management of revenues.

Scotland has missed out by not having its own public oil company. Creating a national champion to lead extraction of the North Sea would enable the country to join most other oil-extracting nations. From Denmark and Norway to Brazil, Nigeria and Angola, state-run companies are the global standard in helping manage oil & gas resources.

It's important to ask whether it's worth the necessary resource inputs to set up a national oil company. Oil extraction rates in the North Sea have plummeted in recent years. This has various causes, but ultimately this is a declining sector. Why invest public resources into an industry that is dying and outdated, and a part of the past, rather than the future? Complete nationalisation would leave the new Scottish state with major liabilities, responsibility for decommissioning and rapidly declining assets. And building national institutions wedded to hydrocarbons would entrench oil and gas further in Scotland's political future, despite the economic costs.

Part Public Ownership

With this model, oil-extracting countries generally take a share of the oil through mandatory state participation in joint venture contracts, and ‘charge’ the oil companies for the share that the companies take, through the mechanisms of royalties and petroleum taxation. Scotland could take a significant stake in joint oil ventures through partial state ownership. This would likely range from a minority holding to a 51% majority stake. It's generally up to the private companies to cover, or “carry” the costs of the state's share.

Taking a majority stake would not require Scotland to operate the fields. It's standard for private oil companies to be minority shareholders, while operating the concessions. For example, Shell was the operator for the Kashagan field in Kazakhstan while owning 16.8%; BP owns 50% of the GUPCO joint venture in Egypt that it operates. By not directly participating in running oil operations, Scotland would not need to build up a fully-fledged national oil company.

A practical and simple model would be to mirror Norway’s fiscal regime. The Norwegian state has a direct financial interest in 121 extraction licenses in Norwegian waters, and it levies a 50% Special Tax (compared to Britain’s 32% Supplementary Charge). These two measures generate 95% of Norway’s oil revenues, and provide a simpler mechanism, and would reduce the potential for tax avoidance. Despite generating vastly greater revenues for government (£74 billion more than if the UK’s tax regime was applied between 2002--2008), the Norwegian model doesn’t reduce the viability of investments for private companies. It is designed “so that an

investment project that is profitable before tax would also be profitable after tax." (Boué & Wright 2010)

The standard industry response to such proposals is that Scotland has higher costs than Norway. However, empirical evidence shows that in 25 out of 32 years between 1976 and 2008, Norwegian investment per barrel extracted was higher than that in the UK. And in two out of the only seven years in which UK costs were higher, this was due to the required safety investments after the Piper Alpha disaster. (Boué & Wright 2010). More generally, extraction costs are expected to continue rise in the North Sea and globally.

By bringing North Sea oil extraction, especially larger projects, under part public ownership, Scotland could ensure more control and accountability as a shareholder, and increase revenues.

Slow down extraction and preserve reserves

We know that there is more oil and gas in the world than it is safe to burn. The International Energy Authority estimate that "no more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2°C goal" (i.e. limiting global climate change to 2°C). Others, such as the Potsdam Climate Institute, estimate only one-fifth of proved reserves can be burned to limit the chances of the world exceeding 2°C of warming.

What does this mean for Scotland's energy policy options? In our view, the most important outcome for energy policy is that Scotland's modern and wealthy economy is harnessed to speed a transition away from fossil fuels and towards low-carbon means of energy production. This will not be achieved by rapidly shutting down the oil industry – the necessary investment in low-carbon infrastructure would disappear with economic recession. But a policy of maximising fossil fuel extraction rates is not compatible with the need to avoid dangerous changes to the stable climate in which human well-being has thrived.

Every barrel of oil extracted and burnt generates revenue but it also reduces the nation's assets. In a future where natural resources, such as easily accessible oil and gas, are becoming increasingly rare it is prudent to maintain natural resources for the future.

Fossil fuels, despite their name, are not only used for fuel. Electronics, medicines, fertilizers and everyday plastics and chemicals such as paint and solvents, all rely on oil-based products. It is difficult in a market economy to make sure that extracted crude oil is put to non-fuel use but future resource and climate policy may well restrict the use of fossil resource in this way.

By implementing an energy policy which aims to slow down extraction, preserve reserves and maximise revenues Scotland could create the conditions needed to transition to a low-carbon energy economy, retain natural assets for the future and play a fair role in tackling climate change.

There are opportunities to increase revenues. The British state is known to capture a remarkably small portion of the enormous revenues that flow from the North Sea. In the Scottish Government's May 2014 future scenarios for revenue paid by the oil & gas industry from 2014-2018, the tax income varies from £7.56 to £16.12 per barrel (Scottish Government, 2014) The average tax revenue per barrel in the five main Scenarios (2-6) is £11.32. In 2008, Norway's average take per barrel was £27.50 - more than double that of the UK. If Scotland aimed to collect revenues at the Norwegian rate, and without increasing for inflation since 2008, it could collect £27.50 billion for 1 billion barrels, or £79.75 billion for its total proven reserves.

A more democratically accountable Scotland with full control over energy policy should capture a significantly greater percentage of the rent. With less need to incentivise future drilling, there will be reduced pressure for tax hand outs for the companies. Part-public ownership, as in Norway and most other oil extracting countries, would further boost the revenues recovered for the public purse.

Unburnable Carbon & Stranded Assets

Unburnable Carbon refers to fossil fuel energy sources which cannot be burnt if the world is to adhere to a carbon budget that would prevent runaway climate change. According to the International Energy Authority (IEA), “no more than one-third of proven reserves of fossil fuels can be consumed prior to 2050 if the world is to achieve the 2°C goal”. It's worth bearing in mind that the IEA is a rather conservative organisation, and 2°C is increasingly recognised as critically dangerous. (Hansen et al 2013)

Research by financial specialists Carbon Tracker argues that, while global action on climate change has been meagre so far, the escalating impacts will necessarily lead to global political action. The transition to a low-carbon economy will result in changes in the market and regulatory environment which will transform unburnable carbon into stranded assets. Billions of barrels of oil will become stranded assets - fossil fuel reserves which become economically non-viable and are not extracted. (Carbon Tracker 2013)

If only one-third of proven reserves can be safely consumed, there is a high chance of the remaining two thirds becoming stranded assets. There is also, on some level, a corresponding moral responsibility.

The most recent figures from the Department for Energy and Climate Change show the UK as currently having around 2.9 billion barrels of proven oil. (DECC 2014) Like every oil province, there remain significant oil reserves not yet discovered or proven.

If only one-third of global proven reserves are burnable, Scotland’s proportional share would be exhausted within two years at current rates of extraction. Extraction rates can be slowed and there are non-fuel uses for fossil fuel reserves but these are currently a very small proportion of overall use. The unburnable carbon argument leaves Scotland with tough choices.

Apart from the issue of social responsibility in using up Scotland's portion of global burnable carbon reserves and taking us beyond safe climatic limits, the potential for major stranded assets raises important questions over the future viability of the oil & gas industry in Scotland.

Continued investment in low-carbon infrastructure is essential. The threat of significant stranded assets highlights the need to use all remaining revenues to rapidly expand Scotland's clean energy generation, in a manner that ensures community development, an end to fuel poverty, a just transition for energy sector workers and builds Scotland's long term economic potential as an electricity exporter.

Building on the transition

Aberdeen is currently a global hub for oil and gas services. Britain has over a thousand oil service firms whose revenues reached £27 billion in 2011. Industry body Subsea UK estimates that its members make half their cash outside Britain. (The Economist 2014) Many of these companies are based on the East coast of Scotland.

Decommissioning has yet to play a significant role in the North Sea. As a result, Scottish companies have not prioritised developing these skills and services. Yet industry lobby group Oil & Gas UK estimates the cost of decommissioning existing and approved installations in the North Sea at £37 billion by 2040, at 2013 prices. (Oil & Gas UK 2014) This is a major opportunity for existing supply chain companies.

The Scottish Government could position Aberdeen as a centre of expertise and skills to decommission not only the North Sea, but oil infrastructure globally. Recognising that in the coming decades we will likely see a large-scale shut down of many rigs and pipelines globally, Scotland has the ability to take a leadership position, by identifying the engineering, legal and financial services that will be in demand. Scottish companies that develop expertise in the North Sea will be ahead of the game and able to share it internationally.

Concrete policy steps could include:

- A Scottish Government inquiry into maximising the opportunities from decommissioning
- Building an International Centre of Excellence in Decommissioning, based in Aberdeen
- Government investment and part ownership in oil services firms specialising in decommissioning.
- Local content standards for decommissioning in the North Sea

Just transition for workers

The oil industry claims to support 200,000 people in Scotland, both through direct employment and indirect job creation.

A rapid shift to renewable energy could create as many, and probably more, jobs as are lost from moving away from fossil fuels. The latest report from the Zero Carbon Britain project estimates that 1.33 million full time equivalent jobs could be created in the UK in wind, marine, solar power, geothermal, synthetic gas and support services. (Allen et al. 2013) Given the extent to which renewable energy resources are concentrated in Scotland and the need for Scotland to export electricity to its neighbours, a complete transformation should generate more than enough work opportunities to compensate for losses. A significant number of jobs could also remain in the oil industry through the process of decommissioning and disassembly. This number will be boosted if Scotland can position Aberdeen as a global centre for shutting down fossil fuel operations. The recalibration of infrastructure needed to power down and reduce energy waste would also create new jobs, both in the installation phase and through maintenance.

Certain major downstream fossil fuel infrastructure can be retooled. Refined oil and gas will continue to be essential feedstocks for plastics, fertilizers, medicine and a myriad of other non-fuel products. There are already proposals for a coal gasification plant at Grangemouth to produce low-carbon synthetic gas and utilise old oil infrastructure to transport and store waste carbon. This could provide Grangemouth workers with a longterm and important role in Scotland's energy future.

However, these jobs are not an intrinsic result from a switch towards renewables. Most political parties envision a future “low carbon economy” that is subjugated to the vagaries of the market. Big business, large landowners and the international financial

hierarchy will try to cash in on, privatise and transform Scotland's natural resources into private wealth.

While renewable energy production is growing rapidly in the UK, the Westminster government has already failed to create employment or a significant domestic industry around it. The skills, factories and the finance are mostly abroad.

Making sure that Scotland sees significant job creation will require long-term government planning and investment. It means giving the public sector a central role in the transition, and in running future energy generation and infrastructure. A large-scale energy efficiency investment programme that insulates, replaces boilers and installs double glazing would generate jobs quickly, and reduce fuel poverty.

A legal requirement to meet significant 'local content' quotas will nurture domestic industry for the long run, build a new skills base and invigorate local economies. Increased self-reliance and control over public energy resources will allow the mutual development of shared assets for collective benefit of the Common Weal (Cumbers et al 2013). This process needs to be democratic, with workers and trade unions centrally involved in planning and structuring the transition. All new energy authorities and bodies should have significant elected worker representation on the boards, similar to Denmark and Norway.

Specific policies that would lead to a long-term and strategic approach that delivers a just transition include:

- A commitment by the Scottish Government to lead the way in financing public sector renewable energy projects. The government will be able to raise large amounts of money through Renewable Energy Bonds;
- Scottish Government support for public energy companies at a local authority level and a range of social enterprises, to put control of energy generation and efficiency in community hands and raise revenue for public services;
- Strengthening labour laws to allow workers to organise while banning exploitative employment practices;
- Land reform to diversify ownership and deliver more land into community hands;
- Energy authorities overseeing the transition from fossil fuels to renewables should have significant worker representation on their boards;
- Legislation that ensures a significant local content and local employment component for all renewable energy operations (production or transmission).

Scotland's renewables: an alternative to fossil fuels

Scotland is rich in renewable energy potential, and better endowed than most of its neighbours. Scotland already generates four times as much of its electricity from non-hydro renewables than the UK (16% of production rather than 4%) due to the Scottish Government's proactive stance.

Scotland can generate large amounts of energy both onshore and offshore. Combined with energy storage and solar generation technology that already exists, these can enable Scotland to become a major electricity exporter to its neighbours in Northern and Western Europe. The construction and installation process will bring major investment and jobs, and strengthen the Scottish economy.

Scotland is widely believed to have 36.5 GW of wind power potential, with a further 7.5 GW of tidal and up to 14 GW of wave power potential. In reality, Scotland could generate far more wind power than this. The most common figures are based only on fixed turbines, with foundations on the shallow seabed. The UK has around 116 GW of fixed wind capacity, of which Scottish waters could generate around 46 GW. (Offshore Valuation Group 2010)

Where the sea is too deep for fixed foundations, floating turbines can be deployed that are anchored to the ocean floor by cables. Full-scale prototypes of this technology have successfully been tested for years. The 65 m tall floating Hywind turbine operated in 200 metre waters off the coast of Norway, surviving 90 mph winds and 19 metre wave heights. Statoil is now planning to install five 6MW turbines in 100 metre deep waters off Peterhead in Aberdeenshire. (Miller 2013) The potential for rolling out this technology is enormous, especially in the deep Atlantic waters of off the west and north coast of Scotland.

The Offshore Valuation Group, composed of government and industry organisations, estimated the UK as having 116 GW of fixed wind capacity (of which Scottish waters have 40%) and 350 GW of offshore floating wind capacity (of which Scottish waters have 35%). If only 70% of the floating wind resource is used, Scotland could still access 86 GW. Add to this the 46 GW of fixed wind, and Scotland's offshore wind capacity is closer to 132 GW. (Offshore Valuation Group 2010)

By reducing energy demand using efficient technology and social change, Scotland can meet all its energy needs from renewable sources, and boost its excess electricity generation. This will require substantial reductions in the energy used for heating and hot water, cooking, lighting and appliances, and transport. For example, energy demand for heating could be reduced by up to 40-50% by introducing high standards for new construction and retrofitting existing buildings. Increased use of electric cars and heat pumps will decrease the need for fossil fuels, while smarter appliances can reduce energy demand at key moments to balance the grid. (Allen et al. 2013)

The existing Scottish Government projections forecast electricity exports to England 60% of the time by 2030. This forecast is based on harnessing only a fraction of Scotland's renewables resources. By maximising the use of its offshore electricity generation capability, Scotland could position itself as an energy exporter for the long haul.

Making best use of its renewables potential will require enormous investment, to build the turbines, the grid connections, and the energy storage, while renewing existing distribution and domestic heating infrastructure. Electricity exports are currently limited due to congested and insufficient transmission lines across the border. (Offshore Valuation Group 2010)

The costs of this transition will be significant, but bring enormous potential benefits. It can provide the basis for a sustainable and

decentralised reindustrialisation, generating foreign reserves and jobs while building long term economic diversity.

Maximising these benefits will rely on Scotland building direct and proactive links with other European countries and regions, and not relying on Westminster. For example, the electricity connector to Norway could connect Scottish renewables capacity to the integrated Nordic electricity grid.

This paper supports a much more diverse energy economy. There is a clear need, and opportunity, for the public sector to drive significant investment along with community, local and private development. Private utility companies alone won't take on the full financial burden of the transition. Expanding energy production and distribution should be based on long-term planning of national need, not short-term profit for foreign investors. The urgency to the upscaling of renewable energy and infrastructure must not lead to foreign multinationals once again picking Scotland clean of its energy wealth. The benefits of the transition should reside with the public.

Specific policy proposals:

- Create a diversity of ownership forms for local renewables that are weighted towards democratic participation and public oversight and accountability;
- A more decentralised, distributed and smart electricity grid;
- Taking a leadership role in EU super-grid negotiations, to ensure that Scotland derives maximum value from its design and implementation;
- Active participation by publicly-owned companies in constructing offshore wind power, both fixed and floating;
- Develop the Scottish supply chain as a key to deployment at scale and least cost;
- The issuing of Scottish Energy Bonds by the Scottish government, to access cheap finance for the transition;
- Creation of an International Centre of Excellence in Floating Wind Technology;
- Create a Scottish Energy Authority to oversee and shape energy systems.

What to do with the oil revenues?

If Scotland achieves control over oil revenues, it's essential that the mistakes of Westminster are not repeated. Increased participatory decision-making and distribution of revenues across the country will strengthen both economic democracy and democratic control and distribution within the country

An ‘Oil Fund’ or ‘Energy Fund’ can provide a basis for wider engagement in how money is made, as long as it creates space for bottom-up collective decision-making.

Another mechanism would be to disburse revenues to local community bodies or Local Authorities, specifically to fund construction of local renewable energy generation. By decentering the decision-making process, the population of Scotland as a whole would be involved in disbursing oil revenues, and receive buy-in to the new renewables sector. Funds could be limited to energy projects that meet rigorous local content and local, common ownership guarantees. This would boost regional and community economies in both urban centres and peripheral rural areas. Combined revenue reform with land reform would ensure that renewables generation is not dominated by a small number of already wealthy landlords. Instead, communities would own their own electricity generation, as many do in Denmark, and on a limited scale in Scotland.

While local communities and Local Authorities would receive significant autonomy in identifying how to spend the revenues, a Scottish Energy Authority overseeing generation, distribution and storage of energy could set parameters and guidance to ensure cohesion. By providing both significant financial resources and a process of vigorous collective decision-making, this would model new forms of local public ownership. Scotland can build alternatives to both profiteering private companies and top-down nationalised bureaucracies.

This would help meet the Scottish Government's existing plans to “develop new models of community ownership and community benefit from energy generation and delivering real community empowerment", while following through on the “responsibility of countries that have benefited from the production of hydrocarbons to lead the way in investing in a low carbon future." (Scottish Government 2013)

Eigg Electric

In 1997 community of the Isle of Eigg, in the inner Hebrides, conducted a historic community buy out, which saw them take control of their land and future. In 2008, the community switched on the island electrification project, which makes 24-hour power available for the first time to all residents and businesses on the island.

The community owned system generates power at a number of locations around the island, from the renewable resources of Hydro Electric, Wind and Solar energy, and makes this available to all households and businesses via an island wide high voltage distribution grid. The renewable resources contribute over 95% of the island's electricity demand and it is believed to be the first time in the world that the three resources have been successfully integrated into a community grid system.

The community is also leading the way on carbon reduction targets, with household electricity use half the UK average. This has been achieved through demand side management, energy efficiency and the use of renewable energy.

Aside from the environmental benefits, Eigg Electric also has social, economic, and employment benefits. Eigg's electricity grid supports four part-time maintenance jobs, consisting of building work to improve Trust properties, jobs from harvesting of wood for heating, and a part time 'green project manager' post, which employs two people on a job share basis. New businesses including restaurants, shops, guesthouses and self-catering accommodation have been enabled due to reliable, affordable electricity supply.

The model of community owned renewable energy project on Eigg is a model that could be replicated across Scotland in isolated communities, and on the mainland.

Oil & democracy: how to avoid becoming a petrostate

The oil and finance industries have a tight grip on politics in London. Democracy has been undermined through intensive lobbying by industry groups like Oil & Gas UK, the revolving door between politicians, civil servants and company executives, and heavy corporate influence on cultural institutions. Policies and decisions related to the industry are made by closed groups, often with disastrous consequences for the public good, and there is no desire from the main political parties in Westminster to change this status quo.

Independence creates the possibility of building a more viable democracy north of the border. It's possible to ensure greater accountability to the people, collective decision-making over energy and finance policies and to curb the power of Big Oil.

But there is no guarantee of this. As a smaller entity, Scotland could become even more of a petrostate than Britain is. The wrong political choices could allow oil to dominate society and the economy, making the state seem dependent on the goodwill of the oil companies. This could skew Scotland's economy towards a declining industry, see decades of ever greater subsidies being exported to London and Houston, and Scotland following Canada's pathway in backtracking from climate and environmental commitments. (Baker 2013)

Preventing the corporate capture of a new Scotland's energy and finance policies is essential. Oil companies have tried to influence values and politics in Scotland for years. An independent Scotland will see them demanding a position at the heart of the Scottish establishment and identity.

By prioritising public deliberation, control over knowledge, and limitations on the power of corporate lobbyists, Scotland can ground itself in democratic practice. Norway, with its own state oil company, still needed strong institutions to counter the pressures from foreign companies and negotiate between different interests. Scotland could learn from these experiences in ensuring that energy policy – absolutely central to the future economy, combating fuel poverty and keeping the lights on – is formed through widespread democratic engagement and doesn't prioritise BP and Shell's interests over the public good.

Can Scotland stand up to the oil companies?

Both independence or increased devolution will leave Scotland needing to decide how able it feels to make demands on multinational oil companies like Shell, BP and Total. It's tempting to see these entities as all powerful and able to bully small nations at will. Not least when they are so deeply entrenched in British political machinery.

In 1997 when Gordon Brown attempted to raise North Sea taxation, a vigorous industry campaign led by BP saw companies threatening to pull out of the UK if taxes were raised. But at the same time that the companies were talking down the viability of the North Sea, they voted the UK their favourite country to invest. BP's profitability in that UK that year was twice its non-UK profitability. This was largely because Britain offered the second most generous (to oil companies) tax regimes in the world. (Rutledge & Wright 2010)

Yet in reality the oil companies have relatively limited negotiating power. Although BP operates in 80 countries, assets are largely immovable and can easily end up stranded. The major players already face a lack of opportunities, regularly issuing profit warnings as they search for ever more remote frontiers. North Sea oil is increasingly difficult to extract – but the risks taken need to be compared to new frontiers like the Arctic.

Few states have been as acquiescent to big oil as Britain. And it's not only comparably strong states with large oil reserves like Russia and Venezuela that forced contract migration and retroactive tax hikes — conditions that oil majors mostly accepted. Smaller countries with far more precarious economies like Bolivia successfully rewrote contract terms with BP, Shell and BG Group.

These companies make big threats that they struggle to follow through on. The global oil industry is quite inflexible. The oil companies need Scotland more than Scotland needs the oil companies.

Conclusion

Scotland has the potential to be a world leader in renewables and decommissioning technology. It can become both energy self-sufficient and a major electricity exporter to its neighbours, using natural resources that will never run out. It can ensure a just transition and major job creation through public investment into local energy infrastructure. Dispersed economic power and a focus on collective energy projects can strengthen deliberative and participatory democracy. This can end the concentration of economic power in the hands of unaccountable elites, and prevent dependence on foreign multinationals that exploit Scotland's public resources for private profit. The transition can help end fuel poverty and position Scotland as a beacon in the global fight against climate change.

Oil companies will fight tooth and nail to assert their power in the new Scotland – whether it is independent or increasingly devolved. Such unaccountable private interests should not be able to use assets belonging to the citizens of a nation to control and bully those citizens. Those who believe in democracy and civic engagement need to be ready to stand up to the oil barons either way.

For Scotland to prosper, the profits generated from natural resources – whether oil or wind – need to be controlled democratically by the Scottish people, not by a corrupt globalised corporate hierarchy. Achieving economic sustainability will involve building rapid alternatives to the oil industry as a mainstay of the Scottish economy, not increased reliance on an industry in decline. Whatever happens on September 18th, the dialogue on oil options must start now, amongst the political parties and amongst the people.

The Scottish Government has argued that "an independent Scotland could also use our position as a major hydrocarbon producer to drive the most ambitious low carbon economic transformation of any country." This is definitely the case. Whereas a Scotland that remains part of the UK will struggle to assert control over its energy policy, an independent Scotland could build a globally leading position with a rapid transition from fossil fuels to renewables. This will mean breaking not only from London, but also the oil interests that have captured the British state.

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