Degrowth and Fracking

Title Slide

The problems associated with Unconventional Oil and Gas demonstrate clearly the desirability and the inevitability of degrowth. Unless degrowth is consciously embraced then we are faced with a delayed adjustment in which the political economic elite, wedded to the idea that there is techo-fix for everything, will end up damaging the conditions in which communities can transition to new beginnings. We all have our favourite ideas for what the future might look like – but none of them will work very well if the climate is pushed into runaway mode, fresh water supplies and farmland are contaminated and the health of communities are compromised by persistent environmental toxins.

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To remind ourselves - the problems identified many decades ago by the authors of **Limits to Growth** was of depletion and pollution as a growing economy runs up against progressively inferior resources. As the easier to extract mineral and energy resources are used up the cost of extraction, whether measured in energy or in money would increase. Pollution would increase too – leading to public health risks and damage to the eco-system. Both depletion and pollution will eventually bring growth to a halt as ecological systems and human social systems are degraded past their ability to regenerate.

The response of the mainstream to these ideas was, and still is, in essence, a statement of religious faith – the market, human ingenuity and technological change will solve all problems. Our Great God - Economic Growth – cannot be stopped and nor is it desirable to try to stop it.

What unconventional oil and gas fields demonstrate however is that this faith in Growth is failing. To continue to maintain the faith requires work by the PR industry, suppression of information gathering (eg gagging orders on victims in exchange for compensation), subordination of the regulatory system and decision making taken over the heads of communities and imposed on them in a way that makes a mockery of democracy.

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What is it that makes shale oil and shale gas an inferior resource? It is the fact that the oil and gas is locked in by the geology and it takes work to extract it. In a conventional oil or gas well the geological strata is permeable and the oil or gas will flow towards the vertical well. In an *unconventional* field permeabillity has to be artificially created by hydraulic fracturing and holding open the fractures across the whole field, using sand as a proppant. That requires a large number of wells so the scale, operational intensity and land area covered is hugely different to a conventional gas or oil field. It can be as much as 100 times as much.

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When the oil and gas industry presents their case for shale oil and gas they typically ignore or play down this issue of scale. They describe what happens as an engineering process happening to geological strata in a single well or a single frack or originating from a single well pad. But the relevant scale are all the developments across a single gas field including the pipes, compressor stations, flare stacks AND, further afield, the extraction of frack sand, the disposal of water and so on. A single well or a single well pad stands no chance of being economic. Scale is crucial thing and a 5% chance of one well failing is not the same as a 5% chance of each well failing in a 100 well field not to mention the accidents and mishaps in all of the rest of the infrastructure.

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It is because of the scale difference that the capital cost to extract a given amount of oil and gas is much

higher as this diagram shows. That's why for unconventional oil or gas to have any chance of being profitable requires low interest rates and high oil and gas prices.

Slides 6, 7 and 8

I am sure that you are aware that since the crash of 2007-2008 central banks have kept interest rates at a very low level. Oil prices were very high, immediately before the 2008 crash and then between November 2010 and September 2014. Natural gas prices are more variable around the world but in the USA during the fracking boom they were high immediately before and after the financial crash but have hardly ever been high enough in recent years for the gas fracking industry to make a profit. The industry has been trapped in a Catch 22. If oil and gas prices are too high then eventually the economy sinks into recession and they come down. Yet if oil and gas prices come down the oil and gas industry cannot make a profit and builds up unrepayable debts.

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The scale of operation also leads to greater health and environmental risks. For example the more wells, the more pipes and transport the more accidents and spills, as well as a greater amount of atmospheric pollution. It is a little early to say how much environomental and public health damage this industry will do. Many health effects, if and when they show up, will emerge over the much longer term. When they occur cancers take time to show up. However, a flood of academic articles after 2013 give worrying indicators of public health impacts and of damage to air quality and of water contamination. There are also serious climate implications because natural gas is a fossil fuel and the development of the industry is not a bridge to a low carbon future but a delay. The problems are greater still when one considers the problems of fugitive methane – in other words the climate effects of leakage from the wells, and installations, as well as from venting.

Slide 10 and 11

As a result of the negative impacts on communities – and because the oil and gas industry is a competitor for land and water - there have been multiple conflicts the world over. Information about unconventional oil and gas has spread horizontally via the internet, as well as by NGOs. There have been some remarkably militant and successful actions by small communities. For example farmers in villages in Poland and Romania have held big multinational corporations like Chevron at bay – even though these oil and gas companies had the backing of national states and of the US government.

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I am speaking here of the US government State Department pushing its Global Shale Gas Initiative – from 2010 onwards in China, South Africa, Lithuania, Romania, Morocco, Bulgaria, Chile, India, Pakistan, Argentina, Indonesia and the Ukraine on behalf of companies like Chevron, ExxonMobile, ConocoPhillips and Shell.

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With support for the fossil fuel companies at the highest level energy strategy has always been intertwined with global geo-politics. For example NATO has sold the case for unconventional gas development in many countries as a means to “energy independence” which means reducing reliance on Russian gas supplies. That means that for the paranoics who run NATO that if you oppose fracking you may be secretly working for the Russians.

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Several years after the launch of the Global Shale Gas Initiative there is not a lot to show as a result of the

efforts. Outside North America the results have been slow and faltering. Exploratory activity is still going on in some countries while in others the industry has not taken off. This is because of the resistance but also because it has not proved economically viable. The geological conditions are not as favourable as were at first hoped and oil and gas prices are not high enough to make the industry profitable.

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In the USA and Canada after several years of development the unconventional sector has produced a lot of oil and gas but it has not in general been profitable. It has built up a mountain of debt which Wall Street is reluctant to write off - preferring to roll over the debt and lend yet more rather than acknowledge that this industry is just not profitable. This has the consequence that the fate of the finance sector and the fate of the energy sector are increasingly intertwined and increasingly vulnerable.

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For local communities the implications are clear. Well connected energy companies have sought to co-opt national level politicians and officials so that decisions are taken over their heads and regulatory arrangements are often neutralised despite the claims that regulation will make unconventional oil and gas safe. To protect their water, the atmosphere and local soils local people need to take back control over the decision making about local eco-systems – whether through strengthened land planning arrangements in which local people take the final decisions and/or the re-creation of commons arrangements for decisions about land.