

Divestment from fossil fuels: a critical appraisal

Divestment is strictly the selling up of all fossil fuel share holdings. However it is currently difficult to decide which fossil should have priority for this though gas is widely, though probably inaccurately, considered to be of less priority than the other fossil fuels, or even exempt from divestment (see foot note¹).

A wider debate concerning the ethics of any form of investment is outside the scope of this communication.

Four main reasons have been suggested for divesting from fossil fuels:

1. It is morally right.
2. Fossil fuel shares are volatile, overvalued and risky.
3. Divestment sends a strong message to fossil fuel companies, banks that finance them, governments that subsidise them, and to the public, helping to strip the companies of their enormous and undemocratic political power.
4. It could reduce fossil fuel production and emissions which would be good for both climate and environment.

Here I seek to evaluate each argument critically. I conclude that the moral argument is compelling for individuals and organisations concerned about the negative impacts of fossil fuel use, while the argument that fossil fuel investments are highly overvalued, risky and volatile has the potential to influence many individual investors and fund managers.

I further conclude that although divestment could send a strong message to the fossil fuel companies it will take more than this to strip them of their immense wealth and political power.

My overall conclusion is that although there is a strong case for divestment, it does not provide a direct mechanism for reducing the negative impact of fossil fuel use. Divestment therefore needs to be accompanied by a raft of additional far-reaching social, economic, legal, and governmental measures if extremely dangerous climate change is to be prevented.

¹ The difficulty depends on whether the highest priority for divestment should depend on: (i) . Overall environmental impact, or (ii). The fuel(s) currently producing the highest annual carbon dioxide emissions, or (iii). The fuel with the largest effect on global warming when the effects of other greenhouse gases produced during extraction and use are included in addition to carbon dioxide. If (i) , the answer may be coal when the effects of marine acidification and mountain top removal are included. If (ii) the priority would be jointly coal and oil as annual global CO₂ production from each is currently closely similar. If (iii), gas may be the priority taking into accounts its probably higher fugitive methane emissions and coal's generally greater production of cooling sulphite aerosols. However some uncertainty is attached to the size the latter two greenhouse effect components. The recent poor performance of coal shares may make them the easiest to divest.

1. Morally right.

This appears to be the most frequently cited reason for divesting from fossil fuels. The use of these fuels starting with coal at the onset of the industrial revolution has been the largest source of cumulative emissions and hence of the already unsafe levels of CO₂ in the atmosphere and oceansⁱ (see also section 2.4 below). Collectively the fossil fuel companies have plans to maintain and increase production.

This would likely lead to future large scale negative effects on biodiversity, food production, health and human survival. Negative impacts are already being experienced by the world's poorest people who contribute least to climate change and this inequality is predicted to worsen in the future. Carbon capture and storage is unlikely to solve the CO₂ problem because it is: only applicable to large plants; too expensive causing UK and Norway to drop demonstration projects; currently without a means of paying for, or incentivising it; and some way from being ready for large-scale deployment.

Thus the unmitigated burning of fossil fuels is an extremely important and pressing inter-generational and international equity and justice problem.ⁱⁱ Desmond Tutu has recently described manmade climate change as "The human rights challenge of our times"ⁱⁱⁱ. There is a strong argument that the continued holding of fossil fuel shares or shares in banks that fund them by individuals or by pension funds is of dubious morality.

2. Volatility and risks inherent in fossil fuel investments

It can be argued that the following factors make continued investment in fossil fuel shares extremely risky.

2.1 Risks associated with a **downturn in the global economy**

Here we first consider recent events as an example of the vulnerability and volatility of oil and other fossil fuel shares.

Brent crude prices started to decline in May 2014 from an undulating plateau following March 2011 peak and started to slump in the week beginning 12th of October 2014, losing about a quarter in just five months. This decline was largely driven by a combination of fears of a global economic slowdown particularly in China, USA and Germany and much of the Eurozone, and by oversupply by Saudi Arabia and some other oil producers.^{iv} The fall in oil prices was in part stimulated by a report from the Goldman Sachs investment bank which predicted that Brent Crude might fall to \$80 in the second quarter of 2015 in view of the likelihood of both continued oversupply and stagnating global demand.^{v vi} In fact Brent Crude had already fallen beneath \$80 by the 12th of November 2014, much faster than predicted and was beneath \$59 by the 16th of December 2014, the rate of decline accelerating over the period.^{vii}

Gas and coal prices tend to track those of oil. Sustained low fossil fuel prices would tend to benefit some sectors of the global economy and countries that rely on imports of fossil fuels. Moreover most economists consider that this will lead to a net increase in global GDP though some commentators claim the opposite.^{viii ix x xi} The effect of low oil prices on net oil producing countries arises from a causal chain that starts with the fact that the reduced revenues from oil sales at current prices are much less than the high and increasing capital

expenditure (capex) required to find, extract, process and transport oil and gas in many locations^{xii xiii}. As the oil analyst Steven Kopits reports, exploration and production costs have been rising at 11% a year since 1999, while the amount of oil produced for that extra spend has fallen as a consequence of depletion.^{xiv}

In this connection, Bloomberg News analysis in May 2014 of 61 American oil and gas shale drillers found that their debt had increased 200% over the past four years while revenue had increased by only 5.6 %.^{xv} Further, according to Morgan Stanley analysts, the seven major oil and gas companies, Royal Dutch Shell, BP, Exxon Mobil, Chevron, Total, ENI and Statoil ran a staggering collective deficit of a \$55 billion in 2013.^{xvi} To seek to prevent further debt the fossil fuel companies have already laid off large number of workers they took on in boom time.^{xvii xviii xix} This would tend to reduce global GDP. At the same time fossil fuel companies to seek to balance the books are cutting capex by cancelling currently unprofitable projects. This could also to slow the growth of global GDP^{xx xxi} even though the supply of fossil fuels (their availability and price) and growth in demand are the prime drivers of economic activity rather than capex. The effect of falling oil capex on global GDP could be significant as fossil fuel companies have earmarked an estimated \$1.1trillion of capex for high cost oil projects out to 2025 requiring a sustained oil price of \$95 (in purchasing power adjusted dollars) to make a profit.^{xxii} Cutting capex and laying off workers would tend to gradually reduce global supply though this may not happen fast enough to trigger an increase in oil prices if the Organisation of Oil Exporting Countries and the US fail to cut production and the global economy continues to stagnate.

The current low oil prices do not impact equally on all countries. Saudi Arabia is relatively immune to falling oil prices as its oil may cost as little as \$30 a barrel to produce though the breakeven price there may be as much as \$93.^{xxiii} The USA may be similarly immune as the head of the International Energy Authority (IEA) claimed on the 13th of October 2014 that 98 percent of crude oil and condensates from the United States had a breakeven price of below \$80 while 82 percent of their shale production had a breakeven price of \$60 or lower. He further claimed that shale oil production had yet to be affected by falling oil prices.^{xxiv} However a week later a Bernstein Research claimed that shale oil production would be uneconomical if oil prices were to fall to \$80 per barrel^{xxv} while Wood MacKenzie's estimated that the vast majority of US shale oil plays have a breakeven price above \$60 and none would be economic at \$40.^{xxvi}

In contrast the breakeven price for Iranian oil is claimed to be about \$140 and for Russian oil \$105 (for Russian arctic oil about \$120) making these countries very vulnerable to sustained low oil prices.^{xxvii xxviii} This has led to support for the idea that Saudi Arabia and the US have conspired to maintain Saudi oversupply of oil. The motive for this would be to use oil as an economic weapon against Iran to reduce its nuclear programme and against Russia both to end support for Syria's president Assad and to reverse Russian policy on Ukraine.^{xxix xxx} American involvement in this conspiracy is somewhat unlikely as sustained oil prices in the region of \$60 to \$80 or less would threaten the US shale oil industry. A more likely motive is that Saudi Arabia and other Gulf States producing oil very cheaply would eventually benefit greatly by squeezing out other more expensive producers out of the market.^{xxxi} Support for the latter suggestion comes from a statement on 15th December 2014 by the United Arab Emirates' oil minister that OPEC would stand by its decision not to cut output even if oil prices fell as low as \$40 a barrel and would wait at least three months before considering an emergency meeting.^{xxxii}

These circumstances suggest that oil prices are unlikely to recover quickly unless global demand increases rapidly. This currently seems unlikely in the light of evidence that the global economy is continuing to slow down.

In addition, sustained low oil prices increase the risk of oil and shale gas company defaults on the enormous levels of debt they have built up^{xxxiii}. This would have serious implications for the already vulnerable banking sector. A combination of these factors could trigger a steep downward spiral because governments, banks, individuals and companies are already burdened by massive debts in addition to those of the fossil fuel sector. This might be compounded by a possibly imminent collapse of the global property bubble^{xxxiv xxxv}.

Energy shares appear to be particularly vulnerable to this complex situation. This is clear from the J.P. Morgan Assets report of November 14th 2014 which showed that low oil prices have wreaked havoc on the relatively small energy companies (S & P energy small caps) whose year to year total share yield declined 20.2% and the all energy sub-index shares declined by 1.2% compared with 12.4% increase in the S & P 500 all share index over the same period.^{xxxvi} Similarly the FTSE oil and gas index has tended to fall faster than both the percentage decline in the FTSE 100^{xxxvii} and the decline in Brent crude oil prices^{xxxviii}. This also occurred in 2011 during the start of the second dip of the recession triggered by the 2007 Credit Crunch^{xxxix}.

However there is considerable uncertainty about future fuel prices and debate about the future value of fossil fuel shares continues to rage for many reasons^{xl}. These include the uncertainty of long term economic predictions and the probability that the current excess of oil supply over demand may eventually be reversed for political and/or geological reasons unless there is a sustained downturn in the global economy. In contrast, a continuing glut of coal is quite likely if China cuts its coal consumption.

2.2 Risks associated with **tackling market externalities** and **cancelling subsidies**.

Fossil fuels are known for their large hidden costs that are excluded in conventional market economics and known as negative externalities.^{xli} Tackling this failure of market economics would make alternative energies more competitive and could reduce the consumption of fossil fuels.^{xlii} For example the two pressing needs in China to reduce air pollution in cities and to stimulate the Chinese renewable energy industry is motivating a switch away from polluting coal-fired stations and the introduction of carbon-trading zones.^{xliii} Acting on fossil fuel negative externalities could therefore reduce the rate of growth in fossil fuel demand adding to the risks associated with shares in this sector.

Cancellation of government fossil fuel subsidies presents an additional risk to fossil fuel companies. Indeed the International Monetary Fund (IMF) motivated by free market theory has recently called for an end to national government subsidies for fossil fuels which they estimate add up worldwide to \$1.9 trillion per year^{xliv xlv}. Removing these subsidies would help to make a level playing field encouraging the investment in renewables and energy conservation technologies.

However increasing the price of fossil fuels to consumers by abolishing subsidies is unlikely to lead to a proportionate reduction in fossil fuel consumption as the effect of price rises on demand for oil may be very small and slow to take effect.^{xlvi} In this connection the IMF

reports that “a 10 per cent permanent increase in oil prices reduces oil demand by [only] about 0.7 per cent after 20 years”.^{xlvi xlvi}

The IMF call for an end to fossil fuel subsidies to tackle negative externalities and fossil fuel subsidies would be supported by many in the climate and environmental movement. Many environmentalists would however question the IMF’s motivation, the maintenance of global economic growth and a system which benefits the rich at the expense of the poor. Environmentalists would also be likely to question the effectiveness of the IMF’s proposed way of tackling climate change: a carbon tax unlikely to reduce fossil fuel demand significantly (see above), and the Cap & Trade price mechanism notorious for its failure to reduce emissions^{xlvi}.

2.3 Risk to fossil fuel investments resulting from **effective Intergovernmental action on climate change**

The argument underlying this risk stems from the bursting of what has come to be known as the carbon bubble.^l The “carbon bubble” argument considers that fossil fuel shares are currently massively over-valued. This is because much of the fossil fuel companies’ assets would be stranded if effective action was taken on a global scale to reduce fossil production or emissions, the principal cause of climate change.

In this connection the IPCC AR5^{li}, the Global Carbon Project^{liii} and the International Energy Agency^{liv} agree that about two-thirds of the remaining fossil fuel reserves must remain in the ground to give a reasonable chance of avoiding extremely dangerous climate change. President Obama appears to have agreed with this view^{lv} while the governor of the Bank of England has recently lent his weight to the “carbon bubble” argument.^{lvi} Citi bank, HSBC and Moody’s bank all take the carbon bubble argument seriously while it was revealed on the 1st of December 2014 that both the Bank of England and the House of Commons Audit Commission will conduct their own enquiry into the risks posed by the carbon bubble.^{lvii} On the 6th of December The Daily Telegraph reported that Ed Davey in his first intervention on the carbon bubble warned that, “[The] financial authorities must examine the risks posed by coal, oil and gas companies to prevent pension funds investing in what could become “the sub-prime assets of the future””; the same article reported that Former BP chief Lord Browne said that oil and gas companies were in denial about the “existential threat to their business” posed by this.^{lviii}

However it has been argued that concern about the “carbon bubble” and “stranded assets” in high places is motivated by desire to maximise economic growth and maintain the present socioeconomic structure.^{lix} These motives are problematic because there is strong evidence that continued economic growth (the product of per capita economic growth and growth in the number of consumers) is the greatest barrier to effective action on climate change and other environmental and resource depletion problems.^{lx lxi}

2.4 Risk to fossil fuel investments as a consequence of improved **global energy efficiency, energy intensity and carbon intensity.**

It has been argued that improved **energy efficiency, energy intensity and carbon intensity** on a global scale might help to reduce fossil fuel demand, fossil fuel company evaluations and their share prices.

It is clear that the price of renewable energy has continued to decline. As of 2014 new wind power is cheaper than new coal and gas power in Australia,^{lxii} China^{lxiii} and the United States^{lxiv}. A recent EU report^{lxv} shows that onshore wind is far cheaper than coal and gas when health externalities are taken into consideration, while electricity produced from photovoltaic roof panels is often cheaper than electricity from the grid^{lxvi}. Cheap and efficient means of storing the energy would further reduce the capital cost of renewable energy. However it is to be noted that falling fossil fuel prices would reduce the cost advantage of renewable over fossil fuels, while a global recession would retard investment in renewables and energy efficiency measures yet reduce emissions as it did in the last recession. Moreover, increased energy efficiency does not always decrease energy use^{lxvii}^{lxviii} and renewable energy is arguably in general an addition to rather than a substitute for fossil fuels^{lxix}.

2.5 Financial risks to fossil fuel investments from legal action.

Fossil companies are increasingly subject to the risks of large direct costs from litigation for their role in local environmental degradation and climate change.^{lxx} These risks arise in a variety of ways including:

- **Risk of legal action against environmental degradation caused by fossil fuel extraction^{lxxi}**. The risk of extremely serious damage is increasing as companies resort to advanced recovery techniques such as underground coal gasification, fracking and mountain top removal, and to working in increasingly hostile environments such as the Arctic Ocean and deep water oil wells. For example, legal action following the Deepwater Horizon explosion and massive oil spill in the Gulf of Mexico in 2010 could cost BP \$18 billion in penalties in addition to the \$28 billion already paid out in claims and clean-up costs. These penalties greatly exceed the \$3.5 billion BP had allotted at the start of the case, and could have grave implications for the company.^{lxxii}
- Companies face legal action associated with **denial, misinformation, and misrepresentation** with respect to climate change.^{lxxiii}
- **Risk from claims for damages and injunctive relief** in civil law climate suites. Attempts to sue fossil fuel companies in this respect have so far been thwarted by court rulings that requirement to restrict production or emissions is displaced from the companies to national governments. There is also the difficulty in establishing the causal connection between fossil fuel production and damage or nuisance from extreme weather or flooding events, although climate scientists are beginning to make progress in this area. Fresh approaches are being investigated and as climate litigation moves forward the cumulative damages sought could reach trillions of dollars.^{lxxiv}
- Fossil fuel companies increasingly run the risk of being held responsible for **human rights abuses**. Olivier De Schutter, UN Special Rapporteur on the right to food, considers that there is huge scope for human rights courts to treat climate change as an immediate threat to human rights, for example in cases related to fossil fuel mining.^{lxxv}

- **Direct risks to investment in fossil fuel power stations.** The Sierra Club’s ‘Beyond Coal’ campaign has already stopped more than 165 new coal-fired power stations from being built in the US and led to the early retirement of another 142. ^{lxxvi}
- The **cost of insurance** cover may become a major item for fossil fuel companies facing environmental damage and climate litigation. This would include the increased insurance premiums for the growing defence costs associated with an increasing number of legal actions. Christopher Walker, head of greenhouse gas risk solutions unit at Swiss Re, one of the world’s largest reinsurance companies, reportedly said that his company may be forced to approach Exxon Mobil and say “since you don’t think climate change is a problem, and you’re betting your stockholders assets on that, we’re sure you won’t mind if we exclude climate related lawsuits from your directors and officers insurance.” ^{lxxvii}
- Risk of criminal cases brought against fossil fuel companies if an international law making **Ecocide a crime** was put in place to prevent large scale damage, destruction to or loss of ecosystems. ^{lxxviii} Such a law would have precedence over national law.

3. Divestment sends a strong message to the fossil fuel companies and to the general public helping to strip the companies of their enormous and undemocratic political power.

It has been argued that stripping fossil fuel companies of their immense power is vital as “the long term success of the human race will be much endangered if corporations continue to be ...the world’s most powerful group of institutions and their motivations continue to drive them to strive short-sightedly for economic growth...”^{lxxix}. Furthermore, it is clear that the power fossil fuel corporations and the banks that fund them have a profoundly undemocratic influence in the UK ^{lxxx} and in other countries.

It has been argued that although the anti-apartheid campaign for divestment from South African companies had little direct effect on their financial position, it greatly increased public awareness of the injustices of South Africa’s apartheid government. This fuelled the worldwide popular opposition to apartheid in the 1980s which almost certainly contributed to its end^{lxxxi}. It has been suggested that similar success could arise from concern about the bursting of a “carbon bubble” (see 2.3 above) augmented by growing public concern about the role of fossil fuels in serious climate impacts for example concerning food production, flooding and health. This may lead to a growing public movement to divest and wider awareness of these issues.

The number of organisations and individuals that have already committed to divestment is certainly growing. These now include 14 universities or colleges; for example both Stanford and Glasgow Universities, 31 cities including Oxford UK, Örebro (Sweden) and Seattle (Washington); 2 American counties, 49 church organisations including the World Council of Churches; 29 Trusts and Foundations including the Sierra Club and 8 other institutions including the BMA ^{lxxxii}. An August 2014 white paper by Bloomberg New Energy Finance is supportive of divestment ^{lxxxiii}. Intriguingly the Rockefeller Brothers Fund whose considerable wealth was built on oil has recently decided to disinvest.^{lxxxiv} Stephen Heintz, president of this Fund stated, “John D Rockefeller... if he were alive today, as an astute businessman looking out to the future...would be moving out of fossil fuels and investing in clean, renewable energy. More recently UN secretary general Ban Ki-moon at the launch of

the most recent report of the UN Intergovernmental Panel on Climate Change addressed a comment to investors including pension fund managers: “Please reduce your investments in the coal and fossil-fuel based economy and [move] to renewable energy.”^{lxxxv} On November 19th 2014 Norway’s largest manager of pension funds, KLP, announced that they will divest from coal and will instead invest funds valued at \$75 million in renewable energy ventures. Four days later Jim Yong Kim, president of the World Bank announced that it will invest heavily in clean energy and only fund coal projects in “circumstances of extreme need” occasioned by the requirement for industrialisation to tackle poverty in the least developed countries.^{lxxxvi} On the December 1st 2014 German utility giant E.ON announced that it would split its operations in order to focus on clean energy, power grids and energy efficiency services. Two other German Energy corporations, RWE and EnBW are also considering a switch away from nuclear and fossil fuels.^{lxxxvii}

It has also been argued that if the recent penetration of “green technology” continues, the companies involved may draw wealth and political power away from the fossil fuel lobby unless the fossil fuel industry diversifies into green alternatives.^{lxxxviii}

These circumstances would pose a further threat to fossil fuel company evaluations and share prices.

Divestment can send a strong message to fossil fuel companies and to investors. However fossil fuel lobby is so powerful and deeply entrenched in government that it seems unlikely that disinvestment will solve this problem on its own. However it could start to reduce it.

On the other hand it has also been argued that some of the growing support in high places for both the “carbon bubble” argument and divestment is motivated by the need to maintain rather than challenge the current socioeconomic model which includes support for neoliberalism, economic growth and the existing undemocratic power structure.^{lxxxix} It has been further argued that this motivation is not helpful for the prevention of extremely dangerous climate change.^{xc}

4. Disinvestment would help keep fossil fuels in the ground.

There is a strong argument that there is no effective economic mechanism by which divestment could directly reduce fossil fuel production and emission and that at best it could have only a small effect on fossil fuel consumption.^{xc}^{xcii} This is largely because selling shares does not directly affect the amount of money invested in fossil fuel companies; it only changes the ownership of these companies. This suggests that seeking to choke off the banks’ supply of funds to the fossil fuels should be used to augment divestment. Moreover, a further factor currently limiting the impact of divestment is that fossil fuel companies form one of the world’s largest asset classes, with a stock market value of \$5 trillion at the end of August 2014 while the size of the funds divested so far remains relatively small.^{xciii}

A further consideration is that divested shares will be taken up by investors not sharing the same environmental concerns if they consider that the shares are paying good premiums or are likely to increase in value. This means that the resulting change in share ownership could limit shareholder efforts to encourage the companies to adopt green technologies and other pro-environment policies. Thus divestment needs to be coupled with increased lobbying of fossil fuel companies to change their policies.^{xciiv}

Conclusion

The moral argument for divestment is strong. In addition there is a strong case that investment in fossil fuel shares is highly risky for several reasons. These include the effects of: the current excess of fossil fuel supply over demand and fears of a global economic slowdown; the need to tackle market externalities and subsidies; the bursting of the carbon bubble as a consequence of global action on climate change; risks associated with an accelerating global low carbon transition; and costs and reputational damage arising from successful legal action against the fossil fuel corporations.

I also argue that while divestment can send a strong message to the fossil fuel companies and to the governments and banks that support them, divestment alone is unlikely to strip them entirely of their immense political power though it may help to reduce it.

Further, there appears to be no direct mechanism by which divestment can keep fossil fuels in the ground. However divestment could provide an indirect mechanism to do this by encouraging governmental and intergovernmental action on climate change. In this connection it has been argued that indirect mechanisms may have greater chances of success than direct ones^{xcv}

Divestment must be seen as part of a package of changes needed to tackle the negative impacts of fossil fuel production and use, not as a substitute for concerted and rigorous action at international and national governmental levels to keep fossil fuels in the ground. The only practical and fair way of achieving the latter is a progressively tightening cap on fossil fuel production administered by a totally independent organisation we have termed the Global Commons Climate Trust.^{xcvi} These changes will not come about without great and widespread pressure on politicians but there is a chance that the global divestment campaign may help to make this happen.

David P. Knight 12th December 2014

ⁱ <http://www.climatecodered.org/2014/08/dangerous-climate-change-myths-and-23.html>

ⁱⁱ e.g. <http://www.walker-institute.ac.uk/events/annual%20lecture%20downloads/Annual%20lecture%2009.pdf>

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