

Implementing the Paris Agreement in a World of Fossil Abundance

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With the world awash in surplus oil and prices languishing around USD 40 per barrel, how can governments step up efforts to transform the world's energy systems in line with the Paris Agreement? Simon Upton will consider whether there is ever a Goldilocks moment for climate action, why governments should avoid fine-tuning policy in line with short-term volatilities and how differently situated countries should think about taking common action to implement the accord.



around 30 years.⁶ The deadline is even more urgent from an infrastructure perspective given its potential to lock-in emissions for decades.⁷

Yet there are plenty of people out there (especially fossil fuel producers) convinced that the new post-fossil economy still lies far in the future. For example, BP In its Energy Outlook confidently states that “fossil fuels remain the dominant form of energy powering the global expansion: providing around 60% of the additional energy and accounting for almost 80% of total energy supplies in 2035”.⁸ Not so long ago Chevron cast doubt on the “effectiveness” of carbon pricing as a strategy, on the premise that “customers want affordable energy”.⁹ The world is “going to need all forms of energy” asserts Chief Executive John Watson, outlining his expectation that the company will remain a “vibrant and viable business for a long time”.¹⁰ The chairman of Glencore, Tony Hayward, had a similarly steady-as-she-goes message for coal in his remarks to the Paris business summit in May 2015. For the fossil fuel incumbents, the new normal looks a lot like the old one. Hold your hats (if you can); there will be many more holes drilled and mines dug before the curtain goes down on this act.

Depressingly, they might still be proved right. Global coal demand might conceivably have peaked with the transformation of the Chinese economy – despite a rush of new-build approvals last year following decentralisation of the process.¹¹ But oil and gas investment is an order of magnitude bigger. Last year’s oil demand growth was three times that consistent with a 2 degree path – it would take around 50 million electric cars’ to offset the additional emissions! And fossil fuel technologies don’t stand still. This is a very technologically sophisticated sector. The productivity gains in a new sector like shale gas have been truly impressive. So unless there is a sustained message that the end of the fossil age is in sight, investment in the sector could easily recover and the price lows of 2015 might be remembered as part of just another boom and bust cycle.

Faced with so much uncertainty and the path dependency that follows in the wake of long-lived investments, how should governments respond? How can they make long-term policies that send clear messages when there’s still so much uncertainty. The truth is that governmental actions have never fully lined up with the aspirations they have expressed on climate. The Paris Agreement may have been historic but national pledges fall far below the ambition of the 2 degree upper threshold called for - let alone the more ambitious 1.5 degree target.¹²

Beyond climate objectives, governments have been slow to acknowledge the other costs of fossil combustion. The economic cost of outdoor air pollution in terms of the value of lives lost and ill health is much higher than previously thought. The estimated costs of premature mortality and morbidity combined can be measured in the trillions with much of this attributable to fossil fuel emissions.¹³

A minister was originally scheduled to address this conference but he couldn’t attend. So as an off-course substitute you have been offered a former Minister. You might wonder why a politician was invited to speak to a business conference on climate. My hunch is that that is because what governments do – or don’t do – in the next very few years will determine once and for all the level of climate risk we are exposed to. Either governments will implement clear, long-term, reliable frameworks to accommodate the huge changes that will be needed to head off dangerous climatic disruption. Or they will attempt a series of ad hoc interventions that will end up being a source of distraction. We hope, post-Paris, that it will be the former, because there is in any case plenty of uncertainty to cope with.

The fossil fuel sector is in upheaval on a number of fronts. Oil prices have collapsed and with them \$400 billion of new investments have been suspended.¹ Coal prices have collapsed too. China wants less of the stuff; regulators don’t like emissions from burning the stuff; and governments everywhere have given a lot of support to renewables whose costs have plummeted. Is this cyclical or is it structural? When will things return to ‘normal’?

Governments, at least when they have their climate change hats on, say there shouldn’t be a return to normal: that they want the world’s energy supply to change out of recognition – and many of the consumer behaviours we have grown up with. This is the reality implied by the Paris climate change agreement reached by 195 governments at COP21 in December last year.² A 2 degree world (they have even flirted with 1.5 degrees)³ won’t look like the present one. Governments insist they want to steadily eliminate fossil fuel emissions. There is no shortage of political statements to this effect. IEA Ministers in November 2015 “explicitly recognise(d) and signal(led)” that an energy transformation is necessary if our climate goals are to be achieved.⁴

Looking at the corpses and the wounded on the fossil fuel battlefield, a visitor from Mars might conclude that this was a foretaste of things to come with the transition to low carbon – and not such a bad outcome if the aim is to shift capital away from the old fossil energy economy to one which is compatible with planetary limits. And those limits are fast approaching. World CO₂ emissions from fossil fuels and industry are now around 36 Gt.⁵ If that rate is sustained, the 2°C carbon budget will be exhausted in

Let's recall the roller-coaster of the last decade or so. Not long ago, the expectation was that high and volatile commodity prices would provide, with increasing energy demand, a natural, mounting incentive to increase efficiency and go after clean, non-fossil technologies. As recently as 2012 the IEA was saying that "in the longer term, improvements in extraction and conversion technologies are unlikely to offset the increasing demand, resulting in a continued rise in fossil fuel prices".¹⁴ Even if government-imposed carbon prices or taxes were modest, consumers would eventually be driven by high market prices to change their behaviour. The challenge was more on the production side. Given the returns for the foreseeable future, what would stop hungry capital seeking out new resource frontiers – shale, deep water, Arctic etc. And in the immediate wake of the global financial crisis, many governments hoped that revenue from new sources of oil and gas could plug budget deficits. There was a warm welcome for oil and gas explorers in countries like Greece, Ireland, New Zealand, Spain and Italy.¹⁵

Now the tables have been reversed. Commodity prices have collapsed and with them the high returns that sucked in capital investment. Producers don't need governments to tell them to stop investing when returns have evaporated. The challenge has switched to the consumer side of the equation. What measures can be taken to shift consumption patterns with fuel prices so low? Again, governments find themselves conflicted. Desperate to prime flagging economies, many are hoping cheaper energy will help to reboot domestic demand and provide a boost for industries like air transport and tourism more generally. Some governments, like the United Kingdom, are even introducing new tax concessions to prop up flagging oil and gas production!¹⁶

Conventional wisdom would have it that in the ordinary course of events, cheaper fossil energy will support demand and help to get consumers and producers back in a mutually reinforcing symbiosis. This would support growth overall, although with gains to oil consumers largely at the cost of producers. The signals to date have been mixed but there is some evidence that oil importing economies have been helped. As *The Economist* recently noted "the world is both a producer and a consumer: what producers lose and consumers gain from a drop in prices sums to zero. Conventionally, extra spending by oil importers exceeds cuts in spending by exporters, boosting global aggregate demand."¹⁷

OECD modelling estimates that – all other things being equal - the decline in oil prices since mid-2014 will boost GDP by around 0.3, 0.5 and 0.7 percentage points per annum over 2015-16 in the euro area, US and Japan, respectively.¹⁸ This is based on a decline to only USD 50 per barrel, so the benefits may turn out stronger than anticipated if we take past patterns as a guide.

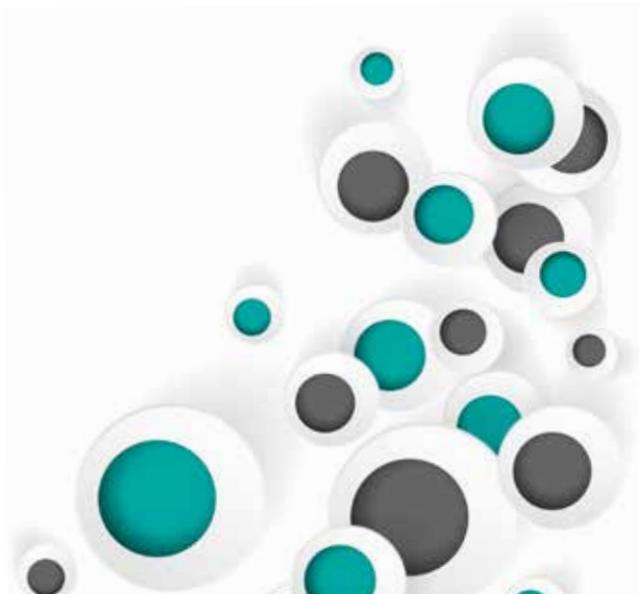
But governments have, in their Paris Agreement, effectively said there won't be 'an ordinary course of events', neither for the short nor long term. They have explicitly agreed that "in order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of

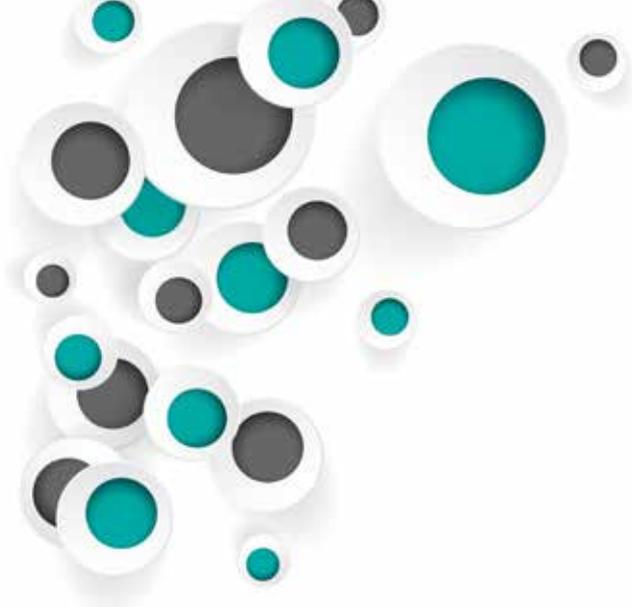
greenhouse gas emissions as soon as possible ... and to undertake rapid reductions thereafter ... so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century..." This, in typical diplomatic language, is how countries decided to address the reality that their climate goal implies zero net emissions. If the language is elliptical, the meaning is not. Net zero is a long way from anything 'normal'.

So what should governments do now? Countries come in different shapes and sizes – with very different interests notwithstanding their agreement that a dangerously warmer planet is in no-one's interests. The formula depends on where you stand. Here are four different standpoints.

If you're the government of an oil producing, developing country you should consider whether the resource you own has an economic future given the amount of atmospheric space left for emissions. In countries like Saudi Arabia, Iraq and Iran where oil is plentiful and cheap to extract, there's likely to be business left to do. Even on a radical decarbonisation pathway, the world will consume sufficient oil for those resources to be produced. Iraq's ever-increasing production despite the havoc wrought by ISIS is a remarkable reminder of the region's resilience – indeed the country's output increased more than the Saudis over the past few years!

Saudi Arabia's decision to break up the cartel has certainly had a dampening effect on competing supply, as suggested by the almost USD 400 billion in arrested investment. Saudi Arabia's oil minister, Ali Al-Naimi, has made it clear that his country is no longer prepared to sacrifice market share to prop-up more costly producers – even at considerable short-term cost to its economy.¹⁹ However, with lower demand on a 2 degrees pathway making high cost oil developments unnecessary, lower prices will cut into the oil rents that are critical to finance budgets across the Middle East. Saudi Arabia is reducing public spending to help compensate for a public deficit that ballooned to 15% of GDP in 2015.²⁰ Policymakers of oil producing countries should use the breathing place provided by their sovereign wealth funds to create the institutional foundations of sustainable growth outside the fossil fuel sector.





Other countries in this group with less generous endowments will need to get economic reform and subsidy removal under way even faster. This is already happening. Russia announced an additional 10% cut to public spending following the further swoon in oil prices this year.²¹ Indonesia was set to save almost USD 14 billion in 2015 alone after scrapping all gasoline subsidies in the 2015 budget and capping diesel fuel subsidies.²²

If you're the government of a developed, oil-producing country, you should (if you've not already done so) think hard about banking the remaining rents so that there is some capital substitution going on to permit life after oil. This is what Norway has done to such significant national advantage over the last 25 years.

If you're the government of an oil-import dependent developed state, the chances are that you're already a pretty efficient user of fossil fuel so your economy doesn't need an infusion of cheap energy to under-write its future. Your economy survived \$100 plus per barrel oil; it is a good time to introduce carbon taxes so that the 'windfall' of cheap oil prices isn't simply gobbled up at the gas station. You should shelve any delusions about hoping to find 'black gold', enjoy the short run benefits of cheaper oil and start planning now to ensure that all infrastructural investments and regulatory environments are 'tuned' to changing technology.

Finally, if you're the government of an import-dependent developing state, you probably have an urgent need for energy and the widest array of possibilities to meet that need in history. You will most likely be looking to the global community for support in accessing "affordable, reliable, sustainable and modern energy for all" as the 7th Sustainable Development Goal phrases it. In calling for that support you will need to take a hard look at whether the energy solutions being promoted to you are in fact either modern or sustainable. As a starting point, the burden of proof needs to be reversed so that fossil-based solutions – particularly coal – have to prove that they are competitive only if other options are not competitive after accounting for the full environmental, health and social

costs of fossil combustion. These decisions are of global significance given the scale of current and projected emissions from these countries.

There is never a right time to take climate action: when growth is strong, there are plenty of people urging government's not to get in the way. When growth is weak, another chorus asks incredulously how climate policy advocates could possibly consider making things worse? Is there ever a Goldilocks moment for climate policy? The answer to that is probably no. It is a long-run problem that requires policies which send long-run signals. By definition, they can't be ones that are constantly being fine-tuned to the volatility of the moment. And attempting to do so risks making volatility worse. And volatility, we know, really is bad for growth.²³

The climate outcome governments want is one that is utterly transformational, not incremental. Getting there is unlikely to be a smooth, step-wise process. Technological changes wreak gales of destruction. They may well be creative, as Schumpeter put it, by giving rise to completely new technologies and business opportunities. But if you're situated on the destructive side of the equation that is little comfort. That there will be winners as well as losers is backed up by recent research we've undertaken.²⁴ Governments can't ignore adjustment costs but neither can they avoid them: if they try to protect the status quo they will not only fail the climate issue but they will ultimately impose even higher social costs and fail to capitalise on the economic opportunities that reform can bring.²⁵ This goes to the heart of a long OECD history of supporting reforms in product and labour markets to facilitate adjustment and benefit productivity growth and competitiveness. So government policies designed to bring about that change have to be steady and consistent. The market will throw up quite enough surprises and train wrecks as it is. Some of those will call for government action. But it must be action that lubricates the change rather than tries to stop it in its tracks – like proactive new market arrangements in the electricity sector to help integrate renewable generation, secure flexibility and reflect system costs.

Once investment capital figures out that the game is over for a fossil-based economy, governments have to let the effects of the capital reallocation that follows play out. There will be plenty of human and social adjustment issues for governments to busy themselves with. But trying to fine-tune an economic and technological adjustment path will prove to be as futile as trying to control commodity prices.

Can I close, since we are in the United Kingdom, by saying that this is one of the very few countries that has managed to put in place the stable, framework conditions needed for the energy transition we face. Almost uniquely it achieved a multi-party accord on the seriousness of the problem and the need for a long-term, staged approach to tackling it – and then legislated it in place. This is what other countries should try to emulate. To implement the Paris accord, they need to do so very soon.

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