

# Deferring COP: Some Considerable Risks

## Decommissioning – project phase?

### Decom: Industry End Game?

North sea oil production started 45 years ago; with each project having construction, operating and decommissioning (decom) phases. **It is now clear that decom is a similar scale project to construction/installation**<sup>[9]</sup>.

Today most UK platforms are nearing their end, and a bow-wave of decommissioning has been kept ahead for several years now; in the UK and around the globe.

As we look around us we may see that the age of oil is ending, and while there may be occasional new installations for another 20 years, these will in turn be added to the last 45 years’ worth of platform-decommissioning waiting. **From 2019, and for the coming decades more than half of the industry efforts in the North Sea will be decommissioning**<sup>[28]</sup>.

**Looking at Decommissioning as an industry end-game can help find the most effective approach.**

### Early or Late COP / Decom?

Is your company waiting for...

...Decom costs to come down?

- 1) Is it perhaps natural for estimates to only go up, as the industry makes more detailed estimates, executes small projects, and comes to grips with uncertainties which are a product of historical decisions and cannot be designed out? Every “unknown” will increase costs in a “known” world.
- 2) Techno-Salvation: postponing COP while trying to develop tools and methods which will make it all cheaper. Generally the learning curve doesn’t kick in until you start.

...Oil Price Recovery?

Awaiting oil price recovery while producing at a loss (common in UKCS) reduces cash and therefore ability to fund decommissioning.

...the Decommissioning Industry to be established first?

While the fledgling decommissioning industry has been worn down by multiple false starts, now the staff pool required for a busy future may be leaving the industry.

A late start to decommissioning may result in staff shortage, higher costs and missed tendering opportunities.

Meanwhile:

Asset values may reduce.

Residual and book values of the installations depend on the market – further in the future the market for petroleum installations is likely to follow the market for petroleum products.

Future Cash-Flow may become riskier.

- 1) As cash-flow is based on reserves and used to finance decommissioning, “Stranded Assets” may mean reduced ability to pay for the decommissioning.
- 2) Based on oil price: with a lower -more realistic- oil price scenario future earnings may be limited.

**Risk of high impact events increase as installations get older.** Releases and explosions would have a disruptive impact on the process, and could increase costs going forward.

### Who Pays for Decommissioning?

Interestingly it is expected that **the taxpayer will end up paying most of the cost**. While the rules are complex<sup>[30]</sup> (with current levels of tax relief locked in by the 2013 Decommissioning Relief Deed) **the government contribution is expected to be over 70%**<sup>[13]</sup>.

It is readily conceivable that a conflict may arise between Maximum Economical Recovery (MER) for the company and Maximum Economic Value (MEV) for the government. For example as decom costs will increase with delay of decom date due to deterioration of installations, this could in turn provide tax-relief for an earlier (higher tax) period benefitting operator at the expense of the taxpayer.

**Because the UK taxpayer has so much involvement, greater awareness could be appropriate.**

## What’s Happening – Beyond the Confines of the Petroleum Industry?

### Global Crisis – Elephant in the Room?

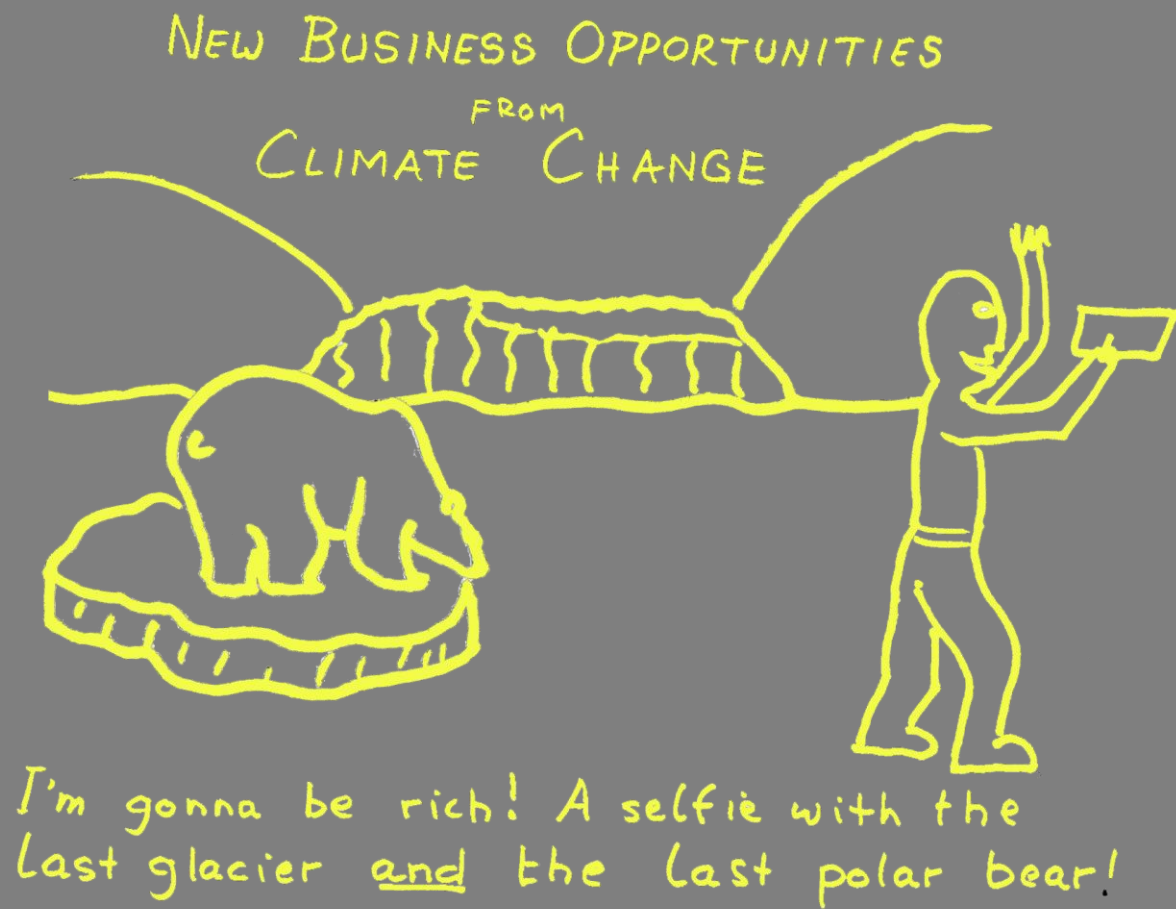
The United Nations agreed in December 2015 that the **world’s nations intend to leave most known carbon reserves in the ground**.

While this is not how they said it, the agreed intention is to keep global warming below 2°C, aspiring to 1.5°C. Since emissions from carbon fuels are the major cause of warming, there is an implicit emissions “budget”, a carbon “burning-budget” [565 GT CO<sub>2</sub>eq., 2014], which stands at around 20% of global proven carbon reserves (2014), and up to 50% of oil reserves<sup>[7]</sup>. The earlier expectations of Carbon Capture and Storage have proven excessively costly and complex.

**Which reserves will be produced?** Many factors play a role, but there’s a strong bias towards low cost oil which is a rare occurrence in the North Sea.

**Large operators insist that “staying below 2°C will be a challenge”**<sup>[19,21]</sup>, yet they fail to step up to this challenge. This contrasts with the response to e.g. the deepwater challenge.

What is driving “Production” vs. “Decommissioning and Diversification” in the UK? The current political driver is MER, Maximise Economic Recovery<sup>[12]</sup>. While this is valid from an oil company perspective, for the government Maximise Economic Value (MEV) would be better<sup>[14]</sup>.



### Demand for Oil and Gas

Demand assumptions in industry are: continued demand growth tied in to economical growth. Some signs are missed: in 2014 and 2015 economic growth was decoupled from emissions growth. While this is partly coal being replaced with gas, this could well be a trend for carbon fuels in general<sup>[29]</sup>.

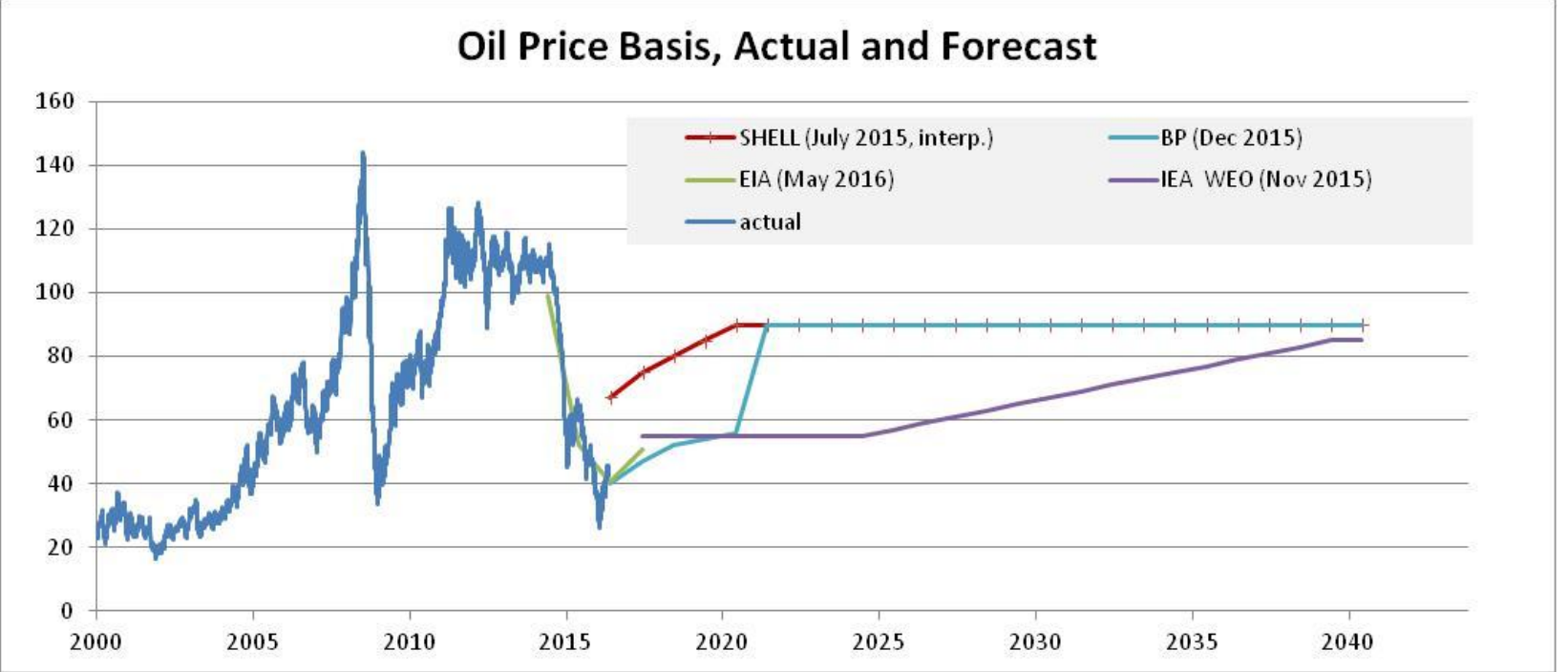
**Demand for carbon fuel has two distinguishing aspects: convenience and cost.** Convenience is related to availability and to “energy density”, the ease with which fuels can be transported or taken along. **Both of these are expected to be resolved in alternatives within 2 decades**<sup>[2,3]</sup>.

Less visibly, advantages of alternative energy sources related to distributed generation, reduced long-term cost, clean air, and **the moral implications of burning fossil fuels and emitting carbon to the detriment of future generations of life on earth are also taking hold**. There is growing pressure to act on the \$5.3 Trillion annual cost<sup>[37]</sup> and 7 million lives lost each year as a consequence of burning carbon fuels.

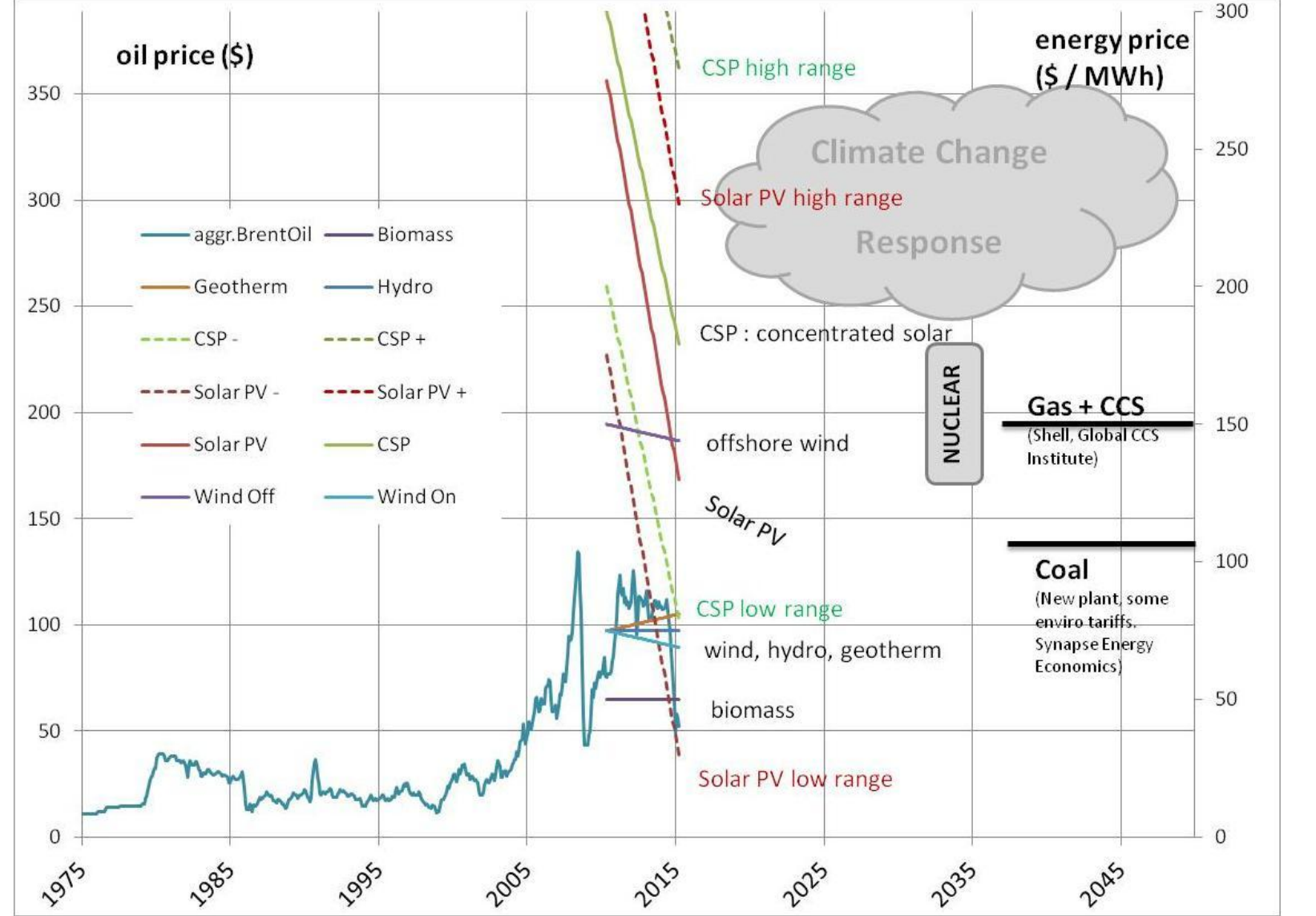
While some amount of oil and gas will remain as inputs to fabrication of products, burning these valuable finite resources may not be advisable.

### Prices - Signs of a Changing World

As illustration of the perhaps limited view of energy prices looking at some industry price scenarios helps:



**Many oil companies appear barely influenced by the global agreements mentioned earlier**, perhaps more driven by a desire to prove future cashflow -on paper at least.



Looking at competitors in the energy markets, both price and convenience (including energy density of storage) will be met well within two decades<sup>[2,3]</sup>.

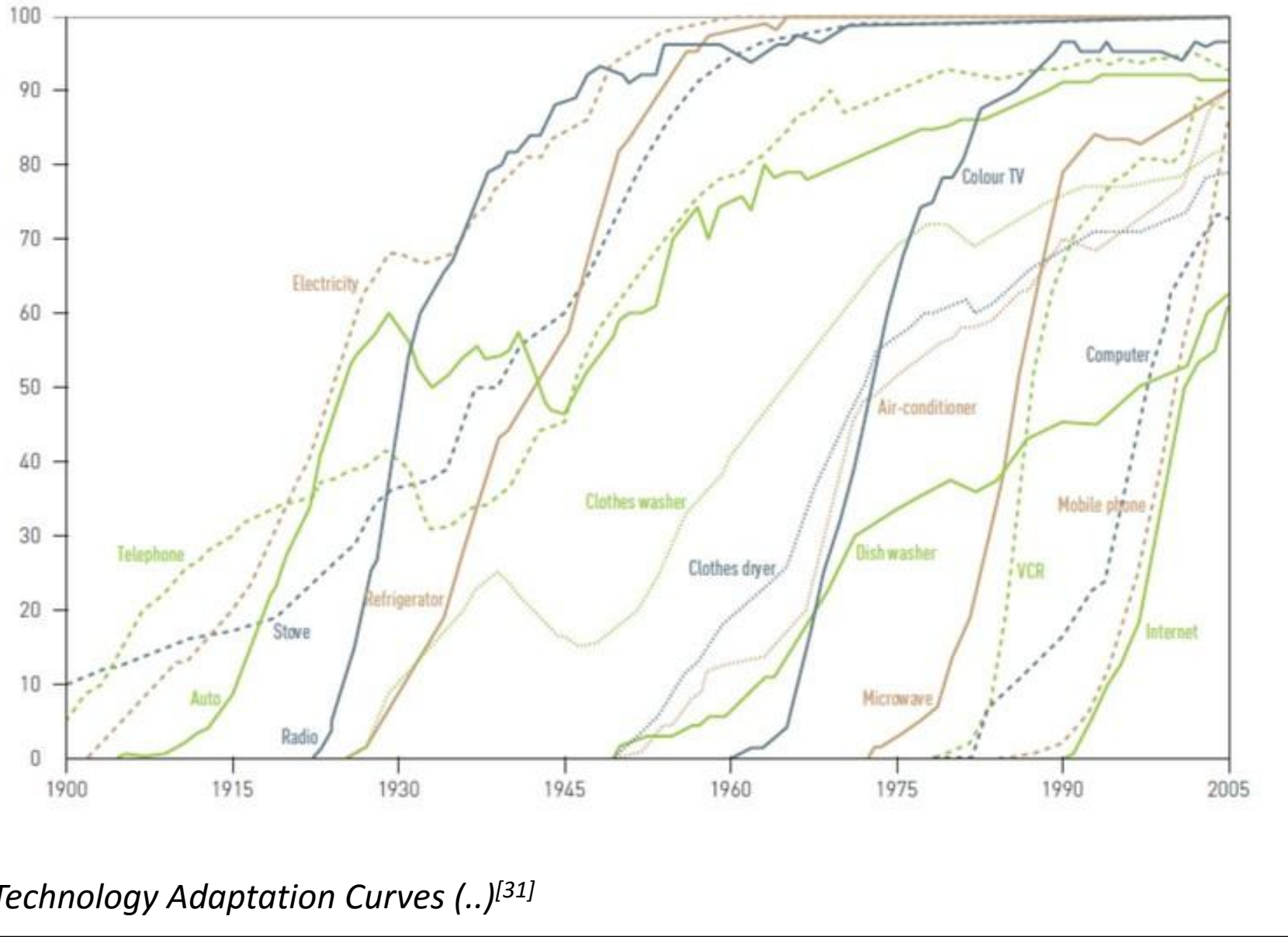
**Even though commodity prices remain speculative, the “Business As Usual” scenario appears an unconvincing story.**

### Disruptive Trends

New technologies have a take-off point<sup>[35]</sup> proven time and again, as illustrated for many recent developments.

**At some point market penetration goes into overdrive, and this point is coming for electric vehicles, solar energy (PV and heat) and high speed rail (esp.China) in the coming one or two decades.** Since gasoline, heating oil, and jetfuel make up around 3/4 of oil produced<sup>[2]</sup>, this will knock global demand in a way not expressed in single digit percentages.

Awareness of this potential disruption may bring opportunity, ignorance means being unprepared and at risk.



### Recommendations

**Decommissioning is a strategic issue for government and operators**<sup>[14]</sup>, and of great relevance for **Aberdeen’s future**: the inevitable ramp-down of North Sea oil production must be closely tied to the ramp up of decommissioning activity to ensure skills and resources will remain available within the UK. If this fails then not only will the taxpayer pay a large part of the expense, but the gains will be exported.

**Consideration of this “staff and skills” driven approach towards the end-game of petroleum could be an area of increased focus of OGA, DECC and the Scottish and Local Governments:** stimulating controlled strategic decommissioning to sustain the industry during transition from production to decommissioning would improve the overall outcome.

**Strategic Industry analyses should make use of more realistic real-world conditions, including Climate Change**, a restricted market and a long term low oil price.

**Additionally, a long term energy strategy could play a role in looking beyond decommissioning**, to ensure a diversified local economy results after this great transition.

### References, Affiliations, Author

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