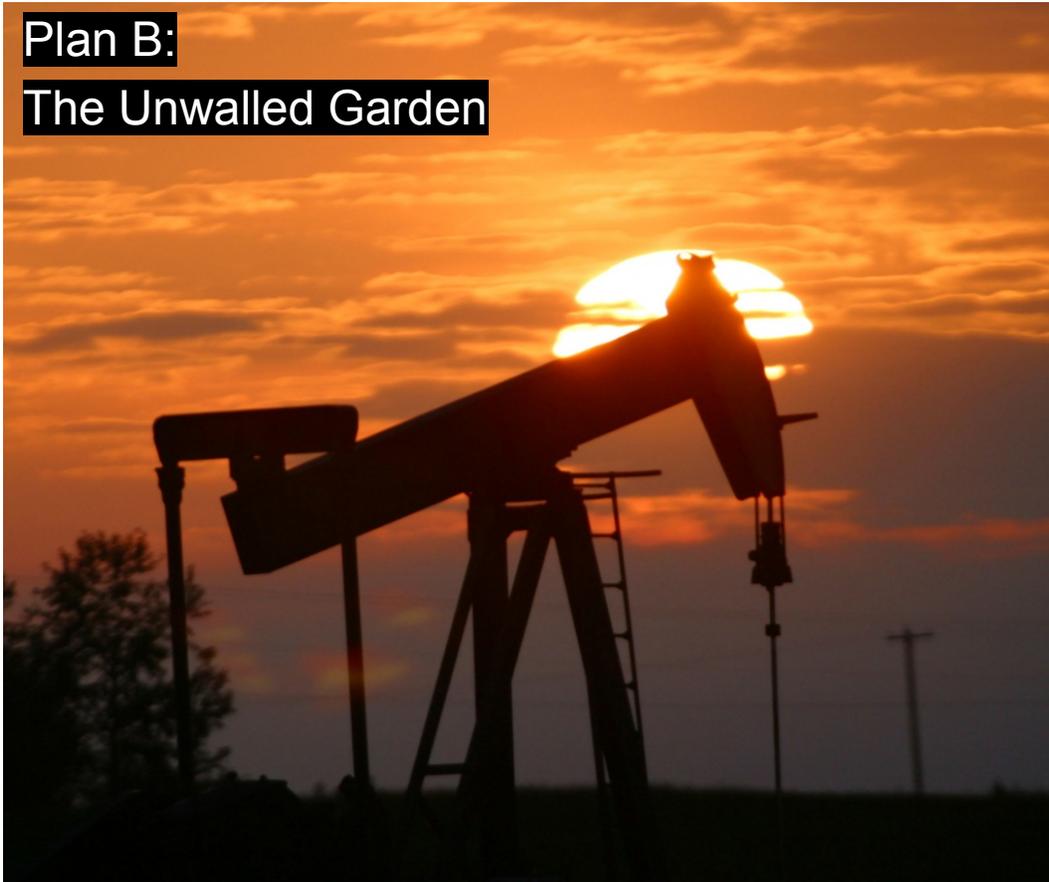


**Plan B:
The Unwalled Garden**



October 2016

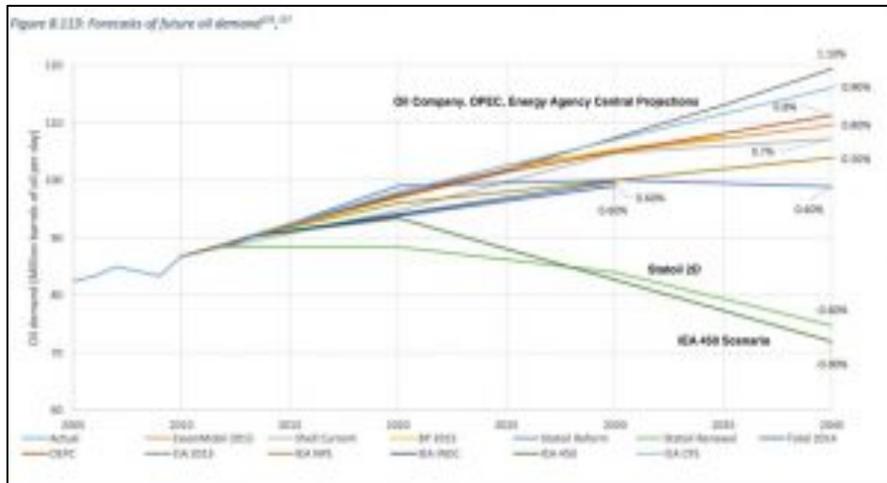
Plan B: The Unwalled Garden

Leading Oil Firms Should Start Executing Plans for a World of Less Demand, and External Rivalry

Summary

- Two categories of world confront today's major oil companies
- **Projectionland**, a consensus-backed place of smoothly rising demand, slow-paced competition, limited external shocks, and a stable regulatory environment.
- And **Nexusland**, a contrarian one with rapid changes and connections in finance, technology, regulations and social commentary leading to unpredictable consumption and competitor action
- Most firms are heavily invested in their Projectionlands, expecting steady upward arcs of volumes and price, and only gradual penetration of alternate energy technologies - but this analysis of risk is heavily flawed: *if the impact of policy and technology uncertainties cannot be predicted precisely, it should not be assumed it can be discounted to zero.*
- So a continued focus on high risk asset capitalisation in pursuit of reserves replacement is highly unreliable if the Projectionland model is faulty – as it was recently for shale oil projections and coal industry demand, causing huge strategic mis-steps in both industries
- In Nexusland internal rivalry between OPEC and non-OPEC becomes more an external contest between different networks of energy technology, regulation and finance – oil demand is likely to be far lower, and competition much more intense
- A robust Plan B requires the rapid reversal of investment in exploration and infrastructure growth, and a measured scheme of smart decapitalisation of current assets via sales, joint ventures and a range of other commercial frameworks.
- The future oil major may be less a global engineering asset developer and production house, and more a strategic holder of a mixed energy interests, positioned for a complex hydrocarbon energy transition
- That boils down to betting correctly on the nature of the coming age: steady consolidation of the hydrocarbon model that has been globally constructed, or the widespread emergence of a new network of energy infrastructure.
- Wise firms may choose to hedge

The World of Energy 2035 – Projectionland
Chart 1 - The Path Most Taken



Outside China, and a few smaller countries, growth in the electrification of cars and light trucks has developed slowly, attaining only 4-5% of the total fleet. Other technological innovations such as autonomous vehicles, web-enabled car-sharing applications and national urban planning optimization have therefore had marginal and limited momentum: policies in the US, EU, Japan and the UK have been inconsistent, prone to reversals and unsuccessful in abandoning the historic fossil-fuel infrastructure.

Clean air acts, energy efficiency standards and climate impact accords have had in aggregate lower influence than expected as international advances such as COP21 in Paris, which were non-binding and informal, have succumbed to inconsistent national policies. Fossil fuel investment subsidies and infrastructure support continues, especially in OPEC countries.

Although influential investment houses, corporations and pension funds continued to pressurize investors to avoid exposure to carbon-intensive industries in portfolios, continued price spikes in oil and gas prices forced many to maintain heavy positions in energy-related stocks, keeping the sector buoyant.

The atmospheric CO₂ concentration is now approximately 500ppm, and has yet to stabilize as the annual emissions rate continues to grow. The Paris 2 deg C target was largely abandoned when the 1.5deg C temperature increase level was breached in 2022, and no new international limiting mechanism has been drafted yet to replace its framework.

Sporadic intense climate events have occurred, but they have been below the worst case predictions of the IPCC. This has led to a preference for incremental fiscal investment to extend hydrocarbon infrastructure, rather than a switch to major scale financing that a transition to alternative energy would require. Direct regulatory support for renewables, although strongly backed in certain quarters, and delivering substantial success in initiatives in countries such as Norway and Morocco, have not created enough momentum for major global breakthroughs in solar or wind. These remain important but niche energy applications after initial surges in investment leveled off.

As a result, consumption of crude oil (excluding NGLs and biofuels) is just over 100 million barrels per day. However, as the US is now largely oil self-sufficient, producing almost 90% of its 15million bpd consumption, and China has removed reliance on oil imports via a contrarian policy of renewable

investment and electrification, OPEC and Russia now service an approximate 75% of open global oil demand.

The reserves to production ratio of OPEC remains stable at around 50 years, and that of Russia at about 20. For international oil companies, however, despite mergers, the ratio is just above 7 years on average: continuing field complexity have slowed reserve developments to under 100% replacement for many years. In 2035 their share of the overall crude market has declined to just under 9%.

However, since the balance of supply and demand remains narrow, the higher cost non-OPEC crude effectively sets the trading price. For international consumers, outside the US and China, in 2015 dollar terms, spot oil cargoes trade in the range \$75-85/bbl, or about \$110/bbl today.

Living in Projectionland

“A major state can lose many battles, but the only loss that is always fatal is to be defeated in strategy.” (1)

Many firms tend to live in Projectionland.

It is a fleshed out version of most of the central or reference oil and gas demand cases provided by industry participants and analysts, as [outlined here in detail](#) - it's a place with smoothly rising demand, slow-paced competition, limited external shocks, and a stable regulatory environment.

In short, it's an efficient location for accurate business planning in a long-cycle industry – and it allows the turmoil of oil price declines of over 60% in the past two years to be placed in the context of an extended upward arc of industry demand.

To be sure, Projectionland as presented here is a world with plenty of logic holes, and some questionable speculations on government actions. But its general outline remains a popular way of interpreting the world. The most contentious element of the fiction is the price assumption – but it's clear that controlled and increasing pricing is implicit in all industry long-term models.

And of course, like many scenarios, and awful lot of things have to go just right and in concert for it to work.

The Dangers of Projection land

Projections are of course not predictions – a caveat most industry bodies such as EIA and IEA stress in their papers.

The dangers of relying too heavily on Projectionland are laid out in stark detail [here](#) – a cautionary tale of the coal industry we’ve discussed before.

In this instance, living in Projectionland caused an over-reliance on models of ever-increasing consumption, and an under-reliance on the probability of real-world demand shocks and regulatory momentum – which caused a 99% decline in the US coal index over a period of less than four years – see [chart](#).



For big oil and gas companies, leaning too heavily on Projectionland may hold similar risks.

Most oil firms assume steady further demand growth, and supply control via OPEC allied with curtailed non-OPEC investment to cause prices to steadily recover in a narrative generally referred to as “rebalancing”.

What is unclear is what are the oil company plans for a more disruptive, non-linear world where oil demand does not increase smoothly, and may abruptly decline, and where substitute technologies or regulations develop in sudden moves, rather than straight lines.

“...for decades, oil has been sold for more than it would have cost in a competitive industry. This strategy has generated huge economic rents for the industry’s key players, including Gulf sovereigns and publicly traded oil companies. Today, however, this structure is being eroded, and may even be collapsing before our eyes. The emergence of the North American shale-oil industry as a large and price-responsive source of supply is a key component of this change.”

The New Oil Regime, Pierre Noel, IISS, Survival | vol. 58 no. 5 | October–November 2016 | pp. 71–82

From nowhere in 2009, by 2014 shale oil producers as a group became the fourth-largest oil producing entity on the planet. They did not feature on central projections before 2009, and they highlight a major defect that runs through many models: over-reliance on linear future demand growth, and smooth technology development. Both can, and have, exhibited very different behavior.

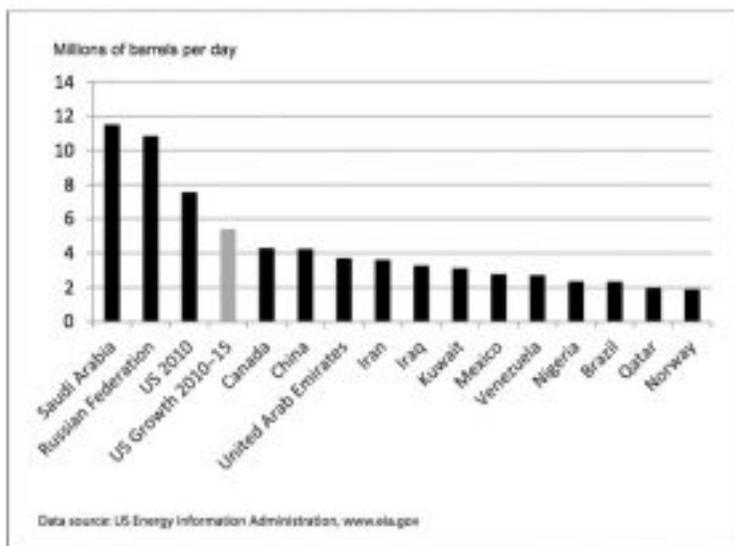


Figure 2: Ranking of oil producers in 2014

The recent cases of coal and shale highlight two core messages oil firms should review regarding projections: in coal’s case, the clear trajectory of regulations was under-played, in oil, technology was assumed to grow linearly, not

exponentially. A truly robust strategy will have a contingency based on these types of deviations from central scenarios.

However, most oil strategies today look very similar to those of early 2014: continuing to invest in exploration, high-graded project developments and efficiency improvements in core assets. As normal, this will be financed from cash-flow and debt, net of paying progressive dividends.

And as before, these strategies will be highly vulnerable if the projections on demand are too high and / or substitutes emerge more rapidly. What does an alternate to Projectionland look like, and how to plan for it?

Nexusland

Projections tend to use one main factor at a time, and rely on single compound growth numbers to model it (see chart 1). The oil industry tends to use GDP growth, or vehicle ownership rates as a single factor driving long-term oil growth. It is definitely a factor, but such analysis avoids interplays with other significant issues such as regulations, or technology.

Although some models are stress-tested, eg with lower demand assumptions, these are additions to the core model, rather than a different projection. Similarly, scenario planning tends to focus on one or two outcomes, rather than a broad range of possibilities.

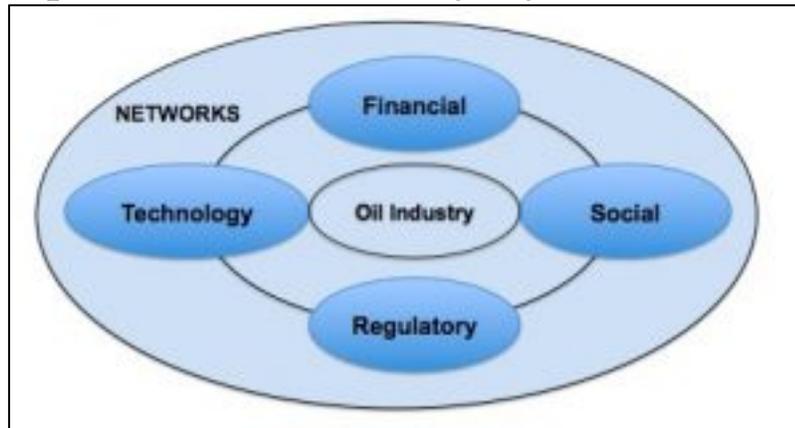
Increasingly, industry analysts are using feed-back type models. Here they take three or four of the key issues surrounding the industry, and recognize that they actually interact with each other in feed-back loops – sometimes causing the non-linear disruptions of complex systems.

No model like this can, of course, predict a complex energy world– but it does allow some ongoing creativity with key planning assumptions, and highlights what events or actions could get reinforced into a disruptive event. It also avoids single projections, or the adherence to particular scenario, and forces management conversations about emerging changes.

Several recent [papers by BlackRock](#), an investment fund, investment bank [Goldman Sachs](#) and a [recent speech](#) on the climate paradox from the Governor of the Bank of England are examples of this approach applied to the oil industry.

Synthesising the papers together provides a simple model like the figure below:

Figure 1 – Simple Model for Oil Industry Key Interactions



Four key forces are seen to impact the industry – financial, social, regulatory and technology – and they are assumed to work with each other in various combinations. All of them are in turn accelerated and reinforced by the increasing prevalence of network: specialist forums, internet platforms and so on allowing the rapid transmission and development of information and ideas.

Lets call this Nexusland, as connections between these various forces can suddenly be reinforced to create disruptive outcomes.

Taking the forces in turn:

Financial. The world of major finance has been grappling with how to improve yields in post-crisis world of low interest rates and weaker global GDP. In part, this led to the early years of the shale boom with low-growth cash reserves loaned to the higher risk and return (and eventually bust for many) models of shale players. But investment banks are still [very accommodating to these sectors](#).

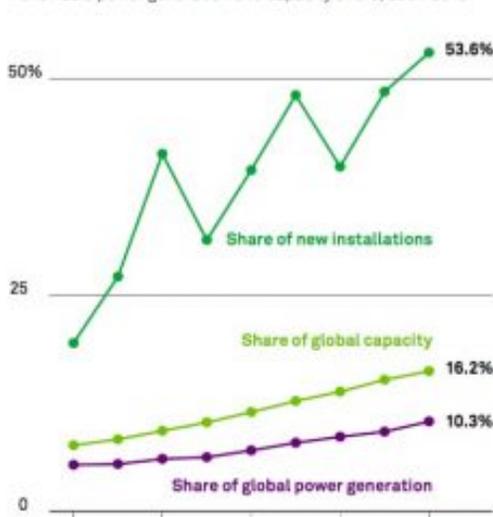
Global finance's search for growth never sleeps either, so the broader energy transition from extractive hydrocarbons to shale oil manufacturing, solar and PV has begun to attract a lot more financial investment models.

As these technologies have moved from laboratory to the field and scaled up commercially, more substantial financial tools are being applied to their growth.

Major clients such as pension funds can now begin to invest in a diversified portfolio of low carbon stocks, which Blackrock claim can produce improved yields over conventional portfolios – they also future-proof those portfolios from carbon taxes or and other regulations.

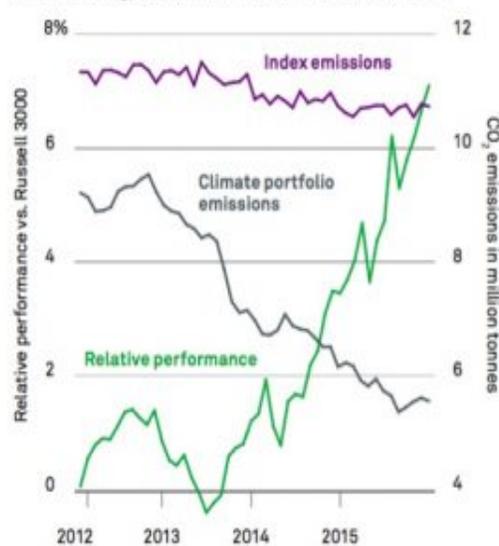
The charts below from Blackrock shows the scale of growth of renewable technologies, and the performance of a simulated portfolio of low-carbon investment stocks versus the Russell 3000 index.

Rise of renewables
Renewable power generation and capacity share, 2007-2015



Sources: BlackRock Investment Institute and Bloomberg New Energy Finance, March 2016.
Note: Renewables exclude large hydropower facilities.

Climate is king
Climate strategy performance and emissions, 2012-2015



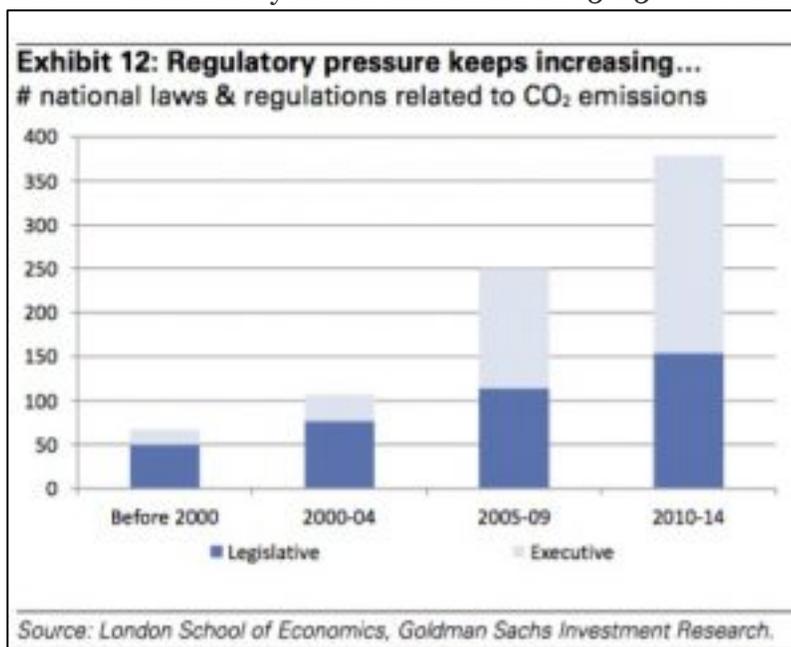
Sources: BlackRock Investment Institute and Russell index data, July 2016. Notes: The analysis

As the insurance business looks to manage the frontline physical realities of climate risks, several institutions such as the Bank of England and Bloomberg have championed the creation of Green Bonds, to support increased investment in renewable infrastructure and projects. It’s a market that has grown to over \$150 billion in just a few years, including over 600 bonds from 24 countries, much of it triple AAA rated. Mark Carney has referred to this as the start of the “Mainstreaming Green Finance”.

To be sure this is a very small fraction of the global fixed income market – but

at growth rates of over 50%, and increased institutional backing, plus the addition this month of a new [green bond trading index](#) their influence could start to accelerate rapidly.

Regulatory – although politically volatile, the growth in legislation related to moderating the impact of fossil fuels and supporting greener alternatives has deepened substantially over time. Goldman Sachs note that regulations will only likely increase in intensity in the timeframe 2015-25 – see chart.



The newly-ratified Paris climate deal is likely to also accelerate this. Whilst non-binding and informal, and potentially reversible, the framework of the Paris agreement was based on Individually Determined National Contributions (INDCs). Unlike Kyoto, which attempted a fixed global quota system, Paris asks countries to set their own targets, and then do their best to over-achieve.

To some, this is too loose, prone to back-sliding and so far does not look like it will achieve key objectives such as the 2degC limit. However, the framework is flexible, open to learning, can be further developed, and creates a model for future agreements. Indeed, even if key members do not sign up, a large number of states have made individual commitments which will be enacted

and act as peer pressure. “Success” has been as much around the creation of a new organic process of international commitment as the specific content.

As the Goldman Sachs paper further suggests, this type of diverse regulation is likely to be more successful than the traditional efforts of Carbon Markets which have suffered from low pricing and political uncertainty.

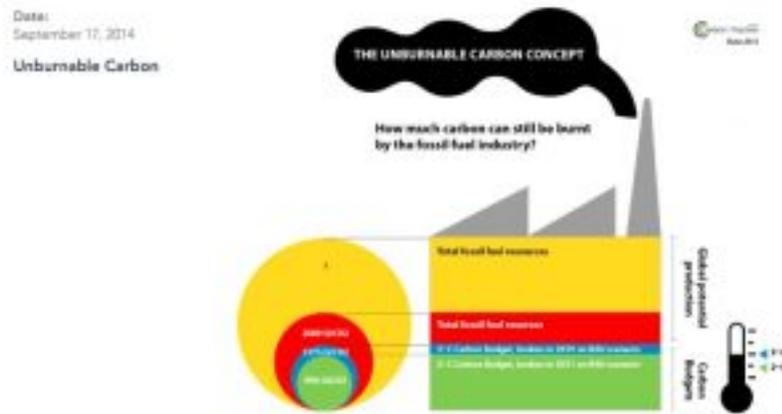
Social - The emergence of socially active energy transition thinktanks such as CarbonTracker are also placing a range of ideas to accelerate the energy transition. A typical contribution to date is the notion of “Stranded Assets”.

The stranded asset theory suggests that investing high levels of capital into high-carbon long-term assets today is high risk, as regulations or technology could render them worthless relatively soon. This is [playing out already](#) in the utilities market, where several large players have split off their traditional fossil-fuel divisions to focus on higher growth, more sustainable renewable models.

As importantly, a 2015 academic [study](#) in Nature indicates that to achieve the Paris 2degC warming challenge: *"a third of oil reserves, half of gas reserves and over 80 per cent of current coal reserves should remain unused from 2010 to 2050 in order to meet the target"*

The notion of stranded assets is also being used by the oil industry itself to signal strategic shifts, [for example by Suncor Energy in Canada](#) – now beginning to use the word strand as a verb.

Carbon Tracker’s Image of Stranded Assets



A range of multinational corporations from GE, to Apple, Google and Wal-Mart have also set targets for exclusively renewable energy sources for their businesses via the [RE100 initiative](#).

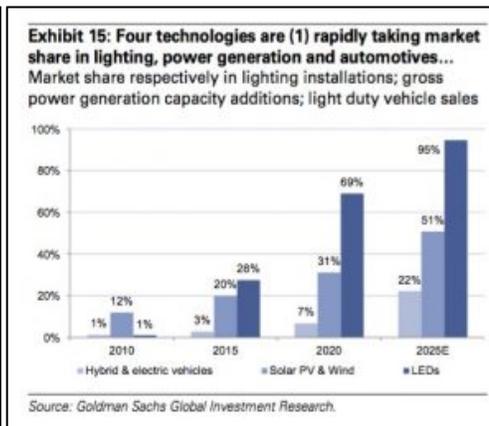
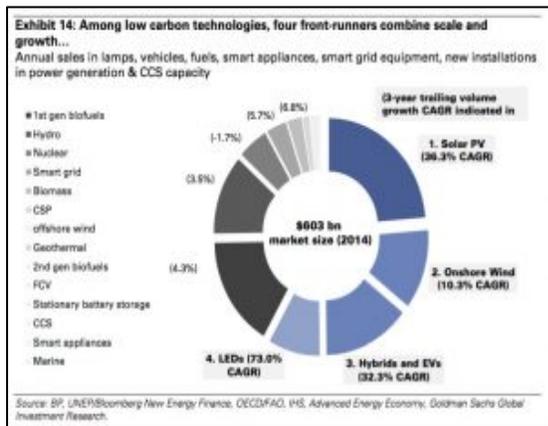
Whilst this is only a very small fraction of energy consumption, and with differing motivations amongst the various firms, it is a very high proportion of reputational profile, and sets out thought leadership and normalization for the general consumer to follow.

Technology – its often assumed that technology is the killer app that will cause the shift from fossil fuels to other energy options. It will play a major part, but the financial, regulatory and social reputational nexus has to be in place for widespread, rather than niche or limited adoption. In the past, the main alternative technologies were hopeful, but experimental and expensive. That allowed previous forecasts of adoption to be over-optimistic, and ultimately dismissed by incumbents.

As noted in Projectionland, many oil companies still expect alternative technologies (including shale oil, even though it is now established) to take a very long time to emerge into the energy mainstream. BP's senior economist in their World Energy Outlook of 2016 suggests renewables may take up to 30-40 more years to make an impact anywhere near 10% of the energy base, based on the uptake of previous new entrants.

Goldman Sachs highlight four technologies – LEDs, Onshore Wind, PV Solar and Hybrid and Electric Vehicles - that are a majority of the already large total

market of \$600bn pa, and have average annual growth rates over 30%. GS predict their market shares in power and transport will therefore rise much more rapidly than forecast – with EVs for example taking 22% global vehicle sales by 2025.



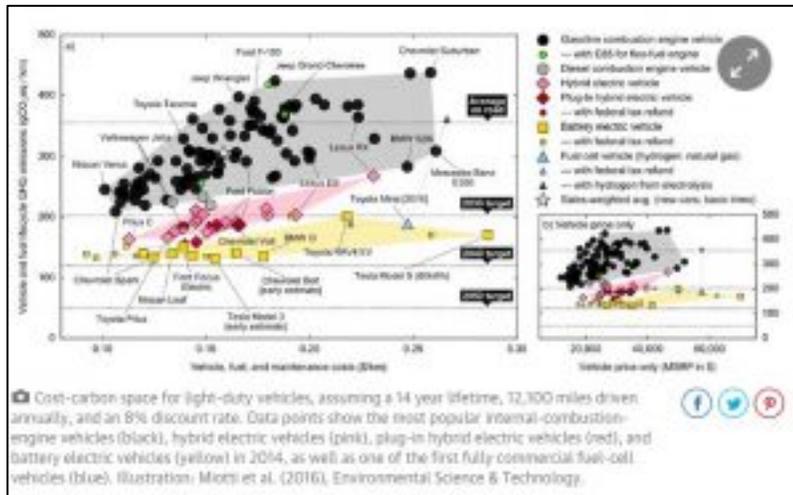
In this analysis, disruption from these technologies would significantly recast transportation, power markets and their supply chains. As major established OEMs such as GM and VW enter the market, the intensity of development will increase markedly. In addition, their impact on lowering carbon emissions by over 1Gtonne per annum, could accelerate the achievement of global emission standards, attracting more regulatory and consumer support.

The impact of autonomous vehicles, and vehicle sharing apps such as Uber is not considered by Goldman Sachs in this analysis, but clearly they could compound the growth of EVs and hybrids.

Networks - the final piece of the model is the growing prevalence of networks – social media, specialist internet analysts, industry-forums and so on. Whilst the four forces above have always interacted, the pace and intensity of the connectivity now is a phenomenon in its own right, rapidly blending the key factors in often creative and surprising ways – see here, for example, a very detailed analysis by Joshua Cooper Ramo on how the “network age” could profoundly impact industries and societies.

As an example, here is a screenshot of an [app from MIT](#) that allows consumers

to assess how “Paris-friendly” and cost-effective their car (or EV) is: a networked blend of all four forces – financial, regulatory, social and technological - in a consumer-focused interactive form.



What does this all suggest versus Projectionland?

The main message from Nexusland is that many real-world outcomes could be on the downside from central industry models which assume steady demand growth and slow-paced technology distribution.

It predicts a more volatile landscape for oil companies, with non-linear events creating potentially much choppier demand, and uneven technology development.

Several key areas underpin this forecast:

Quicker Substitution - A widespread disruptive switch to a substitute fuel – electricity – is a significant possibility, and could occur far quicker than assumed in central projections. Industry models assume its 2040 or beyond before minor changes occur. The analysis here suggests it could be far quicker – in less than ten years significant demand could be shifted across to electricity. In combination with weaker demand overall, this removes a large element of growth from projected assumptions. Industry cycle time is especially vulnerable to sharp moves in a 5-10 year time-frame (witness shale oil).

Varied Pace of Change – The growing energy regulatory, financial and

social landscape can move far more rapidly than technological - but swiftly prepare the landscape for new energies to grow rapidly. The Paris framework has been passed in less than a year provoking new regulations and targets. Financial portfolios and regulatory disclosures may soon change regarding reporting requirements and carbon-intensity of investments. Social networks can move the strategies of major actors such as automobile manufacturers: for example, the VW diesel emissions investigation is credited in pushing their strategy far more quickly to EV adoption.

Even if some of these changes are overly burdensome or misguided, they keep a trajectory of narrative change toward alternative fuels. As the Carbontracker report into coal noted, even if individual policies are not enacted, they provide a general momentum and context for future regulations and technological initiatives.

Shifting Tone of debate – possibly the greatest risk the industry faces is the force of social change. With alternative energy options maturing quickly, a move to non-hydrocarbon fuels is rapidly being normalized. The social arguments of climate change, air quality, independence from OPEC’s price manipulation, for instance, could lower barriers to substitution as the technology simultaneously drives down its costs – closing in on power “grid parity” - and supporting an alternative transportation infrastructure. The social dimension can also cast future oil industry investments in an increasingly negative light if it is not engaged.

Nexusland - A New Contest

Today oil industry executives can talk about 15-20 year strategy horizons for oil and gas development by describing it as a focus on core expertise and strong assets, and based on the data from Projectionland.

Increasingly, however, this may be heard as having a narrow strategy - to invest the majority of shareholder capital, across decades, into carbon-intensive, high-cost, high-risk projects to generate carbon dioxide emitting fuels.

This policy is problematic, but achievable, if there is no alternative, and projections are correct – but if an equivalent cost, cleaner and more stable energy source becomes available much sooner, it can become strategically fatal.

The oil industry’s internal competition between OPEC and non-OPEC regarding oil price and volumes is now becoming an external contest between different networks of technology, regulation and finance aiming for the future

management of energy.

Every Company has a robust Plan A for the central projection case. A strong Plan B for the world of Nexusland is now needed.

Plan B –The Unwalled Garden

“When Chinese want to do something, we begin with the question, “What is the Nature of the Age?”.. Westerners begin with the goal. What do they aim to achieve? Chinese...tend to look at any problem they face and begin by considering the conditions and environment around the problem. The context matters as much as the solution because, even if you think you’ve solved a specific problem, that context endures.” (1)

The muscle memory of oil companies has been honed by pro-cyclical investments, and optimistic belief in overcoming risks with engineering solutions. There is much to admire in this, but it almost always results in an over-dependence on Plan A – capitalising more assets for the future, relying on past trends to continue.

Start Point - Stating the obvious, there needs to be a real plan B

This is not a trivial point. Having a core plan, and running some economics at oil prices of say \$25/bbl less than projected, is not an alternative plan. It’s only an assessment of the financial downside assuming everything else remains the same.

Most companies faced with major future disruptive risks tend not to disclose or develop them clearly. A point made by the Carbontracker report into the sudden collapse of the US coal industry in 2015, partly due to clean air policies from the US government.

“While companies often expressed uncertainty in forecasting the impact of climate policy, they readily provided third-party scenario information suggesting decades of continued demand for US coal—even though those projections discounted the aforementioned policy uncertainties to zero. From the point of view of a company managing risk, this seems a flawed approach; if an impact cannot be predicted precisely, it should not be assumed there is no impact at all”

Fast forward to the oil industry: in a [recent presentation to analysts](#) by BP, the head of their Exploration division made the following point about future

scenarios:

“Looking beyond the next few years, the long term fundamentals for our industry remain sound. Even in some of the most ambitious scenarios, for example the IEA’s ‘450 scenario’ – oil and gas would still provide almost half 45% of the world’s energy needs in 2040. And as ever, there are uncertainties. From a growing global consensus on climate change to the technological improvements being made in alternative energies, as well as the future approach of OPEC nations like Saudi Arabia.”

In the the very first chart in this post, the one significant downside scenario, the “IEA 450’ maps out oil demand to 2040. It assumes oil peaking around about 2020 or earlier and declining thereafter by 1million bpd for the next 20 years, resulting in a 25% reduction in demand.

Oil and gas may well be 45% of the total primary energy mix at that time – but investors will likely want to know what is the fate of high cost producers in that world, and how it is being planned for and mitigated. In short – there are many reasons why Plan B thinking tends not to occur effectively, or is seen only as a variant to the main planning models with some stress testing at lower oil prices.

Not having one in 2014, however, caused emergency cancellation of major projects, and staff reductions – a better plan may have been able to preserve or restructure these assets.

And a Plan B need never be enacted in full – it can be a graduated one, of measured responses to new signals or red flags identified in the process of developing it – indicating management control and competitiveness in a major downturn.

Next Up - Confronting Reality: in Nexusland Big Oil has an existential problem.

The standard business model is one of recycling cash-flow from operations for capital investment and shareholder dividends. If there is to be a secular and sharp decline in demand and hence oil price, this model is highly vulnerable both internally against lower cost production from OPEC, and externally as regulations and technology developments will reduce product value and increase costs.

As the industry’s high-cost developers, having the heavy mathematical burden

of withstanding decline rates on a massive global production infrastructure, large oil companies are hugely vulnerable to oil price weakness. The drop-off over just the last 24 months has obliterated long-term capital investment plans, and reduced human resources permanently by tens of thousands. Meanwhile OPEC and Russia have increased investment and production relatively efficiently, and shale players have restructured to become more efficient.

Even with high pricing in 2010-2014, most oil majors could not sustain a 100% reserves replacement ratio average.

Reserves to production ratios are in the low teens, and declining, and the basic maths of the business model are highly strained: large projects are increasingly inefficient, exhibiting development costs at 30-40\$/bbl.

Add to this operating costs of roughly \$15/bbl and dividends about \$10/bbl, then basic break-even sits close to \$60/bbl or higher. Long-term profitability seems far-off, and cash-flows remain weak.

With no prospect in Nexusland of oil getting near this \$60/bbl long-term an era-shifting moment has been reached.

Critical targets have to be restated. Reserves will either continue to decline naturally because of investment shortfalls, and production forecasts constantly reduced or, and this is the crucial turning point, be fully recast, as part of a transformational strategy for the world ahead.

In Projectionland, this is all but impossible to propose. As in the case of coal, no oil company will voluntarily recommend their future plans are for contraction and diminished capital, potentially leading to lower long-term revenues and long-term dividends. For the first to offer, it might be corporate suicide.

In Nexusland, however, it can be communicated in the wider context of regulatory, financial and social forces: responding to nature of the age, the global direction for cleaner fuels, and investor priorities, recognizing a singular focus on carbon-intensive investment is not sustainable or a valid deployment of investor funds.

Other metrics will have to be developed: if capital is reduced and core businesses optimized in the ways proposed below, cashflow, dividends and portfolio growth from new ventures can be generated as replacements for the

major reserves replacement ratio (RRR) indicator.

Despite this being counter to all industry standard practice, the longer international firms resist at least engaging with these arguments, or considering and developing them, the more sharply negative the outcome will likely be in terms of business impact.

Therefore if Plan B is a measured withdrawal from conventional consensus-driven growth, there are several key actions:

Downgrade Exploration and Long-Term Asset Growth: continuing to invest the majority of capital in widening and deepening the asset base increases exposure, and the complexity of reacting to a downturn. The global, international production base of international oil companies is a source of pride and achievement, but it is a growing liability.

As long as it is maintained and extended, it soaks up capital, and requires greater internal resource to sustain, manage and keep safe. Management effort to do this distracts from fundamental actions to restructure the sprawling infrastructure.

Capital invested in exploration today will on average only achieve project sanction by 2025-2030, and first production by 2030-2035. Payback will be around 2040-45, and infrastructure decommissioning will begin in 2055-2065. And this all assumes that project performance, which has been pretty [woeful over the past decade](#), can be improved significantly, after three years of capital reverse and staff depletion.

Likewise restarting major projects will take up to five years, and a further five to develop – so even proved resources in early development may only come on-stream around 2030, without over-runs.

The critical action here – its Plan B remember - is to zero budget exploration, and high-grade the remaining project portfolio to cancel any new frontier developments, and focus only on scalable, high-return, near-term capital opportunities.

Once the new capital core is decided, there has to be a sustained retreat from the wider base, and a thoughtful, measured but extensive removal of the targeted assets. This can be done smartly however, rather than just setting disposal targets for the market and buyers to analyse.

Smart Decapitalisation (Reverse M&A): there is huge value in the IOC existing capital base, which is another reason to avoid doubling down on new capital investments. Some oil companies have already started to decouple creatively from their own international portfolio. [BP Norway's transformation](#)

to become Aker BP ASA realizes cash, reduces future capital and management effort, and also retains an interest in any future production, price and reserves upturn by holding a 30% stakeholder share. The JV also suggests it can break-even at around \$35/bbl due to lower overheads, significantly below the historic costs of BP.

Rather than being a niche approach to the tail of the global asset base, this structure should become a feature of core assets (once more, its Plan B, remember). BP's latest presentation for example notes eight key "incumbencies" for future asset growth, but with only two – Egypt and Gulf of Mexico – with clear development opportunities in the near future. A radical decapitalisation plan for the other six, ranging from Azerbaijan to Trinidad and Oman along the model of BP Norway would reduce future exposure, but retain exposure to the core business.

To be sure you have to have others on the other side of these deals willing to buy more capital exposure – the role of smaller, independent players, private equity and competitors married to Plan A perhaps.

This decapitalisation can also leave companies, deliberately, part-exposed to future industry price swings, via a physical hedging strategy. Sales contracts could have embedded farm-in or farm-out future options based on oil strike prices, for example. The more a company does this, the better deals it is likely to strike.

The Unwalled Garden: A De-Integrated Model - Consistent with the move to reduce infrastructure, the global integrated model needs to be reversed (again, this is Plan B).

Each company will have a different route to de-integrate. Some major oil companies have a vestigial downstream presence in refining and retail that would require little restructuring, although brand management would be important, and asset liability issues key. Others may see it as a new core capability with lower, but more stable margins.

The upstream split between Oil and Gas is more fundamental. Most major companies have a roughly 50/50 reserve and production ratio, but the outlook for the two commodities is quite different, and each company is configured differently.

The basic strategy will be to decapitalise smartly, avoid major commitments, and if feasible and valuable, de-merge the main units. This could include a restructure of trading and service related divisions into stand-alones or joint ventures – if they are independently competitive. Mid-stream assets such as

terminals and pipelines are also potential key assets and businesses.

This approach, along with de-capitalisation, challenges the Walled Garden approach to business that the constant investment route requires – the need to retain engineering, procurement, construction and a whole host of other disciplines within the same company.

Inevitably, the quality, cost and co-ordination of these becomes a large burden with continued growth, versus the management of a smaller more focused portfolio of more dedicated and independent teams.

The successful oil and gas company of the longer future is likely to rely less on expanding fixed-cost internal expertise across all these areas, and more on specialist contracts, partnerships and active and inactive investments in a wider portfolio of energy activity.

Finally – what not to do – avoid becoming alternative energy

Never say never, but strategies aimed at part-transforming into shale or solar companies are likely to be high risk, and distracting. These strategies suffer from the Creosote Bush problem (see previous post), and while modest investments may have merit in terms of understanding business strategy (eg Aramco's \$3.5bn investment in Uber) the renewables market is diverse, fragmented and changing rapidly – a potentially huge distraction for oil companies looking to make fundamental conversions.

Even forays into adjacent segments in tight gas and shale have been [unconvincing](#), even for Exxon, and likely to be so in the future for others as managerial business models differ significantly.

Making the Bet

In the end, Plan B casts the international oil major of the future not as a global engineering asset developer and production house, but more a strategic and perhaps regional holder of a mixed portfolio of energy interests, positioned for a complex hydrocarbon energy transition.

In reality, many oil companies may not see the need for such a comprehensive dismantling of the main business model, even in a hypothetical plan. The analogies with coal will not be persuasive: most oil firms believe that they have detailed plans to deliver cost improvements and, in any event, the oil price will likely be rebalanced by OPEC's self-interest.

That boils down to betting correctly on the nature of the age: steady consolidation of the hydrocarbon models that have been globally constructed, or the widespread emergence of a new energy infrastructure.

Wise firms may choose to hedge.

Notes

*(1) - Several of the quotes have been taken from the book *The Seventh Sense*, Joshua Cooper Ramo, Little, Brown & Co, 2016, as mentioned in the main text, and recommended to me by Liam Denning of Bloomberg.*