
What does the future hold for oil & gas majors?



Authors: Tarek Soliman and Luke Fletcher

What is the future for majors?

The shift to a low-carbon world presents the question of what role oil and gas companies will play in this transition, and what their strategic options are in the more immediate and longer term. Some of these are discussed below. These options are not mutually exclusive; it is likely that a combination of some of the below elements presents the best path. However, companies will need to formulate their specific strategies over the coming years.

Short-term:

- ▼ **Improve capital discipline** – continue to cut costs and focus on projects that are low on the cost curve which deliver a sufficient risk-adjusted returns to shareholders.
- ▼ **Improve operational efficiency** – eradicate routine flaring, measure and reduce methane leakages and drive down emissions intensity of hydrocarbon production.
- ▼ **Adapt business models** – incorporate robust climate risk modelling into strategic decisions e.g. time-adjusted discount rates to account for long-term negative externalities and tightening climate policies over time (and resulting changes in demand dynamics)¹. This can also entail rebalancing company asset portfolios to natural gas to take advantage of its role as a bridging fuel in the medium term or investing in shorter life assets to increase flexibility.
- ▼ **Invest in CCS** – become leaders in the technology and help accelerate its commercialisation. Oil and gas companies have the expertise to drive forward the commercialisation of Carbon Capture and Storage (CCS) and have access to hydrocarbon reservoirs which are ideal to serve as storage sites. Many climate scenarios rely on material deployment of CCS technologies to achieve less than 2°C of warming (see our recent [CCS report](#) for further details). Expertise in this technology may form part of the oil & gas industry's social license to operate in coming years.
- ▼ **Oil and gas service provider** – as the distribution of economical hydrocarbon reserves continues to tilt in favour of sovereign states², international companies can utilise their expertise in the field to become the partner of choice to national oil companies by supplying technical and engineering knowledge.
- ▼ **Invest in specialist technology** – re-establish technological advantages and utilize competitive expertise in cutting edge areas including: advanced fluids, advanced materials, energy efficiency, digital technology and other innovations.

Medium to long-term:

- ▼ **Managed decline of fossil fuel production** – as projects with acceptable risk-adjusted returns on capital reduce over time, oil and gas companies can return capital to shareholders gradually through share buy-backs or special dividends from cashflow as the existing reserve base is produced, becoming a smaller, leaner company over time.
- ▼ **Diversified energy company** – become a wider energy provider and expand operations to the low-carbon and renewable energy space through both in-house development or acquisitions of companies and expertise (see below 'A pathway to a 2-degree world'). Ørsted (formerly DONG Energy) is an example of such a transformation, having shifted its business from oil & gas production to offshore wind.
- ▼ **Downstream products and petrochemicals** – oil and gas companies can shift focus to producing value-added downstream chemical products which use natural gas feedstocks.

¹ The IEA World Energy Outlook 2016 estimates an average reduction in valuation of 20% for listed oil and gas companies under the 450 scenario vs. an assumption that today's market capitalization is based on an outlook similar to the New Policies scenario.

² According to IPECA, prior to the 1970s, private international oil companies (IOCs) had access to over 85% of global reserves. The rise of resource nationalism and national oil companies (NOCs) shifted the balance and now more than 70% of global oil and gas reserves are controlled by governments and NOCs.

Pathways to a 2-degree world

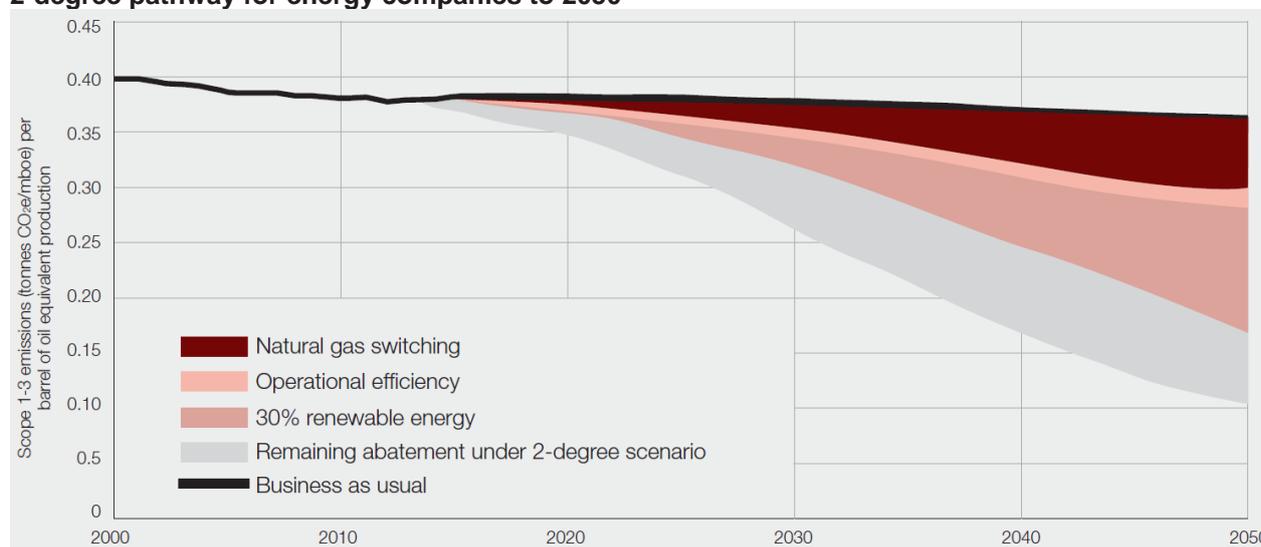
Some of the potential climate actions for oil and gas companies highlighted above, such as operational efficiency measures, a switch to gas and the deployment of low-carbon energy, are analysed below in the context of a potential transition of an oil and gas company over the coming decades.

These are illustrative pathways developed by CDP and seek to highlight the change required by companies which might remain as energy suppliers in a Paris compliant world. This approach looks at the rate of decline of total emissions intensity of energy supply according to changes in the company fuel mix. This incorporates estimated Scope 3 emissions originating from fuel use in downstream sectors which is essential in a comprehensive assessment of an energy source's emissions footprint given these account for approximately 90% of total (Scope 1-3) oil and gas company emissions.

In the example below, a company which produces approximately 55% oil and 45% gas in 2015 manages down its Scope 1+2 emissions through operational efficiency gains and switches its hydrocarbon production entirely to natural gas by 2050. In that timeframe it also gradually deploys low-carbon energy generation capacity to account for 30% of its energy supply by 2050. The emissions intensity of the company's energy supply reduces significantly from approximately 370kg CO_{2e} per barrel of oil equivalent energy content in 2015 to approximately 200kg in 2050. However, this falls short of the emissions intensity level needed for global energy supply in a 2-degree scenario. Deployment of approximately 50% of energy supply from renewable sources by 2050 takes the company emissions intensity of energy supply to approximately 150kg per barrel of oil equivalent (in line with a 2-degree transition).

This analysis works using the underlying assumption that global energy supply (i.e. oil and gas as well as other fuels) converges to a single emissions intensity by 2050 time, and continues to fall into the second half of the century to achieve net zero emissions (with CCS). Such an assumption may not hold as energy companies, by their nature, will produce their supply using different fuel mixes and therefore a uniform emissions intensity is unlikely.

2-degree pathway for energy companies to 2050



Source CDP Technical Team, IEA 2016 ETP

An example of such a shift in a company's method of delivering energy is best evidenced by Ørsted (formerly DONG Energy). The company increased its asset exposure to wind, bioenergy and thermal power generation over the years, eventually selling its oil and gas business in September 2017, and fully committing to a shift towards renewable energy.

Of the companies we assessed in our 2016 oil & gas [report](#), the closest example of such a forward looking approach is Shell. In November 2017, the company communicated its ambition to cut its net carbon footprint of its energy products by around half by 2050. For consistency and comparability companies should look to set targets through the Science Based Targets initiative which is currently developing methodology tailored to the oil and gas sector (see [here](#) for further detail).

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