



FOSSIL FUEL COMPANIES

| Evaluating Climate Change

Fossil Fuel Companies' Climate Calculus

The world's largest oil and gas companies have sky-high budgets, top scientists in their employ, and an incentive to plan for the long term due to their massive investments in permanent infrastructure. They are neither altruistic nor clueless, and they are taking climate change seriously. This includes planning ahead for a future with strong climate policies.

They face a divergent set of major threats. The catastrophic impacts of unchecked climate change would severely impact their operations, and the resulting economic chaos could have unpredictable effects on demand. Meanwhile, the energy transformation necessary to avoid catastrophe would involve strict regulations on their primary product. From their perspective, both scenarios carry drawbacks and risks.

In response, fossil fuel companies are increasingly working to hedge their bets. Corporate statements show that these companies actively want to avoid a catastrophically warm future. They would prefer a path where the necessary policies are put in place, in a way that produces a level playing field between companies, and a transparent and consistent backdrop for planning and investment as they evolve their energy offerings. Companies are planning for a climate-constrained future by investing in lower-carbon energy resources and carbon capture and storage technology. They are also building the assumption of a carbon price into many of their long-term project evaluations.

As a backup plan in absence of strong climate policies, companies aim to stay ahead of the competition by extracting our remaining fossil fuels as quickly as possible. In [2013 Exxon, Shell and Chevron spent \\$120 billion](#) searching for new fossil fuel deposits despite the fact that known reserves are more than enough to torpedo our chances of meeting temperature targets.

In Summary:

Fossil fuel companies support the scientific consensus on climate change. They affirm that warming is real, human-caused, and will present a dangerous problem if left unchecked.

Many companies are actively asking for carbon-reducing policies. This would provide them with certainty moving forward and help them plan their investments. They advocate for policies that would allow a level playing field between companies and between countries.

Delay and uncertainty are encouraging risky fuel exploration as a hedge. Without a clear timeline for when stronger climate policies would arrive, companies are continuing to invest in exploration of additional fossil fuel deposits. This is a dangerous practice because even without these additional reserves, the planet already contains enough fossil fuels to warm the climate well over 2°C.

Fossil fuel producers expect strong climate policy eventually. Most companies are using some form of carbon price in determining the cost-effectiveness of long-term projects. They are also investing in renewables, natural gas, and carbon capture and storage. Because they are planning ahead, carbon-reducing policies may not unduly harm their business.

Support for the Scientific Consensus

No major non-national oil company now denies the connection between carbon emissions and dangerous warming. The oil companies' [statements on climate change](#) show a common acceptance of the science. These companies include [Exxon](#), [Shell](#), [BP](#), [Chevron](#), [ConocoPhillips](#), [Total](#) and [Hess](#).

Their shift demonstrates the strength of the scientific consensus, especially in light of the fact that many of these companies previously funded climate change denial organizations like the now-disbanded [Global Climate Coalition](#), [Greening Earth Society](#), [Natural Resources Stewardship Council](#) and [American Energy Freedom Center](#). While there is no way to know for certain what finally changed their approach, the sheer magnitude of [scientific evidence has pushed oil companies](#) and even the industry lobby group [American Petroleum Institute \(API\)](#) to acknowledge the reality of human-caused climate change. As all the major public oil companies above have stated, there is now no doubt – indeed, it is counterproductive to deny – that climate change is a critical problem affecting everyone and everything around the world.

Demand for Climate Policy

Many fossil fuel companies have taken the additional step of advocating prompt, comprehensive implementation of policies to reduce climate change.

It may seem counterintuitive for oil companies to wish for added restrictions, but their reasoning makes sense in the context of managing uncertainty. Greater certainty about the future regulatory environment is good for business in that it allows for planning. If a carbon price is coming, it benefits oil companies to know what form it's going to take, and embracing

the regulation increases the likelihood that they will [gain a seat at the planning table](#). Fossil fuel companies also benefit from reducing uncertainty of climate impacts, which are already [negatively affecting oil and gas operations](#).

Many companies signed a [2012 Corporate Climate Communique](#) expressing support for some form of global carbon price. Signatories including Shell, BP, and Statoil emphasized the need for predictability and a level playing field across countries, industries, and companies.

In public statements, representatives of fossil fuel companies have also displayed a preference for a future without runaway climate change. Mark Finley, BP's general manager of global energy markets, stated in a speech reported by [Climate Spectator](#), "Markets work... if you want to reduce emissions put a price on carbon." Likewise in 2009, Shell CEO Jerome Van Der Meer told the [New York Times](#) "I don't lose any sleep if the United States or anyone else gets a carbon tax... the world is helped by pricing carbon dioxide, whichever way you do it." The same New York Times article quoted Exxon executive Michael J. Dolan criticizing cap and trade but suggesting support for a carbon tax.

These statements are a far cry from the point of view advocated by groups like the American Petroleum Institute (API) who claim to speak on behalf of industry. API and others argue that a carbon price would [cripple](#) the [economy](#), while fossil fuel executives are sending signals that they are planning for an eventual carbon price one way or another, and that their business will be just fine.

Managing Uncertainty while Policymaking Stalls

The scientific consensus makes it increasingly clear that climate change impacts will be severe and some form of carbon price is needed. Many fossil fuel companies believe that such regulation will eventually be implemented. They can read the signs that [regulations on carbon emissions](#) already exist and are expanding. For example, a [2013 study by the World Bank](#) found that 17 countries are already pricing carbon, accounting for over 20% of global emissions.

However, there is still considerable uncertainty as to when and how further climate regulation will come to pass, and fossil fuel producers have estimated this timeframe in different ways. Their estimates for future climate action tend to be [less than the amount necessary](#) to restrict warming to 2°C, often trending more towards the "medium warming" scenario described by the IPCC. Their communications often emphasize that demand for fossil fuels will persist into the future, while acknowledging that reductions compared to current consumption rates are likely.

For example, on ConocoPhillips' site the company [acknowledges](#) that laws and regulations to address climate change will have an "increasing" effect on their business, while remaining vague on quantities and timeframes. In a [2012 memo](#) Chevron goes the route of echoing the predictions of the International Energy Agency, with an eye towards proving that fossil fuels will still be needed in the future. [Shell](#) has also predicted a future where fossil fuel consumption is reduced, although not enough to reduce warming to 2°C. In the face of uncertainty they predict a middle road.

Most major oil companies also manage uncertainty using the idea of a “[shadow price](#).” This is a hypothetical price on carbon for the purpose of evaluating future projects. Shell and BP use a price of \$40 per ton of carbon, planning that [cost into their analyses](#) despite the fact that it is not currently being charged. Exxon recently released a statement saying it will assume a [long-term emissions price of \\$80 per ton of carbon](#) by 2040. [In addition](#), ConocoPhillips uses a carbon price range of \$8-\$46 and Total uses a price of \$34. Chevron and Hess have said they use an internal price on carbon, but have not disclosed their figures. Exxon spokesman Alan Jeffers explained the company’s use of a shadow price to the [Washington Post](#), saying “Ultimately, we think the government will take action through a myriad of policies that will raise prices and reduce demand.”

Investments in Renewables and Natural Gas

To prepare for a regulated future, major fossil fuel companies are making sizeable and increasing investments in renewable power, as well as [potentially cleaner](#) fossil fuels like natural gas. While the revenue share of renewable energy is still comparatively small for the big oil companies, green technologies are expected to be a [major source of growth](#) in the future.

For example, BP has projected that renewables will become the fastest-growing energy source by 2025, and has [committed to invest \\$8 billion](#) in biofuels and wind farms by 2015. Exxon is spending \$600 million on a [10-year project to convert algae into biofuel](#). The company is also now the nation’s largest natural gas supplier following a [2010 acquisition](#). [Shell is investing billions of dollars](#) in Brazil to buy sugar cane mills, plantations and refineries to make ethanol. [ConocoPhillips announced in 2011](#) a \$300 million investment in solar, biofuels and coal gasification projects. [Total is also investing](#) undisclosed sums in solar research and development, while [Hess](#) is investing in energy efficiency technology.

However, many of these companies have also [come under criticism](#) that their green investments have been a token effort to improve their public image. While oil companies have substantially increased their investments in alternative energy over the last decade, the proportion of renewables compared to fossil fuels is still miniscule and the [return on investment](#) is still much less than it is for oil.

Ever-Riskier Exploration

As a hedge to prepare for an unregulated future, companies also plan to secure additional fossil fuel reserves. Uncertainty over when (or whether) climate policies will be implemented has propelled a [free-for-all in oil exploration](#), despite the fact that known reserves already contain more than twice as much carbon as we can burn if we want to keep warming below the [agreed-upon target of 2°C](#). Theoretically, future policies that effectively enforced this temperature target would necessitate that these reserves would need to [remain unburned in the ground](#). The continued exploration for further reserves shows low confidence on the part of fossil fuel companies that this will end up being the case.

Oil companies are incurring huge costs to pursue ever more expensive projects in the remotest corners of the globe. Early in 2014 [The Wall Street Journal reported](#) that the three biggest oil

companies – Exxon, Shell and Chevron – together spent more than \$120 billion in 2013 alone to boost their output. [Chevron also recently announced](#) plans to invest another \$1.6 billion with Argentina’s YPF to develop oil and gas projects in a large shale formation in Patagonia. [BP has partnered with Shell, Chevron and ConocoPhillips](#) in a new round of drilling in the remote Shetland Islands north of Scotland. The multiple-well project will initially cost at least \$500 million, is expected to go past the \$1 billion mark depending on results, and is part of a larger plan to invest more than \$12 billion over the next few years to develop this environmentally sensitive area for more oil production.

Some companies have [defended the exploration](#) by [referencing carbon capture and storage](#) (CCS) technology. This technology captures carbon at the site where it is being released, and injects it back into the ground. If CCS was widely implemented, it might be possible to burn the reserves without exceeding temperature targets. However, this is a highly uncertain and risky proposition given that CCS technology has been implemented on an industrial scale in only [a small number of installations](#).

Behind the Scenes Lobbying

Major fossil fuel companies have begun openly accepting climate science, and for the most part they have stopped overtly supporting denier groups. However, they are still slowing the progress of climate regulation in indirect ways. For example, members of the oil industry still funnel millions of dollars in [annual dues to the American Petroleum Institute](#), the industry lobby that has paid for advertising campaigns that oppose “arbitrary” EPA greenhouse gas regulation and has fought steps Congress has taken to end huge tax breaks for big oil companies. API has also [run massive campaigns](#) describing climate legislation as an “energy tax” and orchestrating an effort to recruit industry employees, retirees, vendors and contractors to rally against Congressional climate action.

Fossil fuel companies also donate to political groups, like [ALEC](#) and the [U.S. Chamber of Commerce](#), that aren’t organized around climate issues but take an extremely hostile stance towards regulation in general. Such behind the scenes maneuvers by industry-financed lobbies show that in the high stakes world of carbon emissions policy, word and deed are not always well aligned.

The American Petroleum Institute is the largest trade organization in the country and has [hundreds of dues paying members](#) from all sectors of the industry. Because of this extremely wide membership, it is difficult to attribute the lobbying efforts of API to the policy preference of any given member. The list of [membership benefits](#) is long and attractive for any company that wants a voice in shaping industry policy.

Table of Statements

Company name	Statement on climate	Assumed carbon price	Investment in clean energy
ExxonMobil	“There is growing recognition that addressing the risk of climate change will require significant efforts by both the developed and the developing world.”	\$80 per metric ton by 2040	\$600 million in algae-biofuel conversion
Shell	“To manage CO ₂ , governments and industry must work together. Government action is needed and we support an international framework that puts a price on CO ₂ , encouraging the use of all CO ₂ -reducing technologies.”	\$40 per metric ton	\$1.63 billion in Brazilian Ethanol
BP	“BP believes that climate change is an important long-term issue that justifies global action... We also believe that putting a price on carbon – one that treats all carbon equally, whether it comes out of a smokestack or a car exhaust – will make energy efficiency and conservation more attractive to businesses...”	\$40 per metric ton	\$8 billion in biofuels and windfarms
Chevron	“At Chevron, we recognize and share the concerns of governments and the public about climate change. The use of fossil fuels to meet the world's energy needs is a contributor to an increase in greenhouse gases (GHGs)—mainly carbon dioxide (CO ₂)—in the Earth's atmosphere.”	In use, but undisclosed	Retreated from clean energy investment
Conoco Phillips	“We recognize that human activity, including the burning of fossil fuels, is contributing to increased concentrations of greenhouse gas (GHG) in the atmosphere that can lead to adverse changes in global climate. We are continuing to manage GHG emissions in our operations and to integrate climate change related activities and goals into our business planning.”	\$8-\$46 per metric ton	\$300 million in solar, biofuel and coal gasification
Total	“As an industrial operator that uses, produces and markets oil and gas, our responsibilities include managing the carbon emissions generated by our activities. We are also developing solutions to curtail air emissions.”	\$34 per metric ton	Undisclosed investment in solar R&D
Hess	We recognize that climate change is a global environmental concern with potentially significant consequences for society, including the energy industry... We are incorporating considerations for carbon accounting and energy efficiency into the process we use to evaluate upstream investment decisions.”	In use, but undisclosed	Undisclosed investment in energy efficiency

Conclusion

Not surprisingly, oil companies are not the most ardent campaigners for strong climate policy. They predict limited climate action and are circumspect about their plans for operating in a future where carbon emissions are constrained.

But they are aware that we need to reduce emissions to avoid dangerous temperature increases, and they would prefer a livable future to one with runaway climate change. They are taking their own steps to manage their risks, including using a hypothetical carbon price to evaluate future projects, and investing in lower-carbon technologies including ethanol, natural gas, renewables, and carbon capture and storage.

One topic they consistently reference is certainty. As long as uncertainty over future policies persists, these companies will hedge their bets by continuing to engage in exploration for new fossil fuel resources. The world's leaders could provide certainty by implementing long-term climate policies, whether at a regional, national, or international level. This would free up resources to speed the transition to a lower-carbon energy economy.