



## Action Report

# Environment (Climate Change) Governance (Board Oversight)

**Chevron**  
May 10, 2017

Ticker	Exchange	Meeting Date	Record Date	Annual Meeting Location
CVX	NYSE	5-31-17	4-03-17	Midland, Texas

Agenda	
Item	Proposal
1	MGT: Elect directors
2	MGT: Ratify selection of auditors
3	MGT: Advisory vote on executive compensation
4	MGT: Advisory vote on frequency of executive compensation vote
5	SH: Report on lobbying
6	SH: Report on anti-genocide policy
7	<b>SH: Report on climate change strategy</b>
8	<b>SH: Report on climate change</b>
9	SH: Require board chair independence
10	<b>SH: Nominate environmental expert to board</b>
11	SH: Allow shareholders to call special meetings

**Si2 Briefing** [Environment \(Climate Change\), Governance \(Board Oversight\)](#)

**Report Author** [Sara E. Murphy](#)

**Links** [2017 Proxy Statement](#); [2016 Form 10-K](#)

**Vote History** Item 7 is a resubmission this year, having earned 40.7 percent support in 2016. Chevron unsuccessfully challenged the resolution last year at the SEC, which disagreed with the company's contention that it concerned ordinary business and was substantially similar to two earlier proposals that had not earned enough support for resubmission.

Item 8 is new to Chevron this year in its current formulation. But it is related to others that have appeared at Chevron in the past. A 2016 proposal asking for a report on greenhouse gas reduction targets earned 7.9 percent, after earning 8.2 percent in 2015. That year was the first time since 2008 that Chevron had been asked for such a report. Proponents sought a report on climate change in 2014, but the company successfully convinced the SEC that proposals submitted in 2010, 2011 and 2013 were substantially similar and that the 2013 proposal did not receive the 10 percent support required for resubmission. The 2013 resolution earned 7.5 percent support. Last year saw two other related shareholder resolutions: one asking for a change in reserve replacement accounting earned 6.8 percent support, and another asking for an increase in the authorized dividend given stranded asset risk earned 3.4 percent.

Item 10 is a long-running proposal that received 18.8 percent support in 2016, 19.9 percent in 2015 and 21.4 percent in 2014.

### Item 7

**Resolved Clause** RESOLVED: Shareholders request that by the Annual Meeting of Stockholders in 2018, Chevron Corporation (Chevron), with board oversight publishes an annual assessment of long-term portfolio impacts to 2035 of possible public climate change policies, at reasonable cost and omitting proprietary information. The report should explain how current capital planning processes and business strategies incorporate analyses of the short and long-term financial risks of a lower carbon economy. Specifically, the report should outline impacts of fluctuating demand and price scenarios on the company’s existing reserves and resource portfolio - including the International Energy Agency’s “450 Scenario,” which sets out an energy pathway consistent with the internationally recognized goal of limiting the global increase in temperature to 2 degrees Celsius.

**Lead Proponent** Wespath Investment Management

**Summary** This proponent notes the growing body of scientific research regarding climate change, coupled with an increasing regulatory response designed to constrain greenhouse gas emissions, and is concerned about the risk these developments pose to Chevron’s carbon-dependent business model. The proponent points to examples of other oil and gas companies that are explicitly endorsing mechanisms to constrain greenhouse gas emissions, and integrating climate change scenarios into their capital planning strategies. The proponent wants Chevron to report on long-term portfolio impacts through 2035 in keeping with the International Energy Agency’s 450 scenario, which is consistent with the goal of limiting average global warming to 2 degrees Celsius, and how current capital planning incorporates this analysis. Management rejects the proposal, arguing that it has already aggressively managed its climate change risk in its project planning, and that it reports adequately on its positions and initiatives in this regard, particularly in a new report on climate risk that Chevron published in March 2017 in response to last year’s proposal. Management argues that it is flawed and unrealistic to assume that an adequate global climate change response would require all fossil fuel producers to curtail production proportionately, and that the most efficient producers should be able to continue or increase production even as overall greenhouse gas emissions decrease.

### Item 8

**Resolved Clause** RESOLVED: Shareholders request that Chevron issue a report (at reasonable cost, omitting proprietary information), assessing how it can respond to climate change and the resultant transition to a low carbon economy by evaluating the feasibility of altering the company’s energy mix by separating or selling off its highest carbon-risk assets, divisions, and subsidiaries, and/or buying or merging with companies with outstanding assets or technologies in low carbon or renewable energy.

**Lead Proponent** Arjuna Capital

**Summary** This proponent, similarly to Item 7, notes the growing body of scientific research on climate change, coupled with an increasing regulatory response designed to constrain greenhouse gas emissions, and is essentially about the risk of Chevron’s carbon assets being stranded. The proponent notes that concerns over climate change are already driving transitions in energy markets, with more likely to come, and that Chevron’s sustained high spending with concomitant low profitability risks a significant drop in valuation. Arjuna seeks a plan for how Chevron intends to adapt to a low-carbon future. Management rejects the proposal on essentially the same grounds as item 7.

**Item 10****Resolved Clause**

Therefore, Be It Resolved: Shareholders request that, as elected board directors' terms of office expire, at least one candidate is recommended who:

- has a high level of expertise and experience in environmental matters relevant to hydrocarbon exploration and production and is widely recognized in the business and environmental communities as an authority in such field, as reasonably determined by the company's board, and
- will qualify, subject to exceptions in extraordinary circumstances explicitly specified by the board, as an independent director.\*

\*For these purposes, a director shall not be considered "independent" if, during the last three years, he or she—

- was, or is affiliated with a company that was an advisor or consultant to the Company;
- was employed by or had a personal service contract(s) with the Company or its senior management;
- was affiliated with a company or non-profit entity that received the greater of \$2 million or 2% of its gross annual revenues from the Company;
- had a business relationship with the Company worth at least \$100,000 annually;
- has been employed by a public company at which an executive officer of the Company serves as a director;
- had a relationship of the sorts described herein with any affiliate of the Company; and
- was a spouse, parent, child, sibling or in-law of any person described above.

**Lead Proponent**

New York State Common Retirement Fund (NYSCRF)

**Summary**

Given the environmental challenges confronting Chevron and the oil and gas industry, the proponent believes that Chevron should nominate a candidate to its board with clear environmental expertise that is widely recognized. The proponent believes such expertise will offer the board better guidance and management and improved oversight of the company's environmental practices. Chevron's board opposes the proposal. It notes that its Corporate Governance Guidelines already recognize environmental expertise as a valuable attribute to look for in board candidates, and it says that its board already has several independent directors with in-depth experience in environmental issues and has access to extensive internal and external environmental expertise.

**I. Chevron**

Chevron, through its subsidiaries, engages in integrated energy, chemicals and petroleum operations worldwide. The company operates in two segments, Upstream

and Downstream. The Upstream segment is involved in the exploration, development and production of crude oil and natural gas; processing, liquefaction, transportation and regasification associated with liquefied natural gas; transportation of crude oil through pipelines; and transportation, storage and marketing of natural gas, as well as the operation of a gas-to-liquids plant. The Downstream segment refines crude oil into petroleum products; markets crude oil and refined products; transports crude oil and refined products through pipeline, marine vessel, motor equipment and rail car; and manufactures and

Financials					
(\$ millions)	2016	2015	% Change	2014	% Change
<b>Revenue</b>	\$110,215	\$129,925	-15.2%	\$200,494	-35.2%
<b>Net Income</b>	-\$497	\$4,587	-110.8%	\$19,241	-76.2%

markets commodity petrochemicals and fuel and lubricant additives, as well as plastics for industrial uses. It is also involved in cash management and debt financing activities, corporate administrative operations, insurance operations, real estate activities and technology businesses. Further, the company holds interests in power plants, operates geothermal plants and engages in the transportation of refined products primarily in the coastal waters of the United States. The company was formerly known as ChevronTexaco and changed its name to Chevron in 2005.

Chevron completed its acquisition of Atlas Energy in February 2011, thus solidifying its position in the Marcellus Shale and its position as an unconventional oil and gas player. In 2016, gas production constituted 34 percent of the company's total oil and gas equivalent production, and Chevron expects its gas production to grow in the coming years.

**Financial performance:** Chevron's earnings depend mostly on the profitability of its upstream business segment. For the fifth consecutive year, Chevron reported declining revenues and earnings. In its 2016 Form 10-K, the company identifies the crude oil price as the biggest factor affecting its upstream operating results.

The price of crude oil has fallen significantly since mid-year 2014, reflecting persistently high global crude oil inventories and production. The downturn in the price of crude oil has impacted, and, depending upon its duration, will continue to significantly impact the company's results of operations, cash flows, leverage, capital and exploratory investment program and production outlook. The company is responding with reductions in operating expenses, including employee reductions, reductions in capital and exploratory expenditures in 2016 and future periods, and increased asset sales. The company anticipates that crude oil prices will increase in the future, as continued growth in demand and a slowing in supply growth should bring global markets into balance; however, the timing of any such increase is unknown. In the company's downstream business, crude oil is the largest cost component of refined products.

The company's worldwide net oil-equivalent production in 2016 averaged 2.59 million barrels per day. Chevron generated about one-sixth of its net oil-equivalent production in 2016 in the OPEC-member countries of Angola, Nigeria, Venezuela and the Partitioned Zone between Saudi Arabia and Kuwait. Chevron said OPEC quotas had no effect on its net crude oil production in 2015, 2014 and 2013.

The company estimates its average worldwide oil-equivalent production in 2017 will grow 4 to 9 percent compared to 2016, assuming a Brent crude oil price of \$50 per barrel and before asset sales. (Over the course of the last year, the Brent crude oil price has generally [hovered](#) above \$50 per barrel, with several dips below that level, including at the beginning of May 2017.)

**Capital investments:** Chevron's capital and exploratory expenditures in 2016 were \$22.4 billion, down from \$34.0 billion in 2015, \$40.3 billion in 2014 and \$41.9 billion in 2013. The company estimates that 2017 capital and exploratory expenditures will decline even further, to \$19.8 billion. Chevron says that this planned reduction comes in response to current crude oil market conditions, major capital projects nearing completion and "the targeting of shorter-cycle projects."

The company reports that its total net proved reserves for 2016 totaled 11.1 billion barrels of oil-equivalent, down slightly from 2015 and 2014. The reserve replacement ratio in 2016 was 95 percent, down from 107 percent in 2015.

### ***Potential Disruptions to the Oil & Gas Industry***

According to the International Energy Agency (IEA), transportation [accounts](#) for more than one-fifth of global carbon dioxide emissions and that percentage is likely to rise, [requiring rapid adoption](#) of new technologies to keep temperatures within the 2-degree Celsius limit set by the Paris Agreement. The IEA and the International Council on Clean Transportation [forecast](#) that transport electrification will play a critical role in achieving required greenhouse gas reductions by 2050. Sales of electric vehicles (EV) are

[on the rise](#): in 2016, U.S. EV sales rose by 37 percent in the United States and 41 percent globally. **Statoil's** CEO recently [predicted](#) that oil demand would peak in 2020 with “a shrinking oil industry” as vehicles are electrified. A recent [report](#) from Carbon Tracker and the Grantham Institute calls “business as usual” predictions of slow growth in the market for EVs a “high risk strategy,” and urges use of a range of scenarios to evaluate future demand.

An October 2016 [Fitch Ratings report](#) warned that oil companies faced a “resoundingly negative” threat from the recent and growing proliferation of electric cars. “Widespread adoption of battery-powered vehicles is a serious threat to the oil industry,” says the report, which urges energy companies to plan for “radical change” spurred by new technologies that could arrive more quickly than expected. Ratings agency Moody's [announced](#) in June 2016 that it would begin analyzing carbon transition risk based on the two-degree scenario. Moody's noted the particular risk exposure of the energy sector. In February 2017, Moody's published a [subsequent report](#) asserting that future shifts in U.S. climate policy—which are likely under the new Trump administration—would not stall global emissions reduction efforts.

Increased fuel efficiency for internal combustion engines could reduce demand for gasoline and diesel fuels. According to Obama-era regulations, efficiency requirements for light-duty vehicles are slated to increase to 54.5 miles per gallon by 2025, and agencies under the previous administration had been considering standards leading to significant reductions in fuel consumption for medium and heavy-duty trucks. President Trump has expressed his intention to roll back fuel efficiency standards. At the same time, California has the clout to enforce its own more stringent standards, and has stated its willingness to go up against the new administration. California's market share is so significant that vehicle manufacturers typically find it more efficient to conform their entire U.S. production to the state's requirements, rather than to produce separate vehicles for the rest of the country. It remains uncertain how this will play out.

### ***Chevron and Climate Change***

Chevron acknowledges the risks climate change poses, and also the fact that fossil fuel combustion is a primary producer of the greenhouse gases that are responsible for climate change. This sets Chevron apart from some other energy companies that continue to question the established scientific consensus in their public disclosures.

**Risk disclosure and management:** In its 2016 Form 10-K filing, Chevron acknowledges the proliferation of laws and regulations designed to constrain global greenhouse gas emissions, but asserts that their ultimate form and direction remain uncertain. The company acknowledges:

In the years ahead, companies in the energy industry, like Chevron, may be challenged by an increase in international and domestic regulation relating to GHG emissions. Such regulation could have the impact of curtailing profitability in the oil and gas sector or rendering the extraction of the company's oil and gas resources economically infeasible.

While this statement may sound unremarkable, it is the [strongest made to date](#) by any of the oil majors in their SEC filings.

Chevron describes some activities that may be targets of future legislation, including “consumers' and customers' use of the company's products,” as beyond its control.

Consideration of GHG issues and the responses to those issues through international agreements and national, regional or state legislation or regulations are integrated into the company's strategy and planning, capital investment reviews, and risk management tools and processes, where applicable. They are also factored into the company's long-range supply, demand and energy price forecasts. These forecasts reflect long-range effects from renewable fuel penetration, energy efficiency standards, climate-related policy actions, and demand response to oil and natural gas prices. The actual level of expenditure required to

comply with new or potential GHG emissions laws and regulations and amount of additional investments in new or existing technology or facilities, such as carbon dioxide injection, is difficult to predict with certainty and is expected to vary depending on the actual laws and regulations enacted in a jurisdiction, the company's activities in it and market conditions.

The ultimate effect of international agreements and national, regional and state legislation and regulatory measures to limit GHG emissions on the company's financial performance, and the timing of these effects, will depend on a number of factors. Such factors include, among others, the sectors covered, the greenhouse gas emissions reductions required, the extent to which Chevron would be entitled to receive emission allowance allocations or would need to purchase compliance instruments on the open market or through auctions, the price and availability of emission allowances and credits, and the extent to which the company is able to recover the costs incurred through the pricing of the company's products in the competitive marketplace. Further, the ultimate impact of GHG emissions-related agreements, legislation and measures on the company's financial performance is highly uncertain because the company is unable to predict with certainty, for a multitude of individual jurisdictions, the outcome of political decision-making processes and the variables and tradeoffs that inevitably occur in connection with such processes.

Chevron is one of several oil companies—specifically, **ExxonMobil**, **Royal Dutch Shell** and **BP**—that have publicly urged President Trump not to abandon the Paris climate agreement. Chevron [said](#) it “supports continuing with” the Paris deal because it “offers a first step towards a global framework.” ExxonMobil, the biggest U.S. oil company that Secretary of State Rex Tillerson used to lead, sent a letter to the White House in March 2017 [hailing the Paris agreement](#) as an “effective framework for addressing the risks of climate change.” While it may seem surprising that these companies would stake out such a position, the Paris agreement would favor their burgeoning natural gas operations.

In its 2016 Form 10-K, Chevron does not explicitly address physical risks of climate change. However, without acknowledging that established science projects all of the following risks among the consequences of climate change, Chevron says its “capital investment reviews and decisions incorporate potential ranges of physical risks such as storm severity and frequency, sea level rise, air and water temperature, precipitation, fresh water access, wind speed, and earthquake severity, among other factors,” but says it is “difficult to predict with certainty the timing, frequency or severity of such events, any of which could have a material adverse effect on the company's results of operations or financial condition.”

On its [website](#), Chevron provides some additional detail about its risk management process. For the first time, Chevron also published a [report](#) in March 2017 on how it manages climate change risks, which it says came in response to last year's shareholder resolution. The primary conclusion of this report is that Chevron's risk exposure in a greenhouse gas-restricted scenario is “minimal.”

The company considers the International Energy Agency's (IEA) New Policies Scenario, under which energy demand would grow by 32 percent by 2040, to be the most likely pathway. However, this scenario does not constrain greenhouse gas emissions to a level that scientists agree would prevent catastrophic impacts. The proponent of Item 7 wants the company to evaluate its risks under the 450 Scenario, which is considerably more restrictive. It sets out an energy pathway consistent with the goal of limiting the global increase in temperature to 2°C by limiting concentration of greenhouse gases in the atmosphere to around 450 parts per million of CO<sub>2</sub>. According to the most recent scientific analyses, even this scenario may not prevent devastating consequences to the environment and society. As it stands, Chevron's baseline assumptions lead it to conclude that the combined market share of oil and natural gas will remain relatively constant or increase through 2040.

Chevron notes that even under the 450 Scenario, the IEA says, “oil and natural gas will meet 44 percent of global demand [through 2040], with coal providing an additional 16 percent. By comparison, wind and solar generation are expected to increase, meeting about 3 percent of such demand by 2040, up from

less than 1 percent today.” The company views the 450 Scenario as a “tremendous challenge, requiring increasing investments in energy production and distribution infrastructure, changes in consumer behavior and lifestyles, and the imposition of a variety of policies.” Chevron notes that the IEA acknowledges this, and views the 450 Scenario as a possible pathway society could follow in pursuit of its climate goals, rather than a prediction or forecast.

In this context, Chevron says it uses a strategic planning process that includes “proprietary models” to project possible price trajectories. The company goes on to describe elements of its risk mitigation approach in broad, general terms. Regarding high-cost assets, Chevron says the following:

Certain high-cost assets around the world could be impacted by the hypothetical GHG-constrained case. Given the reduced demand and pricing impacts of this hypothetical modeling scenario, this is an expected modeling outcome. In the event that this GHG-constrained case were to manifest itself, these high-cost assets, for which a final investment decision has yet to be made, would not find a place in our investment portfolio given our risk management processes. However, even applying this hypothetical scenario, given the ongoing demand for energy, lower-cost assets remain competitive, including those assets already producing, which would continue to produce.

With respect to physical risks from climate change, Chevron is slightly more expansive in its climate risk report than in its 2016 Form 10-K, saying that it has long:

managed risks associated with the impact of severe weather on our operations. These long-standing practices are being applied and extended to reflect possible climate impacts. For example, Chevron is ensuring the ongoing resilience of our infrastructure, both for current operations and for those being developed and/or considered.

This cautious language could be calibrated to avoid a direct acknowledgement that climate change poses physical risks to the company’s operations, which would then trigger a requirement by the SEC to expound on these risks in Chevron’s annual filings. The company says it has undertaken a “global assessment” of “possible impacts” climate change could have on its assets.

The proponent in item 8 raises the threat electric vehicles may pose to the hydrocarbon-based energy sector, as described earlier in this report. In response to this concern, Chevron says the following in its climate risk report:

Although the increasing market share of electric vehicles will be a factor in reducing the demand for oil, the overall demand for oil is still expected to increase because only 10 percent of global oil demand comes from cars. As IEA Executive Director Fatih Birol has noted, only 1 in 100 cars currently sold is electric, so “[e]ven if you assumed that, as of tomorrow, every second car sold was electric, global oil demand would still increase.”

The [EIA projects](#) that in the United States, because the increase in freight travel demand will be offset by rising fuel economy standards, heavy-duty vehicle energy consumption will be approximately the same in 2040 as it was in 2016. Demand for air transport will rise through 2040, leading to a 40 percent increase in jet fuel consumption by 2040, despite efficiency improvements.

### ***Chevron and Stranded Asset Risk***

*For a detailed discussion of stranded carbon asset risk, please refer to Si2’s 2017 [Briefing Paper on Climate Change](#).*

In its 2017 climate risk report, Chevron includes a section on stranded asset risk. As with previous discussions in its report, Chevron’s primary parry is to note projections of sustained energy demand for several decades to come. The company goes on to cite a 2014 study from IHS Energy, an oil and gas consulting firm, called [Deflating the “Carbon Bubble”: The reality of oil and gas company valuation](#). Chevron notes that the report:

found, in part, that “the intrinsic value of most publicly traded oil and gas companies is based primarily on the valuation of proved reserves—90 percent of which are expected to be monetized in 10 to 15 years.” This focus on proved reserves contrasts to the broader classifications of probable and possible resources. IHS goes on to state that “going even further to define [possible and probable resource] assets as being potentially ‘stranded’ is misleading, since the capital spent to acquire and/or discover a resource yet to be classified as proved is usually only a small fraction of the ultimate capital commitment upon attaining final investment decision for full-scale development and maintenance of producing facilities.”

Hence, the combination of ongoing demand for energy even in a carbon-constrained scenario, the evolving nature of possible demand and regulatory changes, and the ability of companies like Chevron to adjust investment patterns and portfolios to reflect these policy and demand circumstances as they evolve ensures that the possible risk from “stranded assets” is minimal and certainly manageable. Because the U.S. Securities and Exchange Commission’s reserves booking rules limit the definition of “reserves” to resources expected to be commercially produced in the relatively near term, the possibility that even an aggressive climate change response scenario such as the IEA’s 450 Scenario could result in the “stranding” of booked reserves is minimal.

In January 2015, the Carbon Tracker Initiative—an independent financial think tank that provides “in-depth analysis on the impact of climate change on capital markets and investment in fossil fuels, mapping risk, opportunity and the route to a low carbon future”—published a [response](#) to the IHS report cited above, arguing that it ignored price and reinvestment risks, overestimated the extent to which the world would continue to need fossil fuels and disproportionately blamed coal even as oil is the largest primary source of energy. Carbon Tracker offered the following key takeaways and action points:

- Carbon Tracker’s “Carbon Supply Cost Curve” analysis has focused on the break even prices of high cost capital expenditures and why these can potentially become wasted capital in a demand constrained world.
- IHS... have taken this into what we see as a narrow focus of the implications for proven reserves and short term company valuations.
- In response, we have shown that whilst the majority of a company’s [net present value] may be due to near-term (the next 10-15 years) cash flows from proven reserves, if these cash flows are recycled and invested in new future production then the value is simply rolled over with greater risk.
- Further, even using the IHS approach of no reinvestment and looking at current proven reserves only, deterioration in the oil price driven by expectations of future demand weakness could cause cash flows to weaken and valuations to fall...
- We expect the transition towards a 2°C scenario to be driven by efficiencies, falling renewable energy costs and climate regulation, with or without a “global deal”. The impacts for fossil fuel company business models should be seriously considered.
- The key point is that, rather than diluting performance by investing cash flows from historic high-return projects into newer low-return projects, companies might improve returns and lower risk for shareholders by boosting dividends and buying back shares.
- Investors must question industry assumptions and challenge capital expenditure at the wrong end of the cost curve. It is not too late for the transition to a lower-carbon economy to be an orderly one, with fossil fuel companies steadily shrinking overall but delivering the best results for their shareholders by focusing on value rather than volume.

According to a [February 2014 study](#) from Columbia University’s Center on Global Energy Policy, capital expenditures (capex) by the largest oil companies had risen five-fold since 2000, yet overall industry production was nearly flat. The study authors interpreted this trend to mean that capex productivity (in the sense of barrel of production capacity per capex dollar invested) had fallen by a factor of five since 2000. According to a December 2014 [Goldman Sachs analysis](#), in the preceding two years, no major new oil

project had come on stream with production costs below \$70 per barrel, with most in the \$80 to \$100 dollar range, raising the risk of stranded assets.

An estimated \$380 billion worth of oil and gas projects have been cancelled since 2014, according to a January 2016 [estimate](#) from Wood Mackenzie. The report says that 68 major projects around the world were scrapped in 2015, which account for around 27 billion barrels of oil and natural gas. In the latter half of 2015, when oil prices fell once again following a modest rebound in the spring, the industry pushed off 22 major projects worth 7 billion barrels of oil equivalent. The cancellations are projected to lead to dramatically lower oil production in the years ahead. An estimated \$170 billion in capex spending was slashed for the period between 2016 and 2020. All told, industry cuts will translate into at least 2.9 million barrels of oil production per day that will not come online until at least sometime next decade. Chevron accounts for 13 percent of the delayed projects in the study, which concluded that 44.8 percent of Chevron's capex would be "unnecessary" under a two-degree pathway.

Among the projects in the Wood Mackenzie study was BP's Mad Dog 2 project in the Gulf of Mexico, which is also co-owned by **BHP Billiton** and Chevron. The long-delayed project was put on hold again early in 2015. The Mad Dog Field was initially discovered in 1998, but first production from that field did not begin until 2005, when Mad Dog 1 came online. Appraisal drilling for the Mad Dog 2 project started in 2009, and initial development was commissioned in 2012, with plans for first oil in 2017. That plan, however, was delayed in 2013, after skyrocketing costs caused BP, BHP Billiton and Chevron to return to their plans to seek a more economical approach. Under the new plan, with 50 percent of cost trimmed from the original concept, the project will not deliver first oil until 2021. According to Chevron's 2016 Form 10-K, "At the end of 2016, proved reserves had not been recognized for the Mad Dog 2 Project."

**Additional CTI analysis:** According to the [Carbon Tracker Initiative](#) (CTI), as of 2014, 26 percent of Chevron's future project portfolio (2014-2050), representing \$87 billion, requires at least \$95 per barrel for a breakeven price, and 14 percent requires a price of \$115 per barrel. By the end of 2025, CTI expects high-cost, unconventional projects to represent 36 percent of Chevron's potential future production. Chevron's capex covers a fairly diverse range of potential projects, although there is a focus on deep water projects: 41 percent of capex for undeveloped projects requiring market prices above \$95 a barrel is for deep water projects, 19 percent for ultra-deep water projects and 16 percent for conventional projects (onshore and continental shelf). Oil sands mining and oil sands in-situ account for 11 percent and 1 percent of the company's potential budget. Chevron's capex increase between 2012 and 2013 was enough to [draw the attention](#) of SEC regulators, who asked the company for greater disclosure on how its spending might affect its liquidity.

In March 2016, CTI published a follow-on report, [Full Disclosure: Why Chevron Needs to Stress-Test the Business at Two-Degrees](#). CTI published the report out of concern that while many oil and gas companies are now reporting that they account for stranded asset risk, they are not showing investors how they have done so. CTI says that Chevron has lagged behind its peers in such disclosure. In examining Chevron's public disclosures CTI observed the following:

- Chevron appears to project future fossil fuel demand in keeping with the International Energy Agency (IEA) Current Policies Scenario, which assumes no climate action through 2035, but such a scenario strikes CTI as exceedingly unlikely given actions to date.
- Chevron seems to acknowledge that in a two-degree demand scenario, oil demand might have reached its peak by 2035, but does not discuss the implications of that development.
- Chevron views the climate goals agreed to in the 2015 UN Paris Agreement as unlikely, and does not appear to consider the possibility that governments will live up to their commitments. CTI

views disclosure from the company on the implications of a low-carbon scenario, and not just its likelihood, as critical.

- Chevron suggests a cost/benefit framework for considering climate risk, but does not weigh the costs of action against the harms from inaction.

CTI believes that companies such as Chevron could clarify the discussion of stranded assets if they tested their potential portfolio of projects against a two-degree demand scenario, regardless of whether management believes such a scenario to be “likely.” While Chevron’s recently released climate risk report addresses the notion of the two-degree scenario, if the company has stress tested its portfolio against this scenario, it has not disclosed details to that effect.

In May 2016, CTI published another study, *Sense & Sensitivity: Maximising Value with a 2D Portfolio*. In it, CTI tested its hypothesis that two-degree portfolio stress testing would demonstrate the comparative value of a smaller, lower-cost portfolio of future projects. To evaluate this, CTI looked at the net present value of the aggregate portfolios of upstream assets held by the seven oil majors: Chevron, **ExxonMobil, Shell, BP, ConocoPhillips, Eni and Total**:

At the upstream level, our results indicate that these companies could successfully manage a potential decline in demand by adopting a more conservative approach to future projects. Continued new investment will be needed even in the reduced portfolio, but less than under a business-as-usual scenario. Although demand for oil under the IEA’s 450 Scenario ultimately falls to 74 [million barrels a day] by 2040, the overall rate of production from existing fields will naturally decline at a faster rate than demand. This decline will need to be offset by some additional sources in order to satisfy energy needs.

The oil and gas majors have a range of options along the supply cost curve. Our analysis has shown that by not approving the new high cost options going forward, they could create more shareholder value than by pursuing all options at all costs. Maintaining such capital discipline, even if oil prices rebound for a time, will be essential to optimising value. At current oil prices, we estimate that the portfolio of **the combined majors’ upstream assets would be worth c.\$140bn more with investments restricted to 2D-compliant projects** only (using a 10% discount rate). [emphasis added—the proponent raised this point in item 8]

Under the IEA’s 450 Scenario, CTI [calculates](#) that roughly \$44.8 billion of Chevron’s potential capex spending through 2025 would be unneeded, and thus at risk of asset stranding.

CTI published an additional study in July 2016 in concert with the United Kingdom’s Local Authority Pension Fund Forum (LAPFF). In *Engaging for a Low Carbon Transition: Why a 2°C Business Model Is Less Risky than ‘Business-As-Usual’ for Oil Companies*, they asserted:

Most oil companies follow an ‘invest-for-growth’ business model aiming to grow production steadily. Ironically, in many cases, this model has failed to deliver top-line growth. Even more concerning for shareholders, it has delivered deteriorating returns over the past five years. The current model has clearly not delivered. A ‘managed decline’ or ‘harvest’ business model – reducing investment to match a two-degree demand scenario – would likely lower business risks, reducing the likelihood of destroying shareholder value. It would do so because such a company would be investing in lower cost assets, reducing the volatility in earnings caused by oil price movements. Reducing capital expenditure by focusing only on lower cost assets could enable companies to return more capital to shareholders over the next five to ten years.

As described earlier in this report, Chevron has demonstrated the 5-year decline in returns the previous paragraph describes.

**Additional capital expenditure analysis:** The *Wall Street Journal* reports that Chevron’s spending increased 89 percent from 2009 to 2013, a “costly quest” that coincided with a 3 percent drop in production over the same period. A comparison of Chevron’s [2005 Annual Report](#) and [2013 Annual Report](#) showed that over the 10-year period from 2003 to 2013, Chevron’s capital expenditure increased 575 percent, while the company’s total oil barrel equivalent production decreased 1.5 percent. In recent

years, the company's profitability has been declining even as its capex has soared. Despite this situation, Chevron's CEO in March of 2014 [remarked](#), "The \$100 barrel is the new \$20 barrel."

Some of Chevron's projects present particular concern under a carbon bubble scenario. The Gorgon is a 15 million ton per year LNG plant on Australia's Barrow Island. Chevron owns 47.3 percent. Its cost overruns have been dramatic. The project was more than 45 percent over budget in 2014 when it was still only 75 percent complete. [Production began](#) at the facility in April 2016, only to be halted by substantial and persistent [mechanical problems](#). Chevron achieved full production in March 2017.

**Shell** shelved its Pierre River oil sands mining project—the largest such project to be deferred as producers struggle with low energy prices—in order to focus on "more imminent" growth opportunities such as its Athabasca Oil Sands project, in which Chevron holds a 20 percent interest. Although the Athabasca Oil Sands project has a lower market oil price required to break even, it remains one of the riskier projects. Indeed, last year [uncontrolled forest fires](#) raged through the Athabasca region, forcing the evacuation of an entire town of 80,000 people and causing Shell to halt its oil sands mining operations there. The fires themselves were attributed to unseasonably warm temperatures and dry weather. While it is not currently possible to associate a specific weather observation with climate change, increasing average temperatures and changes in global precipitation are among the impacts of global warming.

In February 2016, Chevron [outlined plans](#) to target spending on "short-cycle" investments—lower-cost projects that can take months, rather than several years, to come online. In particular, the company is focusing on its significant presence in shale oil fields in the U.S. Permian basin at the expense of high-cost, complex deepwater projects. Chevron has a strong portfolio of long-term projects on hand, so some analysts think this strategy may be a good way to shore the company up against oil price challenges. Indeed, Chevron reported a strong reserve replacement ratio of 107 percent for 2015, which was well above the 89 percent it delivered in 2014. However, its 2016 reserve replacement ratio has slipped back to 95 percent, possibly as a result of the company's slashing of capital expenditures. Furthermore, in its 2016 [response to CDP](#), Chevron elected not to provide specifics in its answer to the question asking it to describe its future capex plans for different strategic development areas.

In April 2016, Moody's [downgraded](#) Chevron's credit rating from Aa1 to Aa2, affecting \$30 million of rated long-term debt. The downgrade was driven by Moody's expectations of negative free cash flow and rising debts levels caused by low oil prices in 2016 and 2017. Moody's stable outlook was based on Chevron's increasing capital spending flexibility and scope for operating cost reductions, which, combined with modest rises in commodity prices, "should allow Chevron to reduce negative free cash flow substantially in 2017 and stabilize its debt levels and corresponding financial leverage as measured against capitalization and proved reserves." Comparing Chevron to its peers, Moody's observed:

The company entered this period of persistently low oil prices with lesser financial leverage than its peers, which has allowed it to sustain its large capital project spending and its dividends while still maintaining financial leverage relative to book capitalization and proved reserves that are lower than most of its peers. Like its peers, Chevron faces the ongoing challenge to replace its reserves and the accompanying capital intensity, but the visibility on production growth from its development projects is among the best in the highly rated integrated peer group.

As You Sow published a July 2016 report, [Unconventional Risks: the Growing Uncertainty of Oil Investments](#), which considers structural changes in the oil market that have the potential to contribute to a weakening of the oil industry. The report notes that Chevron's capital expenditures grew nearly 240 percent from 2005 to 2015, its operating profitability has fallen 107 percent over the last decade and its 2016 return on equity and return on invested capital were at historic lows.

**Climate communications:** In 2016, the Union of Concerned Scientists (UCS) published *The Climate Accountability Scorecard: Ranking Major Fossil Fuel Companies on Climate Deception, Disclosure, and Action*. In this report, the UCS evaluated the climate-related communications, positions and actions of eight leading fossil-fuel companies, including Chevron, focusing on the period from January 2015 through May 2016. UCS scored [Chevron](#) and **ExxonMobil** at the bottom of the ranking.

In November 2016, [Influence Map](#), a non-profit that evaluates corporate influence on civil society policy, published a report evaluating the climate risk of 10 global oil majors, including Chevron. In *The Oil Majors and Climate Risk: What Investors Need to Know*, Influence Map scored the companies on four climate issues “currently being driven in part by significant regulatory pressures which are likely to impact revenue streams and costs and includes an analysis of financial disclosures, focusing on SEC filings.” According to the report, the key risk issue to oil majors is the proliferation of zero emission vehicles (ZEV) and hybrids, resulting in decreasing demand for petroleum products used in road vehicles, which on average provide at least 35 percent of gross revenue of the oil majors. The research found scant disclosure by the oil and gas majors on their precise projections for ZEV penetration and impact on gasoline/diesel sales. This theme echoes a number of the shareholder resolutions this year related to climate change strategy, many of which—including Chevron’s item 8—cite various sources on the threat posed by the rapid transition to cleaner or no transportation fuels.

In the report, Chevron ranked last. The report identified the following issues with the company:

- Chevron uses an undisclosed internal carbon price on new projects. It has a mixed disclosure on the impact of increased pricing but has not communicated a climate-related reserve impairment policy. Influence Map also notes numerous statements by Chevron’s CEO that question anthropogenic climate change and reject many policy initiatives to constrain it.
- Chevron has not communicated a clear prediction on future electricity generation, but suggests solar and wind will account for 3 percent of the total energy mix in 2040. It has limited disclosure on the business impact of an increasing market share for renewables.
- Chevron has not communicated clear estimates on low/zero-carbon vehicles but has suggested that changes to the auto industry will not meaningfully impact the oil industry for another 50 years. It has limited disclosure on the business impact of low/zero-carbon vehicle proliferation.
- Chevron has not clearly communicated a long-term, group-wide greenhouse gas emissions reduction target. It has some, mixed disclosure on the business impacts of future greenhouse gas emission reductions.

**Industry precedent:** In April 2015, 98 percent of shareholders supported a management-backed resolution at **BP**, surpassing the 75 percent threshold for making the resolution binding. The special resolution—‘Strategic resilience for 2035 and beyond’—amplified by a supporting statement, called for routine annual reporting from 2016 onward to include further information about certain activities related to climate change, including ongoing operational emissions management, asset portfolio resilience to the IEA’s scenarios (including the 450 scenario one proponent raises with Chevron, and essentially equivalent to the two-degree scenario) and public policy positions relating to climate change. While *The Financial Times* [characterized](#) this development as a “major victory” for shareholder activists, [others note](#) that BP’s board of directors supported the resolution, and question the extent to which it will make a significant difference in the company’s operations. The boards of **Shell** and **Statoil** have also supported the resolution.

In a similar vein, in 2016 Canadian oil sands company **Suncor**’s shareholders [voted](#) 98.18 percent in favor of a shareholder resolution requesting a report assessing the company’s future in a low-carbon economy and seeking emissions reduction targets, energy diversification strategies and stress-testing against low-

carbon scenarios. The company's board recommended that shareholders approve the proposal, which has never happened with a U.S.-domiciled company on this issue. Suncor has openly understood and acknowledged climate science and publicly endorsed a price on carbon emissions. "Since hydrocarbons are finite resources with an environmental impact, it will be critical to use them wisely as the world transitions to lower carbon sources of energy," said a Suncor representative. "Suncor believes our energy system is in an era of change."

In April 2015, a group of investors representing \$2 trillion of assets under management, filed a letter with the SEC asking it to require fossil fuel companies to provide more disclosures about climate-related risks to their businesses, including "excessive capital spending on high-cost, carbon intensive projects" and highlighting "an absence of disclosure in SEC filings." The Bank of England addressed carbon asset risk and the potential for stranded fossil fuel assets with the publication of its [One Bank Research Agenda](#) in 2015, noting that climate change presents a category of transition risk "for central banks to consider, including the potential for carbon intensive assets becoming 'stranded.'"

**Corporate initiatives**—In June 2014, 10 oil and gas companies formed the [Oil and Gas Climate Initiative](#) (OGCI). OGCI companies [share an ambition](#) to achieve two-degree scenario limits. Founding members BP, **CNPC**, **Eni**, **PEMEX**, **Reliance Industries**, **Repsol**, **Saudi Aramco**, Shell, Statoil and **Total** produce more than one-fifth of global oil and gas production and more than 10 percent of energy supply.

**BHP Billiton**, a global mining, metals and petroleum company, has adopted a [planning process](#) that "uses scenario analysis to encompass a wide spectrum of potential outcomes for key global uncertainties." In a 2015 [report](#), BHP Billiton outlined four possible scenarios ranging from an orderly transition to a two-degree world to a shock event that leads to a much more rapid transition to a two-degree Celsius world by 2030.

Other oil and gas companies have begun using scenario analysis to assess the direction of their businesses and to assure investors that they are poised to take advantage of new opportunities. For example, **Total** issued a [report](#) in 2016 that discusses how a two-degree scenario affects the company's decision-making process, discusses its targets for reducing the carbon intensity of its operations over time and includes the endorsement of its board of directors for this approach. Other companies beginning to use a two-degree scenario analysis in their business planning include **ConocoPhillips**, **Statoil** and **Shell**. ConocoPhillips' action prompted the withdrawal of a shareholder resolution on the subject last year. ConocoPhillips has also adopted the shrink-to-grow strategy CTI espouses, as described earlier in this report.

**Energy diversification:** Chevron, **Exxon** and **BP** each invested and then divested renewable energy divisions between 2000 and 2008. Since then, they have not made significant new investments in renewable or low-carbon technology. While at that time, the market may not have been sufficiently responsive to such innovative investments, that seems to be changing now. Total provides an example of an oil and gas company successfully diversifying into low carbon technology, with a majority stake in Sunpower, the world's largest solar panel producer, and a planned purchase of French battery maker Saft Groups SA.

Chevron has several [renewable energy projects](#) underway, although it has reduced its exposure to some of these in the last year. The company was a leading producer of geothermal energy, with two projects in Indonesia with a total capacity of 647 megawatts (MW) and a 40 percent interest in a 692 MW project in the Philippines. However, it reached agreements to sell these assets in 2016.

Chevron has several photovoltaic PV solar test projects in New Mexico and California. The company also has five joint ventures in PV solar in the United States that generate a combined 73 MW of energy. It has a 16.5 MW wind power facility in Wyoming. Chevron says that biofuels are one of its renewable focus

areas, although biofuels are in the development stage, and were not significant enough for mention in Chevron's 2016 Form 10-K.

Given the different units of denomination used for different fuel sources—fossil fuels are measured in oil and gas units, whereas renewables are measured in MW—it is not possible to determine the significance of Chevron's renewables investments compared to its overall operations. However, it is clear that Chevron's renewables projects are a small, and declining, part of its business. Of the projects listed above, only the geothermal installations are even mentioned in Chevron's 2016 Form 10-K, and that is only in reference to the company's sale of these assets.

**Greenhouse gas emissions and targets:** Chevron's 2015 greenhouse gas emissions (the most recent reported) totaled 57 million metric tons of carbon dioxide equivalents (CO<sub>2</sub>e), ahead of the company's target for that year, according to Chevron's [2015 CDP response](#). The company's absolute emissions and emissions intensity have held relatively steady since 2010, according to its [2015 Corporate Responsibility Report](#) (the most recent available). Chevron reports that combustion of its products resulted in emissions of 366 million metric tons of CO<sub>2</sub>e in 2015.

Chevron's primary emissions reduction efforts are in reducing methane flaring and venting and improving energy efficiency in its operations. Chevron showed a decline in emissions associated with flaring and venting from 2010 to 2015, and an increase over the same period in emissions associated with combustion and other sources. The company says it is a member of the World Bank-led Global Gas Flaring Reduction Partnership, and has helped develop country-specific plans to minimize gas flaring.

Chevron says it has invested in a series of flare-reduction efforts in western Africa for more than 15 years. Since 2009, the company's Agbami facility off the shores of Nigeria has been operating with no routine flaring because the associated gas is reinjected. The company does not address the associated risk of induced seismicity. Chevron says it continues to work with its production partners in Nigeria on a series of additional projects to address the remaining flares. Projects that focus on the capture and delivery of natural gas from existing flares and other sources to serve new gas markets throughout western Africa are included in these efforts. Its Angola Liquefied Natural Gas (LNG) facility is expected to reduce natural gas flaring and greenhouse gas emissions from offshore producing areas.

Similarly, Chevron's Gorgon LNG project off the northwest coast of Australia includes one of the largest carbon dioxide injection projects in the world. The carbon dioxide present in the natural gas will be injected into a sandstone reservoir more than 1.5 miles below Barrow Island. The carbon dioxide is extracted from the natural gas as a part of normal gas-processing operations and would otherwise have been vented to the atmosphere. Over the life of the project, Chevron expects to inject approximately 120 million tons of carbon dioxide. The company is also participating in a similar project in Alberta, Canada, called Quest. This joint venture injects carbon dioxide from the Athabasca oil sands project. Chevron says these projects will be undertaken safely, but does not address the risks associated with carbon capture and storage, as discussed in further detail in *Si2's 2017 Briefing Papers on [Climate Change and Environmental Management](#)*.

Chevron has no emissions reduction targets. In its [2016 CDP response](#), the company somewhat tangentially accounts for its lack of targets by describing its existing risk-management strategies as previously detailed in this report, implying that these are sufficient.

### **Board Oversight of and Expertise on Environmental Issues**

Chevron’s board has a Public Policy Committee charged with oversight of sustainability issues, according to its [charter](#). In particular, its mandate states that the committee is to assist the board in:

- Identifying, evaluating and monitoring social, political and environmental trends, issues and concerns;
- Analyzing how public policy trends could impact the corporation’s business activities and performance;
- Determining how the corporation can anticipate and adjust to public policy trends in order to more effectively achieve its business goals or to be an important contributor to the policy dialogue;
- Analyzing the company’s global reputation and developing recommendations to strategically position the company to support its business objectives; and
- Formulating and adopting basic policies, programs and practices concerning broad public policy issues.

The committee’s charter dictates that it comprise not fewer than three members of the board at large. The board’s nominating and governance committee recommends members, who are appointed by the board at large. The board also has the option of appointing a chair. The committee has the authority to retain independent advisors it deems necessary to execute its duties, at the company’s expense.

**Expertise:** While pointing to considerable expertise in certain aspects of Chevron’s businesses and peripherally to environmental issues, none of the members of Chevron’s board of directors appears to possess specific environmental credentials, such as degrees in environmental science or related fields or job experience with an environmental organization. One, Robert E. Denham, is a former trustee of the Natural Resources Defense Council, an international environmental non-profit organization that works to protect the world’s natural resources. Denham is also the former Chairman of the John D. and Catherine T. MacArthur Foundation, which funds environmental and sustainable development programs. Chevron highlights his “unique experience with environmental issues by representing buyers and sellers in complex mergers and acquisitions.” Another, Charles W. Moorman IV, is Virginia chapter chair of The Nature Conservancy and a trustee of the Chesapeake Bay Foundation. While these credentials constitute more than a passing familiarity with environmental issues, they do not appear to qualify Denham or Moorman as specialists.

#### **Si2 Benchmarking Studies**

In 2014, Si2 examined the extent of voluntary sustainability oversight mandates at companies in the S&P 500 index, which enables comparative analysis of these firms. Overall, [Board Oversight of Sustainability](#) found that a little more than half the companies examined have some kind of board sustainability oversight requirement, and that those with such mandates choose most often to include them among the duties of the governance and nominating committee, although a few have dedicated committees such as the Public Policy committee at Chevron. Far more companies, in general, require oversight of social policy matters (more than half of those with mandates) and fewer mention the environment (only about one-third). In Chevron’s Energy sector, though, Si2 found that 25 out of 43 firms have board charters that specify environmental and health and safety oversight, including Chevron. Sixteen others in the sector do not have board charters mentioning these issues.

**Board experts:** In late 2014, Si2 also separately examined the extent of sustainability expertise brought to the table by board members who sit on committees that have sustainability mandates, looking at the evidence provided by companies in proxy statement director nomination. We found companies mentioned specific sustainability-oriented expertise for just 19 percent of the nearly 800 board members examined, and that environmental expertise was the most commonly noted qualification, outside other typical qualifications such as industry experience.

Chevron also highlights board member Alice P. Gast’s scientific credentials. Dr. Gast is president of Imperial College London, and under the “Environmental Affairs” segment of her bio in Chevron’s 2017 proxy statement, the company says the following:

At Imperial College London, oversees environmental institutes and centers. At Lehigh University, presided over the establishment of STEPS, an initiative on science, technology, environment, policy, and society, and oversaw the university’s Environmental Advisory Group and emergency and crisis management planning, which included preparedness for environmental emergencies. Expertise in chemical and biological terrorism issues gained through service on several governmental committees.

According to her bio on the Imperial College London’s [website](#), Dr. Gast’s academic interest is in surface and interfacial phenomena, in particular the behavior of complex fluids. She is a chemical engineer by training and profession. As such, Dr. Gast surely has a stronger understanding of environmental matters than the average person, particularly as regards fracking chemicals and contamination. However, she still does not qualify as an environmental expert under the definition the proponent advances.

Chevron also counts Jon M. Huntsman Jr., former U.S. Ambassador to China and former Governor of Utah, among its board members. Under the “Environmental Affairs” segment of his bio, Chevron says the following:

As Governor of Utah, oversaw environmental policy, including signing the Western Climate Initiative, by which Utah joined with other U.S. state governments to pursue targets for reduced greenhouse gas emissions. Significant experience overseeing environmental practices and related matters as Vice Chairman of Huntsman Corporation and Chairman and CEO of Huntsman Holdings Corporation.

Here again, this does not appear to be the sort of specialized knowledge the proponent seeks. Chevron also highlights several other board members’ leadership of multinational companies as environmental experience, in that they have overseen environmental matters within the context of their companies’ operations. This appears to remain firmly in the realm of generalized knowledge, not the expertise the proponent recommends.

**Board membership qualification standards:** Chevron’s [Corporate Governance Guidelines](#) describe its board nominee qualification standards. The board’s membership criteria say that board members “should have broad experience or expertise at the policy-making level” in one or more of a variety of experience categories, including environmental experience. This qualification is a new addition in 2017.

## II. Proponent Positions

### *Common elements to all proposals*

All of the proposals in this report express a concern about climate change, to varying degrees. The proponents note governments’ increasing understanding that to minimize global temperature rise to two degrees Celsius—the level generally understood to prevent the most severe of negative ramifications for the planet—deep cuts in greenhouse gas emissions are needed. The proponents recognize Chevron’s intimate role in this process, as one of the largest energy companies in the world, a major developer of fossil fuels and thus a significant source of greenhouse gas emissions. Most note that transformation already is occurring in the energy sector in the form of rapid energy efficiency increases, decreasing costs of renewables and disruptive technology development such as electric vehicles.

### *Item 7: Report on climate change strategy*

Wespath Investment Management wants Chevron to assess annually long-term portfolio impacts to 2035 of possible public climate change policies, explaining “how current capital planning processes and business strategies incorporate analyses of the short- and long-term financial risks of a lower carbon

economy,” evaluating the “impacts of fluctuating demand and price scenarios on the company’s existing reserves and resource portfolio.”

The proponent asserts that while Chevron acknowledges the importance of climate change and the risk tightening regulations could pose to its operations, it has not provided shareholders with enough information about how its portfolio would perform under various carbon-constrained scenarios.

The proponent highlights what it considers to be better disclosure currently provided by Chevron’s competitors, including support for similar resolutions by the boards of Royal Dutch Shell, BP and Statoil, and actions by peers such as ConocoPhillips and BHP Billiton to evaluate and report on the impact of carbon-constrained scenarios.

### ***Item 8: Report on climate change***

Arjuna Capital contends that shareholders’ investment in the company is at risk from what it views as Chevron’s failure to plan for a transition toward a low-carbon economy, which the proponent says is already underway.

Arjuna points to various studies described earlier in this report that highlight the “resoundingly negative” threat to the oil industry from electric vehicle proliferation, urge energy companies to prepare for “radical change” and estimate that 44.8 percent of Chevron’s capex could be at risk of asset stranding. The proponent also refers to Chevron’s history of high spending coupled with declining returns as evidence that it is not adequately managing climate change risk.

Arjuna says, “Investors are concerned that Chevron is at risk of further eroding shareholder value through continuing investments in assets likely to be stranded and uneconomic in a low carbon demand scenario.” The proponent identifies peers **Total** and **Statoil**’s forays into clean energy projects as positive examples, and says other transition strategies might “include profitably shrinking the company’s carbon-based asset base.”

The proponent further asserts, “Low carbon planning is also critical to meeting Chevron’s stated objective of increasing developing countries’ access to affordable and reliable energy without conflicting with the Paris Agreement.”

### ***Item 10: Nominate environmental expert to the board***

Given the challenges and scrutiny the industry receives from shareholders, lenders, host country governments and regulators, and affected communities, the New York State Common Retirement Fund (NYSCRF) points out that “a company’s inability to demonstrate that policies and practices are in line with internationally accepted environmental standards can lead to difficulties in raising new capital and obtaining the necessary licenses from regulators.”

In light of regulatory and investor scrutiny, NYSCRF believes that Chevron “would benefit by addressing the environmental impact of its business at the most strategic level by appointing an environmental specialist to the board.” The proponent specifies that this should be “an authoritative figure with acknowledged expertise and standing” empowered to “help ensure that the highest levels of attention focus on the development of environmental standards for new projects.”

Therefore, NYSCRF is asking that the next time the term of an elected board member expires, the company nominate at least one candidate with environmental expertise relevant to the oil and gas industry. The proponent also asks that the candidate be identified as independent and recognized as an authority in the field.

### III. Management Positions

#### *Common elements to all proposals*

Chevron provided substantially similar arguments in its opposition statements to items 7 and 8:

Chevron shares the concerns of governments and the public about climate change risks and recognizes that the use of fossil fuels to meet the world's energy needs is a contributor to rising levels of greenhouse gases (GHGs) in the earth's atmosphere. Chevron believes that taking prudent, practical, and cost-effective action to address climate change risks is the right thing to do. Mitigation of GHG emissions, adaptation to climate change, and continuation of scientific and technological research should all be considered.

Upon examination of the different supply-and-demand scenarios, it is clear that a decrease in overall fossil fuel-related GHG emissions is not inconsistent with continued or increased production *by the most efficient producers*. The premise that governmental or societal responses to climate change require each fossil fuel producer to curtail its individual production proportionately is flawed and unrealistic and, if carried out, could impose great economic inefficiency. We believe that Chevron is a capable and efficient producer, well positioned to compete in any plausible supply-and-demand scenario.

The company points in several places to the various elements of its public disclosure, detailed throughout this report and listed in the resources section at the end of this report.

#### *Item 7: Report on climate change strategy*

The board opposes this proposal on the grounds that the company already has all necessary safeguards and oversight in place to plan effectively for future risk. The company discusses the IEA's scenarios and its expectation that fossil fuel demand will continue to increase through 2035. Management asserts that Chevron already takes full account of the issues the proponent raises, and that its recently published climate risk report that it developed in response to last year's resolution satisfies the proponent's disclosure aspirations. Management goes on to detail some of the elements of that report, as discussed earlier in this report.

Management concludes that it:

has processes in place involving executive management and the Board by which we manage a variety of risks to our business, including climate-related risks. The Board's assessment is that Chevron's existing processes are sufficient to ensure that we can monitor and adjust appropriately to likely future scenarios.

#### *Item 8: Report on climate change*

Similarly to item 7, management opposes the resolution on the grounds that it already substantially complies with the request, again highlighting its recently published climate risk report.

The board of directors emphasizes its agreement with the imperative to address the sources of climate change and that fossil fuels are a major contributor. The company asserts its own commitment to reducing greenhouse gas emissions. At the same time, Chevron describes projections for ongoing increases in global energy demand, and its own commitment to meeting this demand. The board reiterates arguments about the need for the company to invest prudently in its growth. Management goes on to describe the various ways in which it is managing its portfolio "dynamically" to account for market signals.

The board says Chevron monitors and often participates in "research on evolving renewable energy technologies that might impact us," and integrates its insights into strategic planning. It says it believes strong demand for its "current product slate" will continue, even in a carbon-constrained scenario. Management believes the company already has a robust strategy and disclosure platform in place, rendering the proposal unnecessary.

Given our deep and proven capability to efficiently produce hydrocarbon resources, and the important role of hydrocarbons in meeting future energy demand, we do not believe it would be prudent to shift our hydrocarbon focus at this time. In fact, doing so could be detrimental to current stockholders because it would divert limited resources away from profitable deployment to areas where we do not have a competitive advantage.

### ***Item 10: Nominate environmental expert to the board***

Chevron recommends a vote against the proposal, because it believes that it already has “strong environmental performance” and that its existing Corporate Governance Guidelines give due account to environmental expertise. The board also notes the declining support this resolution has received in the last few years.

Furthermore, the company says its current board includes several independent directors experienced with environmental issues and public affairs, and it lists them by name. Chevron also notes that its board has access to internal and external environmental experts to keep it apprised of important environmental issues.

Chevron underscores that its policies, environmental management system and practices—including its Operational Excellence Management System and Environmental, Social and Health Impact Assessment process. In particular, the company says it:

- is a leader among its peers in spill prevention, and has implemented various programs to prevent incidents and promote safety;
- has reduced its equity greenhouse gas emissions from flaring and venting by 45 percent since 2003;
- has an environmental management company dedicated to responsible and timely stewardship of sites with residual environmental impacts;
- recognizes the importance of biological diversity by incorporating conservation considerations into project evaluations and decision-making and by supporting numerous flora and fauna conservation projects around the world.

Management concludes:

In light of the existing environmental experience represented on Chevron’s Board and Chevron’s rigorous standards for protecting the environment and well-developed environmental risk management systems, your Board believes that this proposal is unnecessary, would narrow the pool of eligible Directors for consideration and would provide no additional benefit to Chevron and its stockholders.

## **IV. Analysis**

### ***Key Points at Issue***

- Is Chevron adequately managing and reporting on its performance and the risks it faces as a company—especially new risks arising from a changing regulatory and operating environment for natural gas production and fossil fuel exploitation?
- How does Chevron stack up against its competitors on climate change risk management?
- Would the company benefit from the presence on its board of directors of an environmental specialist?

*Si2’s 2017 Briefing Paper on Climate Change* contains a detailed analysis of climate change issues that investors may want to consider. *Si2’s Briefing Paper on Board Oversight* may prove useful to consideration

*of Item 10, and Si2's 2017 [Briefing Paper on Sustainability Reporting](#) provides background information that investors may find useful for all three resolutions. The following discussion is specific to Chevron.*

Chevron is a major oil and gas company, and thus by definition a substantial source of greenhouse gas emissions that contribute to climate change. Chevron's greenhouse gas emissions have remained relatively flat for the last five years, as have its emissions intensity measures. The company sets no emissions reduction targets.

Multiple studies show that climate change poses risks to fossil fuel companies, possibly existential risks, among which is asset stranding. Until now, scientists and governments have generally understood that keeping average atmospheric temperature to no more than two degrees Celsius of warming was the mechanism by which the worst negative impacts from climate change could be averted. In fact, the latest research suggests that even two degrees could be too much, and that 1.5 degrees Celsius may actually be the maximum threshold. This assessment supersedes whatever regulatory bodies choose to do. The science does not trouble itself with political stagnation.

The Paris climate treaty reached in December 2015 initially prompted optimism from many about new prospects for a real shift in global government action to address climate change. The outcome of the 2016 presidential election and the new Trump administration's stated intention to abandon many of the existing U.S. climate initiatives may delay some movement at the federal level. Many analysts do not believe that a temporary shift in U.S. policy will derail decarbonization efforts, however. They believe that regulation is inevitable, given the scope and impact of the problem, and that if such regulation is delayed, it will constitute a greater shock when it is ultimately passed. They argue that companies would create a strategic advantage by adjusting their business models now. Indeed, many leading global asset managers are now advocating for greater climate change risk management and disclosure, and many large institutional investors are convinced that companies and governments must take urgent action to address climate risks; they are paying ever closer attention to how their portfolio companies are strategically situated to handle climate-related risks and opportunities. Chevron and some of its peers have come out in support of the Paris agreement, raising the prospect that President Trump may be under pressure to rethink his position.

Some of Chevron's peers are moving ahead on the two-degree scenario now. A number of energy companies including **Shell, BP, Statoil, BHP Billiton** and **Total**, have endorsed requests for stress-testing portfolios for resilience to a two-degree scenario. In addition, ten oil and gas companies support achieving the two-degree target as part of the Oil and Gas Climate Initiative. **ConocoPhillips**, Statoil, Total, Shell and BHP Billiton have conducted two-degree scenario analysis, with Conoco's action prompting the withdrawal of a shareholder resolution on the subject last year.

Chevron published a climate risk report in 2017 in response to last year's shareholder resolution on the subject, in which it provides some discussion of carbon-constrained scenarios. While it offers more disclosure than the company has provided before, it is not the sort of robust analysis of the potential business, strategic and financial implications of climate risks that the proponent seeks. The report does not describe how two-degree scenario analysis is integrated into the company's decision-making or strategic planning because Chevron does not believe said scenario is likely. The report offers limited discussion of market and technological risks to the company's business model, and supplies no indication of current or projected low-carbon investments. The report furnishes some information about Chevron's assessment of climate-related physical risks, but does not disclose how it determines their materiality or plans to manage these risks in the future.

Chevron does not perceive the two-degree scenario to be likely, and neither plans for it nor makes projections around it. Investors will want to weigh how likely they find timely multilateral action on this point to be. Further, however, they will want to assess whether regulatory requirements should be the

only catalyst for action on Chevron's part. Given the scientific consensus, major consequences are coming. Shareholders will need to decide whether they seek independent accountability from the world's heaviest emitters, irrespective of whether governments do so in time.

This is intimately linked with increased expenditures on high-cost projects with non-concomitant returns on investment. While it is impossible to attribute corporate balance sheet evolution to any single factor, Chevron certainly has exhibited these characteristics over the past decade, as have many of its peers, although Chevron is in a stronger position than most of its oil and gas rivals in this regard. Investors will need to evaluate whether they believe that a strategy that includes aggressive greenhouse gas emissions reduction targets, as well as forecasting significant reductions in legally permitted emissions, will help to address the company's climate change risks. Further, these investors will want to consider whether they agree that scaling back on high-cost, low-return capex, as Chevron is now doing, is a good and adequate strategy for the company, or if they agree that future energy demand warrants ongoing investment in the company's energy development activities, or a transition to an entirely new business model.

Tying all of these themes together, shareholders will need to consider whether the appointment of an environmental expert to Chevron's board of directors would help the company to make sounder decisions on these points and more. Only one board member has a background in science, and as a chemical engineer, her background also does not amount to environmental expertise, except perhaps as concerns some hydraulic fracturing risks.

### ***Voting Considerations***

#### **Item 7: Report on climate change strategy**

**Votes in favor**—Those investors who believe that climate change impacts may restrict Chevron's ability to exploit its fossil fuel reserves are likely to support this proposal. They are likely to share the proponent's concern that regulators may soon place restrictions on greenhouse gases, in line with a two-degree scenario, and that the company's business would be in jeopardy in that case. Shareholders who believe that Chevron may find some of its assets stranded before the end of their useful life are also likely to support this proposal.

**Votes against**—Investors who believe that Chevron has already provided sufficient information on its climate change risk exposure and mitigation strategies will vote against the proposal. They are likely to share the company's view that the two-degree scenario is unlikely, and that fossil fuels will continue to be an important part of our energy mix at least through 2040. These investors may be satisfied that Chevron's recently published climate risk report satisfies shareholders' need for information on the company's strategic planning.

#### **Item 8: Report on climate change**

**Votes in favor**—Those investors who believe that climate change risks and the evolving regulatory response expose Chevron to asset stranding, and who share the proponent's view that the company is not adequately accounting for those risks, may vote for the proposal. These investors will also view the company's high capex projects coupled with recent flat returns as a poor use of capital, and are likely to view the company's draw-down on capital spending as an insufficient response to the challenges at hand.

**Votes against**—Investors who share the company's view that it must continue investing in energy resource development in order to meet future demand are likely to reject this proposal. These investors are also likely to believe that fossil fuels will continue to be an important part of our energy mix, and that Chevron has taken adequate account of the risks it faces from climate change.

**Item 10: Nominate environmental expert to board**

**Voting in favor**—Shareholders who believe a dedicated environmental expert on Chevron’s board would help the company better manage the many environmental issues confronting it will likely vote for this proposal. These shareholders are likely not to perceive the environmental credentials of Chevron’s existing board members as adequate.

**Voting against**—Shareholders who feel that adequate environmental expertise already exists on the board are likely to vote against this proposal. They will likely share management’s view that even if board members do not have in-depth expertise on a particular environmental issue, the board can request assistance from management or outside experts. Those who agree that Chevron’s policies and environmental management system offer enough evidence that its board and management are adequately overseeing the company’s environmental practices are also likely to vote against this proposal.

**Resources**

- Chevron’s 2016 Form 10-K  
<https://www.sec.gov/Archives/edgar/data/93410/000009341017000013/cvx-123116x10kdoc.htm>
- Chevron’s 2017 Proxy Statement  
[https://www.sec.gov/Archives/edgar/data/93410/000119312517119801/d304635ddef14a.htm#xtoc304635\\_65](https://www.sec.gov/Archives/edgar/data/93410/000119312517119801/d304635ddef14a.htm#xtoc304635_65)
- *Managing Climate Risks: A Perspective for Investors*  
<https://www.chevron.com/-/media/chevron/shared/documents/climate-risk-perspective.pdf>
- *Chevron’s 2015 Corporate Responsibility Report*  
<https://www.chevron.com/-/media/chevron/shared/documents/2015-corporate-responsibility-report.pdf>
- Chevron’s 2016 CDP Response  
<https://www.cdp.net/sites/2016/91/3191/Climate%20Change%202016/Pages/Disclosure-View.aspx>
- *Full Disclosure: Why Chevron Needs to Stress-Test the Business at Two-Degrees*  
[http://www.carbontracker.org/wp-content/uploads/2016/03/CTI\\_Chevron\\_Full\\_Disclosure\\_090316.pdf](http://www.carbontracker.org/wp-content/uploads/2016/03/CTI_Chevron_Full_Disclosure_090316.pdf)