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Irbaris Reflects on Unburnable Carbon, the Impact of Climate Change on Shareholder Value, and the Challenges of Scenario Planning for 2020-30

Irbaris is a leading international advisory firm specializing in climate change mitigation, adaptation and broader sustainability issues. The firm's clients are mostly large multinationals in the oil and gas, electric power, heavy manufacturing and other sectors, but the firm has also worked with CDP (formerly Carbon Disclosure Project), World Wildlife Fund, Ceres, the European Space Agency, and the UK's Department of Environmental, Food and Rural Affairs.

Principal William Lynn discussed a wide range of climate change mitigation and adaptation issues and trends with CCBJ.

CCBJ: The phrase “unburnable carbon” became famous in 2013 when the International Energy Agency reported that fossil resource companies must leave most of the proven reserves of coal, gas and oil in the ground in order to begin stabilizing the atmosphere by 2050. What structural change and policies will be required to forego use of these resources?

Lynn: Without offering consumers credible alternatives that can be rapidly adopted at scale, fossil fuels will continue to be extracted and burnt, no matter what the “carbon budget” is. In our view, too much emphasis in the debate on unburnable carbon is being placed on the supply side. Focusing on demand has the potential to be much more constructive.

In the electricity sector, some of the structural changes that are needed are beginning to happen. Solar and wind are rapidly making up ground and becoming

cost competitive, and there is lots of innovation when it comes to demand management.

Changes in the electricity sector, however, only really affect demand for coal and gas; alternatives to oil for transport are a different challenge. Structural changes in the transport sector are much harder to identify. For example, although EV/PHEV sales are growing fast, they remain a very small percentage of new vehicle sales.

In terms of policy, this is such a vast issue that it is impossible to summarize the many interventions needed to solve the problem. Again, policies that affect demand, as opposed to supply, could have significant impact.

That means making changes to public transport and urban planning policies, enhancing air quality standards and even ensuring that IT and communications

technologies are developed to support greater connectivity and better energy management. That said, increasing the share of global subsidies to clean technologies relative to fossil fuels is essential to solving the problem. The IEA has repeatedly pointed out that fossil fuel subsidies dwarf those directed to renewables, and at the international level much more pressure should be put on governments to be transparent about this imbalance and to start to redress it.

CCBJ: HBSC estimated that oil and gas majors could lose 40% to 60% of their market value under an “unburnable carbon” scenario. What are the key issues for senior managers and shareholders to consider as they weigh the implications of “unburnable carbon”?

Lynn: Many aspects of “unburnable carbon” are issues the fossil fuel industry has been dealing with for some time now, so in many ways it represents nothing new. What is new, is the pressure that is being exerted by investors as well as activist groups such as 350.org.

Companies have been forced to be much more transparent about the assumptions that they use to justify their capital expenditure and investment plans, and while this is undoubtedly a good thing, it creates an interesting challenge for senior managers. If the carbon budget continues to be used up at the current rate, many of these assumptions will simply not be defensible in three to five years time.

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We therefore think it is important for senior managers to avoid simply thinking about answering the immediate concerns of investors, but to consider how they would answer the same questions in three to five years, especially given the investment decisions they are making today. Some companies are undoubtedly making decisions that will mean they are more vulnerable in future, and this should be a major concern.

The very recent decline in oil prices shows the rapid impact that change in demand has on prices and it is not clear how this will affect the long term supply/demand balance—renewables will be disadvantaged if competing against services linked to the oil price, but long term many oil & gas development projects will simply not happen at current prices.

For shareholders, the issues are equally complex. Firstly true alternatives to fossil fuel investment in terms of scale, yield and diversity are currently limited; divestment away from high-carbon fossil fuel assets requires credible and viable alternatives.

Secondly, the pace of change is key to how individual shareholdings will be affected; shareholders need to assess whether a transition away from fossil fuels is likely to be abrupt or gradual and be prepared to take action appropriately.

Thirdly, a structural move away from fossil fuels will have much wider ramifications for investors than simply depressing the value of fossil fuel equities, and so investors should be prepared to think more widely than simply looking at equity holdings. For example, Russia's current challenges show how quickly fossil fuel prices can have an impact on whole economies. Many other national economies will also be exposed in the event of a sustained drop in demand, and this will affect investment portfolios significantly.

CCBJ: We are based in California, where 120-mile roundtrip commutes are common. Yet, the state is aggressively ratcheting up fuel efficiency requirements and will start pricing transport carbon emissions next year. Similar policies are growing stronger in Europe and elsewhere. What are the implications for oil and gas companies' long-term investment and asset management strategies?

Lynn: The first thing to note is that in "developed" markets, particularly the EU and the US, many oil companies are already assuming that liquid fuel demand has stagnated and will begin to decline. So in some ways, these emerging regulations do not create new challenges, they simply exacerbate existing ones.

The exception to this in the United States is the diesel market, where the growth in road freight is expected to support demand for diesel for the foreseeable future. That is why the Obama administration's fuel efficiency standards for trucks are so important. These standards could begin to have an impact on demand in the short term—the truck fleet turns over more quickly than the car fleet. Air pollution standards, especially in urban areas, could further accelerate this trend.

In "developing" markets, oil & gas companies generally expect robust growth, and without a mass adoption of alternative fuel vehicles and renewable energy, this growth will more than offset any demand destruction in the US and the EU.

When thinking about efficiency and other product/end use standards, however, it's important to consider how they could begin to affect global demand, even without universal adoption. For example, European tailpipe emissions standards for cars will affect other markets because European manufacturers now sell those very same models in many different parts of the world. The same is true for efficiency standards for consumer electrical goods—standards in one part of the

world (e.g., South Korea) affect demand everywhere, in a way that wasn't true in previous decades.

When it comes to long-term planning and capital investment decision-making, we see a real risk for "group think" in demand projections and future scenarios. There is much more uncertainty than many companies are willing to admit, and we have been helping our clients to develop and explore much more radical future scenarios.

Too many energy forecasts are predicated on continued, robust growth in demand for fossil fuels. While at a global level this is likely to be true, change can happen very quickly in some market segments (e.g., shale gas), and there is greater uncertainty in the 2020–2030 period than most companies currently plan for. The policy changes you mention are adding to that uncertainty; many future energy forecasts, such as from the IEA, only consider a future in which current policies continue; they don't explore what could happen if, for example, emerging policies like the Californian Low Carbon Fuel Standard (LCFS) were to proliferate internationally.

CCBJ: Public infrastructure agencies were the first to start planning for climate change adaptation. Today it increasingly involves the private sector, especially those industries with weather- and water-sensitive operations and far-flung supply chains. What are some of the key climate resilience and adaptation actions being taken by large corporations?

Lynn: Much of the existing work to prepare companies for a changing climate has focused on increasing the resilience of their existing assets. This is a good place to start, and some companies have already undertaken some detailed engineering studies and made changes to the design of their facilities.

What most companies are beginning to realize, however, is that simply building more resilient facilities is not enough

to protect business value. Successful adaptation requires building a resilient value chain and that means ensuring that infrastructure, workforces, suppliers and even customers are adequately prepared for a changing climate.

We have been working with our clients to help them assess the wider resilience of their business and understand how to improve it. But this is a complex task, and an area in which much work and thinking needs to be done. Irbaris has been and very much intends to remain at the forefront of this thinking and we hope to create new tools and approaches for our clients in the coming few years.

There is one other critically important point on adaptation and which, for oil and gas companies, links back to unburnable carbon. Many oil & gas companies have argued—persuasively—that the political will to enact a carbon budget does not currently exist, and the risk from unburnable carbon is therefore minimal. The paradox is that the same companies are not modifying their planning assumptions to account for the logical conclusion of that: global adaptation to a temperature rise of 4–6C, and all of the economic disruption that that implies.

More companies—and governments for that matter—need to realize that there is no such thing as "business as usual"; we either face the cost of mitigation or the cost of adaptation. Companies that assume otherwise are making ill-informed decisions.

CCBJ: You did groundbreaking work in 2011 with Ceres and the World Business Council for Sustainable Development on a tool and methodology for investors to evaluate corporations' water management activities. Can you provide examples?

Lynn: The Ceres Aqua Gauge is a framework that lays out, in a very intuitive way, all of the elements of a comprehensive approach to managing water risk. It identifies 28 activities, and for each it

provides users with a definition of best practice. Companies can use it to identify gaps in their current approach and ways in which those gaps can be filled. For investors, it provides an excellent basis on which to engage companies in a conversation on how they are managing water risk.

To date, a wide range of companies have used the tool and we find that very encouraging. At Irbaris, we have worked with companies in the food, beverage, power, oil & gas and automotive sectors, and all of our clients have emerged with a better understanding of what they are doing well and what they need to do better.

In the past year, one of the biggest challenges we have been working with our clients on is how they value water. This is a very complex issue and there is no single approach; each company needs to take stock of how it interacts with water and select the valuation approach(es) that work best for their situation.

For investors, the Aqua Gauge can be used to benchmark companies but we made a very deliberate effort not to turn it in to a way to "score" companies. Some large asset owners, such as CalPERS, are using the tool to engage companies on their water risk management approaches, and many of the elements of the Aqua Gauge are being integrated into how CDP will score responses to its questionnaire on water. Again, these developments are very encouraging and Ceres is continuing to work hard to ensure that the number of investors asking questions increases. ✨

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