The Promise of Our New Energy Future

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Introduction

Takk for at dere har bedt meg hjem. Hjem til å holde tale til dere om olje, investering og vår framtid. Mine oldeforeldre kom fra Kristiansand, Trondheim, og Haugianere fra Østfold. Min bestefar emigrerte i 1915 fra Tysvær. Forrige helg, bodde jeg i Tysvær med min Kvammen familie og jeg bor med slektninger her i Stavanger i kveld. Jeg vokste opp med historier fra bestefar om hans barndom og ungdomstid i Norge og besluttningen hans, som en ung kar, til å utvandre og satse på en fremtid i Amerika. Han ble nesten et hundre år og gav sin forkjærlighet for Norge til meg. Han ville ha vært veldig glad for å vite at jeg er her sammen med dere i dag, som et barnebarn av en bakerlærling i Haugesund, for å snakke til et så ærverdig publikum. Vi kaller det den norske amerikanske drømmen.

Jeg er sikker på at deres engelsk er bedre enn norsken min, så jeg håper at det er greit om jeg fortsetter på engelsk nå.

I am grateful to the Bellona Foundation for inviting me to share my perspective on the promise of our new energy future. I admire the leadership of Frederic Hauge and his colleagues, from their courageous identification of environmental risks in Arctic Russia to their pioneering vision on carbon capture and sequestration and their push to pursue carbon negative energy. Frederic has been effective at getting our attention and then keeping it. He defines the word "proactive."

It is, of course, no coincidence that a strategic conference exploring the intersection between technology, investment and the environment convenes in Norway. Indeed, the Norwegian people's traditional affection for the fjell, fjord, and hytte provides a deep and strong foundation for a modern, robust quest for sustainability. And the unique history of both Arctic and oil explorations – Roald Amundsen and Statoil Hydro – married to a modern, well-financed, diversified economy, complete with a carbon tax since 1991, gives Norway a comprehensive and unique understanding of energy and the environment. No wonder that through its 30-year history, this ONS conference has become the premier international event in the world of oil and gas.

Armed with this rich history of innovation and leadership, we gather today to discuss the latest strategies for investing in the future of energy; for finding innovative ways for the gas and oil industry to embrace the clean energy opportunity; and for realizing the extraordinary potential that a green economy and new energy future presents for business and for Norway.

Bringing the Best of the Past to the Future

The climate problems and resulting constraints in the energy industry that we have heard today and that we will hear about throughout the ONS conference create challenges for Norway, the United States and all countries. Yet, I chose the word promise for the title of my remarks, because I expect enormous prosperity and success to result from these challenges. Our new energy future is promising. And, in part, it is promising because of past achievements enabled by oil and gas.

The arrival of energy through fossil fuels created a period of enormous innovation and progress. This progressive era brought people and cultures closer together, literally, by train, cargo ship, car, and plane. In some parts of the world, it also created a middle class, producing timesaving inventions and raising living standards to previously unimagined heights.

However, we now understand this progress has come with costs: Costs to our environment, costs to our individual well-being and costs to our future – because of the release of carbon dioxide into the atmosphere.

In his speech this May at the International Convention on Biological Diversity in Bonn, Yvo de Boer, the executive secretary of the United Nation's Framework Convention on Climate Change, outlined the two dramatically divergent roads now before us, citing two recent international analyses that present polar opposite outcomes. The IPCC concludes that we must *decrease* carbon emissions by 55-85 percent by 2050 in order to stabilize the earth's atmosphere. At the same time, however, the Internal Energy Agency forecasts a $20 trillion dollar investment in fossil fuels over the next 20 years, which would result in a 50 per cent *increase* in carbon emission.

So, which path is better for humanity and which path is better for investors? The very same path is the best path for both.

One path will lead us to great new investment in new clean energy and clean technologies, the other path to significant new investment in fossil fuels. In my opinion, one path looks forward and leads us to an exceptional return; the other looks back and leads to unacceptable risks.

When viewed from this perspective, there really is no choice. We must take the road that leads to opportunity and the new energy future. By doing so, we have the potential to not only slow climate change and protect our environment, but to propel the world economy and markets forward.

We are only just beginning to realize this potential: Renewable energy and energy-efficiency industries together generated almost $1 trillion in revenues in the United States alone in 2006 and employed 8.5 million workers.[1] And, according to New Energy Finance, new global investment in clean energy in 2007 was up 60 percent over 2006 – to more than $148 billion.[2]

The new energy transformation presents extraordinary opportunities and rewards. The pioneering countries, industries, companies, and individuals driving this transformation will be both the innovators and leaders of our time, as well as the protectors of our future.

[1] Management Information Services
[2] New Energy Finance press release, February 28, 2008.

And that future is fast approaching. As history has shown, small changes are gradual but big changes are not. Big changes are sudden and sweeping, transforming everything in their path. They create a clear break between what came before and what came after.

The Gutenberg printing press leads to the Reformation and irrevocably transforms the structure of power in Europe in just a few years. The Berlin Wall falls and the divide of Europe between East and West ends virtually overnight. The Internet and the cell phone arrive and quickly become ubiquitous – irrevocably changing societies, business, and lifestyle.

And now we are on the precipice of another life-changing, world-changing transformation. There is no going back and we will go forward at a pace unfathomable just a few years ago.

The Opportunity for Significant, Enduring Progress

Our vision is clear and bold: to rapidly and dramatically reduce greenhouse gas emissions, while developing safe, vibrant new energy sources. Leaders around the world are formulating strategies and setting targets. We hear of new scientific and research breakthroughs every day.

Yet, as a business and investment expert, I believe that even more can be done to support the science and to speed our progress.

As we heard earlier today, the Bellona Scenario proposes a range of scientific solutions to significantly lower emissions. There is no one single answer. The power lies in the combination of new energies, technologies, and efficiencies.

Now we focus on acceleration so that our actions are sufficiently rapid to prevent climate change. There are four accelerators that can get the job done: a new energy mindset by businesses, a price on carbon by government, a more accurate way of analyzing risk by investors and proactive leadership in all sectors.

Accelerator #1: Business incorporates a "new energy mindset" into the very DNA of their organizations, intensifying their efforts to drive energy efficiencies and to retool their business practices.

In recent years, the business sector has made great strides in introducing innovative, new products and processes that drive energy efficiency. Examples include: more efficient industrial and residential lighting, utilities that develop systems to use energy grids more effectively and new tools for consumers that can monitor and lower the energy draw from household appliances.

However, there are many more opportunities to be realized. According to recent research from the global strategic consulting firm McKinsey, if the world invested $170 billion a year for 13 years in capturing opportunities to increase energy productivity, projected energy demand growth **could be cut by at least half, while energy savings could rise to $900 billon annually.**[3] These opportunities, McKinsey notes, would utilize "existing technologies that pay for themselves, thereby freeing up capital for investment or consumption elsewhere."

[3] McKinsey & Co. "The Case for Investing in Energy Productivity," February 2008

In addition, business and government would avoid investment in energy infrastructure otherwise needed to meet growing demand. According to the IEA, on average, an additional one dollar spent on more efficient electrical equipment, appliances, and buildings avoids more than two dollars in investment in electricity supply.[4]

This research is important because it shows that new energy efficiencies are good for the environment and good for business. As McKinsey reports, since the early 1990's, DuPont and Dow Chemical have achieved energy savings of $2 billion and $4 billion respectively[5]. Just as companies utilize process reengineering and restructuring to drive down costs, they increasingly look to energy efficiency as a tool to strengthen their bottom line.

Companies also realize compelling new business opportunities through retooling their products and processes around clean energy. In addition to providing existing industries with the chance to realize huge savings in efficiencies, new energy also creates significant new revenue streams. An example is Toyota's extraordinary success with hybrid cars. To date, the company has sold more than one million hybrids globally, including more than 800,000 of its Prius models.

Retooling is the greatest of all opportunities because the greatest economic growth occurs through the transformation or transition of an economy, not simply through the extension or expansion of its current industries and products. Companies that capitalize on clean energy will achieve out-sized rewards and gain first-mover advantage. Those who lag behind risk ceding their position in the marketplace to their more innovative peers and to new entrants.

Of course, the oil and gas sector faces perhaps the most profound challenges and the greatest ultimate opportunity in adapting to the new energy economy. These companies can learn from the examples of so many past businesses that faltered as they dedicated their resources and capital to defending their historic products – rather than transferring their core extendable assets to new arenas. Oil and gas companies can choose, instead, to invest and become true energy companies with value chains across the new energy economy. Doing this requires them to excel in three areas: proactive leadership, segregated resources – both human and financial, and a skill at collaborative partnerships.

The second way to accelerate the transition to new energy: governments can take definitive action to "set a price" on carbon.

In any new market, risk – when approached responsibly and rigorously – can be a powerful catalyst for progress and growth. The new energy market is no exception.

Investors see profound potential in complex, multi-faceted, and fast-changing environments. However, effective risk-taking is predicated on a comprehensive, accurate analysis of the risks at hand. This process works best when risk factors are adequately priced, especially when external risk factors are well incorporated into the pricing.

To speed the transformation to clean energy, policymakers can send more consistent signals on prices through available policy options, such as Norway's adoption of a carbon tax in 1993. Many companies, state governments, and NGOs in the United States are already calling on the new Congress and President to pass price-setting legislation. Governments can also send price

[4] Ibid
[5] Ibid

signals by initiating investments in renewable energy through energy use standards and subsidies to speed implementation.

In addition, the international community, through member states, can foster a more comprehensive future view of energy. As Mohamed ElBaradei, director-general of the International Atomic Energy Agency, wrote in the Financial Times last month, a global energy organization "could provide authoritative assessments of global energy demand and supply…"

Accelerator #3: A more accurate definition and assessment of risk leading to out-sized returns.

Investments by individuals, companies, and pension funds move more resources more quickly than the actions of government. As such, investment strategy is an enormous accelerator.

Investment strategy is rooted in the accurate assessment and pricing of financial risk. The world financial sector has been appropriately criticized for its risk assessment and pricing practices. The roots of this problem are two-fold. First, investors often underestimate risks within established sectors by extrapolating prior results and assumptions. This bias toward the status quo can lead to understating risk in traditional sectors and overstating risk in new sectors. Second, the investment community can often act like a "herd," rushing en masse to an area where one firm has found profitability without fully understanding whether the underlying conditions for profitability can be replicated. This can lead to compromised returns or worse to staggering losses.

Take the sub-prime mortgage failure, which is an example of both of these shortcomings. In a well-established market, housing risk was not accurately assessed or priced. Investors kept returning to the same market, over and over again, without considering the true deterioration as the quality of investments deteriorated sharply.

The same problems apply to the continued exploitation of sub-par fossil fuels, such as oil sands, which create up to eight times as many CO2 emissions as conventional oil production[6]. Development of this unconventional oil source is causing so many concerns in Alberta, Canada, that even an original champion of the cause, Former Alberta Premier Peter Lougheed, a conservative, has called for a moratorium.

As the oil sands example shows, just because something – in this case, fossil fuel – has been a good investment historically doesn't mean it is always so. Accurate risk assessment requires investors to always take a fresh look.

Rather than pursue these "old energy" opportunities, investors have more to gain by exploring new energy frontiers, such as wind and solar power, carbon capture and storage, and, in the future, carbon negative products and services. Emerging industries like these are already attracting strong interest – and money – from the very best venture capital firms in the business, such as California-based Khosla Ventures, and institutional and individual investor interest is exploding.

Investors outside of the new energy space will also benefit financially by paying close attention to the changing environmental paradigm and its potential effect on world markets and economies. Many long-term investors, and the financial institutions they rely on, do not fully integrate global environmental changes into their risk assessment. Well-protected investors will strive to see the

[6] World Wildlife Fund and Co-operative Financial Services report July 2008

whole picture thereby protecting themselves against rapid shifts and gaining from promising markets.

To gain, successful investors practice rigorous risk-assessment and due diligence. What makes a good business, one that generates significant returns for investors? Three elements stand out: a unique or special capability – something the business can do that others can't do at all or do as well; the ability to realize a significant unmet need or fulfill a great aspiration; and the management talent to lead the business to its full potential. In other words, advantage and adaptability reign.

Ecosystem changes and market changes are not linear and often occur gradually at first, then suddenly reach warp speed, after which it is too late to reap the benefits of earlier opportunities.

Accelerator #4: Proactive leadership in all sectors.

At this unprecedented time in world history, facing an unprecedented challenge, proactive leadership of our important institutions is a vital accelerator. Based on my experience in business and government, the leaders of this transformation will have three key abilities:

- The ability to define and communicate a vision of our desired future and create workable paths to achieve it;
- The ability to anticipate change, project its broader implications, and proactively adapt institutional structures, practices and services, and;
- The ability to assess and take risks, as well as achieve consensus, in complex, multi-faceted environments characterized by significant governmental involvement, scientific processes, private sector service delivery and NGO engagement and advocacy.

The very best leaders will do this with style combining an ease and enjoyment in understanding and working with people from all ways of life with broad thinking that draws on the lessons of history, the wisdom of literature, and voice of nature.

I have focused my career on building socially important companies so that they are large enough to make a difference. Over almost 20 years, I helped build a company that improved the health of older Americans and low-income families by working with the government and NGOs. I led this company from a handful of employees to nearly 20,000 employees and from $440 million to more than $30 billion dollars, or $150 billion Norwegian kroner, in annual revenue.

I left because I realized that unless we address climate change soon, nothing else will matter. As a business executive and a mother of three sons, I decided that I could use my experience and help the many socially and environmentally important companies and organizations that are needed to create the new energy future. And that will contribute to sustainable economic growth in the future. I want to be part of this. And I know that you do too.

The Special Role for Norway as a Financial Center

Now I want to speak to the Norwegians in the audience as your overseas cousin. You have a unique opportunity and a special responsibility in this challenging situation.

As an Arctic country with significant public oil-producing and financial capacity, and a robust private industry sector, ***this is a moment for Norway to think big and to act urgently. The opportunity to create new, more accurate, transparent, and profitable financial institutions***

offers a special role for Norway and for Oslo specifically, to be a leading world financial center.

To such a vision, Norway brings unique competencies: the transparency of the Norwegian financial and governmental processes, the unique understanding of both the fossil fuels and climate change, and the sheer size of Norwegian financial resources.

The fact that Norway is not a major financial center today is a significant advantage. You are not burdened by outdated business models or a status quo culture in your financial sector so you can more accurately assess and price risk. In fact in the business world, a new entity often does a better job at responding to wholly new opportunities than an established one.

The transition to a green economy will certainly create reward for the new financial center or centers that emerge. One or more financial centers will emerge in the way that London, New York and Silicon Valley did in response to major social and economic transitions of the past.

So why shouldn't Oslo become a new world financial center around the new energy economy? Although it would be a challenge to create the necessary capabilities, building the sustainable world financial center in Oslo is certainly no more difficult than building your own energy sector, a task at which you have already excelled. In fact, given your current assets in public and private finance, you have more indigenous capacity to create a financial center than you had when you began your energy sector.

And you are in many ways you are already part way there in financial leadership. Norway's sovereign wealth fund is the global standard. France talked about following the Norwegian example and "the pension fund" owns nearly one-half percent of all the equities in the world.

In international leadership, you already 'punch above your weight.' The world looks to Norway over and over again for leadership in the toughest of international challenges: the formation of the UN, peace in the Middle East, peacekeeping, and refuge protection and in UNESCO. From Trygve Lie to Gro Harlem Brundtland to Jan Egeland to Einar Steensnæs, you provide the leaders. Your size as a country is no impediment to global leadership; on the contrary, it can enable the consistency and transparency in standards that lead to more accurate and more profitable economic activity.

We will need immense amounts of capital to make the transition to the new energy economy and Oslo could be the financial center that makes it happen: responding more accurately to the assessment and pricing of risk in a post-carbon world and facilitating the capital raising for the new companies and industries that are required to occur. Norway can enable the financial wherewithal to make the transition from a fossil fuel world to a better energy future. And in doing so, create a new export industry. This is what proactive leadership is about.
So this new energy future will require more of you -- and all of us. A global economy creates the platform for a global solution to achieve this safer, more responsible, more economically sound world. That solution requires proactive leaders to accelerate investments and progress.

Conclusion

Saturday, I visited my grandfather's home in Tysvœr and looked out at Hodnafjell, the mountain he climbed as a boy, and Grindafjord where he fished. Each time I see that house and that

mountain, I think of my ancestors who looked upon these same sights. And how I wish that for my own grandchildren.

My grandfather, left Tysvœr, a place he truly loved, for an unknown world full of adventure and hope. We too are on a journey of adventure and hope.

And we are privileged to be on this journey, leaving an exciting age, now proven to be unsustainable, to create a new age, ripe with economic growth through the deployment of existing energy and clean technology sources – and the invention of even stronger and more innovative ways to renew our industries and protect our environment. Let us rise now as leaders – of science and technology, of government, of business, of finance – and bring these opportunities to life.