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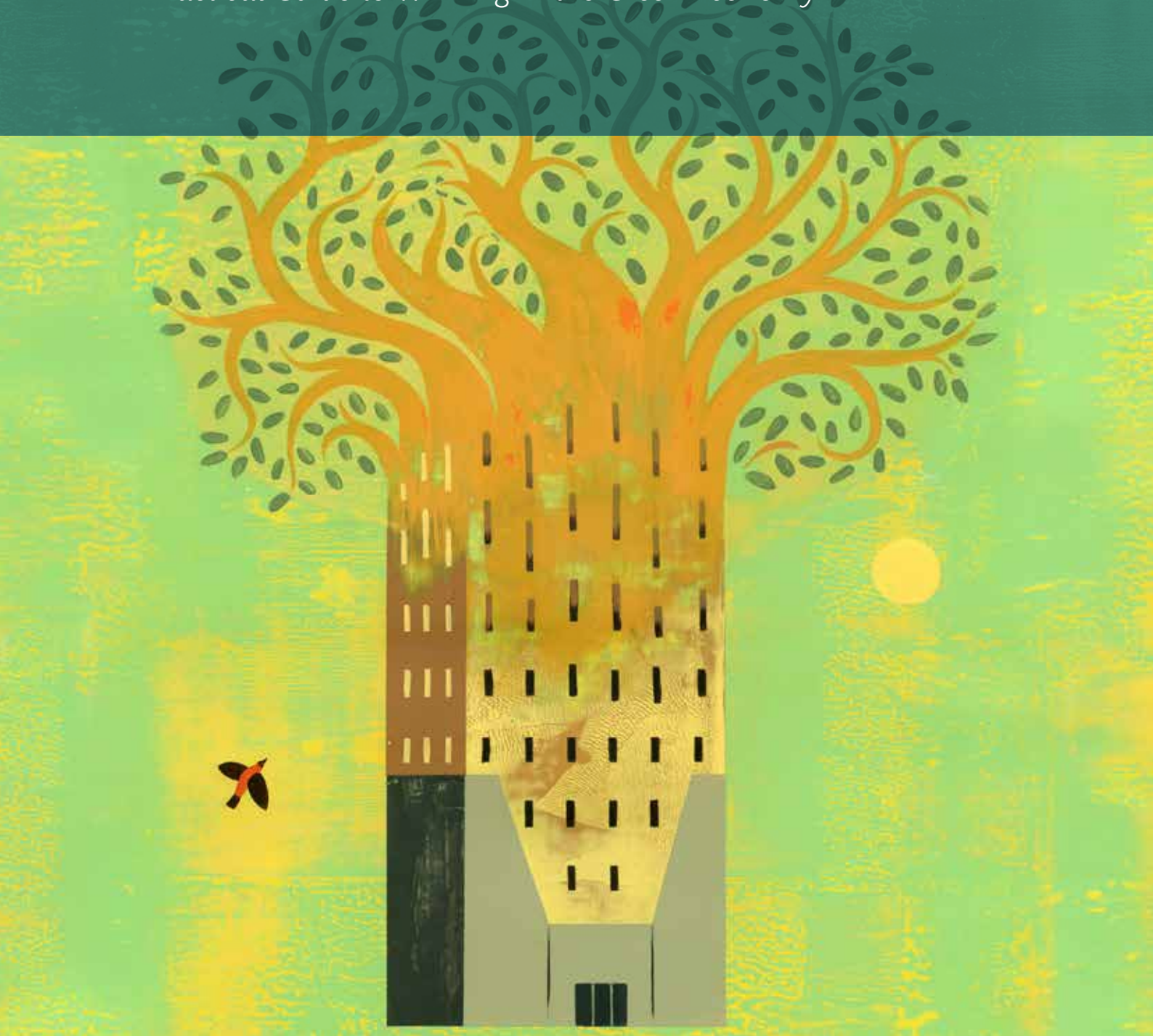
Green Leadership

A Practical Guide to Winning in the Green Economy



The Boston Consulting Group (BCG) is a global management consulting firm and the world's leading advisor on business strategy. We partner with clients from the private, public, and not-for-profit sectors in all regions to identify their highest-value opportunities, address their most critical challenges, and transform their enterprises. Our customized approach combines deep insight into the dynamics of companies and markets with close collaboration at all levels of the client organization. This ensures that our clients achieve sustainable competitive advantage, build more capable organizations, and secure lasting results. Founded in 1963, BCG is a private company with 85 offices in 48 countries. For more information, please visit bcg.com.

The Confederation of Norwegian Enterprise—Næringslivets Hovedorganisasjon (NHO)—is Norway's major organization for employers and its leading business lobby. Its current membership consists of nearly 25,000 companies accounting for about 800,000 employees, ranging from small family-owned businesses to multinational companies, across most sectors. The NHO is the leading voice of business and industry in Norway. Having expert knowledge and an extensive business network, the NHO plays an important and constructive role in Norwegian society. The organization's main objective is to create and sustain conditions that secure the competitiveness and profitability of business and industry, and thereby maintain the basis for a good standard of living, sound economic growth, and sustainable development.

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A Practical Guide to Winning in the Green Economy

Øyvind Torpp and Knut Olav Rød

January 2017

AT A GLANCE

Environmental sustainability is no longer just about "doing good." Resource scarcity and technological development are making sustainability critical to competitiveness across industries—a business opportunity for the CEO's agenda.

The Road to Sustainable Profit

Companies are shifting their approach to sustainability from avoiding negative consequences to building competitive advantage through *green efficiency* (increased resource efficiency) or *green growth* (innovation in products or services).

In Norway, Recognized Opportunities but Limited Results

While about two-thirds of business leaders recognize opportunities for green value creation, there are few true growth stories—only 30% have increased profits. There is an untapped opportunity for investing in innovation and creating new jobs.

A Business Leader's Guide to Green Value Creation

Based on 43 CEO interviews and a survey of 800 business leaders, we gathered leading examples of how Norwegian companies' green initiatives create value. Our guide provides leaders with concrete advice for thriving in the new business environment.

While the "green shift" has been on Norwegian business leaders' agendas for several years, we are now starting to see real impact: companies are realizing substantial benefits and building competitive advantage from their green initiatives. Environmental sustainability is no longer just about "doing good;" it is a business opportunity that leaders need to address.

To help Norwegian businesses seize this opportunity, The Boston Consulting Group, in partnership with the Confederation of Norwegian Enterprise (NHO), has interviewed 43 CEOs and surveyed 800 business leaders in Norway, and drawn on its global business expertise, in order to distill concrete advice on how to increase profitability and grow business by "going green."

The Green Opportunity

The worldwide depletion of natural resources—such as food, water, and fuel—combined with stronger regulation and increased consumer focus on sustainability is changing the business environment across industries.

A 2015 Nielsen survey of 30,000 consumers worldwide showed that 66% were willing to pay extra for products and services from companies committed to positive social and environmental impact—up from 50% in 2013. In 2014, a comparable Nielsen survey showed that 67% would prefer to work for a socially responsible company. In addition, the increased awareness of resource scarcity and climate change is likely to impact the regulatory landscape and increase the demand for low-carbon solutions. The international climate agreement signed at COP21 in Paris in late 2015 marks a turning point and will have broad implications for companies.

Environmental sustainability is a business opportunity that leaders need to address.

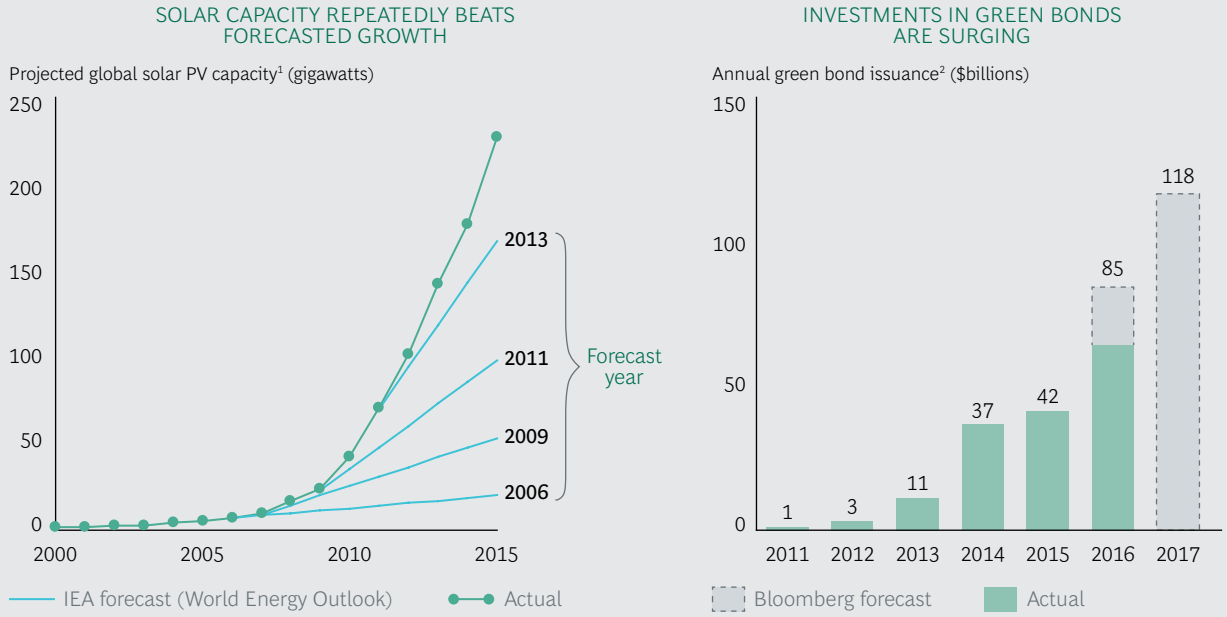
At the same time, technological innovations are enabling new—and greener—value creation, thereby opening up opportunities for companies. For one thing, an energy transition is underway; renewable power generation is becoming the cheapest way to produce electricity in many countries. According to Bloomberg, solar photovoltaic (PV) module costs have fallen 80% since 2008, and the UN Environment Programme estimates that there was twice the global investment in renewable over fossil-based power generation in 2015. The issuance of green bonds is also surging and expected to reach US$85 billion in 2016, Bloomberg reports. Falling battery costs will make electric transport competitive in a matter of years, and distributed power generation—for example, consumers selling excess power generated by their solar panels—is now challenging the traditional business model of utilities.

In addition, digitization works as an enabler of green value creation across all sectors of the economy. Within manufacturing, for example, the rise of new digital technologies, collectively known as Industry 4.0, is enabling companies to increase efficiency and to produce products in new and greener ways. Through the use of autonomous robots, sensors, and data analytics, production flows can be optimized—reducing resource use and waste as well as enabling the measurement of environmental impact.

These global trends are easy to underestimate. Too often, we mistakenly expect change to follow a linear, incremental path, while both renewable capacity and adoption of digital technologies have grown exponentially. When automobiles were introduced, they were discounted as a novelty—a point of view disproved in less than 15 years. The story is similar for telephones, computers, and the internet. In 2006, the International Energy Agency estimated that global solar capacity would be 20 gigawatts in 2015; in 2013, it increased its estimate to 167 gigawatts. Actual installed capacity exceeded 225 gigawatts in 2015, showing exponential growth over early estimates. (See Exhibit 1.)

It will be too late to respond to these changes when other businesses are redefining the market or regulation is tightened. Environmental sustainability has therefore become a core business issue and should be on the agendas of business leaders in all sectors. It is a source of efficiency improvements and innovation—and critical to remaining competitive in the green economy.

Exhibit 1 | The Green Economy Is Gaining Traction



Sources: IEA World Energy Outlook 2006-2013; Bloomberg; Climate Bonds Initiative; BCG analysis.
[1]Data on actual solar PV capacity comes from the IEA; 2006-2013 forecasts of 2015 solar PV capacity come from the IEA World Energy Outlook. In all instances, we present the central scenario (that is, the reference scenario for 2006 and 2009 and the new policies scenario for 2011 and 2013).
[2]Green bonds are debt instruments issued to finance projects and activities that address climate change mitigation and adaptation or promote environmental sustainability in other ways. Data on green bond issuance comes from Bloomberg and the Climate Bonds Initiative.

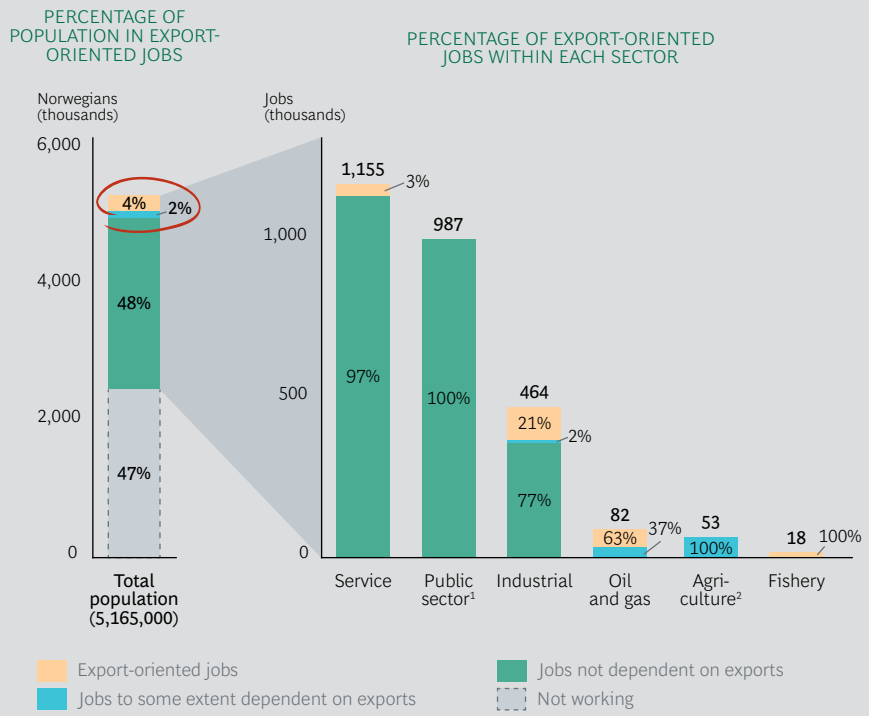
More broadly, for Norway, the transition to a green economy also represents an opportunity to create much needed "export-oriented" jobs and, at the same time, contribute to reducing global carbon emissions. We estimate that there is a potential for creating 75,000 new green jobs before 2025. (See the sidebar "Two Resolutions for the Price of One.")

TWO RESOLUTIONS FOR THE PRICE OF ONE

The green economy represents a major opportunity for Norway as it faces two serious challenges: increasing its number of export-oriented jobs and contributing to reduced global warming by minimizing its carbon emissions.

Just 4% to 6% of the Norwegian population is employed in export-oriented sectors—mainly in oil and gas. (See the exhibit below.) The oil and gas sector has been essential to Norway's high standard of living. In 2015, a job in extraction of oil and gas

Too Few Norwegians Work in Export-Oriented Sectors



Sources: Statistics Norway (SSB); Norway's *National Budget* 2015.
Note: "Export-oriented jobs" are defined as those in sectors in which more than 50% of production or value creation is exported (directly or indirectly). Jobs considered "to some extent dependent on exports" are those in sectors in which between 35% to 50% of production is exported. Jobs considered "not dependent on exports" are those in sectors in which less than 35% of production is exported. This categorization is based on table 6.1 in SSB's *Industries Exposed to International Competition* (2013). Employment data is from Norway's *National Budget* 2015. Because of rounding, not all percentages add up to 100.
[1]The analysis of the public sector includes private jobs in the health care sector.
[2]The analysis of the agriculture sector includes forestry.

We estimate that there is a potential for creating 75,000 new green jobs by 2025.

TWO RESOLUTIONS FOR THE PRICE OF ONE (continued)

contributed NOK 15.5 million, on average, to GDP, compared with NOK 1.3 million, on average, per job across the whole economy, according to Statistics Norway. The expected decline in value creation and jobs in this sector presents a major challenge for Norway.

Green technology and knowledge could play a part in increasing both Norway's exports and the number of export-oriented jobs. Looking at the construction industry for example, the CEO of Skanska Norway, Ståle Rød, told us, "We are already exporting green competence and knowledge, and there is a large opportunity for more Norwegian companies to do the same." Of the 800 business leaders in Norway that we surveyed, almost 50% noted that green value creation represents an international business opportunity for them.

BCG made a rough estimate of the potential for "green jobs" in Norway. This estimate is based on international studies of employment in the environmental goods and services sector, as well as jobs that focus on reducing companies' environmental impact in other sectors. It shows a potential for creating 75,000 new jobs before 2025, or about 3% of current Norwegian employment—demonstrating how this sector could play a vital role in Norway's future economy.[1]

Norway should be well positioned to build competitive advantage from environmentally friendly goods and services. We have access to clean hydroelectric power and a highly educated workforce. Our high cost of labor has made Norwegian companies dependent on efficient and technologically advanced production, with as little waste as possible. But capturing this opportunity requires investment, innovation, and focus. And BCG's research does not support the view that Norway is leading on this front. On the contrary, Norway needs to increase its investment in innovation and growth. The 2014 Global Cleantech Innovation Index, released by the Cleantech Group and the World Wildlife Fund, ranks Norway 25th in the world on Cleantech-specific innovation drivers and 14th in the overall index. Norway needs to make a step change in its efforts in this area.

In 2015, the Norwegian parliament set a target of reducing Norway's greenhouse gas emissions by 40% (from 1990 levels) by 2030. Since 1990, however, Norway's emissions have increased. By driving innovation and developing new green technologies that enable value creation with a smaller environmental footprint, businesses will play a key role in fulfilling Norway's emissions-reduction target.

NOTE
1. This estimate excludes indirect employment, and it is based on anticipated growth in current industries. We have not attempted to estimate the potential for "green jobs" in completely new sectors.

The Road to Sustainable Profit

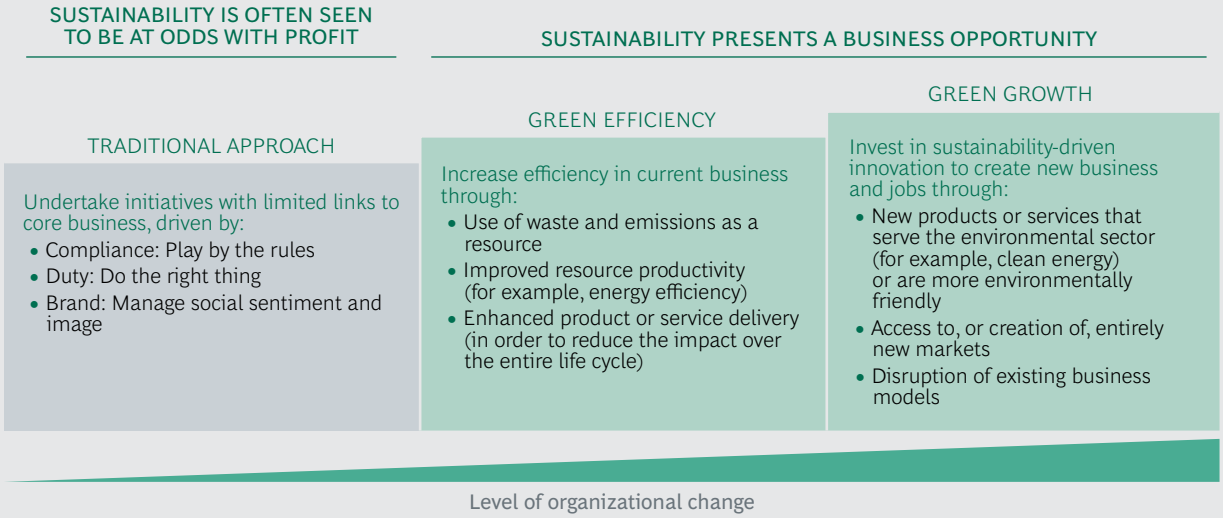
While the pursuit of environmental sustainability can be a source of competitive advantage, the result strongly depends on the approach businesses take to seizing the green opportunity. (See Exhibit 2.)

The *traditional approach* that businesses have taken has had limited potential to create competitive advantage—and limited impact. It has typically been driven by one of three motivations: compliance (narrowly focused on risk mitigation), duty (often generic initiatives in keeping with social norms but unrelated to the core business), and brand (focused primarily on marketing). Environmental sustainability has been perceived as either in opposition to profit making or, at best, simply a brand issue—both of which have led to missed opportunities for business and society.

In contrast, successful companies now see environmental sustainability as an integral part of their core business and realize competitive advantage from two main sources. The first source, *green efficiency,* builds on the belief that any emission is a form of waste. Companies increase efficiency in their use of resources, cut waste, and lower cost, while reducing their environmental footprint. The dairy producer TINE, for example, found a way to recycle waste in its dairy in Jæren—lowering both energy costs and emissions. Surplus heat from its production processes is used to heat a neighboring plant nursery, and the CO_2 produced is fed to the plants, promoting growth. In addition, TINE plans to reduce its transport emissions by 75% and increase its use of renewable energy in production to 85% by 2020.

The second source is *green growth,* which is using the pursuit of environmental sustainability to drive innovation in creating new products, expanding into new markets, or developing new business models. While efficiency improvements are important for both increased competitiveness and lower emissions, investment in innovation is material to creating new jobs and sustaining profit in the long term.

Exhibit 2 | Companies Follow Three Approaches to Environmental Sustainability



Source: BCG analysis.

Kongsberg Gruppen, an international, knowledge-based group delivering high technology systems and solutions, for example, sees opportunities for using its competencies in new green markets. The company utilizes its expertise in advanced sensors, robotics, and decision-support systems in innovating solutions for green shipping, operation of wind turbines, sustainable fisheries, digitization for optimizing sea routes, technology for climate research, and environmental monitoring.

To sum up, environmental sustainability, if done right, represents a major business opportunity. The questions are: Do leaders recognize this opportunity? And are they able to effectively address it?

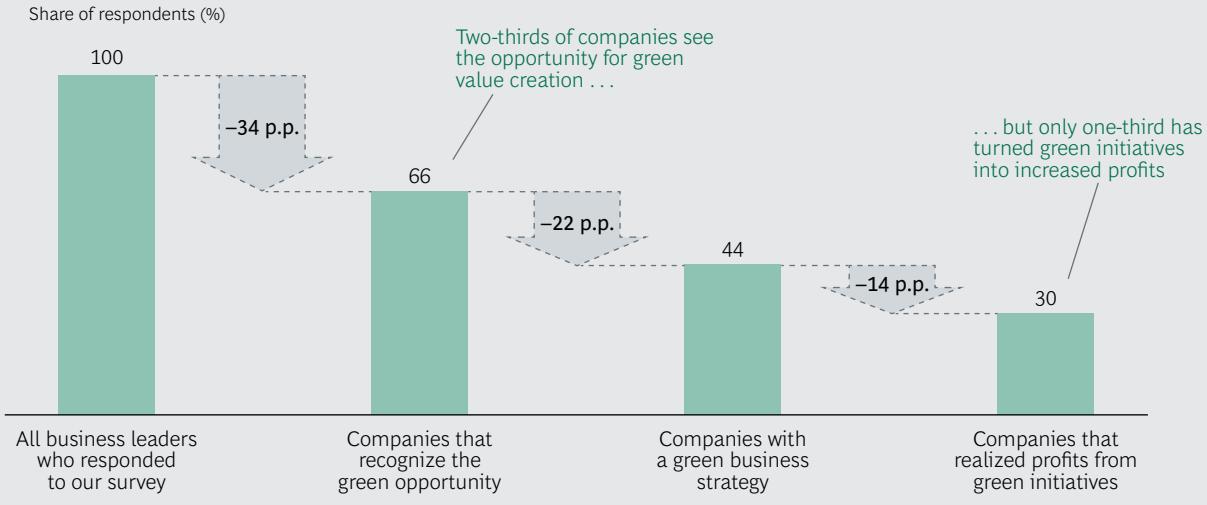
In Norway, Recognized Opportunities but Limited Results

To understand how Norwegian businesses approach green value creation, we surveyed 800 business leaders from large international companies and small and medium-sized enterprises in Norway, and we conducted in-depth interviews with 43 CEOs from many of Norway's most important companies.

In general, the benefit of close integration between business and sustainability is recognized, and many Norwegian companies have launched substantial initiatives. Fully 66% of the business leaders who responded to our survey perceive green value creation as an opportunity for their companies. (See Exhibit 3.) Despite solid efforts, however, far fewer companies (only 30%) have been able to turn their green initiatives into increased profits, illustrating the need for a robust approach to turning opportunities into results.

To date, Norwegian companies' approach to green value creation has been focused on green efficiency initiatives—for example, 61% of respondents reported reduced energy

EXHIBIT 3 | Green Opportunities Too Often End with Unrealized Financial Results



Source: BCG analysis.
Note: In 2016, BCG surveyed 800 business leaders in Norway from large international companies to small and medium-sized enterprises in order to understand how Norwegian businesses are approaching green value creation.

consumption. While such incremental improvements to current operations are very important and can yield significant results, there is untapped potential for green growth. Less than half of our survey respondents reported development of new products (44%), while even fewer increased profits (31%), changed business models (30%), or created new jobs (21%). Overall, we find that while many companies focus on improvement of their current business, few address the full potential for innovation in their green initiatives. In the future, green growth opportunities will be critical both for business leaders, in order to build their companies and remain competitive, and for Norway, in order to create new jobs while simultaneously reaching its emission-reduction goals.

While companies focus on efficiency, there is untapped potential for green growth.

Looking at the results of our survey, we also found that large companies (those with more than 500 employees) and export-oriented companies (in which more than half of production is exported) see more opportunities for green value creation (93% and 78%, respectively, versus 66% for all companies). Of course, large companies have access to more resources and thus greater ability to invest in these opportunities. Our survey found that small companies (those with fewer than 500 employees)—to a much greater extent than large companies—see lack of government support (45% versus 14%, respectively) and internal resources (39% versus 21%, respectively) as major barriers to green value creation.

A Business Leader's Guide to Green Value Creation

Drawing on our interviews, survey results, and BCG's extensive global work on strategy and change management, we have developed a holistic blueprint for green value creation.

At the heart of this blueprint is the importance of leadership and the ability to pursue both efficiency improvements and growth opportunities. (See Exhibit 4.) This is a challenging undertaking, as it requires distinct organizational and leadership abilities. Efficiency improvements are often achieved through standardization, top-down goals, or scale. The exploration of new growth areas, on the other hand, requires flexibility, risk taking, and experimentation with the unknown.

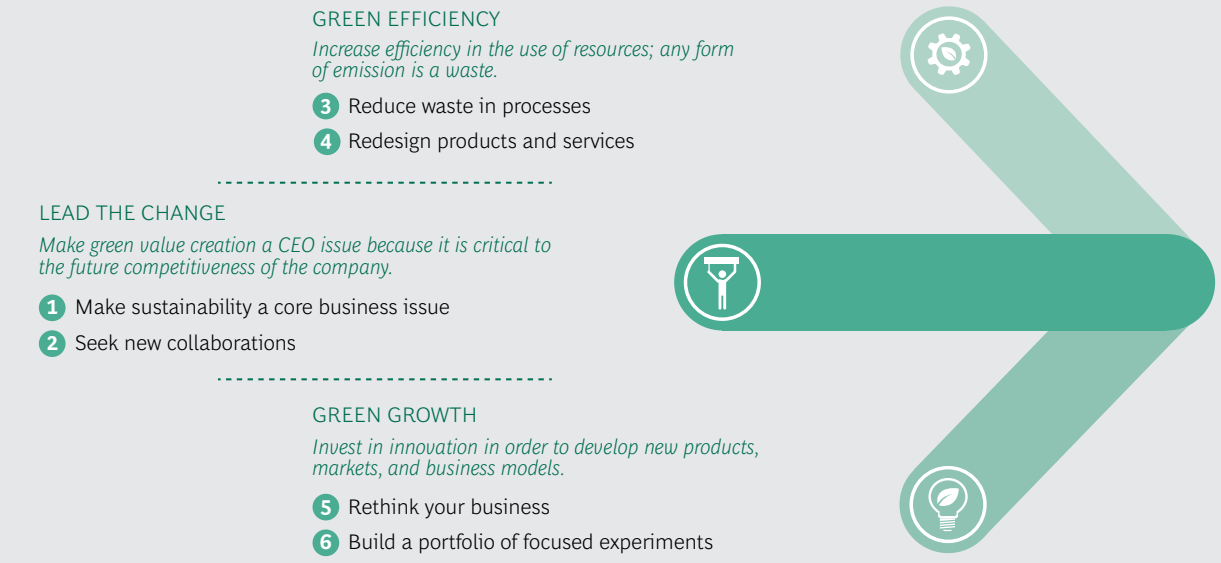
There needs to be a balanced approach to green value creation. Improving the efficiency of current business is important. At the same time, many companies underinvest in developing new growth areas—they leave opportunities untapped and increase the risk of being left behind. The best companies are able to simultaneously push improvements of current business while they invest in potentially disruptive growth opportunities.

Lead the Change

Leadership is critical for all change efforts. Our survey shows a clear connection between companies that place green value creation high on leadership's agenda and the results they are able to realize (37% realized increased profits versus just 15% for other companies).

Make sustainability a core business issue. The first step toward enabling green value creation is to change the way you approach sustainability. Specifically, as a leader you have to articulate why green initiatives present an opportunity for your

Exhibit 4 | A Blueprint for Green Value Creation



Source: BCG analysis.

company and how they can help you build competitive advantage. It is vital to build consensus around this story among senior management so you all speak with one voice.

A case in point comes from the expedition cruise and adventure travel company Hurtigruten. Taking a hands-on stance toward green value creation, CEO Daniel Skjeldam attended COP21 in Paris, where he advocated that the maritime industry needs to take greater environmental responsibility. "Hurtigruten is the frontrunner in green technology and sustainable solutions in shipping. As a CEO it is crucial that I talk about how global changes will affect our industry and how we can use this as an opportunity to become a part of the solution," he commented. Hurtigruten's focus on green value creation led to pride among its employees and fresh initiatives and ideas within the company.

As we have argued in this report, environmental sustainability is a source of innovation and competitive advantage. This realization has profound implications for how you should approach sustainability.

- **Prioritize and focus efforts.** Focus your sustainability initiatives on areas in which you can have a material impact and there is potential for building competitive advantage. Avoid spreading your efforts too widely or launching initiatives without a clear link to your strategy, as this limits the potential benefits. Achieving a competitive advantage requires understanding how your existing capabilities can be applied in the green economy.

- **Integrate sustainability into core processes.** To realize the potential benefits, you have to integrate these perspectives into your core business processes: What does it mean for strategy, for product development, for investment decisions? A

global BCG survey shows that building sustainability into business units doubles the chances of profiting from sustainability activities. At the fertilizer producer Yara, for example, environmental sustainability is an integral part of its strategy. (See the sidebar "Green Leadership in Action.")

GREEN LEADERSHIP IN ACTION

Yara and Telenor are each leaders in their industries in pursuing green value creation—not only in the interest of sustainability but also to increase their own competitiveness.

Yara: Tying Sustainability to Its Core Business

To highlight how integral sustainability is to its core business, Yara, one of the world's largest producers of fertilizers, recently rewrote its mission as: "Responsibly feed the world and protect the planet." For Yara, this is not a charitable endeavor. It is a conscious decision to think long-term about growing the business by delivering solutions to some of society's biggest challenges.

One example of Yara's holistic view of sustainability is its work on sustainable farming. Through product innovation, sensor technologies, and on-the-ground agronomic support, Yara helps farmers optimize, rather than maximize, the use of fertilizer. The result is higher yields, improved quality, and reduced negative environmental impact.

In Africa, Yara has extended its involvement and entered into value chain partnerships with companies such as Nestlé and Unilever in order to support farmers in their efforts to turn subsistence farming into profitable farming. Yara also supports the UN's World Food Programme in developing local supply chains and buying food produced in Africa, thus reducing the need to import food. These initiatives help secure the profitability and livelihood of African farmers—Yara's customers—and thereby strengthen the company's competitiveness.

Telenor: Collaborating to Build Better Public Transportation

Telecom company Telenor is working to reduce its own emissions, but it also sees extensive opportunities in enabling its customers to become more sustainable. With this goal in mind, Telenor considers it critical to move resources to innovation and to actively invest in projects that reduce negative impact on the environment.

One example is a pilot project in partnership with Ruter and SmartCity Bærum, in which big data collected by Telenor is being used to provide valuable insight on how to build the public transportation system of the future. Using anonymous data from mobile phone subscribers, Telenor analyzes travel patterns in Oslo, giving unique insight into how people travel through the city and at what times. Together, Telenor and Ruter are using this data to improve public transportation services, thereby reducing personal automobile use, traffic, and emissions. According to Berit Svendsen, CEO of Telenor Norway, "The possibilities for how we can use technology to enable more environmentally friendly solutions are enormous; we have just scratched the surface."

"The possibilities for how we can use technology to enable more environmentally friendly solutions are enormous; we have just scratched the surface."

Seek new collaborations. It is easy to become too focused on your own organization. Collaboration does open up new opportunities. Successful companies work with customers, suppliers, rivals, nongovernmental organizations, and governments. New growth opportunities arise when you partner with actors from other industries or connect to your customers in completely new ways. An example is Telenor, which is collaborating with Ruter to build better public transportation services. (See the sidebar "Green Leadership in Action.")

Green Efficiency

Systematically look for improvement opportunities in what you do today. Use sustainability as a lens through which to see ways to reduce costs, improve quality, increase productivity, and lower risk. The aluminum producer Hydro, for example, decreases costs and environmental impact through initiatives such as energy efficiency. (See the sidebar "Saving Money and the Environment.")

Many of the CEOs we met said that involving the whole organization in identifying green efficiency can be a major source of motivation for employees. Working

SAVING MONEY AND THE ENVIRONMENT

Hydro, Norway Post, and Orkla have all profited from their green efficiency initiatives by reducing waste or increasing productivity.

Hydro: Getting to Zero

In 2013, the global supplier of aluminum Hydro set a target of becoming CO_2 neutral from a life cycle perspective by 2020. Its goal: ". . . to save as much or more carbon emissions than it generates." This target is achievable since the use of aluminum can lead to significant energy savings and emissions reductions, which offset energy use and emissions during its production.

To deliver on its carbon-neutral target, Hydro integrated CO_2 impact assessments into its core business processes—including decisions on new investments and development. For Hydro, reduced environmental impact does not stand in opposition to profitability or growth. Measures to increase energy efficiency and lower emissions actually reduce costs. This approach has led to the adoption of more energy-efficient technology, increased recycling, and more aluminum delivered to applications where it reduces the CO_2 emissions in the use phase. It exemplifies how a clear target and systematic work can drive change in an organization.

Norway Post: Reducing Its Footprint While Increasing Productivity

Norway Post wanted to reduce its carbon footprint and, at the same time, lower its costs and delivery time. It set a target of a 40% reduction in its CO_2 emissions by 2020 and, together with a small Norwegian company, developed the Paxster— a small 100% electric car for postal delivery.

In addition to reduced fuel costs and zero local emissions, Norway Post has achieved several other benefits from this green initiative. The Paxster's easy handling enables Norway Post's drivers to pull up right next to mailboxes and

toward sustainability brings excitement and engagement. To identify opportunities to improve green efficiency, leaders should explore ways to reduce waste and redesign products and services.

Reduce waste in processes. Proactive companies typically start by analyzing their processes to look for opportunities to increase efficiency; they use sustainability to systematically assess their resource use and identify improvements that would otherwise not be found.

- **Set clear targets.** Define operational metrics to measure what you want to achieve. In our survey we found a direct correlation between companies that set clear and measurable key performance indicators and those that are able to make a profit from green initiatives.

- **Be transparent.** Communicate both challenges and successes in order to establish credibility. Being open about challenges is the first step in finding solutions, and it is far more fruitful than trying to ignore or hide them.

deliver mail from inside the car—increasing efficiency by as much as 30% on some routes. Because the ergonomics of the Paxster are also much better, drivers have more flexibility and are more comfortable, reducing daily wear and tear as well as sick leave.

According to former Norway Post CEO Dag Mejdell, "Large companies have to collaborate and drive green value creation. This effort does not have to be a cost to the company—it can actually be the opposite if done right." This certainly has been true for Norway Post, which won the Award for Design Excellence from the Norwegian Design Council in 2013 for the Paxster—in recognition of innovation and international potential. The Paxster is now being sold to international customers.

Orkla: Reducing Waste in Packaging

Consumer goods company Orkla made its stance on the environment clear in its strategy for 2020: to bring its commitment to sustainability into its core business by creating more eco-friendly products that benefit customers, the environment, and the company. Orkla focused on 9 of the UN's 18 sustainability goals—where its efforts could have a real impact. In the area of climate change, for example, Orkla targeted a 20% reduction in greenhouse gas emissions and a 30% reduction in waste by 2020.

Orkla sees its focus on the environment as a source of competitive advantage that brings innovation to its products and packaging. With the understanding that choosing the right raw materials, packaging, and product design can significantly affect a product's environmental impact—and contribute to increased efficiency and lower cost—Orkla was able to reduce its use of packaging materials by 7% in 2015. Orkla CEO Peter Ruzicka stated, "Sustainability is a source of value creation and can yield results on the bottom line. Companies should not look at it as a barrier or a cost."

"Sustainability is a source of value creation and can yield results on the bottom line. Companies should not look at it as a barrier or a cost."

The positive effects of these efficiency measures can extend beyond expected improvements. Norway Post, for example, was able to reduce its fuel costs by switching to the use of electric cars while simultaneously increasing productivity. (See the sidebar "Saving Money and the Environment.")

Redesign products and services. Another source of efficiency improvement is assessing ways to redesign products and services so as to reduce resource use or enable recapturing of resources through recycling.

To capture these opportunities, companies should evaluate the full lifecycle of their products and services, make environmental considerations part of product and service design, and work with customers and suppliers to identify areas for improvement in procurement, transport, and use.

In addition to increased efficiency in resource use, companies that redesign their products with the green economy in mind gain a competitive edge with consumers who prefer environmentally friendly products. One example is consumer goods company Orkla, which redesigned many of its consumer products in order to reduce its use of packaging materials. (See the sidebar "Saving Money and the Environment.")

Green Growth

Green growth is about using sustainability as a starting point to innovate in products, markets, or business models. This undertaking requires a will to allocate money to research and innovation, as well as setting up a structured innovation process with green trends as an explicit part of the ideation process. In companies that succeed, we also observe a broader use of partnerships to generate more ideas. By collaborating with a network of companies, you can challenge your internal thinking and identify additional opportunities.

Rethink your business. The most innovative companies have leaders who dare to think differently about what they do—and invest accordingly. Identifying the most powerful opportunities requires you to actively search for them.

Green growth is about using sustainability as a starting point for innovation.

- **Monitor other industries for technological developments or market opportunities.** Rather than starting from your current industry structure or way of doing business, explore new ways of using your capabilities. For example, Nortura, a Norwegian agricultural cooperative, looked at the waste in its food production process as an opportunity to develop new products outside its industry. (See the sidebar "Sustainability-Driven Innovation.") Developments outside your industry silo could present the most important opportunities.

- **Actively seek disruption and international growth.** Don't be satisfied with incremental improvements. Constantly work to identify opportunities that can redefine your business. Take Gelato, for example, a Norwegian software company that is seeking to revolutionize the $800 billion global printing industry. Through its brand management platform, Gelato connects companies and professional print houses around the world. Orders are routed to the print house closest to the delivery address, thereby reducing shipping costs and shortening

SUSTAINABILITY-DRIVEN INNOVATION

At Nortura, Statkraft, and Marine Harvest, sustainability is now a starting point for creating innovative growth opportunities.

Nortura: Developing Innovative Products Outside Its Industry

One of Norway's largest food companies, Nortura, is looking outside its traditional industry to optimize the use of its resources. In its meat and egg production, 420,000 tons of live animals and eggs delivered 270,000 tons of food for human consumption. Through its structured innovation process, Nortura searched for better ways to utilize all parts of the animal, thereby reducing its environmental impact and creating new growth opportunities.

One opportunity explored was the use of egg membranes, which have specific properties that make them well suited for improved wound treatment—one of the largest health challenges in the world and a US$6 billion market. Nortura, through its daughter company Norilia, collaborated with medical researchers and the startup community in order to extract egg membranes from eggshells as a basis for new, more efficient adhesive bandages. This is a small start, with more and much larger projects on the launch pad.

Nortura recently decided to participate in a joint venture biorefinery in order to extract proteins, fats, and minerals from chicken and turkey bones through Norilia. According to Nortura's CEO Arne Kristian Kolberg, "Our goal is to be the leader of innovation in our industry and to surprise the market." In the process, Nortura is discovering new business opportunities while contributing to optimal utilization of resources and a better environment.

Statkraft: Investing in Future Growth Through Its Venture Fund

In the changing global energy market, Norway's largest utility, Statkraft, views the transition to renewable energy sources as a necessity, and its explicit strategy is to invest only in clean energy.

To turn the global energy challenge into potential competitive advantage, it is now investing in the fringes of its existing business (for example, developing solutions for biofuel). According to CEO Christian Rynning-Tønnesen, "In addition to our traditional renewable business, we are also actively experimenting with new environmentally friendly energy solutions—you could say we bet on multiple horses." One example is how Statkraft launched an internal venture capital unit that invests in energy-related startups (for example, smart grid technology)—enabling it to partner with potential game-changing startups and remain current on the latest technological developments.

Marine Harvest: Collaborating to Promote Eco-Friendly Production

The world's leading seafood company, Marine Harvest, is collaborating with research communities and startups to transform aquaculture industry practices. Salmon has one-tenth of the carbon footprint of beef and thus

SUSTAINABILITY-DRIVEN INNOVATION (continued)

can be an important source of protein in a low-carbon economy. But the industry needs to overcome challenges in dealing with lice and escapes from fish farms in order to enable further growth. In an effort to explore new and more efficient models for fish farming, Marine Harvest has teamed up with three startups—learning from their fast and agile development processes, while leveraging its own know-how and financial muscle.

Marine Harvest has also partnered with the Norwegian Marine Technology Research Institute (Marintek) and the Norwegian University of Life Sciences (NMBU) in developing the Blue Revolution Center, with the goal of creating more sustainable technologies for fish farming—drawing on Marine Harvest's expertise in operations, Marinetek's expertise in technology, and NMBU's expertise in biology. This focus on R&D is an engine for sustainable growth, and it is integral to the company's vision of "Leading the Blue Revolution."

delivery time while helping to reduce carbon emissions in two high-impact sectors: transport and pulp and paper.

Build a portfolio of focused experiments. In our interviews, many CEOs highlighted the importance of experimentation for green value creation. You need to be able to move resources to innovation, and constantly reinvent the company. The utility Statkraft, for example, is actively investing in startup companies through its venture fund. (See the sidebar "Sustainability-Driven Innovation.")

To be effective, you need to manage such experimentation in a targeted and systematic way.

- **Use a portfolio approach.** Many, perhaps even most, green initiatives will fail, so it is important to invest in a portfolio of ideas and experiments. Successful companies actively manage their projects in order to ensure sufficient variety and breadth, as well as a tight link to the company's strategy and capabilities.

- **Limit the time spent on each experiment—launch early to learn fast.** The business of innovation is moving faster than ever, while time spent on product development is rapidly decreasing. Companies have to shorten innovation cycles and constantly reinvent themselves or risk being left behind. An example is the seafood company Marine Harvest, which is collaborating with researchers and startups in order to innovate in fish farming. (See the sidebar "Sustainability-Driven Innovation.") Partnering with startups to increase the speed of innovation processes is one way to do this. Companies are also adopting the mindset of software companies, realizing that it is better to launch early prototypes than waste resources trying to perfect complex products.

We are at a tipping point: companies are now building competitive advantage in the green economy. Business leaders need to take a balanced approach in pursuing green efficiency and green growth in order to capture this opportunity. The stakes are high—insufficient focus or lack of leadership could have grave consequences. At the same time, the opportunities for green profit—and the blueprint for obtaining it—are clear. The time to act is now. We call on Norway's business leaders to be daring and take on green leadership.

Appendix: Business Leaders Interviewed

We thank the following business leaders for their valuable contributions to the findings in this report.

Alf-Helge Aarskog, CEO, Marine Harvest

Tore Bakke, CEO, Bravida

Alexandra Bech Gjørv, CEO, Sintef

Gunnar Bovim, Rector, NTNU

Remi Eriksen, CEO, DNV GL Group

Abraham Foss, CEO, Telia Norge

Kristin Færøvik, MD, Lundin Norway

Kjetil Førsvoll, CEO, Boreal Transport

Arne Giske, CEO, Veidekke

Paul Hegna, VP Communication and CSR, MøllerGruppen

Trond Helgerud, CEO, FMC Biopolymer

Karl Johnny Hersvik, CEO, Det norske oljeselskap

Egil Hogna, CEO, Sapa Group

Marius Holm, General Manager, Zero

Svein-Tore Holsether, CEO, Yara International

Geir Håøy, CEO, Kongsberg Gruppen

Geir Isaksen, CEO, NSB

Björn Ivroth, CEO, Evry

Bernt Reitan Jenssen, CEO, Ruter

Matts Johansen, CEO, Aker BioMarine

Jon Karlsen, CEO, Glava

Arne Kristian Kolberg, CEO, Nortura

Idar Kreutzer, Co-head, Ekspertutvalg grønn konkurransekraft

Viggo Larsen, Head of HR, Relacom

Bjørn Kjetil Mauritzen, Head of the Climate Office, Hydro

Dag Mejdell, former CEO, Norway Post

Grethe Kristin Moen, CEO, Petoro

Geir Molvik, CEO, Cermaq

Maria Moræus Hanssen, CEO, Engie E&P

Henrik Müller-Hansen, CEO, Gelato

Tom Nysted, CEO, Agder Energi

Erik Osmundsen, CEO, Norsk Gjenvinning

Anne Marit Panengstuen, CEO, Siemens Norge

Hanne Refsholt, CEO, TINE

Eivind Roald, CCO, SAS

Finn Bjørn Ruyter, CEO, Hafslund

Peter A. Ruzicka, CEO, Orkla

Christian Rynning-Tønnesen, CEO, Statkraft

Ståle Rød, CEO, Skanska

Baard Schumann, CEO, Selvaag Bolig

Daniel Skjeldam, CEO, Hurtigruten

Berit Svendsen, CEO, Telenor Norway

Gunnar Syvertsen, CEO, Norcem/HCNE

Eldar Sætre, CEO, Statoil

Per Sørlie, CEO, Borregaard

Andreas Thorsheim, CEO, Otovo

Jens Ulltveit-Moe, CEO, Umoe

Thomas Wilhelmsen, Group CEO, Wilh. Wilhelmsen Holding

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1/17


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