



Wind of Change

—

From dirty fuel to the world's
most sustainable energy company

A case study on the business transformation of Ørsted

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Abstract

Title: Wind of Change – From dirty fuel to the world’s most sustainable energy company – A case study on the business transformation of Ørsted

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Key Words: Corporate Sustainability, Strategy, Strategic Change, Dynamic Capabilities, Business Transformation, Energy Industry

We live in a rapidly changing world that holds more and more crises. The energy industry is also particularly affected by these, which poses the question of how companies can respond to these changing conditions to stay competitive and profitable in the long run.

The Danish energy giant Ørsted faced a difficult decision a few years ago. Should the traditional fossil fuel company give in to the rising political and societal pressure to become more sustainable, or should it rely on its core competencies in coal, oil and gas?

This case study examines Ørsted’s sustainable business transformation and its path to becoming the world’s most sustainable company. It analyzes what resources were needed to change Ørsted’s strategy radically and what the success factors of this change were. The theoretical framework to analyze the transformation is threefold. Firstly, the concept of Strategic Change and Fit is introduced to analyze Ørsted’s change process. Secondly, the reasons for Ørsted’s rapid and successful adaptation are examined using the Dynamic Capabilities theory. Lastly, Corporate Sustainability as the strategic core concept is applied as it has guided Ørsted’s process towards a holistically sustainable energy company that secured economic sustainability in the long run. This case study can teach students and managers a real-life example of a successful (and sustainable) strategy change and the advantages of adapting and reinventing towards sustainability in fast-changing environments.

Sumário

Título da dissertação: Vento de mudança - Do combustível sujo à empresa de energia mais sustentável do mundo - Um estudo de caso sobre a transformação empresarial de Ørsted

Autor: Lukas Andreas Huchler

Palavras-chave: Sustentabilidade Empresarial, Estratégia, Mudança Estratégica, Capacidades Dinâmicas, Transformação Empresarial, Indústria Energética

Vivemos num mundo em rápida mutação, que detém cada vez mais crises. A indústria energética é também afectada por estas, o que coloca a questão de como as empresas podem responder a estas condições em mudança para se manterem competitivas e rentáveis a longo prazo. O gigante dinamarquês da energia Ørsted enfrentou uma decisão difícil há alguns anos. Deverá a empresa tradicional de combustíveis fósseis ceder à crescente pressão política e social para se tornar mais sustentável, ou deverá confiar nas suas competências?

Este estudo de caso examina a transformação empresarial sustentável do Ørsted e o seu caminho para se tornar a empresa mais sustentável do mundo. Analisa que recursos foram necessários para mudar radicalmente a estratégia de Ørsted e quais foram os factores de sucesso desta mudança. O quadro teórico para analisar a transformação é triplo. Em primeiro lugar, o conceito de mudança estratégica e ajuste é introduzido para analisar o processo de mudança do Ørsted. Em segundo lugar, as razões para a adaptação rápida e bem sucedida de Ørsted são examinadas utilizando a teoria das Capacidades Dinâmicas. Por último, a sustentabilidade empresarial como conceito central estratégico é aplicada uma vez que orientou o processo de Ørsted para uma empresa energética holisticamente sustentável que garantiu a sustentabilidade económica a longo prazo. Este estudo de caso pode ensinar a estudantes e gestores um exemplo real de uma mudança estratégica bem sucedida e as vantagens de adaptação e reinvenção no sentido da sustentabilidade em ambientes em rápida mudança.

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List of Abbreviations

CEO – Chief Executive Officer

COP – Climate Conference of the Parties

CS – Corporate Sustainability

CSR – Corporate Social Responsibility

DC – Dynamic Capabilities

DONG – Danish Oil and Gas Company

EBITDA – Earnings Before Interest, Taxes, Depreciation, and Amortization

EEC – European Economic Community

EU – European Union

GW – Gigawatt

IPO – Initial Public Offering

kW – Kilowatt

MW – Megawatt

TWh – Terrawatt hours

NGO – Non-Governmental Organization

WWF – World Wildlife Fund

1. Introduction

“Our world faces many grave challenges: Widening conflicts and inequality. Extreme weather and deadly intolerance. Security threats – including nuclear weapons. We have the tools and wealth to overcome these challenges. All we need is the will.”¹

- António Guterres, UN Secretary General

As Guterres describes it vividly, we live in a world with ever-changing challenges and problems. Especially the past years have highlighted how fast change and crisis can happen and how fast they will happen in the future due to the climate crisis, resource shortages, and rising geopolitical conflicts. All this is causing ecological, social, and financial problems, and not least, the recent Covid-19 pandemic and the war in Ukraine have illustrated this. Thus, companies are also laboriously affected by this, and the question is how they can react, adapt or change in order to survive and thrive in a multi-factorial, fast-changing world of crises.

Significantly the energy industry was impacted by these crises: A massive dip in energy demand due to an economic standstill in 2020 (World Economic Forum, 2020), disrupted supply chains (McKinsey, 2021), and the overarching threat of the climate crisis. The latter is especially relevant for the future of the energy sector, as it is responsible for 75% of all greenhouse gas emissions in the European Union (EU) as of 2021 (European Commission, 2021) and therefore plays a crucial role in the green transition to a climate-neutral economy.

Consequently, financial, political, and societal pressure rises, and energy companies face a complex playing field. While many energy companies worldwide still rely on fossil fuels today (Kent, 2022), the Danish energy company Ørsted decided at the beginning of the 21st century to seek a different approach. Thus, they embarked on a strategic change journey to transform themselves from a traditional fossil energy provider to the world’s most sustainable energy company (Ørsted, 2022i). However, Ørsted’s green transformation was impacted by several exogenous shocks posing the question how they should move forward and address these challenges strategically.

In line with this question, the three broader concepts of Strategic Change and Fit, Dynamic Capabilities (DC), and Corporate Sustainability (CS), form the theoretical framework for this thesis. The first literature stream Strategic Change and Fit describe a fundamental shift in the

¹ Source: United Nations, 2017.

organization's business model, touching all its cultural and structural aspects (Balogun et al., 2016) in order to e.g. to achieve a better fit with the conditions of its environment, such as opportunities and threats (Zajac et al., 2000; Zajac & Kraatz, 1993).

Secondly, DC examines how companies can cope with rapidly-changing environments and how DC define their ability to build internal and external competencies to address the latter (Teece et al., 1997). As a result, a firm's potential to systematically solve problems (Barreto, 2010) and create firm-specific advantages (Teece et al., 1997) amplifies. Lastly, CS can be considered a strategic concept, defined as the holistic embracement of economic, social, environmental, and governance responsibilities (Eccles et al., 2014; Grewal & Serafeim, 2020; Ioannou & Serafeim, 2019; Khan et al., 2016) into the core business model and a crucial strategy for companies in order to strive economically, environmentally and socially in the long-run by helping to create and sustain a competitive advantage (Eccles et al., 2014; Khan et al., 2016; Margolis et al., 2009).

Against this theoretical backdrop, the case study method can provide valuable insights and a real-life observation example of a successful sustainable business transformation in a volatile and vital industry with big rewards not only for the environment and society but also for the shareholders. It can help to gain a deeper understanding of Ørsted's strategy change that allowed them to survive and thrive long-term in a fast-changing environment.

As a result, this case study can provide students with three important practical and theoretical managerial learnings and abilities. 1) Fostering strategic thinking by introducing a case of a detailed strategic reorientation of a company. 2) Understanding DC's relevance in adapting and managing fast-changing environments to stay competitive. 3) Comprehending the business advantages of implementing a successful Corporate Sustainability strategy.

The first part of this thesis explains the theoretical frameworks Strategic Change/Fit, DC, and CS, which are essential for working on the case study. The latter is presented in the next chapter: The energy industry, Ørsted's history, its sustainable business transformation, the competitive landscape and current business model are highlighted. Finally, a brief outlook on Ørsted's future is ventured. The teaching notes provide essential insights for teachers to apply the case in the curriculum and stimulate a fruitful classroom debate. Finally, the discussion will connect the theoretical frameworks with the presented case study and offer suggestions for future research as well as limitations of this thesis. Lastly, the conclusion will complete this thesis.

2. Literature Review

In this chapter, the theoretical framework for the case study analysis will be explained. First, the concept of Strategic Change and Strategic Fit (2.1) is elaborated before the more advanced concept of Dynamic Capabilities (2.2) and its role in the literature will be discussed. Finally, the main strategic framework, Corporate Sustainability, will be presented (2.3), including its meaning and development in the literature as well as its business advantages.

2.1 Strategic Change & Fit

In academic research, different definitions of strategic change exist. For the purpose of this thesis, “strategic change involves either a redefinition of organizational mission and purpose or a substantial shift in overall priorities and goals to reflect new emphases or direction” (Gioia et al., 1994). Moreover, “it is usually accompanied by significant changes in patterns of resource allocation and alterations in organizational structure and processes to meet changing environmental demands” (Gioia et al., 1994). Finally, it includes a fundamental shift in the organization’s business model, touching all its cultural and structural aspects (Balogun et al., 2016).

A strategic change primarily results from a legitimization process influenced by external changes and internal cultural reflection (Pettigrew, 2012). Therefore, it is essential to sense a necessary adjustment process and acknowledge that changing competition bases is vital to avoid deteriorating performance (Pettigrew, 1992; Whipp & Pettigrew, 1992). This conclusion is based on the assumption that besides comprehending competitive forces and their development and mobilizing the resources for the necessary response to them, a company’s most important asset is its ability to overcome the challenges associated with its strategy and to change its strategy if necessary (Pettigrew, 2012).

Moreover, there are two main perspectives in strategic change research. Firstly, scholars consider change a natural, continuous, and incremental process to adapt to environmental changes (Orlikowski, 1996; Tsoukas & Chia, 2002; Weick & Quinn, 1999). Secondly, change is described as transformational or revolutionary, meaning a process of intermittent equilibrium with sudden, radical, and discontinuous changes at distinct moments and a change in the structure, culture, and strategy of a firm (Balogun et al., 2016; Gersick, 1991; Miller et al., 1984; Romanelli & Tushman, 1994; Tushman & Romanelli, 1985). Critics of the former proclaim

that this perspective might overlook the difficulty of completing a transformation by only incrementally changing due to organizational characteristics (Balogun et al., 2016; Romanelli & Tushman, 1994). Additionally, the continuity view might not explain sudden change due to upcoming external factors (Biedenbach & Söderholm, 2008). According to other scholars, the latter disruptive perspective neglects the unique features of ongoing change, namely its fluidity, indivisibility, pervasiveness, and open-mindedness (Balogun et al., 2016; Tsoukas & Chia, 2002). However, according to Balogun et al. (2016), both views can be valid depending on the characteristics of the industry.

According to Gioia et al. (1994), the success of strategic change depends 1) on a company's ability to commit to a significant change in vision, values, and direction and 2) on the stakeholder's ability to understand and accept the new conceptualization of the company. Similarly, Pettigrew (2012) assumes that high-performing companies are better at, amongst other capabilities, leading change, linking strategic and operational change, and managing coherence in the overall process of competition and change.

But why should a company change? Mainly to reach a better fit among an organization's strategy, structure, and management processes with the conditions of its environment, such as opportunities and threats (Andrews, 1997; A. D. Chandler, 1962; Zajac et al., 2000; Zajac & Kraatz, 1993). The pursuit of strategic fit is a crucial idea in normative theories of strategy design, and it has historically been thought to have positive performance implications (Ginsberg & Venkatraman, 1985; Miles & Snow, 1984; Zajac et al., 2000). According to Zajac et al. (2000) "successful organizations achieve strategic fit with their market environment and support their strategies with appropriately designed structures and management processes".

Early scholars considered it a relatively static condition (Miller et al., 1984; Rajagopalan & Spreitzer, 1997; Venkatraman, 1989). However, the concept evolved into the direction that coalignment between strategy and environmental conditions was viewed as rather dynamic and constantly changing. Thus, "longitudinal analyses of changes in strategies over time in response to changing environmental conditions"(Venkatraman, 1989; Zajac & Kraatz, 1993) were requested by researchers. In an attempt to do so, Zajac et al. (2000) found "empirical support for a dynamic conception of the matching/alignment concept in strategy".

While necessary, strategic change to achieve strategic fit is complex because a firm's core strategies must be continuously aligned and realigned with internal resource profiles and external environmental factors (Zajac et al., 2000).

2.2 Dynamic Capabilities

The dynamic nature of strategy is also entailed in the concept of Dynamic Capabilities (DC). The original concept of DC is derived from the question of why certain companies obtain and sustain a competitive advantage in the long-run, especially in fast-changing and competitive environments (Barreto, 2010; Pisano & Teece, 1994; Teece et al., 1997). To address this, according to Teece et al. (1997), the industry perspective (Porter, 1997) and internal resource-based perspective (Barney, 1991) were not sufficient due to their assumption of static equilibria.

In an attempt to develop a new dynamic concept, in their landmark paper Teece et al. (1997) describe the crucial adaptation abilities of a company as Dynamic Capabilities. They define them as “the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments” (Teece et al., 1997).

Consequently, DC represent a company's capacity to achieve novel and innovative forms of competitive advantage, given path dependencies and market positions (Teece et al., 1997).

Thus, the strategic model combines the two existing paradigms of market-based strategy and resource-based strategy.

This concept has gained particular significance as current economic conditions make efficient and effective management more challenging than ever, mainly due to hypercompetitive (D'aveni, 2010) or high-velocity environments (Bourgeois III & Eisenhardt, 1988). Some scholars argue, that though more useful in dynamic settings (Karna et al., 2016), DC could also be helpful in stable environments (Ambrosini & Bowman, 2009; Eisenhardt & Martin, 2000).

The advantages of DC are several, according to scholars. First, companies with strong DC can be intensely entrepreneurial (Teece, 2007), and they might enable them to invent and innovate profitably (Pisano & Teece, 1994; Teece, 2007). According to Teece et al. (2007), DC are especially relevant for multinational enterprises' performance in business environments with specific characteristics. Consequently, according to Teece et al. (2007) DC can lead to competitive advantage and better financial performance.

However, criticism was rising about the concept of DC including allegations of being a rather vague and elusive concept which has thus far proven mainly resistant to observation and measurement (Barreto, 2010). Therefore, Barreto (2010) tried to develop a new multidimensional construct, that is formed from four dimensions. The approach's core is to explain how firms can achieve "successive temporary advantages by effectively responding to successive environmental shocks" (Barreto, 2010). For him,

"a dynamic capability is the firm's potential to systematically solve problems, formed by its propensity [a] to sense opportunities and threats, [b] to make timely and [c] market-oriented decisions, and [d] to change its resource base" (Barreto, 2010).

The resource based, hereby, could be changed by adding, reconfiguring and deleting resources or competences (Danneels, 2008). The four dimensions form an aggregate concept wherein all of them have to be considered simultaneously (Barreto, 2010). According to Barreto (2010), DC and performance are indirectly linked as DC may change the resource base that can influence product market positions and increase therefore performance.

Finally, combining DC with the concept mentioned above of strategic fit, Fainshmidt et al. (2019) conclude that "the relationship between dynamic capabilities and competitive advantage is contingent upon the strategic fit between organizational and environmental factors." DC could therefore lead to competitive advantage if they enhance strategic fit and support "a strategic orientation appropriate for the levels of dynamism and munificence in the firm's environment" (Fainshmidt et al., 2019).

Ultimately, DC can be considered an essential but not sufficient condition for a company's success (Barreto, 2010).

2.3 Corporate Sustainability

Clearly, since the first prominent publication about the social responsibility of the businessman by Howard R. Bowen (1953), research about responsible and sustainable business has come a long way. Nowadays, the terms Corporate Social Responsibility (CSR) (Carroll, 1979, 1991, 2015), Stakeholder Engagement (Freeman, 1984; Parmar et al., 2010), Strategic CSR (Burke & Logsdon, 1996), Shared Value (Porter & Kramer, 2006, 2011a) or Corporate Sustainability (Ioannou & Serafeim, 2019; Khan et al., 2016) are a permanent fixture in academic research.

On a strategic level, many interpret these terms slightly differently, albeit it is commonly understood as a goal or strategy that goes beyond mere profit maximization (Carroll, 2015). This perspective highlights the importance of incorporating sustainability as a business strategy and core business necessity, contrary to the traditional shareholder value maximization approach, famously originated by Milton Friedman (1970). Therefore, according to Carroll (2015), all concepts mentioned above overlap and Dahlsrud (2008) also concluded that most CSR definitions are congruent, referring to five dimensions (environmental, social, economic, stakeholder and voluntariness). Thus, the lack of a universally valid definition is not problematic as the confusion was generated “not so much about how CSR is defined, as about how CSR is socially constructed in a specific context “ (Moisescu, 2014, p. 162).

For clarity reasons, in this thesis, the strategic approach referred to is named Corporate Sustainability (CS). CS can be considered a strategic concept, defined as the holistic embracement of economic, social, environmental, and governance responsibilities (Eccles et al., 2014; Grewal & Serafeim, 2020; Ioannou & Serafeim, 2019; Khan et al., 2016) into the core business model and a crucial strategy for companies in order to strive economically, environmentally and socially in the long run (Eccles et al., 2014; Khan et al., 2016; Margolis et al., 2009). It is “an intentional strategy to create long-term financial value through measurable societal impact“ (Grewal & Serafeim, 2020). In the sense of Porter (1996), it is a strategy to differentiate a company from its competitors with an approach that is difficult to imitate.

These findings represent a shift towards a view that economic, social, environmental, and governance are not mutually exclusive concepts and goals but rather factors that can help to create and sustain a competitive advantage (Eccles et al., 2014; Ioannou & Serafeim, 2019; Khan et al., 2016; Margolis et al., 2009; Porter & Kramer, 2011a). This new perspective of CS as a strategic necessity and basis for long-term success is grounded in research findings on several advantages for a company (Carroll & Shabana, 2010; Margolis et al., 2009).

According to Carroll (2015) the business case for CS can be divided into four categories. 1) strengthening the business’s legitimacy and reputation; 2) reducing the business’s costs and risks; 3) creating situations in which everyone benefits via synergistic value formation. 4) ultimately, building or strengthening strategic, competitive advantage.

The first category 1) can be explained from a stakeholder perspective (Freeman, 1984; Freeman & McVea, 2001; Parmar et al., 2010). CS efforts may create value for several primary stakeholders like employees, media or consumers. Firstly, it can increase general employer attractiveness (Edmans, 2012; Farooq et al., 2017; Greening & Turban, 2000), and retain higher quality employees (Greening & Turban, 2000; Turban & Greening, 1997). Moreover, it can generate positive publicity and media opportunities (Carroll, 2015) contributing to increasing social legitimacy (Hawn et al., 2011), and protecting as well as enhancing corporate reputation (Fombrun, 2005; Fombrun & Shanley, 1990). Ultimately, it can attract and retain loyal consumers (Hillman & Keim, 2001).

While strengthening the business's legitimacy and reputation might already lead to reduced costs and business risk, 2) Corporate Sustainability efforts can save even more money on operating and energy costs (Carroll, 2015). Furthermore, it can reduce risks by mitigating the likelihood of adverse regulatory action (Berman et al., 1999; Freeman, 1984; Hillman & Keim, 2001) and improve access to finance (Cheng et al., 2014).

Third, 3), Corporate Sustainability efforts could create shared value for both society and companies by finding profitable solutions to societal problems (Porter & Kramer, 2011a, 2011b). Lastly 4), differentiating itself from competitors through CS can ultimately lead to a competitive advantage (Burke & Logsdon, 1996; D. Chandler, 2014; Porter & Kramer, 2006; Van Marrewijk, 2003; Waddock & Graves, 1997) and therefore superior financial performance (Cheng et al., 2014; Henisz et al., 2014; Khan et al., 2016; Margolis et al., 2009; Orlitzky et al., 2003; Waddock & Graves, 1997).

3. Case Study

“We needed to be at the forefront of change to avoid being left behind with a dying technology, in a position where we wouldn’t be shaping our own destiny”²

- Jakob Bøss, 2022

Jakob Bøss (see Figure 1), former Senior Vice President for Corporate Strategy & Stakeholder Relations at Ørsted, vividly remembers the conversations between him and Ørsted’s former Chief Executive Officer, Anders Eldrup (see Figure 1). In 2008, they sat together and decided to make (Ørsted, 2022b). It was a defining event and moment of truth for the Danish energy giant. Ørsted, a traditional fossil fuel company founded to explore oil and gas from the North Sea, was about to open a new coal-fired plant in Germany when they suddenly experienced a massive backlash (Reguly, 2019). The local and public opposition rose, and their growth strategy in fossil fuels was threatened (Ørsted, 2022b).



Figure 1: Anders Eldrup (left) and Jakob Bøss (right)³

Eldrup and Boss held a meeting that was deeply influenced by their observation of recent developments. Both had watched Al Gore’s movie “An inconvenient truth,” which discussed the urgency of the climate crisis, and both had noticed that the EU had just decided on its 2020 energy policy goals (Global Opportunity Explorer, 2019). Simultaneously, the Climate Conference of the Parties (COP) 15 was about to happen in Denmark in 2009, which put the spotlight on the Danish state, which owned more than 50% of Ørsted’s shares, and on the Danish sustainability landscape (Reguly, 2019).

Boss and Eldrup thought about a new strategy: Committing to a green transformation. They knew that, morally, it was the right strategy. Eldrup thought they could either invest in offshore

² Source: Ørsted, 2022b

³ Source: COP23, 2017; Greentech Media, 2010

wind farms, which would have a bright future, or in coal-fired power plants, which was fundamentally not the right thing to do. “We would be burning coal for 40 to 50 years when we should be converting to green”, Eldrup thought (Reguly, 2019). Nevertheless, the question was if they could pull it off financially. The energy industry in Europe had not yet fully committed to a green energy transition (eurelectric, 2012), and it required divesting from their profitable fossil assets and investing into, back then, expensive renewables roll-out. As they saw a competitive edge in offshore wind energy, they feared a hefty bill to construct and bring down the costs of offshore wind farms (Ørsted, 2022b). However, on the other hand, they sensed a threat of the aforementioned public opposition and a massive carbon tax which would make a green energy transformation even more appealing (Reguly, 2019).

Boss and Eldrup had to make a decision. What should they do? Should Ørsted follow its guts and embark on a strategic shift towards sustainability and renewable energy?

Or was the risk too high, and was it the better decision to keep expanding its profitable fossil fuel business?

3.1 The energy market and industry

Ørsted competes in the energy industry. The energy industry generally refers to the extraction, production, and distribution of power from fossil fuels like oil and gas, nuclear energy, and renewable sources like wind and solar (European Commission, 2022b). As energy has an inelastic demand (Labandeira et al., 2017) and can be considered a fungible (interchangeable) good, it is tough for companies to differentiate.

Energy markets are characterized by rapid growth, complexity, and a crucial role in all global economies (Mousavi et al., 2021). The constant growth is reflected in the constantly increasing energy consumption (see Figure 2), which quadrupled from 40,000 terawatt-hours (TWh) in 1965 to 160,000 TWh in 2021. However, it is highly dependent on fossil fuels as nearly 75% of global primary energy consumption still relies on oil, coal, and gas (Ritchie & Roser, 2022).

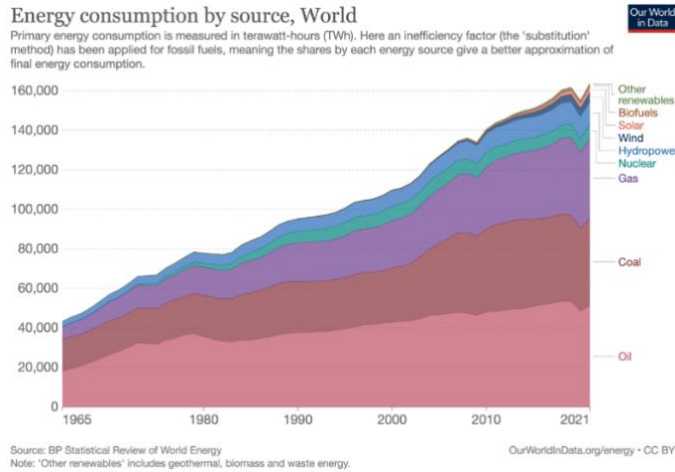


Figure 2: Energy consumption by source, worldwide until 2021⁴

Moreover, energy markets have undergone constant changes, with decarbonization being the recent top priority globally. Governmental regulation and laws, financial incentives as well as technical innovation during the past decade led to decreasing renewable energy generation costs making solar (3.7 US\$ cents/kWh) and wind (4.0 US\$ cents/kWh) the cheapest energy sources in the world in 2020 (see Figure 3).

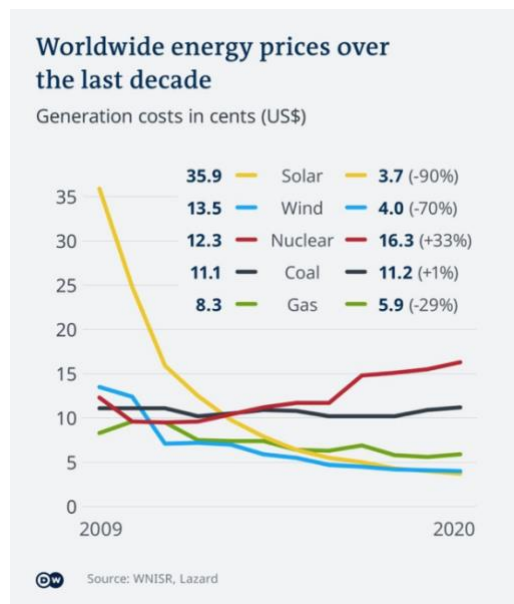


Figure 3: Generations costs in cents US\$/kWh over the last decade⁵

⁴ Source: Ritchie & Roser, 2022

⁵ Source: Rueter, 2021

Therefore, global clean energy investment will exceed \$ 1.4 trillion in 2022, accounting for nearly three-quarters of growth in overall investment while the global energy market will reach \$ 2.4 trillion in 2022 (International Energy Agency, 2022).

3.1.1 The European energy industry

Ørsted's central market region is clearly to be found in Europe. Like the global energy market, the European industry is a complex and diverse sector that plays a crucial role in the region's economy. In Europe, the industry employs 1.6 million people generating an added € 250 billion to the economy (European Commission, 2022b). Like on a global scale (see Chapter 3.1.1), the most important energy sources are of fossil origin with around 70% (eurostat, 2022).

Generally, though, the European energy sector has undergone significant structural changes toward a more competitive environment. The latter was caused by a liberalization of the energy markets in the early 2000s, tight control, and monitoring by regulatory authorities (Halkos, 2019) which ensured fair competition and more and cheaper choices for consumers (Faure-Schuyer et al., 2017).

Moreover, climate change has become essential to the EU's energy policy. In 2007, for the first time, the energy and climate agreement planned mandatory sustainable energy goals for 2020 (The Global Energiewende Wiki, 2022) regarding energy efficiency, emission targets, and national binding targets for the expansion of renewable energy (Ørsted, 2019a).

In recent years, there has been a further shift towards renewable energy with ambitious targets (see Figure 4) to prepare the EU economy for climate neutrality by 2050 (International Energy Agency, 2020) as energy accounts for 73 % of all emissions (Ørsted, 2022h).

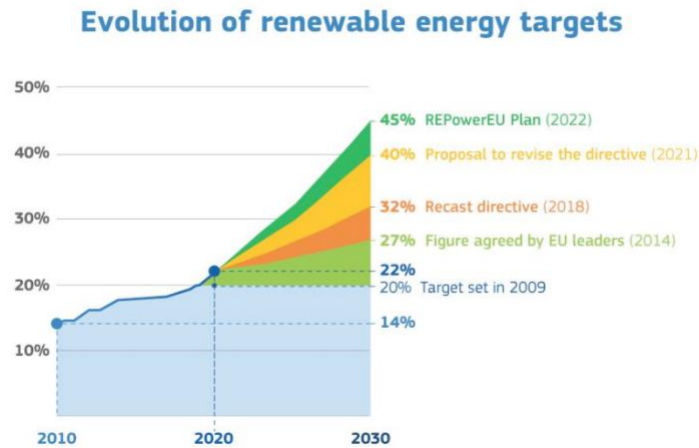


Figure 4: Evolution of renewable energy targets in the EU⁶

3.1.2 Exogenous shocks and governmental impacts on the energy industry

Exogenous shocks, volatility and political regulation characterize the energy market. One major disruptive factor for fossil fuel prices is geopolitical tensions, e.g. resulting in trade embargos between countries, especially in the Middle East (Misachi, 2017).

As most oil and gas reserves are located in those regions, energy markets were always linked to these events (Blasi, 2022). The latter had an exceptionally high impact on the fossil fuel energy market. There were three worldwide oil crises in 1973 (oil price up by 400%), 1979 (oil prices up 100%), and 1990 (Gross, 2019). Moreover, the 2000s were characterized by volatile oil and gas prices.

Consequently, fossil fuels, both oil and gas prices, are highly volatile (see Figure 5) due to these geopolitical events but also due to changing weather patterns like natural disasters or speculation on the spot market (Long, 2003). Therefore forecasting prices in the long run is practically impossible. (Long, 2003)

⁶ Source: European Commission, 2022c

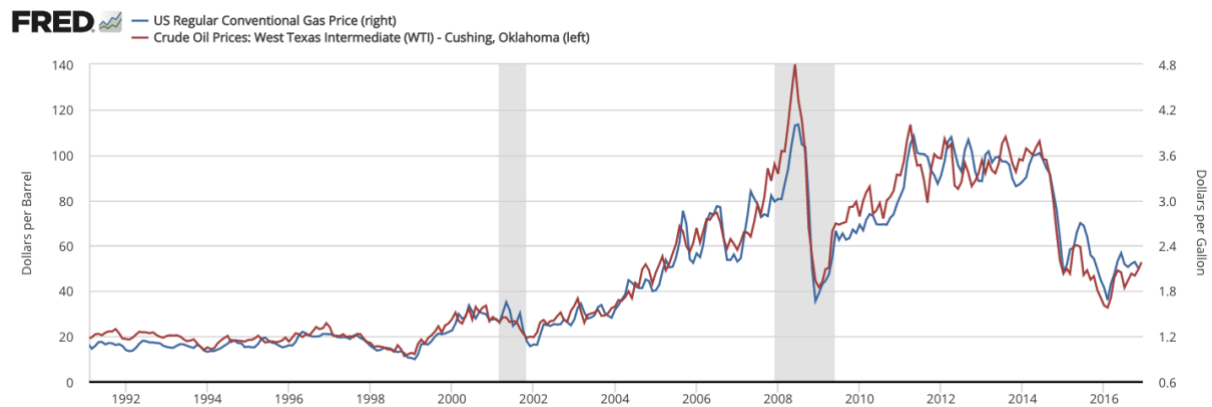


Figure 5: Conventional Gas price and Crude Oil prices on the US market until 2017⁷

In addition to exogenous shocks caused mainly by geopolitical events, political regulations and laws have also contributed to the energy market's change throughout the years. This was mainly due to the pressing problem of climate change and the government's measures to address it (see Chapter 3.1.2). Like the EU with its climate directives and targets (see Chapter 3.1.2.), many countries have started to set energy standards and targets for energy efficiency, renewable energy quotas, and emissions reductions. In addition, financial instruments such as the EU Emissions Trading Scheme in 2005 have been introduced for the European energy market, making CO₂-intensive fossil fuels more expensive. (European Commission, 2022b, 2022a)

3.2 Ørsted and its transformation

Founded in 1972 as a fossil fuel company called Dansk (Danish) Naturgas A/S (“DONG”) Ørsted has a long history in the energy industry and has undergone one of the most impressive corporate transformations in the last ten years (Ørsted, 2019c).

3.2.1 Ørsted's history: From “DONG” to “DONG Energy” (1972 – 2009)

1972 was not only the year Denmark joined the European Economic Community (ECC) but also the birth of Ørsted. Back then, founded as DONG. As opposition to nuclear power plants in Denmark arose among the population in the 1970s, and the oil crisis broke out in 1973,

⁷ Source: Wikimedia, 2022

Ørsted’s purpose was to increase energy independence from fossil fuels from the Middle East and extract oil and gas from the domestic North Sea. (Ørsted, 2022g; Reguly, 2019).

During its first 30 years of existence, Ørsted evolved into Denmark’s largest energy company, mainly operating in its domestic market. Its business model strategy in the early 2000s was to be a vertically integrated energy company (see Figure 6) and to serve the entire value chain in the energy sector (DONG energy, 2006, 2011): A) Upstream with oil and gas procuring, production, and electricity generation, B) midstream with energy trading and distribution, and C) downstream with direct sales to the end-consumer (DONG energy, 2006, 2011). It e.g., handled, administrated, and operated Denmark’s only oil pipeline (DONG, 2003).

Moreover, Ørsted’s central vision was to add maximum value for its shareholders. Its mission was to add value for its stakeholders by procuring, producing, and trading in oil, gas, and electricity with Northern Europe as its geographical focus (DONG, 2002, 2003).

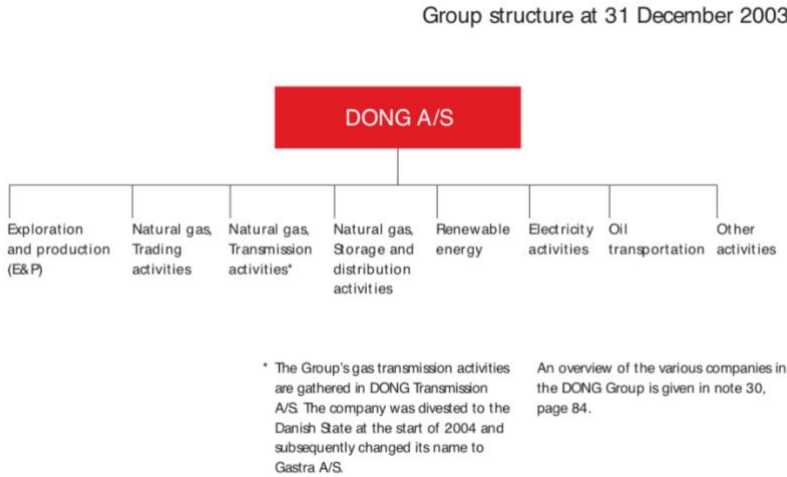


Figure 6: Ørsted’s group structure 2003⁸

In 2006, “DONG” merged with five domestic electricity companies to form “DONG Energy” to expand its portfolio. Three of these companies were active in renewable energy and expanded their international market position. Still, the geographical focus area was limited to Northern Europe (Denmark, UK, Netherlands, Norway, Sweden, Germany, and Poland), with revenues outside Denmark accounting for nearly 50% (DONG energy, 2009).

⁸ Source: DONG, 2003

However, at that time, Ørsted's primary strategy focused on increasing its market share in the gas market through gas trading and procurement of gas and leveraging on its core competence in coal with its modern coal-fired plants (DONG energy, 2006, 2007). Its primary revenue (more than 50%) already came from gas. In addition, over 80% of Ørsted's heat and electricity mix was based on fossil fuels, and renewables accounted for only 7% of its profits. (McKinsey, 2020; Reguly, 2019). Furthermore, Jakob Bøss and Eldrup decided to develop a new coal-fired power station in Germany to increase its market share in power plants. (Reguly, 2019) Jakob Bøss remembers: "Coal was our core competence (...) We were one of the most coal-intensive energy companies in Europe, responsible for one third of Denmark's carbon emissions" (Reguly, 2019).

However, in 2008, local resistance arose, and Bøss and Eldrup had second thoughts about the project and its fossil fuel strategy. Consequently, the board decided to terminate the project (McKinsey, 2020; Ørsted, 2022a). For Ørsted, this was the first clear sign that the world was beginning to move in a different direction, and they concluded that there was no sustainable way to realize the project (McKinsey, 2020). A new chapter began.

3.2.2 A strategic change: The 85/15 vision (2009-2012)

The new chapter of Ørsted began with a "moment of truth" in 2008 (Reguly, 2019). In a meeting, Jakob Bøss, and CEO Anders Eldrup decided to fully commit to the green transformation from a fossil-fuel based to a renewable energy company for two reasons. Firstly, they were influenced by the public coal opposition and the upcoming climate conference in Denmark in 2009, which put climate change on the agenda and thought it was the right thing to do (see Chapter 3.). Secondly, they thought that it made financial sense (Reguly, 2019). Due to upcoming political pressure (see Chapter 3.1.2) and the threat of a carbon tax, they dared to make significant financial investments into offshore energy and decided to dismantle coal plants (Reguly, 2019).

Nevertheless, internal and external skepticism was broad. Employees thought they were the world's best at running coal-fired power plants and a benchmark for the industry, and the Danish government thought Ørsted's move was too risky and threatened the European energy security (Reguly, 2019). However, firmly convinced, Eldrup and Boss did not seek a second opinion from outside advisors before moving forward with their proposal (Reguly, 2019).

To underline its transformation and to communicate the new strategy to important stakeholders and the public, in September 2008, Eldrup wrote an op-ed piece in a Danish newspaper. He stated:

“We must create a completely different energy system, where the majority of the world’s energy comes from the infinite amounts of naturally occurring energy sources, such as wind and sun” (Reguly, 2019).

The result was a brand new 85/15 vision. Back then, 85% of Ørsted’s power and heat production were fossil fuel-based, and only 15% was green. The goal was to flip this ratio around by 2040 so that 85% would be renewable-based and only 15% black (Reguly, 2019).

To fill this new vision with life, Ørsted’s managers put their heads together and thought about how they could fill it with life. Firstly, they began converting the coal- and gas-fired power plants to sustainable biomass. Secondly, and most importantly for their scalable business, they bet all cards on wind power. Here, they thought they had competencies and skills and could have a competitive advantage (McKinsey, 2020). Marianne Wiinholt, CFO of Ørsted as of today remembers:

“We looked to our businesses and found out that the only place where we had a competitive edge, and we could - if all went well- look into a scalable business was offshore wind” (Ørsted, 2022b).

Due to the merger in 2006, Ørsted’s portfolio already included the world’s first offshore wind farm built in Denmark in 1991. As the technology developed, the executive board realized that offshore wind had the potential as an almost unlimited power source with no land use constraints like onshore wind and with almost no direct carbon emissions (Ørsted, 2022b, 2022e). However, at the time, offshore wind farms were still small installations with a maximum output of 160 megawatts (MW) – far away from today’s farms, which can generate up to 714 megawatts (MW) (Steuer, 2020)

Therefore, Ørsted began investing in research and development and the build-out of offshore wind farms not only in Denmark but also abroad.

For this, Eldrup and Bøss did a 360-degree review. First, they looked at their supply chain, competencies, and financing models. The result was that installation and supply were serious obstacles (McKinsey, 2020). Therefore, within one year, Ørsted acquired the market leader in offshore installation, an interest in a cable-laying company, and 500 wind turbines from

Siemens to build a strategic supply chain to scale cost-effective offshore wind farms. The last number was more wind turbines than all the offshore operations in the world at this time (Ørsted, 2022b).

But the biggest problem was costs (see Figure 7), wherefore the offshore wind market was still largely uncontested. Offshore wind was way more expensive than onshore, coal, or gas power, with an energy cost of €130/MWh compared to €40/MWh for coal and €25/MWh for gas. Ørsted knew they had to bring them down to gain support from governments, society, and employees, as not everyone was happy about the turnaround (McKinsey, 2020).

Therefore, their “crazy target” was set to bring costs below €100/MWh. It was a top-down decision „which was not backed up by any calculations. It was a revolution to make a statement everybody in the industry subscribed to“, as Martin Neubert, former CEO of the offshore wind unit, remembers it (McKinsey, 2020; Ørsted, 2022b). Between 2002-2011 DONG invested € 2 bn on average per year into the wind industry and erected a new wind turbine every two days (Ørsted, 2022b; Reguly, 2019).

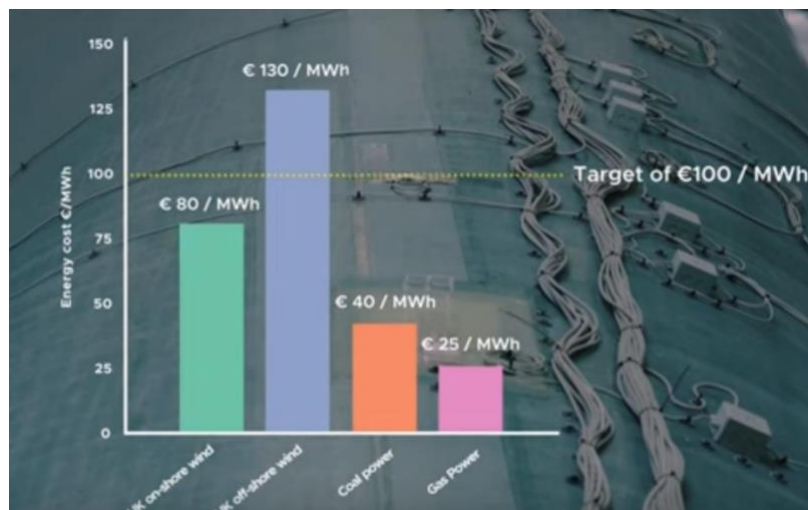


Figure 7: Onshore (green), offshore (blue), coal (orange) and gas (pink) energy cost €/MWh in 2009⁹

3.2.3 A financial crisis for the new CEO (2012-2014)

The transformation was under its way, and in 2012 Anders Eldrup stepped down as CEO. After spending three years at the top of Denmark’s largest telecommunications company, Henrik

⁹ Source: Energy Futures Lab, 2020

Poulsen took over (Richard, 2020). Unfortunately, he received an unpleasant surprise just months after his nomination, putting the strategic transformation under pressure.

In 2012, Ørsted’s profit fell by 40 percent in one year due to an unexpected drop in gas prices and a structural change in the European gas market, on which the company was heavily dependent (Witsch, 2020). As a result, its net income fell from \$ 432,3mn to -\$603,2 mn (see Figure 8). Moreover, the Standard & Poor credit rating of Ørsted was downgraded to BBB+ and the outlook was grim (Reguly, 2019).

Ørsted's net income from financial year 2011 to 2021 (in million U.S. dollars)

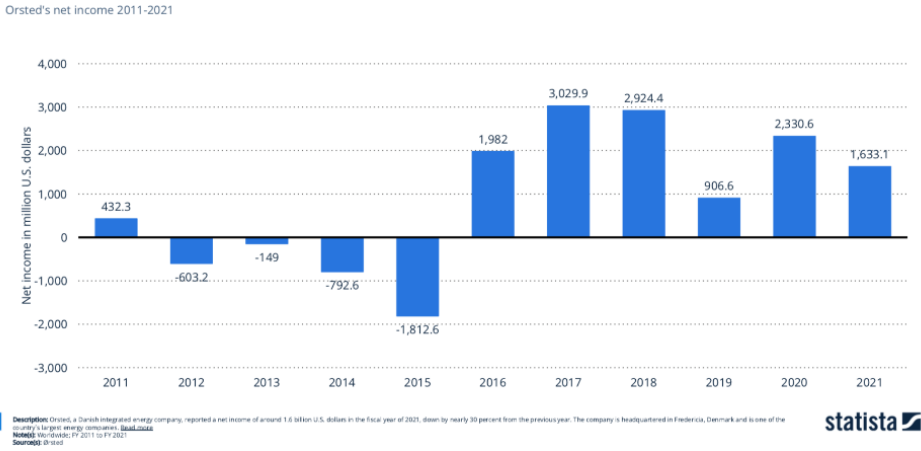


Figure 8: Ørsted’s net income from financial year 2011 to 2021 (in million US\$)¹⁰

Henrik Poulsen and his management team had a decision to make, and it was about nothing less than the future of the Danish energy giant.

Firstly, their goal was to restructure those areas where they were not profitable, like conventional electricity production or gas storage. For this reason, they shortened their business field units from twelve to three (Hubik, 2017). All in all, Ørsted divested more than € 1 bn of non-core assets, reducing costs by more than € 100 mn, injecting new equity into the company by selling 17,9% of its stake to Goldman Sachs. Most importantly, mainly taking this money to focus on offshore wind and oil and gas exploration and production and biomass conversion of its coal heat plants and to strengthen its position in the Danish utility market (DONG energy, 2012; Reguly, 2019).

¹⁰ Source: Statista, 2022a

It was a huge strategic bet, and Ørsted went all in on offshore wind parks. Nevertheless, for it to work long-term and secure capital while the company was divesting from reliable businesses, Ørsted had to become creative. Therefore, they developed the “farm-down” model, “in which it sold “equity stakes pre-construction to outside investors in order to free up its capital for further projects “ (Collins, 2017). Martin Neubert is convinced: “Had we not developed the farm-down model we couldn’t have funded all these projects in Europe. And the structure that we innovated became widely used in the industry” (McKinsey, 2020).

Besides that, a wind-power unit was created which in the beginning lacked structure and a proper operating model. But soon Ørsted established, thanks to Poulsen’s top managers “global functions, clear project governance, and a product-line organization that systematically reduced the cost of offshore-wind electricity by eliminating ad hoc or project-specific sourcing and procurement“ (McKinsey, 2020).

3.2.4 The rebirth as “Ørsted“: The end of fossil fuels (2014-2020)

“As a business you have a much broader responsibility than just to make money. You have to make money, you have to make profit, otherwise there is not reason for running a business. But that said you need to assume a broader responsibility and make a broader contribution to society. These things are not in opposition to each other, in fact I do fundamentally believe they go hand in hand”¹¹

- Henrik Poulsen (CEO 2012-2020)

Fortunately for Ørsted and Henrik Poulsen, the new strategy paid off. After getting into financially stable waters within three years, in 2016, Ørsted reached his goal of reaching a price of €100 per MWh in new offshore wind projects. Four years ahead of time (Ørsted, 2019b). Its production of renewables was outperforming peers accounting for 55% (see Figure 9) and financially, Ørsted’s EBITDA was performing better compared to competitors, growing by 11,1% annually between 2013 and 2015.

¹¹ Source: Ørsted, 2022b

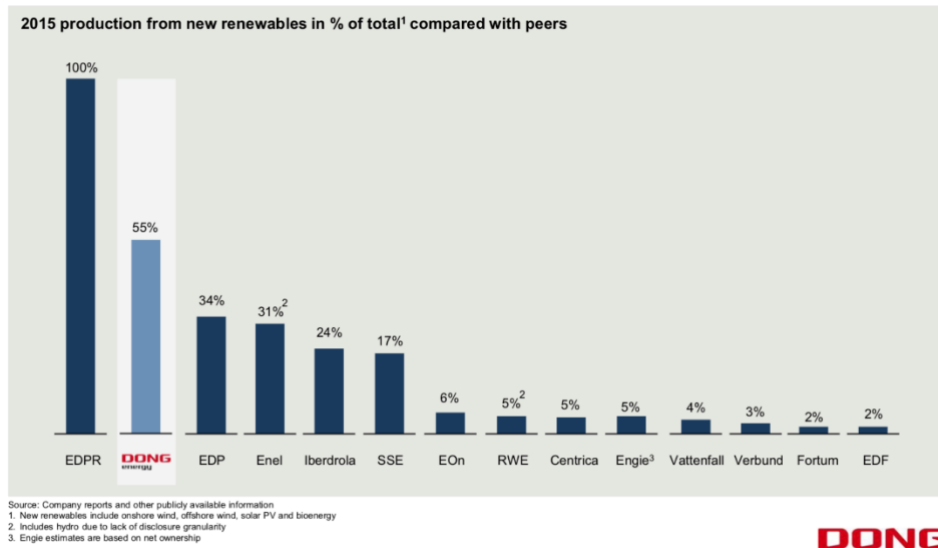


Figure 9: Production from new renewables in % of total compared with peers in 2015¹²

Wind power became Ørsted's growth engine, with almost 80% of all capital expenditure while oil & gas served as a cash generator (DONG energy, 2016b).

In 2016, Ørsted was the most significant offshore player globally regarding global offshore wind capacity. It had developed core competencies in developing, building, operating, and owning offshore wind parks. Moreover, they devised an integrated end-to-end business model with experience and expertise along the entire value chain (DONG energy, 2016a). This helped them to carry out a total life-cycle cost assessment of wind farms, making them more independent from external partners.

As a result of the technology breakthrough and plummeting costs, wind-power earnings were rising, and to fund the growth, in 2016, Ørsted decided to join the stock market through the second-biggest initial public offering (IPO) worldwide of the year and the biggest IPO in Danish history (DONG energy, 2016a; Reguly, 2019).

While in preparation for its IPO, Ørsted decided to keep his oil & gas business for cash flows to keep the funding for its green transformation (DONG energy, 2015). However, only shortly after this decision, due to a constant decline in oil and gas prices, Ørsted made a U-turn in November 2016, and decided to divest from all the Group's oil and gas production (upstream)

¹² Source: DONG energy, 2016b

activities (DONG energy, 2016a) in the North Sea. The divestment was completed in 2017 and sold for US\$ 1 bn (Hubik, 2017).

The decision was in balance with Ørsted's desire to become the world leader in green energy and the historical fact that in 2016 Ørsted's earnings from wind power (€ 1.6 bn) were for the first time higher than earnings from oil & gas production (DONG energy, 2016a). Around € 10.5 bn had been invested for the scalable offshore wind built out. Its wind cost-of-electricity decreased by 60% since 2012 and five of seven heat and power plants were converted to biomass (Ørsted, 2017). The share of total capital employed in renewables had grown to 87% (in 2007 only 16%); as a result, carbon emissions decreased by 67% compared to 2006. Also, thanks to their renewable growth platforms, in 10 years from 2006 to 2016, Ørsted more than doubled their EBITDA and more than quadrupled their return on capital employed, from 6% to 25% (Ørsted, 2017).

Its strategic transformation was completed, and Poulsen thought that this was the right time to make a major change. As a reflection of its transformation, in 2016, "DONG (Danish oil & gas) energy" officially changed its name to "Ørsted." A tribute to the Danish scientist Hans Christian Ørsted who was known for discovering electromagnetism, a crucial process for running a wind turbine (Ørsted, 2022g). In addition, Ørsted launched a new vision for the company: "Let us create a world that runs entirely on green energy" (Ørsted, 2022b).

Moreover, the cost of offshore wind energy had continued to decrease, and in 2019 offshore wind energy was cheaper per MWh than energy generated by newly built fossil fuel power stations in northwest Europe (Ørsted, 2019b). Also, thanks to Ørsted the levelized cost of electricity for offshore had decreased by 66% to 56 EUR/MWh (see Figure 10). A historical step for Henrik Poulsen and its management team.

Levelised cost of electricity (LCoE)
EUR/MWh, 2012¹ and 2019²

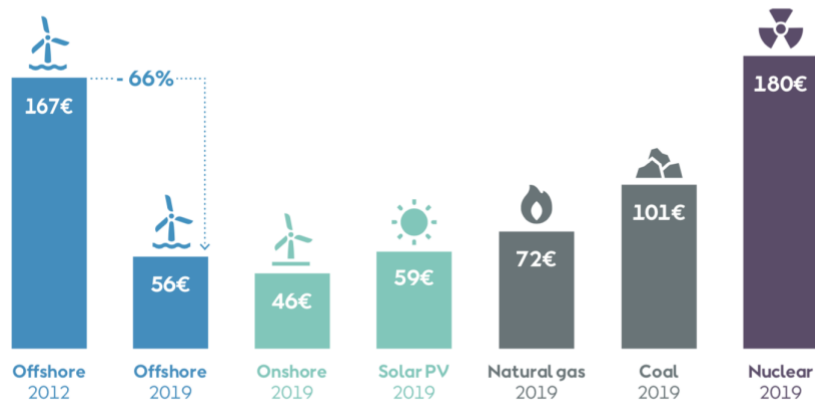


Figure 10: Levelized cost of electricity for different energy sources (EUR/MWh) in 2019¹³

Geographically, Ørsted decided to expand its offshore wind business to Asia (Taiwan) and the US. In addition, in 2018, onshore wind energy, bioenergy, and customer solutions were part of their business portfolio. The customer solutions business, though, and therefore Ørsted’s power distribution and city light business were divested in 2019 to fully concentrate on renewable upstream and midstream activities (Ørsted, 2019a).

In 2019, the green transformation raised Ørsted’s stock market value by about US\$30 billion, transforming it into one of Europe’s most valuable energy companies (Reguly, 2019).

Moreover, in 2019, Ørsted was named the most sustainable company in the world, according to a global 100 index by financial and sustainability research firm Corporate Knights. The first energy company to ever feature at the top of the ranking (Paige, 2020). From the IPO in 2016 until 2020, Ørsted’s profit doubled, and its market value tripled while its CO2 emissions decreased by 80% (Witsch, 2020). As of mid-2021, its share price had almost quadrupled since 2016 (Ørsted, 2022b).

When asked about this achievement, Hendrik Poulsen remembers how they succeeded:

“We set a long-term vision of contributing to a world that runs entirely on green energy. Then we translated that into a strategic business ambition. To become a global leader in green energy. We set a handful of targets to guide that ambition. Something that provides tangibility to the long-term ambition. Then we rolled that back into a set of action items for each employee in the company. Things that we expect that member of the team to focus on over the next year”
(Ørsted, 2022b)

¹³ Source: Ørsted, 2019b

3.2.5 Stakeholder Management and Culture

“If you really want to enter onto a new roadmap, make sure you have connected all the dots in terms of proving your concept. Have the right competencies and skills and really think about how to scale up and what it takes. Look at your stakeholders. Look outside the company. Who are the stakeholders and partners you need to team up with and join forces in order to move forward”¹⁴

- Martin Neubert, former CEO Ørsted Offshore Wind

Stakeholder engagement has been a vital pillar of Ørsted’s transition strategy. The strategic transformation was accompanied by active stakeholder management internally and externally. The new purpose and vision motivated employees and led to positive feedback, which was a reason to be proud to work in Ørsted (Ørsted, 2021a; Science Based Targets, 2022). Thanks to the management team around Henrik Poulsen, Ørsted built an entrepreneurial culture ready to make big decisions on relatively fast processes and assume significant risk (Ørsted, 2022b).

Moreover, in the late 2000s, Ørsted began a dialogue with activist groups like Greenpeace or World Wildlife Fund (WWF). Until today, they engage with Non-Governmental Organizations (NGO) on topics like biodiversity or human rights (Ørsted, 2022j).

Christy Wang, Ørsted’s Taiwan's General Manager, explains that they want to take every chance to communicate with critical stakeholders to guide them through, e.g., the development of offshore wind parks and, importantly, be patient and understanding throughout the communication process. (Ørsted, 2022d).

For this, Ørsted conducts a materiality assessment each year to identify the most critical stakeholders and assess shareholder priorities and how they overlap with societal challenges. Five key stakeholder groups are political stakeholders and authorities, local communities, employees, investors and shareholders, and NGOs/multiple stakeholder networks (Ørsted, 2020, 2021a).

Consequently customers, the sustainability community and also investors reacted positively (Science Based Targets, 2022). The latter were more and more interested in Ørsted as they were specifically looking for green-profile companies with a low-carbon agenda (Science Based Targets, 2022).

¹⁴ Source: Ørsted, 2022b

3.2.6 Competitive landscape

Throughout the years, Ørsted competed in different markets within the energy industry. In their first 35 years, Ørsted mainly competed as a traditional fossil fuel energy company on the domestic market and small parts of Northern Europe (DONG energy, 2006, 2011).

Due to its expansion within Europe and the simultaneous liberalization of the energy market, Ørsted’s main competitors became Europe-wide. In 2010, the main players on the power and natural gas market were EDF, EON, Enel, GDF Suez, Iberdrola, RWE and Ørsted was one of a number of medium-sized, more regionally based companies such Vattenfall (DONG energy, 2010).

During the years and especially after its transformation, Ørsted mainly competed in the renewable energy market, specifically in the offshore wind market, where they saw a competitive edge(Ørsted, 2022b). As shown in Figure 11, before 2009, the installed capacity of offshore wind energy in Europe was almost nonexistent, meaning that no energy company had explored the market to a greater extent.

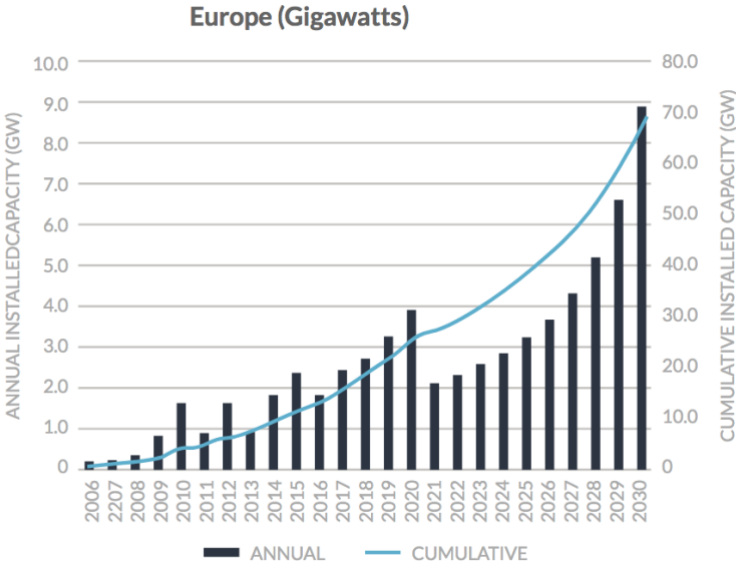


Figure 11: Annual and cumulative installed capacity of offshore wind in Europe in GW¹⁵

After successfully entering the offshore wind market, Ørsted is the global market leader with 29% share of global capacity constructed or under construction (see Figure 12).

¹⁵ Source: Catapult, 2018

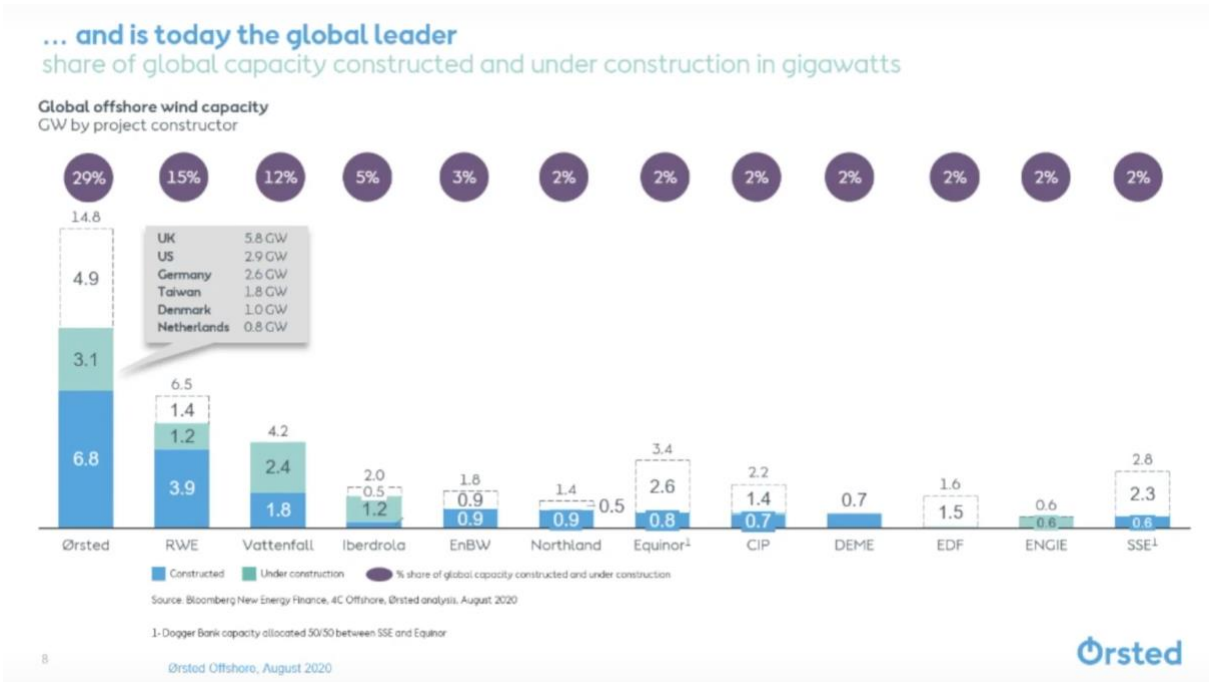


Figure 12: Global offshore wind capacity in gigawatts of Ørsted and main competitors in 2020¹⁶

Moreover, based on revenue it is now the leading renewable energy company worldwide (see Figure 13).

Leading renewable energy companies worldwide in 2021, based on revenue (in billion U.S. dollars)

Leading renewable energy companies worldwide 2021, by revenue

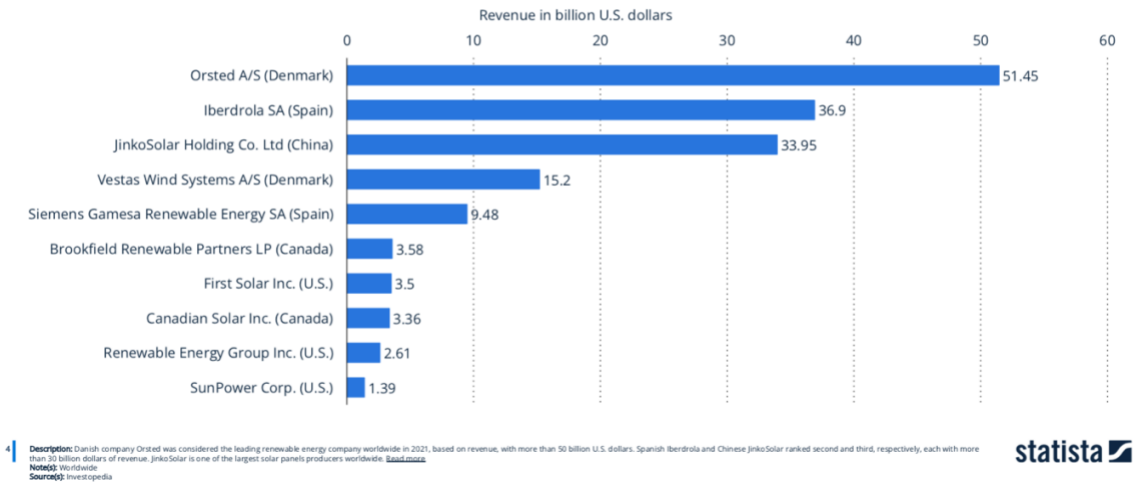


Figure 13: Leading renewable energy companies worldwide in 2021, based on revenue (in billion US\$)¹⁷

¹⁶ Source: Energy Futures Lab, 2020

¹⁷ Source: Statista, 2022

3.3 Ørsted's business portfolio and strategy as of today

„We aspire to be one of the true catalysts of systemic change to a greener society by continuing to prove that there is no long-term trade-off between sustainability and financial value creation.“¹⁸

- Mads Nipper, CEO Ørsted

Today, Ørsted employs around 7,300 people (Ørsted, 2022c). After completing the successful transformation, in 2020 Henrik Poulsen stepped down, and former LEGO CEO Mads Nipper took over. Ørsted is a global company that operates in several countries and is committed to transitioning to a fully renewable energy company by 2025. Its management team around Nipper continues to innovate and develop new technologies to support the growth of renewable energy worldwide. Ørsted's purpose is to be committed to “renewable energy, enabling people, businesses and communities to lever its potential without having to worry about causing a negative environmental impact or limiting the opportunities of future generations” (Ørsted, 2022a).

Furthermore, Ørsted has more than two dozen offshore wind farms in Denmark, Britain, Germany, Netherlands, and Taiwan and has several in development off the US east coast. It is the world's biggest offshore wind power producer with a market share of 25% (Ørsted, 2022b). Besides that, it has developed onshore renewables with a strong presence in the US and Europe. Mainly wind, solar PV, and storage projects. Bioenergy and other (legacy gas activities, waste-to-energy) is the third business field of Ørsted. Lastly, renewable hydrogen and green fuels are Ørsted's latest emerging platform in which they want to become a global leader by 2030 (Ørsted, 2021a, 2022c).

Its main revenues in 2021 stemmed from the Offshore business (€7.62bn), following Bioenergy and other (€4.85bn) and onshore (€0.15bn). Its operating profit totaled €3.3bn, and net profit amounted to €1.5bn.

The strategic choices that Nipper and his board members want to pursue are threefold. Firstly, they want to defend their market leader position in offshore wind energy by expanding to the Baltics, Nordics, and East Asia and constructing innovative energy islands and floating offshore wind. Secondly, in order to diversify onshore renewables shall provide a strong growth platform by accelerating the US-build-out and scaling EU platforms as well as exploring Asia Pacific.

¹⁸ Source: Ørsted, 2022b

Secondly, diversifying onshore renewables shall provide a robust growth platform by accelerating the US-build-out, scaling EU platforms, and exploring Asia Pacific. Lastly, they want to create a global leadership position in renewable hydrogen and green fuels by leaning into value chains collaborating with partners and executing more than 3 Gigawatt¹⁹ (GW). (Ørsted, 2021a, 2022c)

3.4 Looking into the future - where to now?

Ørsted's strategy seemed to pay off, but two major unprecedented and exogenous shocks brought much turmoil in the past two years. For the whole world and also for Ørsted.

3.4.1 Covid 19 and the war in Ukraine

In the past year, Ørsted stock price went down due to two unprecedented events. Firstly, the Covid-19 pandemic, and secondly, the Russian invasion of the Ukraine. Both will be discussed shortly.

The spread of Covid 19 led to an economic standstill in the Fall of 2020 and, therefore, to a decrease in energy consumption which also affected Ørsted (World Economic Forum, 2020). Way worse for Ørsted, the supply chains around the world got interrupted, material costs were rising, and therefore the costs for wind turbines went up drastically (Lex, 2022).

Just after the pandemic seemed under control, in February 2022, Russia invaded Ukraine, sparking an energy crisis worldwide. As many parts of the world depended on Russian oil & gas, supply became scarce, and fossil fuel prices skyrocketed. While oil & gas majors like BP, Shell, and Total heavily profited from windfall profits due to the war (Jolly & Elgot, 2022), the question of energy security arose again (Evans, 2022). Therefore, more and more oil majors like BP and Shell are moving into renewable energy, which means growing competition for companies like Ørsted (Hook, 2021). In offshore wind, this leads to higher prices for development rights accredited by governments (Hook, 2021).

¹⁹ The number of households that 1 GW of electricity can power accounts to roughly 750,000

3.4.2 Ørsted’s 2030 aspiration and mission

“The biggest risk of climate change is the perception that somebody is going to solve it for us”²⁰

- Mads Nipper, CEO Ørsted

Despite recent turmoil, Mads Nipper and his team came together to set a new strategic aspiration “2030” for Ørsted (see Figure 14). The mission is to “become the world’s leading green energy major by 2030” (Ørsted, 2021a) and to “become one of world’s largest green electricity producers” (Ørsted, 2021a). Therefore, they increased their old target of 30GW gross renewable capacity installed from to 50GW (Ørsted, 2021a).

Moreover, as the first energy major, Ørsted set ambitious sustainability targets based on the “Science Based Targets” initiative. By 2025, they want to become a carbon-neutral business and, by 2040, possess a carbon-neutral footprint. Furthermore, no later than 2030, Nipper wants all projects commissioned by Ørsted to have a net positive biodiversity impact (Ørsted, 2021a).

2030 aspiration: Become the world’s leading green energy major



Figure 14: Ørsted’s 2030 aspiration²¹

²⁰ Source: Ørsted, 2022b

²¹ Source: Ørsted, 2021c

4. Exhibits

Exhibit 1: Ørsted financial results in 2021²² (in DKKm)²³

Financial results, DKKm	2021	2020	2019	2018	2017
Income statement (BP¹ comparables)					
Revenue	77,673	52,601	67,842	76,946	59,504
EBITDA	24,296	18,124	17,484	30,029	22,519
Offshore	18,021	14,750	15,161	28,046	20,595
Sites, O&M, and PPAs	13,059	15,476	13,750	11,279	8,529
Construction agreements and divestment gains	7,535	1,593	3,765	18,765	13,667
Other, incl. project development	(2,573)	(2,319)	(2,354)	(1,998)	(1,601)
Onshore	1,349	1,131	786	44	-
Bioenergy & Other	4,747	2,136	1,495	2,100	2,234
Other activities	179	107	42	(161)	(310)
Operating profit (loss) (EBIT)	16,195	10,536	10,052	24,654	16,235
Profit (loss) for the year	10,887	16,716	6,044	19,496	20,199
Income statement (IFRS comparables)					
Revenue	77,673	50,151	70,398	75,520	59,709
EBITDA	24,296	16,598	19,020	28,491	22,574
Depreciation, amortisation, and impairment	(8,101)	(7,588)	(7,432)	(5,375)	(6,284)
Operating profit (loss) (EBIT)	16,195	9,010	11,588	23,116	16,290
Gain (loss) on divestment of enterprises	(742)	10,831	(63)	127	(139)
Net financial income and expenses	(2,166)	(2,524)	(1,135)	(1,278)	(1,042)
Profit (loss) before tax	13,277	17,324	10,392	21,966	15,099
Tax	(2,390)	(1,776)	(3,101)	(3,700)	(1,778)
Profit (loss) for the period	10,887	15,537	7,235	18,276	19,425
Balance sheet					
Assets	270,385	196,719	192,860	174,575	146,521
Total equity	85,137	97,329	89,562	85,115	71,837
Shareholders in Ørsted A/S	64,072	81,376	73,082	68,488	54,791
Non-controlling interests	3,081	2,721	3,248	3,388	3,807
Hybrid capital	17,984	13,232	13,232	13,239	13,239
Interest-bearing net debt	24,280	12,343	17,230	(2,219)	(1,517)
Capital employed	109,416	109,672	106,792	82,896	70,320
Additions to property, plant, and equipment	43,941	28,442	22,440	14,436	17,999
Cash flows					
Cash flows from operating activities	12,148	16,466	13,079	10,343	1,023
Gross investments	(39,307)	(26,967)	(23,305)	(24,481)	(17,744)
Divestments	21,519	19,039	3,329	19,950	16,982
Free cash flow	(5,640)	8,538	(6,897)	5,812	261
Financial ratios					
Return on capital employed (ROCE) ² , %	14.8	9.7	10.6	32.1	25.2
FFO/adjusted net debt ³ , %	31.3	65.0	31.0	69.0	50.3
Number of outstanding shares, 31 December, '000	420,175	420,068	419,985	420,045	420,155
Share price, 31 December, DKK	835	1,244	689	436	339
Market capitalisation, 31 December, DKKbn	351	522	290	183	142
Earnings per share (EPS), DKK	24.3	38.8	12.8	45.3	46.4
Dividend yield, %	1.5	0.9	1.5	2.2	2.7

²² Source: Ørsted, 2021a

²³ DKK 1 bn = € 0.13 bn

Exhibit 2: Orsted (back then DONG energy) financial results in 2008²⁴(in DKKm) ²⁵

DKK million	2008	2007	2006	2005	2004	
CONSOLIDATED INCOME STATEMENT						
Revenue:	60,777	41,625	36,564	18,493	14,209	
Exploration & Production	7,114	4,409	5,111	3,879	3,109	
Generation	15,298	12,358	7,682	114	116	
Energy Markets	38,087	20,262	18,286	14,550	10,635	
Sales & Distribution	15,595	14,552	12,254			
Other (including eliminations)	(15,317)	(9,956)	(6,769)	(50)	349	
EBITDA:	13,622	9,606	8,950	6,314	4,637	
Exploration & Production	4,053	2,290	3,370	2,569	1,850	
Generation	3,155	3,769	2,663	47	59	
Energy Markets	5,082	1,582	1,803	3,609	2,598	
Sales & Distribution	1,827	1,961	1,303			
Other (including eliminations)	(495)	4	(189)	89	130	
EBITDA adjusted for special hydrocarbon tax	12,876	9,584	8,727	5,886	4,460	
EBIT	8,004	4,783	5,691	4,099	2,371	
Financial items, net	(1,134)	(740)	(592)	(152)	171	
Profit after tax	4,815	3,259	5,039	2,687	2,074	
CONSOLIDATED BALANCE SHEET						
Assets	106,085	89,710	99,255	46,854	31,436	
Additions to property, plant and equipment	9,853	11,151	5,281	8,041	2,464	
Interest-bearing assets	2,794	2,517	9,981	7,356	145	
Interest-bearing debt	18,047	17,309	27,760	7,148	3,331	
Net interest-bearing debt	15,253	14,792	17,779	(208)	3,186	
Equity	46,190	42,211	42,390	26,278	16,360	
Capital employed	61,443	57,003	60,169	26,070	19,546	
CONSOLIDATED CASH FLOW						
Funds From Operation (FFO)	11,165	10,046	6,694	5,419	4,302	
Cash flows from operating activities	10,379	8,842	8,169	5,866	3,539	
Cash flows from investing activities	(8,629)	(11,803)	(7,809)	(9,542)	(4,423)	
Free cash flow to equity (with acquisitions/disposals)	1,750	(2,961)	360	(3,676)	(884)	
Free cash flow to equity (without acquisitions/disposals)	430	641	14,302	3,325	1,653	
KEY RATIOS						
EBITDA margin	%	22	23	24	34	33
EBIT margin (operating margin)	%	13	11	16	22	17
Financial gearing	x	0.33	0.35	0.42	(0.01)	0.19
Net interest-bearing debt + hybrid capital / EBITDA adjusted for special hydrocarbon tax	x	1.8	2.4	3.0	1.3	0.7
Number of shares, end of year	1,000	293,710	293,710	293,710	214,360	214,360
Average, number of shares	1,000	293,710	293,710	270,167	214,360	214,360
Earnings per share	DKK	15	10	17	12	9
Proposed dividend per share	DKK	7	5	7	0	0
Cash flows from operating activities per share	DKK	35	30	30	27	17
Free cash flow to equity (without acquisitions/disposals) per share	DKK	1	2	53	15	8
For definitions of financial highlights, reference is made to the description of accounting policies in note 40 of the consolidated financial statements.						

²⁴ Source: DONG energy, 2008

²⁵ DKK 1 bn = € 0.13 bn

Exhibit 3: Ørsted Dividends 2018-2022²⁶

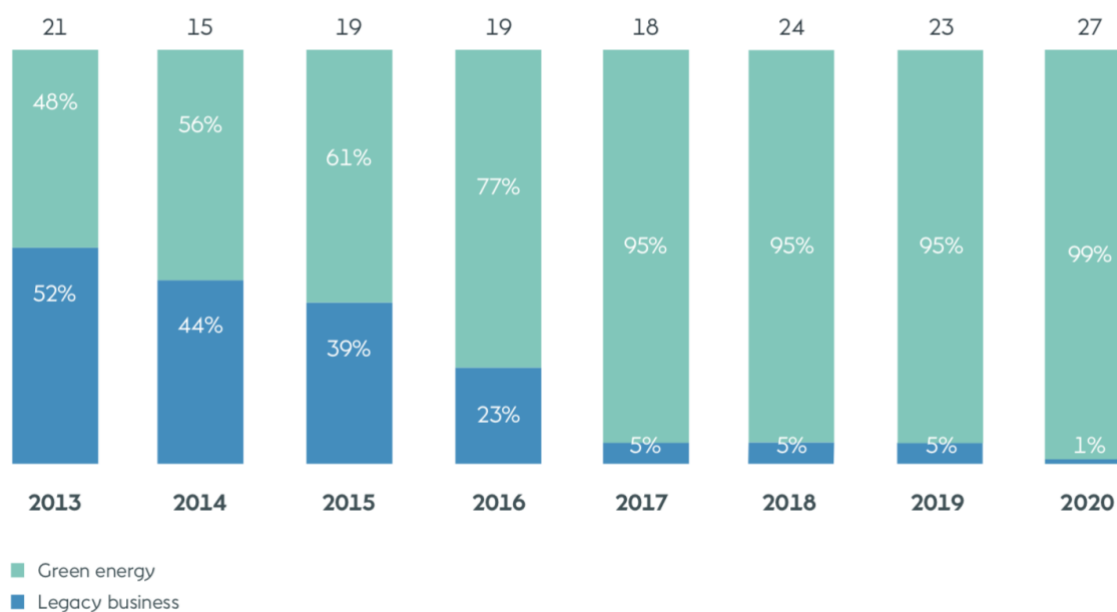
Ørsted A/S Dividends

Ex-dividend date	Payable date	Dividend amount (change)	Adjusted Price	Close Price
2022-04-11	2022-04-28	0.606 USD (-2.73%)	40.12 USD	40.12 USD
2021-03-02	2021-03-18	0.623 USD (20.50%)	51.70 USD	52.46 USD
2020-03-03	2020-03-23	0.517 USD (5.08%)	35.12 USD	36.05 USD
2019-03-06	2019-03-25	0.492 USD (-1.40%)	23.84 USD	24.83 USD
2018-03-09	2018-03-28	0.499 USD	19.31 USD	20.50 USD

Exhibit 4: Ørsted Capital Expenditure (CAPEX) allocation from 2013-2020²⁷ (in DKKm)²⁸

CAPEX allocation to new strategic core 2013-2020³

DKK bn



²⁶ Source: Digirin, 2022

²⁷ Source: Ørsted, 2022b

²⁸ DKK 1 bn = € 0.13 bn

Exhibit 5: Change in market capitalization since Ørsted's IPO until 2019²⁹

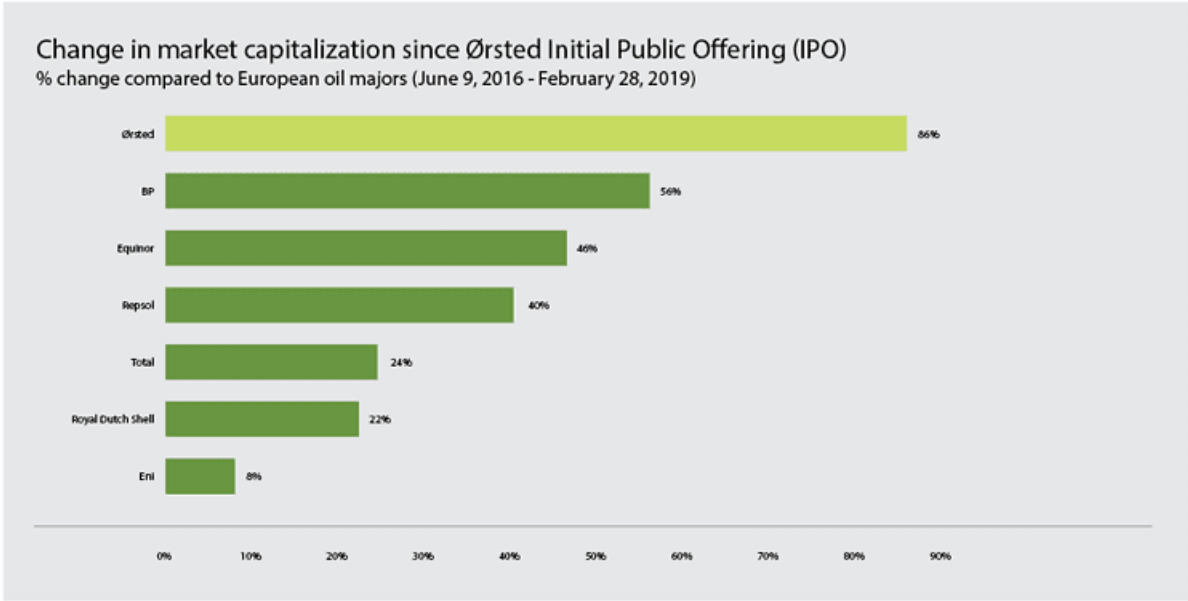
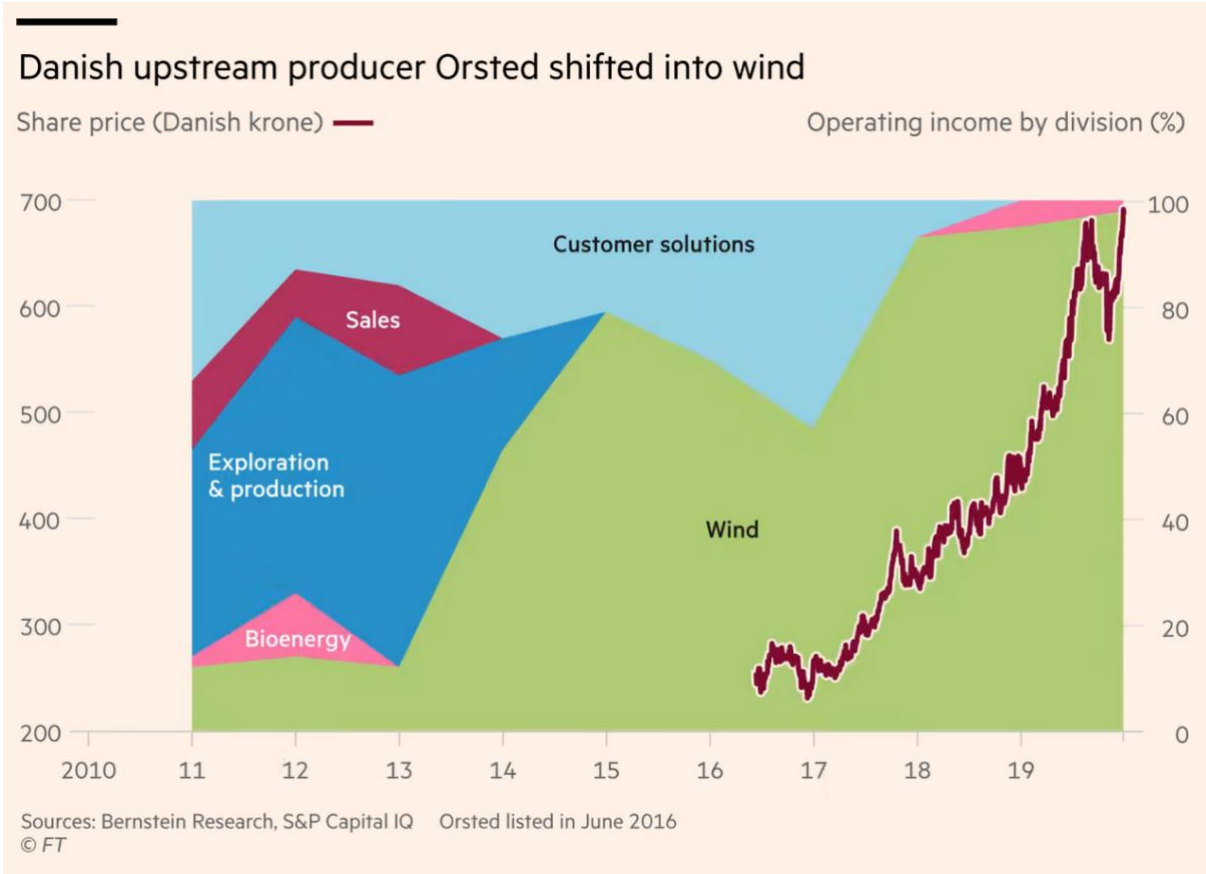


Exhibit 6: Development share price and operating income by division (%) of Ørsted³⁰



²⁹ Source: Reguly, 2019

³⁰ Source: Brower & McCormick, 2020

Exhibit 7: Ørsted comparison development of key KPIs from 2007 to 2020³¹ (in DKKm)³²

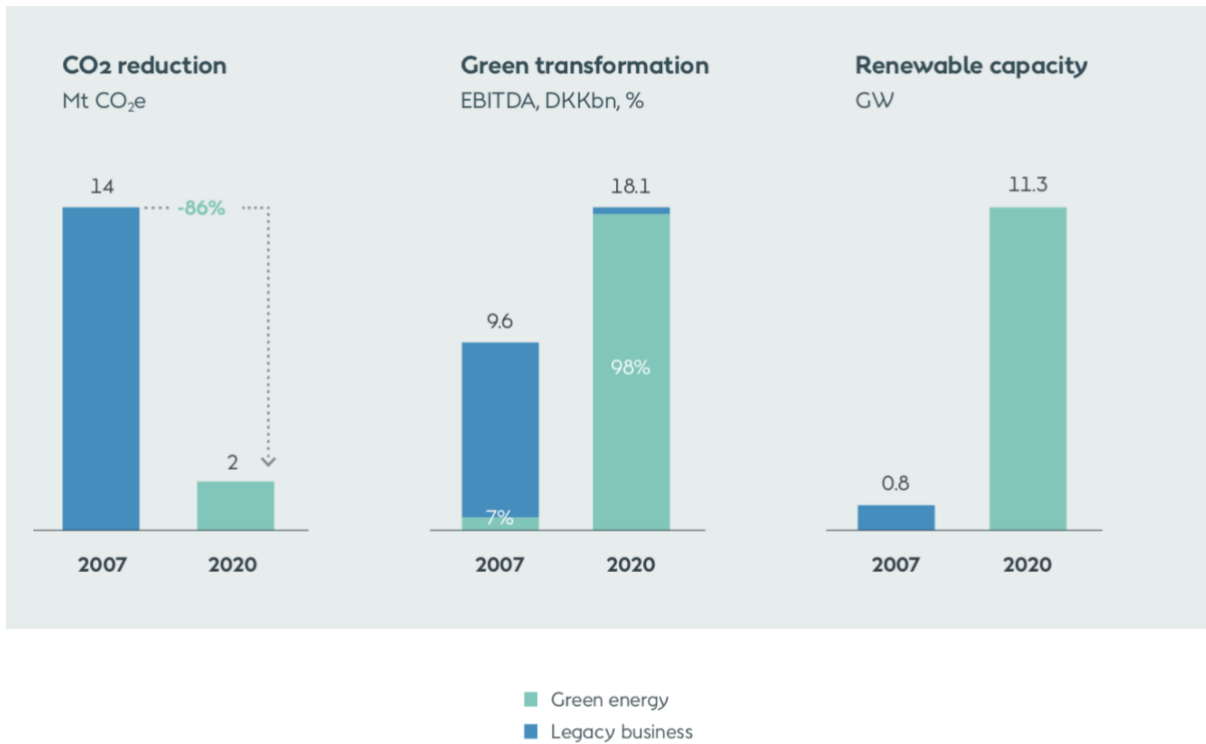
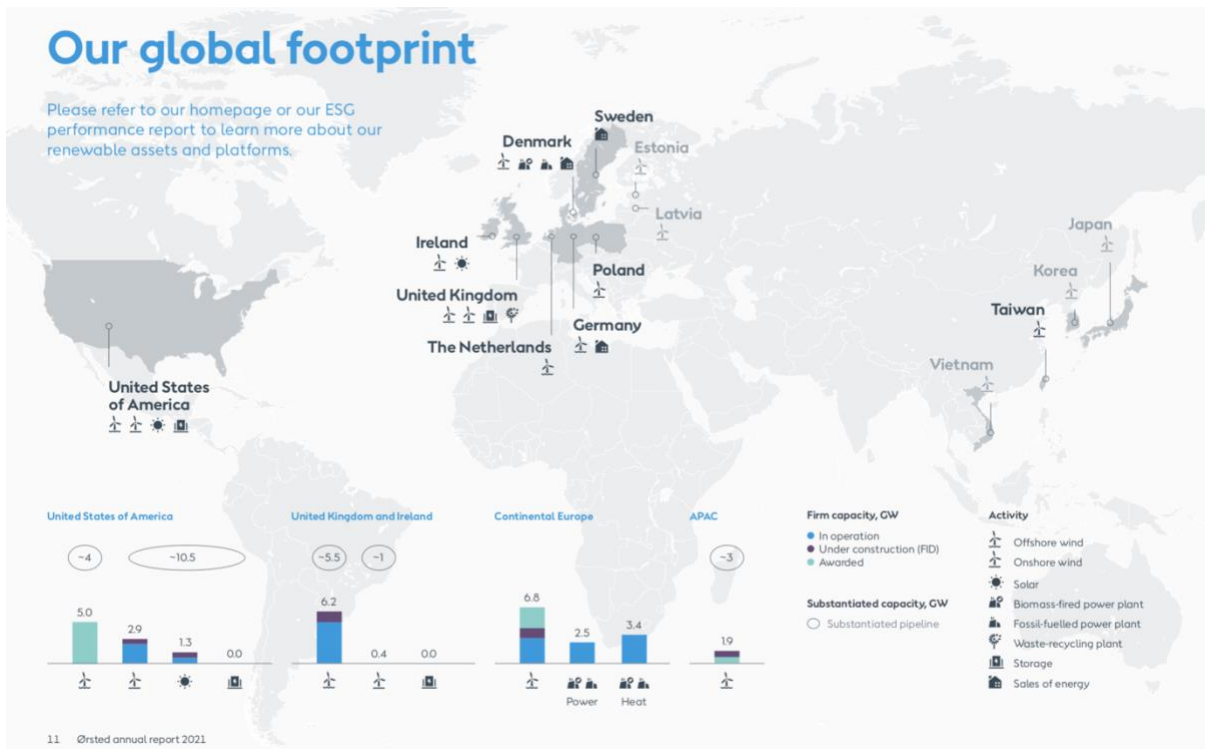


Exhibit 8: Ørsted global footprint of renewable assets (2021)³³











³¹ Source: Ørsted, 2020

³² DKK 1 bn = € 0.13 bn

³³ Source: Ørsted, 2021c

Exhibit 9: Ørsted business units (2022)³⁴

Ørsted develops energy systems that are green, independent and economically viable

<p> Offshore wind</p>  <ul style="list-style-type: none"> ▪ Global leader in offshore wind ▪ Develop, construct, operate and own offshore wind farms ▪ Ambition to reach ~30 GW installed capacity by 2030 	<p> Onshore renewables</p>  <ul style="list-style-type: none"> ▪ Strong presence in the United States and Europe ▪ Develop, operate and own onshore wind, solar PV and storage projects ▪ Ambition to reach ~17.5 GW installed capacity by 2030 	<p> Bioenergy & other</p>  <ul style="list-style-type: none"> ▪ Presence in Europe, including bioenergy plants, legacy gas activities and patented waste-to-energy technology ▪ Own and operate bioenergy and waste-to-energy plants, and optimise gas portfolio 	<p> Renewable hydrogen and green fuels</p>  <ul style="list-style-type: none"> ▪ Emerging platform with 10 pipeline projects (+3 GW) mainly in Europe ▪ Develop, construct, own and operate hydrogen facilities ▪ Ambition to become a global leader in renewable hydrogen and green fuels by 2030
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Capacity, GW ...

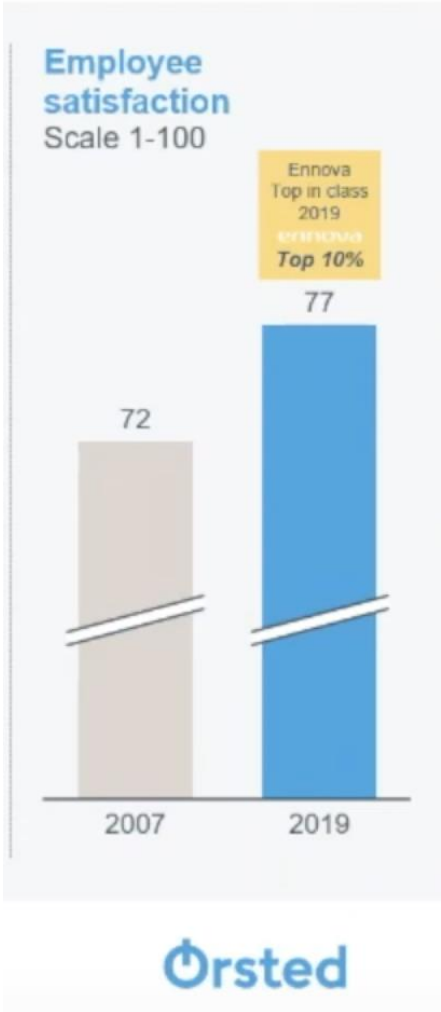
Exhibit 10: Ørsted growth platforms (2021)³⁵

Our growth platform	Europe	North America	Asia Pacific
Offshore wind	Maintain leadership		
Onshore wind and solar PV	Explore growth opportunities	Build strong position	Explore growth opportunities
Renewable hydrogen	Execute projects and pursue scale-up opportunities		

³⁴ Source: Ørsted, 2022b

³⁵ Source: Ørsted, 2021c

Exhibit 11: Ørsted employee satisfaction 2007 and 2019³⁶



³⁶ Source: Energy Futures Lab, 2020

Exhibit 12: Ørsted offshore core competencies³⁷

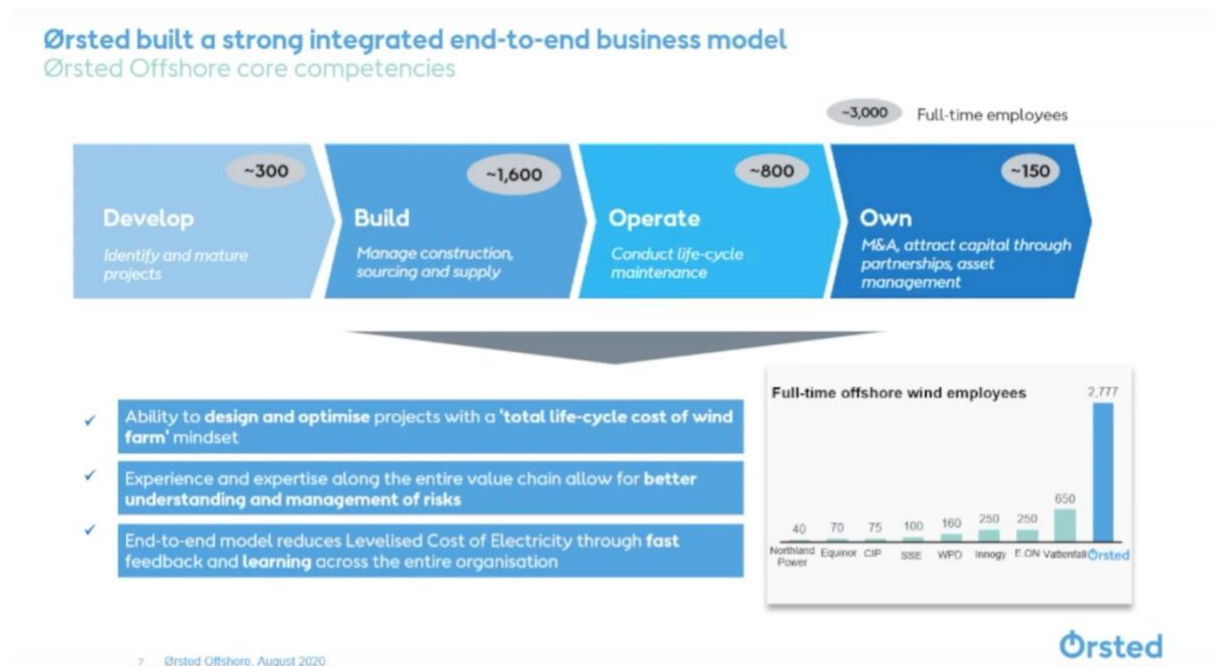
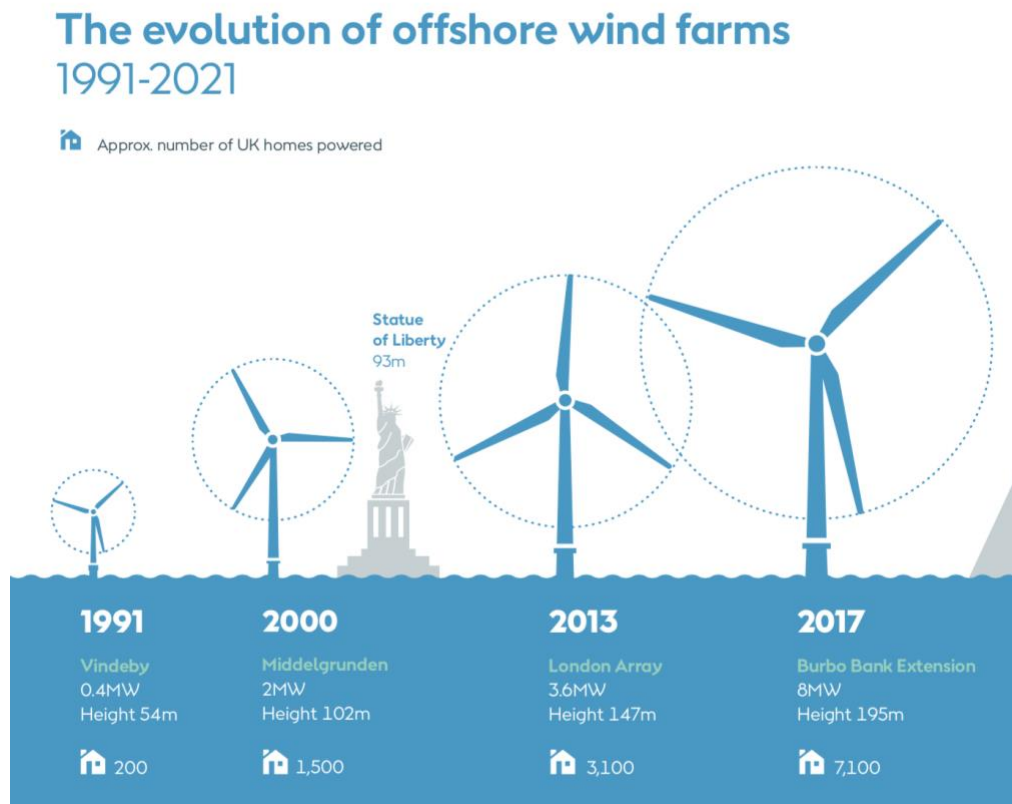


Exhibit 13: The evolution of offshore wind farms³⁸



³⁷ Source: Energy Futures Lab, 2020

³⁸ Source: Ørsted, 2022e

Exhibit 14: Ørsted cumulative constructed offshore wind power capacity, GW³⁹

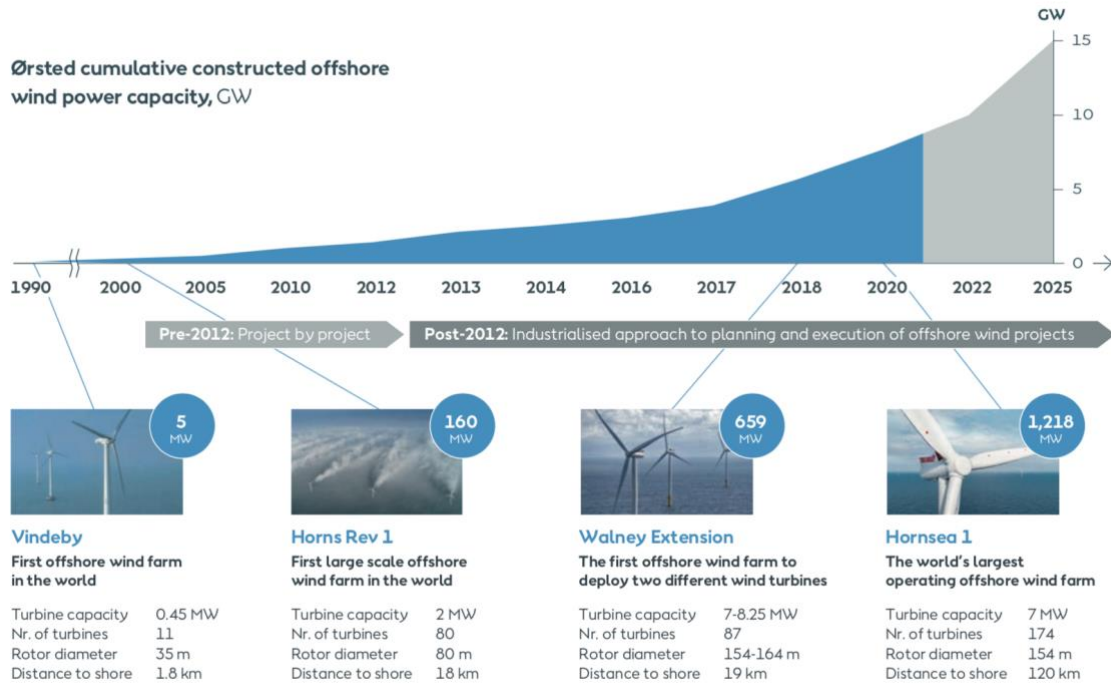
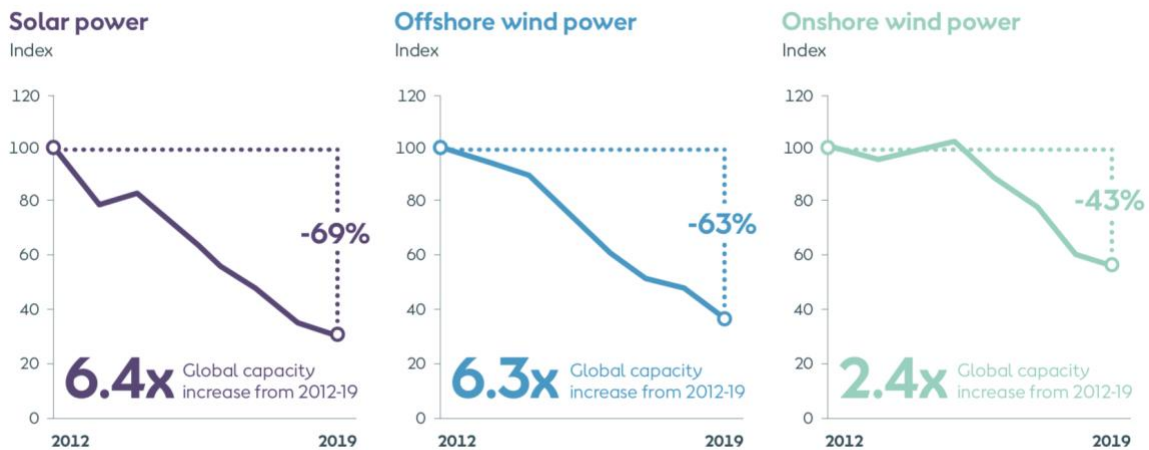


Exhibit 15: Global green power cost reductions⁴⁰



Source: Bloomberg New Energy Finance (2019) New Energy Outlook 2019.

³⁹ Source: Ørsted, 2022e

⁴⁰ Source: Ørsted, 2022f

Exhibit 16: Major EU climate programs⁴¹

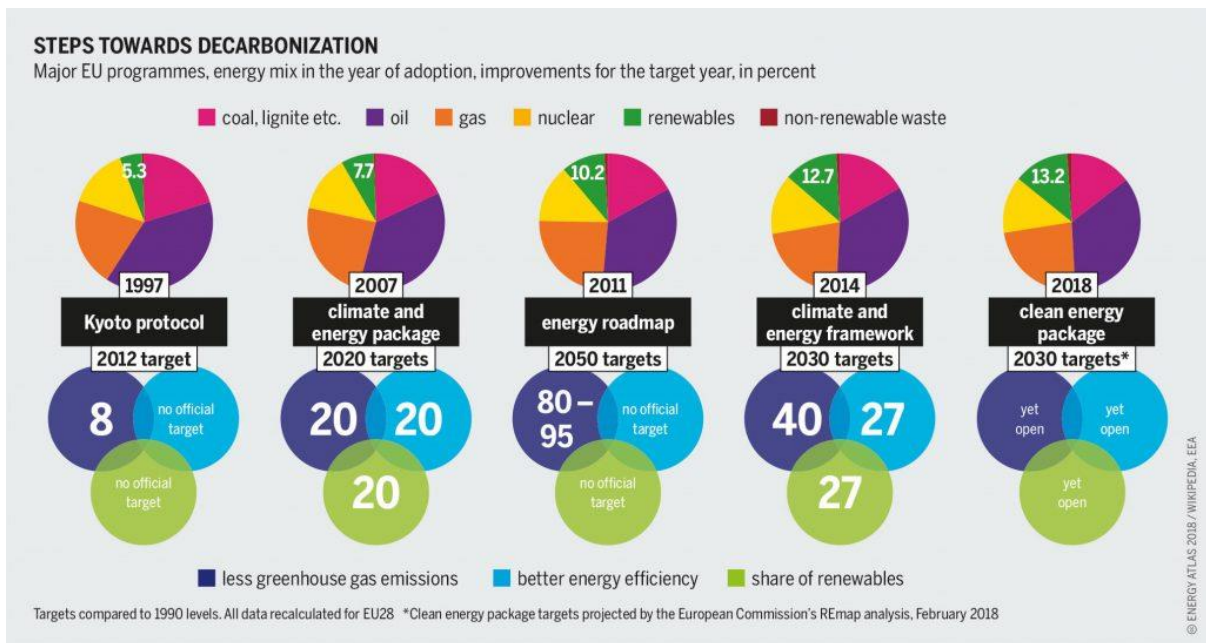


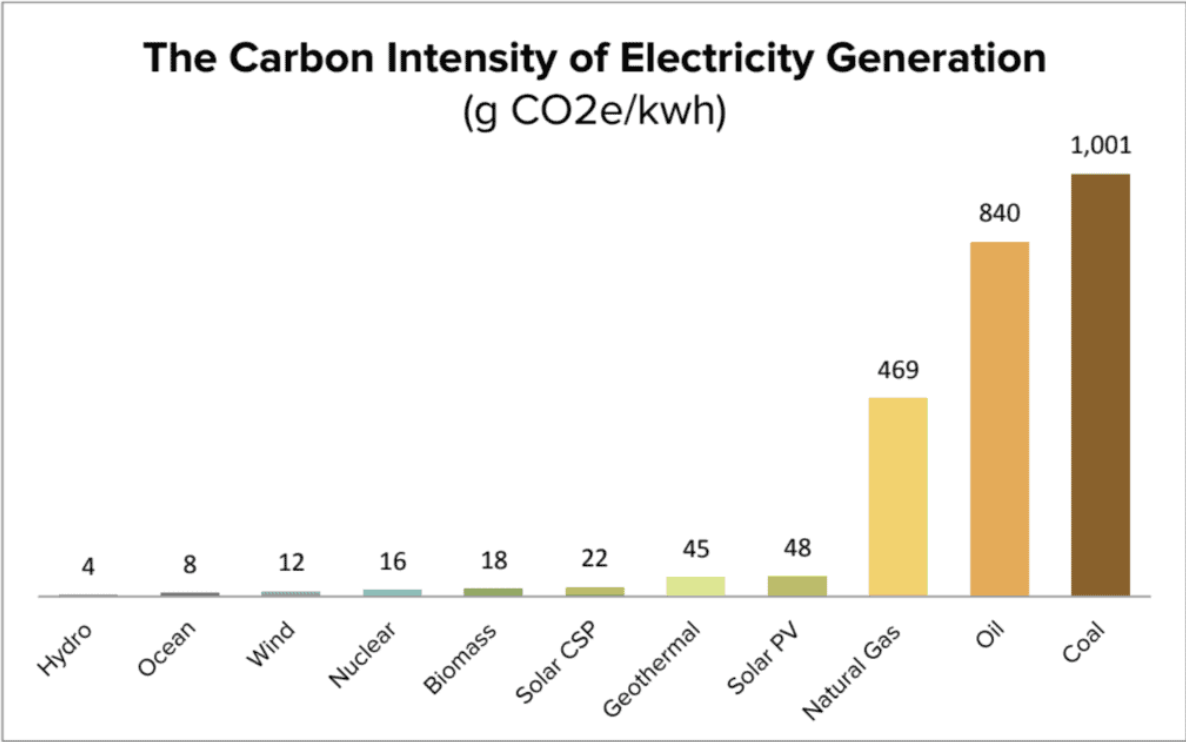
Exhibit 17: Price of CO2 per ton in the EU Emissions Trading System⁴²



⁴¹ Source: The Global Energiewende Wiki, 2022

⁴² Source: Wikipedia, 2022

Exhibit 18: Carbon Intensity of Electricity Generation (g CO2e/kwh)⁴³



Source: Adapted from IPCC special Report on Renewable Energy Sources and Climate Change Mitigation.

⁴³ Source: Lauer, 2022

5. Teaching Notes

This chapter will help teachers to apply the presented teaching case in the curriculum and to create a fruitful discussion in the classroom. First, the case is briefly summarized (5.1) before learning objectives (5.2), a pedagogical overview (5.3), and, most importantly, suggested assignment questions, including analysis (5.4), are described. Finally, a suitable teaching strategy is formulated before the board plan is presented.

5.1 Case Synopsis

This teaching case presents and analyzes the sustainable business transformation of the Danish company Ørsted from a fossil fuel-based to a leading-renewable energy company enabled through a holistic sustainability strategy from 2009 onwards. This transformation happened in the fast-changing and shock-vulnerable energy industry, setting a best-practice example for competitors and other companies in various industries.

The short introduction presents the case protagonist, Danish energy giant Ørsted, and the challenges and obstacles of its executive managers, Jakob Bøss and Anders Eldrup (CEO), on their transformation path into a green energy leader. The first central part of the case deals with the characteristics and peculiarities of the energy industry worldwide and in the EU. Secondly, the focus is zoomed in on Ørsted's transformation by looking at the history and its strategy change under Eldrup and his successor Hendrik Poulsen and examining their stakeholder approach and competitive landscape. Lastly, Ørsted's short future outlook is ventured, which includes and illuminates the consequences of the Covid-19 pandemic and the current Ukraine war on Ørsted's ambitions and aspirations.

5.2 Learning Objectives and Contribution

This case can be taught to undergraduate, graduate, and MBA students in strategic management and corporate sustainability. It can be leveraged especially for analyzing strategic change in fast-changing environments and for the topics responsible business and corporate sustainability. The main goal of this teaching case is to showcase a real-life example of a very urgent and increasingly relevant management problem with the following learning objectives.

Pedagogic goals:

- Identify changing environmental influences and market changes in the business environment and the importance of reacting to them by, e.g., making timely, market-oriented, and decisive resource decisions and thus remaining competitive.
- Understand and analyze the implications and implementation of radical strategic change to meet newly identified market environment requirements.
- Critically analyze the implementation of strategic change by possessing valuable dynamic capabilities and highlight how and why DC are crucial mechanisms to enable strategic change.
- Comprehend what a successful CS strategy can look like and how it can become a successful business case that addresses societal and environmental needs and leads to profitability in the long run.
- Show how vital a clear vision, mission, and associated strategy is to ensure long-term survival and thrive in the industry.

Further Contributions:

- Showcase a successful green transition that has been good for the environment, society, and the company's bottom line.
- A testament to the potential of renewable energy and the role that companies like Ørsted can play in driving the transition to a more sustainable future.
- The urgency of global leaders as players to fight against climate change

5.3 Pedagogical Overview and Teaching Strategy

Before discussing the case in class, students should be given the case, read it and analyze it carefully. In preparation for this and to thoroughly understand the case, the teacher and students should dive into or review the concepts of Strategic Change/Fit and Dynamic Capabilities.

If not already done before, students should be acquainted with the concept of strategy (Michael Porter, 1996, "What is strategy?"). . To address the first two theoretical concepts, the academic journal paper "Modeling the dynamics of strategic fit: A normative approach to strategic change" by Zajac et al. (2000) and "Dynamic Capabilities: A Review of Past Research and an Agenda for the Future" by Ilídio Barreto (2010) should be read.

Moreover, to understand the concept of Corporate Sustainability, recommended readings are “Research on Corporate Sustainability: Review and Directions for Future Research “by Grewal & Serafeim, 2020”, the HBR paper “Corporate sustainability: A strategy?“ by Ioannou & Serafeim, 2019 and “Corporate social responsibility: The centerpiece of competing and complementary frameworks “by Archie Carroll (2015) for a good summary of the historical evolution of corporate social responsibility respectively corporate sustainability.

In addition to this, the teacher and students should visit Ørsted’s website.⁴⁴ Especially the section “About Us”⁴⁵ includes valuable information like white papers, history, and annual & sustainability reports to understand the company better. Ørsted's YouTube channel⁴⁶ is also highly recommended, with interesting explanatory videos about wind energy and, in particular, the video “Our Green Transformation”⁴⁷, which explains the development from a black to a green energy company.

5.4 Assignment Questions and Analysis

For the teaching notes, three assignment questions have thoroughly been set up. Each question is oriented to helping students combine theoretical background with practice and therefore arrive at the proposed pedagogical goals.

Question 1:

- a) *Analyze Ørsted’s strategic fit in 2008 before the introduction of the 85/15 vision. Concentrate on the alignment of Ørsted’s current capabilities and strategy (key overview) with the given external environment (esp. the public and politics).*
- b) *How did Ørsted’s strategy change regarding mission, vision, purpose, core business model, organizational structure, stakeholder engagement, and culture? Compare before 2009 to 2022. How would you characterize the new strategic approach?*

The first question focuses on the strategic (un)-fit and strategic change of Ørsted. It ought to illustrate to students why Ørsted’s old strategy was not a good fit and how Ørsted proceeded to embark on a new strategic direction and successfully implemented its new strategy.

⁴⁴ Source: <https://orsted.com/>.

⁴⁵ Source: <https://orsted.com/en/about-us>.

⁴⁶ Source: <https://www.youtube.com/@Orsted>.

⁴⁷ Source: https://www.youtube.com/watch?time_continue=15&v=N0jja0TrzQ4

Example solution for a):

Internal Focus	External Environment
<p>Current capabilities:</p> <ul style="list-style-type: none"> • Oil and gas procuring, production and electricity generation + energy trading and distribution + direct sales to end-consumer • Core competencies in oil (handling and administrating Denmark's only oil pipeline), coal (modern coal fired plants), and gas (more than 50% revenues) • 93% of profits from fossil fuels • Power and heat production (over 80% of the energy mix consisted of fossil fuels) • Small renewable business due to merger to DONG energy in 2006; renewables accounting for 7% of EBITDA and 0.8 GW capacity in 2007 (see Exhibit 7) 	<p>Public Opinion:</p> <ul style="list-style-type: none"> • Growing public consciousness about global warming and climate change (e.g., caused by Al Gore movie „An inconvenient truth“) • Public opposition towards new fossil fuels projects (e.g., German coal fired plants protests) • COP15 in Copenhagen in 2009 bringing sustainability spotlight to Denmark and Europe
<p>Strategy:</p> <ul style="list-style-type: none"> • Activities mainly Northern Europe (revenues accounting for nearly 50%) • Serving the entire value chain in the energy sector • Main growth areas in gas and coal, increasing market share in the gas market through gas trading and procurement of gas and leveraging on its core competence in coal (new coal fired plants) 	<p>Political regulation:</p> <ul style="list-style-type: none"> • Liberalization of the energy market in Denmark and Europe leading to growing competition (inelastic demand and fungible good) • Increasing importance of climate change in EU's energy policy, setting mandatory 2020 climate targets in 2007; 20% less emissions, 20% share of renewables (see Exhibit 16) • Threat of carbon tax and introduction EU Emissions Trading Scheme (see Exhibit 17 & Exhibit 18)

Summary:

In 2008, Ørsted still was a traditional fossil fuel company with significant investments, resources, and capabilities in that business field. However, it becomes clear that its strategic fit with the external environment, especially the public and politics, was crumbling. Public opposition and pressure were rising, and new political regulations in the EU were threatening the long-term business model and strategy that relied on fossil fuels.

Example solution for b):

	Before 2009	In 2022
Mission	Adding value for its stakeholders by procuring, producing, and trading oil, gas, and electricity	Becoming the world's leading green energy major by 2030 Install 50 GW of renewable capacity by 2030
Vision	Adding maximum value for its shareholders	Let's create a world that runs entirely on green energy
Purpose	Energy security (independence from Middle East fossil fuels) and maximizing profits	We're committed to renewable energy, enabling people, businesses, and communities to lever its potential without having to worry about causing a negative environmental impact or limiting the opportunities of future generations.
Core Business Model	Serving the entire value chain in the energy sector: oil and gas procuring, production and electricity generation + energy trading and distribution + direct sales to end-consumer Main geographical focus: Northern Europe	Ørsted develops, constructs, and operates offshore and onshore wind farms, solar farms, energy storage facilities, renewable hydrogen and green fuels facilities, and bioenergy plants (see Exhibit 9 & Exhibit 12) Geographical focus areas: Northern Europe (Denmark, UK, Netherlands, Norway, Sweden, Germany), Asia (Taiwan) and USA (see Exhibit 8)
Growth Areas	Main growth areas in gas and coal, increasing market share in the gas market through gas trading and procurement of gas and leveraging on its core competence in coal (new coal fired plants)	Expanding to the Baltics, Nordics, and East Asia in offshore (see Exhibit 8) Keep innovating (floating offshore, energy islands) (see Exhibit 10) Onshore renewable by accelerating the US built-out and scaling EU platforms and exploring Asia Pacific (see Exhibit 10) Global leadership position in renewable hydrogen and green fuels (see Exhibit 10)
Stakeholder Engagement	Focus on shareholder and energy security for Northern Europe	Key pillar of transition strategy

		<p>Dialogue with activist groups such as Greenpeace and the World Wildlife Fund (WWF)</p> <p>Yearly Materiality Assessment (identifying most material Stakeholders, assessing shareholder priorities and these priorities intersects with societal challenges)</p> <p>Key stakeholder groups: political, local communities, employees, investors, shareholders, and NGOs)</p> <p>Entrepreneurial culture, ready to make big decisions on fast process, and positive feedback from employees (proud to work for Ørsted) (see Exhibit 11)</p>
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Summary:

Comparing the two strategy approaches at different points reveals that Ørsted did a 180-degree turnaround in pursuing a corporate sustainability strategy. First, they embraced societal and environmental core issues into their primary strategy and now focus on renewable energies only as future growth platforms. Furthermore, the stakeholder engagement was filled with life and embraced several interest groups to make a social and environmental contribution and reduce the risk of reputation issues. Lastly, Ørsted moved from a traditional fossil fuel company seeking the shareholder value maximization approach to a global green major who wants to be an agent for change into an entirely green (energy) world.

Question 2: *How did Dynamic Capabilities (based on Barreto's four dimensions) contribute to Ørsted's successful strategy and business transformation? Please justify your answer with examples from the case.*

The second question discusses the importance of DC in a fast-changing environment and for a successful strategy and business transformation. For students, it highlights enablers of change and how Barreto's four dimensions can help companies critically analyze their resources and capabilities to adapt to exogenous shocks and influences. Students can assess each dynamic capability with low, mid, or high.

Example solution for 2):

DC 1: Propensity to sense opportunities and threats (from changing environment)	
Opportunities	Threats
<p>Ørsted identified:</p> <ul style="list-style-type: none"> Renewables as future growth market shows huge potential (EU energy policy 2007 and EU Emissions Trading Scheme) Sustainability strategy as possible differentiator in competitive markets (given inelastic demand) Having societal support and legitimacy Support from governments (possible subsidies and financial incentives) First-mover advantage offshore energy market (recognized that blue ocean strategy possible⁴⁸) 	<p>Ørsted identified:</p> <ul style="list-style-type: none"> Growing societal opposition towards fossil fuels (legitimacy threat) Climate change as a generational threat Impending energy regulations from EU and increasing carbon tax Profit dependency on volatile fossil fuels (see Figure 4)

Assessment	high
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DC 2: Propensity to make timely decisions
<ul style="list-style-type: none"> Despite internal and external skepticism, implementation of 85/15 vision without external advisors Following gas crisis (2012) within three years: shortening business units (from 12 to 3), divestment of non-core assets (€ 1 bn), reducing costs (€ 100 mn), and injecting new equity Went all in investments into R&D and innovation (2009) to reduce cost of each MW of electricity from offshore wind To scale offshore wind within a year: acquire market leader in installation, interest in cable laying company and 500 wind turbines from Siemens Within one-year overturned decision to keep oil and gas business for cash flows and divested from all Group’s oil and gas production activities in 2017 Within seven years CAPEX from 48% renewables to 99% in 2020 (see Exhibit 4)

Assessment	high
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⁴⁸ A blue ocean represents an unknown market without rivals (Blue Ocean, 2022)

DC 3: Propensity to make market-oriented decisions

- Anticipated market gap in offshore wind energy
- Anticipated that other energy majors were not taking those steps and furthermore a reduction in production costs of renewables (see Exhibit 15)
- Using farm-down model for offshore wind parks as an alternative to their previous reliable business units to secure capital for it to work long term
- End-to-end business model in offshore wind parks having expertise along the value chain and being able to carry out total life-cycle cost assessment of wind farms (see Exhibit 12)
- Decision to change company name to Ørsted to represent changing market environment given new business focus (fossil fuel vs. renewables)
- Expanding offshore business to Taiwan and US to explore new unexplored markets
- Diversifying business portfolio by entering onshore renewables and investing into renewable hydrogen and green fuels as additional (future) growth platform (see Exhibit 10)

Assessment

high

DC 4: Propensity to change the resource base

Addition of resources

- In 2006, merger with five electricity companies to form DONG Energy to expand renewable assets
- Acquisition of market leader in installation, interest in cable laying company and 500 wind turbines from Siemens
- New equity by selling 17,9% to Goldman Sachs
- Creation of wind-power unit in 2012 with global functions
- IPO 2016 to fund growth and inject external money
- Expanding offshore business to Taiwan and US to explore new unexplored markets
- Diversifying business portfolio by entering onshore renewables and investing into renewable hydrogen and green fuels as additional (future) growth platform (see Exhibit 10)

Deletion of resources

- Following gas crisis (2012) within three years: shortening business units (from 12 to 3), divestment of non-core assets (€ 1 bn), reducing costs (€ 100 m)
- 2017 divestment from all oil and gas upstream production activities
- Further business unit's divestment in 2018: divestment Danish power distribution, residential customer and city light business

Reconfiguration of resources

- Converting coal and gas fired power plants to sustainable biomass plants
- EBITDA from renewables from 7% in 2007 to 98% in 2020 (see Exhibit 7)
- Internal change of culture to more entrepreneurial culture, making fast decisions, and employee engagement (motivation and feeling proud) (see Exhibit 11)

Assessment

high

Summary:

Looking at all four dimensions, Ørsted's Dynamic Capabilities that they possessed and built over the years helped them to transform its business successfully. By constantly analyzing its environment and sensing opportunities and threats, Ørsted identified future business fields where it could have a competitive edge. Furthermore, many decisions were made timely and with the foresight of changing circumstances. Additionally, to fulfill the first dimension, Ørsted made market-oriented decisions and built a competitive advantage, becoming the market leader in offshore wind energy. Finally, Ørsted constantly added, deleted, or reconfigured resources to always align their strategic ambitions with the practical implementation process.

Question 3: *What factors led to Ørsted's competitive advantage resulting from pursuing a Corporate Sustainability strategy?*

This question discusses the advantages of a successful Corporate Sustainability strategy. It can teach students how to comprehend what a successful CS strategy can look like and how it can become a successful business case that addresses societal and environmental needs and leads to profitability in the long run.

Example solution for 3):

Factors:

- Investor attractiveness given their desire for green investment profiles, both for low-carbon agenda and increasing mainstream investors
- Almost doubled their EBITDA from 2007 (9.6%) to 2020 (18.1%) with renewables accounting for 98% in 2020 (see Exhibit 7)
- From the IPO 2016 until 2020, Ørsted's profit doubled, and its market value tripled while its CO2 emissions decreased by 80%
- Sustainable finance that sustains liquidity and security as a result from farm-down model in addition to PPA
- Share prices quadrupled since 2016 IPO (as of mid-2021), outcompeted oil majors in market capitalization (see Exhibit 5) as well as regular increase in shareholder dividends (see Exhibit 3)
- Increasing employment satisfaction and motivation resulting from cultural changes (see Exhibit 11)
- First mover advantage in offshore industry: expertise in whole value chain (see Exhibit 12), leader of innovation as well as cost advantages given decreased price per MWh (more than 60%)
- Honest communication and holistic sustainability strategy led to trust also from shareholders (successful IPO and stock price increase)

- Environmental success through emission reductions and therefore risk mitigation from new regulations (EU climate goals) and public scrutiny (see Exhibit 7)
- Alignment with climate science provides protection against tighter future regulations
- Risk mitigation against volatile fossil fuel price
- Winning “World’s most sustainable company” award resulting in legitimacy by all stakeholders

Summary:

Generally, Ørsted turned climate and regulation risk into a business opportunity. By pursuing a holistic sustainability strategy, they were rewarded with many advantages that helped them to survive in challenging times and even thrive financially, outperforming competitors and gaining a competitive advantage.

In line with Porter’s famous strategy definition (1996), they tried to be different and to choose a unique and valuable position in the energy market, which was in offshore wind. Therefore, they did well by doing good and managed to solve some of the world’s problems and be profitable simultaneously.

5.5 Board Plan

This teaching case is based on a 90 min student lesson assuming one teaching instructor:

Teaching lesson agenda	Working mode	Duration (in min)
Recap theoretical frameworks & case	Guided by teaching instructor	15
Question 1)	-	-
a)	Group discussion (a 4 students)	10
b)	Group discussion (a 4 students)	20
Question 2)	Group discussion (a 4 students)	20
Question 3)	Group discussion (a 4 students)	10
Student group presentations	One per group	5
Discussion & answer	Guided by teaching instructor	5
Conclusion & take-aways		5
Total		90

6. Discussion

This case study highlights the strategic transformation of the Danish energy company Ørsted, which went from fossil energy to the world's most sustainable energy company.

It can serve as a best practice example to answer the question posed in the introduction by showing how Ørsted could survive and even thrive in a fast-changing and volatile industry and environment. To explain this success story, the three concepts of Strategic Change & Fit, Dynamic Capabilities, and Corporate Sustainability proved suitable.

Firstly, Ørsted's overall strategic change towards Corporate Sustainability helped them to remain competitive and achieve long-term success. It included a redefinition of its mission and purpose (Gioia et al., 1994) towards sustainability and societal well-being. Moreover, it included significant changes in its resource allocation towards renewables, with 99% CAPEX in renewables in 2020 (Gioia et al., 1994). In addition, it led to a fundamental shift in its business model in all cultural and structural aspects (Balogun et al., 2016) creating an entrepreneurial and purpose-driven culture. Additionally, Ørsted's change process seems to illustrate both perspectives of change. It included radical and transformational aspects (Balogun et al., 2016; Romanelli & Tushman, 1994; Tushman & Romanelli, 1985) in its "moment of truth" in 2008 but also a continuous component (Orlikowski, 1996; Tsoukas & Chia, 2002; Weick & Quinn, 1999) with constant improvements towards Ørsted's new vision of a world that runs entirely on green energy.

Given rising societal and political changes, this change led to an improved strategic fit with their market environment (Zajac et al., 2000). As a result, Ørsted reinvented its strategic fit by aligning its business strategy with its external environment shift towards sustainability and the company's new values and goals.

Secondly, Ørsted's dynamic capabilities proved to be a key enabler in sensing and implementing this necessary change. Especially in times like today, the capability to quickly adapt to sudden exogenous shock seems essential (Barreto, 2010). Particularly in the energy industry, with its volatility and susceptibility to these shocks. Therefore, Ørsted's decision to pivot from fossil fuels to renewable energy sources aligns with the DC theory. Before many other competitors, Ørsted's top management realized that their core business model based on fossil fuels was under threat. They recognized the need to adapt to shifts in consumer demand

and government regulations toward sustainability. In order to change, they built and utilized its dynamic capabilities. First, Ørsted sensed renewable growth opportunities and regulatory and legitimacy threats. Second, its management team acted fast and with foresight, thoroughly analyzing the market to find a competitive edge in offshore wind. Lastly, Ørsted was able to change its resource base through divestment from fossil fuels and massive investments into renewables like ambitious research and development into offshore wind farms.

Finally, sustainability was the key factor in its transformation to a global renewable-energy major. Incorporating CS as a strategic goal and direction of its change process was the primary enabler of the successful business transformation. By integrating social and environmental considerations into business operations and decision-making, Ørsted's success story underlines the economic abilities of corporate sustainability as a strategy (Cheng et al., 2014; Khan et al., 2016; Margolis et al., 2009). They achieved a unique and valuable position and differentiated themselves from competitors by building a strong position within the attractive offshore niche area. This gave Ørsted a distinct competitive advantage that was good for the environment and its bottom line. Moreover, a clear purpose enabled bold management decisions, an entrepreneurial mindset, and a sustainable vision that was crucial to achieving the latter.

This case study proves that the business case for Corporate Sustainability can also be made in the conservative and highly volatile energy industry. Ørsted recognized the importance of addressing environmental issues and contributing to a more sustainable future. By constantly reinventing itself in this direction, the company has seen strong financial growth, quadrupled its stock market value between 2016 and 2021 (Ørsted, 2022b), expanded its operations to several countries worldwide, and outcompeted many peers.

By connecting the theoretical concepts, this case shows that dynamic capabilities can help to quickly adapt and successfully implement strategic change in the context of a CS strategy in a highly volatile and changing environment. As a result, possessing and building DC can enhance the firm's potential to solve problems and help implement a Corporate Sustainability strategy that can ensure long-term financial survival. Moreover, doing so creates a Strategic Fit in a world that has to tackle and adapt to unavoidable challenges like climate change.

This case study can teach practical applications of theoretical concepts by showing a real-life case of a successful business transformation. It can help teach management students about the importance of strategic change in fast-changing environments due to the challenges mentioned

that will only grow in the future. Furthermore, it can teach the advantages of adapting and pursuing a sustainability strategy by showing that sustainability and financial success are not mutually exclusive concepts. Moreover, Ørsted's case shows that a firm can even outperform incumbents with huge financial possibilities in a still very carbon-intensive industry and, on a broader scope, world. Finally, this thesis can bring substantial managerial benefits not only for students but also for managers to get inspired and to transfer important implications and recommendations for action to their businesses.

However, this case study has certain limitations. First, as per the nature of a case study, only one company in the energy industry was analyzed, which limits the generalizability and transferability of the results. Therefore, the applicability to other companies' strategic initiatives and several measures is limited. Nevertheless, it can serve as a best practice example for students to help them understand how a strategy transformation towards CS can be successfully implemented and pay off in the long run. Furthermore, only secondary data was used due to the limited scope of this thesis and the wide availability of online interviews, statements, and company information. Lastly, the nature of a master thesis with limited time and space reduces the scope that can be analyzed.

Longitudinal studies of broader scope would be needed to address the need for more generalizability and transferability. Future research could systematically analyze the energy industry and develop important implications and learnings. Furthermore, a deeper dive into top management's leadership and managerial aspects would be worth pursuing to examine how this contributed to Ørsted's success. Additionally, the impact of political regulations and ambitious climate goals on the future direction of the energy industry and the success factors for companies would be an exciting field of research.

Lastly, given recent developments with the Covid-19 pandemic and the Ukraine war, the implications on Ørsted's strategy and the impact on other (renewable) energy companies would be worth analyzing. In the face of the crisis, the reliance on oil, coal, and gas grew again, and there is a new discrepancy between climate action and energy security.

7. Conclusion

As Ørsted's successful business transformation is ranked seventh on the Harvard Business Review list of "the Top 20 Business Transformations of the Last Decade" (Ørsted, 2019c), it suggested being an ideal real-life example for an interesting case study. Therefore, this thesis focused on building the theoretical background to analyze the case from a theoretical perspective. The three concepts of Strategic Change/Fit, Dynamic Capabilities, and Corporate Sustainability proved to be ideal for this analysis.

Against this backdrop, the transformation story of Ørsted was presented as a case study, including its market, history, strategic changes, competition and current business portfolio. The case was designed to operationalize the initial question of how companies can survive and thrive long-term in fast-changing industries and environments impacted by several crises into a real-life observation. Moreover, to apply this case study to academic education, possible assignment questions with example solutions were added to guide instructors and students.

In sum, Ørsted's story proves that even a fossil fuel energy company can change quickly by pursuing a sustainability strategy and constantly realigning its business model towards a clear purpose. Only 15 years ago, Ørsted self-proclaimed used to be part of the problem (Ørsted, 2022b). Nowadays, it has made the TIME100 which highlights 100 companies making extraordinary contributions around the world (Flauger & Witsch, 2021). All of Ørsted's CEOs since 2008 understood that the most pressing challenge of our time, fighting the climate crisis, is not only morally the right thing to do but also financially. By leveraging (dynamic) capabilities, addressing societal needs, and not focusing solely on short-term profit maximization, they became a first mover in the offshore wind industry. Consequently, they were rewarded not only by the financial market but also by the approval of several stakeholders protecting them from tighter regulations in the future. Moreover, Ørsted understood the transformation as a leadership challenge that can create wealth and societal value. Because not taking action might have been hugely expensive for the company and failed future generations.

As Ørsted's current CEO, Mads Nipper, once said: "The biggest risk of climate change is the perception that somebody is going to solve it for us" (Ørsted, 2021b, 2022b). Transforming from dirty fuel to the world's most sustainable energy company, Ørsted really tried to be the wind of change (Ørsted, 2022a). Not by announcing aspirational targets but by proving in practice that "there is no long-term tradeoff between sustainability and financial value creation" (Ørsted, 2022a).

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