

# Analyze the Influential Factors on Successful Transformation of Traditional Energy Enterprises

Hao Ying \*

College of Art and Design, Zhejiang Guangsha Vocational and Technical University of Construction, Jinhua, Zhejiang, 322103, China

\* Corresponding Author Email: xihud@ldy.edu.rs

**Abstract.** At the beginning of the 21st century, the global energy landscape has experienced substantial transformation due to environmental and policy influences, leading Ørsted, a traditional energy company, to transition towards renewable energy within this context. This study report aims to investigate the factors influencing Ørsted's performance during the transition. This article gives a complete analysis of Ørsted's transition as a case study, utilizing Ørsted's yearly reports, the global energy landscape, and pertinent regulations for evaluation. The methodology incorporates theoretical principles of corporate social responsibility, business strategy, and corporate diversification. The principal factor stems from the corporation's increased commitment to social responsibility, and this report recommends that the company enhance its efforts in this area. The second rationale is strategic flexibility and innovation; this research advises the firm to bolster its strategic resilience and develop supply chain contracting capabilities. The third factor is industrial diversification. This research recommends that the firm concentrate on relevant and varied industries. This study provides a crucial reference for energy corporations and high-pollution businesses, while also providing as a theoretical framework and practical case support for the government and pertinent organizations in formulating energy policy and promoting renewable energy programs.

**Keywords:** Ørsted's Transformation, Corporate Social Responsibility, Strategy Adjustment.

## 1. Introduction

As people approach the twenty-first century, the global energy policy landscape has changed significantly. The global energy sector underwent a reorganization as a result of various policies. In 2007, the EU enacted Article 194 of the Lisbon Treaty to combat climate change and diminish dependence on fossil fuels, promoting enhanced energy efficiency and the use of renewable energy sources [1]. This agreement enables the EU to advance a unified and coordinated energy policy. In 2008, the European Union implemented the 2020 plan, which aims for a 20% reduction in greenhouse gas emissions, a 20% contribution of renewable energy to total energy consumption, and a 20% increase in energy efficiency by 2020. Subsequently, Copenhagen, the capital of Denmark, held the climate conference (COP15) in 2009. The gathering focused on additional strategies for addressing climate change in various countries. At that time, Ørsted was a traditional Danish energy company concentrated on oil and gas extraction. Denmark is prominently represented at the climate conference.

The policy change also represents a shift in world energy trends. In order to meet the changing policy environment, reach the set targets, and comply with global trends, Ørsted urgently needs to transform their energy mix to renewable energy. Renewable energy technology innovation, market size, and trends are also essential background information to drive the transition.

In 2008, there were rapid developments in the global renewable energy sector, with technological innovations occurring in many areas. Technological advancements enabled the implementation of several projects that would have faced economic challenges due to technical constraints. Globally, significant technological innovations have occurred in the fields of wind, solar, and biomass. These technological innovations have reduced production costs and increased energy efficiency.

Against these backgrounds, this paper examines the transformation process of the energy company Ørsted: Ørsted is a leading global clean energy company headquartered in Denmark, specializing in



the development and operation of offshore wind and renewable energy. Transitioning from traditional fossil fuels, the company is committed to driving a green transition in the global energy system to reduce carbon emissions and combat climate change.

There have been a number of previous studies on the impact of environmental or economic sustainability on business. Gupta et al. used structural equation modeling in AMOS to analyze the association between environmental sustainability and firm performance [2]. Cheng et al. developed an integrated multi-attribute decision analysis model to study the impact of sustainable development on firms' ability to remain competitive, using small and medium-sized enterprises (SMEs) in Taiwan [3]. Using five Russian metallurgical companies, Eliseeva et al. examined whether a green-competitive environmental strategy would help to optimize the economic return on environmental investments and transform these investments into a source of competitive advantage [4].

Despite the abundance of studies on the economic and environmental aspects of corporate sustainability, the majority focus on the context of stable corporate development or use SMEs as case studies. Despite the numerous studies conducted on the transformation of large enterprises, including the subject of this thesis, a significant research gap persists in this field. What factors contributed to Ørsted's success in transitioning to sustainability? The research on this topic can provide a valuable reference for other energy companies or highly polluting industries to learn from their experiences on how to balance environmental responsibility and economic interests against the background of increasing global pressure on environmental pollution.

In order to fill the research gap mentioned above and to solve the problem of what factors make Ørsted's transformation successful, this thesis will firstly introduce the case of Ørsted's transformation and then analyze the reasons that led to its successful transformation in the light of the case. Finally, the thesis will analyze the reasons for Ørsted's transformation and then give a reasonable opinion on how Ørsted should develop in order to achieve a win-win situation in terms of both corporate sustainability and environmental sustainability.

## **2. Case Description**

Ørsted is a leading global renewable energy company headquartered in Denmark. It was founded in 2006 as DONG Energy (Danish Oil and Natural Gas), with its predecessor focusing on the production and distribution of oil and gas. With the growing global demand for clean energy, Ørsted officially changed its name in 2017 and completed its strategy of transitioning to green energy.

Ørsted's core business is now focused on offshore wind, onshore wind, solar, energy storage solutions, and green hydrogen projects. As a global leader in offshore wind, Ørsted has built and operated large-scale wind farms in several countries, driving the development of renewable energy [5].

In 2006, 'DONG' merged with five national Danish energy companies to form 'DONG Energy' [5]. In 1991, they founded the world's first offshore wind company. At that time, coal energy was the company's core competence. In 2007, 83% of the company's power capacity came from black energy [5]. By 2008, the global economic crisis had broken out, putting enormous pressure on the energy economy. The introduction of EU policies to combat the climate crisis, the imposition of expensive carbon taxes, and the impending COP15 climate conference in Denmark prompted the management to contemplate the company's future: whether to transition to a green energy model or to maintain the current energy supply model.

Subsequently, the local population's opposition grew, forcing management to rethink their strategy. Ultimately, they decided to fully shift to green energy. The management has set a target of reversing the energy industry share by 2040, with 85% clean energy and 15% black energy [5]. Plans are underway to construct offshore wind farms in Denmark and the UK, as well as onshore wind farms in Sweden, Poland, and Denmark [5]. Simultaneously, the sale of certain non-renewable energy assets aims to raise additional funds for investments in renewable energy. Some coal-fired power plants have converted to biomass in addition to wind energy [5].

In 2009, some of the wind farms became operational. Revenues fell 19% due to lower energy prices [5]. The government subsequently shut down four coal-fired power stations and increased investment in renewable energy [5].

In 2010, revenues increased by 11%, primarily due to higher natural gas sales volumes and increased energy production [5]. Wind energy production increased by 43% as a result of the start-up of new wind farms [5].

In 2012, after two years of growth, there was a corporate financial crisis, and earnings fell by 40% [5]. The main factors contributing to the substantial decline were the fall in natural gas prices and changes in the structure of the European energy market. The board fired the CEO, Anders Eldrup, and a new CEO, Henrik Poulsen, came on board. Henrik Poulsen and his management team have adopted a number of strategies to ensure revenue for the business. They have developed a farm-down model, in which they sell off assets that are not relevant to their sustainability strategy by selling off equity, and then use the proceeds to invest in the development of renewable energy [5].

In 2016, the company achieved a reduction in the cost of offshore wind power generation to €100 per kWh, four years ahead of schedule [10]. It also became the world's largest offshore wind power company. During the year, revenues from wind power surpassed those from oil and gas production for the first time, prompting a decision to sell off oil and gas energy production assets worth up to \$1bn [5]. A new corporate philosophy was defined: Let's create a world that runs entirely on green energy [5].

In 2017, DONG Energy changed its name to Ørsted and announced that it would no longer invest in fossil fuel projects. Marking the completion of Ørsted's full transformation.

By 2021, Ørsted's revenues will have grown significantly, especially in the renewable energy sector. In 2021, the company's total revenues were almost DKK 13 billion, with more than 80% coming from renewable energy sources [5]. Also operating globally, between 2019 and 2020, Ørsted achieves its goal of reducing emissions by 60%, driving the world towards sustainability [5]. The award given to Ørsted also acknowledges the company's contribution and competence in sustainable development. In 2020, Ørsted was ranked number one in Corporate Knights' 2020 Global 100 Most Sustainable Companies Index [5].

### **3. Analysis**

#### **3.1. Reasons on Taking on More Social Responsibility**

In response to the global climate catastrophe, Ørsted has made a strategic decision to transform green and sustainable energy, taking on additional social duty for firms to achieve success in both profit and environmental preservation.

Until 2008, Ørsted's energy mix was dominated by oil and gas, with only 13% of its production coming from renewable sources, mostly wind power [5]. In 2008, Ørsted saw a shift in global policy and growing public hostility, and began investing substantially in offshore wind projects and divesting businesses that didn't correspond with their new development ambitions [5]. They have set an ambitious goal of sourcing 85% of their power from renewable sources by 2020 [5]. DONG Energy prioritized natural gas, the cleanest fossil fuel, coupled with wind energy to enable a smooth transition. In 2009, DONG Energy promised to halve its carbon emissions by 2020, with a focus on retiring coal-fired power facilities and establishing biomass power plants and wind farms [5].

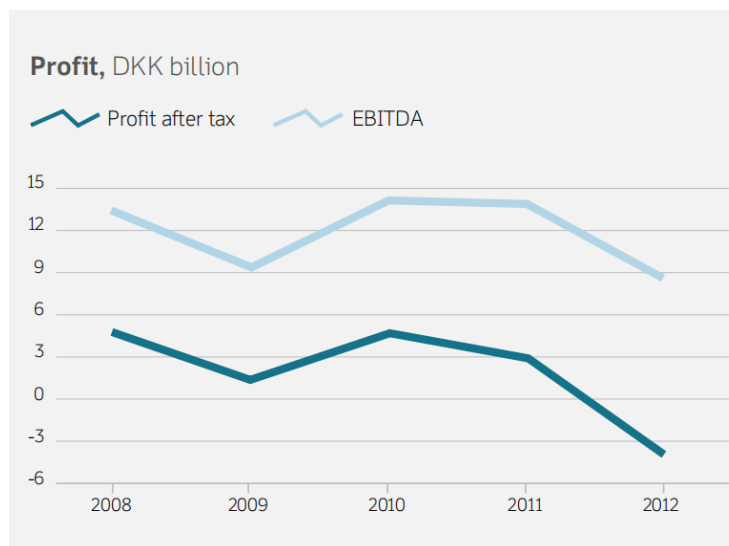
Prior to 2017, the company's name was DONG Energy, and in 2017, the name was changed to Ørsted. The company aspires to power an entirely green world. By this time, they had achieved 64% of their heating and electricity generation from renewable sources [5]. This compares to just 13% in 2007. They plan to reduce carbon emissions by 96% by 2023 compared to 2007 [5]. This was the year they sold off their last oil and gas business, marking a full exit from fossil fuels. The sale symbolized their shift to a company primarily focused on renewable energy, particularly offshore wind.

Following a successful transformation, the company's profits have continued to grow, and its market capitalization has risen significantly, reaching €55 billion in 2019 [5]. Corporate Knight nominated it as the most sustainable company, and it became the first energy company to rank first in the Top 100 Index [6].

Many researchers and scholars have proven the importance of corporate social responsibility. Corporate efforts at social responsibility can help companies create value. Huang and others found a positive correlation between corporate social responsibility (CSR) and corporate financial performance (CFP) [7].

### 3.2. Reasons on Strategy Adjustment and Innovation.

Arrsted has promptly addressed financial issues and implemented innovative strategies. The following sections provide specific descriptions of strategic alignment and innovation. Ørsted has maintained some of its oil and gas energy output since the transition. The goal is to maintain revenue during the changeover period. However, in 2012, oil and gas prices continued to decline, and the energy market structure shifted [5]. Due to the lack of commissioned projects, Ersted's investment in the wind power business resulted in a negative revenue situation [5]. Figure 1 depicts the change in Ørsted's earnings after tax and EBITDA from 2008 to 2012 [5]. The figure shows that Ørsted saw its first negative earnings in five years in 2012. The steep decrease indicated major issues.



**Fig 1.** Line chart of five-year profit.  
(Data Source: <https://Ørsted.com>)

The board dismissed CEO Anders Eldrup in March 2012, and Henrik Poulsen took over in August [5]. Then the change began.

Ørsted divested DKK \$10bn in non-core assets and reorganized the energy structure [5]. With high expectations, the board decided to end their investment in a series of waste-based power stations and invest in wind energy. The board also implemented a number of measures to promote wind energy. The management team discovered that the construction phase incurred a significant portion of the costs associated with using wind farms. In order to reduce the costs, they have set a target of reducing the costs to €100 per kWh by 2020 [5]. They acquired A2SEA, the market leader in offshore installations at the time, and invested in the cable-laying company CT [5]. They also signed a framework agreement with Siemens to purchase wind turbines in bulk [5].

In addition, the management team developed the “farm-down” model [5]. They provide financial support for the project. This model allows them to recover funds and diversify risks. It allows them to build more renewable energy projects faster on a global scale. These strategic changes and model

innovations enabled them to effectively address the corporate financial crisis. In 2017, they achieved outstanding growth after several years of continuous stabilization, with the operating profit reaching DKK 16.235 billion [5].

Many scholars can also attest to the importance of strategic flexibility. Grewal and Tansuhaj employed a confirmatory factor analysis methodology in their study on the relationship between market orientation and strategic flexibility, as well as the organizational ability of firms to manage economic crises [8]. Having strategic flexibility in a business means being able to react quickly to threats and opportunities in the marketplace, and thus being able to manage a changing marketplace [8].

### **3.3. Reasons on Diversification**

A large part of Ørsted's transformational success could not have been achieved without its diversification.

Renewable energy made up a portion of the industry even before the decision to begin the transformation in 2008. "DONG" merged five power companies to form "DONG Energy", dating back to 2006. One of these was the first offshore wind energy company [5]. After years of technological development, "DONG Energy" has mastered the most advanced offshore wind technology at the time and is a global leader in the industry. The executive management believed that this would give them a significant advantage in the offshore wind sector. The offshore wind energy industry was a virtually blank market at the time. Indeed, it laid a strong foundation for their transition.

In 2008, their main operations derived 13% of their energy from renewable sources, in addition to oil and gas production. In 2023, they plan to invest DKK 270 billion in 70% offshore wind, 25% onshore wind, and 5% in P2x and bioenergy sectors, respectively [5]. This shift in focus is consistent with their strategy of retaining a significant portion of their major projects for revenue generation while focusing some attention on projects that remain competitive but do not yield large revenues. Researchers have also underscored the significance of diversification. For instance, Lubatkin and Chatterjee, in their examination of the application of modern investment theory portfolios to corporate diversification, assert that corporate diversification lessens a company's reliance on a single product, market, or technology [9]. It also mitigates returnability risk and volatility by minimizing exposure to the commercial challenges and cyclicity inherent in any single commodity's development over time [9].

## **4. Suggestions**

### **4.1. Suggestion on Taking More Social Responsibility**

The first reason analyzed suggests that a company's social responsibility plays a significant role in the customer's product choice. This thesis proposes the next step: expanding established and mature projects globally by increasing investment efforts in the renewable energy sector.

In 2023, Ørsted has reduced its CO<sub>2</sub> emission intensity by 75% compared to 2018, with an installed capacity of 24.1 gigawatts and a 93% share of electricity and heat generated from renewable sources [5]. At the same time, Ørsted is actively exploring the international market and is planning to invest in the establishment of renewable energy projects in many parts of the world, making a significant contribution to the promotion of global renewable development. In response to this, this paper gives the following advice.

Ørsted should continue their globalized expansion and make more people aware that this is an effective way of dealing with global climate change. Adopting sustained, large-scale global expansion will allow us to reach a larger customer base and contribute more deeply to the global transition to sustainable development.

Tesla provides an excellent example, having made a similar decision. Following the successful development of the electric car, international sales helped disseminate the idea of driving an electric automobile all over the world. While providing objective revenue, it also changes people's perceptions of new energy sources and develops the concept of sustainable development. Ultimately, this will contribute to the worldwide transition to sustainability. Globalization is recruiting a diverse spectrum of qualified workers while also expanding into new product markets [10]. As more individuals utilize Tesla's electric vehicles, the business will achieve greater emission reductions [10]. This article suggests that Ørsted could increase business earnings and contribute to environmental protection by making the suggested adjustments.

#### **4.2. Suggestion on Strategy Adjustment and Innovation.**

In response to a financial crisis, Ørsted created a new financial model to secure adequate funding. By assessing the difficulties that have occurred, this study proposes that businesses enhance their resilience and become more proactive in dealing with risks before they materialize, including building supply chain contracting capabilities.

Ørsted employs a comprehensive risk assessment approach that considers commercial, sustainability, and legal issues. The Audit and Risk Committee is in charge of financial and business-related risks, as allocated by the Board of Directors [5]. To prevent unanticipated risks from having an unmanageable influence on corporate interests, companies should develop resilience in addition to other risk management strategies.

Similarly, there are scholars who support this viewpoint. According to Yossi Sheffi's book, firms confront a variety of hazards as part of the globalized supply chain paradigm. A multinational supply chain model exposes businesses to a variety of hazards, including natural catastrophes, terrorism, political considerations, technical failures, and more. These hazards cannot be avoided, but they can be managed more flexibly by building resilience [11]. They also discuss the benefits of a varied supply chain, such as reducing single-source dependency, establishing a redundant supply chain, and ensuring that there are alternatives in the event that one provider fails [11].

#### **4.3. Suggestion on Diversification**

The above section mentions Ørsted's diversified chain and analyzes how it has helped Ørsted's transformation. Among the recommendations in this section, this paper suggests that Ørsted should focus more on diversification into related product diversification and less on unrelated product diversification.

The current Ørsted industry consists of offshore wind, onshore wind, solar, energy storage solutions, hydrogen production, and biomass power generation [5]. According to the Standard Industrial Classification (SCI) definition of related and unrelated products, all of the products currently included in the Ørsted chain are related products, which means that they are right now a related diversified company. They should keep this relevant chain in place.

Scholars have conducted research on this topic and have proven it. Markides et al. analyzed the performance of related diversified firms and unrelated diversified firms in terms of firm profitability using three methods: t-test, median-test, and Mann-Whitney U-test [12]. They conclude that related diversified firms significantly outperform unrelated diversified firms in terms of profitability growth rates [12]. The former can make more effective use of the existing resources and capabilities of the enterprise to create long-term competitive advantages [12]. The gains of unrelated diversified enterprises can be offset by the possible adverse economics of managing some unrelated industrial businesses, affecting the financial performance of the enterprises.

## 5. Conclusion

This article analyzes Ørsted's corporate metamorphosis in relation to global and European legislative changes regarding energy, investigating the elements that facilitated Ørsted's successful transition from a conventional energy corporation to a green energy enterprise. The ultimate conclusion is that the company's dedication to corporate social responsibility, strategic adaptability, and industrial diversification has resulted in a successful transformation.

This study presents an innovative method for analyzing the relationship between sustainable development and business transformation. It clarifies how a business can effectively manage the problems and opportunities associated with the current trend of sustainable development. The research introduces a novel theoretical framework that can validate the practical applicability of the conclusions derived. A review of relevant research supports the idea that there is a positive relationship between CFP and CSR. The research also looks at the effects of industrial diversification on businesses, the impact of strategic flexibility on organizations, and other ideas related to business transformation. This article analyzes the applications of many theories in this domain, identifies potential interconnections among them, and synthesizes them to provide a cohesive theory.

This paper has some limitations. The research's summary analysis inherently involves subjective influence and reflects personal opinion and evaluation. It draws upon the theoretical frameworks established by other researchers and recognizes their efforts to establish a robust theoretical foundation for academia. This work has limitations, as it relies on specific settings and solely focuses on scientific research findings related to factors that influence enterprises.

This theory provides a significant addition to corporate transformation; nonetheless, its claim that one case study is adequate to validate the theory's generalizability is erroneous. This publication invites additional researchers to undertake further validation investigations.

## References

- [1] European Union, retrieved from: [https://european-union.europa.eu/index\\_en](https://european-union.europa.eu/index_en)
- [2] Gupta, Amit Kumar, and Narain Gupta. "Effect of corporate environmental sustainability on dimensions of firm performance—Towards sustainable development: Evidence from India.", *Journal of cleaner production* 2020, 253 119948,3-5.
- [3] Chang, An-Yuan, and Yen-Tse Cheng. "Analysis model of the sustainability development of manufacturing small and medium-sized enterprises in Taiwan." 2019, *Journal of cleaner production* 2019, 207 458-473, 1-5.
- [4] Shmeleva, Nadezhda, and Evgeniya Eliseeva. "Environmental sustainability and competitiveness: construction of indicators system for Russian metallurgical enterprises." 2016, *International Multidisciplinary Scientific GeoConference: SGEM 2016*, 3 3-10, 5-7.
- [5] Ørsted, Ørsted annual report, retrieved from: <https://Ørsted.com>
- [6] Huchler, Lukas Andreas. *Wind of change: from dirty fuel to the world's most sustainable energy company: a case study on the business transformation of Ørsted*. Diss. 2023.27-36.
- [7] Huang, Kaixing, Nicholas Sim, and Hong Zhao. "Corporate social responsibility, corporate financial performance and the confounding effects of economic fluctuations: A meta-analysis." 2020, *International Review of Financial Analysis* 2020, 70 101504.32-37.
- [8] Grewal, Rajdeep, and Patriya Tansuhaj. "Building organizational capabilities for managing economic crisis: The role of market orientation and strategic flexibility." 2001, *Journal of marketing* 2001, 65.2 67-80.9-12.
- [9] Lubatkin, Michael, and Sayan Chatterjee. "Extending modern portfolio theory into the domain of corporate diversification: does it apply?" 1994, *Academy of Management Journal* 1994, 37.1 109-136.14-24.
- [10] WU, ZHE-QIAO, PHUONG-QUYNH NGUYEN, ILADA PHANKASEMSAN, and ELENA WOLF. "Driving Sustainability and Electric Vehicles Evolution: Tesla Company's Success Strategies." 2022,25-34.
- [11] Sheffi, Yossi, and James B. Rice Jr. "The Resilient Enterprise." *Conference on National Security, Natural Disasters, and Logistics & Transportation: Assessing the Risks & the Responses*, University of Rhode Island, RI, 2006, September.4-8.
- [12] Markides, Constantinos C., and Peter J. Williamson. "Related diversification, core competences and corporate performance." 1994, *Strategic management journal* 1994, 15.S2 149-165.3-15.