ØRSTED

COMPANY REPORT

UTILITIES SECTOR

23 MAIO 2018

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There is a great art in selling the wind

Initating Coverage with a TP of DKK 389

- **The first mover takes it all**. Ørsted is the largest Danish utility company with operations increasingly relating to offshore wind power generation, an industry pioneered by the company in Europe.
- **But we live in a world where nothing is really yours to keep.** Offshore wind installed capacity has enjoyed a strong increase over the last few years, especially in Europe and China. The number of players is also expanding, due to the appealing industry's expectations of decreasing costs aligned with large subsidies.
- **Go green or go home.** In order to sustain its leading position, Ørsted decided to reinvent itself as a sound renewables player, by leaving the Oil & Gas business, while using the proceeds to heavily invest in developing new wind farms in the European market.
- **Making a statement**. Ørsted has been aggressively biding in latest European offshore auctions, reiterating its intention of further growing in Europe before advancing to new potential markets.

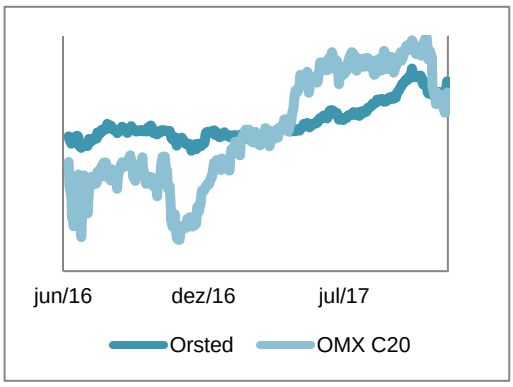
Company description

Ørsted is a Danish-based utility company with a strong focus on renewables, namely in the offshore wind segment. Its operations are mainly developed in Northwestern Europe, where it owns several wind farms and eight Combined Heat and Power plants.

Recommendation:	**BUY**
Initiation of Coverage	
Price Target FY18:	**DKK 389**
Price (as of 31-Dec-17)	**DKK 347**

Market Cap (DKK million)	DKK 145.87M
Outstanding Shares (m)	420,381

Source: Bloomberg



Source: Bloomberg

(Values in DKK millions)	2016	2017	2018F
Revenues	61.201	59.172	67.640
EBITDA	19.109	22.187	17.776
Net Profit	13.213	19.867	7.147

Source: Company Annual Report 2017

Table of Contents

Executive summary

Ørsted, with headquarters located in Frederica, Denmark, is the Danish largest utility company and its main activities are related with power generation and distribution not exclusively in Denmark, but also in the UK, Germany, Sweden and Netherlands.

Currently, the company has an installed offshore wind capacity of 3.9 GW (2017) in the European wind development market, currently the most developed one in the world.

Regarding wind developers, Ørsted is the best positioned company, with 26% European market share, vs. its closest peers with roughly 7% of market share. Nevertheless, there is a growing demonstrated interest by European utilities and even some oil companies over the last year in entering the offshore wind developing market.

Such development has been tightening differences between players and incentivizing competition in the sector, with governments favoring lowest-price mechanisms to select companies in offshore wind projects' rights.

Ørsted's was valued through a Discounted Cash Flow Model, leading to "BUY" recommendation, with a target price of DKK 389 and an expected gain of 42%.

Company overview

Company description

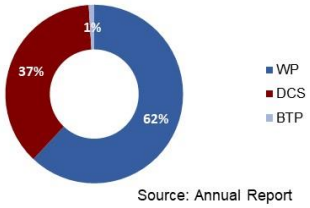
Ørsted, with headquarters located in Frederica, Denmark, is the Danish largest utility company and its main activities are related with power generation and distribution not exclusively in Denmark, but also in the UK, Germany, Sweden and Netherlands.

The company, originally called DONG Energy, resulted from a merger that took place in 2006 and involved six Danish companies: Dansk Olie og Naturgas A/S, a state-owned company founded in 1972 to manage gas and oil resources in the Danish sector of the North Sea; Elsam and Energi E2, two electricity power producers; and NESA, Københavns Energi and Frederiksberg Forsyning, three electricity distributors.

After this massive acquisition period, Ørsted's business structure was divided in four segments: Oil & Gas, Wind Power, Bioenergy & Thermal Power, Distribution

& Customer Solutions. Throughout the last few years, Ørsted elected renewable energy generation as its focus and started to pursue a global leading position in offshore wind generation market. Ørsted pioneered that industry inception, building the first offshore wind farm in the world by 1991. Currently, the company has an installed offshore wind capacity of 3.9 GW (2017) corresponding to 26.5% of the European wind development market , currently the most developed one in the world.

Exhibit 1: EBITDA Breakdown 2016



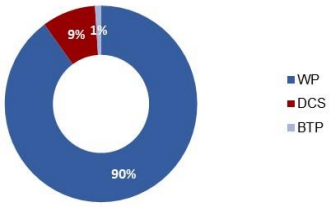
Source: Annual Report

By 2017, the company decided to stress its decarbonization targets and its focus on renewable energy generation by following a deep rebranding of the company (changing from DONG Energy to Ørsted), selling its original Oil & Gas unit and increasing its participation in offshore tenders and auctions in Northern Europe. As a result, Ørsted's operations can now be divided in three different businesses:

Wind Power (WP)

Under this unit, Ørsted develops, builds, operates and owns offshore wind farms, mainly in Denmark, UK, Germany and Netherlands. Every offshore wind farm project starts by the development phase, where the company identifies a potential project, evaluating the site conditions and jurisdictions. Once it is all settled (after 3-5 years), the project transitions to the construction Phase, where the farm's design is planned and the Final Investment Decision (FID) is taken, after which the project starts being physically installed. Overall, construction phase takes typically 3 to 4 years, with actual construction occupying 12 to 18 months.

Exhibit 2: EBITDA Breakdown 2017



Source: Annual Report

Operations and Ownership phase starts with the commissioning of the wind farm. In this phase, Ørsted provides O&M services to the project under the establishment of O&M agreements, as it is responsible for maintaining all parts of the wind farm. This phase lasts until the end of the useful of the wind farm (typically 24 years), when Ørsted is responsible for decommissioning the project.

Given the capital intensity required, Ørsted has developed a partnership model to secure funding from financial and institutional investors, which enables, by one side, the creation of additional earnings and, by the other, allows for an early monetization of the project's value by anticipating future earnings. Such strategy also liberates funds for Ørsted to invest in new projects, accelerating the company's ability to scale and to grow.

Usually, partners enter in the project after the FID has been taken, acquiring a 50% stake of it. After, partners will establish a contract with Ørsted, in which the company becomes responsible to build the partner's stake of the project in the Construction phase; and in the Operations phase Ørsted will be responsible for the

O&M of the complete farm. This model provides three main sources of earnings in Wind Power unit for Ørsted, all accounted at EBITDA level:

1. Generation – it is the actual on-site energy production, under the terms of each farm's long-term contracts agreed on.

2. Farm-downs – divestment gain of a 50% stake of the wind farm project, after the Final Investment Decision (FID) has been taken. This source of earnings is only verified when Ørsted sells part of its future wind farms to institutional partners, which may not happen every year.

3. Construction contracts – contracts agreed with partners that bought the stake of the project that cover the construction phase, meaning that this source of earnings only exists when the company is in physically building a wind farm.

Bioenergy & Thermal Power (BTP)

This unit is part of Ørsted's Danish utility business and it is dedicated to the production and sale of district heating and power in the Danish and Northwestern European markets. This activity is supported by eight large scale combined heat and power plants (CHP plants) in Denmark, which provide an electrical capacity of 2,979 MW and a heat capacity of 3,437 MW. Typically, these plants have a useful life of 50 years, with a lifetime extension operation to be completed after 25 years. Overall, this unit has two main contributors for the Group's revenues:

1. Power sales – sale of power on the day-ahead Nord Pool Spot market.

2. Heat & Steam sales – sale of heat through long-term contracts mainly to municipally owned heat supply companies, covering 26% of Danish heat's demand. When a contract expires, the company seeks to a new negotiation.

In order to achieve its objective of being coal-free by 2023, Ørsted is currently executing a large-scale bio-conversion program its CHP Plants, in which fossil fuels are being replaced by sustainable biomass.

Distribution & Customer Solutions

This unit is also part of Danish utility business and here, Ørsted's activities consist on operating the Group's power distribution network in Denmark and on selling both power and gas to customers in Denmark, Sweden, Germany and the UK. Power Distribution grid is the most relevant asset in this unit: currently it is worth DKK 10.3m and its license to operate will finish by 2025.

Following Danish government's Remote Power Meter project, Ørsted is expected to add DKK 3 bn to its Regulatory Asset Base (RAB) until 2020, as the project requires a complete conversion of all power meters to remotely readable meters.

Under Distribution & Customer Solutions unit, there are three main contributors to the company's earnings:

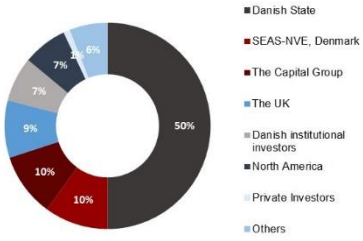
1. Power Distribution – it is the most relevant contributor to this segment's EBITDA and it is subject to regulatory framework, which indicates the allowed return for the company, based on its RAB.

2. Power sales – operates in both B2B and B2C businesses, enjoying a Danish market share of 20% and 26%, respectively, over the last 6 years.

3. Gas sales – operates in both B2B and B2C businesses, enjoying a Danish market share of 25% in both segments, over the last 6 years.

Shareholder structure

Exhibit 3: Oersted's Shareholder Structure



Source: Annual Report

As of December 2017, Ørsted comprised 420,031,080 shares outstanding enjoying the same voting and dividend rights, spread among 24,600 shareholders (12% higher than 2016).

The shareholder structure includes both public and private investors, with the largest portions being hold by institutions. The major shareholder of the company is the Danish State, which holds 50% of the company's capital. Ørsted has two other entities holding more than 5% of company's shares: The Capital Group Companies, an American asset management fund, which holds 10%; and SEAS-NVE., a Danish consumer-owned energy company with 10% of the group's shares. Together, these three institutional investors correspond to 0.01% of shareholders and hold 70% of Ørsted's total capital.

The remaining 30% of Ørsted's shares is spread among 99.99% of the investors. From this remaining capital, 9% is held by UK investors, 7% is detained by Danish institutional investors, 7% corresponds to investors from the US, 1% belongs to private investors and 6% to others. In geographical terms, roughly 68% of Ørsted's capital is still with Danish owners.

Ørsted paid a total dividend of DKK 2.5 bn in 2016, amounting to 6 DKK per share. In 2017, it will pay a dividend of 9 DKK per share, corresponding to a total of DKK 3.8 billion. This increase is consistent with company's strategy until 2020, as the group intends to increase the dividend annually.

Exhibit 4: Share Price evolution

Share Price Performance

Ørsted became officially listed in Nasdaq Copenhagen Index on 9 June 2016. The IPO had a final offer price of DKK 235 per share, and the company sold 72.8 million shares in the offering, which corresponds to 17.4% of company's share capital, leading to a market capitalization of DKK 98.2 bn. The gross proceeds from the offering amounted to DKK 17.1 bn, which rose to DKK 19.7 bn after the exercising of an overallotment option.

At the end of 2016, Ørsted's shares had a closing price of DKK 267, leading to total return of 13.8% between June and December. This means that, in that period, the company significantly outperformed both OMX Copenhagen 20 Cap, an index comprising the 20 most actively traded shares on the Copenhagen Stock Exchange, which registered a negative total return of -11.2%; and STOXX 600 Utilities, a European index comprising 600 utility companies, which also had a negative return of 6.7% in the last 6 months of the year.

Between 30-Dec-16 and 29-Dec-17 Ørsted achieved a total return of 26.56%, against 15.86% return given by OMX Copenhagen 20 Cap and 5.49% return given by STOXX 600 Utilities. This represents the best performance by Ørsted's share price and proves that the company is scoring above both the average Danish company and even above the average European utilities sector company, indicating that this positive trend may be explained by the company's specific strategy and characteristics, and not just as the consequence of the good performance of the macroeconomy and of the sector.

Competition

Providing an accurate picture of Ørsted's competitors may be an unfair task, given the company's specific profile. Its leading position as offshore wind developer, which anchors almost all of its generation capacity to only one renewable technology, makes it a bit different when comparing with other utility companies operating in the same markets. Despite its ambition to grow outside Europe, it is still its core market, with 99% of its 2017's revenues tied to the region.

There are few companies currently paying so much attention to offshore market development as Ørsted, and they are usually more linked with turbine manufacturing, as it is the case of Siemens-Gamesa and Vestas. Regarding wind developers, Ørsted is the best positioned company, with 26% European market share, and the firm that better compares with Ørsted's profile in terms of business organization, geographic presence and technology used is Vattenfall, a Swedish power company. However, Vattenfall is not publicly traded, which makes it difficult

to compare with Ørsted. Nevertheless, there is a growing demonstrated interest by European utilities and even some oil companies over the last year in entering the offshore wind developing market. Most relevant players in the offshore developing industry are summarized below:

E.On is a German utility company operating through three main business segments: renewables generation, with a portfolio comprising mainly onshore and offshore wind technologies; Networks and Customer Solutions. In 2017, the company achieved a total EBITDA of €4,559M, 64% from Networks, 19% from Customer Solutions and 17% from Renewables. From the €785M EBITDA coming from Renewables, 61% was generated by the offshore wind segment. By Dec-17 E.On had a total installed capacity of 5.1 GW, with 1 GW being offshore wind installed capacity. In geographic terms, E.On's most of offshore installed capacity is split between Germany (318 MW) and the UK (646 MW), with small stakes in projects in Denmark and Sweden. E.On is planning to participate in new offshore wind projects with a total potential capacity of 789 MW, where 393 MW correspond to E.On's stakes.

Innogy is a subsidiary from RWE (who owns 77% of Innogy) devoted to the renewables business, became listed in Frankfurt Stock Exchange in 2016. The company has three main business segments: Renewables generation, with a portfolio comprising mostly wind, hydro and solar technologies; Grid & Infrastructure, dedicated to distribution networks; and Retail. At the end of 2017, Innogy had a total installed capacity of 3.9 GW. From this, 1,017 MW were devoted to offshore wind installed capacity, mainly split between the UK (585 MW), Germany (345 MW) and Belgium (87 MW). Currently the company has two main projects under development in the UK, with a total installed capacity of 1.213 MW.

At the beginning of 2018, RWE and E.On announced an asset swap deal, in which RWE will get Renewables division from E.On and Innogy, while E.On will get total Distribution and Retail divisions from Innogy and RWE. Under this deal, RWE will become one of the most solid European Renewables generator player.

Iberdrola is the largest Spanish utility company, which became listed on IBEX Stock Exchange in 2007. Iberdrola's core activities are related with power generation through both traditional and renewables, and distribution of power and gas; and it develops its operation in Spain, UK, US and Latin America. In 2017, the company reported a total EBITDA of €7,319M, of which 57% corresponds to its distribution division, and 21% corresponds to renewables generation. The Group has a total installed capacity of 48,447 MW, from which 29,112 MW are renewables. Its renewable generation capacity is mainly composed by hydro (15,741 MW) and onshore wind (33,878 MW), but it recently has devoted a growing

attention to offshore wind: in 2017, Iberdrola sums a total offshore wind installed capacity of 544 MW, an increase of 180% vs. 2016. Next steps in offshore wind industry comprise the East Anglia projects in the UK, with a cumulative capacity of 2.8GW.

EDP Renováveis is a subsidiary 82.5% owned by the Portuguese largest utility company, EDP. The company develops, builds and operates wind farms and solar plants, mainly in Portugal, Spain, other countries from Europe, Brazil and the US. EDPR had a total installed capacity of 11 GW by Dec-17, distributed across the following regions: 50% in the US, 3% in Brazil and the remaining 47% in Europe (mainly in Iberia). The company has currently two offshore wind projects under construction in its pipeline: one in the UK, with a capacity of 950 MW and in France with a capacity of 992 MW.

SSE is a Scottish energy company headquartered in Perth, Scotland and is listed on London Stock Exchange since 1998. The company is dedicated to the generation, transmission, distribution and sale of gas and electricity, and develops those activities in the UK. At the end of Mar-18 SSE had a total generation capacity of 10,643 MW, of which 3,309 MW were devoted to relates to onshore wind and biomass. The company has a new offshore wind farm under development, the Beatrice offshore wind farm. It is located in the UK and has a potential capacity of 588 MW, with SSE's stake being 40%.

Additionally, it is worth mentioning the increasing interest by oil companies in the offshore wind industry, which is attributed by many to the possible similarities found in both industries in terms of installation of massive infrastructure in the sea. Oil & Gas giants as Shell and Statoil are currently diversifying their portfolios by developing offshore wind: Shell created a new division in its company called New Energies, under which is participated in a consortium awarded with an offshore wind farm in Netherlands that will be commissioned by 2022; while Statoil is already developing four projects in the UK, one in Germany and one in the US.

The Sector

Offshore Wind Industry

The development of renewable energy technologies in recent years has been tackled by the increasing environmental awareness of both governments and population, following the scientific consensus over climate change being caused by greenhouse gas emissions (GHG). Such consciousness has been motivating

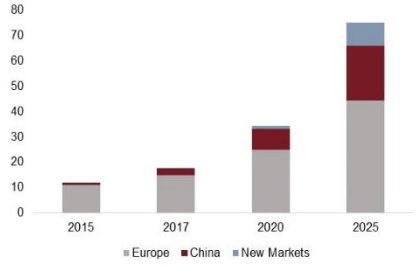
the design of multinational agreements looking for incentivizing and regulating the transition to low-carbon generation technologies, as it is the case of Kyoto Protocol and Paris Agreement. Such initiatives provide the basis for European targets' framework:

EU 2020 Targets – in 2008, European Union launched the Renewable Energy Directive, which requires the EU to guarantee that at least 20% of its total energy needs will come from renewable energy technologies by 2020. The Directive specifies renewable energy targets for each member state, accounting for each county's starting point and its overall potential for generating renewable energy.

EU 2030 Targets – in 2014 EU members established a new set of climate and energy targets and policy objectives for the period between 2020 and 2030, as an incentive to meet its long-term 2050 target of 80-90% GHG emissions reduction comparing to 1990 levels. Main goals for 2030 include a 40% cut in GHG emissions (compared to 1990 levels) and at least 27% of the gross final energy consumption to come from renewable energy.

Offshore wind – a story that has barely started?

Exhibit 5: Installed Capacity



The first offshore wind farm was commissioned in 1991 by DONG Energy, less than 2km off the Danish coast in Vindeby. It comprised 11 turbines adapted from onshore technology with an installed capacity of 0.45MW, which implied a total capacity of roughly 5MW.

Until 2001, the development of the offshore wind power sector was irregular, comprising essentially small near-shore projects in both Denmark and Netherlands, using turbines with an installed capacity below 1MW.

From the beginning of the century onwards, the rhythm of new offshore wind installations has increased yearly, underpinned by some strategic changes in the used model: projects became larger-scale, farther from the shore (average distance in 2017 was 41 km vs 1.8 km in 1991) and using bigger and technological advanced turbines, with increasing installed capacity.

Offshore wind installed capacity in Europe by 2005 was 0.7GW, while in 2017 it achieved 14.7GW, representing a yearly increase of 1.7 GW for 12 years. In the future, Europe is expected to achieve 24.7GW of installed capacity in 2020, and 44.3GW in 2025, implying a market share in terms of installed capacity of about 58% by then.

The second most developed offshore wind market after Europe is China. China had an offshore installed capacity of roughly 1GW by 2015, but in 2017 it achieved 2.8GW of installed capacity, corresponding to an average yearly installation of

0.9GW in two years. Until 2020, China is expected to install 5.4GW, which means that it will have to install an average of 1.8GW per year until then; while by 2025 it will have 21.4GW of offshore wind installed capacity. Such growth will ensure a total market share in terms of installed capacity of 29% by 2025.

Installed capacity outside Europe and China comprised roughly 0.1GW by 2017, and it is expected to achieve 1.3GW in 2020 and 9.2GW in 2025. Overall, world's total installed capacity in 2017 totalized 17.6 GW, and it is expected to achieve 34.3 GW in 2020 and 74.9 GW in 2025. The installation peak until 2020 is tied to binding national 2020 targets for power generation from renewables settled by EU's Renewable Energy Directive.

But, where are we now?

Offshore wind is far from being a mature industry, with still a large room to grow in the next few years. Nevertheless, the ability to in fact materialize these growth prospects is dependent on a few different drivers, with capacity additions and its competitiveness comparing with other renewable technologies being the most relevant ones in our view.

New capacity additions are mainly dependent on governments' settlement of decarbonization targets: it is based on these targets that governments decide how much capacity to award in the auction/tender processes in which companies compete to win the right to explore a specific project. Thus, the higher the targets for decarbonization, the higher will be the capacity allocated to offshore wind projects.

On the other hand, since offshore wind is still expensive compared with other renewable and conventional power generation sources, subsidies are still required to make it competitive with other technologies and attract investment. As so, governments' supporting mechanisms and pricing is another key driver for the industry's development in our view.

Finally, the rhythm of decreasing costs in offshore wind is what ultimately will allow the technology to fairly compete with alternative renewable sources. Such decrease is ultimately linked to the ability to cut initial investment costs in wind farms, since they represent roughly 70-80% of total investment costs of the project. In our view, decreasing initial investment costs is directly related with technological development in the offshore turbines, as turbines are the center piece of a wind farm.

Governments' renewable targets and supporting mechanisms

Denmark – the Government set 1GW additional of offshore wind capacity to come online until 2020 and 1.5GW offshore wind capacity additions until 2025. In 2050, Denmark plans to be 100% free of fossil fuel, with wind energy ensuring a large part of the energy mix by then. Subsidies to offshore wind in Denmark are set in the form of a feed-in tariff over the market price, which is supported by the power consumers. The attribution of such tariff is decided based on a tendering system, in which the winner will be the company that bids the lowest tariff needed.

UK – the Government expects to achieve 10 GW of installed capacity by 2020. Developments from then onwards largely are not set yet, as the Government only wants to target offshore wind capacity if it becomes more competitive versus other tcnologies. In 2013, the UK introduced a new subsidy system: Contracts for Difference (CfD) . Worth mentioning that strike prices set in CfDs are set based on each technology, rather than negotiated individually in each project, in the case of offshore those are expected to decrease throughout the time: it is stated at £140/MWh for the period 2018-2019.

Germany – the Federal Ministry for Economic Affairs and Energy set out, in 2014, a cumulative target of 6.5 GW of offshore installed capacity by 2020 and 15 GW by 2030. Germany follows a new feed-in-tariff attributed through a tendering system, where the lowest bid is the one that receives the rights to explore the project and the one getting the subsidy. This system will be applied to turbines commissioning from 2021 onwards. Until then, fixed amounts are defined: for turbines commissioning from 2018 onwards, the fixed tariff will be €149/MWh, while for turbines commissioning after 2020 will receive a tariff of €139/MWh.

Netherlands – the country targets to reach 4.5 GW of offshore wind capacity by 2023, while the new Government established a new target of 10 GW installed until 2030. Netherlands' subsidy regime is through a feed-in-tariff above the market price, similar to Denmark; which is also attributed under the tender/auction system. Its current feed-in-tariff is set at €72.6/MWh so far.

People rightly focus on turbine size and that is undoubtedly the biggest cost driver of the projects. You get economies of scale with bigger projects".

Scaling turbines: the sky is the limit?

While in onshore wind farms turbines represent roughly 75% of the total investment cost, in an offshore wind farm, they only represent 40% of it. Nevertheless, turbines can still be considered the main driver of the cost evolution of an offshore wind farm, as it represents the largest stake of the total investment cost. Simultaneously, as one may observe in the cost split in, remaining components of the investment cost can be directly related to the number of turbines in the projects: foundations, electrical components and installation costs directly depend on the number of turbines used in the project.

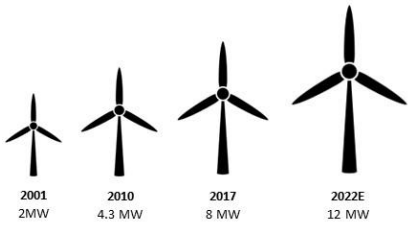
Exihibit 6: Cost Split

Components	Stake
Turbines	40%
Electrical	15%
Foundations	10%
Installation	15%
Other	20%
Total	**100%**

Source: Company IPO Offering Circular, 2015

The industry is pursuing large cost reductions by trying to scale both the farms' dimension and by developing turbines technology, to make them larger and with a higher installed capacity. Any sort of technology improvement relating to turbines will strongly impact investment costs and consequently the cost of energy produced by a wind farm.

By analyzing the evolution of investment costs of offshore wind farms, it becomes apparent the increasing rhythm in technological development in the las few years, as well as the constant entry of new players in the market, especially from China, where the offshore industry has been developing faster than in the rest of the world.



All of this has incentivized an increasing price pressure in the turbine manufacturing industry. Big players already reacted by forming powerful alliances (Siemens and Gamesa- SG merged in 2017, Vestas formed a joint venture with Mitsubishi to explore offshore), by accelerating the launch of new technologies (SG presented its turbine with 8GW-167M; Senvion announced it would launch a 10MW offshore turbine, GE unveiled a 12MW offshore turbine to be fully operational by 2022) and by adopting cost cutting measures (SG announced on its Capital Markets Day the launch of L3AD2020 program, a program targeting an overall cost reduction of €2 bn, from which €0.5 bn coming from Offshore manufacturing unit). As a result, expectations of decreasing costs in turbines are aligned for the next few years.

Danish Power Market

In Denmark, power is exchanged in Nord Pool Spot market, a liberalized market that serves the European Nordic region. Here, buyers (typically a utility company) and sellers (typically a power generator) set a contract for the delivery of power the next day. The price is set where the curves for the bid and asked price meet. The increasing volumes of renewable energy entering the power market, combined with an insufficient withdrawal of existing capacity led to a decrease in Danish power prices. Such decrease makes the activity of generating power through traditional technologies less attractive for power generators, which incentivizes them to look for alternative activities.

Danish Heating Market

Nowadays, roughly 64% of Danish consumers (98% in Copenhagen) receive their heating through the District Heat (DH) system. Heating supply is controlled by heating demand, which has been relatively stable, with an annual demand variation of 8% in the last 15 years.

The supply of DH in Denmark ends up being a natural monopoly, due to its large investments requirements. The system is organized in different regions: it has six large central DH areas in major urban areas and around 400 small and mid-sized DH areas supplying the remaining country's regions. Due to the magnitude of the costs associated with DH, a lot of areas rely only in one provider.

The production of DH comes basically from combined heat and power (CHP) plants, typically hold by energy companies, production companies or cooperative societies; and heat only boilers (HOB), owned by the individual consumer. Historically, DH production was especially tied to CHP units; however, due to the decrease of Nordic electricity market prices caused by the volumes of renewable energy entering the market, production from CHP has been decreasing and being offset by HOB.

Denmark's long-term policy goals includes to eliminate fossil fuel use in electricity and heat production by 2035. To achieve this, DH production system is currently substituting fossil fuels by biomass since 2000: the use of renewable energy has been increasing, achieving roughly 50% by 2016, while the share of fossil fuels decreased around 20% for the same period.

The Heat Supply Act: The main ruler in the game

Generation of heat in Denmark is regulated by the Heat Supply Act, which defines not only the pricing system but also the translation for a more environmentally friendly heat generation, to ensure that the country meets its renewables targets in the future.

According to the Heat Supply Act, the overall principle that must be followed when setting the price is the coverage of necessary costs associated with the heat production. The heat prices calculated by the producers must then be confirmed by Danish Energy Regulatory Authority, which can amend such prices in the case of disagreement.

Since 2012, and to incentivize the bio-conversion of CHP plants, the Heat Supply Act allowed heat producers to deviate from the "necessary costs requirement" described. Biomass-based heat production is tax-exempt, which is a cost supported by the heat customers in the case of fossil-fuel heat generation. So, under certain conditions, the heat customer is allowed to share the tax exemption of using biomass with heat producer, which provides an incentive for the heat producer to convert the CHP plants. Additionally, a price supplement of DKK 0.15/kWh is available for heat producers in the case of biomass-based heat generation.

Danish Power Distribution

In the case of Denmark, power distribution activity is regulated by the Electricity Supply Act, which requires that the methods used by distributors for setting the tariffs must be approved by DERA before they can enter into force. According to this regulatory framework, distributors must receive an income which is capped under two criteria: a revenue cap, imposed on the annual revenue and a return cap, imposed on the return on capital.

The necessary costs comprise the level of operational costs, depreciations and capital costs associated with an efficient operation of the distribution grid in 2004. Each year, revenue cap is determined by the distributor's price-adjusted necessary costs in 2004. On the other hand, the regulatory return is set at the long-term bon rate set by the Association of Danish Mortgage Banks plus 1%.

Financials

Past Performance

Overall, results from Ørsted have been reflecting the company's new strategy, by showing a larger influence of Wind Power Unit in the company's total figures. Such influence is more evident in EBITDA, as it takes into account the farm-down gains, which represent a very large proportion of Wind Power's results. In EBITDA terms, Wind Power represented 39% of total EBITDA, by 2015, while in 2016 it accounted for 62%. In 2017 it accounted for 90%, when Group's EBITDA achieved 22.5 DKK billion in 2017, representing a 18% increase from 2016. Note that roughly 13.7 DKK billion from 22.5 DKK million were related to the farm-downs and construction contracts. Given the differences in Ørsted's composition throughout the last few years, an analysis of Ørsted's results by business unit allows a better understanding of the company's overall performance.

Wind Power

As the acceleration on new projects acquisitions increases, so does the Wind Power unit's revenue in different ways. Revenue from generation has been increasing in the last few years, mainly driven by the increase in the installed capacity, a consequence from the commissioning of new wind farms every year. In 2016, new capacity additions (net of divestments) totalized 600 MW, while in 2017 new capacity additions reached 300 MW. Also, in 2017, higher power prices contributed to an increase in revenues from generation.

At the same time, gains from divestment on non-current assets has been also growing, as Ørsted's farmo-downs' are also becoming larger and more frequent: in 2016 it divested two projects, summing a total of 417 MW of installed capacity, while in 2017 it divested another two projects, with a total installed capacity of 555 MW. Following these divestments, revenue from construction contracts has also been increasing in 2015 and 2016, in order to reflect the contracts for construction that Ørsted agreed with its partners. In 2017, revenues from construction contracts decreased, due to lower construction activity.

Gross investments have also been growing in the last three years, reflecting the acquisition and construction of new projects. In 2016 it reflects the construction of six projects, comprising a total capacity of 3.32 GW, while in 2017 it reflects the construction of three projects, with a total added capacity of 2.7 GW.

Bioenergy & Thermal Power

In Bioenergy & Thermal Power, revenue has been following an irregular pattern, reflecting changes in different drivers. Revenue from power generation was falling in 2015 and 2016, due to both lower power prices and lower generation, but it increased in 2017, following an increase in power prices that more than offsets the fall in power generation.

Revenue from heat & steam production was higher in 2016, resulting from colder weather days vs. an average year. In 2017, it increased due to more generation from biomass plants.

Gross investments in this unit in the last few years have been reflecting the process of CHP plants' biomass conversion. While in 2016 it converted four CHP plants adding a total capacity of power & heat of 3.4 GW, in 2017 gross investments were lower, since Ørsted converted a total power & heat capacity of 1.3 GW.

Distribution & Customer Solutions

Results from Distribution & Customer Solutions have been distorted in the last few years, due to the booking of one-offs in 2016, relating to the payment from the renegotiation of long-term gas purchase contracts.

Revenues from Sales fell in 2016, following lower gas sales and an average gas price 29% lower than the one observed in 2015. However, in 2017 average gas price recovered increasing 24% vs. 2016, so revenues from gas sales increased. At the same time, power sales also increased due to higher power prices in 2017.

EBITDA from Distribution has been decreasing, reflecting the sale of the Gas Distribution Grid in 2016. Adjusting for that, EBITDA from Power Distribution has been constant in the last few years, with an average return on RAB of roughly 6%.

Gross investments in both 2015 and 2016 was mainly related to the maintenance of the power distribution grid. However, in 2017 it increased, reflecting the initial installation of roughly 200,000 power smart meters under the scope of the RPM project, which is expected to be concluded by 2021.

Valuation

Ørsted operates in different geographies, however the consolidated financial statements provided by the company do not discriminate the results' breakdown by country. As so, each monetary item in the financial statements is presented in DKK, and any gains or losses derived from movements in exchanges rates is registered in the appropriate lines of each statement. Note that possible sudden movements in exchange rates may affect Ørsted's results, so revenues forecasted for Ørsted had in account the expected future exchange rates.

Revenues

Revenues from **Wind Power** unit has two main sources recognized in this line: revenues from power generation and revenues from construction contracts. Revenues from power generation have three main drivers: the installed capacity, load factor and the price achieved. Installed capacity is expected to increase considerably in the next few years, following the existing large Ørsted's projects pipeline. For the projects in which FID is already taken and the commissioning date is already set, it was assumed that they will be operational as planned. For projects in which FID was not taken yet, two scenarios were forecasted: the upside scenario, in which projects follow the usual timeline (3 years until the FID, and then 3 years until the wind farm's commissioning); and the downside scenario, under which the projects suffer a delay against the typical timeline, taking 5 years until the FID, with commissioning happening 4 years afterwards.

Load factor for already operational wind farms was assumed to be the historical average of the last 3-4 years, excluding the commissioning year as it typically generates a lower load factor if the commissioning date is not at the beginning of the year (in this case, turbines operate for a lower period than the typical one). For new wind farms, the country's average load factor was used, as it was found to exist more similarities between regions than between turbines' models.

For the price achieved, announced subsidies were taken into account, while power prices were forecasted by using power exchange futures from the different markets as a reference to determine future power generation prices, adjusted then for the expected inflation.

Revenues from construction contracts has two main drivers: the capacity divested and the price agreed per MW divested. Capacity divested was in line with farm-downs forecasted, which are explained below. The selling price per MW was calculated based on past information, as the company has been following a constant pattern and did not disclose any intention to move to another strategy.

Bioenergy & Thermal Power unit's revenues have two main contributors: power sales and heat & steam sales. Power sales' key drivers are the power installed capacity and the power price per MWh; while heat & steam's sales key drivers are the heat installed capacity and the heat price achieved per MWh.

Installed capacity from power is expected to be set constant, as Ørsted does not anticipate new capacity additions under this unit in the future. In the case of heat & steam, there are marginal capacity changes expected in when the bio-conversion of the CHP plants takes place, which are already disclosed by the company.

In the case of power prices, it was decided to use power exchange futures from the Nord Pool Market as a reference to determine future power generation prices, adjusted then for the expected inflation. As for the heat price, since it is basically sold to municipalities through long-term fixed contracts, it was forecasted based on the historical average price achieved, adjusted for annual expected inflation.

Distribution & Customer Solutions unit's main contributor for the revenue is the revenue generated by the power distribution grid, which is driven by the regulatory asset base (RAB) and by the return allowed by the regulatory framework.

Regulatory Asset Base is expected to increase due to the implementation of the Remote Power Meter project. According to the Danish regulatory framework, investments in the power grid can be added to RAB in the magnitude of its cost. Thus, RPM project is expected to add DKK 2,100 million to RAB by 2020, implying that overall RAB will achieve DKK 13.5 billion by then.

Allowed return is expected to be subject to its current formula: 1% above the long-term bond rate. In the last few years there was a mismatch between revenue cap and the return cap, which allowed Ørsted to achieve a higher return than the one set by the cap. However, adjustments in this case are performed in the next period, so it is expected that both caps are already coherent, which prevents Ørsted from achieving a higher return than the one settled in the future.

Farm-downs

Farm-downs have two main drivers: new capacity additions and the average selling price. The company has stressed out several times that farm-downs are an

operational part of the business and they intend to divest 50% of all the parks they develop from now onwards. Given that capacity additions are expected to increase in the following years, divested capacity is also expected to rise by 50% proportion of the new installed capacity. Regarding the proceeds from the sale, Ørsted has stated in its 1Q18's conference call that it considers proceeds achieved in past transactions a good indication for future selling prices. As so, we assumed an average selling price per MW divested, and assumed also that it will evolve according with the inflation.

CAPEX

Future investments in Wind Power unit comprise basically the investment costs related with the construction of offshore wind farms. Turbines account for roughly 40% of a total investment cost of a wind farm, while remaining elements can be expressed relating to the number of turbines; so a CAPEX per MW was defined to follow the trend in offshore wind turbine prices. Given recent movements in offshore turbine manufacturing industry, it is largely expected that turbines' prices will decrease in the future. In order to account for that, two scenarios were forecasted: an upside scenario where turbine prices decrease at annual rate of 3%, and the base case scenario, where prices maintain its current trend. Given that wind turbine manufactures operate globally, investment costs per MW installed should not vary considerably across different countries. Hence, we assumed the same capex per MW for all future wind farms.

Future projects in Bioenergy & Thermal Power comprise mainly the remaining biomass-conversions of the existing CHP plants, as the company did not disclose any intention of further capacity additions. According to the Ørsted's calendar, there will be two biomass-conversions in the next few years: Asnaes in 2019 and Esbjerg in 2021. Conversion costs were calculated based on past biomass-conversions, aligned with expected inflation.

Expansion CAPEX in Distribution & Customer Solutions unit are mainly related with RAB's additions under the scope of the RPM projects. The Government required Ørsted to convert all power meters to remotely read meters. The project is expected to be concluded until 2020 and will include the substitution of 1 million power meters, with an overall indicated gross investment of DKK 2.1 billion. Until the end of 2017, 183,000 power meters were already substituted, so it was assumed that remaining installations were equally divided between the 3 following years. Regarding the cost of installations, it was assumed that the costs per installation from now on would be equivalent to the installations already performed. Maintenance CAPEX corresponds to the investments relating to the required

maintenance of the power distribution grid. Those are expected to continue in line with maintenance performed in the last few years.

WACC Assumptions

Ørsted operates in a capital-intensive industry, as its main strategy consists on acquiring and developing offshore wind projects. Nevertheless, Ørsted also assumes as its core strategy to divest a large proportion of its projects in the beginning, allowing it to materialize a large part of its return faster. As so, it was assumed that its current leverage (at market levels), which has been constant in the last few years, matches company's long-term target capital structure. As so, **debt-to-equity ratio** in the long-term was assumed to be 42%.

To calculate Ørsted's **cost of debt**, the market yield from a 10-year bond issued maturing in the end of 2029 (to meet the cash-flows' maturity) by Ørsted was used. Since the Ørsted's debt is rated as a BBB+ by the three main rating agencies, yield was then adjusted for the annualized probability of default (according to Moody's). With this method, the after-tax cost of debt achieved was 3%.

Cost of Equity was estimated on a segment basis, through the CAPM model. As for the risk-free rate the 10-year German Government Bond was considered a good proxy, as it is rated as a triple A by main rating agencies (Standard & Poor, Moody's and Fitch), then adjusted to local inflation. In what concerns the market risk premium, it was only had in account the additional return investors receive from investing in the market instead of investing in a risk-free asset; so an historical approach of Eurostoxx returns was used as an approximation to a world index, providing an annual market risk premium of 6.5%.

Regarding beta, an individual beta for each segment based on corresponding competitors was used: for the Generation business (comprising WP and BTP units), a sample of renewable power generators operating mainly in the European market focused on renewables generation was used; and for DCS unit companies operating in transmission and retail, as transmission and distribution's systematic risk is similar. This led to a final cost of equity of 7% for Generation units, and 4% for Distribution unit. Finally, the WACC achieved for the Generation unit was 6% and 4% for the Distribution unit.

Appendix

Financial Statements

Income Statement *DKK million*	2016A	2017A	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Total Revenues	61.201	59.172	67.640	69.341	68.479	61.879	68.576	69.528	80.542	76.781
Total Cost of sales	- 39.260	- 40.544	- 44.721	- 45.393	- 44.572	- 42.405	- 45.031	- 45.812	- 49.847	- 46.462
Total other costs	- 7.166	- 7.438	- 8.640	- 8.921	- 8.862	- 7.529	- 8.773	- 8.851	- 10.964	- 10.788
Total gain on disposal of non-current assets	2.940	10.835	3.496	9.159	5.663	-	-	-	6.444	6.444
Total EBITDA	**19.109**	**22.187**	**17.776**	**24.186**	**20.708**	**11.944**	**14.772**	**14.865**	**26.174**	**25.975**
Total Depreciation and Amortization	- 5.232	- 5.739	- 6.506	- 7.317	- 7.487	- 7.895	- 8.193	- 8.138	- 8.092	- 8.053
Total EBIT	**13.877**	**15.903**	**11.269**	**16.868**	**13.221**	**4.049**	**6.579**	**6.727**	**18.082**	**17.921**
Profit before tax	**14.352**	**14.712**	**9.162**	**13.860**	**10.314**	**978**	**3.323**	**3.258**	**14.358**	**13.988**
Tax on profit for the year	- 2.191	- 1.765	- 2.016	- 3.049	- 2.269	- 215	- 731	- 717	- 3.159	- 3.077
Profit for the year from continuing operations	**12.161**	**12.947**	**7.147**	**10.811**	**8.045**	**763**	**2.592**	**2.541**	**11.199**	**10.910**
Profit from discontinued operations	1.052	6.920	-	-	-	-	-	-	-	-
Profit for the year	**13.213**	**19.867**	**7.147**	**10.811**	**8.045**	**763**	**2.592**	**2.541**	**11.199**	**10.910**

Balance Sheet consolidated *DKK million*	2016A	2017A	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Total operating assets	92.514	107.178	107.465	110.037	115.641	114.134	114.628	114.868	121.579	120.520
Total nonoperating assets	43.975	39.343	37.074	36.489	36.632	36.776	36.920	37.065	37.211	37.358
TOTAL ASSETS	**136.489**	**146.521**	**144.538**	**146.527**	**152.273**	**150.910**	**151.549**	**151.933**	**158.790**	**157.878**
Total operating liabilities	26.746	31.590	27.507	28.322	28.293	26.626	27.069	27.290	29.664	28.443
Total nonoperating liabilities	52.243	43.094	80.942	74.800	77.290	80.693	83.923	88.319	93.091	95.832
TOTAL LIABILITIES	**78.989**	**74.684**	**108.449**	**103.123**	**105.583**	**107.319**	**110.992**	**115.608**	**122.755**	**124.274**
Total Equity	**57.500**	**71.837**	**36.090**	**43.404**	**46.690**	**43.591**	**40.556**	**36.324**	**36.035**	**33.603**
TOTAL EQUITY AND LIABILITIES	**136.489**	**146.521**	**144.538**	**146.527**	**152.273**	**150.910**	**151.549**	**151.933**	**158.790**	**157.878**

Free Cash Flow Map *DKK million*	2016A	2017A	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Total EBIT	**13.877**	**15.903**	**11.269**	**16.868**	**13.221**	**4.049**	**6.579**	**6.727**	**18.082**	**17.921**
Total Notional Income Taxes	- 3.053	- 3.499	- 2.479	- 3.711	- 2.909	- 891	- 1.447	- 1.480	- 3.978	- 3.943
Total Tax Adjustments	966	1.472	-	-	-	-	-	-	-	-
Total NOPLAT	**11.791**	**13.876**	**8.790**	**13.157**	**10.313**	**3.158**	**5.132**	**5.247**	**14.104**	**13.979**
Total Depreciation	5.232	5.739	6.506	7.317	7.487	7.895	8.193	8.138	8.092	8.053
TOTAL GROSS CASH FLOW	**17.023**	**19.615**	**15.297**	**20.475**	**17.799**	**11.053**	**13.325**	**13.385**	**22.196**	**22.032**
Total Net CAPEX	4.994	- 11.136	- 17.306	- 9.619	- 13.045	- 11.450	- 7.781	- 7.792	- 7.804	- 7.815
Total Change in NWC	- 6.296	- 5.965	6.708	299	- 554	3.077	- 368	- 285	- 4.560	- 346
TOTAL OPERATIONAL CASH FLOW	**15.800**	**4.056**	**4.420**	**11.400**	**4.680**	**2.998**	**5.080**	**5.229**	**9.766**	**13.817**
TOTAL NONOPERATIONAL CASH FLOW	**- 1.666**	**- 4.072**	**2.121**	**1.066**	**339**	**338**	**338**	**337**	**336**	**336**
CASH FLOW AVAILABLE TO INVESTORS	**14.134**	**- 16**	**6.542**	**12.466**	**5.019**	**3.337**	**5.418**	**5.566**	**10.102**	**14.153**

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Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
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