



ANNUAL REPORT

PORT OF ESBJERG

2016



Gateway Scandinavia



NET PROFIT

10.68

MILLION EUR



TURNOVER

30.94

MILLION EUR

PREFACE

2016 was an unpredictable year seen from an international perspective due to the presidential election in the U.S. and the Brexit referendum in the UK. Both events created uncertainty in relation to international trade and cooperation.

At the same time, “stable progress” became the headline for the Danish economy and many businesses. This includes the Port of Esbjerg, which landed its highest net profit to date.

Over the past ten years, the Port of Esbjerg has increased its turnover by 128 percent and the growth has been profitable throughout this period. In fact, the Port of Esbjerg has managed to combine high growth and large investments with increased earnings. The positive development and thousands of jobs at and around the Port of Esbjerg have been, and continue to be, dependent on international trade and access to foreign markets on equal and fair terms.

As such, it is concerning when protectionist rhetoric receives tailwind and people begin to turn their backs on the world and choose to look inwards instead. However, as several experts say in the article later in this annual report, we should “take it easy.” We are, fortunately, still far from a situation, where the door shuts on Danish products, services and investments. Nothing has changed at this point and the markets are closely integrated. The UK’s signature on the Political Declaration on energy cooperation between the North Seas Countries in the fall, despite the Brexit decision, underlines that the Brits wish to maintain strong ties with Europe.

I am convinced that Denmark’s opportunities for international trade will continue at a high level and that the Port of Esbjerg’s role as a centre for trade will increase over the coming years.

All other things being equal, we, in Esbjerg, should meet the future with a certain optimism. After a couple of very difficult years, it looks like the situation is getting brighter for the oil and gas industry. The oil price increased steadily in 2016 and, in that respect, it would also be a big help if we could remove all uncertainty about the Tyra field in the North Sea.

Moreover, the prospects for offshore wind continue to be strong. 2016 and 2017 represent a milestone for the offshore wind industry with a historically high number of tenders and significantly cheaper offshore wind, which must defuse the last doubt as to whether offshore wind makes good economic sense and is worth betting on.

There are also positive signs when it comes to the RoRo area, where the Port of Esbjerg has 6 cargo routes to 25 destinations today. At the same time, we can see a number of interesting market opportunities for all the actors at the Port of Esbjerg. Both within our three core areas and new areas. Esbjerg is, as such, well-equipped to seize the opportunities, not least in part due to the area’s unique cluster of competencies.

The starting point creates demands and the Port of Esbjerg is constantly focused on developing the supporting port infrastructure and our services, so that they match demand and customer needs, and to position ourselves at the forefront of the market instead of chasing after it. We have succeeded in doing this over the last ten years, and we must succeed in doing this over the next ten years. Firstly, we are investing nearly 27 million euros in the last stage of the expansion of the East Port. There is already great interest in the new 250,000 square meter area, which will be completed by the end of the year. We are also currently looking at whether further investments and expansions are relevant in the medium to long term.

Finally, I would like to take this opportunity to thank all the Port of Esbjerg’s customers and partners for the good co-operation in 2016.

Flemming N. Enevoldsen
Chairman, Port of Esbjerg



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ANNUAL ACCOUNTS



2016

FINANCIAL AND KEY FIGURES

Million EUR	2014	2015	2016
Turnover	30.17	30.03	30.94
Other expenses	-5.25	-5.33	-6.15
Gross profit	24.92	24.70	24.79
Staff costs	-4.38	-4.51	-4.44
Depreciation	-7.00	-6.78	-7.41
Operating profit, EBIT	13.54	13.40	12.95
Net financials	-3.11	-3.09	-2.27
Net profit	10.43	10.31	10.68
Total assets	177.27	180.17	190.87
Tangible fixed assets	146.47	146.83	146.70
Equity	87.10	97.38	108.23
Capital expenditures	5.21	7.10	7.13
Key figures (%)			
Return on equity	12.7%	11.2%	10.4%
ROAIC	9.3%	9.2%	8.9%
Solvency ratio	49.1%	54.0%	56.7%

FINANCIAL STATEMENT

The Port of Esbjerg came out of 2016 with a record net profit of EUR 10.68 million against EUR 10.31 million in 2015, thereby exceeding expectations. The turnover for 2016 ended at EUR 30.94 million against EUR 30.03 million in 2015.

The increase is explained by continuous high activity at the port including a 6 percent rise in cargo shipments compared to 2015, an increase in the number of ship calls and a growing demand for the port's areas – especially from the wind industry.

The increased level of activity resulted in a rise in the turnover from ship and cargo fees. At the same time, the port's investment in a fifth mobile crane increased turnover. The generally high level of activity compensated for the low level of activity in the oil and gas sector.

A HEALTHY AND ROBUST BUSINESS

The Port of Esbjerg's total assets in 2016 amounted to EUR 190.87 million against EUR 180.17 million in 2015, while the port's equity ended at EUR 108.23 million against EUR 97.38 million in 2015. As such, the solvency ratio rose from 54 percent in 2015 to 56.7 percent in 2016, confirming the robustness of the business.

Staff costs in 2016 totaled EUR 4.44 million, which is a bit below staff costs in 2015 that totaled EUR 4.51 million. The port employed 55 people in 2016 and 56 people in 2015. As in the previous two years, turnover per employee equaled EUR 536,913. The average among larger Danish ports is approximately EUR 308,725.

Depreciation for the year amounted to EUR 7.41 million, which is above the 2015 level, where the depreciation amounted to EUR 6.78 million. The primary reasons for the increase was the decision to move the investment in a mobile crane forward, along with the completion and operation of several ongoing projects, especially in the East Port.

The return on average invested capital (ROAIC) was 8.9 percent in 2016, which is nearly the same as in 2015.

RISING DEMAND FOR AREAS

The share of leased areas at the Port of Esbjerg increased in 2016. By the end of the year, 2,454,000 square meters of the port's total area of 4,500,000 square meters was leased on long-term contracts.

CARGO TRANSPORT INCREASES AGAIN

Total cargo turnover increased by approximately 6 percent to 4.5 million tonnes in 2016 from 4.2 million tonnes in 2015, bringing the turnover back to the same level as in 2014.

RoRo cargo amounted to 38 percent of the total cargo turnover, while bulk (coal, gravel and liquid bulk in the form of fish oil etc.) accounted for a total of 45 percent. The final 17 percent of the cargo was divided as follows: 8 percent wind components, 5 percent containers and 4 percent of other cargo.

2016 saw twice as much offshore wind capacity shipped from the Port of Esbjerg compared to 2015. A total of 1,100 MW was shipped in 2016 against 450 MW in 2015. The offshore wind farms, Sandbank in German waters and Gemini in Dutch waters, especially contributed to the rise.

In terms of RoRo traffic, the cargo turnover increased from 1.679 million tonnes in 2015 to 1.695 million tonnes in 2016. Once again, the number of cars took a big upwards leap: in 2016, 70,207 cars drove across the quay against 59,060 cars in 2015. This amounts to a 360 percent increase in the number of cars compared to 2011.

NEW RECORD FOR NUMBER OF SHIP CALLS

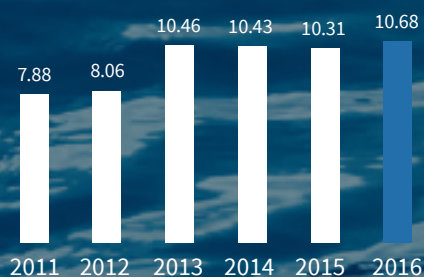
2016 was a busy year at the port's approach. As in 2015, 2016 saw a new record for the number of ship calls. 6,626 ships (excl. the Fanø Ferry) docked at the Port of Esbjerg against 6,432 in 2015. As such, the number of ship calls has increased by 80 percent since 2011.

The increase in the number of ship calls was especially due to the significant development within offshore wind, which resulted in an increase in the number of Crew Transfer Vessels, which transport crews to the offshore wind farms in the North Sea.

FACTS AND KEY FIGURES 2016

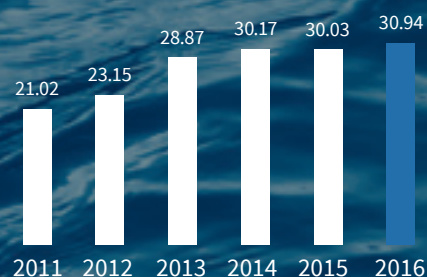
NET PROFIT

 **10.68** million EUR



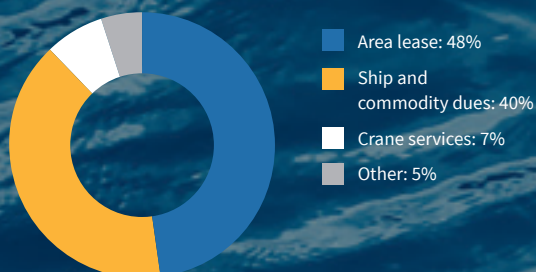
TURNOVER

 **30.94** million EUR



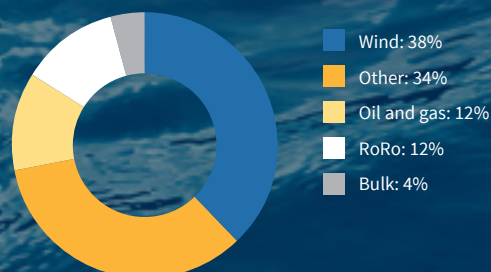
TURNOVER

 by type



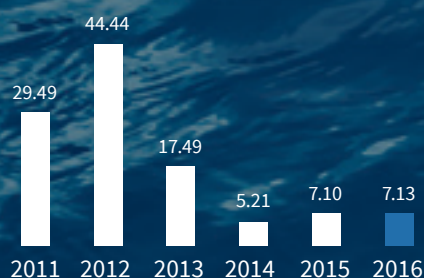
TURNOVER

 by business area



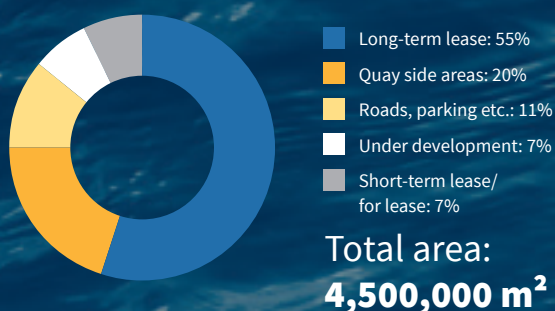
INVESTMENTS

 **7.13** million EUR



CONTRACTED AREAS

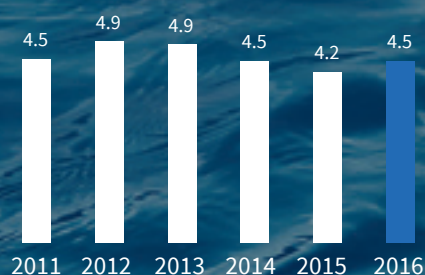
 by type



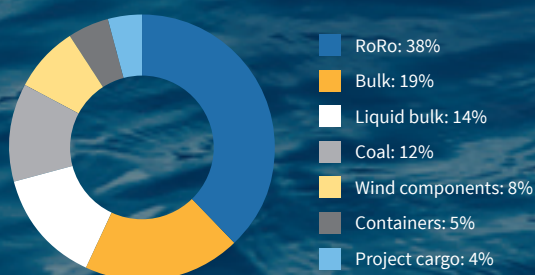
CARGO TURNOVER



4.5 million tonnes



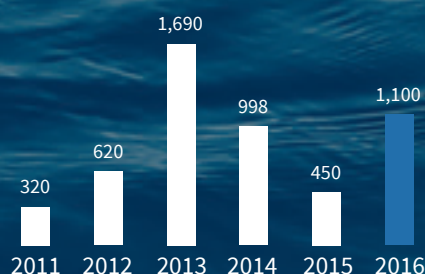
CARGO BY TYPE



OFFSHORE WIND SHIPPED



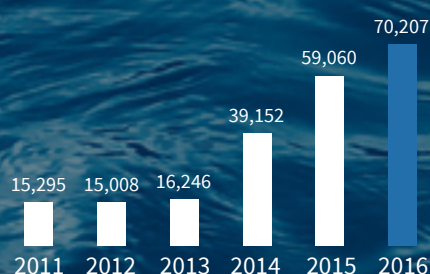
1,100 MW



CARS



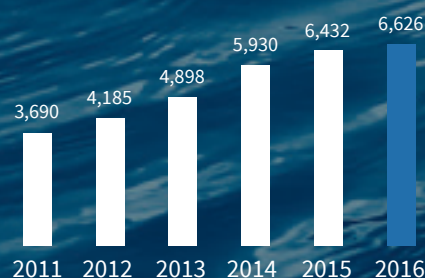
70,207



SHIP CALLS



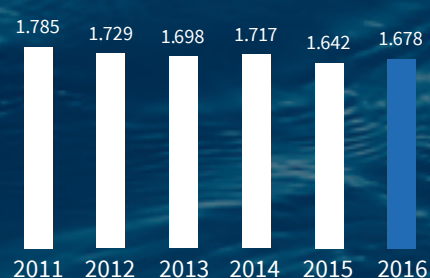
6,626



PASSENGERS



1.678 million persons





3 TRILLION GOOD REASONS TO BET ON THE BLUE ECONOMY

There is plenty of growth potential in the ocean. According to the OECD, activities related to the ocean could contribute with a staggering 3 trillion dollars to the global economy by 2030. Much of the potential lies in areas, where Denmark has a strong position, such as offshore wind, shipping and shipbuilding. And Denmark's Business Affairs Minister, Brian Mikkelsen, is optimistic on behalf of the country.

Five years ago, OECD expert, Barrie Stevens, began looking for new growth areas. With a global economy, which was slowly emerging from the crisis of 2008-2009, there was an urgent need to find new sources of growth – not least in the Western part of the world.

“We were facing a period, where we were getting nervous about big global challenges, such as climate change and environmental issues, but also slowing growth and productivity. So, we were motivated to look for new growth areas. That meant turning new stones and looking at what might be out there,” says Barrie Stevens.

In the process, he discovered that there was very little research about the ocean's economic potential. He, therefore, decided to take a closer look at how sea-based activities contribute to growth. The result was the report “The Ocean Economy in 2030”, which was published in April 2016. It estimates that

the global maritime economy has the potential to contribute with 3 trillion dollars to the global economy by 2030, which is double the figure for 2010.

In other words, there are many good reasons to take an interest in the ocean. And Barrie Stevens also finds that the focus on the blue economy has increased since he began his quest for growth:

“In the last few years, we have seen a whole string of countries begin to understand how important it is to have an ocean strategy. If you are a seafaring nation or border the sea, you really need to tackle this, because there is a lot of potential and this is where the growth will come from.”

And Denmark is one of those nations.

GROWTH IN BLUE DENMARK

In May 2016, then Minister for Business and Growth, Troels Lund Poulsen, appointed a growth team tasked with future-proofing the Blue Denmark's competitiveness towards 2025. Today, the Blue Denmark employs some 100,000 people and is Denmark's largest export area, accounting for approximately 25 percent of the country's total exports.

The growth team is led by Jesper Lok, who, among other roles, is chairman of ESVAGT and J. Lauritzen. The Port of Esbjerg's director, Ole Ingrisch, is also part of the team, which will present its recommendations later this year. These will form the

basis of the Danish government's forthcoming growth strategy for the Blue Denmark.

Business Affairs Minister, Brian Mikkelsen, already sees a large growth potential in the Blue Denmark:

"It is a historically challenging time and changes are happening in a fast and often unpredictable manner. The fourth industrial revolution and other global developments mean that the business community and, not least, the Blue Denmark face both difficult challenges and new opportunities. I think that growth will occur, where we are able to be innovative and able to adjust and cooperate. Especially the solid cooperation, the strong competencies and business acumen are the Blue Denmark's strength, which we must retain and expand."

SEVERAL HIGH GROWTH AREAS

The more than 250-page long OECD report identifies the areas with the strongest growth potential up to 2030.

The OECD highlights the following areas: offshore wind, shipping, shipbuilding, aquaculture, tourism in marine areas (including the cruise industry) as well as maritime surveillance and safety.

Several of the areas overlap with the strengths, which the Business Affairs Minister sees in Denmark:

"The Blue Denmark has a strong position across a broad spectrum. Danish shipping is in a leading position globally and operates sea transports everywhere in the world. Meanwhile, Danish producers of equipment are among the world's largest suppliers of two-stroke engines for freight ships and among the largest in the world, when it comes to, for instance, ship paint, safety equipment and green maritime technology. Denmark has the most CO₂-conscious fleet and, as such, a competitive edge when it comes to resource-efficient sea transport. The Danish maritime industry, offshore industry and the Danish ports are a central part of the Blue Denmark's supply chain and an important part of Danish production, says Business Affairs Minister Brian Mikkelsen and adds:

"The North Sea plays a central role in relation to Danish energy production and when it comes to exploiting Denmark's strong maritime position. A reestablishment of the oil and gas complex, Tyra, and the establishment of wind farms in the North Sea can increase the need for supply vessels whilst also increasing activity in Esbjerg and the Region of Southern Denmark."

RELEASING THE POTENTIAL IS A COLLECTIVE RESPONSIBILITY

Having clarified the potential of the maritime economy, the big question of who is responsible for releasing it remains. Both Barrie Stevens and the Business Minister believe that it is a joint task for companies, authorities and researchers:

"In the end, it is up to businesses to take advantage of the market opportunities and to sell their products and services. Meanwhile, the authorities must ensure that good frameworks and services are present so that it is easy and attractive to run maritime businesses in Denmark. Finally, the research and educational institutions must ensure that new knowledge is generated and made available while the right competencies are developed. As such, it becomes a collective responsibility for everyone in the Blue Denmark to release the potential," says the Business Affairs Minister, who also sees an important role for the ports:

"We are seeing several examples of smaller local and regional efforts, where businesses strategically place themselves close to each other and, as such, achieve synergies and other advantages. The Port of Esbjerg is a good example of collaboration, synergy and adjustment – changing from a strong fishery port to the leading port in Europa, when it comes to shipping and handling offshore wind components. The Port of Esbjerg can, as I see it, contribute to spreading the positive effects of collaboration and, not least, by being ready for change."

The share of growth that ports can get their hands on, according to Barrie Stevens, depends on whether they manage to capitalise on the economic gravity shift toward Asia, which is currently taking place. At the same time, he stresses the importance of ports succeeding in adjusting to accommodate the smart and unmanned ships of the future, e-navigation and the entire digitalisation of communication between land and sea.

In the end, releasing the 3 trillion-dollar potential depends on whether we strike the right balance between growth and sustainability, says Barrie Stevens:

"Rapid expansion of economic activity in the ocean risks undermining the very basis of the ocean economy, unless it is done in a sustainable way. Finding the right balance is key. We are currently looking at scientific and technological advances that both develop economic activity and maintain ocean health and resilience."



Barrie Stevens from the OECD is the author of the report "The Ocean Economy 2030."



Business Affairs Minister, Brian Mikkelsen, from the Conservative Party sees a large growth potential in the Blue Denmark.

DECADES OF INVESTMENTS AND HARD WORK MADE 2016 A RECORD YEAR FOR THE OFFSHORE WIND INDUSTRY

Record low prices, the installation of the first 8MW offshore wind turbine and the North Sea offshore wind agreement. 2016 was a significant year for the offshore wind industry, where decades of hard work and investments paid off. And 2017 is shaping up to be just as eventful.

2016 became a year of price records within offshore wind. DONG Energy started out by winning the tender for the Dutch offshore wind farms, Borssele 1 and 2, with a price of DKK 0,54 per kilowatt hour in July, and in December a consortium led by Shell won the tender for Borssele 3 and 4 with a price of DKK 0,405 per kilowatt hour. In between, Vattenfall won the Danish tenders for the near-shore wind farms and Kriegers Flak with a price of DKK 0,475 per kilowatt hour and DKK 0,372 per kilowatt hour, respectively.

Michael Hannibal, CEO of Siemens Wind Power, one of the world's leading producers of wind turbines, Ulrik Stridbæk, Senior Director at DONG Energy, and Bent Johansen, Head of Operation & Maintenance Offshore East at Vattenfall, who both develop offshore wind farms, do not hesitate to describe the tenders and their effect on the price of offshore wind as the biggest milestone in 2016.

"The most important development within offshore wind in 2016 was the fact that the industry delivered on its promise in terms of making offshore wind competitive vis-à-vis other forms of energy. Offshore wind is now indisputably a part of the energy mix in many countries. The old myth that 'offshore

wind is good, but society cannot afford it' has been proven wrong and now many countries are saying, 'offshore wind is good and we cannot afford not to install it,'" says Michael Hannibal.

"The two Danish near-shore offshore wind projects, Vesterhav Syd and Vesterhav Nord, were price-setting in the offshore sector with the lowest prices in the market to date. The political process was long, but fortunately a solution was found, which received wide support in the Danish parliament. We, of course, also looked forward to the result of the Kriegers Flak tender with great anticipation," says Bent Johansen about 2016.

"The tenders were major milestones in 2016 due to the competition, which arose around tenders and the resulting prices," says Ulrik Stridbæk.

Andrew Ho, Senior Analyst in WindEurope, which represents the wind industry in Europe, agrees with the assessment. He adds the installation of MHI Vestas' 8MW offshore turbine on the Burbo Bank Extension project off the Liverpool coast to the list of milestones. Moreover, he emphasises the importance of the political agreement on closer cooperation on offshore wind, which Denmark and ten other North Sea countries signed in June.

SEVERAL FACTORS BEHIND THE PRICE DROP

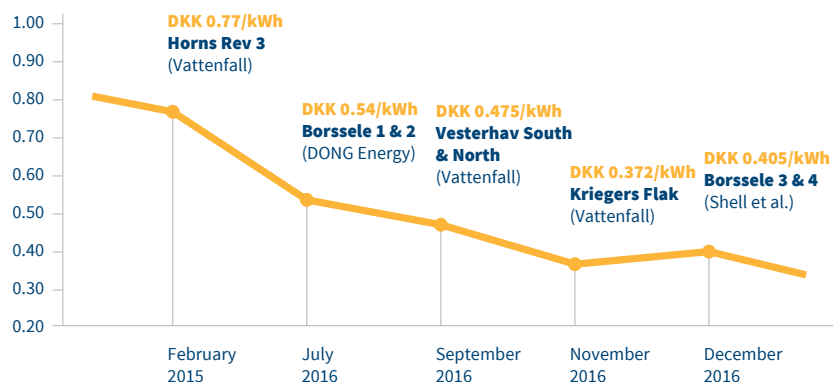
The fall in the price of offshore wind is due to a long list of factors, according to Michael Hannibal. The list includes the industry's large investments in innovation over the past many years, higher efficiency on existing offshore turbines, the optimisation of foundations, innovative grid connection solutions and better service.

Ulrik Stridbæk also views the price drop as a culmination of several factors:

"It is the result of a decade with industrial development in this area, which has driven the sector forward and created scale, technology and a strong supply chain along with developers like us, who can and want this. It was as if all these ends met in 2016."

It is, however, unclear whether the steep price drops from 2016 will continue into 2017.

OFFSHORE WIND PRICES DKK PR. KWH





The high activity within offshore wind in 2016 was felt at the Port of Esbjerg and large volumes of wind components were shipped from the port.



”This is not a continuing race to the bottom, so to think that the price of every succeeding project will be lower won’t be the case, but I think cost reductions will continue in the home markets, and we expect the next German projects to be cheaper than the past German projects. But I don’t think we should take the fact that they got lower one after the other as some sort of trend. The price drops could have occurred in another order in 2016. Germany, for instance, has certain features, which mean you can obtain a price, which is slightly more difficult to obtain in the UK,” says Andrew Ho from WindEurope.

Ulrik Stridbæk thinks that the experiences from other technologies indicate that the cost reductions will continue as the expansion continues. The experience, however, also shows that the prices will flatten, meaning that we cannot expect a repeat of the steep price drops from 2016 in 2017.

Michael Hannibal from Siemens Wind Power has a longer perspective:

“In the long term, the price will come down further – this is our main task as a firm and as an industry. Historically, we have cut 40 percent off the price of offshore electricity every ten years.”

EXCITEMENT ABOUT THE NORTH SEA AGREEMENT

An important step towards even lower prices lies in strengthening the cooperation across the industry and establishing

further standards. As such, there is great excitement about the agreement between the North Sea countries, which aims to create common rules about tenders and offshore wind components, and to coordinate tenders more closely.

”There are already some good results. There is room for more, but it is positive that standards for different operations in the offshore wind industry are being harmonised. For instance, how to lift heavy items. This makes things easier for the suppliers, who deliver service to many different companies while ensuring economies of scale and cheaper solutions. As such, it contributes to bringing the price of electricity from offshore wind down,” says Michael Hannibal and adds:

Wind blades are loaded onto a ship at the Port of Esbjerg.





“Only the imagination sets limits, in terms of where you can work together in the sector, but if I were to mention one point of inspiration, it would be the tender rules for the large projects. The more similar they are, the fewer resources need to be spent by the industry on paperwork, which, while necessary, doesn’t add any value in itself.”

Ulrik Stridbæk is also pleased about the large focus on standards:

“We are very satisfied about the fact that the North Sea agreement is also about the low-hanging fruits and more pragmatic things – not just the very big moon landing projects. It is very pragmatic and we hope to see progress in 2017,” says Ulrik Stridbæk.

HIGH ACTIVITY ON SEVERAL FRONTS IN 2017

Apart from the cooperation between the North Sea countries, 2017 will see a range of other activities within the industry. Over the year, there will be a series of larger tenders in the UK, Germany and the Netherlands. Ulrik Stridbæk is, therefore, in no doubt that the industry will look back at 2016 and 2017 as two very decisive years:

“We will come full circle when looking at these two years. And we will be able to see how things play out in the different countries with different regulatory regimes.”

At the same time, negotiations over the EU Commission’s revised Renewable Energy Directive are in full swing in Brussels. The directive establishes a framework for achieving the EU’s objective of renewable energy making up at least 27 percent of total EU energy consumption by 2030.

Ulrik Stridbæk is generally satisfied with the Commission’s legislative proposal, while Andrew Ho would like a more ambitious target of 30 percent. Agreement on the final directive is not expected until 2018.

Meanwhile, the high activity at sea continues. In 2016, 1.6 GW of offshore wind was installed and WindEurope expects that at least 3 GW will be installed in 2017.

“This means a lot of installation, so the crews will be working throughout the summer to complete the projects. We will also see projects starting in 2017, so the port side activity should be fairly healthy,” says Andrew Ho.

A level of activity, which Vattenfall, among others, will contribute to, says Bent Johansen, referring to the execution of the offshore projects: Horns Rev 3, Vesterhav Syd, Vesterhav Nord and Kriegers Flak.

As such, 2017 is gearing up to be another exciting year for the offshore wind industry.



CAREFUL OPTIMISM ABOUT 2017 IN THE OIL & GAS INDUSTRY

2016 saw the oil price fall to its lowest level in 13 years, which increased the pressure on operators and suppliers from the oil and gas industry to reduce costs. But one year later, there is a glimmer of hope for better times, and the industry's focus is shifting from cost reductions to growth.

When 2016 kicked off, the oil price had fallen almost continuously for 18 months, and the media proclaimed that the oil and gas industry faced a “new reality.” A strong dollar, Iran's re-entrance on the oil market, disagreements in OPEC, slow growth in China and American shale oil had, together, created the perfect storm and underlined that an oil price around 100 dollars, which the industry enjoyed for several years, was a thing of the past.

Meanwhile, the recipe for survival was becoming clear from several sides: The industry had no choice but to adjust to a significantly lower oil price. And according to several experts, operators and suppliers, the industry has succeeded in doing so. Although it has been a tough cure, there are several signs that it has injected new confidence and a certain level of optimism into the industry.

Patrick Gilly, who took over as chief of Maersk Oil's Danish business unit, explains that the challenging market forced the industry to distinguish between must-haves and nice-to-haves:

“We will use the market challenges to continue the journey, we have been on, and to become even more robust,” he says and underlines that the greatest inefficiencies and overcapacities in the industry have been addressed, but that it will take longer to identify and fix the last inefficiencies.

Matt Adams from the British consulting firm Douglas Westwood, which analyses the global energy market on an ongoing basis, has the same impression:

“Companies have generally adjusted to low oil prices now. There have been major pricing pressures on the supply chain since 2014, which has brought down costs considerably across the board.”

The journey has, however, not been free of charge according to Managing Director of Rambøll Oil & Gas, John Sørensen. He has had to let a number of employees go and close several offices due to the low oil price:

THE PRICE OF BRENT OIL



“Some companies have died in the process. That is the case every time you hit a serious crisis. And this has been a serious crisis and continues to be a serious crisis, because we are not over it yet. But there are signs that we are getting closer to a balance. We are not looking into a market, which continues to nosedive, but a market that is more horizontal.”

GROWTH AND INVESTMENTS

While 2016 was characterised by cuts and layoffs in the industry, several experts think that growth will come into focus in 2017.

“2016 was very much about survival for many players in the industry, especially the smaller ones. Although 2017 will be a tough year as well, we do also see some shifts from short term focus towards more long term strategic changes this year, as companies are preparing for a sustained period of lower oil prices than 2014 levels before the downturn,” says Lars Præst Ørsted, Country Manager at DNV GL - Oil & Gas Denmark.

DNV GL's Industry Outlook for 2017, which is based on input from 723 senior industry representatives, shows that cost efficiency as a top priority has fallen from 41 percent in 2016 to 34 percent in 2017.

Even though the will to invest is a positive sign, Matt Adams warns against letting go of the cost-cutting knife:

“The investment climate appears to be picking up, but ope-



In February 2017, several oil rigs were docked at the Port of Esbjerg, which is the base port for the Danish oil and gas industry.

rators will have to keep a close eye on their costs, in order to remain efficient and ready to face the remaining uncertainties in the market.”

FORCED TO INNOVATE

Despite the tough market conditions and the big focus on cost reductions, the industry has also succeeded in being innovative.

“We have certainly seen a lot of efficiency improvements throughout the industry. This is likely a combination of new technologies, better focus and pressures on the supply chain to provide new solutions. The market has been tough and the supply chain, in particular, has had to adapt to provide better value for money, in order to win work, which can only be positive for the industry as it emerges from the downturn,” says Matt Adams.

It does not come as a surprise to Patrick Gilly that innovation is occurring now:

“We are prudent in our DNA - as we have to be for safety

reasons - and as an industry we have only innovated when our back was against the wall or when we needed to push the boundaries in terms of development,” he says and continues:

“We are more eager to adopt technology and something is in motion. Our new reality is turning those challenges into opportunities, and we are increasingly open to what is being done elsewhere.”

Lars Præst Ørsted from DNV GL - Oil & Gas Denmark confirms this tendency:

“Digitalisation is on a rise and increasingly seen as a means to enhance operational and cost efficiencies. According to our Industry Outlook survey for 2017, 39 percent of the respondents expect their organisations’ spend in this area to increase in 2017. And nearly half of the respondents also said their organisation will embrace digitalisation to increase profitability.”

MUST FOCUS ON TALENTS

Another important focus area for the industry in 2017 is talent attraction.



“We continue to need new young engineers,” says Patrick Gilly.

A challenge, which Lars Præst Ørsted agrees with:

“When the industry starts to grow again, we are likely to see a challenge in convincing potential new employees about the attractiveness and job security in these oil and gas jobs. This will require focus.”

LOOKING INTO 2017

Asked about the outlook for 2017, there are varying degrees of optimism among the four experts.

“The combination of a leaner supply chain and a more stable oil price picture means that the global outlook from here is cautiously optimistic, but we will need to ensure there is no return to the highly inflated and frankly wasteful ways of pre-2015,” says Matt Adams.

John Sørensen from Rambøll Oil & Gas thinks that the level of activity will already rise over the course of 2017, and he expects to hire new people during the year:

“Our clients are acting as if the level of activity is increasing now. And at the moment, our list of offers is greater than ever before, because there are a lot of projects, which were put on hold, but which clients are now looking at again.”

Lars Præst Ørsted, on the other hand, is a bit more cautious:

“Though few expect a recovery in 2017, confidence in the oil and gas sector growth has stabilised for now, and opportunities are being created. Improved focus on collaboration, standardisation and digitalisation will enable the industry to transform to meet the demands of the new era and become profitable in volatile markets.”

Patrick Gilly does not wish to speculate about future oil prices, but is not in doubt about the fact that an elimination race is taking place right now, which will define the future:

“The winners of tomorrow will be those able and willing to adapt to our new industry reality. That is on everyone’s mind. Those who succeed will be those, who are most efficient, and who are best at achieving the optimal mix of safety, innovation and industry collaboration.”

British Prime Minister Theresa May has stated that the UK will be seeking a new model of cooperation with the EU.



BREXIT AND TRUMP CREATE BO AND NEW OPPORTUNITIES FOR

Brexit and the election of President Trump in the U.S. have shaken up things politically in two of Denmark's largest export markets and put a question mark around global free trade. Although the exact consequences of the two events in relation to free trade remain to be seen, it looks as though they could create new opportunities for Danish exports – not least in Asia, where growth is booming.

The British Prime Minister Theresa May has promised to trigger Article 50 in the Lisbon Treaty, which formally begins the process for the UK's exit before March is over. Meanwhile, President Trump has tossed the Trans-Pacific Partnership Agreement (TPP) in the bin, put all plans about the Transatlantic Trade and Investment Partnership on hold and is threatening to renegotiate the almost 25-year-old North American Free Trade Agreement (NAFTA) between Mexico, Canada and the U.S.

We have asked Denmark's ambassador to India, Peter Taksøe-Jensen, director in the Confederation of Danish Businesses, Peter Thagesen, and James Turgoose from the British consulting firm, JBP, who is an expert on British politics, what the increasing resistance in the West against globalisation means for global free trade and Danish export businesses.

"There is no doubt that the political winds, which are blowing, and the UK's goodbye to the EU are shifting the balance between those countries fighting for free trade and those, which are more protectionist. And that makes it more difficult for countries like Denmark that wish to establish common and fair rules for all businesses and to move that agenda," says Peter Taksøe-Jensen, who became Denmark's ambassador to India in August 2015 and previously was Denmark's ambassador to the U.S. He, furthermore, delivered a report on Denmark's foreign and security policies to the Danish government in May 2016.

"These developments threaten trade. Since the Second World War and the Marshall Plan, the U.S. – regardless of the presi-



TH UNCERTAINTY DENMARK

dent – has been pro-free trade and led the battle globally for free trade. Denmark has, as a small and open economy, enjoyed this. That course is now changing under Trump. The question is how much it will change. It is a step backwards and it does not benefit Danish interests. Instead, it gives rise to concern,” says Peter Thagesen, who is responsible for the Confederation of Danish Business’ trade policies.

”In certain ways, Brexit is more profound and has deeper impact, because Trump is elected for four years and limited by the U.S. constitution while Brexit was more definitive – it was the British deciding the course of the country for the next 30-40 years,” says James Turgoose, Director of London at the British consulting firm JBP, which advises businesses about public affairs.

TRADE WITH THE UK

As Denmark’s fourth largest export market, there is good reason to keep an eye on what the UK’s future relationship

with the EU is going to look like. But although negotiations are imminent, few dare guess what the outcome will be. One thing is certain according to James Turgoose:

”There are different models, but the government has said it is not seeking to adopt a model enjoyed by other countries. They will come up with their own model.”

Peter Taksøe-Jensen, however, does not believe there is reason to be too concerned right now.

”I don’t envision that large tariff walls will appear between the UK and Denmark. I think we will end up with something, which has a greater political than economic consequence for the EU.”

Meanwhile, Peter Thagesen hopes that Denmark and the EU take a pragmatic approach to the negotiations.

”It is difficult to predict, where we will land in this game. But we are very interested in being as closely integrated with the

UK as possible. We should not sit back and be resentful, but instead work on getting a deal in place, which ensures the closest possible economic integration. It is in our and their interest.”

UNCERTAINTY ABOUT THE U.S.

When looking at the U.S., Denmark’s third largest export market, it remains unclear what Trump in the White House will mean for Danish businesses.

”So far, we haven’t lost anything on the U.S. market. I would still say that we should take it easy and hope for the best. Not least because Trump is a business man as are all his advisers. If they start changing things too much, others will retaliate. In the worst-case scenario, this could lead to trade war and no one is interested in that so I hope much of it is rhetoric,” says Peter Thagesen and adds:

“We must also remember that the Republicans traditionally have been a very free-trade oriented party and a lot of Republicans still have it in their DNA to want free trade and open borders. So, I think that some of Trump’s suggestions will be difficult to get through Congress.”

The Republican proposal for a border adjustment tax is, however, lurking around. It would favour American exporters while American importers would have to pay an extra tax. The proposal would according to Peter Thagesen make competition tougher for Danish exporters.

Peter Taksøe-Jensen assesses that it is too early to draw any final conclusions about future American trade policy and advises Danish business to continue expanding their market shares in the U.S. It may, however, become necessary to launch new initiatives in the long term, he says:

“In the future, Danish business might have to look at establishing themselves in the U.S. to meet the ‘Made in America’ requirements, which might become a consequence of Trump’s policy, but there are other markets where our products won’t be affected – and there is no free trade agreement between the EU and the U.S. so the same conditions continue to apply right now.”

NEW OPPORTUNITIES FOR THE EU AND DENMARK

The new political winds are, however, not uniquely negative for Danish or European interests according to both Peter Taksøe-Jensen and Peter Thagesen.

“The U.S. may be pulling back from the international scene, but this creates new space to act on and we should take advantage of this. Nothing is so bad that it isn’t good for something. It means, among other things, that the trade agreement, which the EU is negotiating with Japan is now moving closer. And if the EU lands that agreement, we will suddenly have a huge lead over the Americans in Japan, which is the world’s third largest market. This is just one example of how opportunities can appear,” says Peter Thagesen.

Peter Taksøe-Jensen agrees and urges Danish business including SME’s to concentrate much more on Asia regardless of the situation. The International Monetary Fund (IMF) expects an economic growth in 2017 in Asia to be 5.3 percent. In South Asia alone, the IMF expects growth of 7.5 percent.

“We have known all along that we should move our focus to where the economic growth will occur over the next 20-30 years. If you compare the growth figures in Europe to Asia there is no doubt that this is where the economic development is taking place. India has a growth figure of 7-7.5 percent and the economic activity in Asia will rise and form a greater share of global trade. So, whether Brexit and Trump had occurred or not, we would need to shift our focus,” says the ambassador.

DFDS has been transporting goods between the UK and the Port of Esbjerg since the port was founded.





The Port of Esbjerg is the center for the Danish offshore wind and oil & gas industries.

PORT OF ESBJERG: CENTRE OF OFFSHORE EXCELLENCE

More than 200 businesses are located at or near the Port of Esbjerg. Combined, they employ more than 10,000 people and make up Denmark's strongest offshore cluster, which includes offshore wind, oil and gas. This concentration of businesses and professional skills has created a unique environment, huge innovative power and a strong supply chain generating value for companies and organisations in the offshore industry.

"An environment that brings together many different companies and professional skills is a great facilitator for providing day-to-day services quickly, efficiently and conveniently and for driving innovation. Having access to different parts of the supply chain provides vital potential for new and innovative thinking. That's something we have in the Port of Esbjerg environment, and it plays a hugely important role," says Bo Cerup-Simonsen, Managing Director of the Danish Hydrocarbon Research and Technology Centre (DHRTC) since July 2014.

The DHRTC's objective is to demonstrate how oil and gas recovery from the Danish North Sea sector can be increased on a commercial basis. Although they are based at the Technical

University of Denmark in Lyngby, just north of Copenhagen and some 300 kilometres from Esbjerg, Bo Cerup-Simonsen and his approximately 60 researchers maintain close ties with the Port of Esbjerg through their collaboration with, among others, Maersk Oil, the University of Aalborg at Esbjerg, and Offshoreenergy.dk.

"We're over there all the time, and we truly feel a part of the environment there. We would really like to present the problems and current potential we see to the Esbjerg community so that the companies at the port can become involved in our programmes and work with us to find practical solutions that can be applied in the North Sea," explains Bo Cerup-Simonsen.

PROVIDING GREAT VALUE FOR BUSINESSES

Being part of a cluster is of immense value for companies, explains Nicolai Sederberg, a leading Danish cluster expert and founder of the Quercus Group, a consultancy that advises public authorities worldwide on clusters.

"Being part of a cluster makes it easier for companies to meet other players, which creates value. For large companies, for example, it becomes easier to meet small companies that they can potentially collaborate and achieve synergies with. Clusters are also good for recruiting, because they create greater

talent visibility from the outside, and gaining access to talent is easier when you're part of a cluster," he explains, adding that this is where the Port of Esbjerg has an important role to play.

"The Port of Esbjerg is a huge driver and a hub. It plays a very crucial role; it is the epicentre of everything. A cluster becomes stronger when there is a hub everyone can cluster around."

Glenda Napier, CEO of Offshoreenergy.dk, the Danish cluster organisation representing 230 companies and knowledge institutions in the offshore industry, sees a great deal of value in the cluster around the Port of Esbjerg:

"Esbjerg has a lot of businesses that work with offshore wind and offshore oil and gas, and most of them are located in and around the port area. This provides a huge benefit for the entire offshore industry. Nowhere else will you find such high concentrations of companies in the offshore oil and gas industry or the offshore wind industry – quite a few of them involved in both areas. This generates a synergy that is unique: not only for Esbjerg and not only for Denmark, but actually on a global scale."

At Vattenfall, the company constructing the Horns Rev 3 offshore wind farm, they also see huge benefits in being a part of the cluster at the Port of Esbjerg, according to Bent Johansen, who is Head of Operation & Maintenance Offshore East.

"Esbjerg is a hub for us at Vattenfall. We operate the vast majority of our wind turbines from there, but especially importantly, it is also the site of our surveillance centre, where we currently monitor 1,161 turbines, a number that will grow considerably in coming years," he says. "We see Esbjerg as one of the most important hubs in the offshore wind industry. It has efficient

harbour facilities, first-class logistics and, not least, the right skills. Vattenfall will continue to see Esbjerg as a hub for our wind operations in northern Europe."

CLUSTER'S KEY ROLE WILL CONTINUE

Looking at the future, Bo Cerup-Simonsen of the DHRTC believes that Esbjerg will continue to play an important role for the offshore sector.

"Innovation will bring new ways of utilising maritime resources, and Esbjerg is a natural location for a centre of excellence that can see and identify new potential and attempt to develop solutions to capitalise on new opportunities and, eventually, reap the benefits of our investments by identifying new opportunities," he says.

Glenda Napier of Offshoreenergy.dk shares his view: "The Port of Esbjerg has been evolving non-stop, and seeing and seizing the opportunities that are there is very much part of the DNA of this city and its port environment. It used to be all about butter casks and bacon. Then it was fish, both for human consumption and for industrial use. Later, oil and gas gained in importance, and today offshore wind also plays a very important role," she explains and continues:

"That evolution illustrates the ability to adapt that is such a huge driver for the port of Esbjerg. It is something that will continue, and I wouldn't be surprised if one day I see drones serving the offshore industry flying in and out of the port of Esbjerg. That is something I would very much like to have helped happen."

Wind turbine blades are loaded onto a ship at the Port of Esbjerg, which is the leading port in Europe for the shipping and handling of offshore wind components.







INTERMODAL LOGISTICS: RED TAPE BLOCKING THE DIGITAL REVOLUTION

Digitalisation plays a major role in the transport and logistics sector, and it is creating new opportunities for intermodal transport systems. Still, a number of administrative and legislative barriers must be overcome first before the potential of digitalisation can truly unfold. Until that happens, digital giants like Amazon are pressuring the established market players with their new solutions and ambitions of setting up their own value chains.

Earlier this year, the European Parliament adopted a report concluding that digitalisation will have to be given very high priority if the EU is to succeed in moving more goods transport from road to sea and rail. The report encouraged EU Member States to accept electronic transport documents and stressed “the urgency of greater simplification of documents and administrative and customs procedures across all modes and across

the different stages in logistics chains.” The timing of the report is due to the EU Commission currently reviewing the EU Directive on combined transport of goods between Member States.

The European Parliament’s conclusions do not come as a surprise to two of Denmark’s leading experts in intermodal transport and logistics.

“The extent of the paperwork is quite the challenge, which is why we’re generally working to digitalise it. The biggest problem is not across transport modes, but rather across national boundaries. We may well have common rules, but the Member States interpret them differently and they don’t all have the same confidence in electronic signatures, and that makes it difficult to use electronic documents across borders,” explains Poul Bruun, Director of Innovation at ITD, the trade association for the Danish road transport of goods.

“Even when a ship sails between two EU ports, the goods it carries are considered to be transported out of the EU. This



creates certain administrative burdens, and although the EU is working to eliminate them, it won't happen right away. The administrative barrier in handling goods at sea is huge compared with how easy it is with road transport. The paperwork is extremely slow and cumbersome," says Jacob Kronbak, an associate professor at the Technical University of Denmark who has been researching transport and logistics for more than 20 years.

USING DIGITAL INNOVATION AS BUILDING BLOCKS

Although there still is immense untapped digital potential, digitalisation has already had a positive effect on the Danish transport sector.

"Thanks to digitalisation, we can now use telematics to track goods in transit much better. We are able to locate goods at any time, whether they are on a trailer or a railcar. It does get a bit problematic when a shipment is at sea, but we can monitor consignments on railcars 24/7. When we get 5G, things will really take off," Poul Bruun explains.

At Blue Water Shipping, a provider of global transport and logistics solutions whose head office is located at the Port of Esbjerg, digitalisation is very much a focus area, explains General Manager Søren Stougaard. Through his more than 30 years with the company, he has witnessed a transition from communications mainly by fax and telephone to today's customer communication, which is mostly based on e-mail and online booking systems. Today, Blue Water Shipping has 60 employees in its IT department developing and maintaining customer programmes.

"IT has become really important over the past five or six years. It's an important competitive parameter: if any of our competitors are able to offer more than we do in terms of IT, it could cost us, so staying abreast of innovation and developing new solutions – preferably before the others do the same – is extremely important," he says and adds:

"Our customers develop their own systems, and they require their transporters to have systems compatible with their own.

As a result, system connectivity is quite widespread. Having IT systems that work also has the benefit of making your customer dependent on you.”

Digitalisation is also slowly changing the face of road transport.

“Everyone’s talking about self-driving technology with new equipment installed in the lorries to help drivers make transport more seamless, energy-efficient and safe. At the same time, distance radar sensors and automatic braking systems help keep the vehicles from driving off the road,” says Poul Bruun of ITD and continues:

“These systems will gradually become more and more commonplace. In a few years, drivers won’t need to have their hands on the wheel. We’re beginning to see experiments to that effect, and hopefully in Denmark, too, because there’s new legislation on the way that will allow us to do such experiments.”

At Blue Water Shipping, they are also monitoring developments closely, according to Søren Stougaard.

“We’re keeping a close eye on developments in terms of self-driving lorries and modular lorries, but it will probably be some years yet before they really begin to take the stage. This will force us to innovate.”

DATA MUST BE SHARED TO CREATE VALUE

With digitalisation comes the potential to collect huge amounts of data that can be used to optimise transport operations both in-house and across the entire intermodal value chain. On the other hand, no major gains will be made until the players along the value chain start sharing their data, Jacob Kronbak explains.

“The intermodal chain consists of many different players with a lot of data, but if they don’t share their data, it won’t have

any value. Each player can always use it to optimise its own operations, but in a general shipping context, the steps that would be competitive against road transport can’t be taken unless you make use of all that data. We’ve begun to distinguish a great deal between data and information. Companies have tonnes of data available, but it’s not worth a thing if you don’t extract knowledge from them, too. Many people are talking about Big Data, but getting value from it requires that you go a step further.”

NEW PLAYERS ON THE MARKET

As in many other sectors, digitalisation has attracted many new players who are curious to see whether things can be done in a smarter or different way in intermodal transport.

E-commerce giant Amazon created shock waves throughout the transport and logistics sector in 2016 when the market learnt about the company’s plans to cut out intermediaries such as Maersk from their value chain and buy their own aircraft, container vessels and lorries.

As a result, Maersk announced in December 2016 a major collaboration contract with Chinese e-commerce giant Alibaba that allows Alibaba’s customers to reserve space on Maersk vessels.

“I believe we will see a shift in the market, with non-traditional players taking control of the value chains – also the intermodal chains. These are players that are currently taking control of their distribution of goods. It will require industry consolidation for the established players to match that trend. They will have to grow even larger and gain control of their chains,” says Poul Bruun and adds:

“This trend is driven by the new technology. The platform economy and the smartphone have made everything much easier for both users and operators. That’s something I’m sure we will see a lot more of.”

Approximately 4.5 million tonnes of cargo pass through the Port of Esbjerg each year and are transported onwards by sea, road and rail.



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