

Mood of the industry improves for the wind markets in Asia and North America Second WindEnergy trend:index released

Hamburg, 14 December 2018 – The global wind industry's assessment of the general political and legal conditions in international markets is more positive now than it was last spring; the same applies to the offshore sector as a whole. This is the result of the second survey of the industry's global mood barometer, WindEnergy trend:index (WEtix), which was launched during the leading global trade fair for wind, WindEnergy Hamburg, at the end of September 2018. A slight upward trend in the assessment of current conditions in the global onshore markets is discernible, e.g. in Asia and North America, whereas the mood in the wind sector regarding conditions in Germany has declined: 50 per cent of respondents gave a negative rating this time, as opposed to 38 per cent last spring. Globally there is a positive trend in the offshore wind sector, especially in Asia and the rest of the world, contrary to the German market where the assessment is again more unfavourable. The market forecast for 2020 sees positive potential for North America as well as the Asian region. These are the main results of the recent WindEnergy trend:index survey conducted by WindEnergy Hamburg, the leading global trade fair for the onshore and offshore wind energy sector, in cooperation with wind:research, the leading market research institute for wind energy. The survey premiered in spring 2018 and will continue into the future.

The results of the autumn survey are now available. 1,655 industry experts participated globally, and about 1,000 of them answered all the questions. By comparison, around 1,200 people had participated in the spring survey, with roughly 700 answering all questions. This represents an increase in participation by one quarter, with a highly representative coverage: To date more than 2,800 experts in total have taken part in the two surveys. "We are happy to see that the global mood barometer for the wind energy sector is well established", says Claus Ulrich Selbach, Business Unit Director at Hamburg Messe und Congress. "There is a strong need in the industry for information that can provide guidance in a complex market environment. This was already apparent during WindEnergy Hamburg in September." The leading global trade fair for onshore and offshore wind energy was attended by around 35,000 industry visitors from 100 countries.

Half of experts see conditions for German onshore development worsening

Both in North America and Asia experts believe the conditions for onshore wind energy have improved, according to the WindEnergy trend:index: While in the spring survey 23 per cent of respondents gave 'positive' marks to the situation in North America, and another 3 per cent believed the situation was 'very positive', these numbers further improved in the autumn survey, with 24 per cent saying the development was 'positive', and 5 per cent giving a 'very positive' assessment (refer to figure 1).

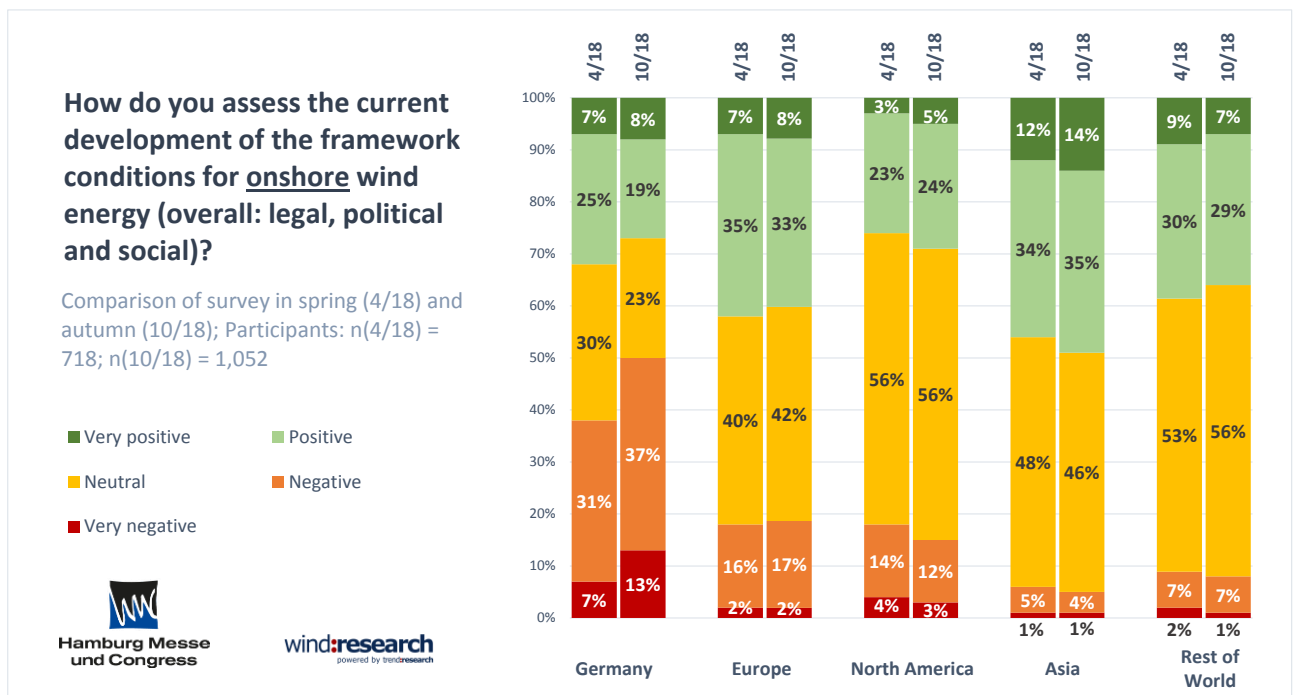


Figure 1: How do you assess the current development of the framework conditions for onshore wind energy (overall: legal, political and social)? (Comparison of the spring (4/18) and autumn (10/18) surveys)

A similar upward trend can be seen in the assessment of onshore potential in Asia. 35 per cent of experts gave a vote of 'positive', and 14 per cent a vote of 'very positive', compared to the spring survey results of 34 per cent and 12 per cent, respectively. The experts' opinion regarding the situation of onshore wind energy in Europe has mostly remained unchanged since the first survey, with a slight decline of 'positive' marks: Today 33 per cent of respondents see the current conditions as 'positive', down from 35 per cent in spring. However, 8 per cent of experts believe the current development in Europe to be 'very positive', as opposed to 7 per cent in the previous survey. By comparison, the share of respondents giving a neutral assessment increased from 40 per cent in spring to 42 per cent in autumn.

When comparing the two surveys there is a definite drop in the number of neutral assessments of the conditions for onshore wind energy in Germany, while the general outlook is dimming. Instead of 38 per cent in spring, the number of experts considering the conditions in Germany to be negative has increased to a total of 50 per cent. "Conceivably this could be a result of the failed special auction for additional onshore wind farms," is the interpretation offered by Dirk Briese, managing director of wind:research.

Positive assessments of offshore conditions on the rise

As far as the current development of conditions for the offshore segment is concerned (refer to figure 2), the survey results reveal a global upward trend: Around the world, experts increasingly view this development as positive. For example, the share of 'very positive' assessments for Germany increased from 10 per cent in spring to 12 per cent in autumn, for Europe from 13 per cent to 17 per cent, for North America from 5 per cent to 7 per cent, for Asia from 14 per cent to 17 per cent, and for the rest of the world from 3 per cent to 5 per cent.

With the exception of the experts' opinions regarding the development of conditions in Germany, there has been a drop in negative assessments. Germany is the only market experts considered to be less favourable in the autumn survey than before.

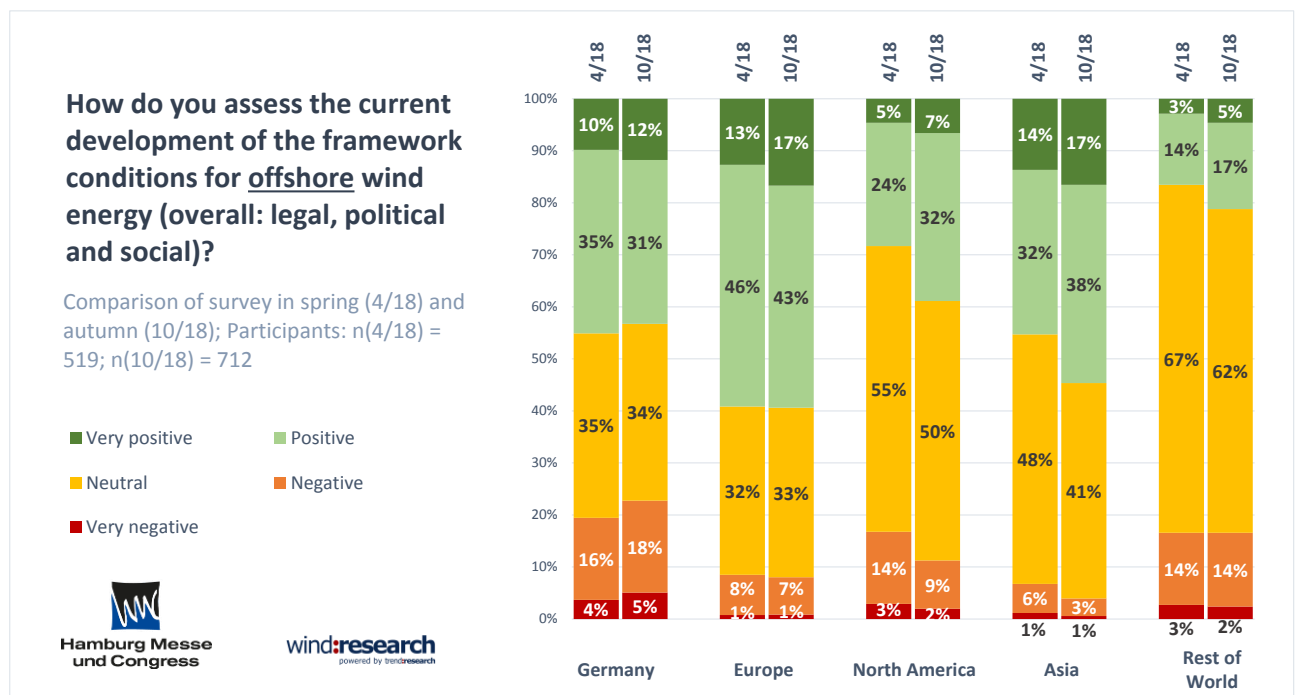


Figure 2: How do you assess the current development of the framework conditions for offshore wind energy (overall: legal, political and social)? (Comparison of the spring (4/18) and autumn (10/18) surveys)

Globally positive forecast until 2020 for the offshore segment

The positive trend continues in the forecast for the global offshore market until the year 2020 in North America and Asia. The share of 'very positive' assessments for North America increased from 10 per cent to 12 per cent, and for Asia from 20 per cent to 23 per cent. The forecast for Germany is generally less optimistic than it was last spring. While in the autumn survey 14 per cent of respondents believed the potential development in Germany until 2020 to be 'very positive', after only 12 per cent had shared that view in the spring survey, as many as 6 per cent of respondents in the autumn survey actually predicted a 'very negative' development. In spring only 1 per cent of the experts had said their expectation for the future development was 'very negative'. There is a slight downward trend discernible in the European market. While 19 per cent of respondents opted for a 'very positive' forecast both in spring and in autumn, as many as 48 per cent had expected a 'positive' development in spring, but only 41 per cent did so in autumn, with a growing number of respondents indicating neutral expectations.

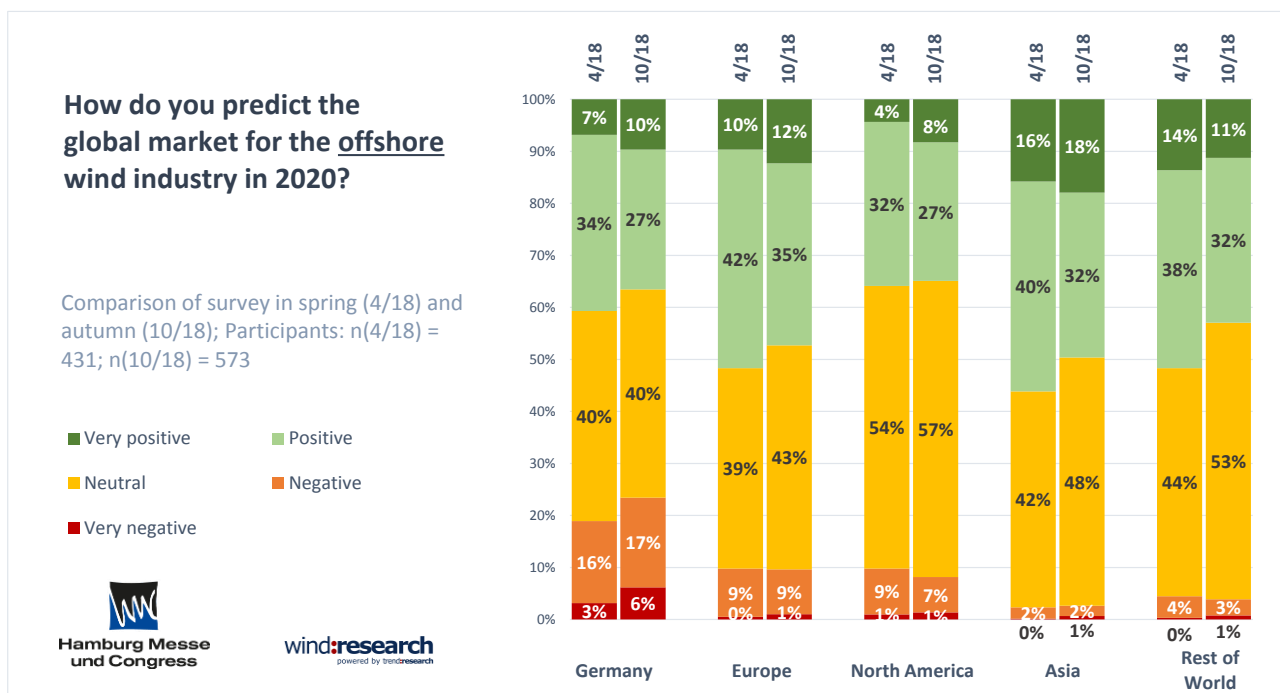


Figure 3: How do you predict the global market for the offshore wind industry in 2020? (Comparison of the spring (4/18) and autumn (10/18) surveys)

Opinions about future onshore market until 2020 increasingly neutral

The increase of fringe votes ('very positive'/'very negative'), especially conspicuous in the Germany forecast for the offshore segment, is now also noticed in the onshore segment, not only for Germany and Europe but also for Asia (refer to figure 4).

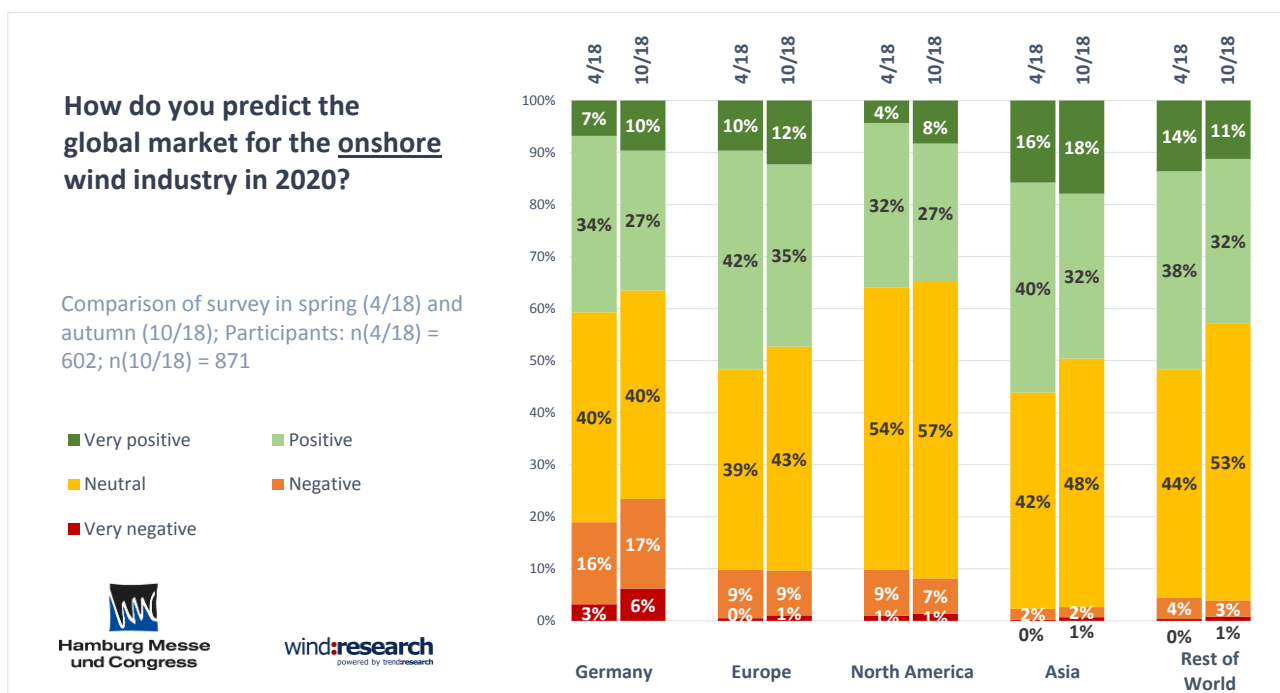


Figure 4: How do you predict the global market for the onshore wind industry in 2020? (Comparison of the spring (4/18) and autumn (10/18) surveys)

Similarly, the forecast until 2020 for the global market, with the exception of Germany, is receiving an increasing number of neutral assessments. As for the future of the German market, 7 per cent of responding experts had 'very positive' expectations last spring, and 34 per cent 'positive' ones. In the autumn survey 10 per cent had 'very positive' expectations, while the 'positive' forecasts were down to 27 per cent. This contrasts with 3 per cent of respondents forecasting a 'very negative' and 16 per cent a 'negative' future development in the spring survey, and 6 per cent of 'very negative' and 17 per cent of 'negative' votes in autumn. While 52 per cent of the experts saw a 'positive' future for the European market in spring, only 47 per cent did so in autumn. The 'negative' and 'very negative' assessments of the future potential for Europe's wind energy market remained largely unchanged at 9 per cent in both surveys. The developments in Asia received neutral judgements from 42 per cent of respondents in the first survey, and from 48 per cent in the second one. As for the North American market, 9 per cent of the experts had given a negative forecast and 54 per cent a neutral one in the spring survey, while in autumn only 7 per cent of forecasts were negative and 57 per cent neutral.

Further consolidation expected

In the survey, participants were also asked to give their opinions regarding further consolidation (refer to figure 5). The intensity of consolidation processes in the onshore segment in 2018/2019 was rated as very high by 14 per cent of respondents, and in the offshore segment by 12 per cent. Furthermore, 36 per cent (onshore), and 33 per cent (offshore) of respondents saw a 'high' intensity of consolidation processes. As few as 11 per cent believed consolidation processes in the onshore segment were at a very low level, and 9 per cent gave the same judgement for the offshore segment. In general, experts are expecting a somewhat higher intensity of consolidations in the onshore segment than in offshore wind energy. Results of future surveys will draw a clearer picture regarding development trends.

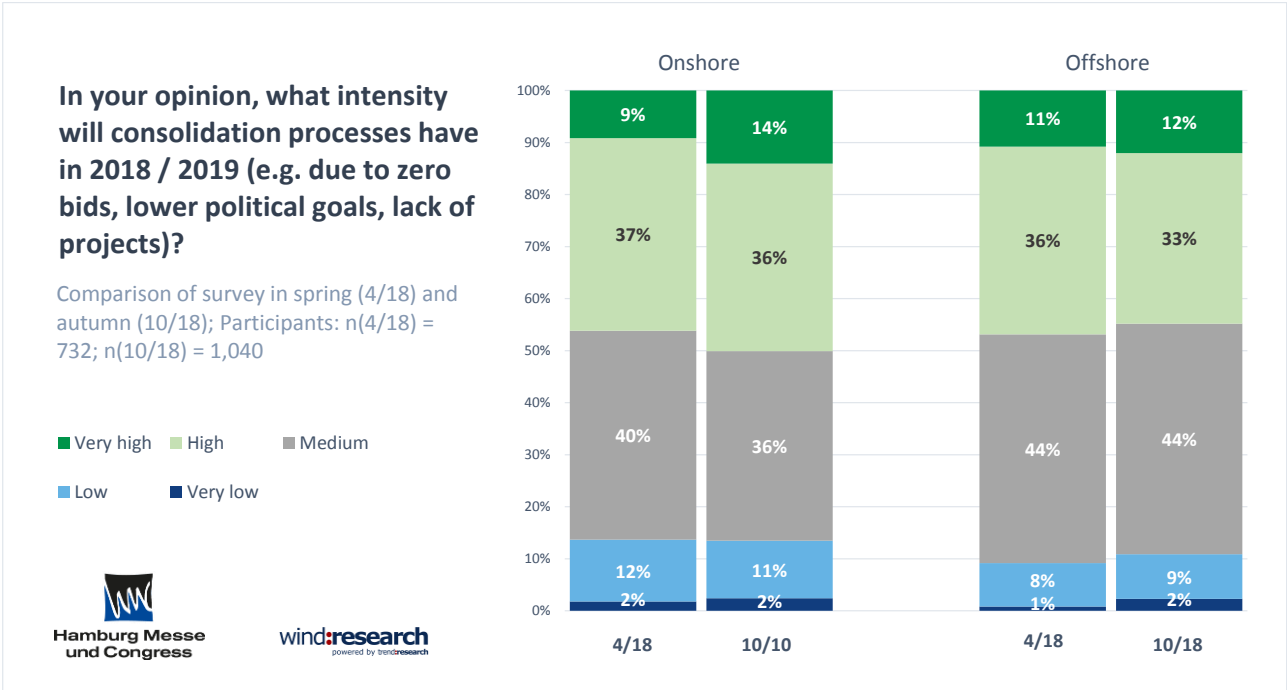


Figure 5: In your opinion, what intensity will consolidation processes have in 2018 / 2019 (e.g. due to zero bids, lower political goals, lack of projects)?

Experts see high potential in the development of modern technologies

The survey participants were also asked to assess technology developments. Many predict that further developments will enable cost reductions (refer to figure 6).

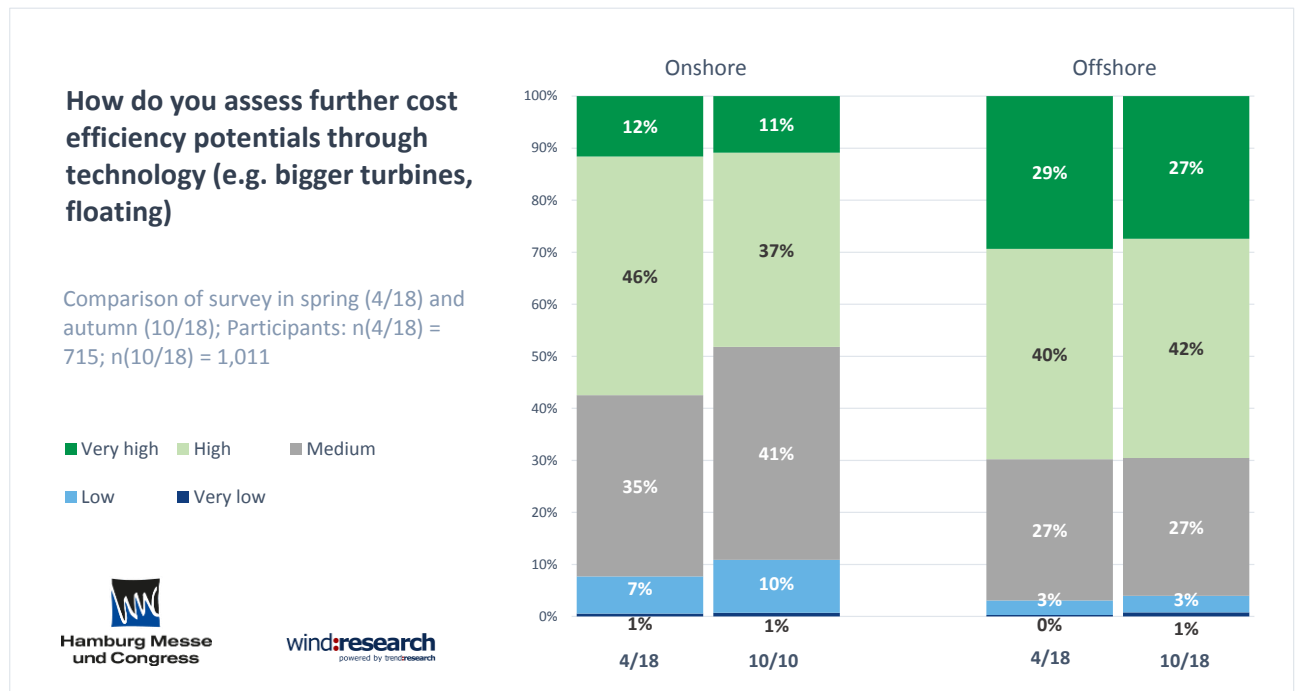


Figure 6: Figure 3: How do you assess further cost efficiency potentials through technology (e.g. bigger turbines, floating)? (Comparison of the spring (4/18) and autumn (10/18) surveys)

About two thirds of the roughly 1,000 respondents were in agreement with this assumption for the offshore segment. Most of the experts believe advanced technology is likely to drive cost-efficiency. In spring, 69 per cent of respondents saw 'high' to 'very high' potential in the offshore segment. In this area in particular experts are increasingly betting on new technologies. The autumn survey confirmed this assumption. Assessments for the onshore segment were somewhat more negative in the second survey where the potential for advanced technologies to improve cost efficiency was rated at 48 per cent overall rather than 58 per cent as in the earlier survey. Nevertheless, this was still a relatively high mark.

A clear majority of experts believe digitalization has high or very high potential, with affirmative or highly affirmative responses now at 22 per cent compared to 18 per cent last spring for the onshore segment, and at 24 per cent, up from 22 per cent, for offshore (refer to figure 7).

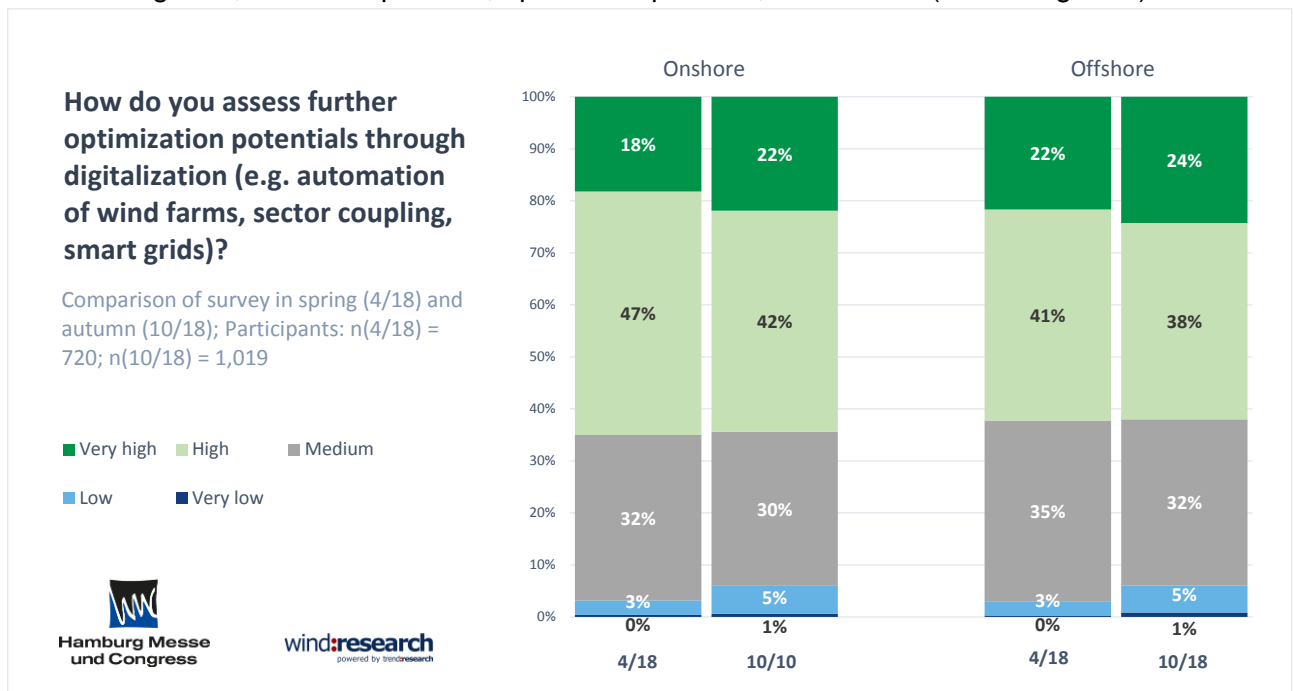


Figure 7: How do you assess further optimisation potential through digitalisation (e.g. automation of wind farms, sector coupling, smart grids)? (Comparison of spring (4/18) and autumn (10/18) surveys)

Note to editors: For a complete listing of survey results, including the respondents' industry affiliation, please go to the press pages of WindEnergy Hamburg where you may also find images in print-ready format for editorial use.

Go to www.windenergyhamburg.com/en/presseservice/presseinformationen/

The market research institute wind:research prepares market studies and analyses as well as expert reports through to M&A services for the wind energy sector, delivering detailed insights for operational and strategic developments to energy utilities, project developers, operators, component and turbine manufacturers as well as municipal, state and federal governments. For further information go to: www.windresearch.de

HUSUM Wind and WindEnergy

From 10 to 13 September 2019 the who's who of the wind industry will be coming together at HUSUM Wind, the most important German wind trade fair of the year. 650 exhibitors from Germany and neighbouring markets will be in Germany's leading model region to showcase the latest trends, newest products and innovative services. Additional topics of the future include hydrogen and Power-to-X, post-EEG solutions for wind turbines, digitalisation & big data. The approximately 18,000 trade visitors can expect an interesting exhibition and congress programme that reflects practical orientation, new information and dialogue formats and the unique HUSUM-Spirit. For further information visit husumwind.com #husumwind

WindEnergy Hamburg will be held in Hamburg, the capital of the wind industry, from 22 to 25 September 2020. The world's leading wind industry expo for the onshore and offshore wind industry mirrors the global market and its entire value chain. More than 1,400 exhibitors from around the world present their product innovations and projects. WindEnergy Hamburg and the global WindEurope Conference, which is held in parallel, jointly form the Global Wind Summit in Hamburg. For further information visit windenergyhamburg.com, [in](https://www.linkedin.com/company/windenergyhamburg) [tw](https://twitter.com/windenergyhamburg)

Press contact: Gudrun Blicke, ph. +49 (0)40-3569-2442, gudrun.blicke@hamburg-messe.de
 Contact for questions regarding content, interpretation and methodology as well as wind:research: Dirk Briesche, ph. +49 (0)471-9026195-0, [presse@windresearch](mailto:presse@windresearch.de)