RESULTS

WINDENERGY trend:index

MOOD BAROMETER FOR THE ONSHORE AND OFFSHORE WIND INDUSTRY SPRING 2020

Wind Energy Hamburg

The global on & offshore event

1 – 4 December 2020

Organised by: Hamburg Messe + Congress

In cooperation with: Messe Husum Congress

windresearch

INTRODUCTION
OVERVIEW & PARTICIPATION

WindEnergy Hamburg
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The fifth edition of the industry's mood barometer once again enjoyed strong participation. The proportion of fully answered questionnaires remains at a high level although one question was added (addressing hydrogen). Representativeness therefore continues to be high.

Survey period		Total respondents	Surveys completed	Percentage
1st survey – Q2 2018	(16 March to 19 April 2018)	1,187	674	57%
2nd survey – Q4 2018	(25 September to 9 November 2018)	1,655	958	58%
3rd survey Q2 2019	(2 April to 13 May 2019)	1,254	817	65%
4th survey Q4 2019	(23 October to 30 November 2019)	1,026	712	70%
5th survey Q2 2020	(17 March to 29 April 2020)	1,156	782	68%
Total		***6,278***	***3,943***	***63%***

Representativeness was determined based on the following categories: Regional distribution, activities across the value chain, coverage of different production areas, onshore and offshore segments, position of respondent. The distribution of response rates (based on IP addresses) across countries and regions corresponds to the market volume of the respective country or region while accounting for the onshore and offshore segments. This ensures a high level of representativeness. The only exception is China which, due to its relatively isolated market and low response rate, is proportionally underrepresented compared to the rest of the Asia region. This statement relates to existing onshore and offshore capacities as well as the importance, or market share, of the wind industry (turbines, towers, foundations, projects, development, etc.).

INTRODUCTION

OBJECTIVES, METHOD, PARTICIPANTS (1 OF 2)

*WindEnergy trend:**index** (WEtix) is a semi-annual survey first launched in 2018 by WindEnergy Hamburg, the leading global trade fair for onshore and offshore wind energy, in collaboration with wind:**research**, the leading market research institute for the wind energy industry, to gauge the mood in the industry.*

- The distribution of response rates (based on IP addresses) across countries and regions largely corresponds to the relevant market volume. This ensures a high level of representativeness. The only exception is China which, due to its relatively isolated market and low response rate, is proportionally underrepresented compared to the rest of the Asia region. This also applies to current onshore and offshore wind capacities as well as the importance, or market share, of the individual stages of the industry's value chain (turbines, towers, foundations, projects, development, etc.).
- The survey includes all onshore and offshore regions globally. The pre-defined market regions were: Germany, Europe (including Germany), North America, Asia, and Rest of World (ROW), including Africa, Australia as well as Central & South America.
- In the following diagrams, Germany is represented separately; however, the results for all of Europe include Germany.

INTRODUCTION
OBJECTIVES, METHOD, PARTICIPANTS (2 OF 2)

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*Furthermore, the distribution of the market participants' activities and those of their respective companies as reflected by the WindEnergy trend:**index** (WEtix) mood barometer is representative of the market structures.*

- As before, the respondents' activities are primarily concentrated on the onshore segment, which delivered roughly three times as many responses as offshore. About 40% of respondents are active in both market segments, which is consistent with the distribution identified by recent research.
- Nearly half of responding companies engage in operation and maintenance business activities. Furthermore, around 40% participate in project development activities; more than one third are manufacturers, and about one fourth perform installation work. Main activities within manufacturing are mostly focused on making turbines, rotor blades and other components.
- *Around 30% of respondents focus on the German market and the European market, respectively. About 15% of respondents are also active in the Asian and the North American markets.*
- More than one third of respondents hold a managerial position, followed by respondents from sales, 'other', R&D and design as well as maintenance and service.

SUMMARY

KEY INSIGHTS – COMPARISON OF 1ST, 2ND, 3RD, 4TH AND 5TH SURVEYS

WindEnergy Hamburg
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The fifth online survey, conducted in spring 2020, again saw a high response rate. All in all more than 6,000 individuals have taken part, assessing the prospects of the global onshore and offshore wind energy industry. The key findings are as follows:

- The distribution of respondents across industry segments is similar to that of the autumn 2019 survey: 45% of respondents are active in the onshore market segment, 15% in offshore, and 40% in both segments.
- The assessments of the current business environment for onshore wind energy in North America and Asia are stagnant at a high level. There are some improvements to be reported for Europe and Germany: respondents are now giving more positive assessments of the business climate in Europe, and opinions about the conditions for wind energy in Germany are not as negative as before.
- The current business environment for offshore wind energy is judged differently region by region: while the conditions in Asia continue to be seen in an increasingly positive light, the views about conditions in Europe are stagnant. Survey results for Germany are returning to the positive side while North America is in decline but remains in the positive range.
- The market situation for onshore wind energy in North America, Asia and RoW continues to receive positive assessments, despite a marked decline of some metrics. The results for Europe are slightly in the negative range for the first time, while the mood in Germany is slowly recovering but remains on the negative side overall.
- While expectations for the onshore wind industry in the next two years are gently trending in a positive direction for Europe and North America, the future prospects for onshore wind energy in Asia and RoW are weakening without leaving the positive range. In Germany the future of onshore wind energy is viewed much more positively than before but remains on the negative side for the time being.

SUMMARY

KEY INSIGHTS – COMPARISON OF 1ST, 2ND, 3RD, 4TH AND 5TH SURVEYS

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A slightly bleaker mood in the international wind energy market: while the general spirit remains largely positive, the current results reveal declining values. In Germany both the current and the long-term mood in the market have turned, making way for a bit more optimism.

- The global market situation in the offshore wind segment has once again received positive assessments for Europe, North America and Asia, but the trend is clearly pointing downwards. The metrics for RoW have dropped into the negative range for the first time. Assessments in Germany are trending slightly upwards and are not as negative as before.
- The trend in the North American, Asian and RoW offshore wind segments is on a slight decline but remains generally positive. The markets in Europe are receiving positive marks for the coming two years in a trend that is gaining momentum. The values for Germany are increasing vigorously into the positive range.
- While the current market situation for onshore wind energy in Germany continues to be viewed as negative, the values are improving slightly, with the future prospects showing a strong increase, resulting in a more positive overall picture. The current assessments for offshore wind energy are negative with a slight downward trend, but a strong positive development is expected in two years.
- Today's onshore wind energy market situation for Europe is slightly down in the negative range whereas the future is seen in a more positive light, with values trending upwards again. Assessments for offshore wind energy this year have declined somewhat, but a positive development is anticipated in two years.
- While the current market situation for onshore wind energy in North America continuous to be viewed as positive, values are trending strongly downwards, whereas the future prospects are seen more optimistically. The overall picture remains positive with values slightly increasing. Current assessments for offshore wind energy remain positive but are declining significantly. A positive development is expected in two years.

SUMMARY

KEY INSIGHTS – COMPARISON OF 1ST, 2ND, 3RD, 4TH AND 5TH SURVEYS

Expectations for the coming years are significantly more optimistic: the market development is receiving positive marks, in most cases trending upwards.

- While the current market situation for onshore wind energy in Asia continuous to be viewed as positive, values are trending strongly downwards. Expectations for the future are generally positive, remaining at a level similar to the previous survey. The current assessments for offshore wind energy are declining slightly but remain positive; the general development is expected to continue at today's positive levels.
- The current market situation for onshore wind energy in 'Rest of World' countries continuous to receive positive marks but the results are trending slightly downwards. Expectations for the future remain clearly positive, if with slight losses. By contrast, the current assessments for offshore wind energy are slightly negative but a positive development is expected in two years.

SUMMARY

KEY INSIGHTS – COMPARISON OF 1ST, 2ND, 3RD, 4TH AND 5TH SURVEYS

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*In addition to the traditional catalogue of questions, the fifth online survey (Spring 2020) for the first time included an additional question to address the hydrogen topic. Questions addressing the corona crisis where purposely avoided.**

- As in the past years, respondents expect consolidation processes in the onshore and offshore segments to continue at high intensity with a slight weakening trend.
- Expectations regarding the optimisation potential driven by digitalisation remain nearly unchanged at a high level for both onshore and offshore wind energy.
- In terms of the saving potential of new technologies, the mood is again in the medium to high range, with the potential for offshore wind energy receiving better ratings than for onshore.
- More than half of respondents believe it is likely or very likely that the production of green hydrogen will play a key role for wind energy.

** Note:*

Since the implementation, and in particular, the design of the spring 2020 survey occurred prior to the comprehensive restrictions and lockdown measures imposed in response to the coronavirus crisis, and since it was deemed important to avoid compromising the comparability of this survey with its predecessors while acknowledging the fact that the 'corona' effect is probably unique (even if it persists for a while), this WEtix purposely contains no questions specifically referring to the coronavirus. Depending on the development of the situation, this issue will be re-evaluated before the autumn survey.

OVERVIEW OF COUNTRIES STUDIED

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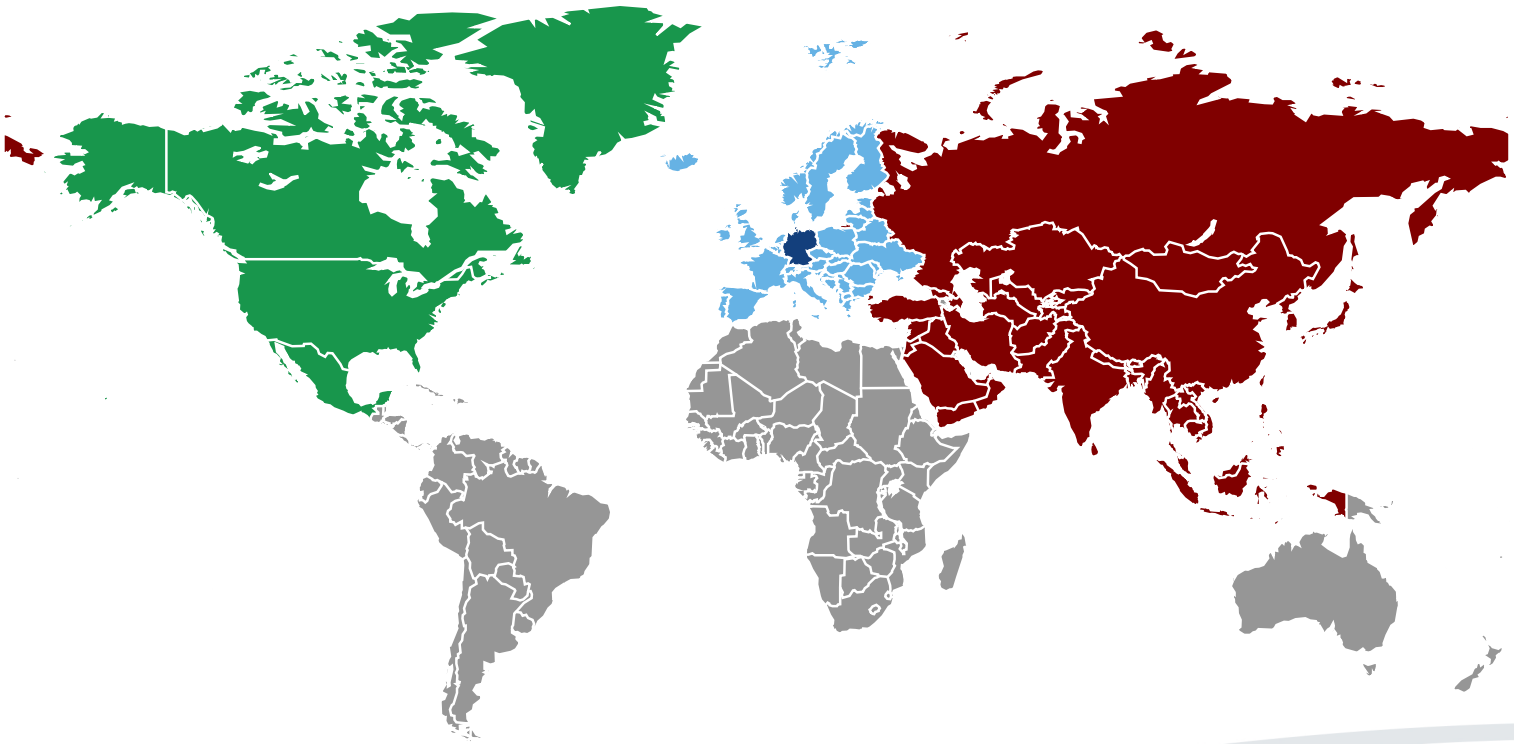
The survey covers all onshore and offshore wind energy regions globally. The pre-defined market regions included: Germany, Europe (including Germany), North America, Asia and Rest of World (RoW), including Africa, Australia as well as Central and South America.



MARKET SEGMENTS

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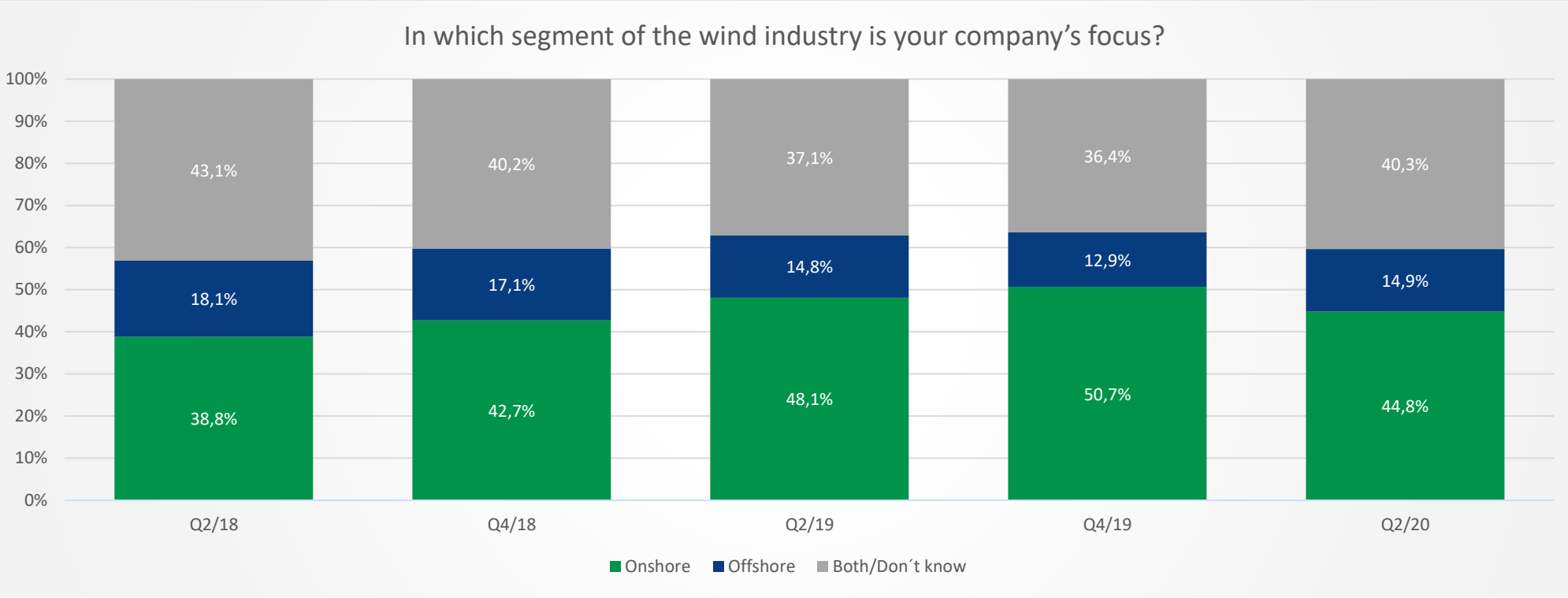
The survey respondents' activities primarily centre on the onshore segment, which delivered roughly three times as many responses as offshore. About 40% of respondents are active in both market segments.



ASSESSMENT OF THE BUSINESS ENVIRONMENT FOR ONSHORE WIND

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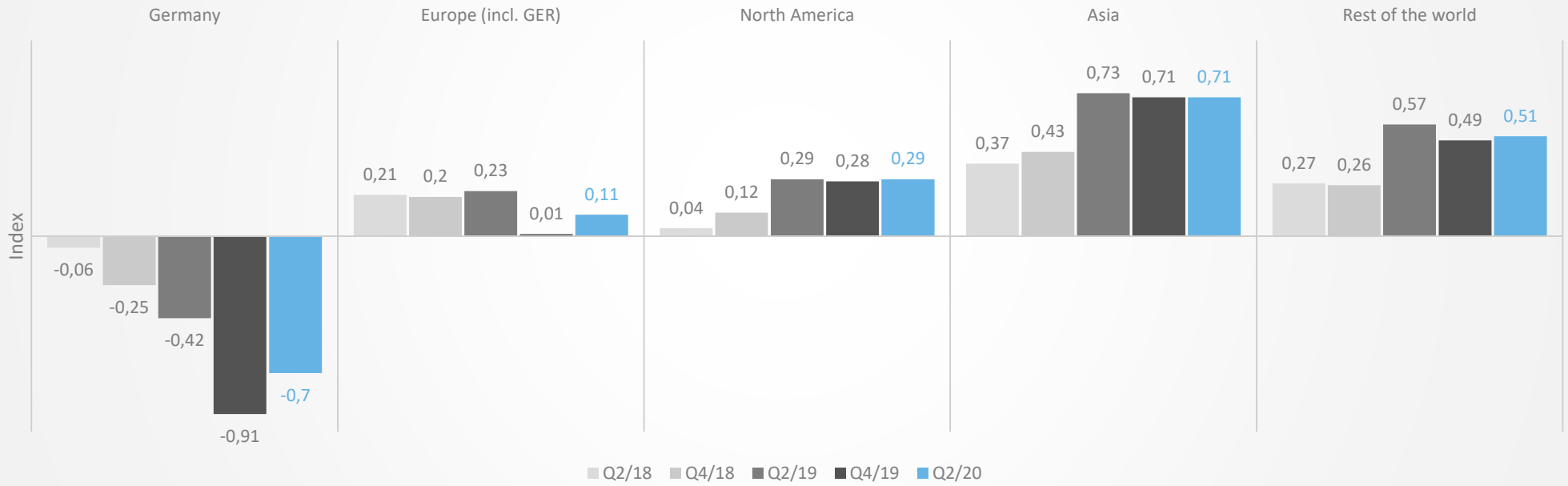
The assessments of the current business environment for onshore wind energy in North America and Asia are stagnant at a high level. There are some improvements to be reported for Europe and Germany: respondents are now giving more positive assessments of the business climate in Europe, and opinions about the conditions for wind energy in Germany are not as negative as before.

How do you assess the current development of the framework conditions for **onshore wind energy** (overall: legal, political and social)?

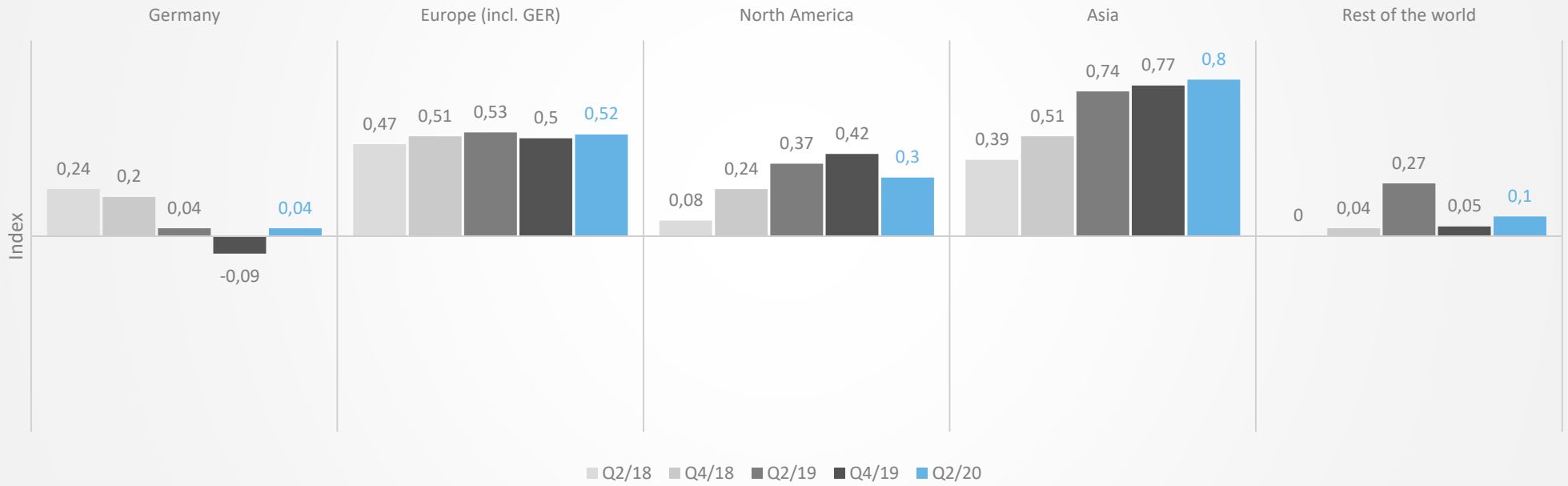


ASSESSMENT OF THE BUSINESS ENVIRONMENT FOR OFFSHORE WIND

WindEnergy Hamburg
The global on & offshore expo

The current business environment for offshore wind energy is judged differently depending on the region: while the conditions in Asia continue to be seen in an increasingly positive light, the views about conditions in Europe are stagnant. Survey results for Germany are returning to the positive side while North America is in decline but remains in the positive range.

How do you assess the current development of the framework conditions for **offshore wind energy** (overall: legal, political and social)?

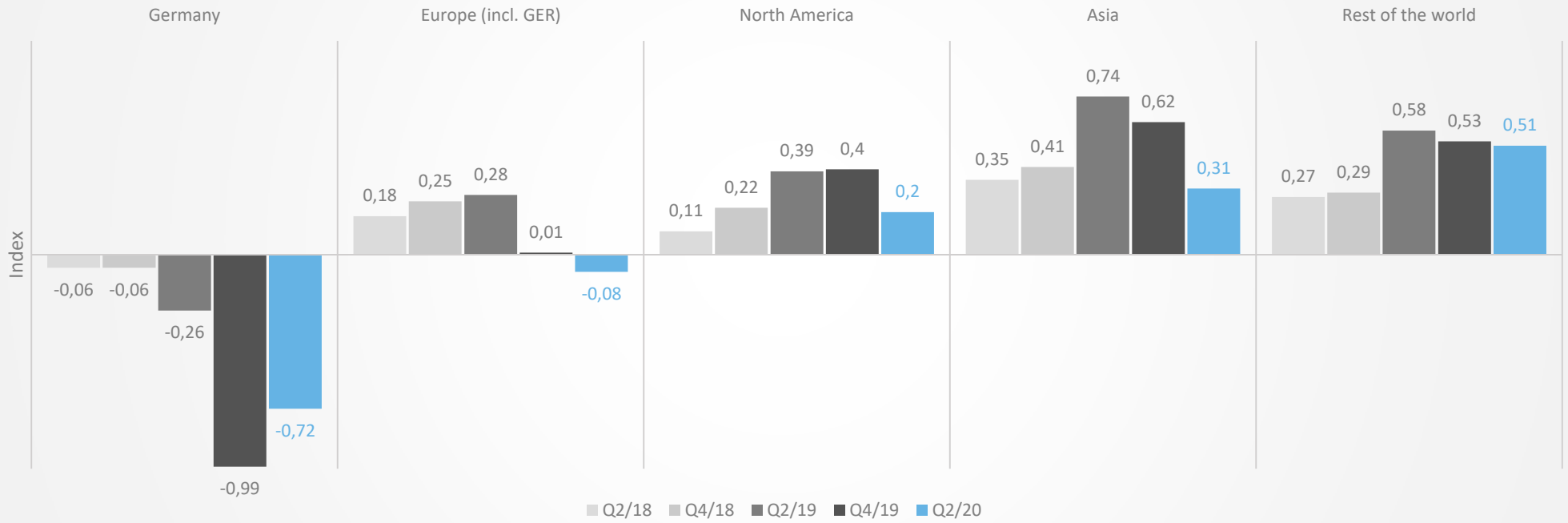


ASSESSMENT OF THE GLOBAL ONSHORE WIND MARKET – CURRENT

WindEnergy Hamburg
The global on & offshore expo

The market situation for onshore wind energy in North America, Asia and RoW continues to receive positive assessments, despite a marked decline of some metrics. The results for Europe are slightly in the negative range for the first time, while the mood in Germany is slowly recovering but remains on the negative side overall.

How do you assess the global market for the **onshore wind industry** in the **current year**?



ASSESSMENT OF THE GLOBAL ONSHORE WIND MARKET – NEXT TWO YEARS

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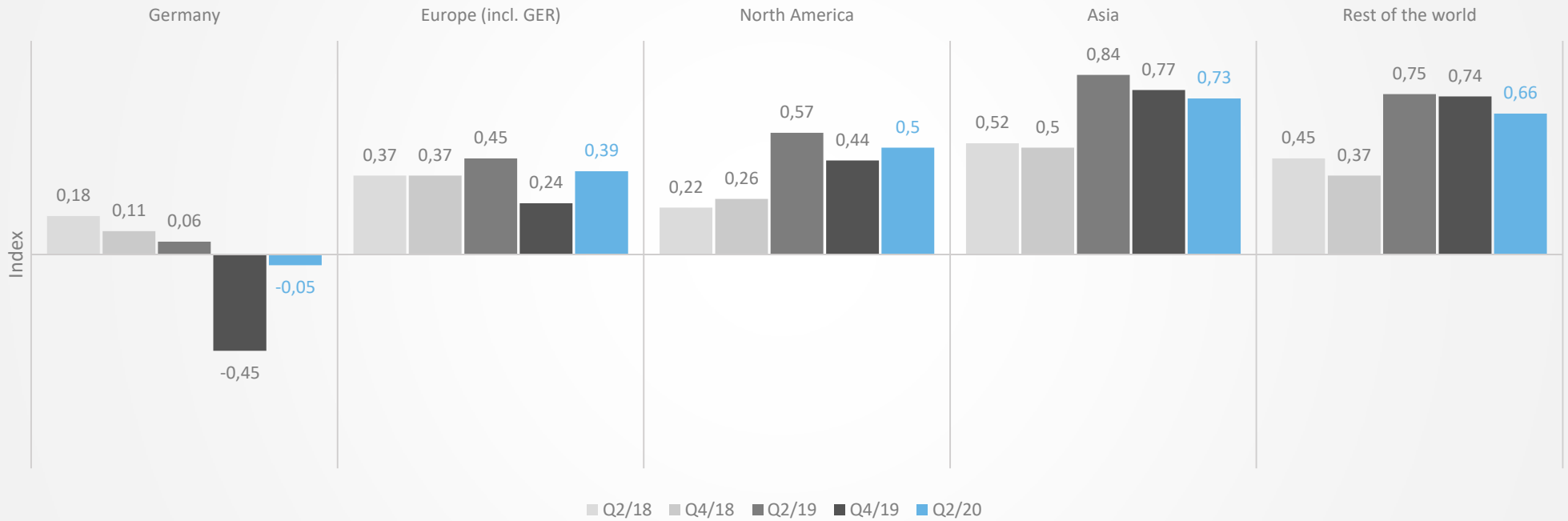
While expectations for the onshore wind industry in the next two years are gently trending in a positive direction for Europe and North America, the future prospects for onshore wind energy in Asia and RoW are weakening, without leaving the positive range. In Germany the future of onshore wind energy is viewed much more positively than before but remains on the negative side for the time being.

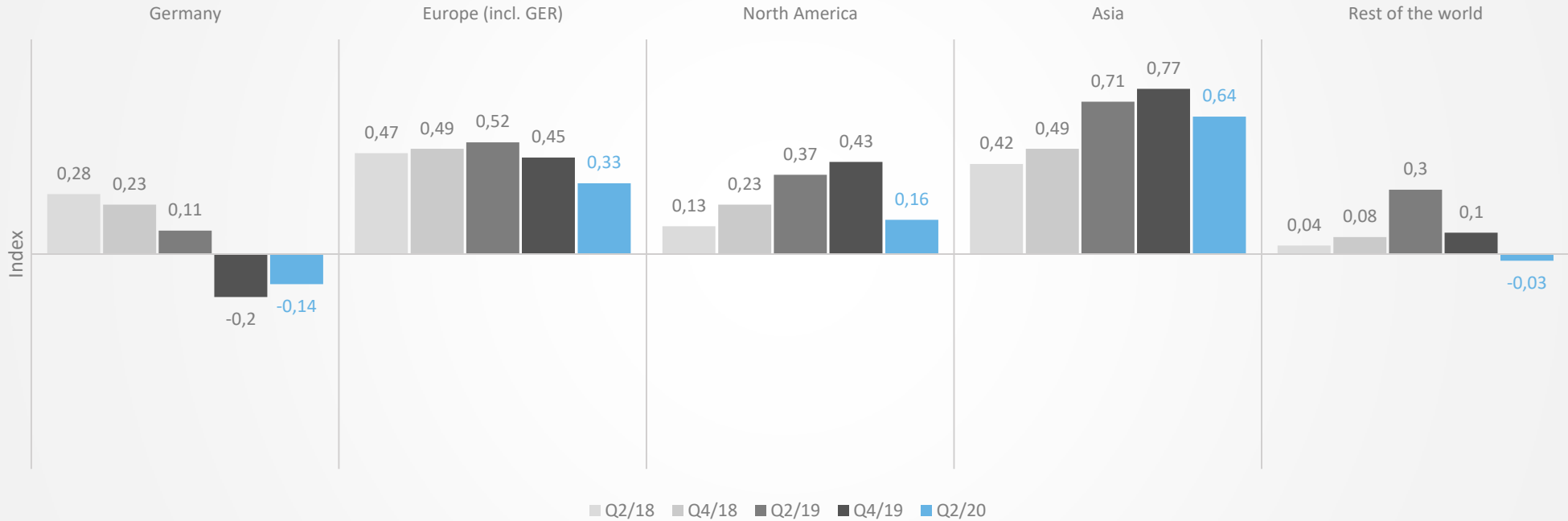
How do you assess the global market for the **onshore wind industry** in **two years**?



ASSESSMENT OF THE GLOBAL ONSHORE WIND MARKET – CURRENT

WindEnergy Hamburg
The global on & offshore expo

The global market situation in the offshore wind segment has once again received positive assessments for Europe, North America and Asia, but the trend is clearly pointing downwards. The metrics for RoW have dropped into the negative range for the first time. Assessments in Germany are trending slightly upwards and are not as negative as before.



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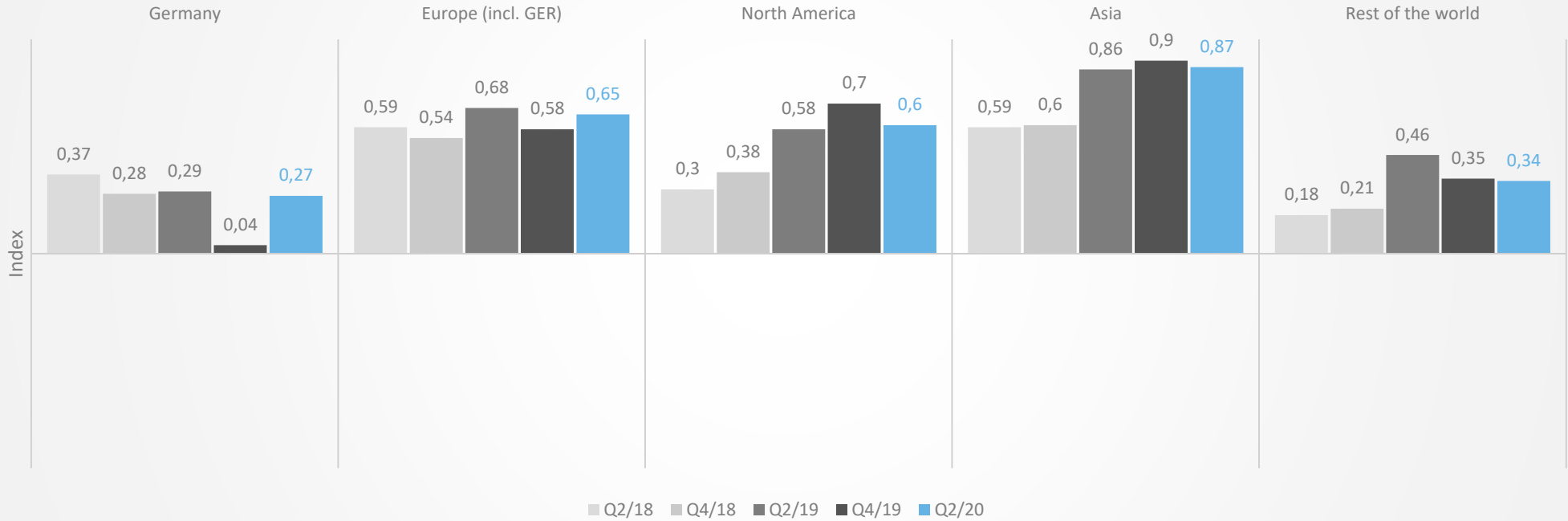
ASSESSMENT OF THE GLOBAL OFFSHORE WIND MARKET – NEXT TWO YEARS

WindEnergy Hamburg
The global on & offshore expo

The trend in the North American, Asian and RoW offshore wind segment is on a slight decline but remains generally positive. Similarly, markets in Europe are receiving positive marks for the coming two years in a trend that is gaining momentum. The values for Germany are increasing vigorously into the positive range.



ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN GERMANY

COMPARISON CURRENT VS. IN TWO YEARS

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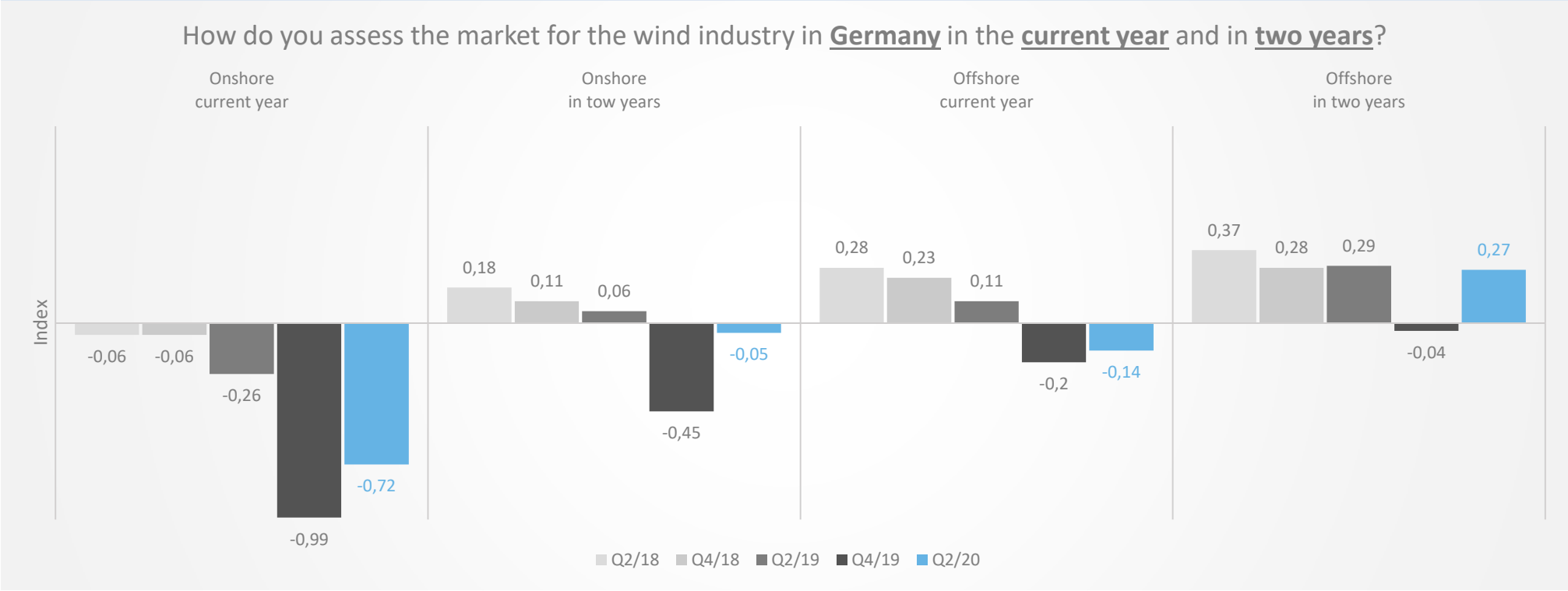
While the current market situation for onshore wind energy in Germany continues to be viewed as negative, the values are improving slightly, with the future prospects showing a strong increase, resulting in a more positive overall picture. The current assessments for offshore wind energy are negative with a slight downward trend, but a strong positive development is expected in two years.

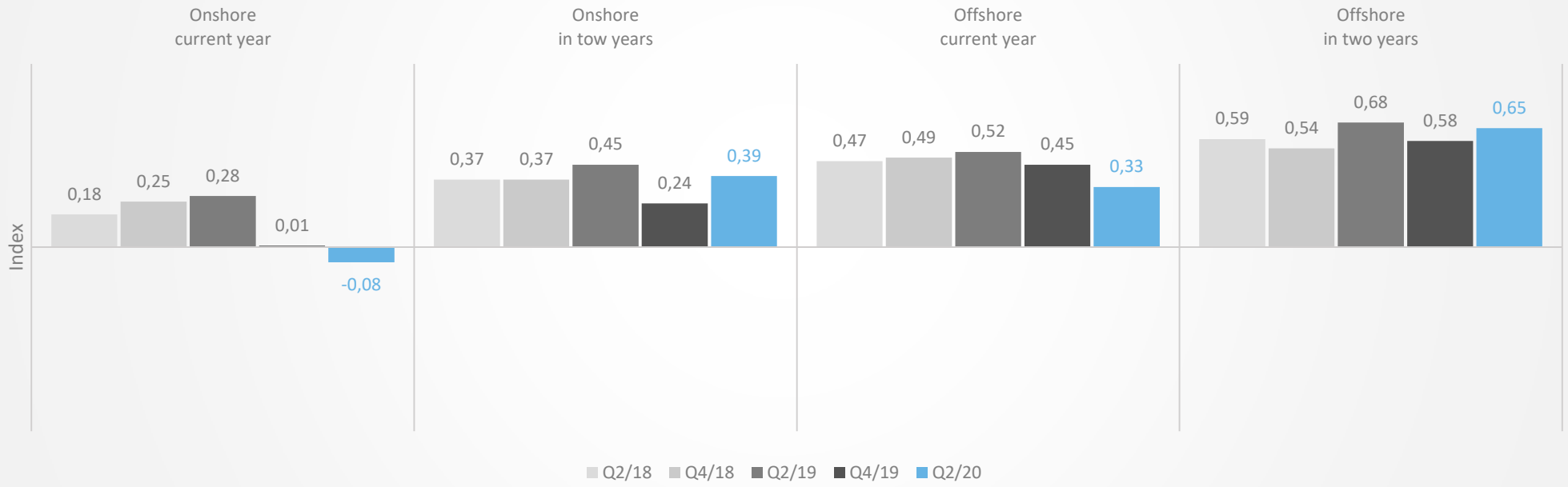


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN EUROPE (INCL. D)

COMPARISON CURRENT VS. IN TWO YEARS

Today's onshore wind energy market situation for Europe is slightly down in the negative range whereas the future is seen in a more positive light, with values trending upwards again. Assessments for offshore wind energy this year have declined somewhat, but a positive development is anticipated in two years.

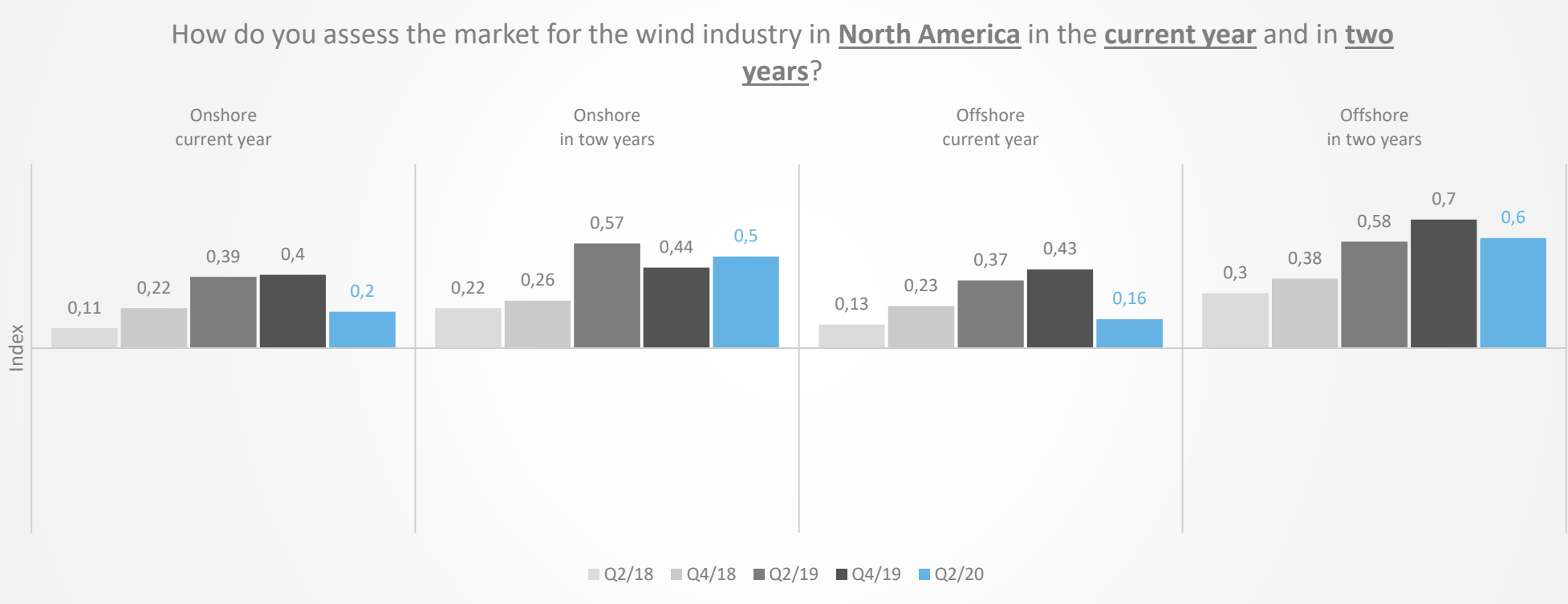
How do you assess the market for the wind industry in **Europe (incl. GER)** in the **current year** and in **two years**?



ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN NORTH AMERICA

COMPARISON CURRENT VS. IN TWO YEARS

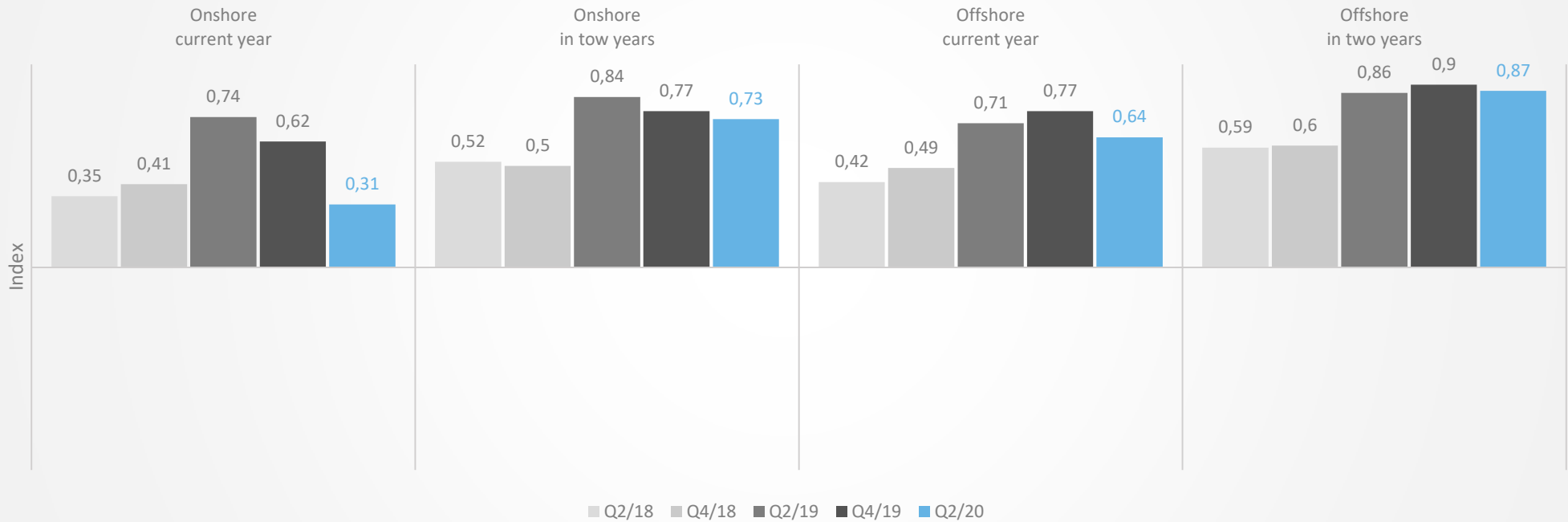
While the current market situation for onshore wind energy in North America continuous to be viewed as positive, values are trending strongly downwards, whereas the future prospects are seen more optimistically. The overall picture remains positive with values slightly increasing. Current assessments for offshore wind energy remain positive but are declining significantly. A positive development is expected in two years.



ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN ASIA

COMPARISON CURRENT VS. IN TWO YEARS

While the current market situation for onshore wind energy in Asia continuous to be viewed as positive, values are trending strongly downwards. Expectations for the future are generally positive, remaining at a level similar to the previous survey. The current assessments for offshore wind energy are declining slightly but remain positive; the general development is expected to continue at today's positive levels.



ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN ROW COUNTRIES

COMPARISON CURRENT VS. IN TWO YEARS

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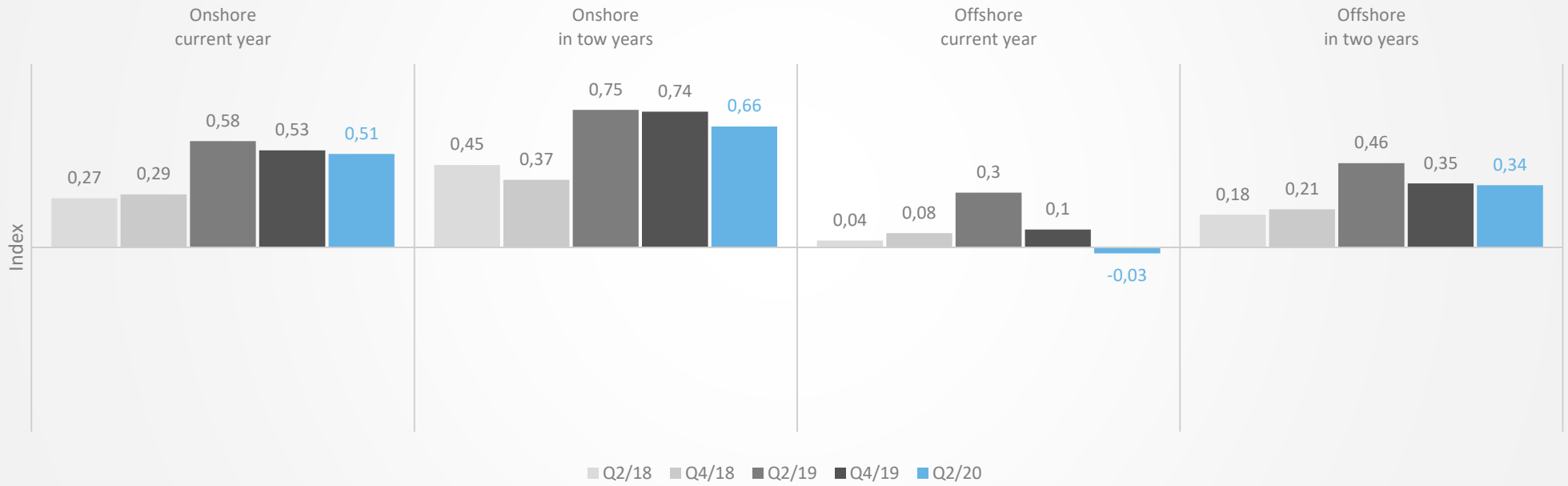
The current market situation for onshore wind energy in 'Rest of World' countries continuous to receive positive marks but the results are trending slightly downwards. Expectations for the future remain clearly positive, if with slight losses. By contrast, the current assessments for offshore wind energy are slightly negative but a positive development is expected in two years.

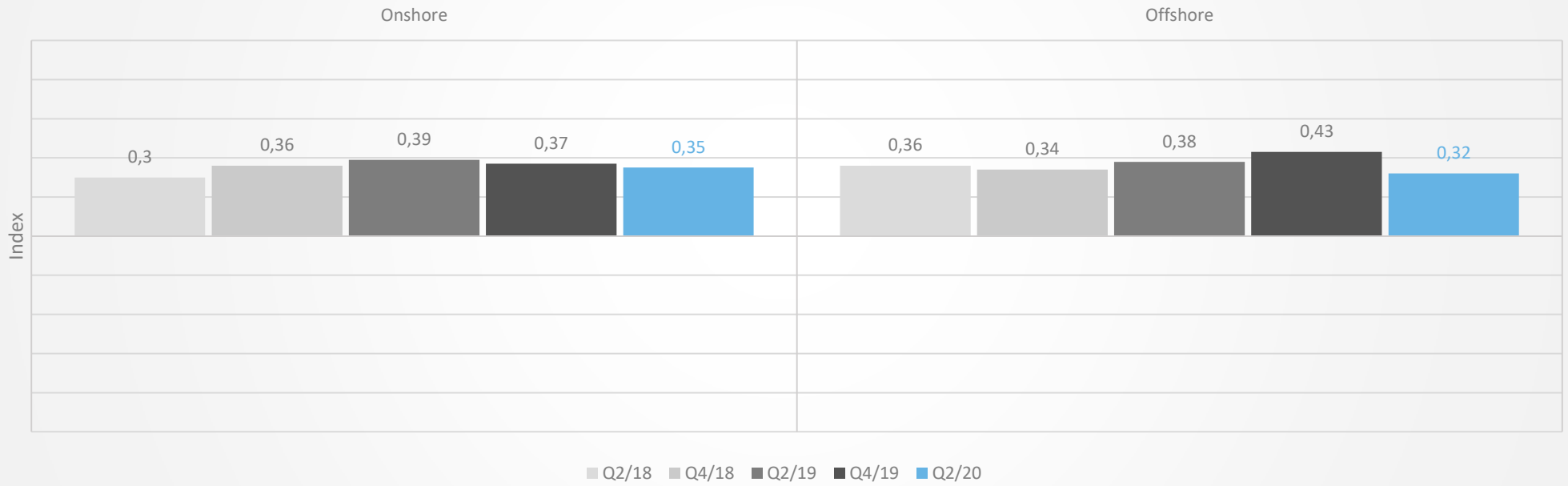
How do you assess the market for the wind industry in **the rest of the world** in the **current year** and in **two years**?



INTENSITY OF CONSOLIDATION PROCESSES

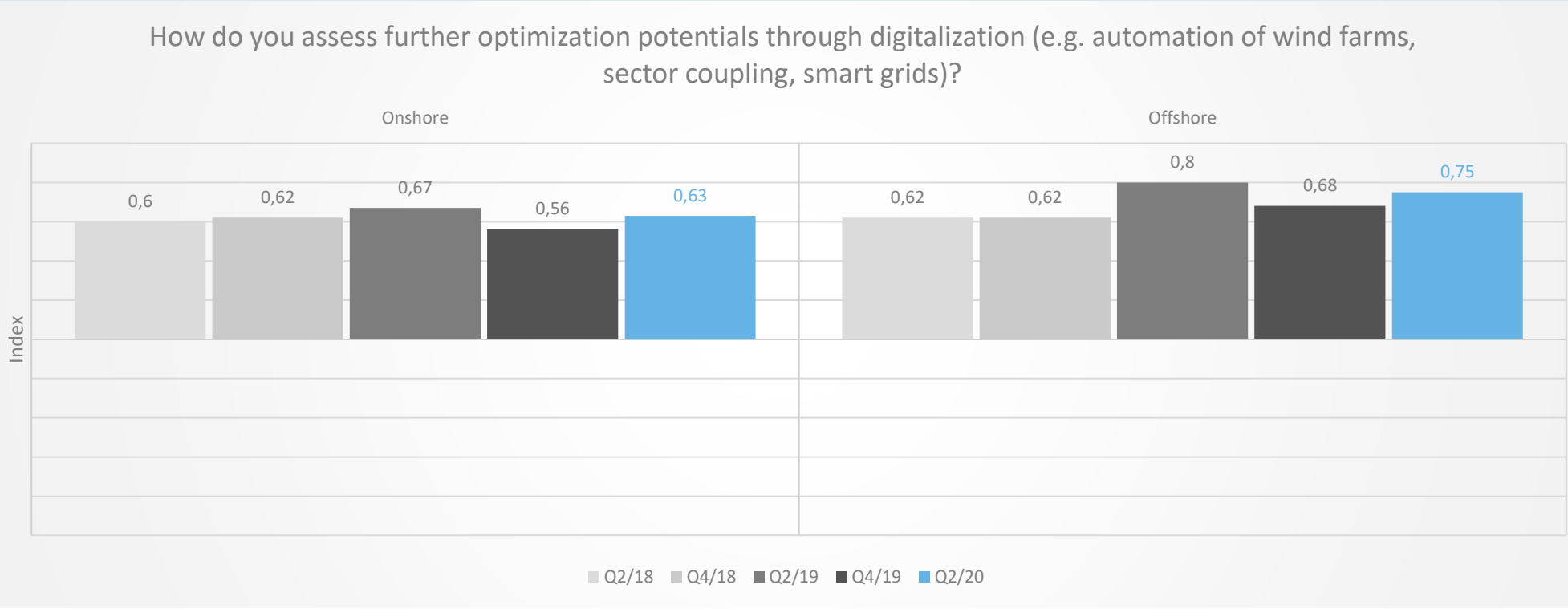
As in the past years, respondents expect consolidation processes in the onshore segment to continue at high intensity with a slight weakening trend. In the offshore segment, however, the intensity of consolidation processes is clearly believed to be declining, returning to a level similar to 2018.

In your opinion, what intensity will consolidation processes have in 2020/2021 (e.g. due to zero bids, lower political goals, lack of projects)?



OPTIMISATION THROUGH DIGITALISATION

Expectations regarding the optimisation potential driven by digitalisation have risen at equal rates for the onshore and offshore wind energy segments, with offshore continuing to play a much more significant role for digitalisation than onshore.



COST REDUCTION THROUGH NEW TECHNOLOGIES

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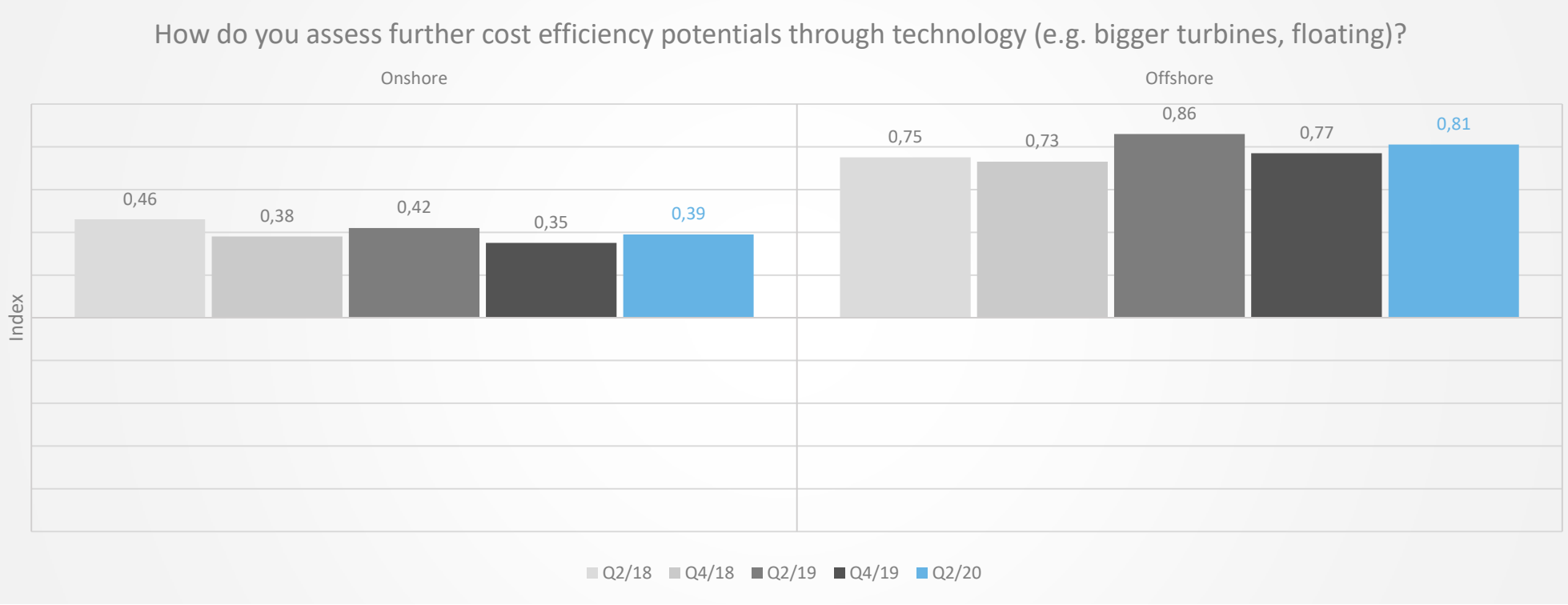
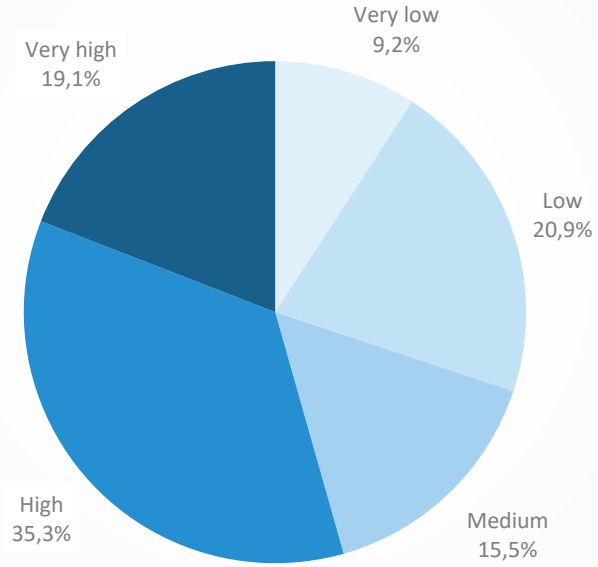
The mood regarding the saving potential of new technologies is again in the medium to high range, with the potential for offshore wind energy continuing to receive much higher ratings than for onshore.



GREEN HYDROGEN

More than half of respondents believe it is likely or very likely that the production of green hydrogen will play a key role for wind energy over the next three years.

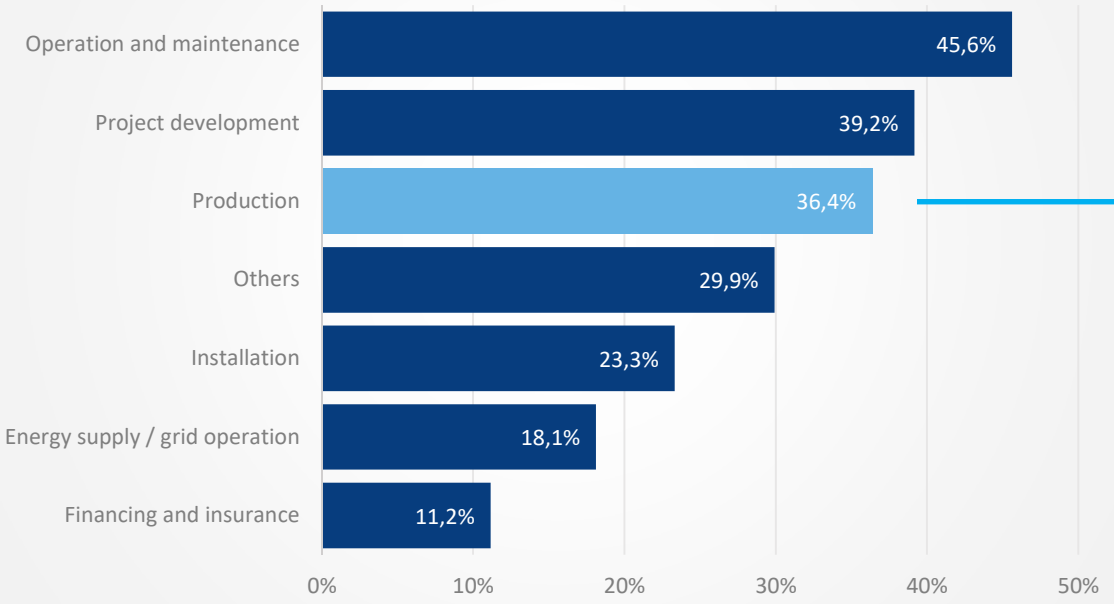
How high do you estimate the probability that the production of green hydrogen will play a major role for wind energy in the next 3 years?



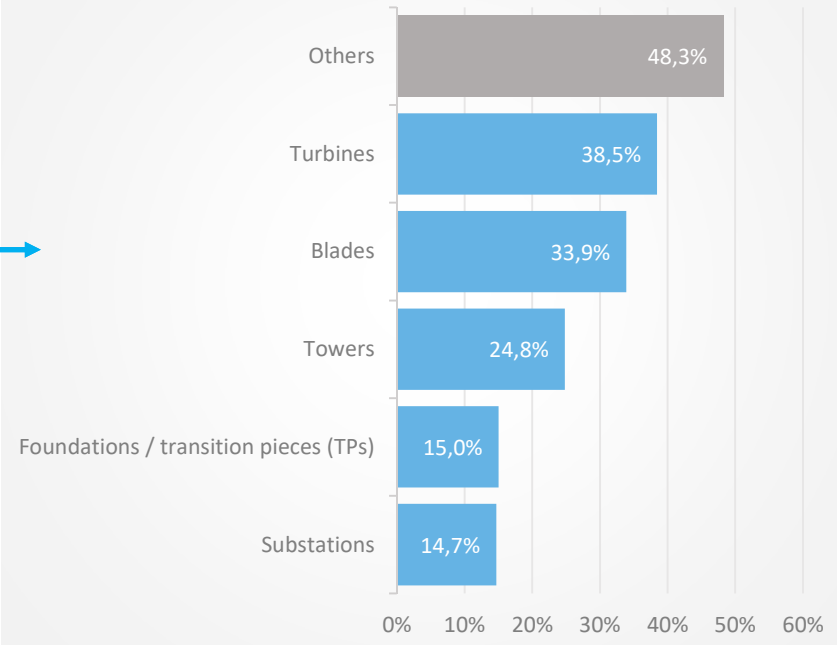
ACTIVITIES WITHIN THE VALUE CHAIN

Nearly half of responding companies engage in operation and maintenance business activities. Furthermore, around 40% participate in project development; more than one third are manufacturers, and about one fourth perform installation work. Activities within manufacturing are mostly focused on making turbines, rotor blades and other components.

On which level of the value chain is your company's activity in the wind energy industry? (Multiple answers possible)



Breakdown of answer "Production"

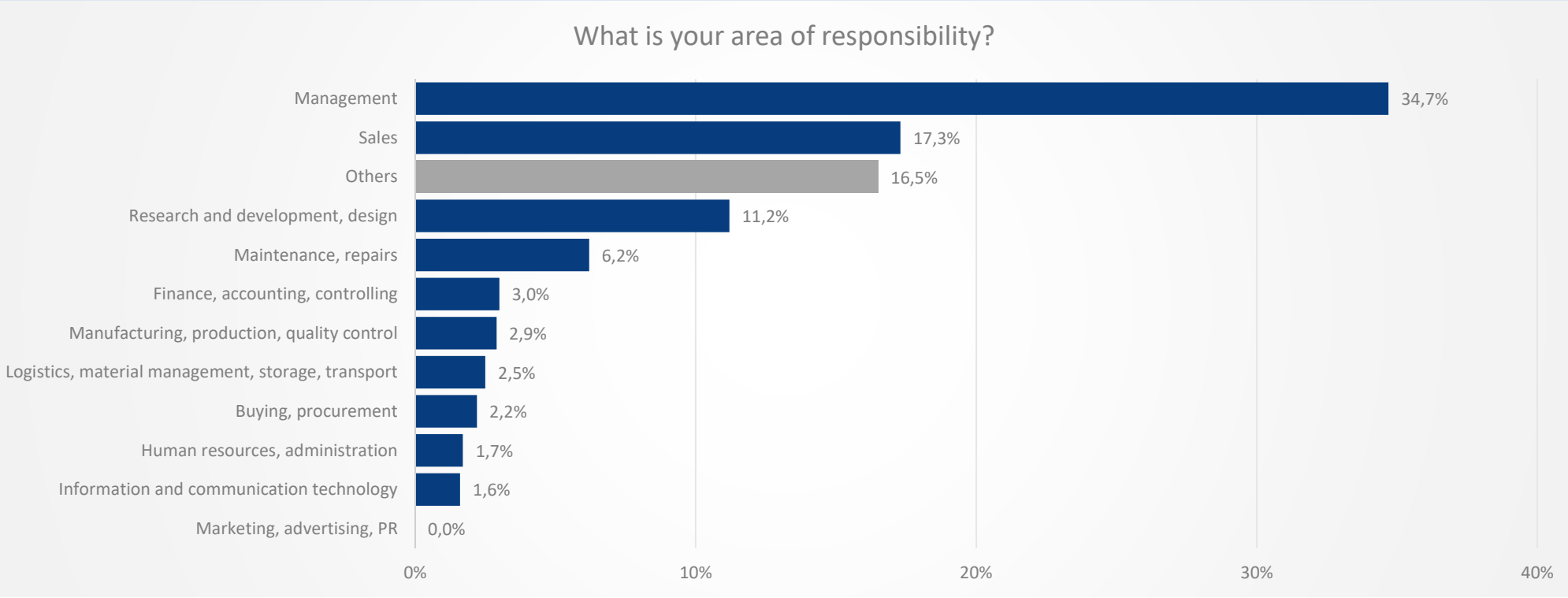


REGIONAL FOCUS

Around 30% of respondents focus on the German or the European market, respectively. About 15% of respondents are also active in the Asian and the North American markets.

RESPONDENT POSITIONS

Similar to the previous surveys, more than one third of participants hold managerial positions, followed by respondents from sales, 'other', R&D and design as well as maintenance and service functions.



WETIX – WINDENERGY trend:index

We look forward to seeing you at
WindEnergy Hamburg – The global on & offshore expo

1 – 4 December 2020 | Hamburg

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