



RESULTS

WINDENERGY trend:index

MOOD BAROMETER FOR THE
ONSHORE AND OFFSHORE WIND INDUSTRY
AUTUMN 2020



Wind Energy
Hamburg

The global on & offshore event

1–4 December 2020

Organised by:

In cooperation with:



wind:research

INTRODUCTION

OVERVIEW & PARTICIPATION

The sixth edition of the industry's mood barometer once again enjoyed strong participation, despite the postponement of the trade fair. The share of fully completed questionnaires remains at a high level. Representativeness therefore continues to be high.

#	Survey period	Visitors	Survey started	Survey completed	Visitor participation rate	Visitor completion rate	Survey completion rate
1	Q2 2018 (16/03 – 19/04/2018)	1,952	1,187	674	61%	35%	57%
2	Q4 2018 (25/09 – 09/11/2018)	2,414	1,655	958	69%	40%	58%
3	Q2 2019 (02/04 – 13/05/019)	2,299	1,254	817	55%	36%	65%
4	Q4 2019 (23/10 – 30/11/2019)	1,582	1,026	712	65%	45%	70%
5	Q2 2020 (17/03 – 29/04/2020)	1,867	1,156	782	62%	42%	68%
6	Q4 2020 (27/08 – 16/10/2020)	2,517	1,277	865	51%	34%	68%
Total		12,631	7,555	4,808	60%	38%	64%

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)

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

- The survey respondents' activities primarily focus on the onshore segment, which delivered roughly three times as many responses as offshore. About 35% of respondents are active in both market segments.
- Nearly half of responding companies engage in operation and maintenance business activities. Furthermore, around 40% are active in manufacturing as well as planning and project development, and more than one fifth perform installation-related work. Activities within manufacturing are mostly focused on production of turbines, rotor blades and other components.
- Around 70% of respondents focus on the German and European markets. Over 30% of respondents are also active in the Asian, respectively, the North American markets, and more than 26% operate globally.
- More than one third of respondents hold a managerial position, followed by respondents from sales, other functions, R&D and design as well as maintenance and service.

SUMMARY

KEY FINDINGS – COMPARING SURVEYS 1 TO 6

The sixth online survey, conducted in autumn 2020, again saw a high response rate. All in all more than 7,500 individuals took part this time, sharing their assessments of the global onshore and offshore wind energy industry. The key findings are as follows:

- The survey respondents' activities primarily focus on the onshore segment, which delivered over three times as many responses as offshore. About 35% of respondents are active in both market segments.
- While the WETix participants share a positive outlook on the current development of business conditions for onshore wind energy in Europe (including Germany) in general, the views of the development in Germany specifically are again less pessimistic, a trend first seen in the last survey. The assessment for North America, Asia and the rest of the world remains stable at a relatively high level.
- The current business environment for offshore wind energy is seen in a positive light across all regions. The economic conditions within Europe are increasingly receiving very high marks. The survey results for Germany are likewise improving significantly, for the first time returning to the level of the first WETix survey in spring 2018.
- The market situation in the onshore wind industry in North America and Asia is increasingly seen as positive, and the assessment of the market in the rest of the world remains positive, despite some losses. Following last year's drop, the values for Europe are now back in the positive range, if only slightly; and the mood in Germany is showing stronger signs of a recovery.
- Around the world the expectations for the future onshore wind market are optimistic: in Europe, North America, Asia and the rest of the world in particular, the outlook on the market situation is increasingly positive. As for the future of the onshore wind industry in Germany, assessments are more optimistic once again, and for the first time since the spring of 2019 values have returned to the positive range.

SUMMARY

KEY FINDINGS – COMPARING SURVEYS 1 TO 6

Expectations for the future of the international wind market are positive globally and continue to rise. For the first time in the past 12 months, the future of the German market has received positive marks.

- Assessments of the offshore wind market situation for Europe, North America and Asia remain in the positive range and are trending slightly upwards; the rest of the world has managed to stop the negative trend seen in the past two surveys. The offshore wind market in Germany has received a positive assessment for the first time since the spring of 2019.
- Expectations for the future of offshore wind are very positive: While Europe, Asia and the rest of the world achieved even better results than in the last WETix, North America remains unchanged at a relatively high level. Germany has seen a remarkable recovery throughout the most recent surveys, with results well inside the positive range and the current survey showing the highest values achieved to date.
- The mood in the German wind industry has recovered from some extremely negative values in November 2019: the current situation in the onshore wind market has improved and received slightly positive-trending assessments for the coming two years. Looking at the prospective offshore wind market two years from now, Germany received the best assessment to date.
- In the current survey, the mood in the European onshore wind industry has returned to the positive range, and for the coming two years, the market assessments reflect a decidedly positive mindset. The assessments of the current situation in the offshore wind industry are likewise trending upwards, and expectations for the coming two years got the highest value ever since the beginning of WETix surveys.
- In North America, thumbs are up for the present wind market as well as the two-year outlook, with a slightly upward trend; the onshore and offshore segments of the wind industry achieved similar values.

SUMMARY

KEY FINDINGS – COMPARING SURVEYS 1 TO 6

Especially the future market situation in the offshore wind industry is receiving positive to very positive assessments.

- The assessments of the current situation in the Asian onshore wind industry turned out significantly better than in spring of this year; expectations for the market in two years remain unchanged, hovering in a high, positive range. The mood in the offshore wind industry is likewise viewed as positive, and long-term expectations are very positive.
- The current market situation for the onshore wind industry in 'Rest of World' countries continues to receive positive marks, if with a slight downward trend. Expectations for the future are positive, showing slight gains. The views regarding the offshore wind industry are currently slightly in the positive range again, and two-year expectations are clearly positive.

SUMMARY

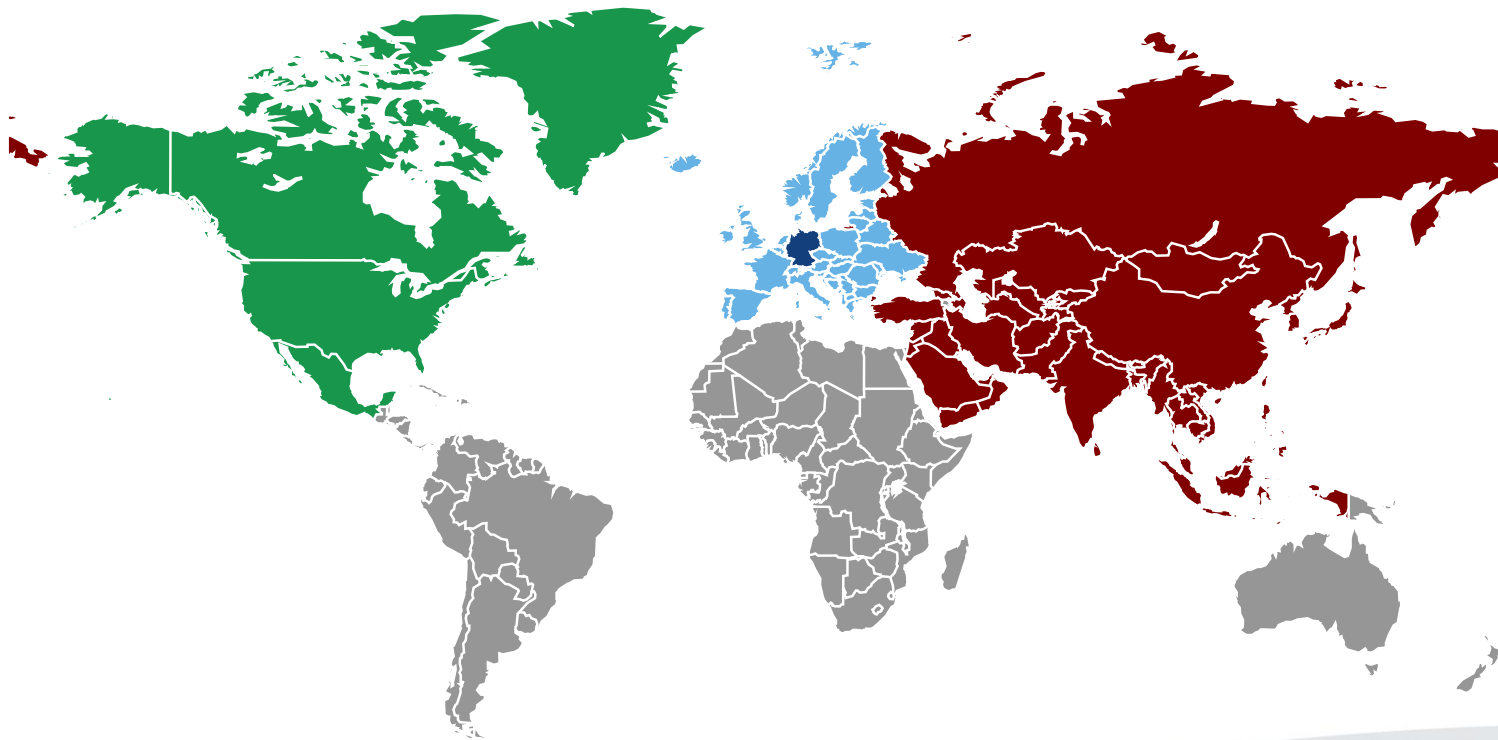
KEY FINDINGS – COMPARING SURVEYS 1 TO 6

In addition to the traditional catalogue of questions and the question regarding green hydrogen which was added for the spring 2020 survey, the sixth online survey introduced an additional question to address the consequences of the coronavirus pandemic.

- Respondents are expecting consolidation processes in both the onshore and offshore segments to decline somewhat. Ratings of the intensity of consolidation processes in the offshore segment are at the lowest level since the surveys first began.
- Expectations regarding the optimisation potential driven by digitalisation remain at a high level for both onshore and offshore wind energy, if with minimal losses, with slightly higher marks given to the offshore wind industry than to the onshore segment, a trend first seen in spring 2019.
- The mood in terms of the saving potential offered by new technologies is unchanged, remaining in the medium to high range. The saving potential in offshore wind energy has been receiving significantly better ratings than onshore ever since the WETix was first launched.
- Over 50% of respondents for onshore, and more than 60% for offshore believe that the coronavirus pandemic has either no effect on the wind industry, or even that it affects it in a positive or very positive manner. These responses contrast with close to 40% who fear negative consequences. Opinions about the likeliness of very negative versus very positive effects are distributed about evenly.
- 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. This means that green hydrogen continues to be considered as highly important for the future, despite slight losses compared with the spring 2020 survey.

OVERVIEW OF COUNTRIES STUDIED

The survey covers all onshore and offshore wind energy 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 and South America.



Organised by:



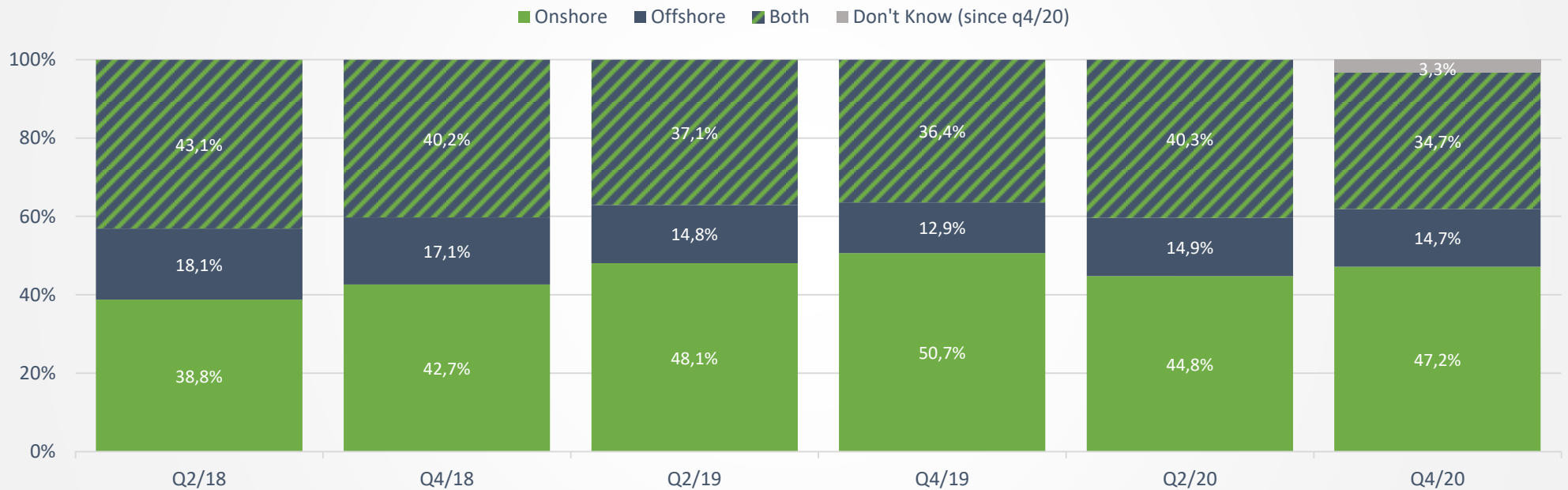
In cooperation with:



MARKET SEGMENTS

The survey respondents' activities primarily focus on the onshore segment, which contributed more than three times as many responses as offshore. About 35% of respondents are active in both market segments.

In which segment of the wind industry is your company's focus?

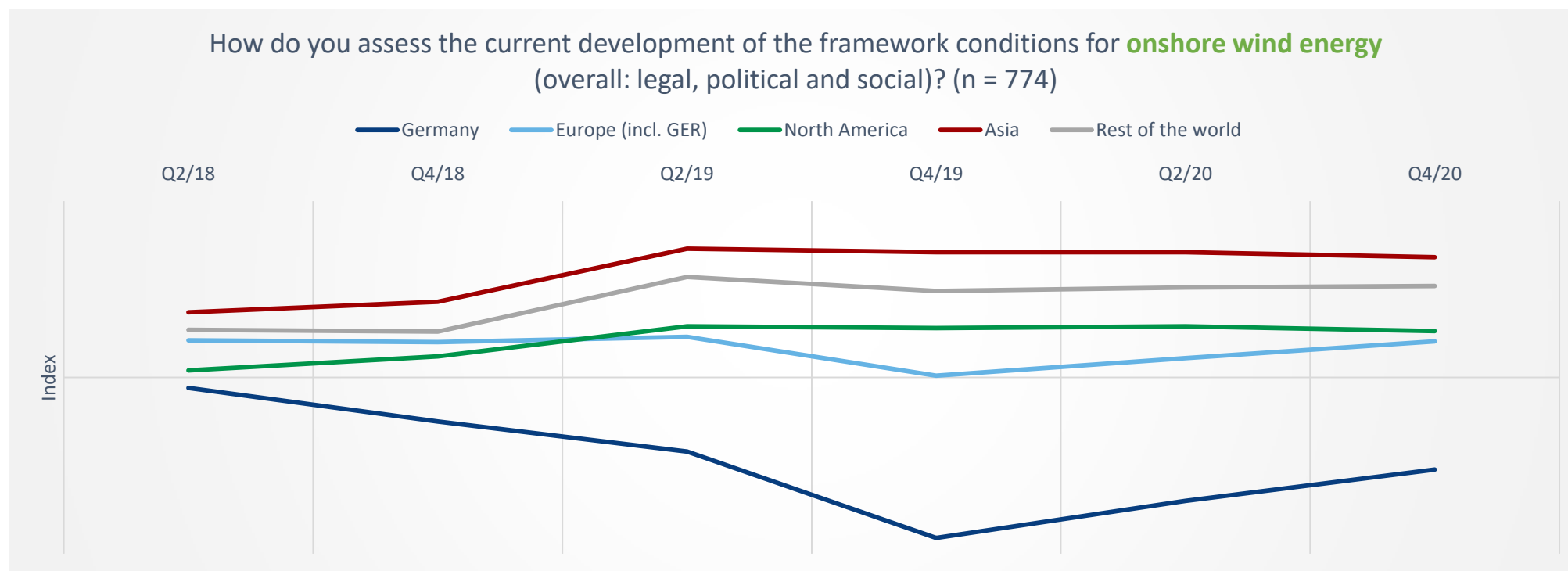


Organised by:

In cooperation with:

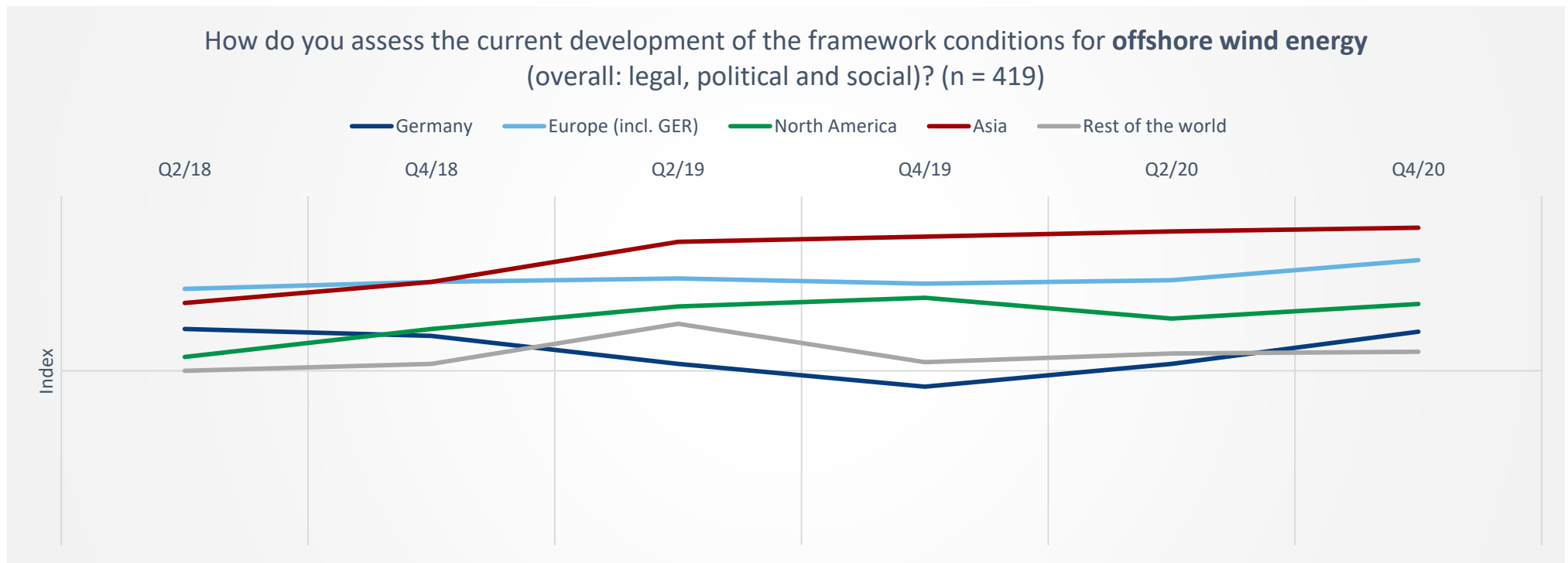
ASSESSMENT OF THE BUSINESS ENVIRONMENT FOR ONSHORE WIND

While the WETix participants share a positive outlook on the current development of business conditions in Europe (including Germany) in general, the views of the development in Germany specifically are again less pessimistic, a trend first seen in the last survey. The assessments for North America, Asia and the rest of the world remain stable at a relatively high level.



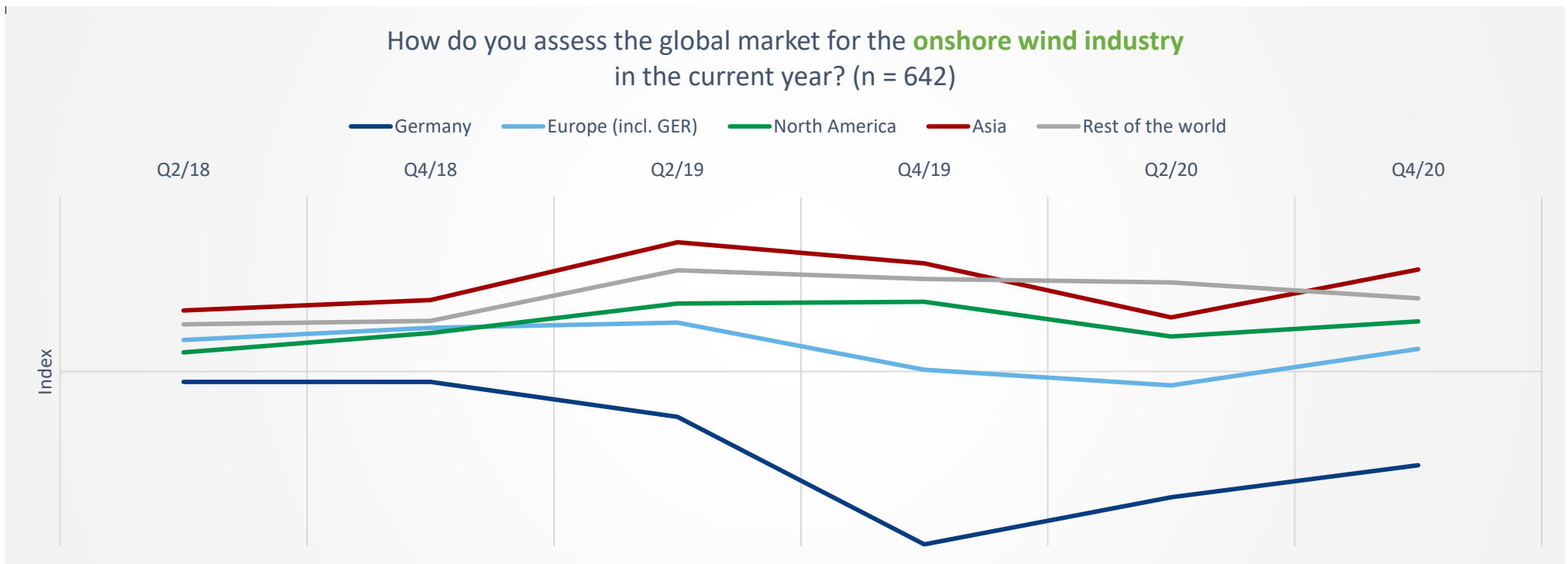
ASSESSMENT OF THE BUSINESS ENVIRONMENT FOR OFFSHORE WIND

The current business environment for offshore wind energy is seen in a positive light across all regions. The economic climate in Europe is increasingly receiving very positive marks. Similarly, the survey results for Germany are improving significantly, for the first time returning to the level of the first WEtix survey in spring 2018.



ASSESSMENT OF THE GLOBAL ONSHORE WIND MARKET – CURRENT

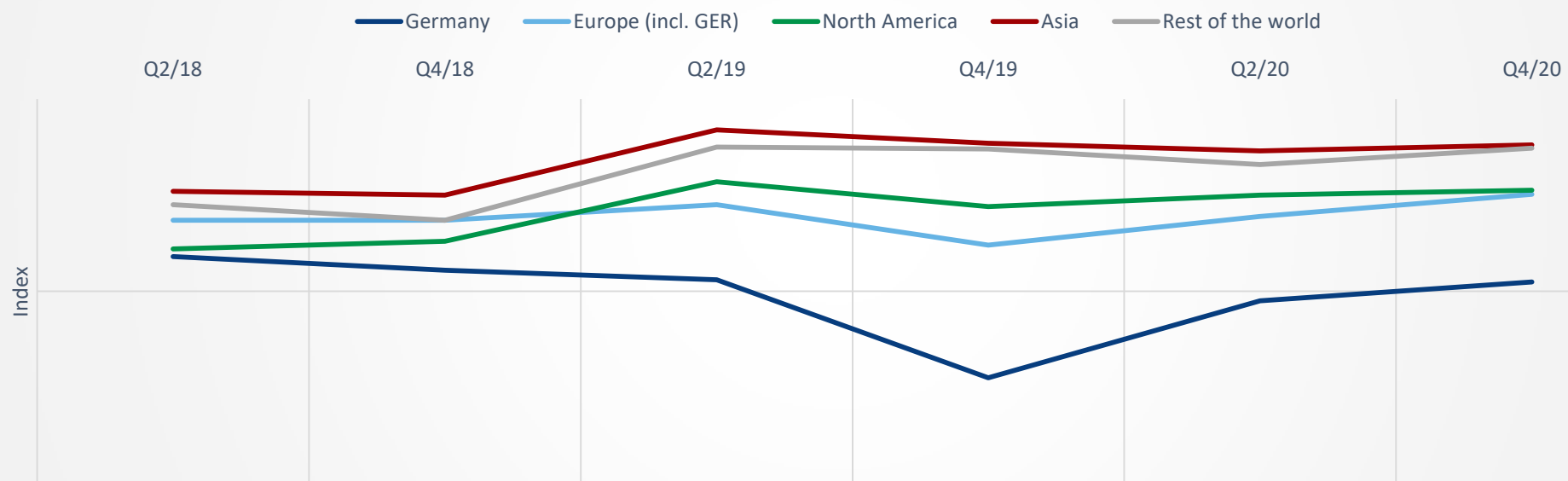
The market situation in the onshore wind industry in North America and Asia is increasingly seen as positive, and the assessment of the market in the rest of the world remains positive, despite some losses. Following last year's drop, the values for Europe are now back in the positive range, if only slightly; the mood in Germany is increasingly showing signs of a recovery.



ASSESSMENT OF THE GLOBAL ONSHORE WIND MARKET – NEXT TWO YEARS

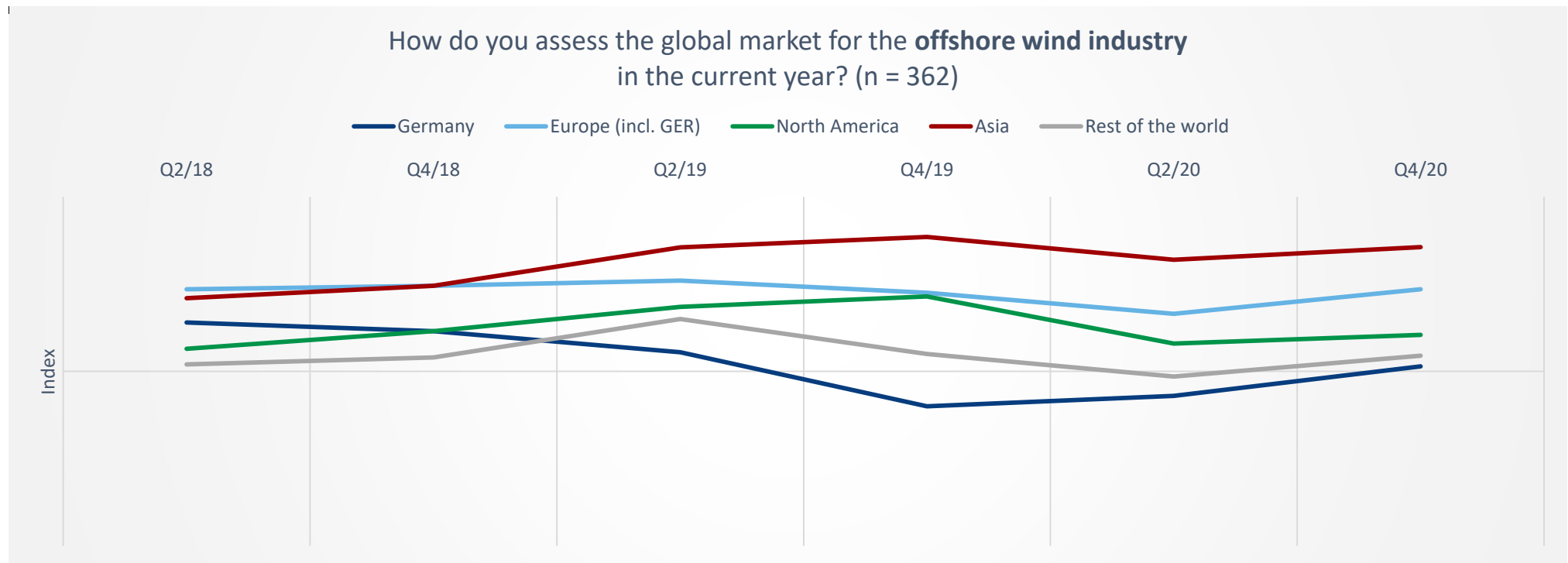
Around the world the expectations for the future onshore wind market are optimistic: in Europe, North America, Asia and the rest of the world in particular, the outlook on the market situation is increasingly positive. As for the future of the onshore wind industry in Germany, assessments are now more optimistic again, and for the first time since the spring of 2019 values have returned to the positive range.

How do you assess the global market for the **onshore wind industry** in two years? (n = 586)



ASSESSMENT OF THE GLOBAL ONSHORE WIND MARKET – CURRENT

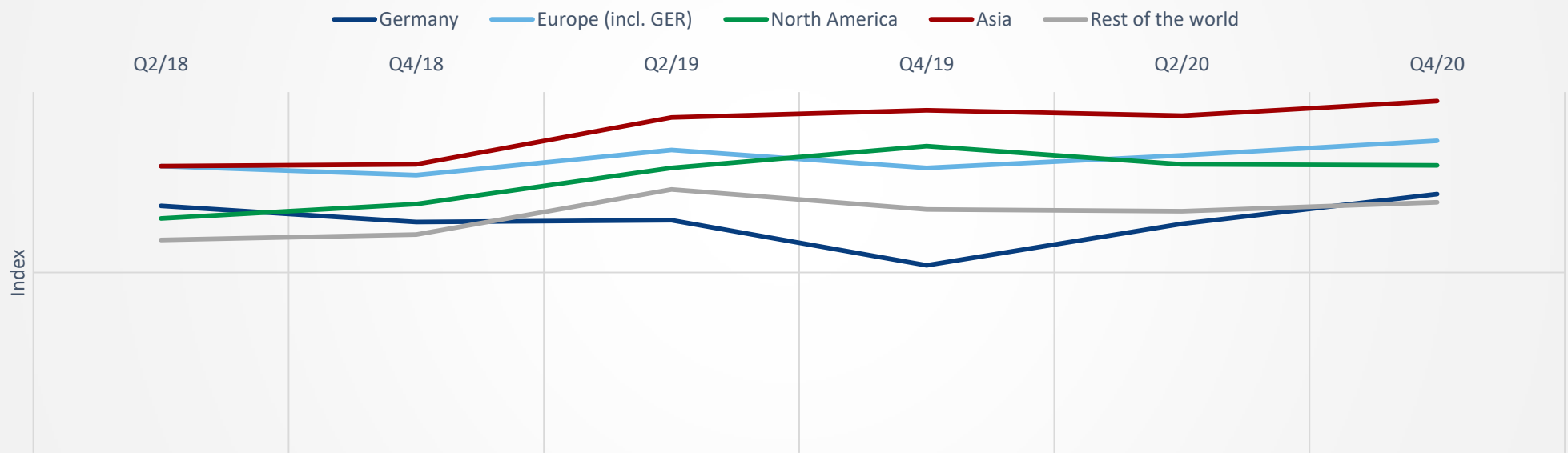
Assessments of the offshore wind market situation for Europe, North America and Asia remain in the positive range and are trending slightly upwards; the rest of the world has managed to stop the negative trends seen in the past two surveys. The offshore wind market in Germany has received a positive assessment for the first time since the spring of 2019.



ASSESSMENT OF THE GLOBAL OFFSHORE WIND MARKET – NEXT TWO YEARS

Expectations for the future of offshore wind are very positive: While Europe, Asia and the rest of the world achieved even better results than in the last WETix, North America remains unchanged at a relatively high level. Germany has seen a remarkable recovery throughout the most recent surveys, with results well inside the positive range and the current survey showing the highest values achieved to date.

How do you assess the global market for the **offshore wind industry** in two years? (n = 343)

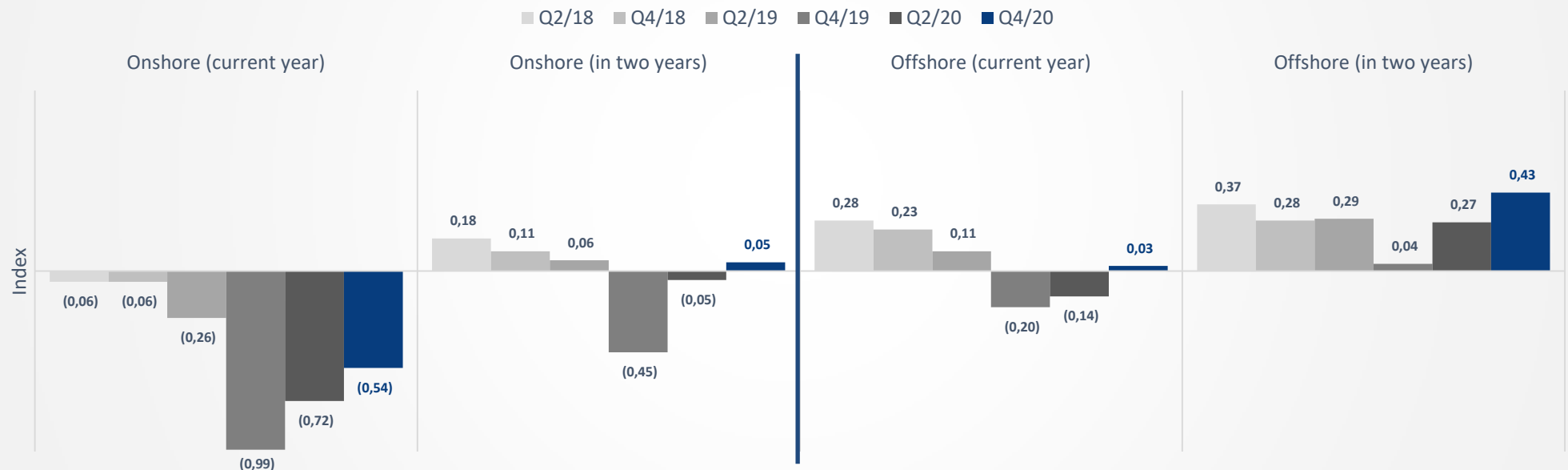


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKETS IN GERMANY

COMPARISON CURRENT VS. IN TWO YEARS

The mood in the German wind industry has recovered from some extremely negative values seen in November 2019: the current situation in the onshore wind market has improved and received positive-trending assessments for the coming two years. Looking at the prospective offshore wind market two years from now, Germany has received its best assessment to date.

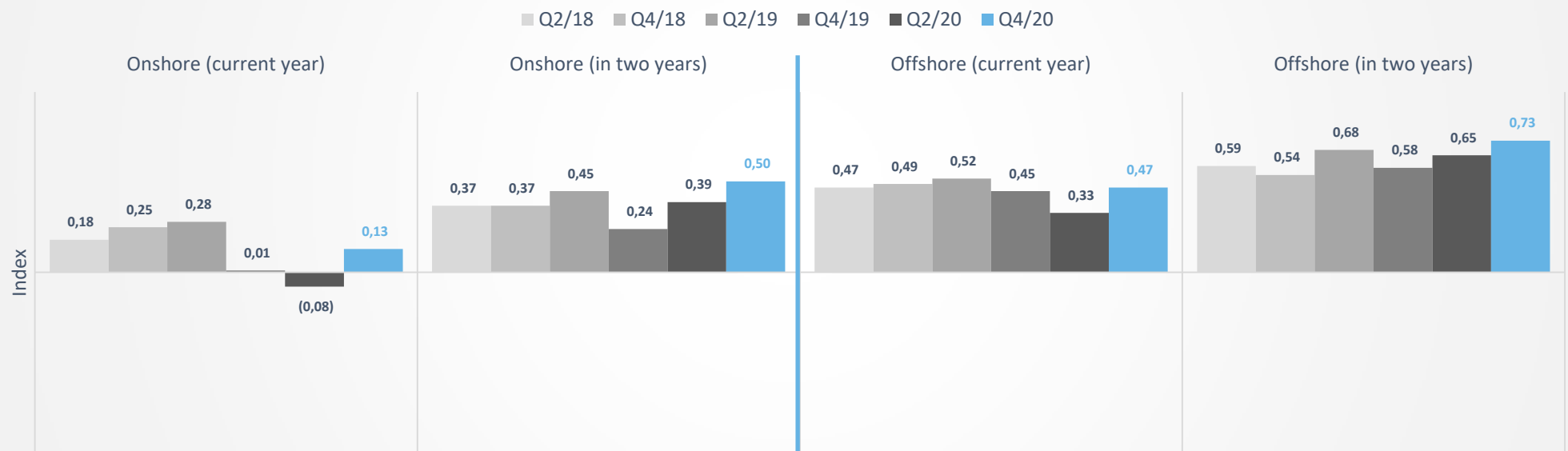
How do you assess the global market for the wind industry **in Germany**
in the current year and in two years?



ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN EUROPE (INCL. D) - COMPARISON CURRENT VS. IN TWO YEARS

In the current survey, the mood in the European onshore wind industry has returned to the positive range, and market assessments for the coming two years reflect a decidedly positive mindset. The assessments of the current situation in the offshore wind industry are likewise trending upwards, achieving the highest value for the coming two years ever since the launch of the WETix surveys.

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

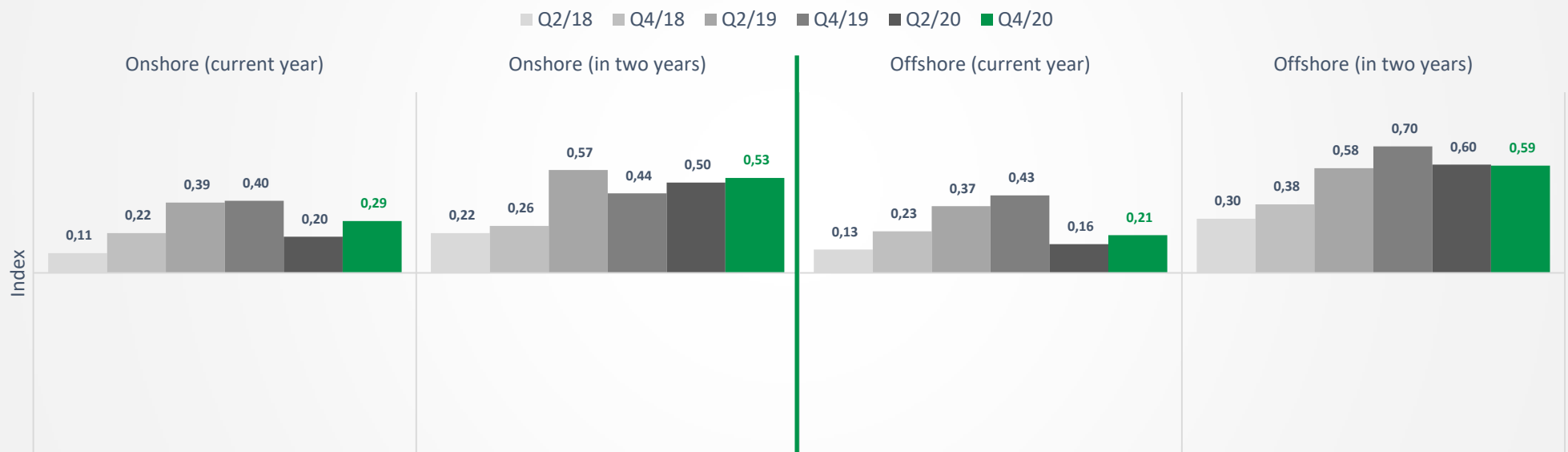


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN NORTH AMERICA

COMPARISON CURRENT VS. IN TWO YEARS

In North America, thumbs up for the present wind market as well as the two-year outlook, with an upward trend; the onshore and offshore segments of the wind industry achieved similar values.

How do you assess the global market for the wind industry in **North America**
in the current year and in two years?

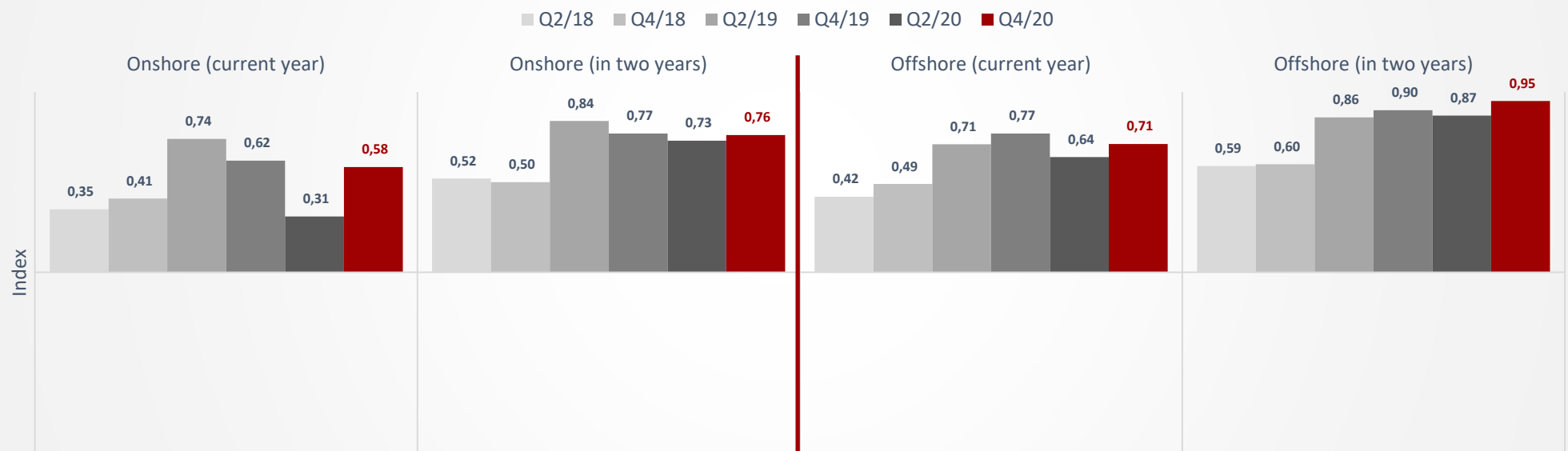


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN ASIA

COMPARISON CURRENT VS. IN TWO YEARS

The assessments of the current situation in the Asian onshore wind industry turned out significantly better than in spring of this year; for the market in two years, expectations remain unchanged in a high, positive range. The mood in the offshore wind industry is likewise viewed as positive, with a 'very positive' long-term perspective.

How do you assess the global market for the wind industry in **Asia**
in the current year and in two years?

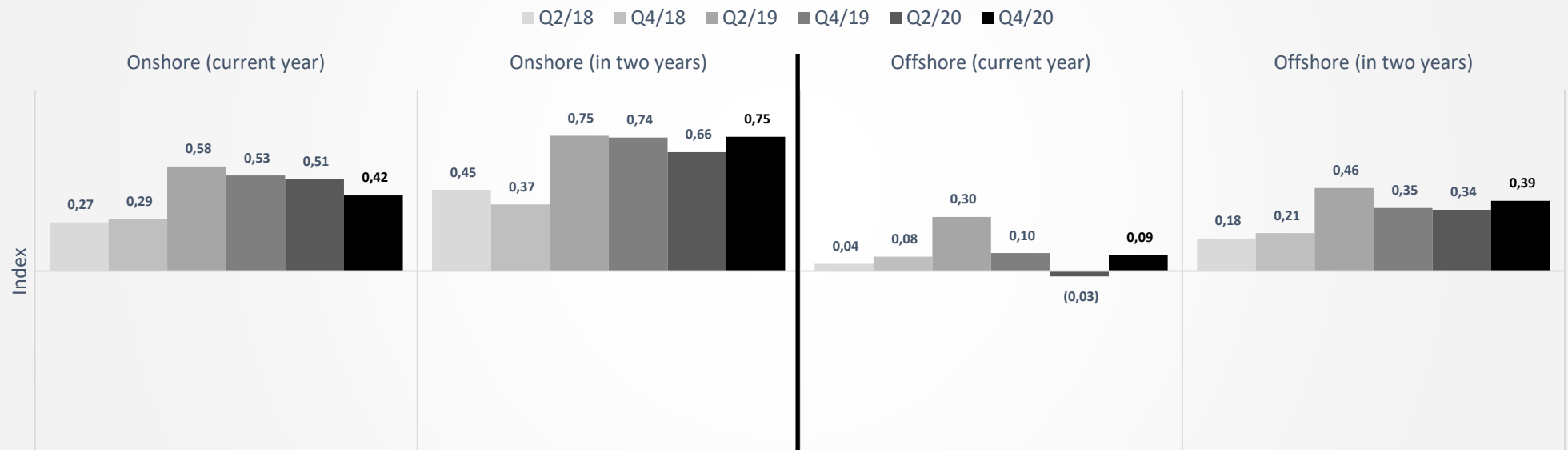


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND MARKET IN ROW COUNTRIES

COMPARISON CURRENT VS. IN TWO YEARS

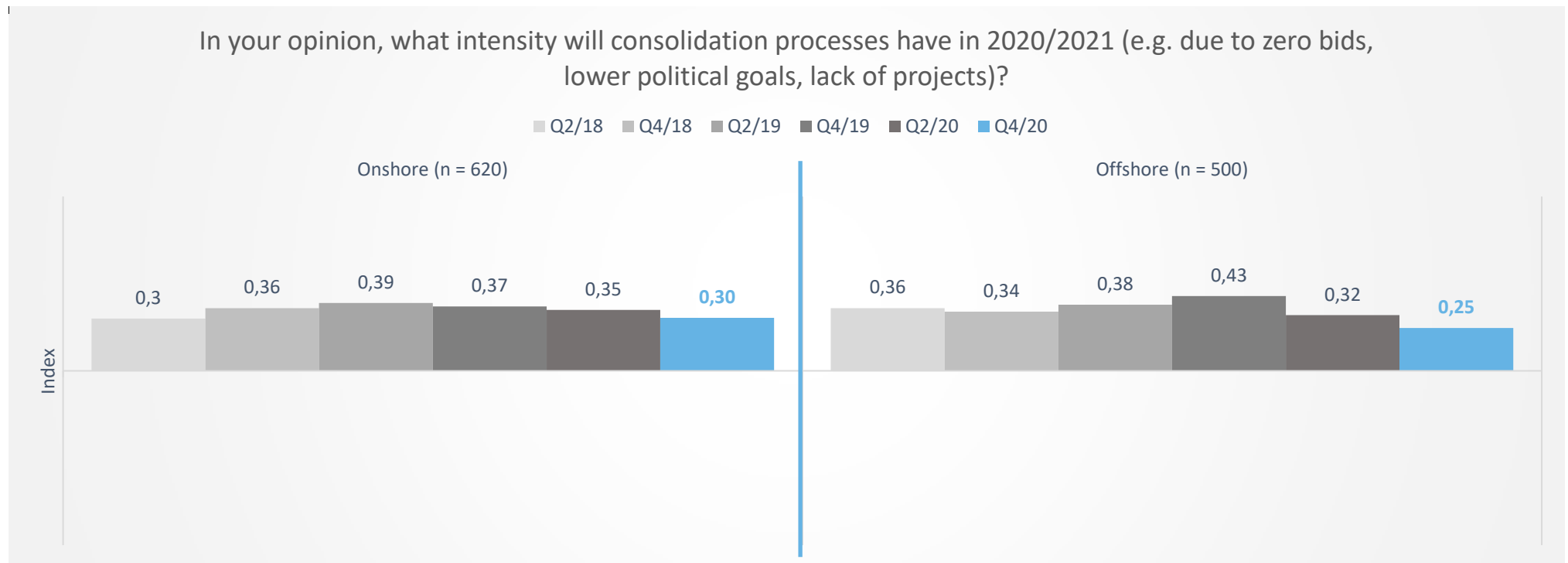
The current market situation for the onshore wind industry in 'Rest of World' countries continues to receive positive marks, if with a slight downward trend. Expectations for the future are positive, showing slight gains. The views regarding the offshore wind industry have risen slightly into the positive range again, and the two-year expectations are clearly positive.

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



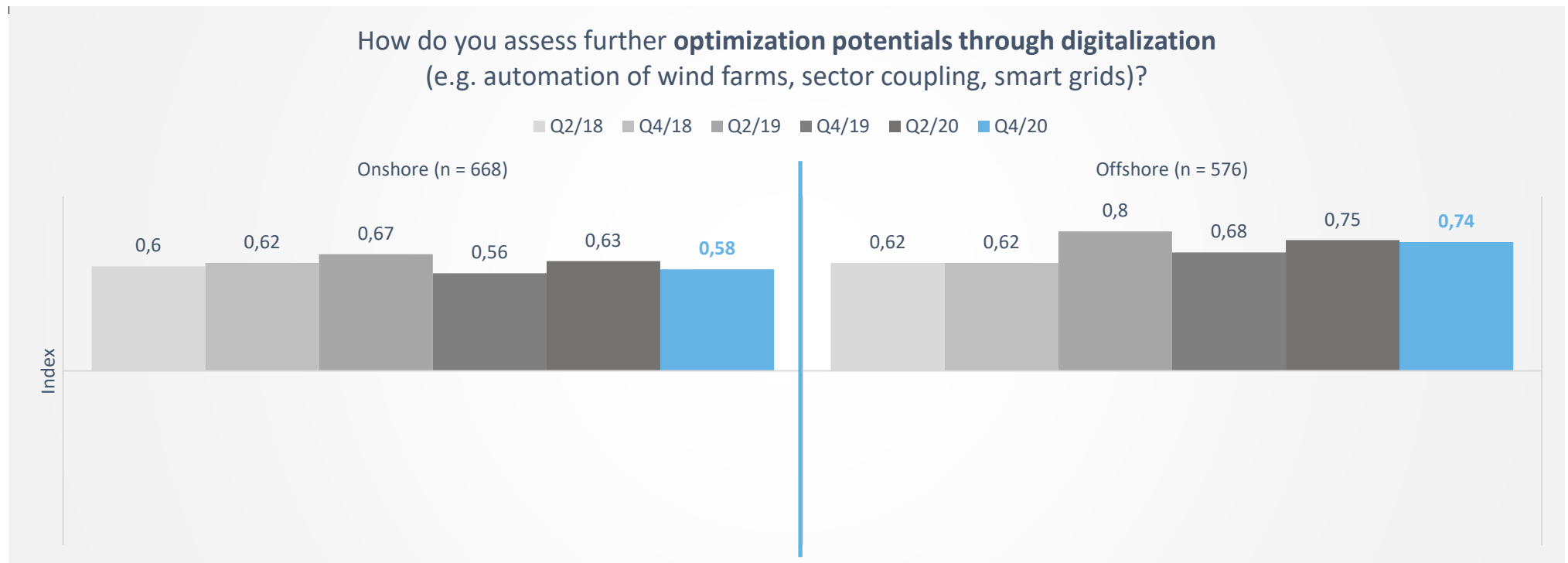
INTENSITY OF CONSOLIDATION PROCESSES

Respondents are expecting consolidation activities in both the onshore and offshore segments to decline somewhat. Ratings of the intensity of the consolidation processes in the offshore segment are at the lowest level since the surveys were first started.



OPTIMISATION THROUGH DIGITALISATION

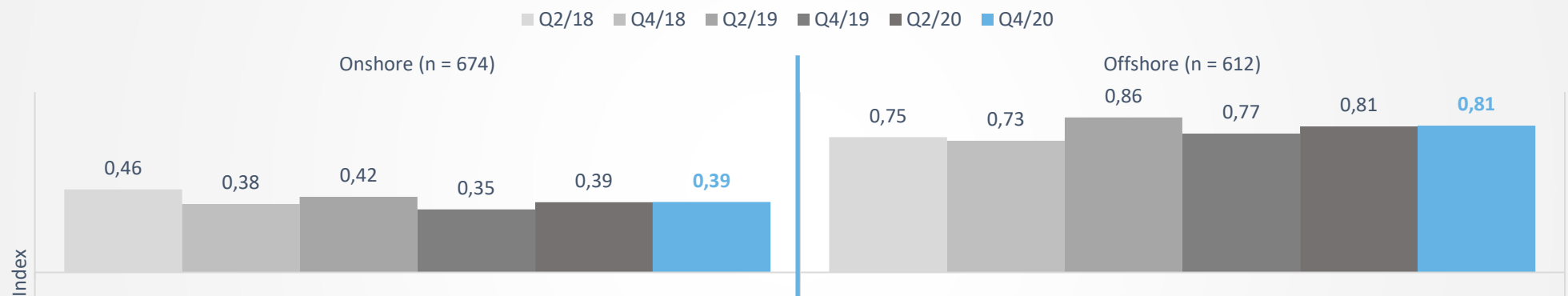
Expectations regarding the optimisation potential driven by digitalisation remain at a high level for both onshore and offshore wind energy, if with minimal losses, with the offshore wind industry seeing slightly higher marks than the onshore segment, a trend first seen in the spring of 2019.



COST REDUCTION THROUGH NEW TECHNOLOGIES

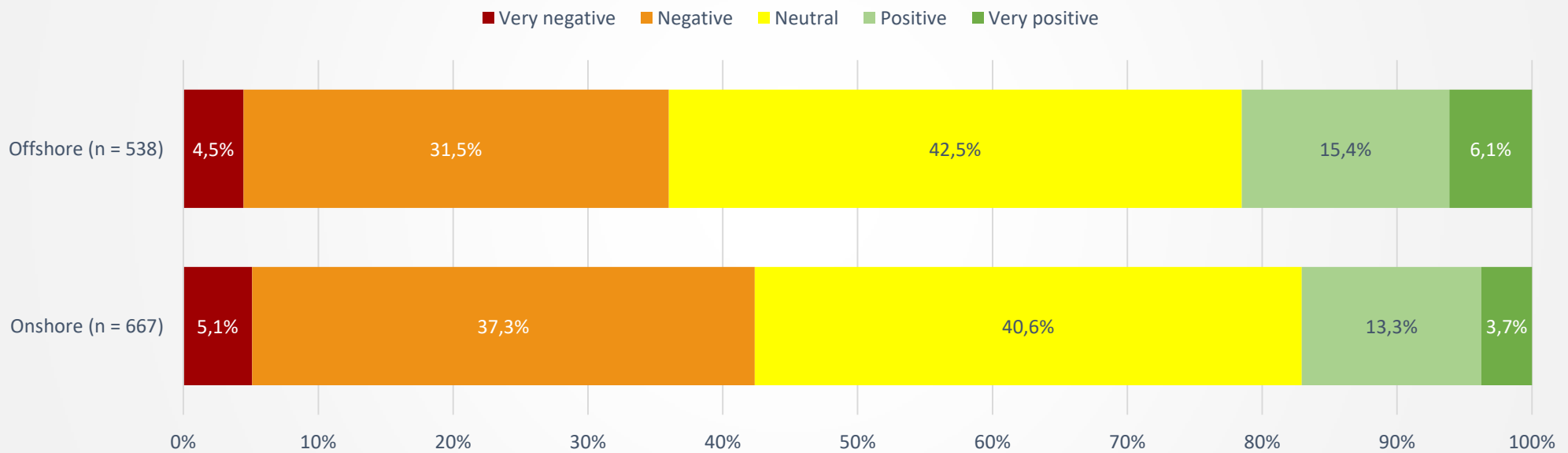
The mood in terms of the saving potential offered by new technologies is unchanged, remaining in the medium to high range. The saving potential in offshore wind energy has been receiving significantly better ratings than for onshore ever since the WETix was first introduced.

How do you assess further **cost efficiency potentials through technology** (e.g. bigger turbines, floating)?



Over 50% (onshore), respectively, more than 60% (offshore) of respondents believe that the coronavirus pandemic has either no effect on the wind industry, or that it even affects it in a positive or very positive manner. These responses contrast with close to 40% who fear negative consequences. Expectations of very negative versus very positive effects are distributed about equally.

How do you estimate the impact of the **corona pandemic** on the development of wind energy (in the next 2 years)?

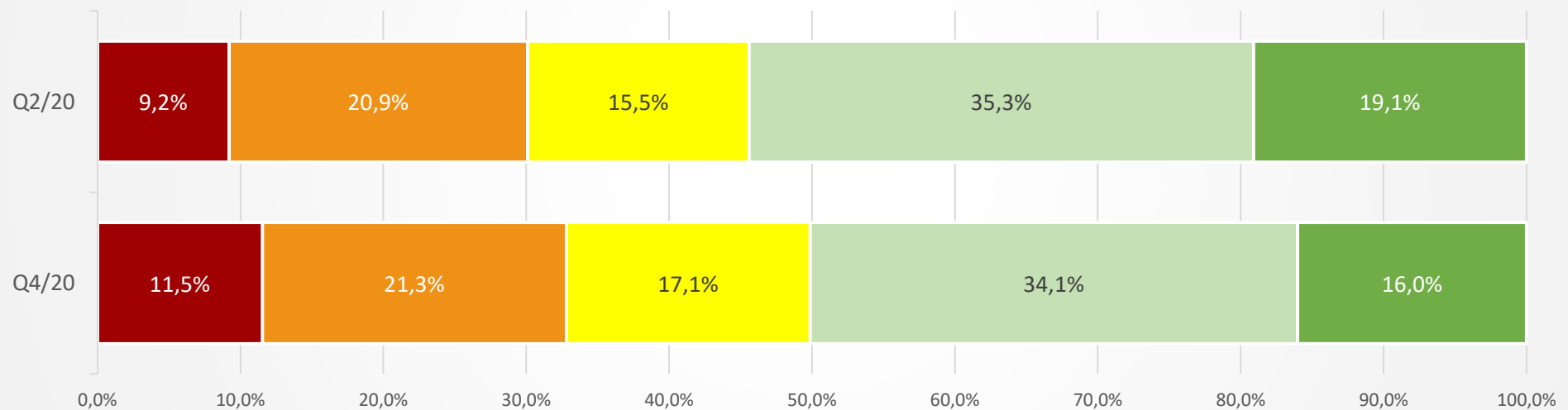


GREEN HYDROGEN

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. This means that green hydrogen continues to be considered as highly important for the future, despite slight losses compared with the spring 2020 survey.

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? (n = 381)

■ Very low ■ Low ■ Medium ■ High ■ Very high



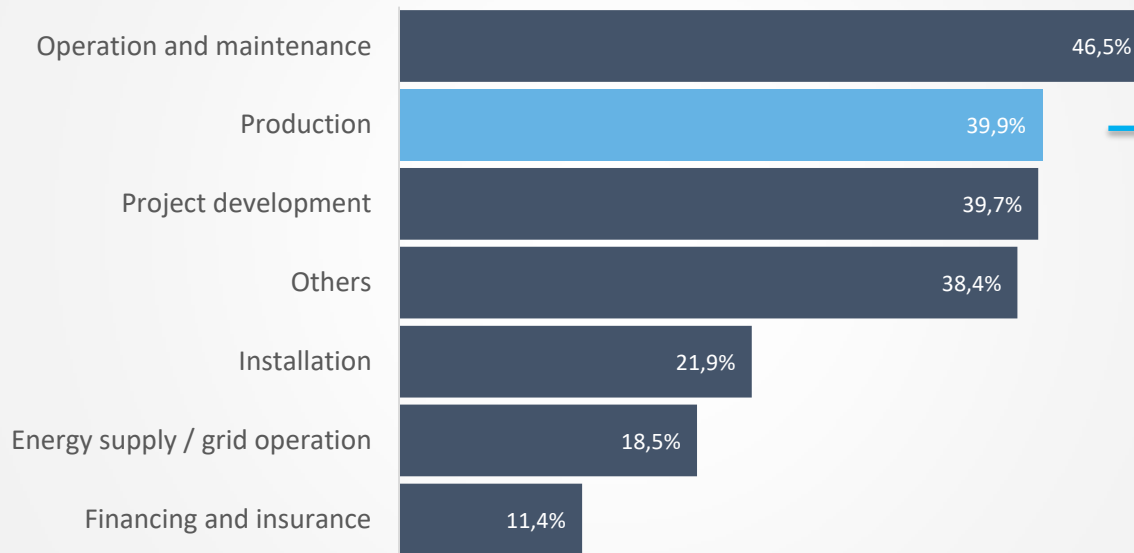
Organised by:

In cooperation with:

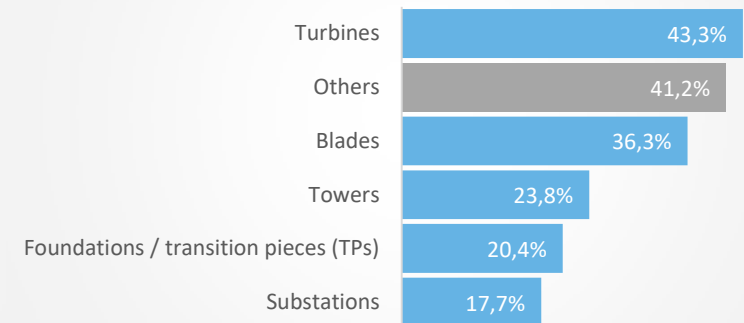
ACTIVITIES WITHIN THE VALUE CHAIN

Nearly half of responding companies engage in operation and maintenance activities. Furthermore, around 40% are active in manufacturing as well as planning and project development, and more than one fifth perform installation work. Activities within manufacturing are mostly focused on production of turbines, rotor blades and other components.

On which level of the value chain is your company's activity in the wind energy industry? (n = 854; N = 2446)



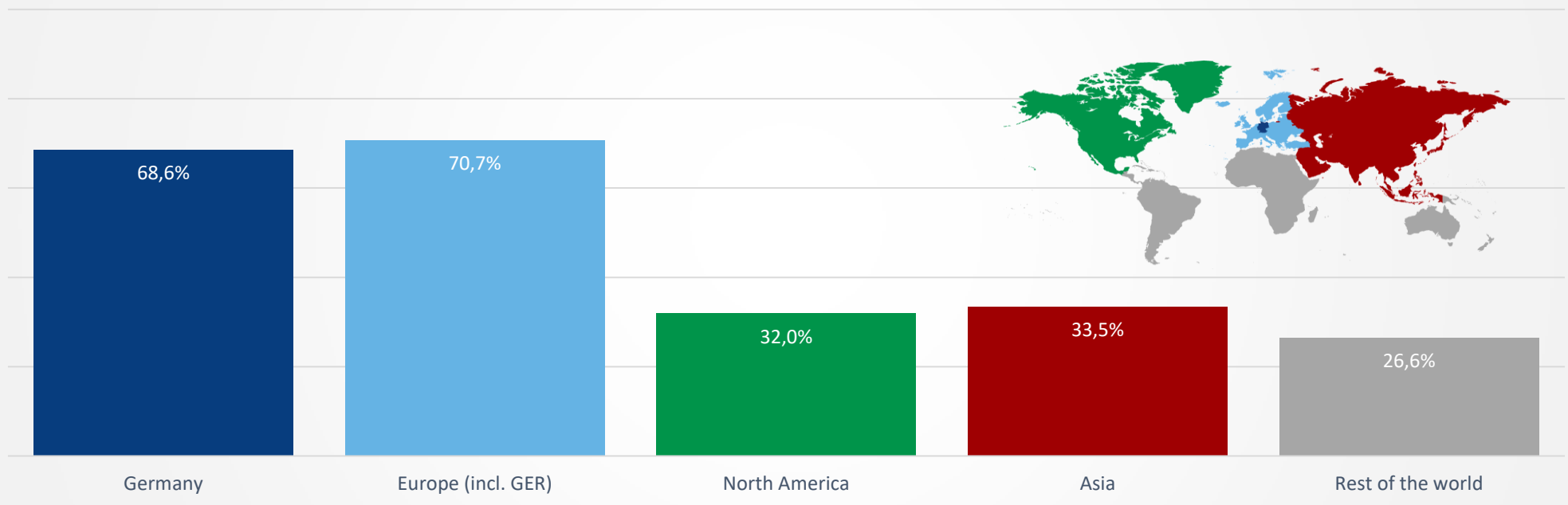
Itemization of answer Production (n = 341; N = 599)



REGIONAL FOCUS

Around 70% of respondents focus on the German and European markets. Over 30% of respondents are also active in the Asian, respectively, the North American markets, and more than 26% operate globally.

On which countries is your company's focus? (n = 851; N = 1.969)



Organised by:



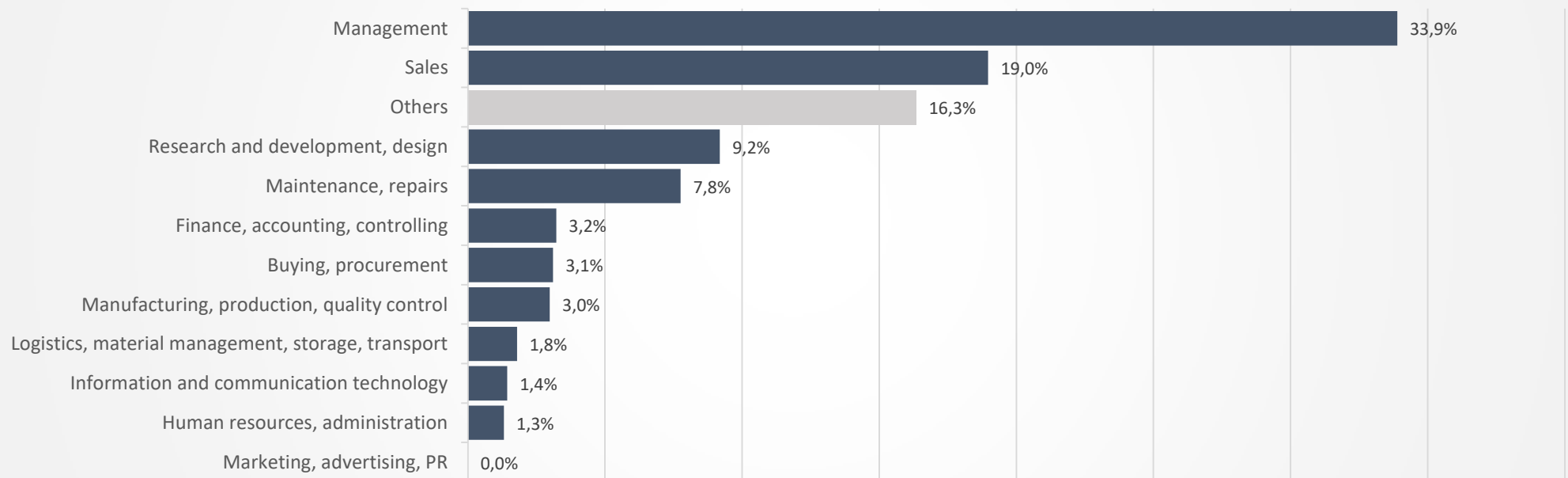
In cooperation with:



RESPONDENT POSITIONS

Similar to 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.

What is your area of responsibility? (n = 838)



WETIX – WINDENERGY trend:index



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



1 – 4 December 2020 | Hamburg

<http://www.windenergyhamburg.com>

Organised by:



In cooperation with:



COPYRIGHT

wind:research

Parkstrasse 123
28209 Bremen, Germany

Ph.: +49 (0) 421 . 43 73 0-0
Fax +49 (0) 421 . 43 73 0-11

Hamburg Messe und Congress GmbH

Messeplatz 1
20357 Hamburg Germany

Ph. +49 40 3569-2442
fax +49 40 3569-2449

Copyright

All contents are protected by copyright. The copyright for any material is reserved. Any duplication or use of objects such as images, diagrams or texts in other electronic or printed publications is not permitted without the author's agreement.

The following uses of the presentation without prior written permission is prohibited:

1. Scanning, or otherwise importing publications into an electronic storage/retrieval system
2. Distribution of publications to other units of the organization through electronic data transmission systems such as e-mail without the purchase of reprints
3. Distribution of publications to external organizations via hard copy or electronically such as via e-mail without the purchase of reprints
4. Distributing copies of publications to customers or prospective customers by company salespeople without the purchase of reprints
5. Posting complete documents on an Internet or Intranet site without the purchase of reprints
6. Posting partial sections of documents on an Internet or Intranet site without approval
7. Placing this content on a Website other than one belonging to wind:research and WindEnergy Hamburg.

This content can be used for editorial purposes only providing the source is mentioned. Please cite/use as following:

© wind:research/WindEnergy Hamburg.

Organised by:



In cooperation with:

