

RESULTS

WINDENERGY

trend:index

MOOD BAROMETER FOR THE
ONSHORE AND OFFSHORE
WIND INDUSTRY
AUTUMN 2024

19-11-2024

 WindEnergy
Hamburg

The global on & offshore event



wind:research

INTRODUCTION

OVERVIEW & PARTICIPATION

The online survey for the 14th edition of the WETix was visited by more than 1,418 individuals, 591 of whom completed the questionnaire entirely. This represents an increase in participation since the last edition of the WETix.

#	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; WEH)	2,414	1,655	958	69 %	40 %	58 %
3	Q2 2019 (02-04 – 13-05-2019)	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, WEH)	2,517	1,277	865	51 %	34 %	68 %
7	Q2 2021 (23-03 – 04-05-2021)	1,384	501	334	36 %	24 %	67 %
8	Q4 2021 (09-09 – 28-10-2021)	1,459	502	322	34 %	22 %	64 %
9	Q2 2022 (14-03 – 14-04-2022)	1,477	874	608	59 %	41 %	70 %
10	Q4 2022 (26-09 – 03-11-2022, WEH)	1,360	842	518	62 %	38 %	62 %
11	Q2 2023 (13-03 – 28-04-2023)	986	543	443	55 %	45 %	82 %
12 *	Q4 2023 (05-09 – 12-10-2023)	640	588	278	92 %	43 %	47 %
13	Q2 2024 (14-03 – 19-05-2024)	815	780	500	96 %	61 %	64 %
14	Q4 2024 (16-09 – 11-11-2024, WEH)	1,418	827	591	62 %	42 %	67 %

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 under-represented compared to the rest of the Asia region. This statement relates to existing onshore and offshore capacities as well as the importance, or rather, the market share of the wind industry (turbines, towers, foundations, projects, development, etc.). * From this point, another method is applied to calculate visitor numbers: We are only counting those who land on the first page of the survey, rather than all those who click the link. This logically results in a lower number of visitors while increasing the participation rates (significantly so).

INTRODUCTION

Objective, Method, Participants

The WindEnergy trend:**index** (WETix), the industry's mood barometer, has been prepared twice every year since 2018 by WindEnergy Hamburg, the global onshore and offshore wind energy event, in cooperation with wind:**research**, the leading market research institute for the wind energy sector.

- The survey covers all onshore and offshore regions globally. The following market regions were defined: Germany, Europe (including Germany), North America, Asia, and Rest of World. In the diagrams, Germany is reflected individually; however, the results for all of Europe include Germany, as well.
- Around 19.7 per cent of respondents work in the offshore segment exclusively and roughly 38.7 per cent are primarily active in the onshore segment. About 35.5 per cent are involved in both the onshore and offshore segments. Companies identifying as “other” (2 per cent) often hail from the hydrogen or photovoltaics industries.
- 45.5 per cent of respondents work in operation and maintenance. Furthermore, around 64.5 per cent are active in manufacturing, 47.1 per cent in planning and project development, and 25.1 per cent carry out installation-related work. Activities within manufacturing are mostly focused on production of wind turbines (19.8 per cent) and other components (26.9 per cent).
- 69.7 per cent of respondents primarily operate in Europe, 65.1 per cent in Germany, about 33.7 per cent in Asia, and 32.3 per cent in North America. About 25 per cent operate in the rest of the world.
- Around 32 per cent of survey participants hold positions in business, corporate or operations management, followed by respondents from sales, R&D and design as well as maintenance and other segments (such as consulting, law).

INTRODUCTION

KEY FINDINGS –

BUSINESS AND MARKET ENVIRONMENT

The current WETix survey reveals a fluctuating mood in both segments, onshore and offshore.

- After a drop of most values was seen in the previous survey, business conditions in both the onshore and offshore segments have received better ratings in this issue. Again the Asian market catches the eye, further increasing its lead over the other markets.
- The mood in the European market is likewise very positive. In the onshore wind energy segment, the European, German and North American markets are at very similar levels.
- Assessments of nearly all aspects of the business environment in both the onshore and offshore segments in Germany have improved.
- The general views of the global market are mixed across all regions but positive across the board.

INTRODUCTION

KEY FINDINGS – MARKET DEVELOPMENT

The results for the global markets reveal a mixed mood. Looking at the short-term assessments of the offshore segment in particular, all markets are trending downwards.

- However, especially the Asian market is now seen in a more positive light compared to last spring's survey result.
- On the other hand, expectations for the next 12 months in the offshore wind segment are less optimistic and unable to maintain their previously high positive level.
- Asia continues to show the most positive mood in both the onshore and offshore segments with regard to the coming 12 months as well as the next two years.
- As for the rest of the world, expectations for the onshore market are slightly up in the short-term, and markedly so in the longer term. On the other hand, the offshore market reveals a slight downturn short-term; however, slight improvements are discernible for the longer term.
- Long-term assessments of the global market for the offshore wind industry result in a mixed picture. In Europe only, respondents had given better marks in the previous WETix, which is why Europe is now at a slightly lower level. The situation in Asia is anticipated to be best two years from now.

INTRODUCTION

KEY FINDINGS – SUMMARY

In this WETix, assessments of the business environment for the offshore and onshore wind segments are trending upwards across all markets, with Asia leading the pack.

- The average mood never drops to the negative quadrant in the present surveys, and compared to all previous WETix trend barometers most ratings remain in the medium to high positive range.
- However, the mood is clearly worse when it comes to the conditions in the rest of the world. On the other hand, Asia again receives very positive marks, especially for the onshore segment.
- Again, long-term ratings of the European offshore market are improving while no longer being more optimistic than for Asia. Respondents also see Asia in the lead when it comes to the current development of the business environment.
- Conspicuously, some markets continue to be neck and neck, with the differences diminishing steadily.

INTRODUCTION

KEY FINDINGS –

TURBINE SIZES – CHALLENGES AND POTENTIAL

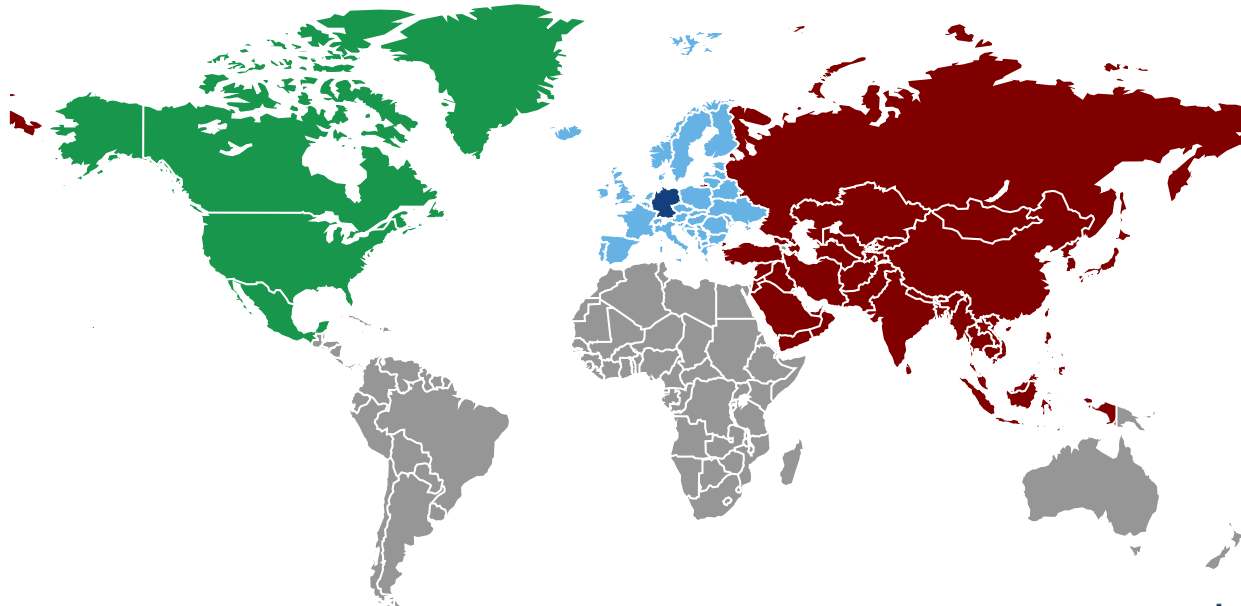
The results of the 14th WETix again show wide-ranging moods about the future business conditions in the wind industry.

- In both segments – onshore as well as offshore –, permitting procedures and hesitant grid expansion are currently perceived as growth barriers.
- In the onshore segment, regulatory issues are an additional challenge, while investment costs are described as a third major obstacle for offshore projects.
- A comparison with the previous year's results highlights the potential and technological progress in terms of turbine sizes for both the onshore and offshore segments:
 - Compared to the previous edition of the WETix report, respondents expect slightly higher output ratings for new onshore turbines installed by 2030 – about 8.55 MW on average. In general, future onshore wind turbines are predicted to be significantly more powerful, a fact that is reflected in the current survey: More than 45 per cent of respondents anticipate output ratings of at least 9 MW.
 - For the offshore segment, respondents are expecting the average rated output of newly-installed turbines to be 19.37 MW by 2030.

*Note: Last year the question about turbine sizes and power output ratings expected for 2030 in both the onshore and offshore segments was asked for the first time in the WETix survey.

OVERVIEW OF COUNTRIES STUDIED

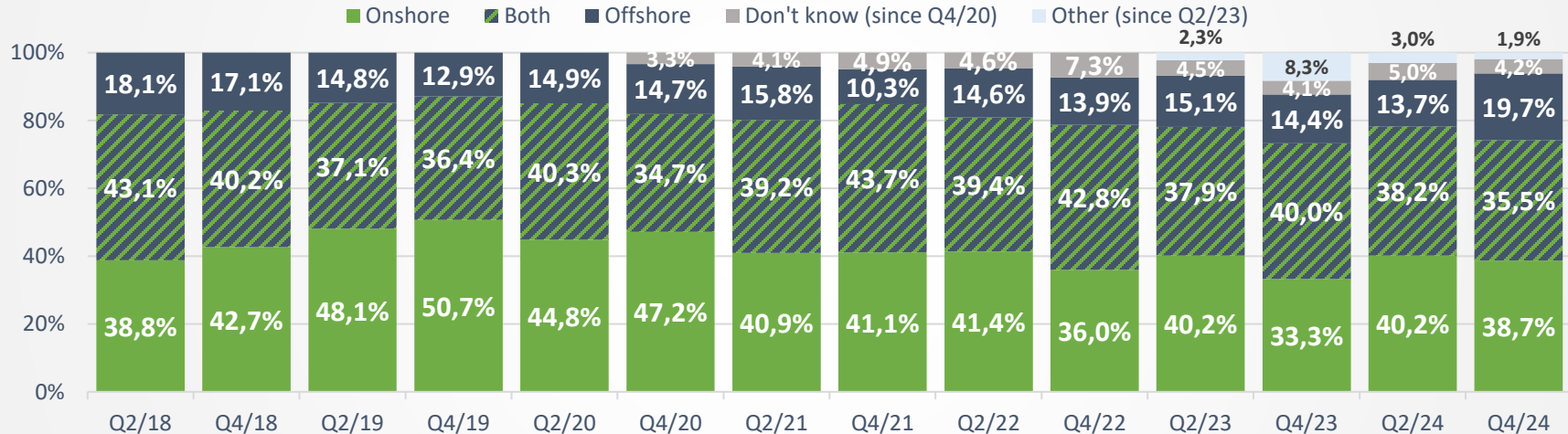
The survey covers all onshore and offshore regions globally. The pre-defined market regions include Germany, Europe (including Germany), North America, Asia and Rest of World (RoW), the latter comprising Africa, Australia as well as Central and South America.



MARKET SEGMENTS

Around 20 per cent of respondents (current issue) work in the offshore segment exclusively, and just under 39 per cent are primarily active in the onshore segment this time. Nearly 36 per cent of respondents, the largest group, serve both segments. Companies identifying as “other” often hail from the hydrogen or photovoltaics industries.

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

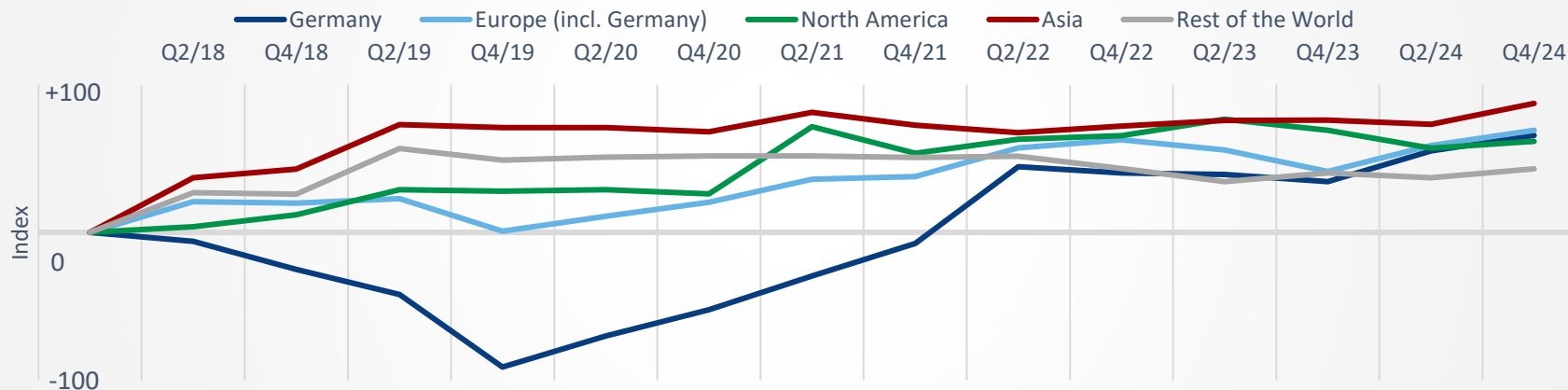


ASSESSMENT OF THE ECONOMIC ENVIRONMENT

ONSHORE WIND

Assessments of the business environment continue to show a long-term positive trend, with Asia in the lead. Ratings for Europe are slightly less positive, closely followed by Germany and North America. Compared to last year, all markets are getting improved overall ratings, and every market with the exception of the Rest of the World remains in the upper positive quadrant.

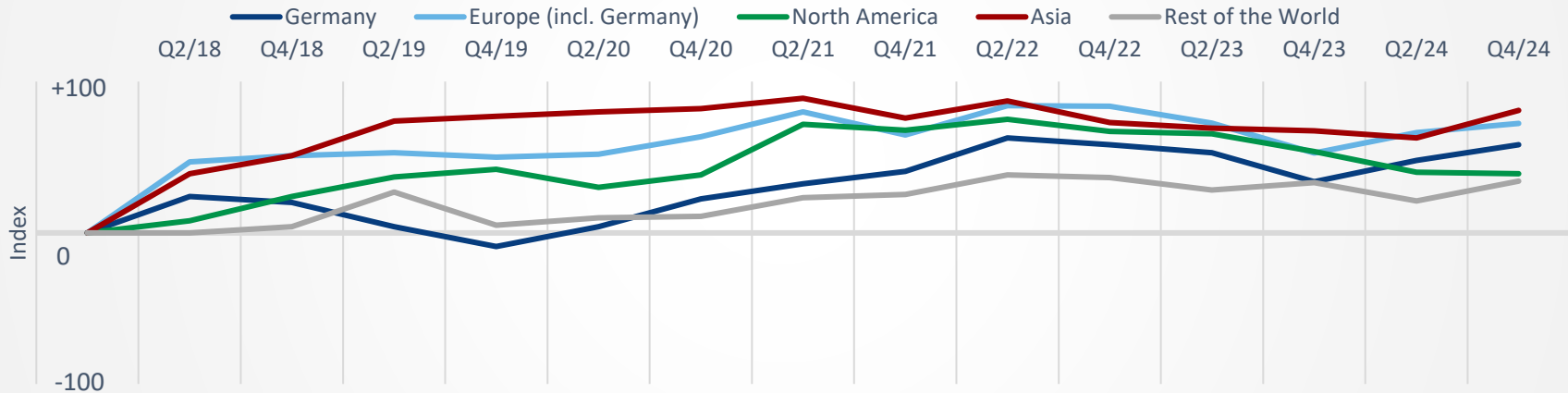
How do you assess the current development of the framework conditions for onshore wind energy (overall: legal, political and social)?



ASSESSMENT OF THE ECONOMIC ENVIRONMENT OFFSHORE WIND

This issue once more indicates improvements of the business environment for the offshore segment. The mood has improved over the previous WETix, with North America the only exception. Conditions for business in Asia have received the best ratings.

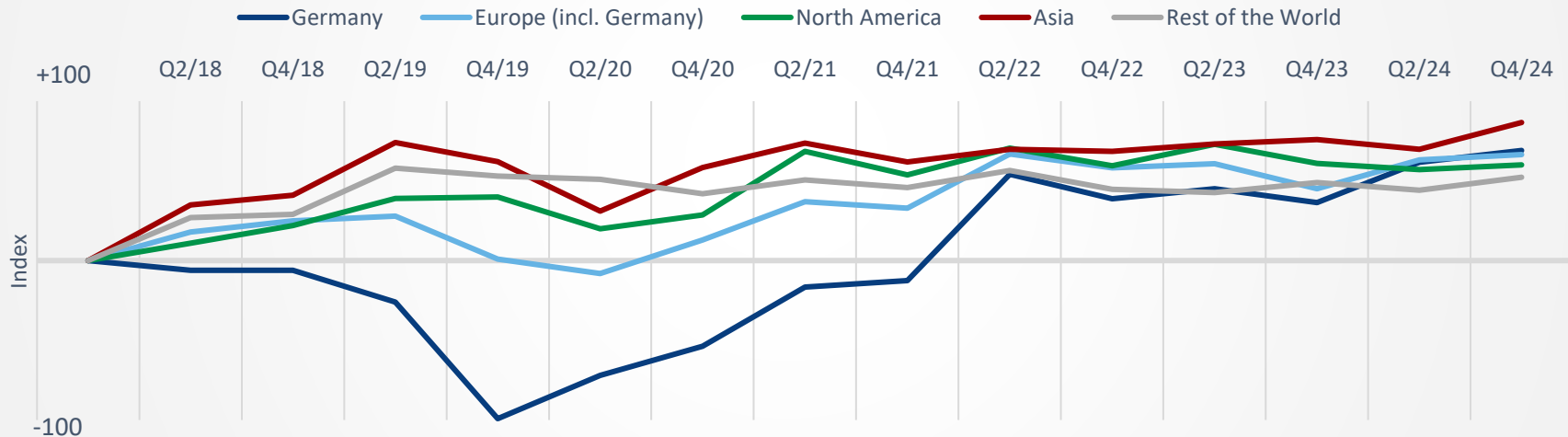
How do you assess the current development of the framework conditions for offshore wind energy (overall: legal, political and social)?



ASSESSMENT OF THE ONSHORE WIND INDUSTRY WORLD-WIDE – NEXT TWELVE MONTHS

The global market for the onshore wind industry has received only slightly better assessments than in the previous WETix survey, with the exception of Asia where participants, similar to their responses given for the business environment, anticipate a marked upturn. So here again Asia is ahead of the other markets.

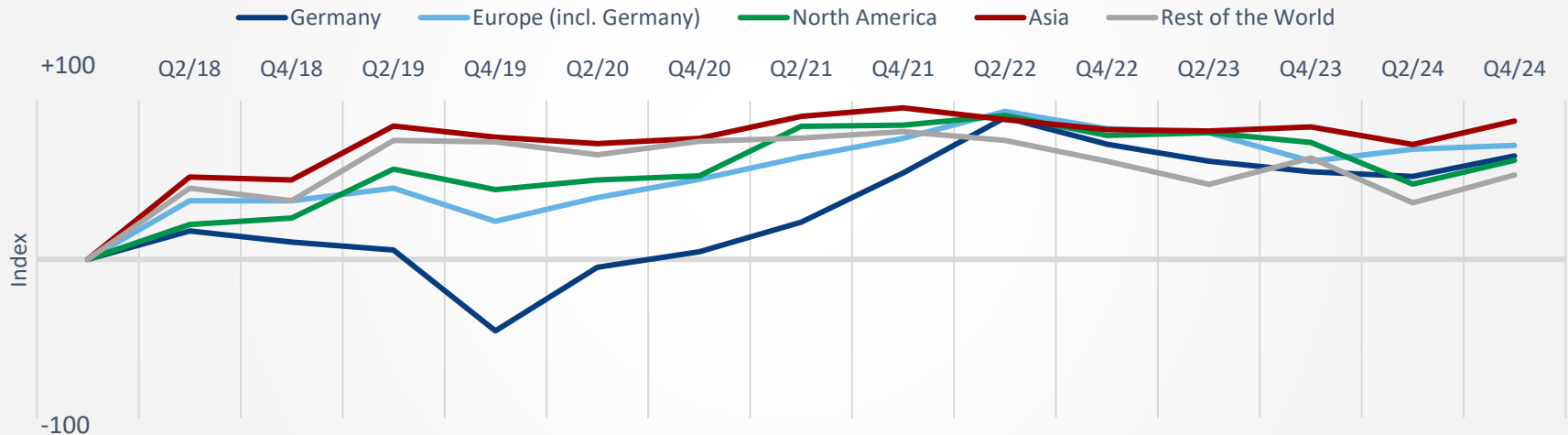
How do you assess the global market for the onshore wind industry in the next twelve months?



ASSESSMENT OF THE ONSHORE WIND INDUSTRY WORLD-WIDE – NEXT TWO YEARS

The mood regarding the future of the onshore wind industry has improved since the previous edition of the WEtix report. Asia once again takes a substantial leap, leaving the other markets behind. All other regions outside Europe have received significantly more positive assessments.

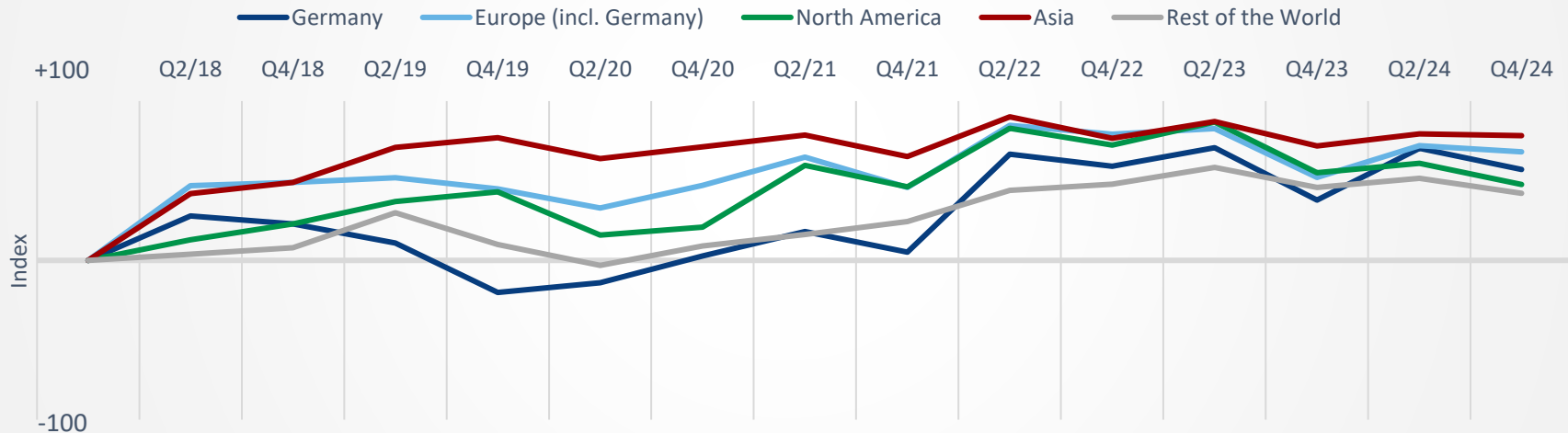
How do you assess the global market for the onshore wind industry
in two years?



ASSESSMENT OF THE OFFSHORE WIND INDUSTRY WORLD-WIDE – NEXT TWELVE MONTHS

While the onshore wind industry received better marks across all markets than in the previous issue of the report, the new survey reveals a negative trend in the assessments of the global market for offshore wind where ratings for all regional markets are less favourable. Nevertheless, the mood in general remains positive.

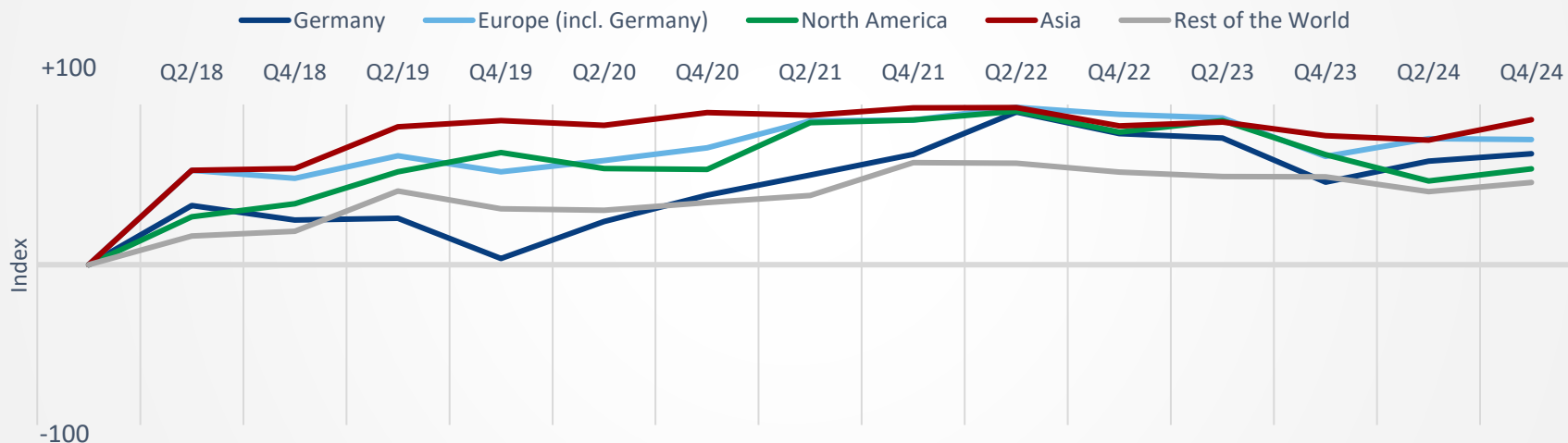
How do you assess the global market for the offshore wind industry in the next twelve months?



ASSESSMENT OF THE OFFSHORE WIND INDUSTRY WORLD-WIDE – NEXT TWO YEARS

When it comes to expectations for the coming two years, Europe is unable to continue the positive trend seen in earlier surveys. Again, Asia is far ahead, while the remaining markets show only a slight upward trend in their assessments of the offshore wind industry's perspectives. Compared to the 12-month analysis of the market for the offshore wind industry, respondents anticipate more positive developments in the medium term only.

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

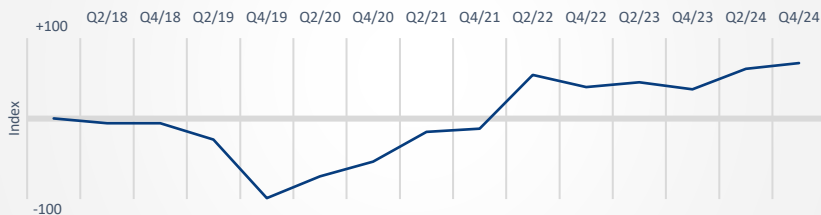


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND INDUSTRY IN GERMANY

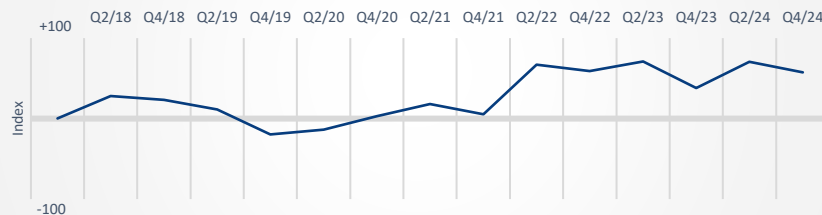
COMPARISON: NEXT TWELVE MONTHS VS. NEXT TWO YEARS

Compared to the previous survey, the mood about the next twelve months has improved for the onshore segment only. However, expectations for the next two years are more hopeful for both, the onshore and offshore segments in Germany.

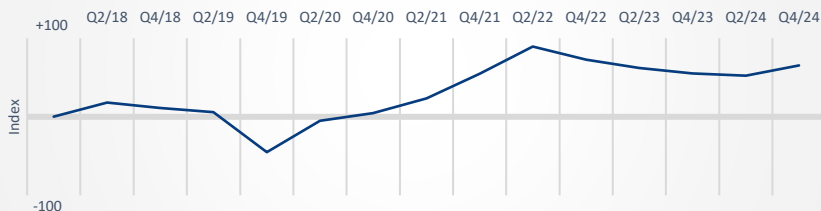
How do you assess the global market for the **onshore wind industry** in **Germany** in the next twelve months?



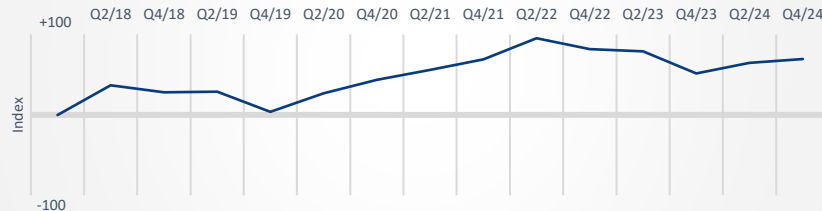
How do you assess the global market for the **offshore wind industry** in **Germany** in the next twelve months?



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



How do you assess the global market for the **offshore wind industry** in **Germany** in the next two years?

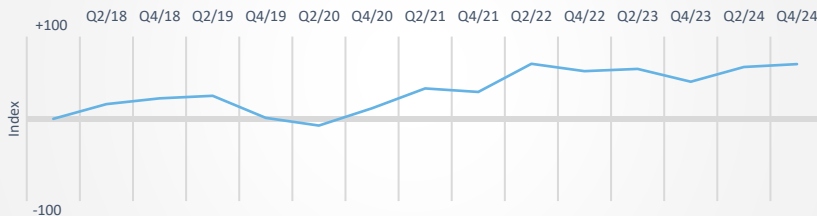


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND INDUSTRY IN EUROPE (INCLUDING DE)

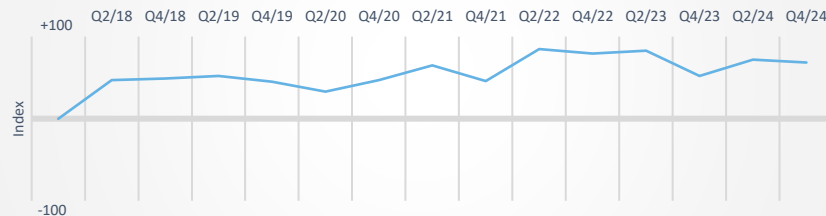
COMPARISON: NEXT TWELVE MONTHS VS. NEXT TWO YEARS

Assessments of the onshore and offshore market in Europe are quite similar. However, expectations for the offshore segment over the coming 12 months are trending slightly downward.

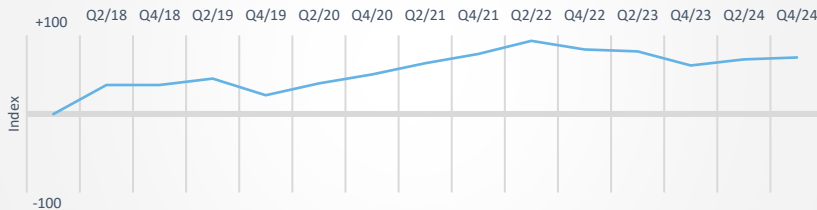
How do you assess the global market for the **onshore wind industry** in Europe (incl. GER) in the next twelve months?



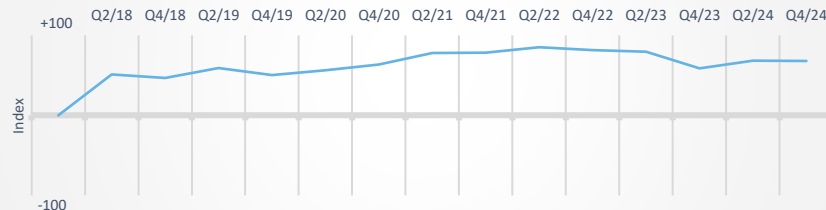
How do you assess the global market for the **offshore wind industry** in Europe (incl. GER) in the next twelve months?



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



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

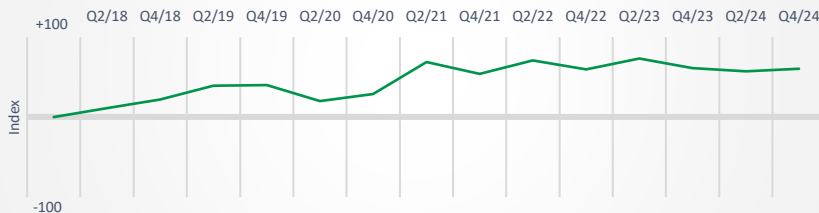


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND INDUSTRY IN NORTH AMERICA

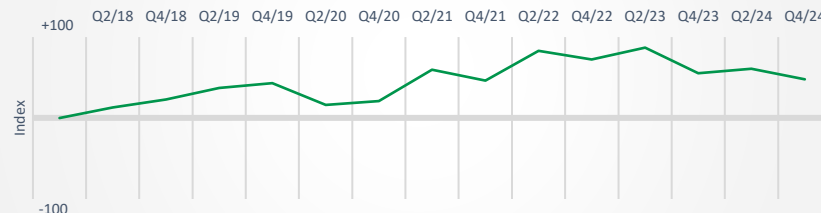
COMPARISON: NEXT TWELVE MONTHS VS. NEXT TWO YEARS

The mood within the North American market is improving slightly or markedly in both segments, with the development of the offshore market over the next 12 months as the only exception. In general, the mood remains positive across all segments.

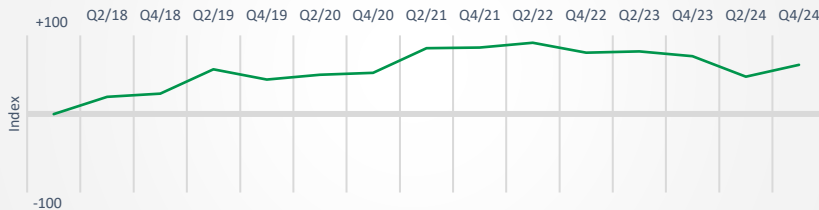
How do you assess the global market for the **onshore wind industry** in North America in the next twelve months?



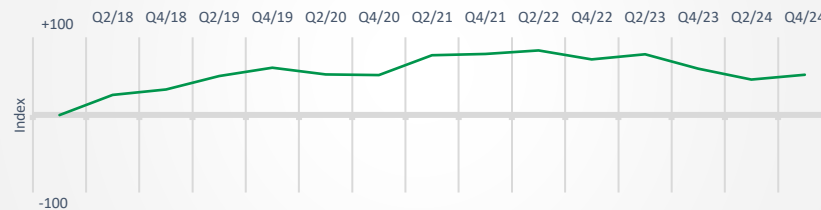
How do you assess the global market for the **offshore wind industry** in North America in the next twelve months?



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



How do you assess the global market for the **offshore wind industry** in North America in the next two years?

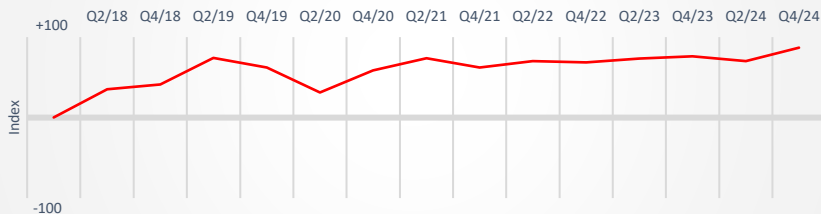


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND INDUSTRY IN ASIA

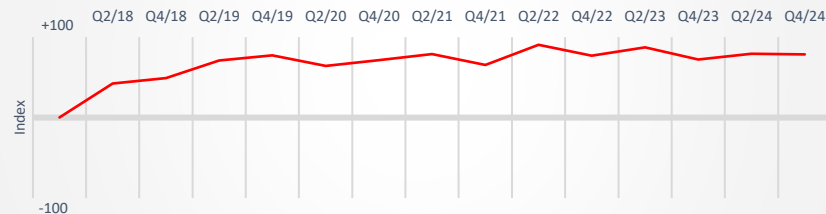
COMPARISON: NEXT TWELVE MONTHS VS. NEXT TWO YEARS

The assessments of the Asian market are again more positive than in the previous edition of the WETix survey. The only exception, much like in the other markets, is the upcoming 12-month period in the offshore market. Nevertheless, Asia has received the best ratings among all regions.

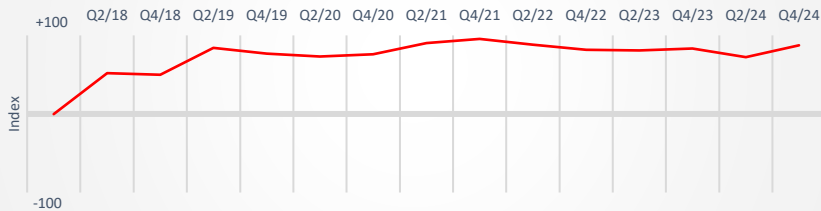
How do you assess the global market for the **onshore wind industry** in Asia in the next twelve months?



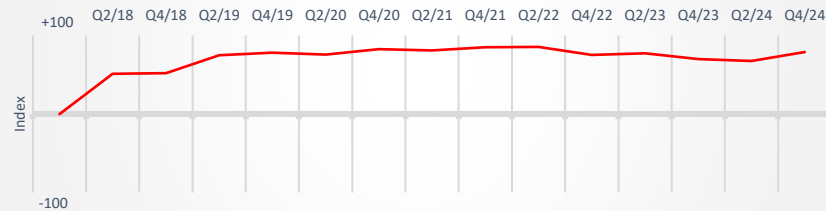
How do you assess the global market for the **offshore wind industry** in Asia in the next twelve months?



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



How do you assess the global market for the **offshore wind industry** in Asia in the next two years?

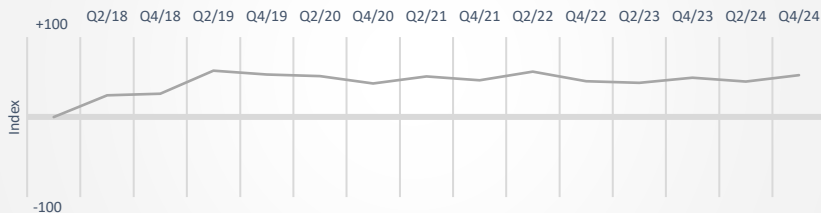


ASSESSMENT OF THE ONSHORE AND OFFSHORE WIND INDUSTRY – REST OF WORLD

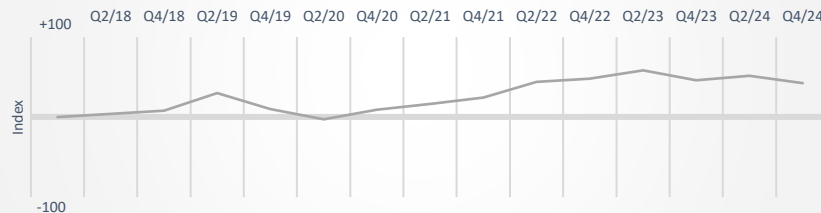
COMPARISON: NEXT TWELVE MONTHS VS. NEXT TWO YEARS

In a comparison of all markets, the rest of the world continues to receive the lowest marks. There is only a slight improvement discernible for both the onshore and offshore segments in the short and long term (except for the offshore market in the next 12 months). However, expectations are generally positive.

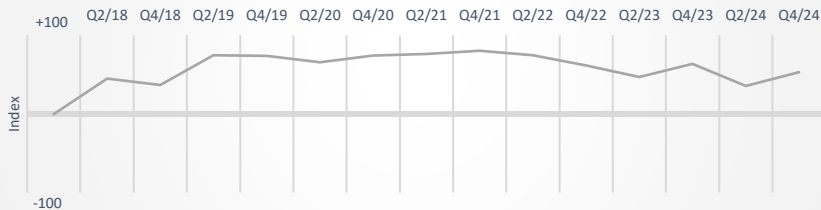
How do you assess the global market for the **onshore wind industry** in the **rest of the world** in the next twelve months?



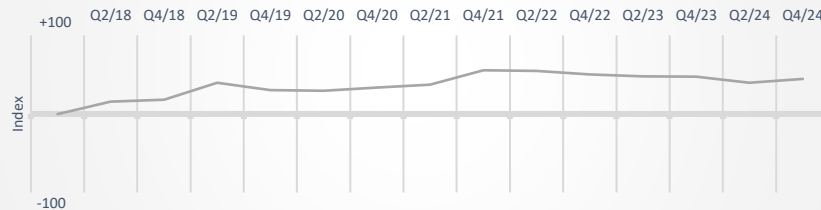
How do you assess the global market for the **offshore wind industry** in the **rest of the world** in the next twelve months?



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



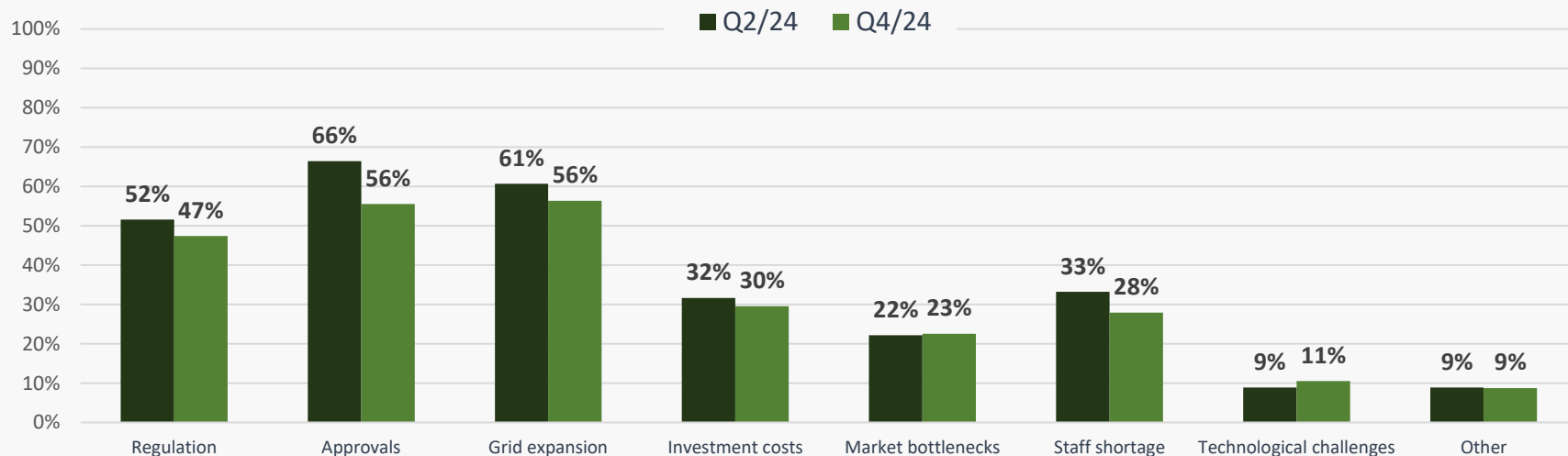
How do you assess the global market for the **offshore wind industry** in the **rest of the world** in the next two years?



CHALLENGES FOR FURTHER WIND ENERGY DEVELOPMENT – ONSHORE WIND ENERGY

Permitting, grid upgrading and regulatory matters continue to be the greatest obstacles to onshore wind energy expansion. Nevertheless, these as well as other challenges – such as investment cost, personnel shortages and others – have become less significant compared to the previous survey, with an almost 10 per cent drop that consequently represents a positive trend.

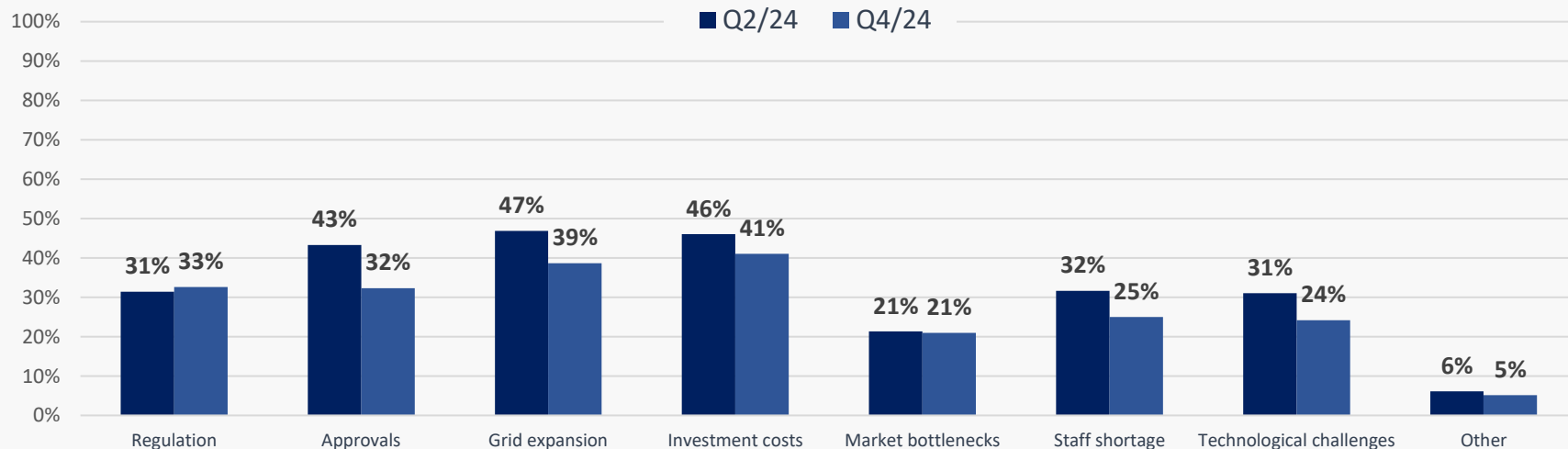
What are currently the most significant barriers to the expansion of onshore wind energy?



CHALLENGES FOR FURTHER WIND ENERGY DEVELOPMENT – OFFSHORE WIND ENERGY

In the current edition of the WETix survey, respondents rated grid expansion, permitting and investment costs as the most severe challenges in the offshore wind energy segment. Yet, similar to the onshore segment, these values have shrunk for offshore wind energy, compared to the previous WETix.

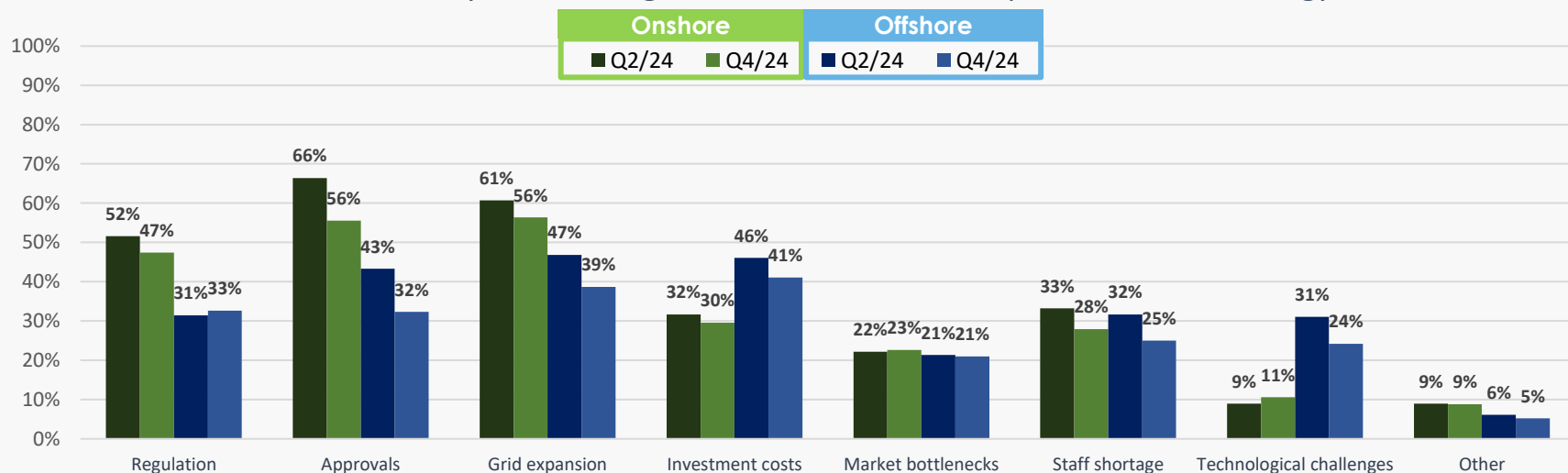
What are currently the most significant barriers to the expansion of offshore wind energy?



CHALLENGES FOR FURTHER WIND ENERGY DEVELOPMENT – OFFSHORE WIND ENERGY

The comparison reveals that respondents continue to believe that grid expansion and permitting are the biggest hurdles in both the onshore and offshore wind energy segments.

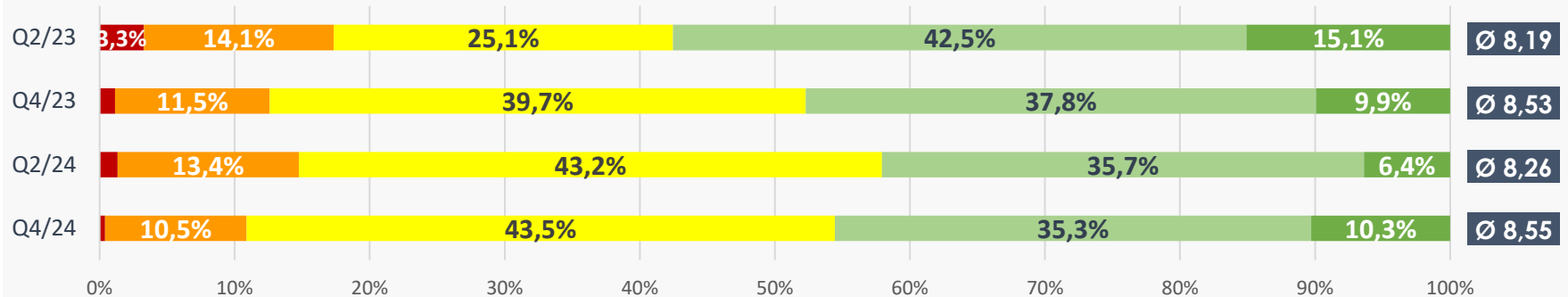
What are currently the most significant barriers to the expansion of wind energy?



Compared to the previous edition of the WETix report, respondents expect slightly higher output ratings for new onshore turbines installed by 2030 – about 8.55 MW on average. In general, future onshore wind turbines are predicted to be significantly more powerful, a fact that is reflected in the current survey: More than 45 per cent of respondents anticipate output ratings of at least 9 MW.

Specifically, how do you estimate the future development of turbine sizes: **How much power will newly installed onshore turbines have on average in 2030?**

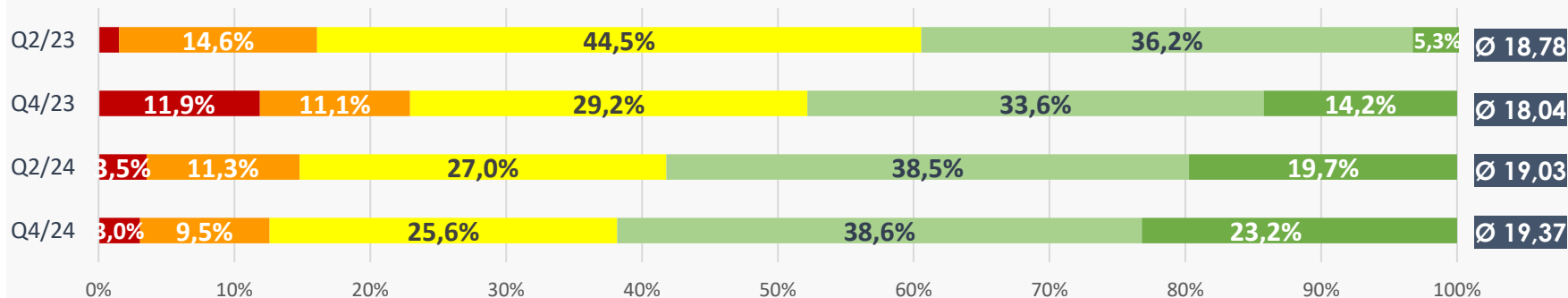
■ 3 bis < 5 ■ 5 bis < 7 ■ 7 bis < 9 ■ 9 bis < 11 ■ 11 bis 12



For the year 2030, the expected average rated output of newly-installed offshore turbines increases from 19.03 to 19.37 MW. The market continues to feel the pressure, as evident in this survey: More than 23 per cent of respondents anticipate output ratings of 22 to 25 MW.

Specifically, how do you estimate the future development of turbine sizes: **How much power will newly installed offshore turbines have on average in 2030?**

■ 10 bis < 13 ■ 13 bis < 16 ■ 16 bis < 19 ■ 19 bis < 22 ■ 22 bis 25

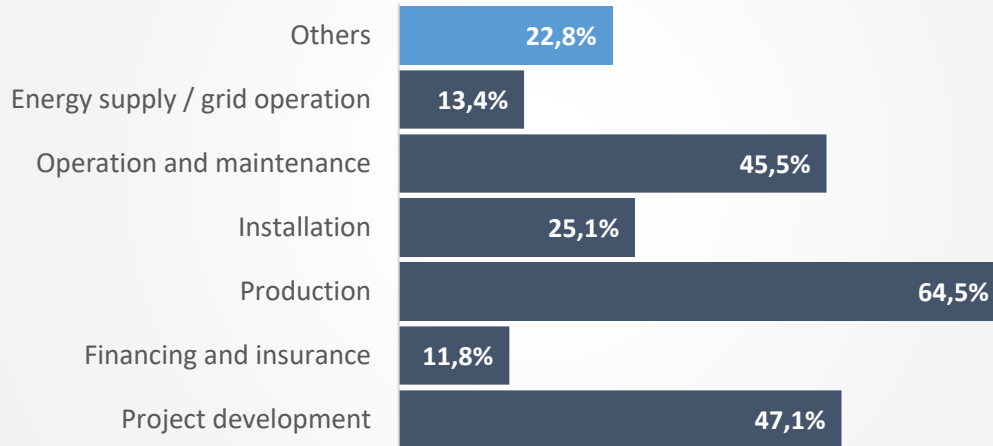


ACTIVITIES WITHIN THE VALUE CHAIN

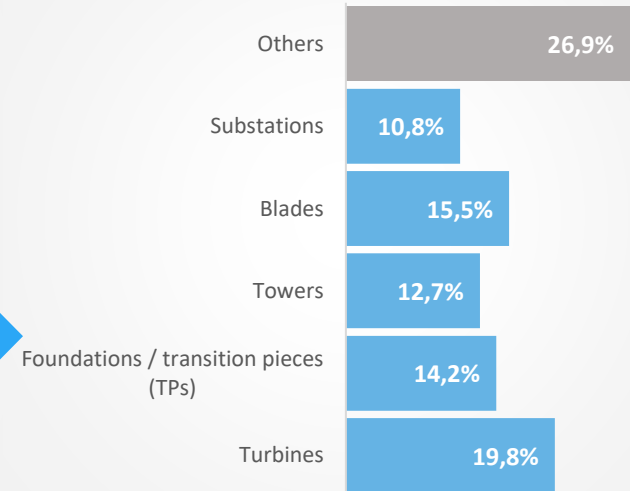
(MULTIPLE RESPONSES ALLOWED)

Most of the companies participating in this survey are from the “Manufacturing” sector, with more than half identifying with this stage of the value chain. The “Others” stage of the value chain denotes companies active in fields such as consulting.

On which level of the value chain is your company’s activity in the wind energy industry?



Itemization of answer Production

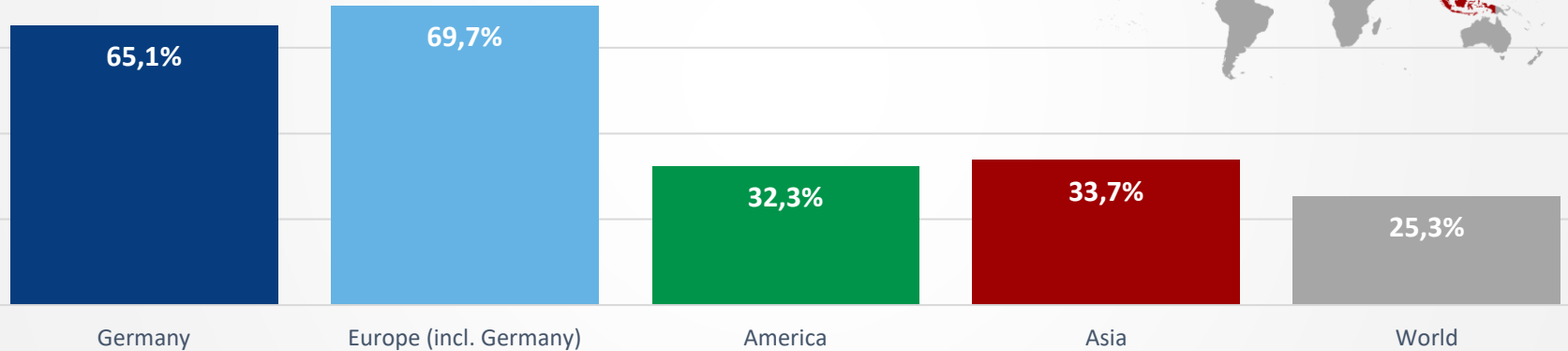


REGIONAL FOCUS

(MULTIPLE RESPONSES ALLOWED)

Nearly two thirds of respondents mainly operate in Germany, and nearly 70 per cent in Europe, the latter representing the largest pool of respondents approached for the survey. With slightly over 30 per cent, Asia and North America each contribute about the same portion of respondents. One year ago this value was still at just over 35 per cent.

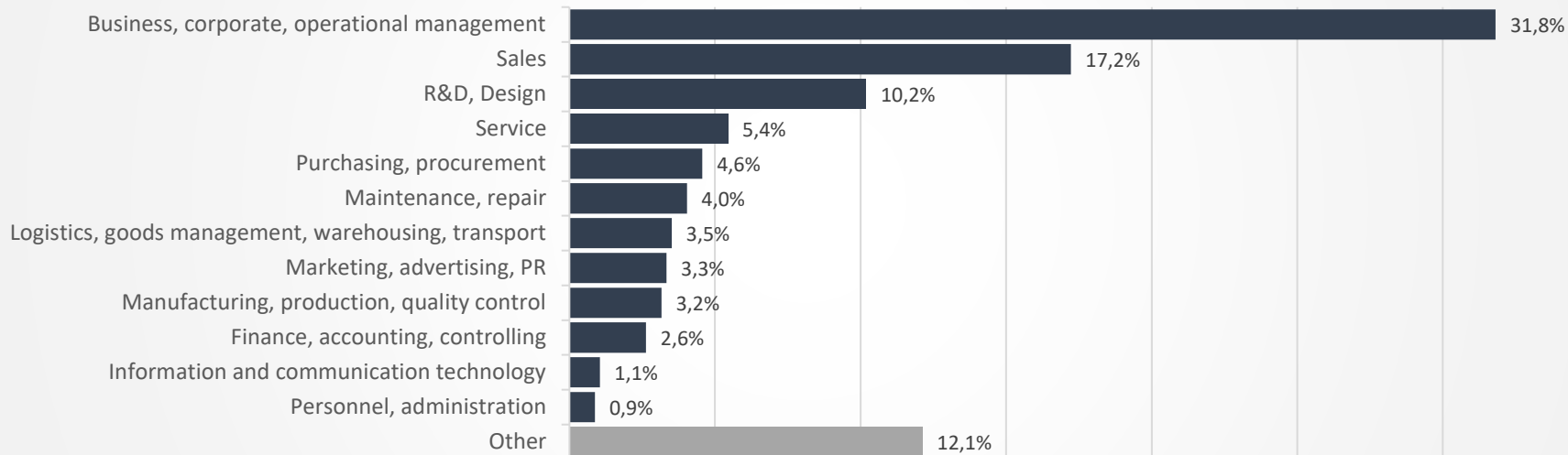
On which countries is your company's focus?



RESPONDENTS' FIELDS OF ACTIVITY

As in earlier editions of the WEtix survey, the largest group of respondents hold leadership positions in their companies; this time, a share of less than 32 per cent fit this description, fewer than the 36 per cent in the survey the year before. Other major respondent groups include employees working in sales or research & development, respectively, design.

What is your area of responsibility?



wind:research

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