GREEN ENERGY
EXPORT DAY 2023

MINISTRY OF FOREIGN AFFAIRS OF DENMARK

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GREEN ENERGY EXPORT DAY 2023

WORKSHOP 1:

Global market outlook – the priorities for Danish wind export

WELCOME

GREEN ENERGY EXPORT DAY 2023

WORKSHOP 1:

Global market outlook – the priorities for Danish wind export

Global market update
Carsten Brinck, Managing Partner, Brinkmann Group

High speed feedback from the regions: Americas, Europe and Asia
Morten Siem Lynge, Director of Energy, Trade Council North America, and Consul General in Houston
Markus Adrian, Senior Commercial Advisor, Ministry of Foreign Affairs
Sune Strøm, Energy Counsellor, Danish Embassy in Japan

Panel debate: Where do the industry see the global hotspots?
Jørgen Skovmose Madsen, Head of Regulatory and Public Affairs, New Markets & EU, Ørsted
Wadia Fruergaard, Head of Policy Positioning & Public Funding, Vestas
Dorte Kamper, Vice President, LM Wind Power
Carsten Brinck, Managing Partner, Brinkmann Group

Reflections on the industry perspectives
Morten Siem Lynge, Director of Energy, Trade Council North America, and Consul General in Houston
Markus Adrian, Senior Commercial Advisor, Ministry of Foreign Affairs
Sune Strøm, Energy Counsellor, Danish Embassy in Japan

Moderator
Anders Mika Dalegaard, Head of Department, Green Power Denmark

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Global market update

Carsten Brinck, Managing Partner, Brinkmann Group

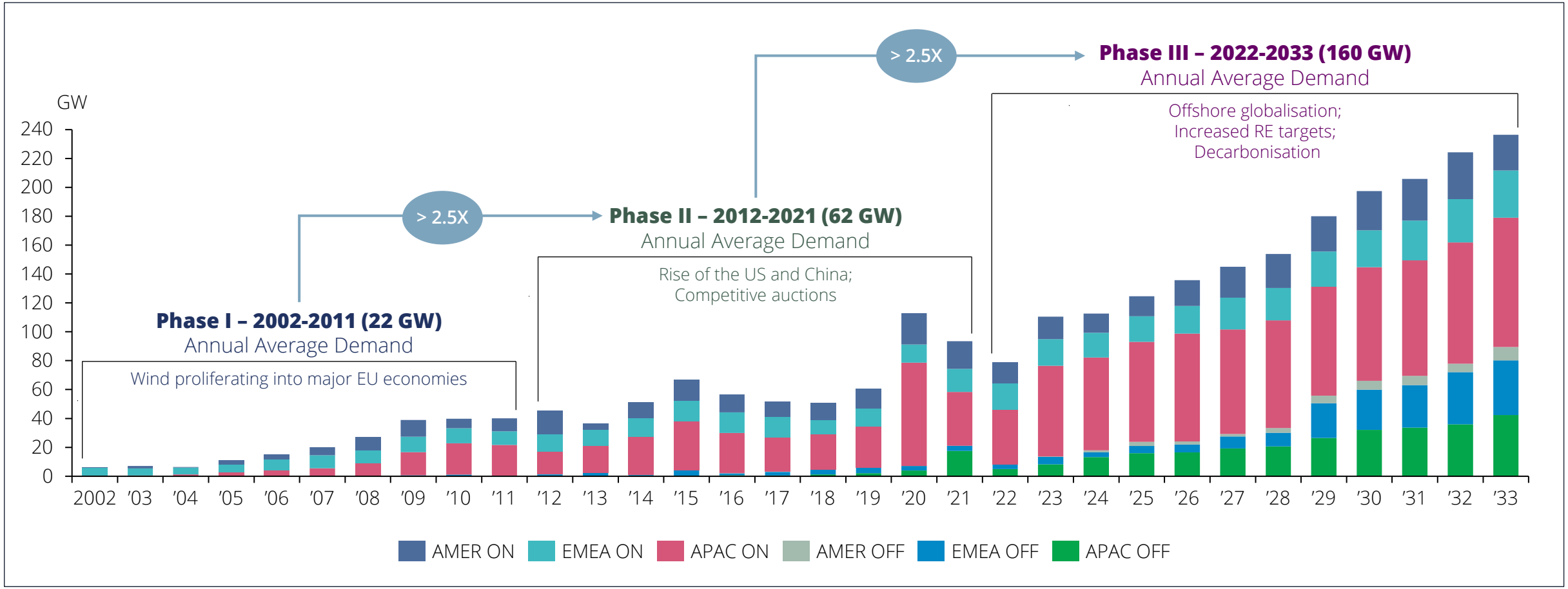
GLOBAL WIND MARKET TRENDS & DEVELOPMENTS

Green Energy Export Day | 29 August 2023

Carsten Brinck

The global Wind industry is to attract USD two trillion in the next decade, delivering an average annual 160GW demand.

Global Onshore and Offshore Wind Installed Capacity 2002 to 2033



Note: ON-Onshore ; OFF - Offshore

Sources: Brinckmann; Historical data from GWEC, ACP and WindEurope

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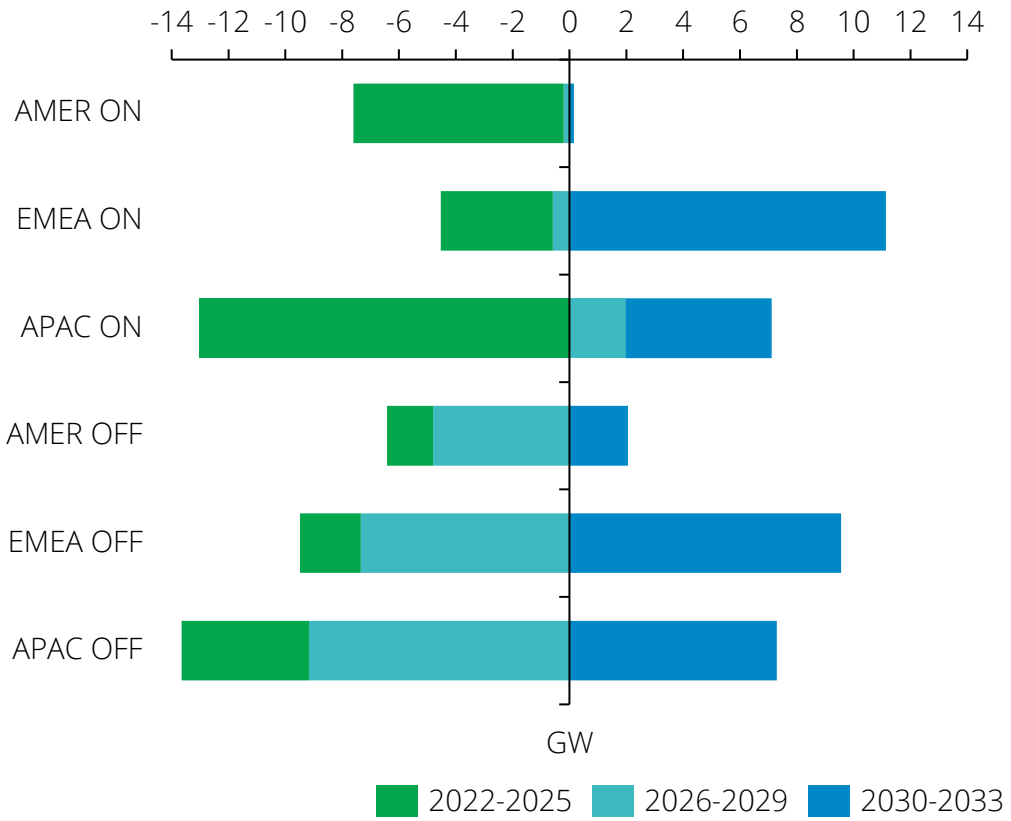
Macro- and Microenvironments delay the project realisation and, in a few cases, project attrition.

Changes To Market Forecasts in H2-2023 vs. H1-2023



Key Takeaways

- **AMER ON:** Delay in Wind project investments decision due to lack of additional clarity on the IRA rules. GE is currently the company that has primarily benefitted from the legislation due to the strong supply chain footprint in the US.
- **APAC ON:** Near-term marginal slowdown in China due to project delays. The profitability of the turbine OEMs has dwindled amid significant price erosion. Some initial signs of price increases were seen in early H2-2023. Due to price increases, developers delay and shelve investment decisions.
- **AMER OFF**: Developers failed attempts to renegotiate projects' PPAs (Power Purchasing Agreements) with utilities, resulting in uncertainty
- **EMEA OFF:** Cost inflation, turbine OEMs' dire financial situation, and increased interest rates force developers to cancel projects. Vattenfall cancelled the Norfolk project in the UK despite the CfD grant. However, increased demand in the decade's second half in new markets like Sweden, Norway and Spain offset some volume declines.

Source: Brinckmann

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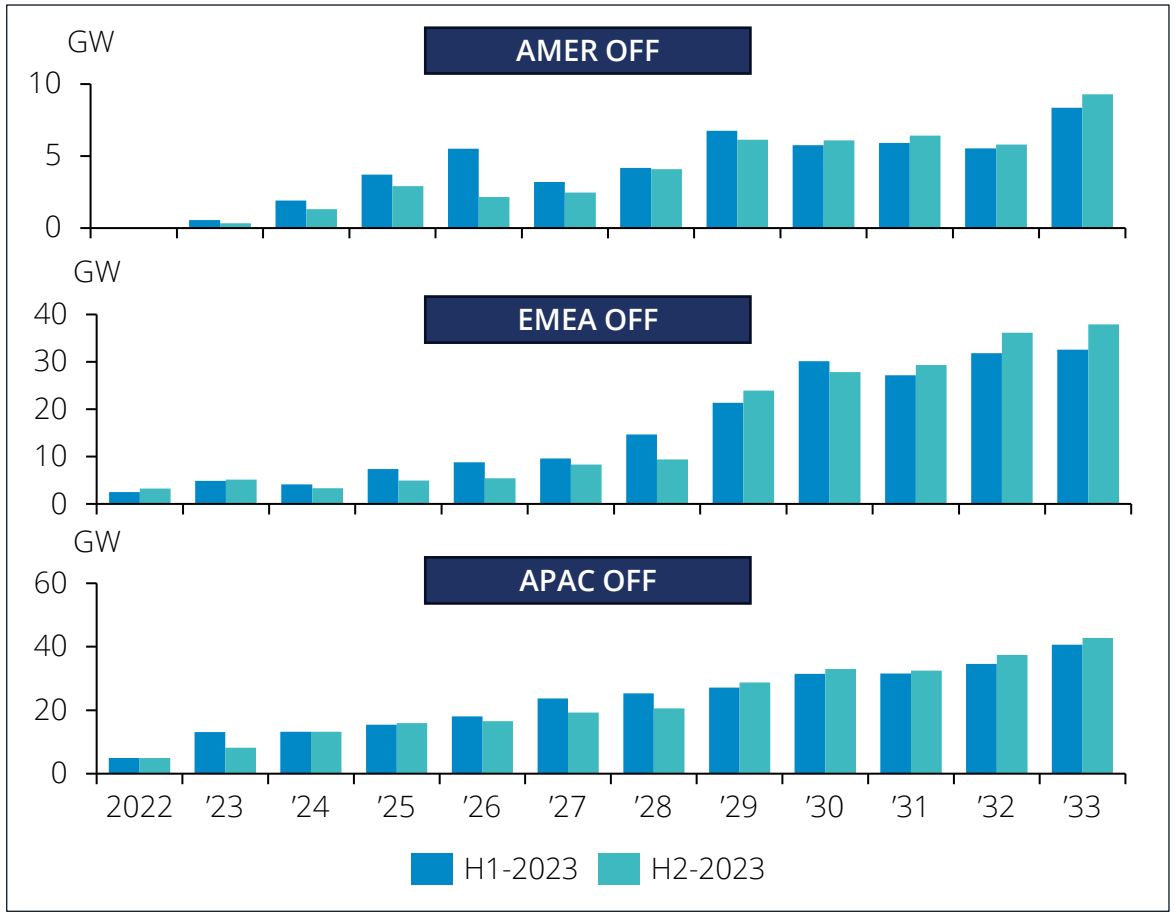
APAC markets dominate the growth in both onshore and offshore segments through out the forecast period.

Regional Onshore Wind Market Forecasts 2022 to 2033

Regional Offshore Wind Market Forecasts 2022 to 2033

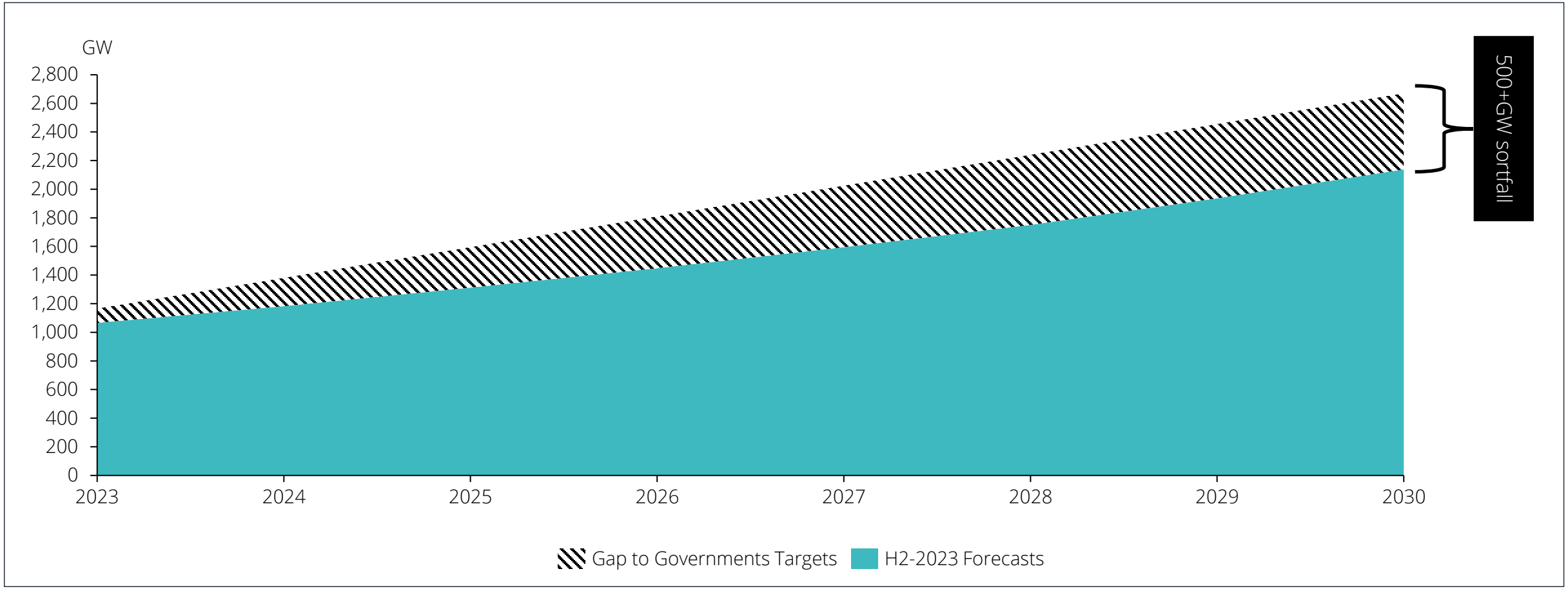


Note: APAC- Here Asia Pacific Excluding China; ON = Onshore; OFF = Offshore

Source: Brinckmann

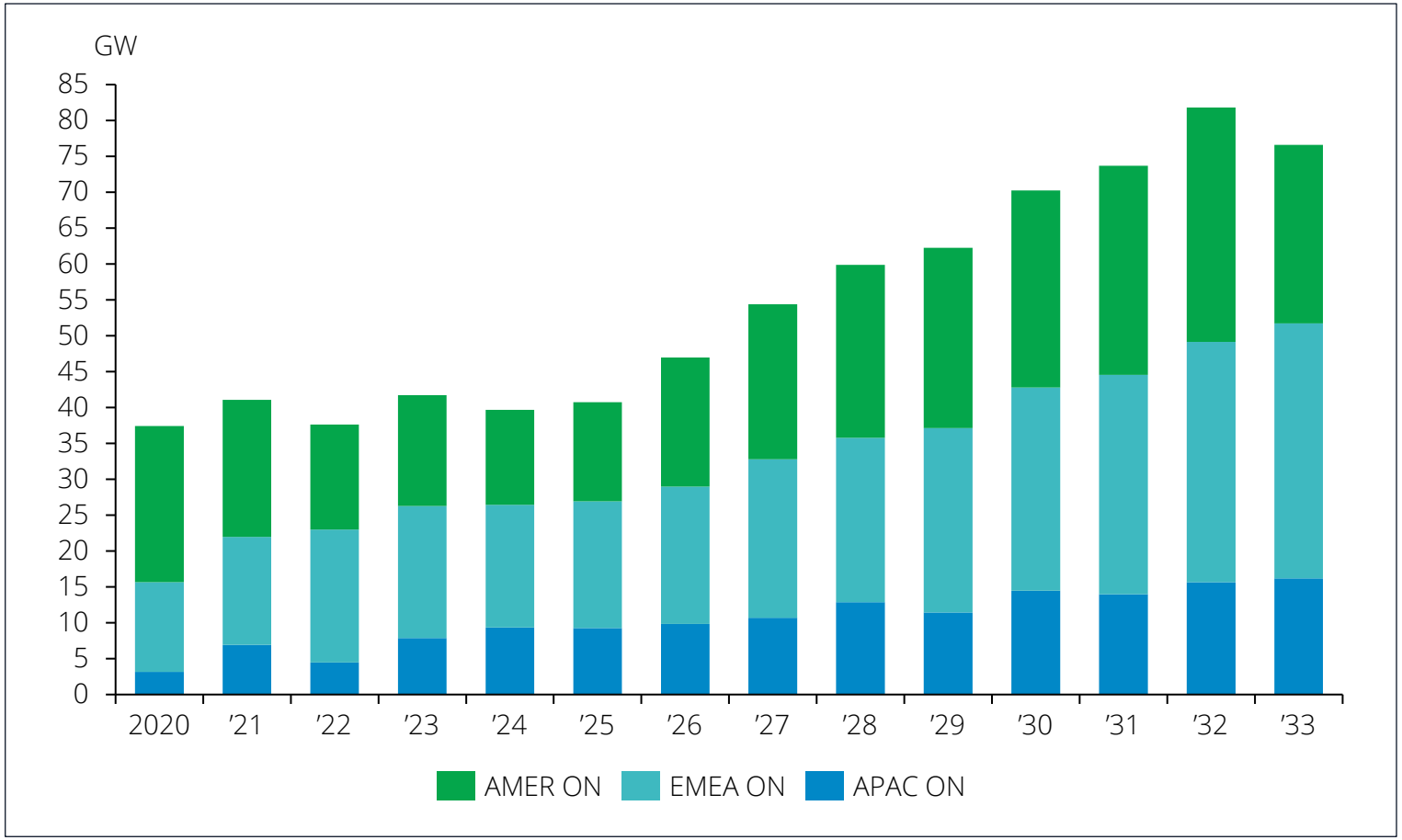
Despite more than two-fold growth in average annual installations, the market is to witness more than 500GW of shortfall to ambitious targets.

Global Wind Industry Cumulative Market Forecasts from 2023 to 2030 vs. Gap to Meet Government Targets



Onshore market to remain flat in the next two years, US IRA and RepowerEU, drive the Wind installations across conventional Wind markets.

Global Onshore Excluding China Market Forecasts 2020-3033



Key Takeaways

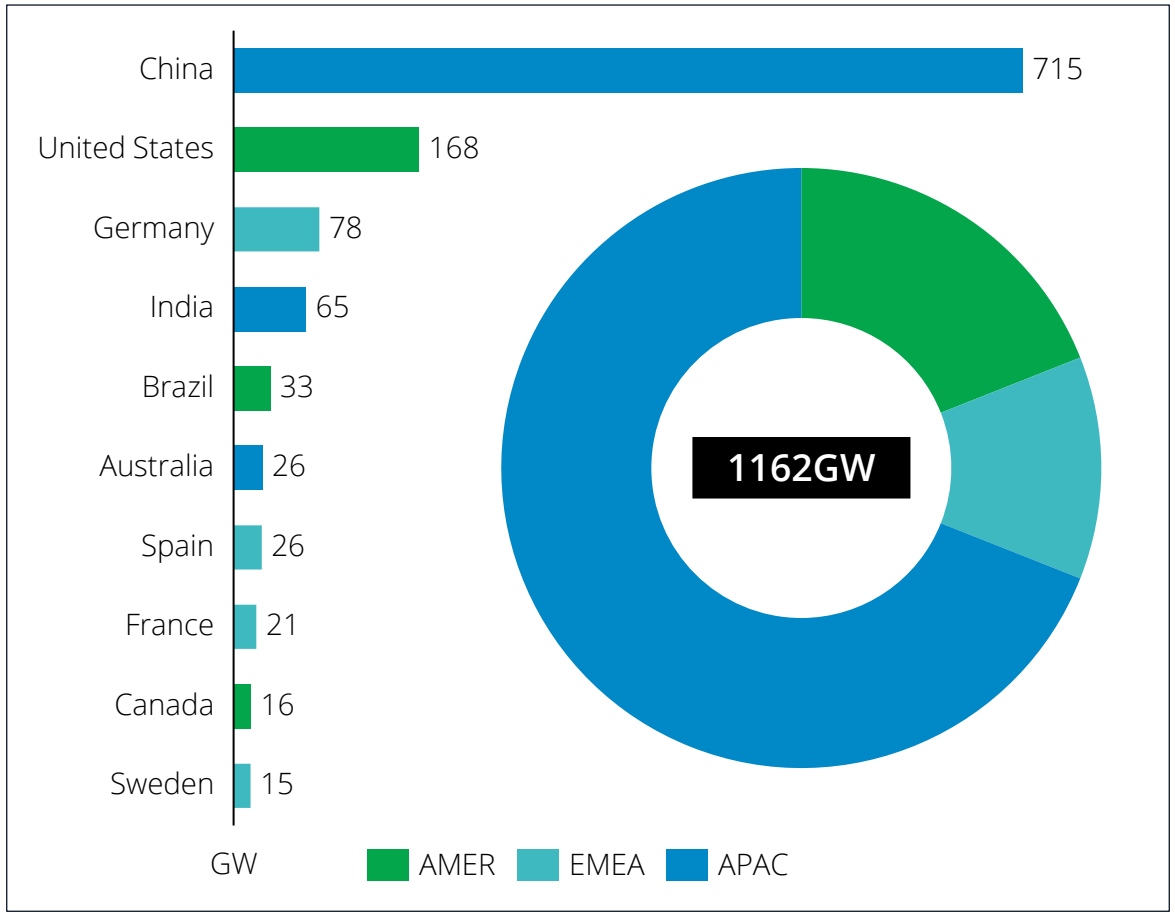
- The Global excluding China onshore market is expected to stay flat in the next two years, driven by a slowdown in turbine OEMs order intake activity due to a plethora of challenges.
  - The aftermath of COVID affected the Wind installation activity.
  - The commodity cost inflation.
  - Higher logistics costs and shortage of container ships.
  - Europe's energy crisis stemming from Russia's invasion of Ukraine.
- All these factors adversely affected the turbine OEM's margins. To combat these challenges, companies raised turbine prices by 30-40% in the past eight quarters.
- The commercial turbine supply agreements are taking much longer vs. business-as-usual, resulting in lower order intake activity in the markets.
- The global excluding China market is predominately driven by the US market during the forecast period.
- Emerging markets across the three regions will accelerate the volume in the second half of this decade.

Note: APAC- Here Asia Pacific Excluding China; FiT – Feed-In-Tariff

Source: Brinckmann

While the AMER region dominates the Global ex. China markets, EMEA markets dominate the offshore segment.

Top 10 Onshore Wind Markets Cumulative Capacity (2023 to 2033)



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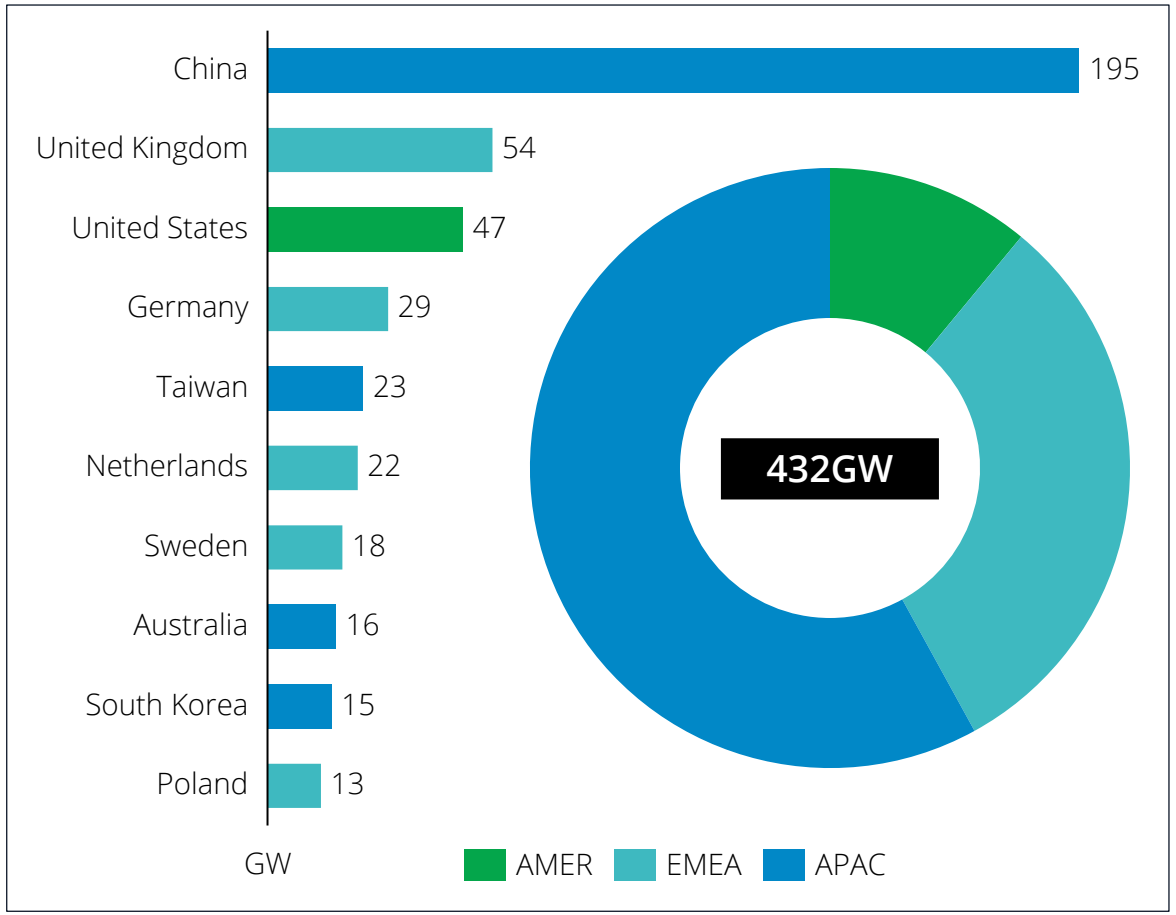

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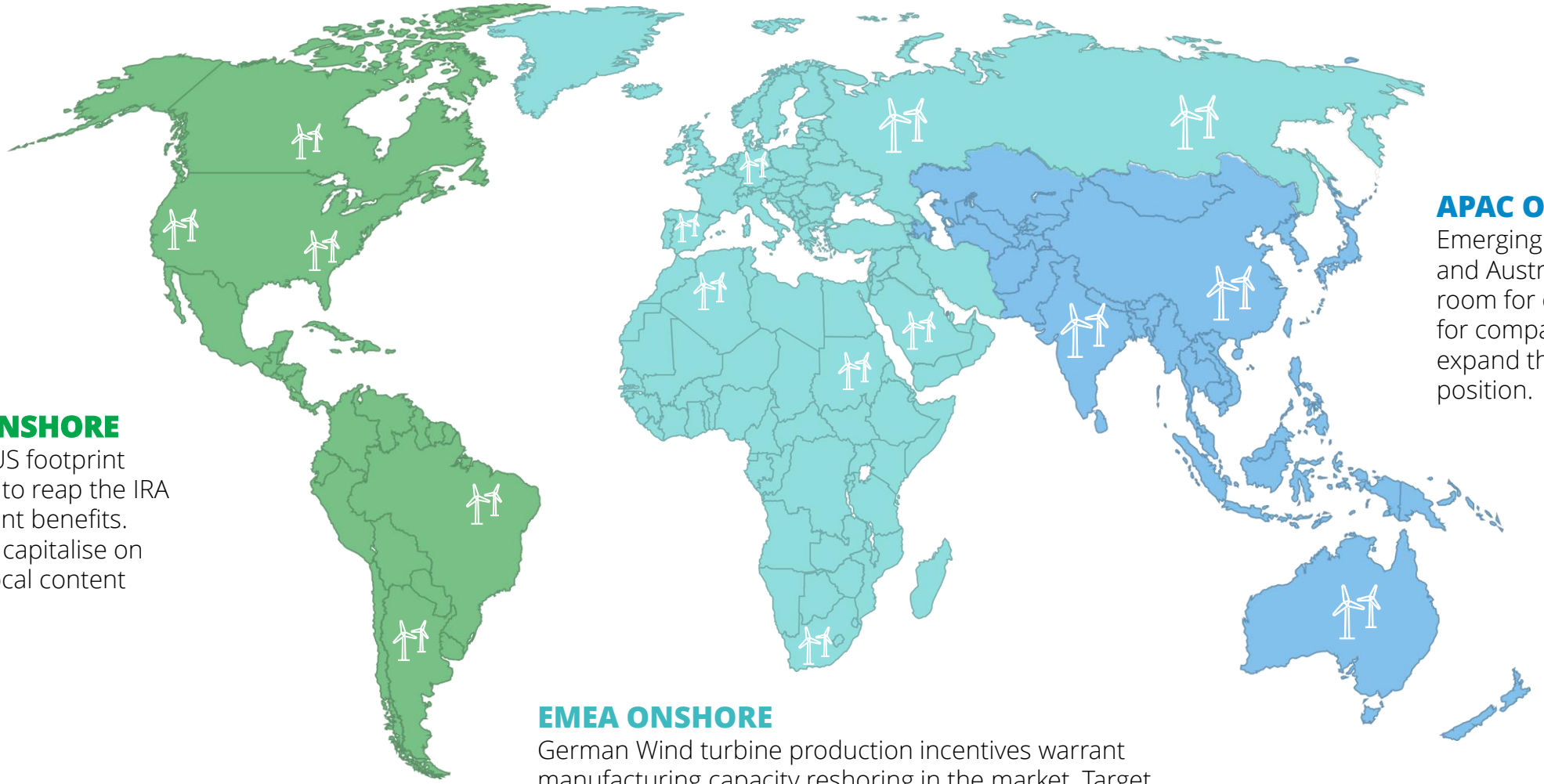
What companies should consider in relation to onshore market strategies?



AMER ONSHORE
Focus on US footprint expansion to reap the IRA local content benefits. Cautiously capitalise on Brazilian local content demand.

APAC ONSHORE
Emerging growth in India and Australia offers room for opportunities for companies to expand their market position.

EMEA ONSHORE
German Wind turbine production incentives warrant manufacturing capacity reshoring in the market. Target Scandinavian demand through a German footprint. While Spain and other markets supply capacity can address the rest of EU demand.

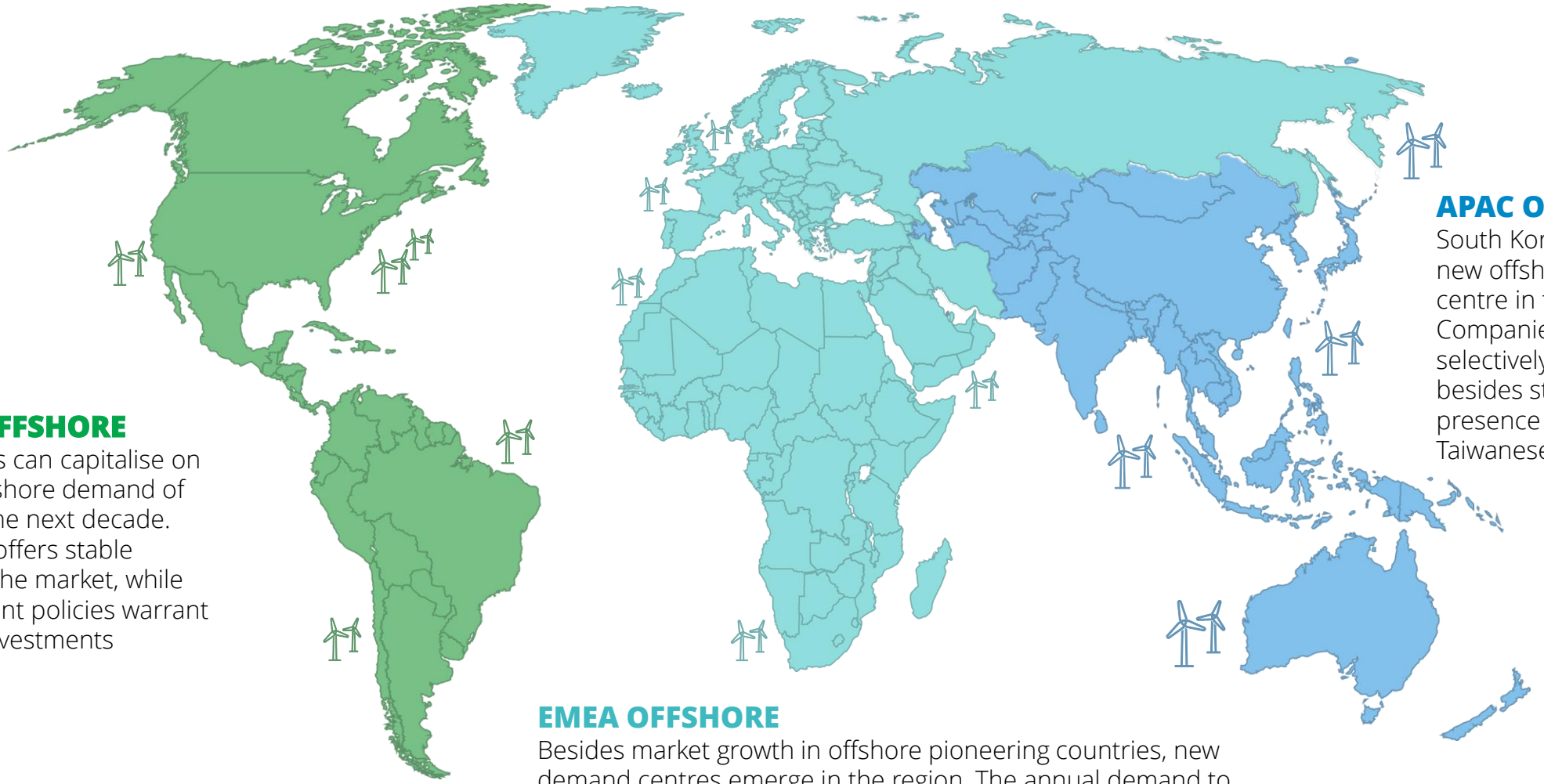
In which onshore markets do Danish companies have an advantage: Companies must target volume markets with stable policy regime.

Market/Region	Policy	Competition	Technology Edge	Premium Pricing
China				
United States				
Germany				
India				
Brazil				
Australia				
Spain				
France				
Canada				
Sweden				

 Least Favourable

 Most Favourable

What companies should consider in relation to offshore market strategies?



AMER OFFSHORE

Companies can capitalise on the US offshore demand of 45GW in the next decade. IRA policy offers stable growth in the market, while local content policies warrant capacity investments

EMEA OFFSHORE

Besides market growth in offshore pioneering countries, new demand centres emerge in the region. The annual demand to grow by more than tenfold.

APAC OFFSHORE

South Korea to emerge as a new offshore demand centre in the region. Companies need to selectively target the areas besides strengthening their presence in the established Taiwanese market.

In which offshore markets do Danish companies have an advantage: Companies target local content driven market with premium pricing.

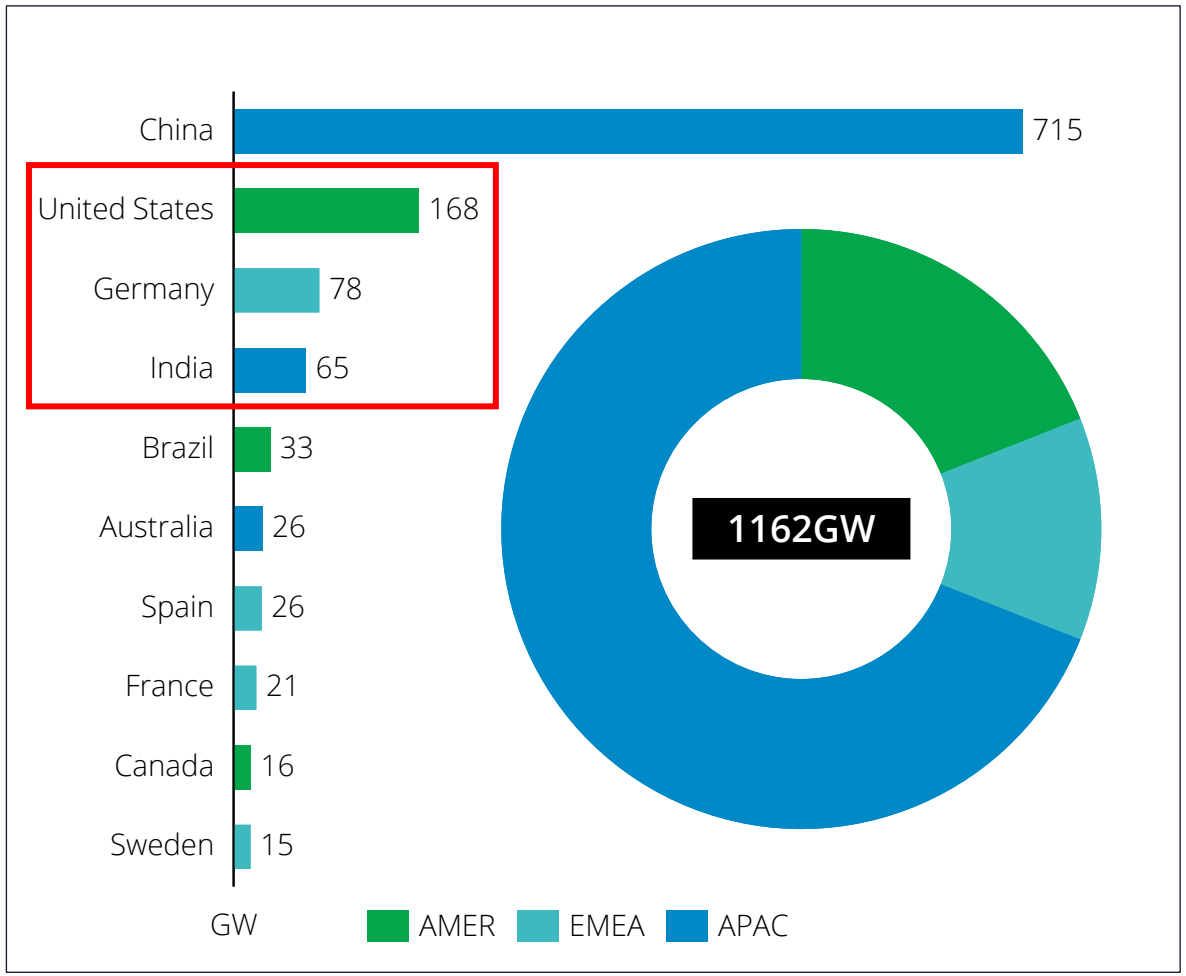
Market/Region	Policy	Competition	Technology Edge	Premium Pricing
China				
United Kingdom				
United States				
Germany				
Taiwan				
Netherlands				
Sweden				
Australia				
South Korea				
Poland				

 Least Favourable

 Most Favourable

The three most important markets, based on volume

Top 10 Onshore Wind Markets Cumulative Capacity (2023 to 2033)



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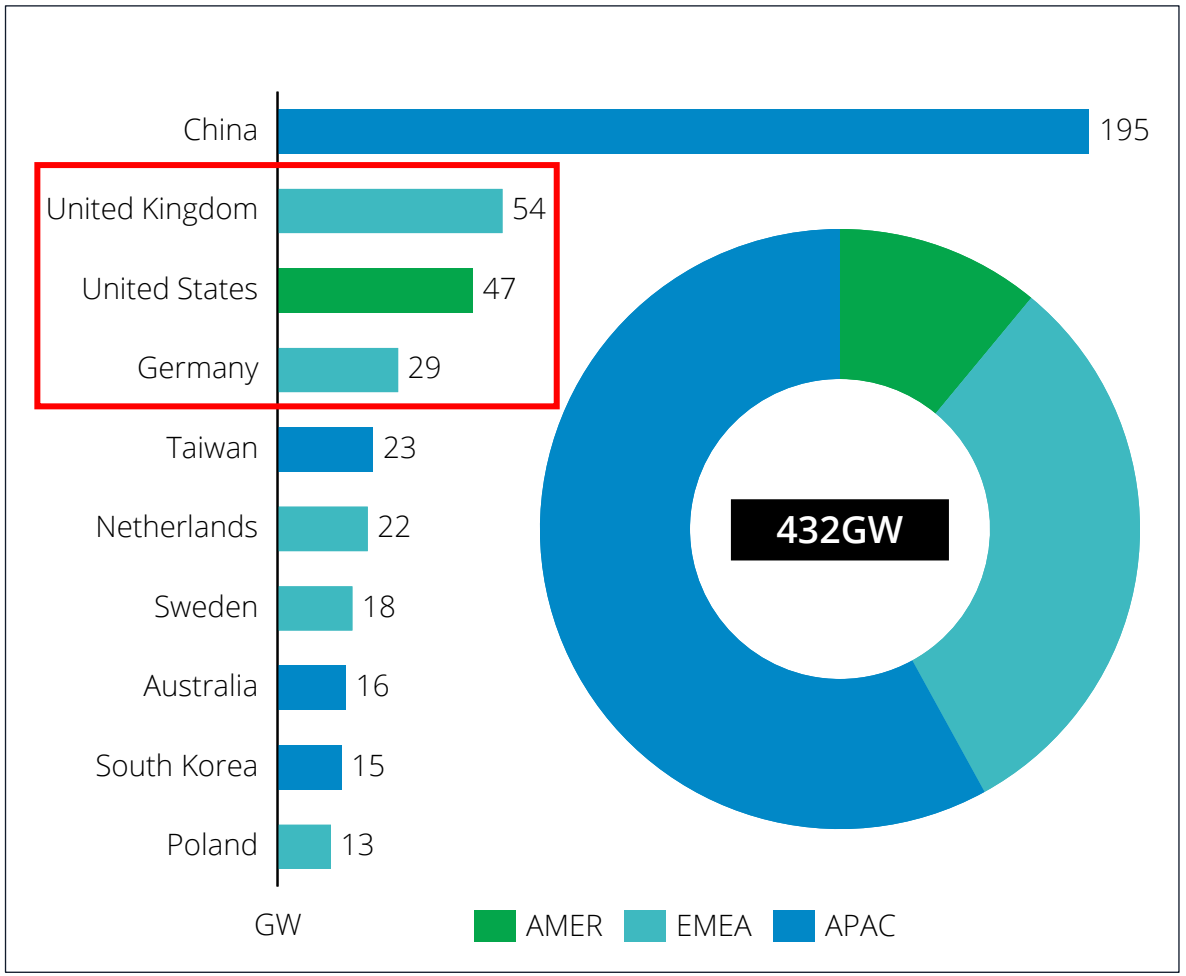

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High speed feedback from the regions: Americas, Europe and Asia

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Panel debate: Where do the industry see the global hotspots?

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Thank you!

See you at 13.00 for *”Scaling up for export”*

GREEN ENERGY EXPORT DAY 2023 – PROGRAMME

		SALEN	13+15	19	17	HOUSE OF GREEN
08.30	MARKET PLACE OPENS					
08.30	WORKSHOP #0				WIND ENERGY EGP KOREA/JAPAN	
10.00	OPENING: DANISH ENERGY EXPORTS - OUR PROMISE TO THE GLOBAL CLIMATE AND DANISH ECONOMY					
10.45	MARKET PLACE – COFFEE					
11.15	WORKSHOP #1	WIND ENERGY GLOBAL MARKET OUTLOOK	DISTRICT HEATING NETHERLANDS	ENERGY EFFICIENCY USA (+ASIA BRIEF)	GREEN HYDROGEN DANISH EXPORT CASE	DENMARK-INDIA GREEN PARTNERSHIP
12.15	MARKET PLACE - LUNCH					
13.00	WORKSHOP #2	WIND ENERGY SCALING UP FOR EXPORTS	DISTRICT HEATING GERMANY	ENERGY EFFICIENCY EUROPE	GREEN HYDROGEN USA	BIOENERGY EUROPE (DE+PL)
14.00	MARKET PLACE – COFFEE					
14.30	WORKSHOP #3	WIND ENERGY MARKET MATURITY	REBUILD UKRAINE BUSINESS / FINANCE	ENERGY EFFICIENCY GERMANY	GREEN HYDROGEN EUROPE	BIOENERGY USA
15.30	AMBASSADOR'S ROUNDTABLE: SEIZE THE OPPORTUNITY					
16.00	RECEPTION AT TOP TERRACE					

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GREEN ENERGY EXPORT DAY 2023

WORKSHOP 2:

Scaling the wind industry supply chain for market boom

WELCOME

GREEN ENERGY EXPORT DAY 2023

WORKSHOP 2:

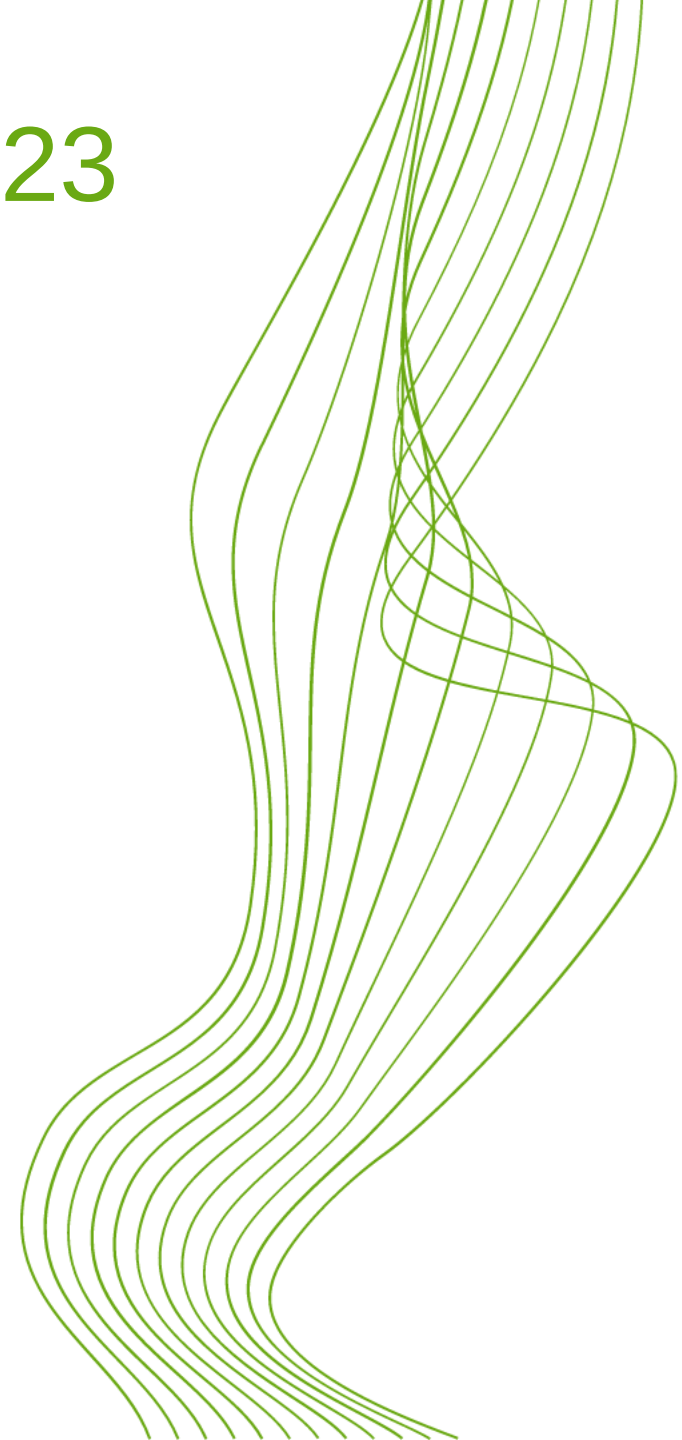
Scaling the wind industry supply chain for market boom

Global supply chain trends and developments
Carsten Brink, Managing Partner, Brinkmann Group

Case: US – Stressed supply chains, Government policies
Jeppe Lundbæk, Chief Advisor, Danish Energy Agency

Panel debate: How and where to scale for global growth?
Rasmus Niebuhr, CEO, Niebuhr Gears and other key industry representatives
Magnus Brogaard Larsen, Associate Partner CIP
Mikkel Glerup, CEO, Cadelar
Aidan Cronin, Senior Director Government Affairs, Siemens Energy

Moderator
Anders Mika Dalegaard, Head of Department, Green Power Denmark



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GLOBAL WIND SUPPLY CHAIN TRENDS & DEVELOPMENTS

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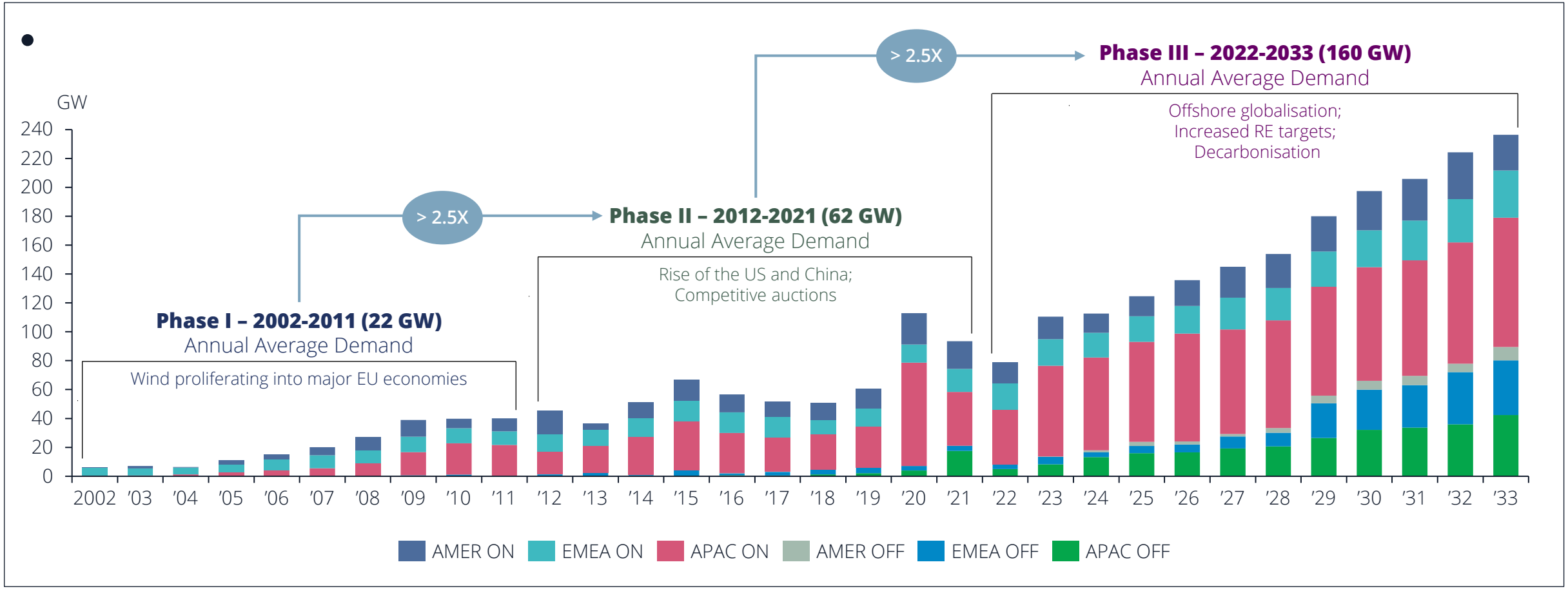

Note: ON-Onshore ; OFF - Offshore

Sources: Brinckmann; Historical data from GWEC, ACP and WindEurope

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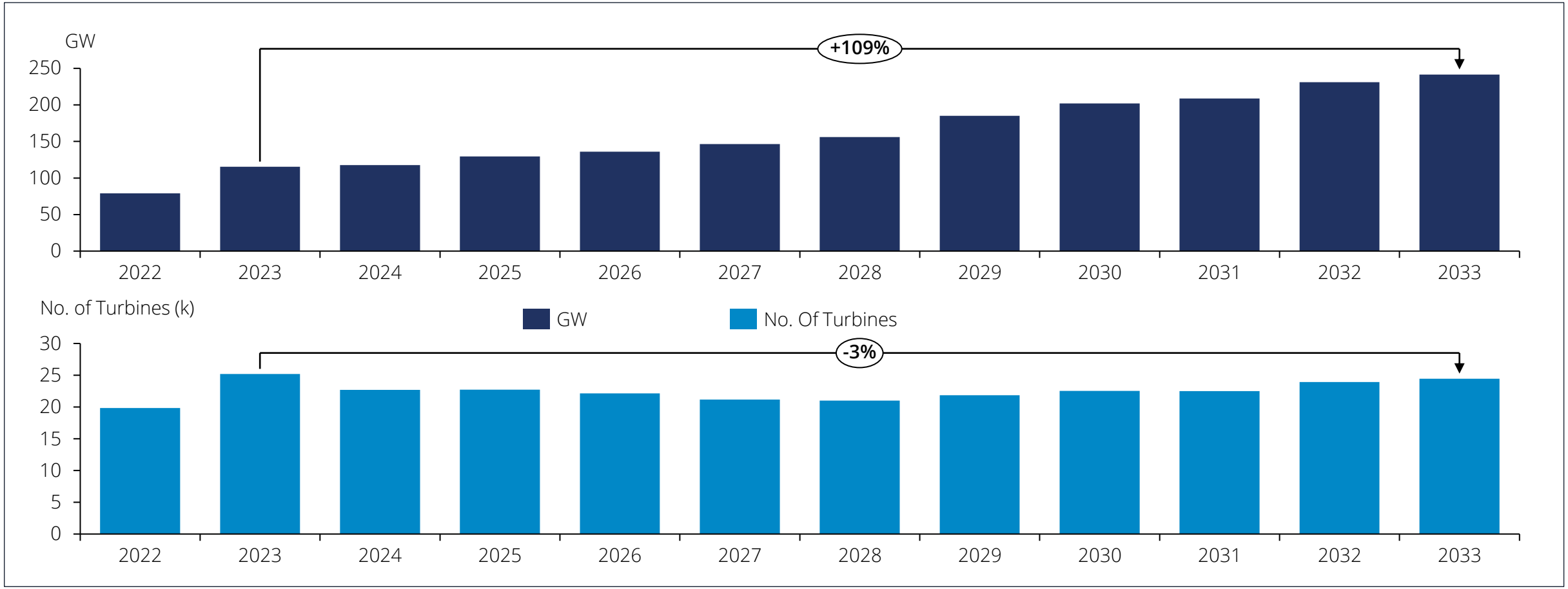
Despite increased global wind GW demand, turbine size growth limits the number of turbines deployed, challenging the supply chain.

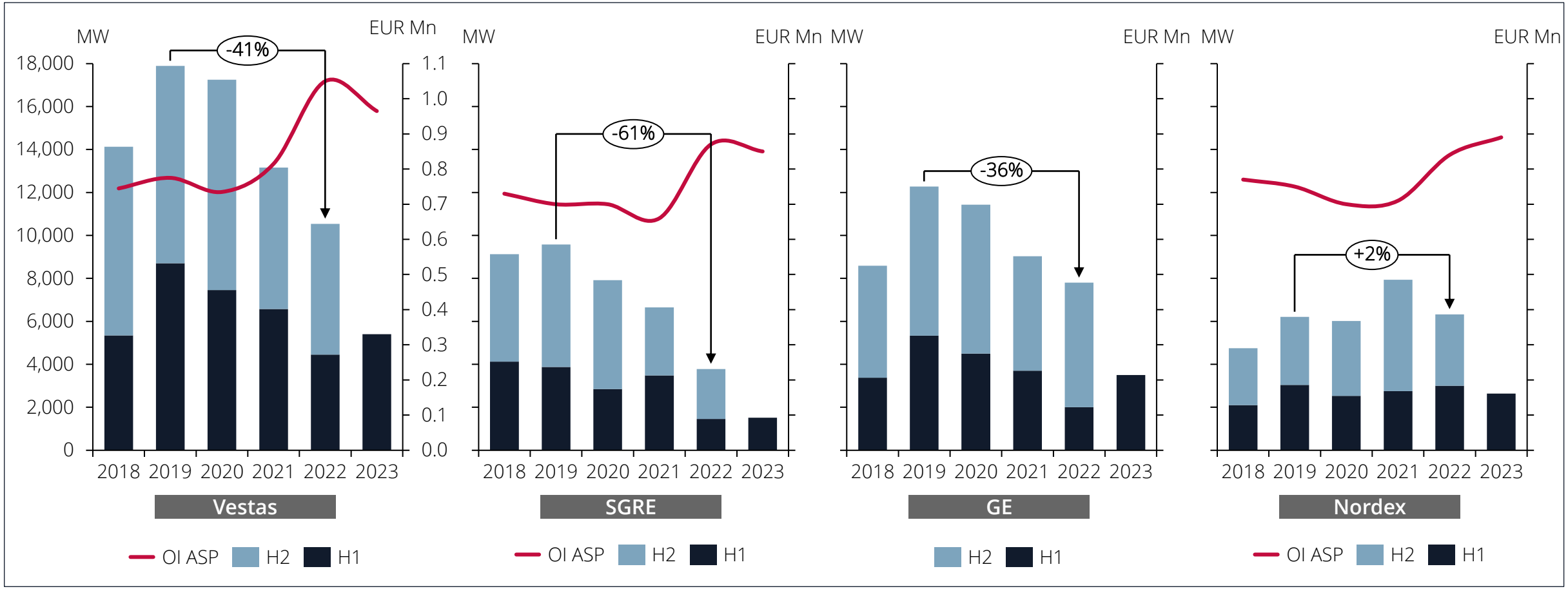
Global Wind Market Forecasts Onshore and Offshore (GW and No. Of Turbines)



Source: Brinckmann

Commodity inflation, energy crisis, and logistics deteriorate the financial health and order intake of Western turbine OEMs.

Wind Turbine OEMs Onshore Order Intake (OI) and Average Selling Price (ASP) Trends 2018 to H1-2023



Note: GE Order Intake (OI) ASP data is unavailable

Source: Brinckmann

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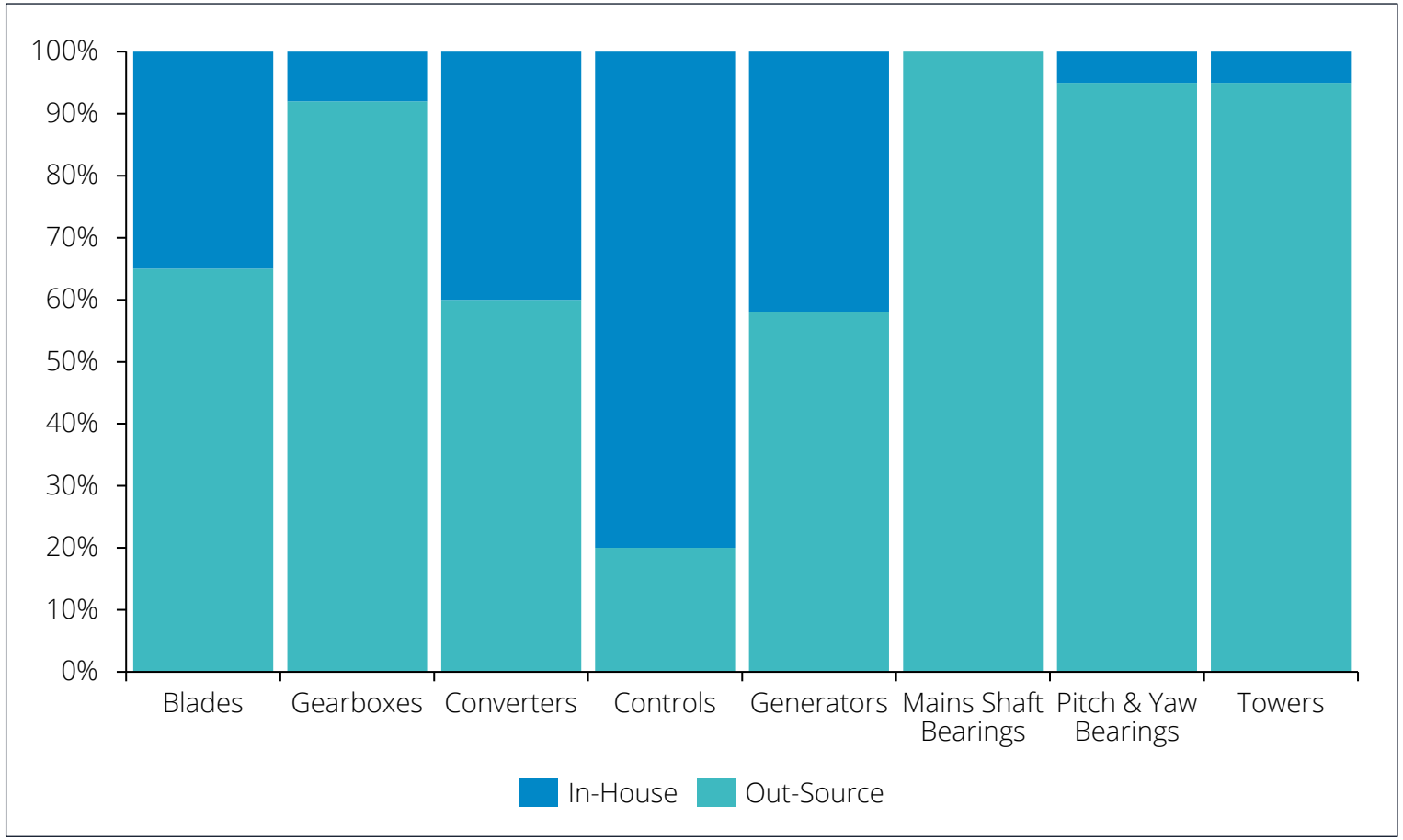
Turbine OEMs constantly increase out-sourcing of key capital components, prompting growth opportunities for suppliers.

Key Takeaways

- Turbine OEMs historically chest guarded the critical component manufacturing.
- However, as the supply chain cost pressures mount, turbine OEMs gradually started out-sourcing capital components to independent suppliers.
- Local content rules and logistics bottlenecks accelerated the out-sourcing trends of turbine OEMs.
- Component suppliers with a global presence and closer affiliation with key customers stand to benefit from this transition.
- Component suppliers must evolve as system suppliers to provide value-added solutions to customers.
- Early partnering with customers on new technology developments will yield positive results in the long run.

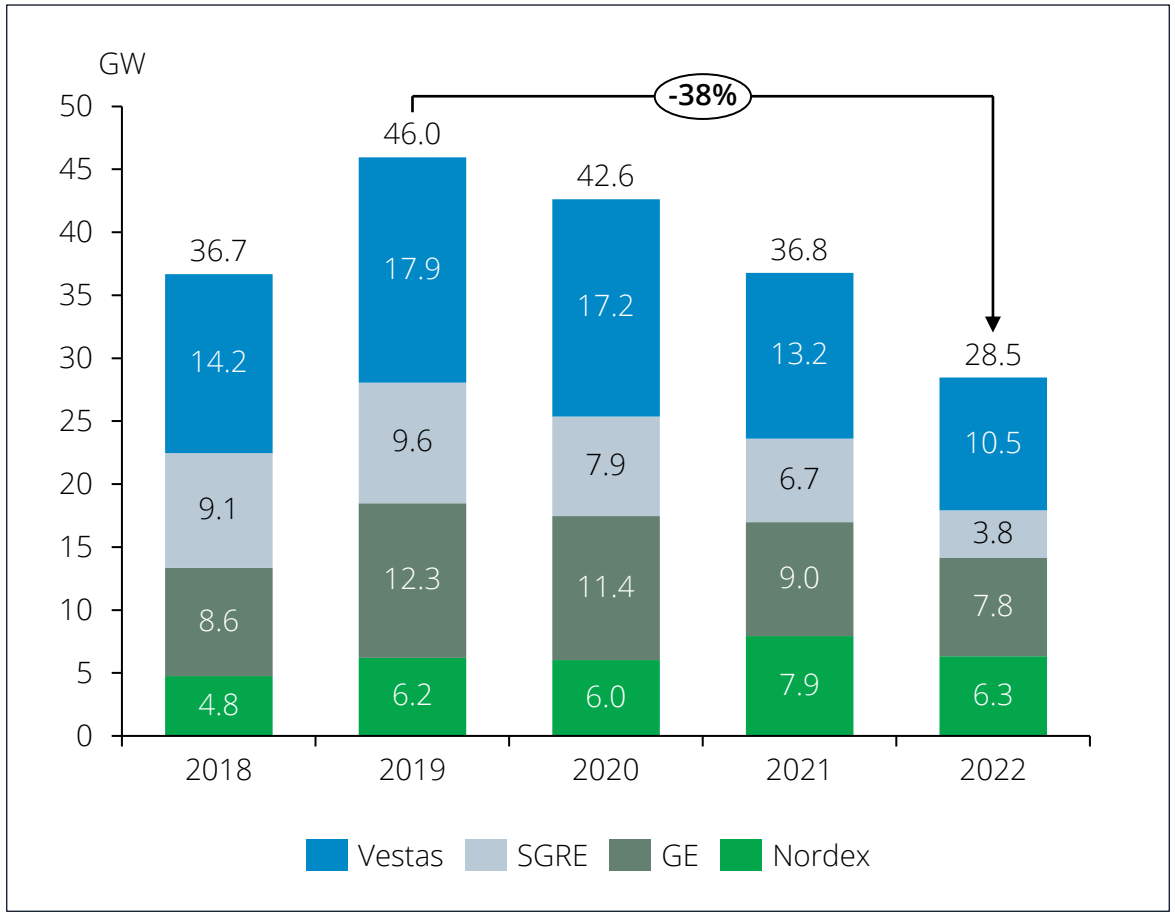
Turbine OEMs component out-sourcing strategies 2023



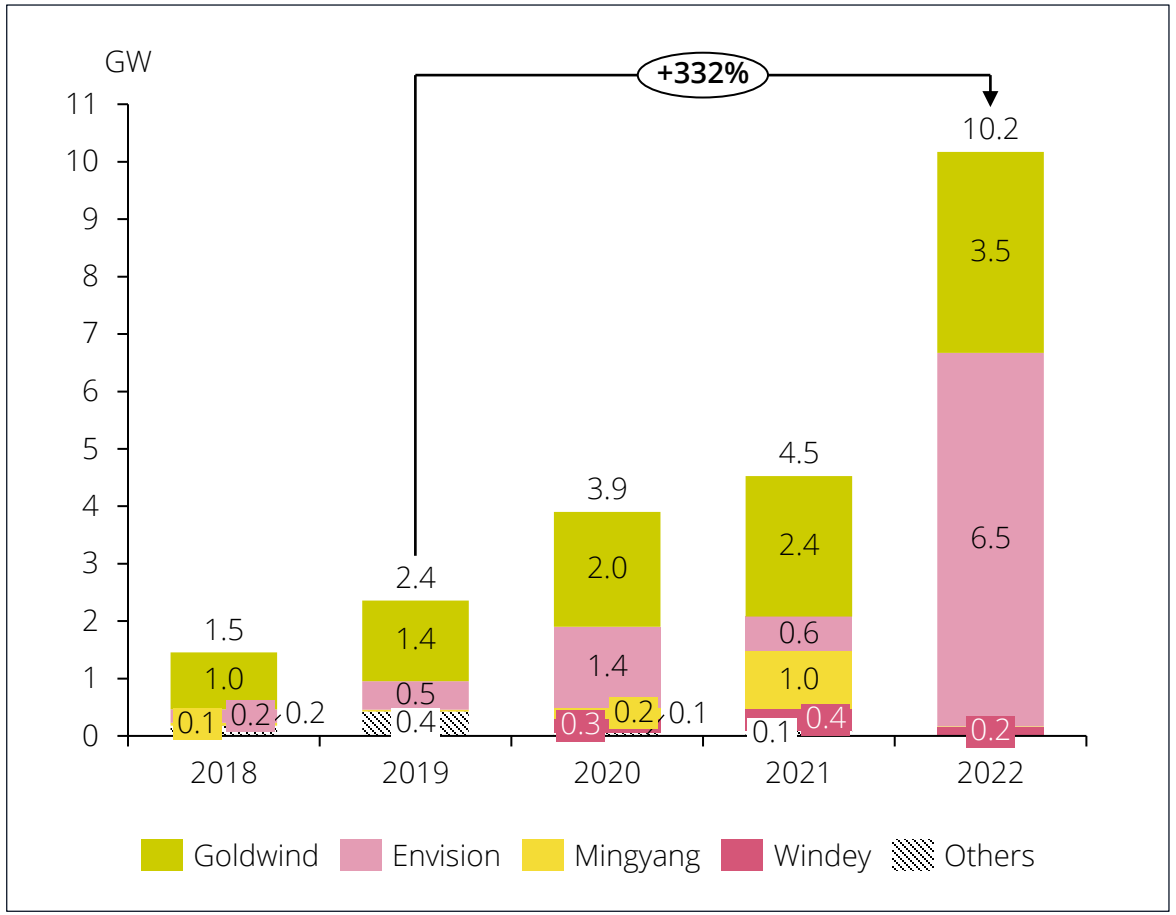
Source: Brinckmann

There is an increasing threat to Western turbine OEMs for Chinese international expansion.

Global Onshore Order Intake By Western Turbine OEMs (2018 to 2022)



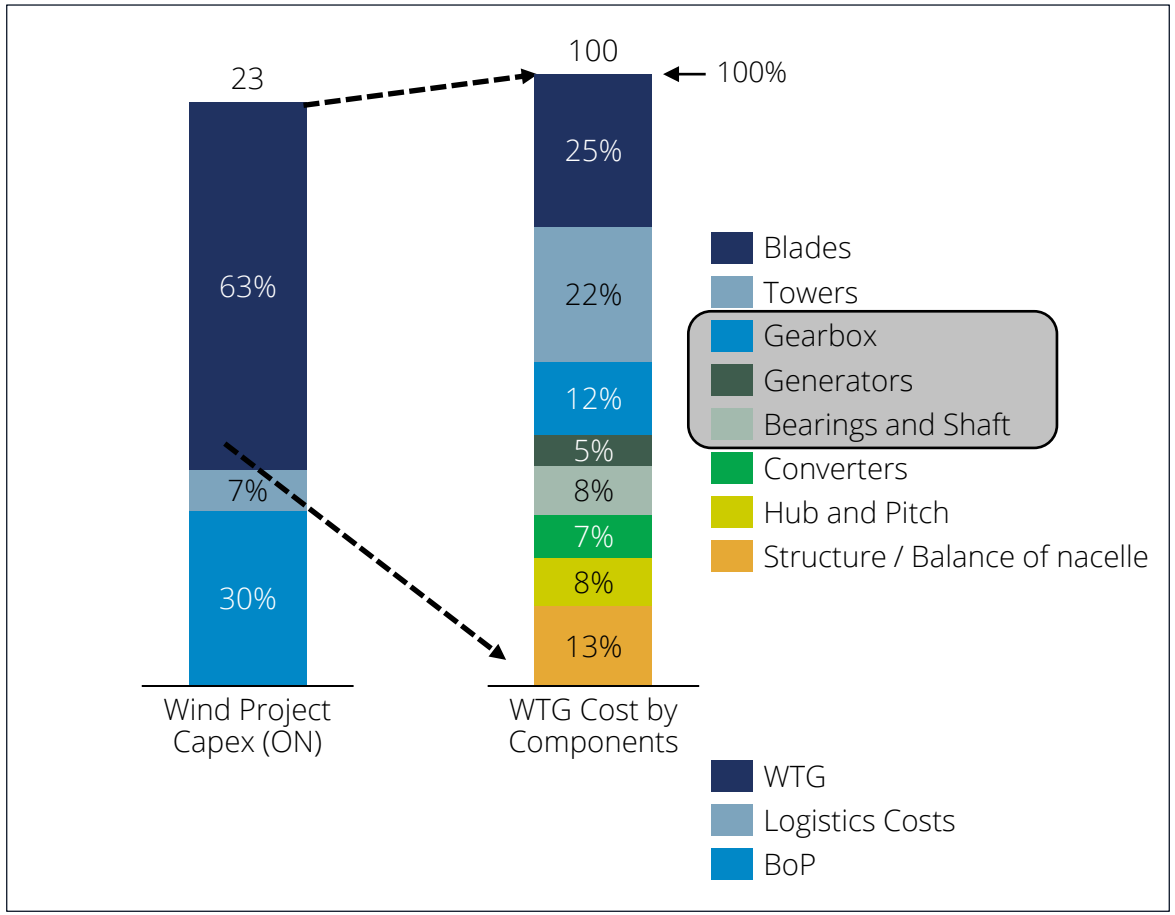
Chinese OEMs Global Excluding China Order Intake (2018 to 2022)



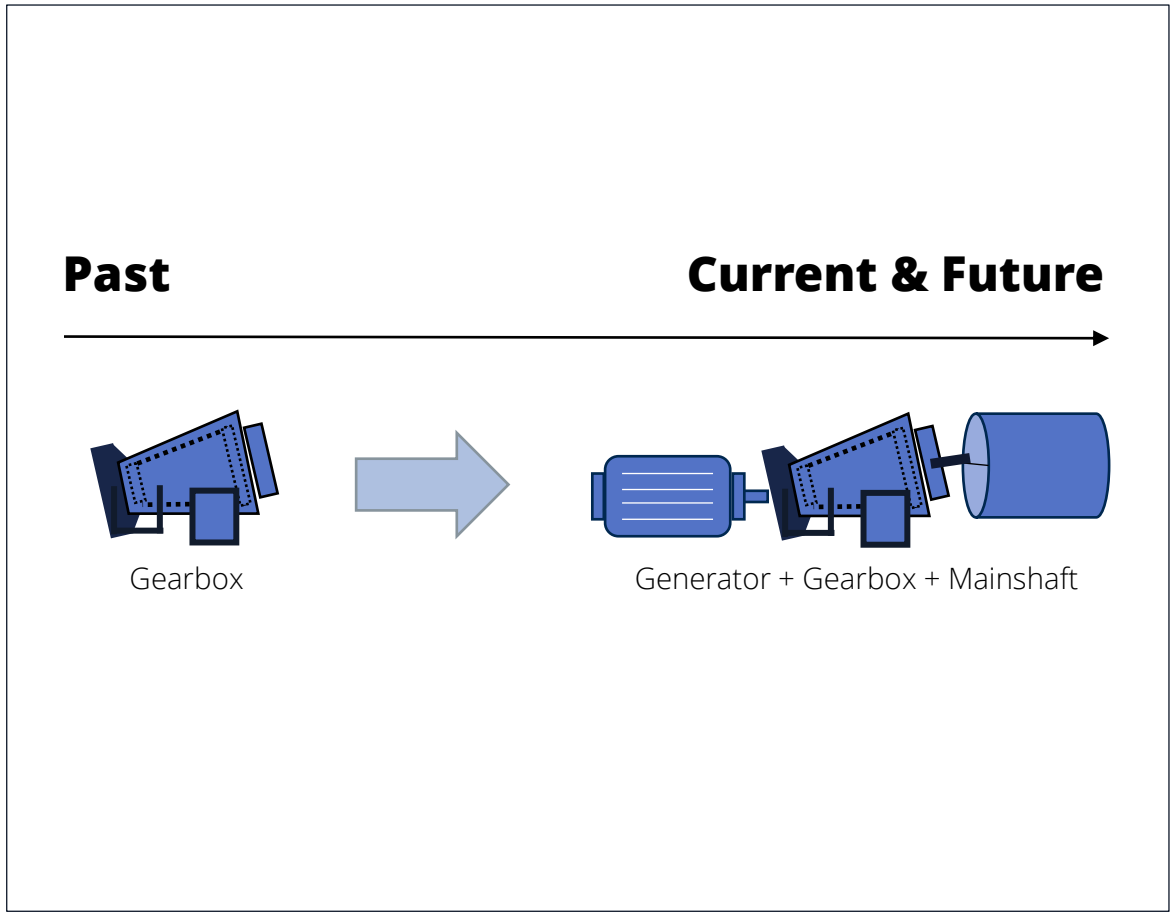
Source: Brinckmann

Component suppliers must evolve as system suppliers to stay relevant and garner position in these challenging market conditions

Typical Onshore Wind Project and Turbine CAPEX split



Gearbox suppliers are evolving as power train suppliers



Source: Brinckmann

What companies must consider in relation to supply chain strategies?

1

Risk Assessment and Scenario Planning

- Identify various risks that could impact your business especially under current market conditions, such as
- Demand Fluctuations
- Geopolitical issues
- Supplier Bankruptcies
- Develop scenarios to understand operational risks to your business and build contingencies

2

Strengthen Partnerships and Increase Diversification

- Follow customers and set up close to demand centres (US, for example) and reduce logistics costs
- Diversify the supply base to further mitigate regional disruptions
- Consider partnerships and collaborations to become system suppliers as customers look for increased reliability

3

Flexible and Agile Manufacturing

- Develop practices that allow for quick production shifts to different products or locations
- Consider modular production lines, adjustable capacity, and adaptable logistics to adapt to changing demand patterns and disruptions
- Ensure advanced inventory management systems for demand volatility

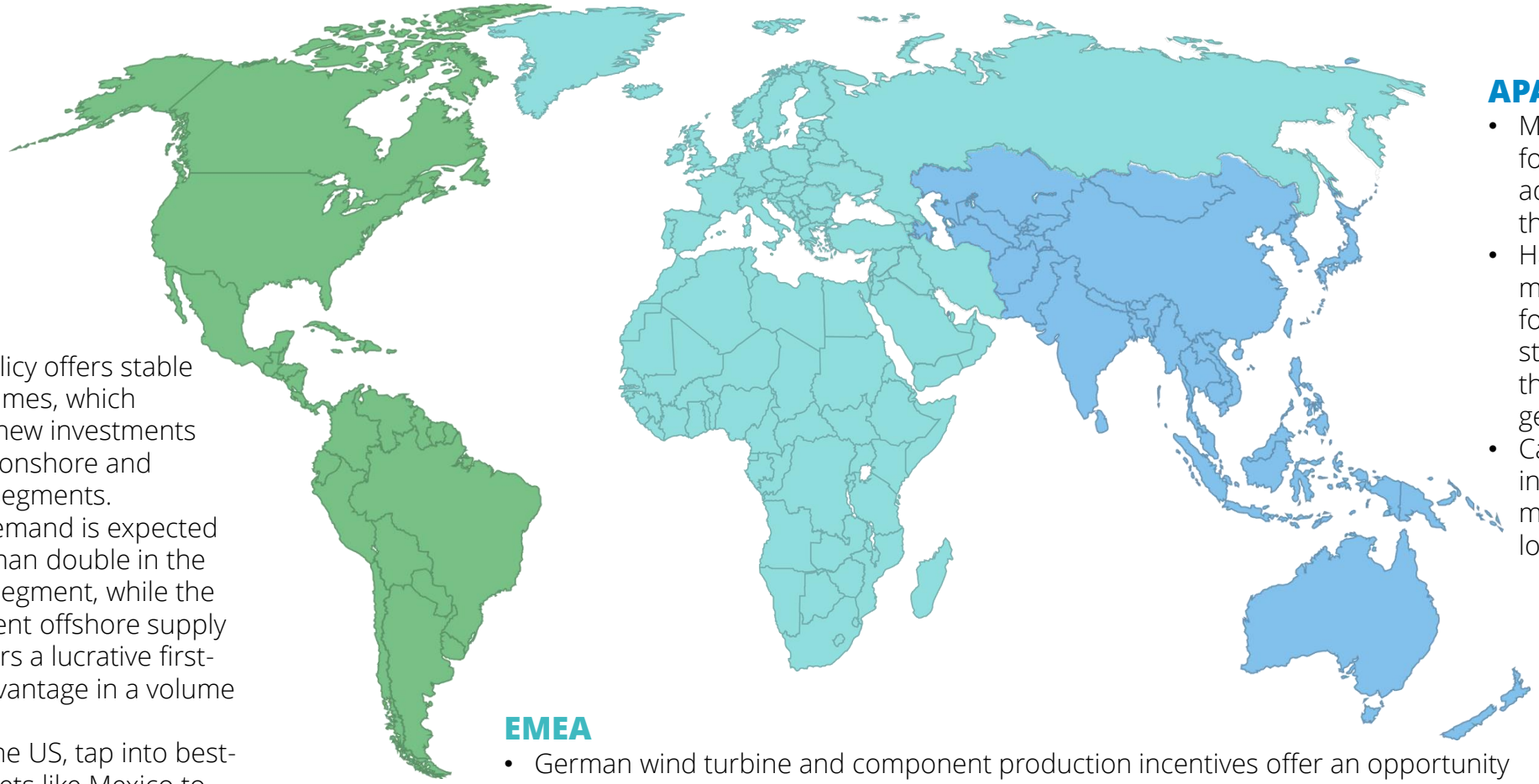
4

Sustainability and Recyclability

- Ensure a thorough lifecycle assessment of your products
- Focus on future material selection with higher recyclability and energy efficiency
- Increase supply chain transparency and information sharing
- Increase supplier engagement and responsibility

Source: Brinckmann

What are the key considerations while scaling up supply to meet the demand?



AMER

- US IRA policy offers stable policy regimes, which warrants new investments into both onshore and offshore segments.
- The US demand is expected to more than double in the onshore segment, while the non-existent offshore supply chain offers a lucrative first-mover advantage in a volume market.
- Besides the US, tap into best-cost markets like Mexico to cater to US demand, subject to IRA clarification.

APAC

- Maintain manufacturing footprint in China to address global excluding the US demand
- Harness India's best-cost manufacturing footprint for cost-effective export strategies, primarily to the US and other geographies
- Capitalise on the growth in emerging offshore markets through localisation.

EMEA

- German wind turbine and component production incentives offer an opportunity to restore the lost manufacturing capacity.
- Growth in the offshore segment and local content rules in multiple markets must be realised to secure long-term sales.
- Explore opportunities for the EU industrial green deal plan to target footprint expansion.

The most important supply chain development hubs

Most Important Supply Chain Development Hubs

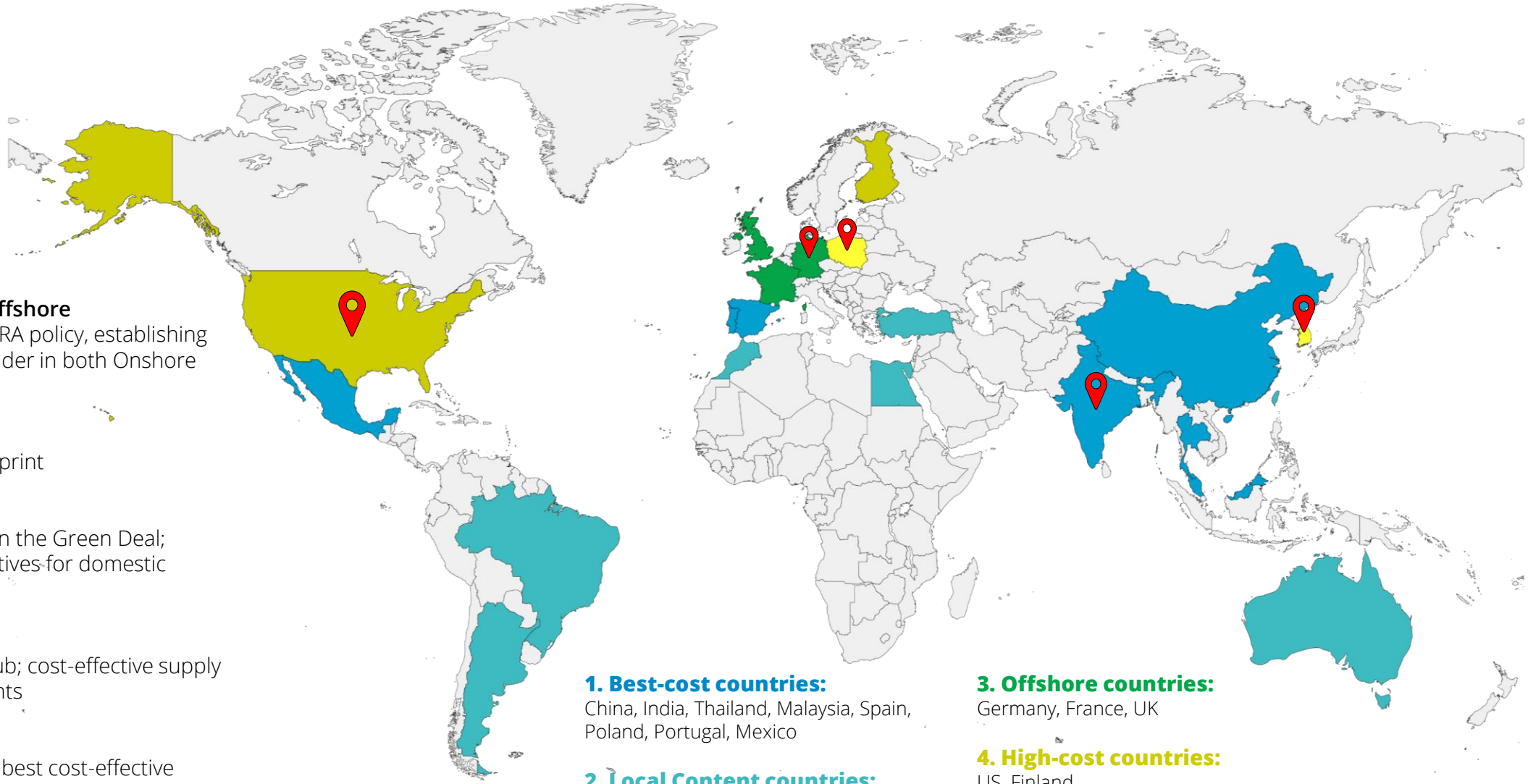
The US – Onshore and Offshore
Greatly benefits from the IRA policy, establishing itself as a development leader in both Onshore and Offshore Wind

India – Onshore
Unmatched best-cost footprint

Germany – Onshore
One of the first countries in the Green Deal; established new law incentives for domestic production

Poland – Offshore
Next big EMEA offshore hub; cost-effective supply and locally built components

South Korea – Offshore
Strong policy frameworks; best cost-effective footprint in APAC



1. Best-cost countries:
China, India, Thailand, Malaysia, Spain, Poland, Portugal, Mexico

2. Local Content countries:
Argentina, Australia, Brazil, Egypt, Morocco, Taiwan, Turkey

3. Offshore countries:
Germany, France, UK

4. High-cost countries:
US, Finland

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Case: US – Stressed supply chains, Government policies

Jeppe Lundbæk, Chief Advisor, Danish Energy Agency

Danish Energy Agency

Case: US – Stressed supply chains, Government policies

29th August 2023

Chief Advisor
Jeppe Lundbæk
Danish Energy Agency
EGP US Offshore Wind

ANNOUNCED OSW TARGETS IN THE US

Federal level: 30 GW by 2030

The Biden administration is fulfilling pledges to open up the US for offshore wind development

UPDATED: 'A historic day': Biden targets 30 GW of offshore wind by 2030, opens door for new wind energy areas

29 Mar 2021 by David Foxwell

State level:

- Massachusetts 5,6 GW by 2030
- New York 9 GW by 2035
- New Jersey 11 GW by 2040
- Maryland 8,5 GW by 2035
- Virginia 5,2 GW by 2034
- North Carolina 8 GW by 2040
- California 25 GW by 2045

CURRENT PIPELINE OF US OSW PROJECTS

The U.S. has 42 MW of offshore wind capacity online with a swelling pipeline totaling nearly 51,400 MW. The U.S. has 32 leases in active development. Within these leases, there are 18 projects in early development and 18 projects in advanced development. Early development projects make up the majority of the pipeline, representing 33,875 MW. There are 16,564 MW of projects in advanced development, and 938 MW under construction. In total, there are 51,377 MW of offshore wind in the U.S. pipeline, 84% of which, or 43,115 MW is on the East Coast with the remaining 8,262 MW spread across five leases on the West Coast. Offshore wind capacity in the pipeline could power more than 20 million homes.

- 32 active leases
- 18 projects in early development (34 GW)
- 16 GW in advanced development
- 938 MW under construction
- 51 GW in pipeline in total

Source: ACP Offshore Wind Market Report, May 2023

A LOOK AT THE SUPPLY CHAIN – NREL STUDY (JAN 2023)

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Half of US Offshore Wind Pipeline at Risk of Delays Beyond 2030 – Report

AUTHORITIES

January 24, 2023, by Adnan Durakovic

Half of the US offshore wind energy projects in the pipeline are at risk of being delayed beyond 2030 because of limited port and vessel infrastructure and domestic manufacturing, according to a new report co-authored by the National Renewable Energy Laboratory (NREL) and the Business Network for Offshore Wind.

A Supply Chain Road Map for Offshore Wind Energy in the United States

Matt Shields,[1] Jeremy Stefek,[1] Frank Oteri,[1] Matilda Kreider,[1] Elizabeth Gill,[1] Sabina Maniak,[1] Ross Gould,[2] Courtney Malvik,[2] Sam Tirone,[2] and Eric Hines[3]

1 National Renewable Energy Laboratory
2 Business Network for Offshore Wind
3 Tufts University

NREL: SEVEN KEY BARRIERS FOR THE US OSW INDUSTRY

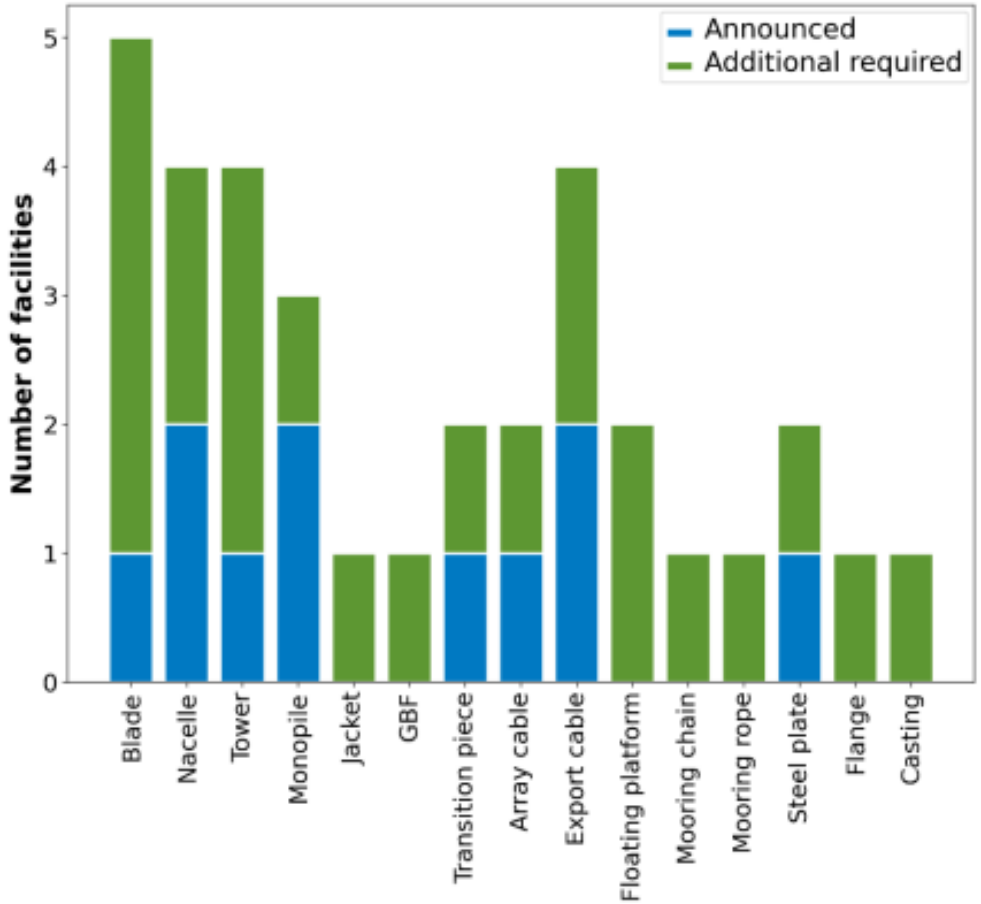
1) Planned projects and targets in place, but construction delays, cost overruns, legal complications, and risk of changes in government
2) Large manufacturing facilities can only be built in suitable ports or nearby, but limited available port space and uncertain permitting and construction timelines.
3) Existing supplier networks will be stressed to provide the required raw materials and subcomponents
4) Existing port and vessel infrastructure inadequate to install 30 GW of offshore wind energy by 2030.
5) Many OSW energy components require specialized manufacturing workforce that is not available in the US.
6) Some parts of the supply chain has not been covered by the IRA or are not enough to cover extra costs
7) (Incorporating equity and sustainability issues in supply chain is resource-intensive and may be insufficiently incentivized)

DOMESTIC SUPPLY CHAIN SCENARIO FOR US OSW BY 2030

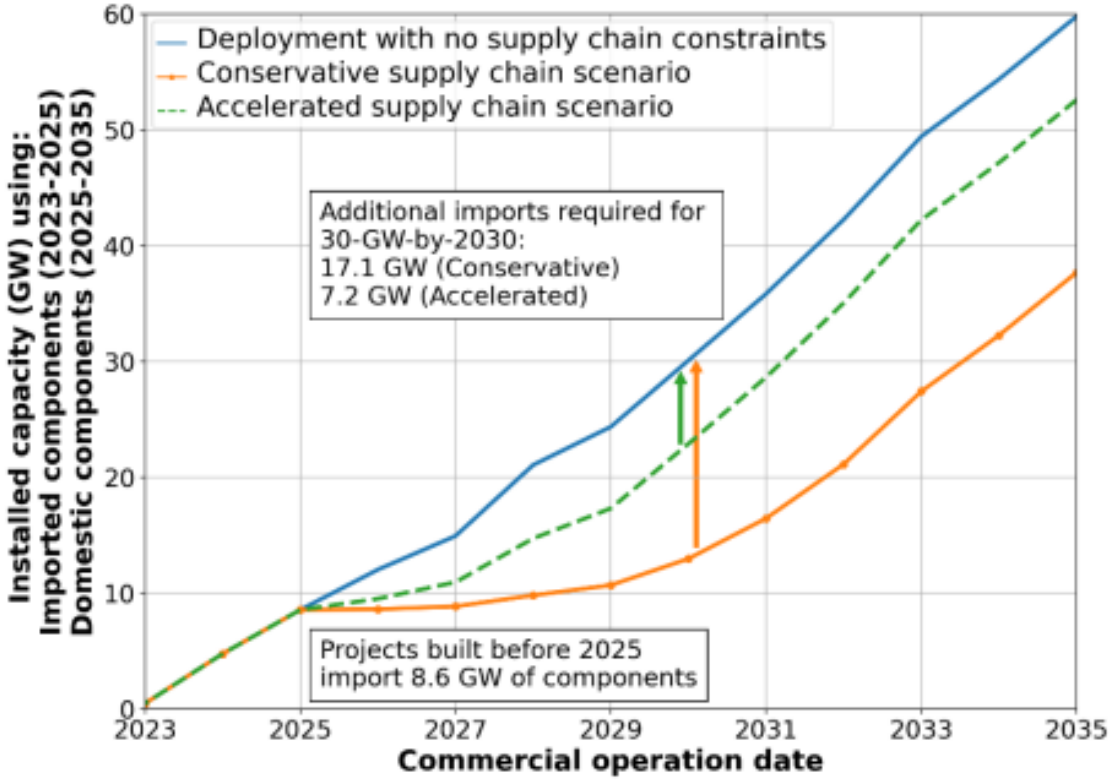
Parameter	Number
Fixed-bottom wind marshaling ports	8
Floating wind integration ports	2
Dedicated wind turbine installation vessels	4–6
Dedicated heavy-lift vessels	4–6
U.S.-flagged specialized feeder barges	4–8
Manufacturing facilities	34
Development time frame	6–9 years

THE SUPPLY CHAIN – SOME GRAPHS

A domestic offshore wind energy supply chain designed to meet the annual demand for major components in 2030 would require at least 34 new manufacturing facilities



Offshore wind projects will need to import components while the domestic supply chain develops. Global supply bottlenecks could limit deployment if U.S. projects cannot source a sufficient number of these components.



RESULTS OF ALL THESE ISSUES ARE MATERIALIZING NOW…

Massachusetts Offshore Wind Troubles

By *Allen Brooks* -- *April 5, 2023*

> *"With two of the*
> *its clean energy g*
> *higher than expec*
> *interesting with s*
> *business."*

The ongoing saga of
in late January when

PLUGGING IN / ENERGY / ENVIRONMENT

NY offshore wind developers also seek price relief

Follow lead of Mass. firms, seek adjustments for inflation, interconnection costs

BRUCE MOHL Jun 7, 2023

25 Shares

Ørsted er presset i USA

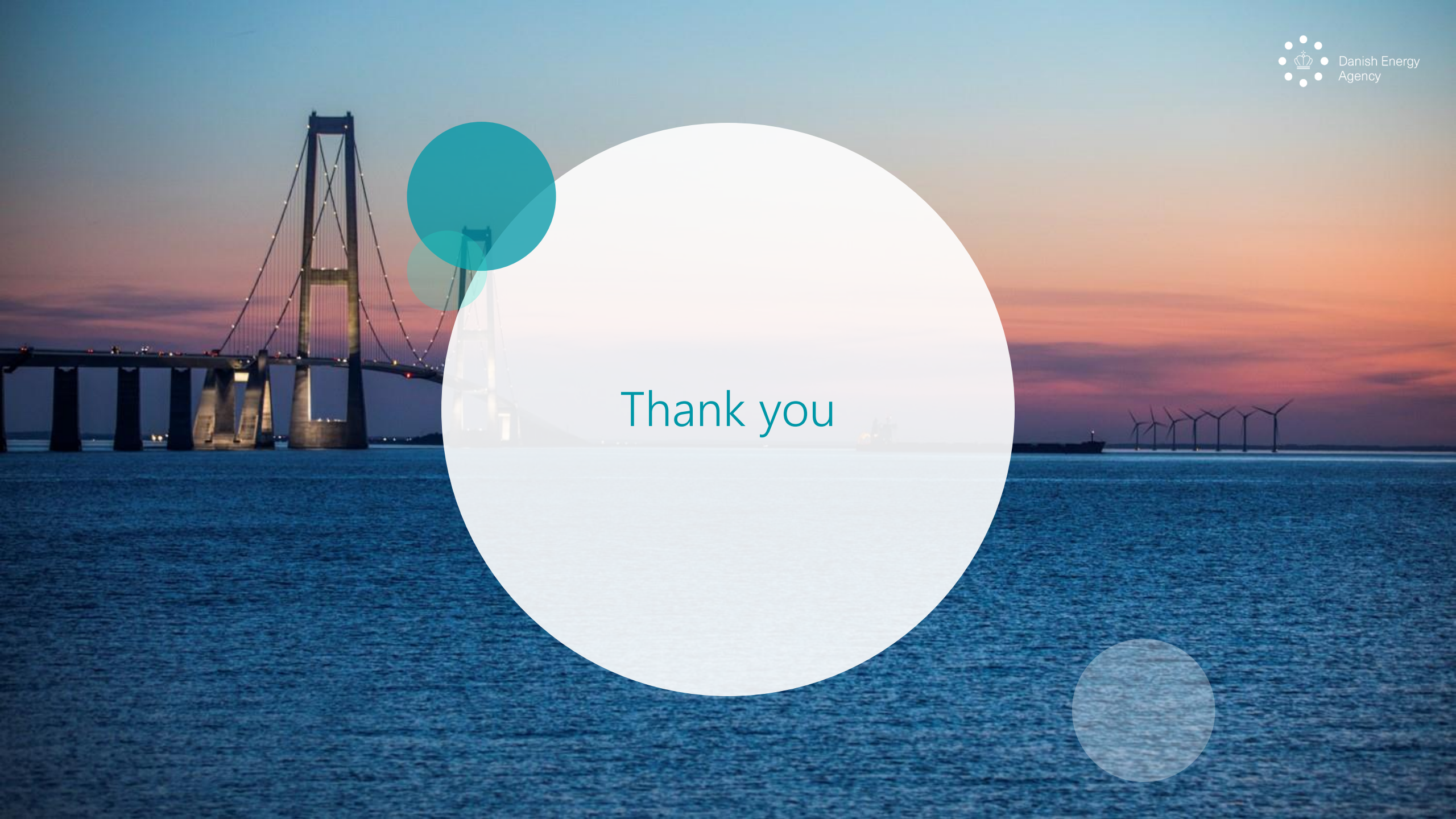
Inflation og stigende renter medvirker til at presse Ørsteds planlagte havvindparkerud for den amerikanske kyst, skriver Børsen.

Høj inflation, stigende renter og flaskehalse i forsyningskæden slutter sig til tidligere problemer som amerikansk bureaukrati og udskudte myndighedsgodkensler i den række af udfordringer, som Ørsted kæmper med for at sikre et tilfredsstillende afkast fra virksomhedens planlagte havvindparker i USA.

GOVERNMENT COLLABORATION US-DK

Six typical topics for discussion:

1) Realistic timetables for tenders, contracts and the construction of wind farms
2) The importance of an open market dialogue with developers
3) The role of permitting processes and transparency, how to handle delays etc.
4) The careful use of penalties and guarantees in contracts
5) Indexation of contracts
6) The delicate discussion on local content vs. relying more on market forces (out of state/country imports)


Danish Energy
Agency
Thank you

GREEN ENERGY EXPORT DAY 2023

WORKSHOP 2:

Scaling the wind industry supply chain for market boom

Panel debate: How and where to scale for global growth?

Rasmus Niebuhr, CEO, Niebuhr Gears
Magnus Brogaard Larsen, Associate Partner CIP
Mikkel Glerup, CEO, Cadelar
Aidan Cronin, Senior Director Government Affairs, Siemens Energy

GREEN ENERGY EXPORT DAY 2023

WORKSHOP 2:

Scaling the wind industry supply chain for market boom

Thank you!

See you at 14.30 for:

”Wind market maturity, timing & support”

GREEN ENERGY EXPORT DAY 2023 – PROGRAMME

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08.30	MARKET PLACE OPENS					
08.30	WORKSHOP #0				WIND ENERGY EGP KOREA/JAPAN	
10.00	OPENING: DANISH ENERGY EXPORTS - OUR PROMISE TO THE GLOBAL CLIMATE AND DANISH ECONOMY					
10.45	MARKET PLACE – COFFEE					
11.15	WORKSHOP #1	WIND ENERGY GLOBAL MARKET OUTLOOK	DISTRICT HEATING NETHERLANDS	ENERGY EFFICIENCY USA (+ASIA BRIEF)	GREEN HYDROGEN DANISH EXPORT CASE	DENMARK-INDIA GREEN PARTNERSHIP
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13.00	WORKSHOP #2	WIND ENERGY SCALING UP FOR EXPORTS	DISTRICT HEATING GERMANY	ENERGY EFFICIENCY EUROPE	GREEN HYDROGEN USA	BIOENERGY EUROPE (DE+PL)
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14.30	WORKSHOP #3	WIND ENERGY MARKET MATURITY	REBUILD UKRAINE BUSINESS / FINANCE	ENERGY EFFICIENCY GERMANY	GREEN HYDROGEN EUROPE	BIOENERGY USA
15.30	AMBASSADOR'S ROUNDTABLE: SEIZE THE OPPORTUNITY					
16.00	RECEPTION AT TOP TERRACE					

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GREEN ENERGY
EXPORT DAY 2023

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GREEN ENERGY EXPORT DAY 2023

WORKSHOP 3:

Supporting Danish wind export at the right time and at the right level!

WELCOME

GREEN ENERGY EXPORT DAY 2023

WORKSHOP 3:

Supporting Danish wind export at the right time and at the right level!

CASE: Offshore Market Maturity Tool

Markus Adrian, Senior Commercial Advisor, Ministry of Foreign Affairs

The company journey to global markets

Ulf Larsen, Vice President, Force Technology

Panel debate: Optimizing the export efforts.

- Rasmus Bjørnø, Head of global energy export team, Ministry of Foreign Affairs
- Ulf Larsen, Vice President, Force Technology
- Thomas Padfield, Head of Business & Brand Development, ProCon Group
- Steen Thorsted, Head of Corporate Public Affairs & Trade, Denmark's Permanent Representation to the EU

Moderator

Jan Serup Hylleberg, Deputy CEO, Green Power Denmark

GREEN ENERGY EXPORT DAY 2023

WORKSHOP 3:

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CASE: Offshore Market Maturity Tool

Markus Adrian, Senior Commercial Advisor, Ministry of Foreign Affairs

MINISTRY OF FOREIGN AFFAIRS
OF DENMARK

Offshore Wind Maturity Mapping tool

DANISH EXPORT ASSOCIATION

GREEN POWER DENMARK

Danish WIND Export
Owned by Danish Export Association and Green Power Denmark

J. Markus Adrian, Wind Energy Advisory Hamburg

August 2023

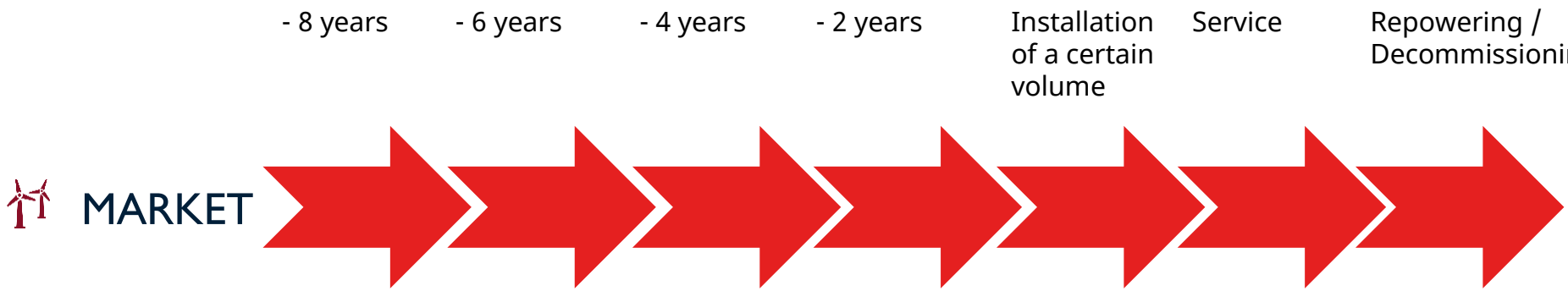
Why – Starting Point

- Many markets intend to expand their offshore wind activities or to start developing an offshore wind market
- Especially for SMEs it is fairly difficult to follow all market developments to an extent that allows them to take action based on a profound knowledge of each market
- Which market is relevant for which industry stakeholder at a given time?
- Who should talk to which value chain / policy partners at a given time?
- When is it the right time for a market to attract what type of Danish companies?

Next steps

Develop market maturity timeline

- Define a maturity timeline that allows to relate a market to it depending on where it is in relation to a certain installation volume



Next steps

Develop value chain definition

- Maturity assessment will be matched against the value chain steps that are relevant in different stages of the market development, e.g.

Planning and Development	Manufacturing	Transport and Storage	Installation	Operation & Maintenance	Decommissioning
					
Developers Investors Engineering etc.	OEMs Foundations Tower Nacelle	Ports Transport Marine operations	OEMs Construction marine Service	OEMs ISPs construction company	ISPs Re-seller construction company

Lawyers, Insurance, Banks, etc.

Workforce, Consultants, etc.

Next steps

Define customer category for each part of the market maturity timeline

- For each maturity phase and value chain step it will be defined who the customers and who the provider / supplier would be,
  - e.g. in a young market, developers in the market (customers) would need support in planning, seabed analysis, financing, etc. (Danish suppliers)
  - Danish companies in this phase could also be developers themselves who would maybe need to talk to partners in the market

Companies involved at that time

Developers

Potential for Danish companies from categories:

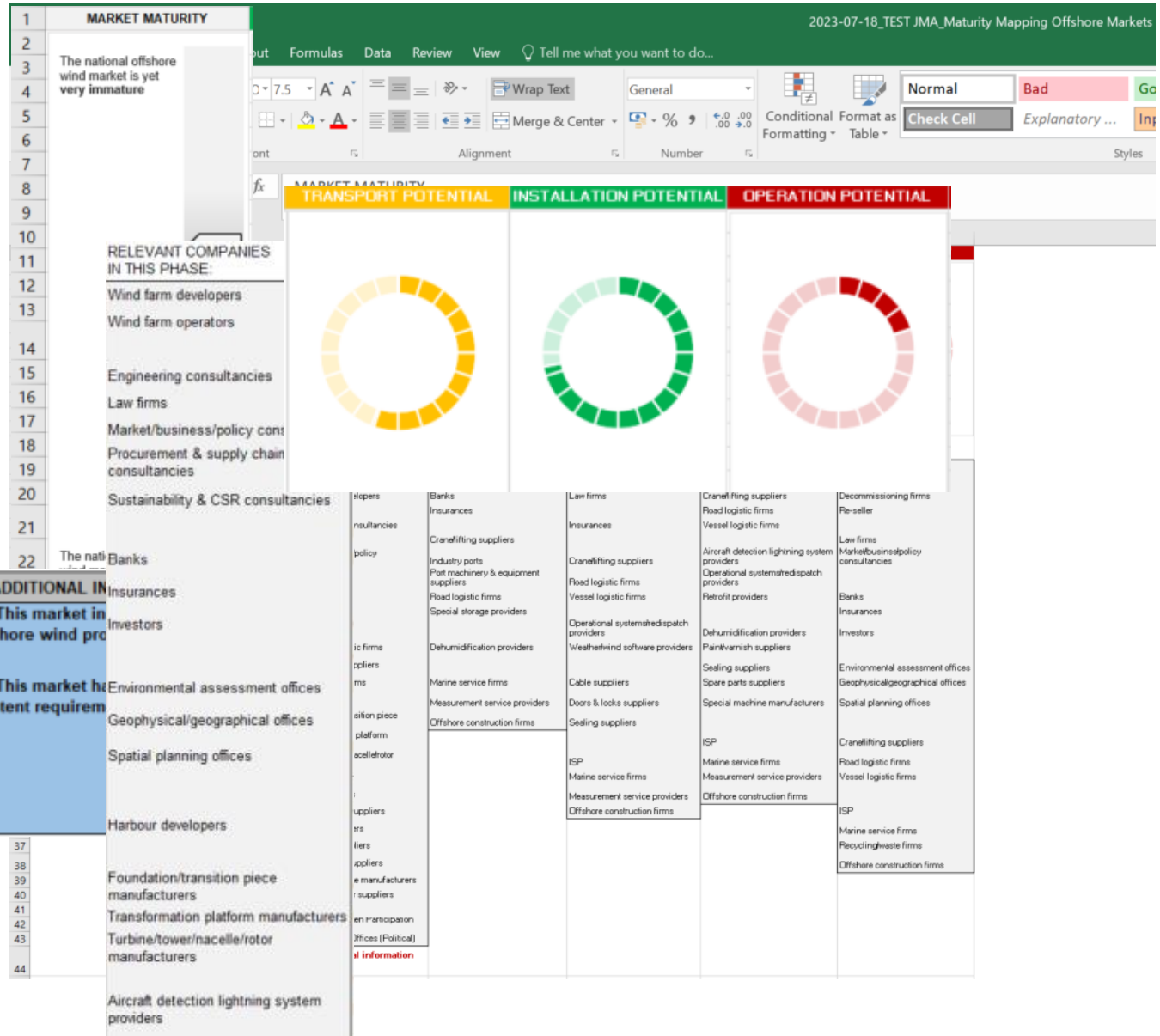
Developers
Financing / Investors
Seabed analysis
…

Approach & Next steps

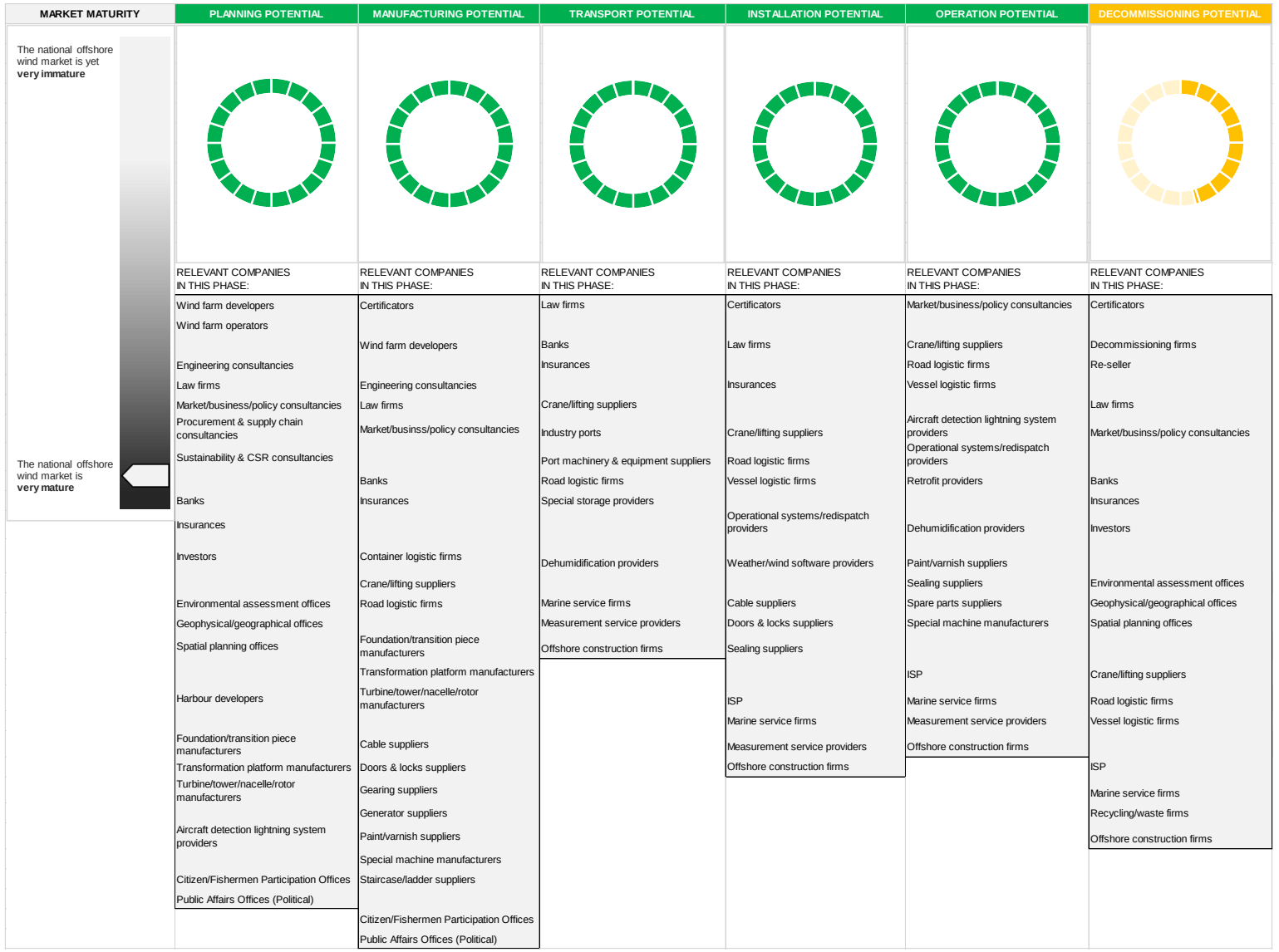
Activity	Partners	Division of tasks
Develop a questionnaire for market maturity assessment ✓	TC Hamburg / DWEA	TC Hamburg: Questionnaire Green Power Denmark, Danish Export and DWEA: Feedback on questionnaire
Development of tool to analyse the answers of the questionnaire ✓	TC Hamburg / DWEA	TC Hamburg: Excel-based tool to automatically analyse the questionnaire Green Power Denmark, Danish Export and DWEA: Feedback on questionnaire
Demo and trial phase ✓	TC Hamburg / DWEA, TC missions	TC Hamburg: Trial with 2-3- markets Selected TC missions: Application of the tool by colleagues in markets with different levels of offshore wind development → How intuitive and easy to use is the tool? → How robust is the tool when confronted with very diverse development stages / degrees of maturity?
Market maturity assessment of the involved markets – regularly	TC missions	TC missions: Develop assessment based on questionnaire TC Hamburg: Support

Overview of Questionnaire categories

Example of THE result sheet



Germany as a case



QUESTION	ENTER VALUE
THE MARKET	
Where is the country you're looking at located?	**North/Baltic Sea area**
Which volume of offshore wind energy has been installed so far?	**8136**
How many offshore wind farms have been installed in total?	**28**
...	**...**
...	**...**
FUTURE DEVELOPMENT	
What is the political installation goal for offshore wind in the short-run? (roughly 2030)	**30000**
When does the next auction round take place?	**2023**
What will be the volume of the next auction round ?	**7000**
...	**...**
...	**...**
CONCESSION FRAMEWORK	
Which type of market premium do offshore wind parks receive today?	**sliding payment (fx CfD)**
How did concession prices from offshore wind auctions develop in the past 3 years?	**sharp decline**
Are auctions or market premiums tied to legal local content requirements?	**No**
...	**...**
...	**...**

Benefits

- Based on knowing:
  - How mature is a market?
  - What are current developments in this market?
  - What is going to happen in the market in the next time?
  - For whom does the market offer the largest potential now / in a few months / in a year?

→ TC advisors / missions are provided with a tool to

→ easily analyse the potentials and opportunities in their markets

→ develop a targeted approach towards the right category of Danish companies fitting the market situation in the respective country

→ Danish (SME) companies can be provided with an indicator to know, which markets could be relevant for them

→ Both allows for and ensures that the markets coordinate their approaches to Danish companies aiming at the largest overall success of the companies

→ **Benefit for Danish companies**

MINISTRY OF FOREIGN AFFAIRS
OF DENMARK
The Trade Council

Thank you

J. MARKUS ADRIAN

Team Leader Wind Energy Advisory
Senior Commercial Advisor

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The company journey to global markets

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Thank you!

Stay tuned for:

AMBASSADOR'S ROUNDTABLE: SEIZE THE OPPORTUNITY

15.30

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