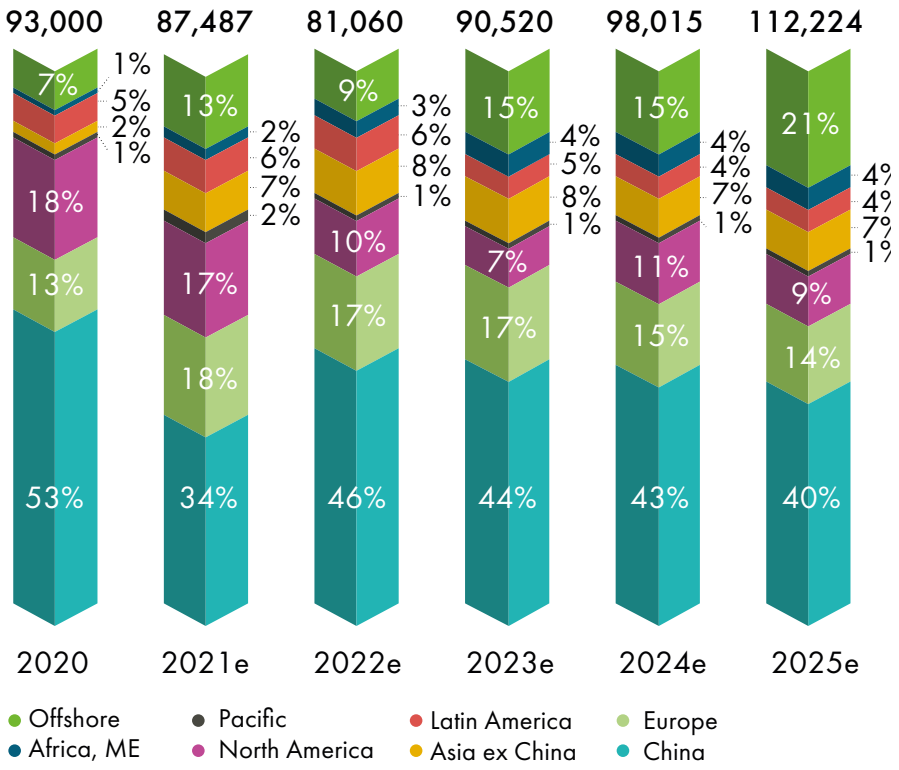
Developing markets and offshore likely to take bigger role to drive global growth

New wind power installations outlook 2020-2025 by region
MW and per cent, onshore and offshore



Offshore wind
The volume of annual offshore wind installations is expected to quadruple from 6.1 GW in 2020 to 23.9 GW in 2025, bringing its share of global new installations from today's 6.5% to 21% by 2025. In Asia, China will remain the largest contributor in the next five years, followed by Taiwan, Vietnam, Japan and South Korea. In Europe, offshore wind will continue to grow, especially when the big CfD 3 projects come online in the UK from 2023 and with new projects to be installed by Eastern European countries from 2024. In the US, under the support of the Biden Administration, commissioning the first utility-scale offshore installations (more than 800 MW) by 2023 is becoming feasible and multi-GW level of new installations are expected to be built thereafter.

Africa & the Middle East
New installations in this region will double in 2021 and then triple in 2022 compared with 2020. Such growth momentum is unlikely to stop during the rest of the forecast period. On average, 3.2 GW of new capacity is expected to be added each year in Africa/Middle East in the next five years (2021-2025), which is primarily driven by growth from South Africa, Egypt and Morocco in Africa and Saudi Arabia in the Middle East.

Asia excl. China
The COVID-19 pandemic coupled with the existing challenges with land acquisition, grid connection and permitting made 2020 a tough year for India. However, the situation is expected to improve and more capacity will come online starting from 2021, with annual installations reaching a new peak in 2023 due to the retirement of the ISTS waiver. Aside from India, Vietnam is expected to be a key driver in this region considering the ongoing installation rush driven by the

planned expiry of the FiT as well as the highly awaited Power Development Plan VIII (PDP8). Additionally, sizable volume is also expected to come from emerging markets in southeast Asia, such as the Philippines and Indonesia, and in central Asia namely Kazakhstan and Uzbekistan.

Pacific
After a four-year break, new capacity was commissioned in New Zealand in 2020 and more projects are expected to be built in the next five years. However, the majority of demand in this region in 2021-2025 will still come from Australia. State level support and auctions together with new solutions like hybrid power plants and Power-to-X will continue to generate opportunities in region's largest market, but grid transmission challenges will need to be addressed to accommodate such growth.

Europe
Driven by expected growth from established markets in Western Europe, including Germany, France and Spain, the Nordic countries, especially Sweden and Norway, and non-EU 27 markets such as Turkey and Russia, a new onshore installation record is likely to be achieved in 2021. After that, annual installations will remain stable in the remainder of the forecast period. However, as WindEurope has flagged, to ensure 15 GW/year onshore growth in Europe in the next five years, issues such as permitting, re-powering and pandemic associated restrictions will have to be addressed.

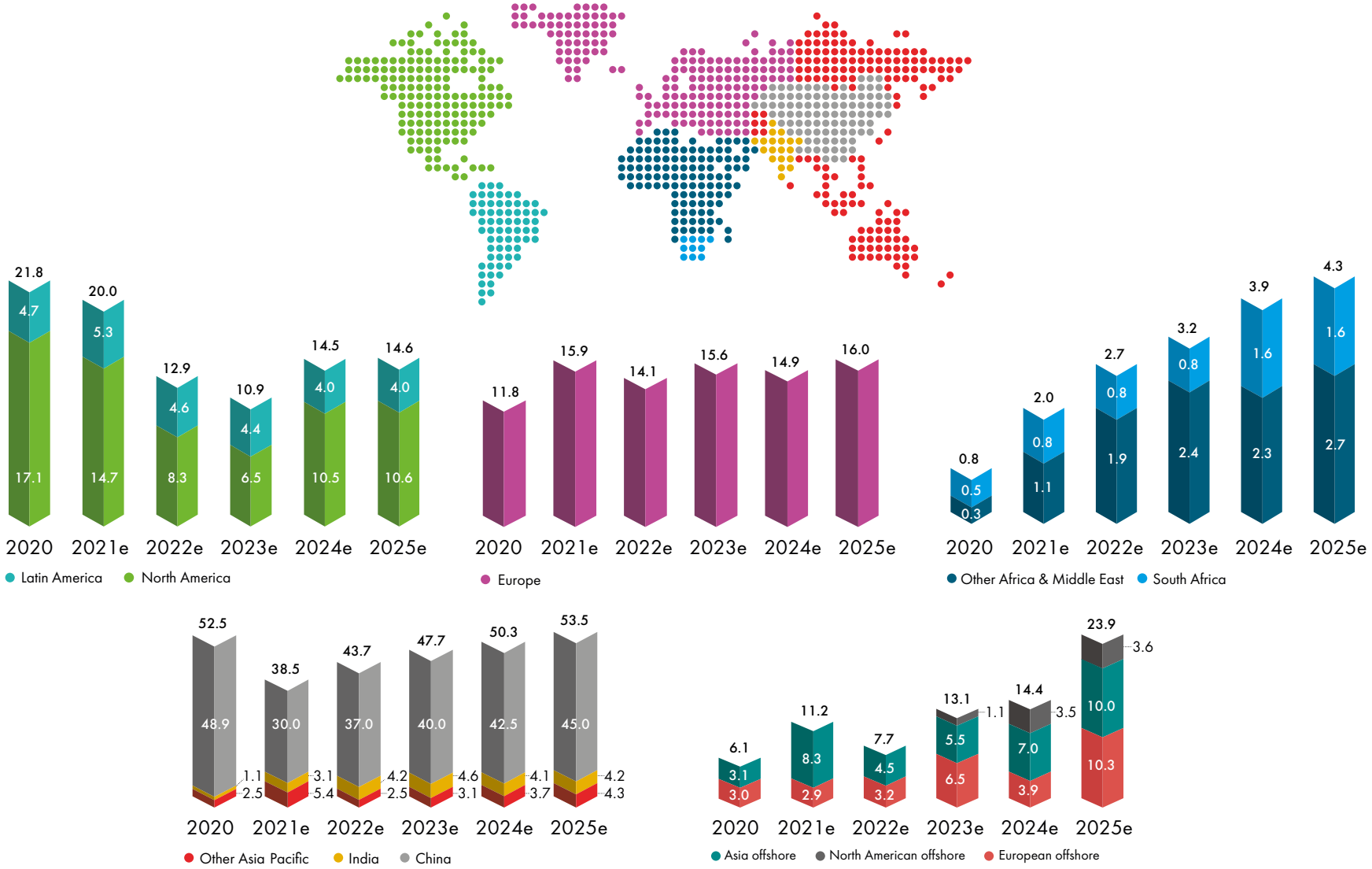
GWEC Market Intelligence expects that over 469 GW of new capacity will be added in the next five years.

The Americas
A new installation record is expected in Latin America in 2021, but the region is still a mixed picture in terms of government support, economic stability and grid capability on a country level, and annual growth in this region is likely to drop back from 2022. Brazil, Chile, Mexico, Argentina and Colombia are expected to be the top five contributors to regional growth in the next five years. In parallel to existing auction schemes, private auctions or bilateral PPAs have emerged as an alternative to drive the growth in this region. In North America, the PTC will remain as the primary driver to support the US onshore wind growth in the next five years. Onshore wind installations in the US are likely to decline in 2022 and 2023 but can be expected to bounce back in 2024 and 2025, driven by the PTC extension enacted in both 2019 and 2020.

China
After explosive growth in 2020, GWEC Market Intelligence believes Chinese onshore wind installations in 2021 will decline significantly. This is because most of the project pipelines approved before the end of 2019 have already run their course and starting from 2021 all onshore projects have to be subsidy-free. Nevertheless, onshore wind installations are expected to gradually ramp up again to support China's carbon neutrality target in the coming years to reach new record levels.

Regional onshore wind and offshore wind outlook

New installations (GW)



APPENDIX

Appendix

Global Wind Report - Methodology and Terminology

Data definitions and adjustments

GWEC reports installed and fully commissioned capacity additions and total installations. However, considering the delay of grid connection in China, GWEC uses installation data from the Chinese Wind Energy Association (CWEA) for China instead of grid-connected data.

New installations are gross figures not deducting decommissioned capacity. Total installations are net figures, adjusted for decommissioned capacity.

Definition of regions

GWEC adjusted its definition of regions for the 2018 Global Wind Report and maintains these in the 2021 edition, specifically for Latin America and Europe.

Latin America:
South, Central America and Mexico

Europe: Geographic Europe including Norway, Russia, Switzerland, Turkey, Ukraine

Sources for the report

GWEC collects installation data from regional or country wind associations, alternatively, from industry experts.

Historic installation data has been adjusted based on the input GWEC received. The 2021 Global Wind Report shows the accurate current and historic data.

Used terminology

GWEC uses terminology to the best knowledge. With the wind industry transitioning certain terminology is not yet fixed or can have several connotations. GWEC is continuously adapting and adjusting to these developments.

Acronyms

BESS	Battery Energy Storage Systems
BNEF	BloombergNEF
CAPEX	Capital Expenditures
CCS	Carbon Capture and Storage
CCUS	Carbon Capture, Utilisation and Storage
CfD	Contract for Difference
CO_2e	Carbon Dioxide Equivalent
COP26	26th UN Climate Change Conference of the Parties
DFIs	Development Finance Institutions
DISCOMs	Distribution Companies
EJ	Exajoules
EO	Executive Orders
ESG	Environmental, Social and Corporate Governance
ETFs	Exchange Traded Funds
ETS	Emissions Trading Scheme
EU	European Union
FiT	Feed-in Tariff
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GW	Gigawatt
IEA	International Energy Agency
IMF	International Monetary Fund
IPP	Independent Power Producers
IRENA	International Renewable Energy Agency
IRP	Integrated Resource Plan
ISTS	Inter-state transmission System
ITC	Investment Tax Credit
KEPCO	Korea Electric Power Corporation
LCOE	Levelised Cost of Energy
LTES	Long Term Energy Scenarios
MDBs	Multilateral Development Banks
MOIT	Vietnam Ministry of Industry and Trade
Mt	Metric Tonnes
MW	Megawatt
NDCs	Nationally Determined Contributions
O&M	Operation and Maintenance
OEMs	Original Equipment Manufacturers
PDP	Vietnam Power Development Plan
PPA	Power Purchase Agreement
PV	Photovoltaic
R&D	Research and Development
REIPPPP	Renewable Energy Independent Power Producer Procurement Program
RPS	Renewable Portfolio Standard
SMEs	Small and Medium Enterprises
TEPCO	Tokyo Electric Power Company
TWh	Terawatt Hour
UK	United Kingdom
UN	United Nations
US	United States

About GWEC Market Intelligence

GWEC Market Intelligence provides a series of insights and data-based analysis on the development of the global wind industry. This includes a market outlook, country profiles, policy updates, deep-dives on the offshore market among many other exclusive insights.

GWEC Market Intelligence derives its insights from its own comprehensive databases, local knowledge and leading industry experts.

The market intelligence team consists of several strong experts with long-standing industry experience across the world.

GWEC Market Intelligence collaborates with regional and national wind associations as well as its corporate members.

About GWEC Market Intelligence

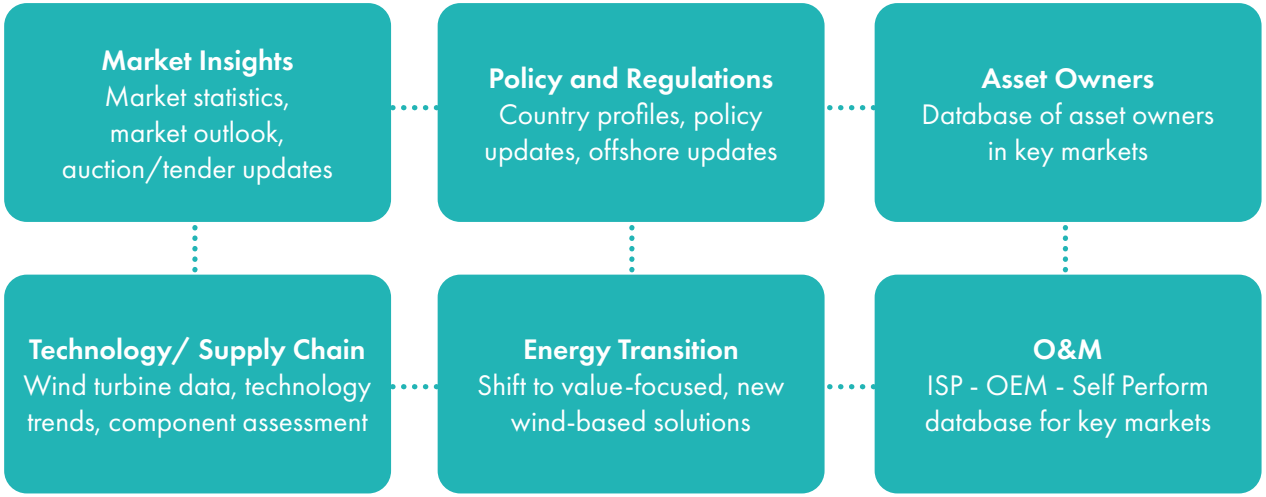
How to access GWEC Market Intelligence

- Corporate GWEC Members
- Wind energy associations
- Market Intelligence subscription

Subscription

Contact Feng Zhao feng.zhao@gwec.net

GWEC Market Intelligence Areas



GWEC Market Intelligence created a Member-only area to provide more in-depth market intelligence to GWEC's members and their employees.

Click here to get your login

GWEC Market Intelligence Products in 2021

Product	Frequency
1. Wind Energy Stats/Market Data	
Wind Stats 2020 (and historic)	Annual
Global Wind Report 2021	Annual
Wind Energy Statistics (wind energy pentration rate, jobs)	Annual
2. Country Profiles/Policy Updates	
Country Profiles Onshores/Country Profiles Offshore	Quarterly/Ad-hoc
Ad-hoc policy updates	Ad-hoc
3. Market Outlook	
Global Wind Market Outlook 2021-2025 (Q1 and Q3)	Semi-Annual
4. Supply Side Data	
Global Wind Turbine Supply Side Data Report (by market, technology, turbine size and numbers)	Annual
5. Auctions/Tenders	
Auction Trends and Learnings	Annual/Quarterly
Global Auction Results (database)	Quarterly
6. Offshore Wind Market	
Global Offshore Wind Report 2021	Annual
Market Entry Opportunities Database	Annual/Quarterly
Global Offshore Project Pipeline (database, in operation and under construction)	Annual/Quarterly
Global Offshore Turbine Installation Vessel Database	Annual/Quarterly
7. Components Assessment	
Gearbox (2019), Blade (2020), Generator (2021), followed by other components	Special Report
8. Wind Asset Owners/Operators	
Ranking of Wind Asset Owners and Operators Globally (Onshore and Offshore)Annual	
9. O&M	
O&M Service Provider Database (ISP- OEM - Self-perform	Annual
10. Energy Transition, Digittalisation, Hybrid, Hydrogen	
Position papers/studies - Value shift, Corporate PPAs	Special Report
New solutions, GWEC policy recommendations	Special Report

WOMEN IN WIND GLOBAL LEADERSHIP PROGRAM

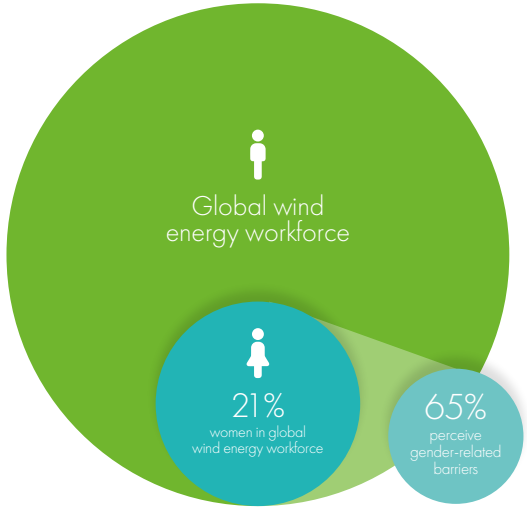
2020 was a year of disruption, loss and adaptation. The pandemic deepened pre-existing inequalities and exposed the vulnerabilities of our social, economic and political systems. As the global community examines the path to green recovery and sustainable growth, diversity and inclusion must be mainstreamed as a priority. Gender equality is crucial to the design of effective climate policies, and national and international efforts to tackle climate change must address the need for shared empowerment and innovation to be successful.

In 2019, the Global Wind Energy Council (GWEC) and the Global Women's Network for the Energy Transition (GWNET) jointly launched the Women in Wind Global Leadership Program. The program is designed to accelerate the careers of women in the wind industry, support their pathway to leadership positions and foster a global network of mentorship, knowledge-sharing, and empowerment.

Women's contributions – their talents, skills and views – are critically important in supporting the growing industry during a momentous transition towards a more sustainable energy system benefiting all of humanity. However, a study by IRENA and Women in Wind published in 2020 found that women currently make up only 21% of the global wind workforce, and the majority of women in the sector perceive gender-related barriers to their retention and/or advancement.

GWEC and GWNET call on stakeholders across the wind and renewables industries to recognise the importance of equal participation in the fight against climate change. In uplifting the next generation of stewards for a sustainable energy system, we affirm that our efforts are in alignment with UN Sustainable Development Goal 5 (achieve gender equality and empower all women and girls) and UN Sustainable Development Goal 7 (ensure access to affordable, reliable, sustainable and modern energy for all).

Find out more and join us: https://gwec.net/women-in-wind/about-the-program/
Instagram: @WeAreWomenInWind



Women make up 21% of the global wind energy workforce, and 65% of them perceive gender-related barriers in the sector
Source: 2019 study by IRENA and Women in Wind, with nearly 1,000 respondents from 71 countries

Jointly organised by:

GWNET Global Women's Network for the Energy Transition | GWEC GLOBAL WIND ENERGY COUNCIL

Leading Sponsor

Vestas

Supporting Sponsor

Wind Energy Hamburg
The global on & offshore event

Associate Sponsors

equinor | Bonfiglioli | NES FIRCROFT | Principle Power Globalizing floating wind | TECHSTORM Reliable Solution | WindESCo

Vestas	modyr@vestas.com
WindESCo	contact@windesco.com
Hamburg Messe (WindEnergy Hamburg)	info@windenergyhamburg.com
Bonfiglioli	Chiara Stefanini (Chiara.Stefanini@bonfiglioli.com)
NES Fircroft	Vicki Codd (Vicki.Codd@nesfircroft.com)
Principle Power	Amisha Patel (apatel@principlepowerinc.com)
Techstorm	Martijn van Breugel (martijn@techstorm.com)

Global Wind Energy Council

Rue Belliard 51-53,
1000 Brussels, Belgium
T. +32 490 56 81 39
info@gwec.net

@GWECGlobalWind
@Global Wind Energy Council (GWEC)
@Global Wind Energy Council

www.gwec.net