NWEC
NIGERIA WIND ENERGY COUNCIL

Insights from the GWEC 2025 Report

Global Wind Power Trends: Growth, Forecasts & Market Outlook

Volume 1

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Executive Summary

The wind industry is regaining momentum after a volatile early decade, with 2024 closing at a record-breaking 117 GW of newly installed capacity globally. The GWEC Global Wind Report 2025 forecasts even higher additions in 2025, reaching 138 GW, the highest ever recorded. This growth, however, must continue to accelerate if the world is to remain on track for net zero by 2050. Annual installations must rise to at least 164 GW annually between 2025 and 2030[1].

From fluctuating installations in the early 2020s to evolving investment trends and policy frameworks, this volume explores how global wind energy markets navigate the complex realities of inflation, supply chains, grid bottlenecks, and geopolitical challenges while highlighting the tools and strategies needed to meet future goals.

1. Historical Installation Trends (2020–2025)[2]

- 2020: 95.3 GW.
- 2021: 93.6 GW.
- 2022: 77.6 GW.
- 2023: 116.6 GW.
- 2024: 117 GW.
- 2025 (Forecast): 138 GW.

After a significant dip in 2022 driven by inflation, COVID-19 aftershocks, and sluggish permitting, installations rebounded in 2023 and stabilised in 2024. Despite external shocks and logistical constraints, the industry has proven responsive to global electrification trends.

2. Cumulative Installed Capacity

Global wind capacity stood at 1,136 GW as of 2024[3], doubling since 2016. China, Europe, and the United States drive most of this growth, while emerging markets are also gaining traction.

3. Regional Distribution of Wind Power Installations in 2024

In 2024, wind power deployment remained heavily concentrated in a few regions. GWEC reports that China, Europe, and the United States accounted for 86% of all new wind installations[4]. This high concentration

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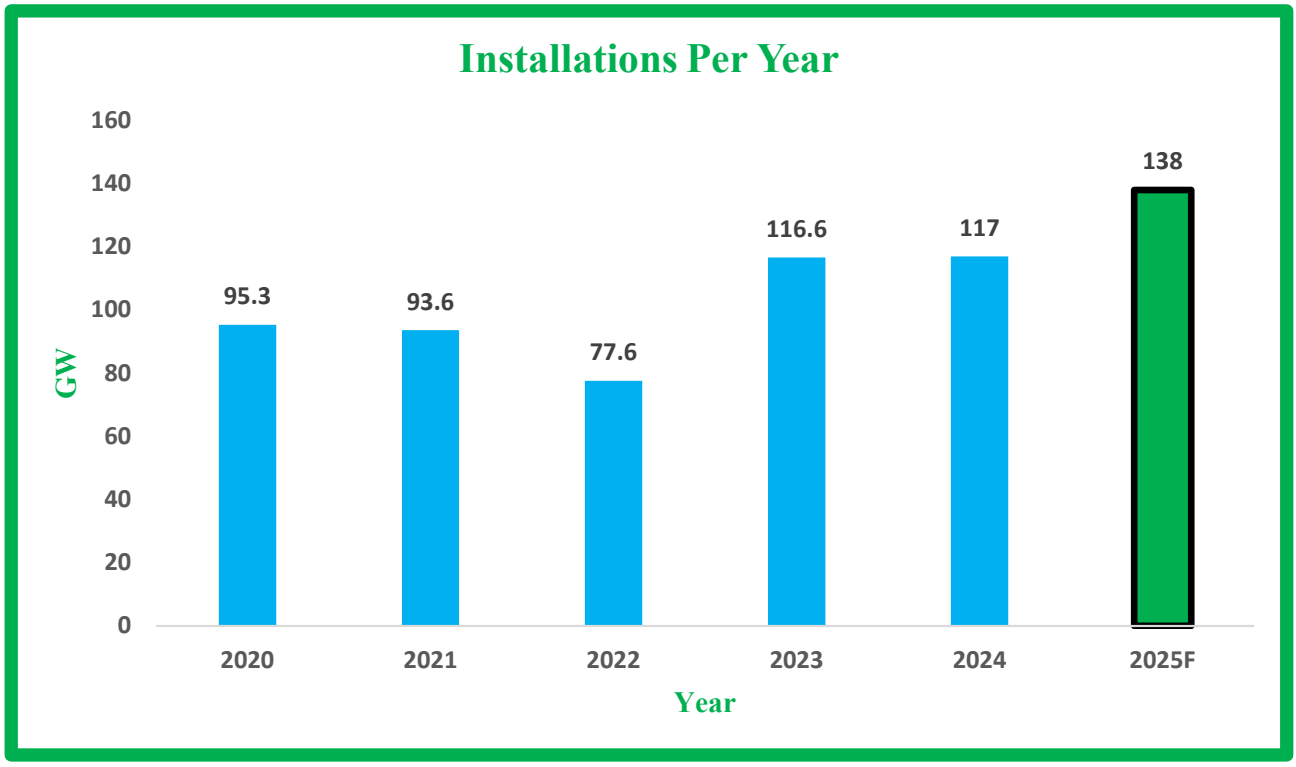

highlights the need for broader geographic diversification. While China took the majority share, emerging regions such as Africa, the Middle East, Latin America, Central Asia, and other parts of the Asia-Pacific received the remaining 14% of new capacity.

4. Key Growth Drivers

Several structural trends continue to underpin wind energy expansion:

- **Policy Incentives:** Germany awarded nearly 11 GW of new onshore wind capacity in 2024 tenders. An all-time high and a 70% year-on-year increase, reflecting its push to bolster industrial resilience and energy security[5].
- **Electrification:** The growing electrification of transport, heating, and industrial sectors is pushing demand for renewable energy.
- **Economic Viability:** Wind (onshore) energy has proven economically viable, becoming one of the most cost-competitive energy sources globally. Where scale has been achieved, wind energy has lowered consumer power prices, created jobs, and regenerated communities.
- **Capital Inflows:** The global wind industry now represents a market attracting over USD 200 billion in investment annually[6].

5. Barriers and Constraints

- **Permitting Delays:** Lengthy permitting processes remain a significant obstacle, particularly in Europe.
- **Grid Bottlenecks:** Grid connection queues stall over 3 TW of wind projects[7].
- **Geopolitical Trade Barriers:** Local content rules, tariffs, and supply chain fragmentation are raising costs and delaying timelines.
- **Macroeconomic Pressures:** Inflation, commodity price spikes, and high interest rates continue to erode project margins and increase financing risk.
- **Disinformation:** The oil and gas industry has spent over $1.5 billion on advertising and lobbying to keep fossil fuels flowing, outspending clean energy groups by a staggering 27 to 1[8].

6. Wind Deployment Forecast Through 2030

GWEC projects that to stay within the net-zero emissions pathway, wind deployment must average 164 GW/year from 2025 to 2030[9], a significant acceleration from current levels. Achieving this target will require strategic interventions in permitting, infrastructure investment, and international cooperation.

7. Recommendations and Call to Action

GWEC outlines a broad set of recommendations for scaling global wind deployment, which includes[10]:

- Improved revenue frameworks (e.g. index-linked CfDs and PPAs).
- Faster permitting.
- Grid investment.
- Support for the workforce and manufacturing.
- Tailored support for emerging markets.

8. Nigeria's Call to Action

The Nextier Group supported the establishment of the Nigerian Wind Energy Council (NWEC) in October 2024. The Council is the pioneering body promoting the adoption of wind energy technology in the country. It has carried out many activities

1 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 2–5). Lisbon: GWEC*
2 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 75). Lisbon: GWEC*
3 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 3). Lisbon: GWEC*
4 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 2). Lisbon: GWEC*
5 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 10). Lisbon: GWEC*
6 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 2). Lisbon: GWEC*
7 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 23). Lisbon: GWEC*
8 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 46). Lisbon: GWEC*
9 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 2–5). Lisbon: GWEC*
10 *GWEC. (2025). GWEC Global Wind Report 2025 (pp. 35-46). Lisbon: GWEC*

since its establishment. The Council has been able to show the viability of wind energy in Nigeria through activities like:

- **Research & Development:** Desktop analysis of Nigeria's wind energy profile.
- **Partnerships and Collaborations:** Partnering with government and non-governmental bodies like the Department of Climate Change at the Federal Ministry of Environment, Rural Electrification Agency of Nigeria (REA), Federal Ministry of Power, Renewable Energy Association of Nigeria (REAN), Global Wind Energy Council (GWEC), etc.
- **Capacity Building:** Capacity building sessions at the University of Abuja and the University of Ibadan in March 2025.
- **Lobbying and Advocacy:** In May 2025, there was a National Discourse on Youth for Wind and Climate Innovation (YWCI), which was followed by the YWCI 30-Days Sprint Challenge in July 2025.

More technical activities and engagement have been planned towards the adoption of wind energy technology by NWEC in subsequent months, including a pilot site demonstration.

9. Conclusion

Wind energy is entering a pivotal growth phase. With momentum returning after the 2022 slowdown, the next five years will determine whether the sector can meet global climate ambitions. GWEC's roadmap provides the policy, financial, and technical solutions to unlock worldwide gigawatt-scale expansion.

Source

Global Wind Energy Council (GWEC) Global Wind Report 2025

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