

ExCo 91
Newsletter
June 2023



iea wind

Japan

Country Presentation

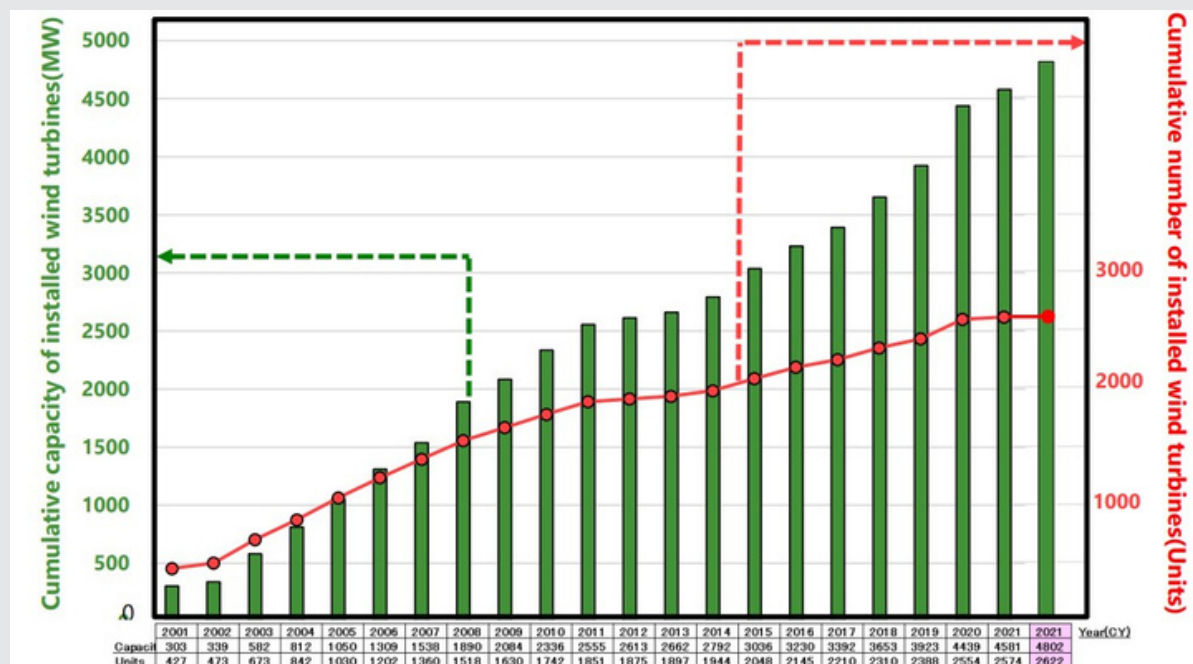


For more information please contact:
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Key highlights

- The total installed wind capacity is 4,802MW at the end of 2022CY in Japan. Wind power accounted for 1.0% of the total electricity.
- Japan's first large-scale commercial offshore wind farm has started operation in Akita Prefecture. There is a fixed-bottom offshore wind farm with a total capacity of about 140 MW.
- Regarding the GI Fund project, as Phase 1 in the wind power field, we are working on elemental technology development targeting four fields.

Installed capacity of wind power in Japan



Sweden

Country Presentation

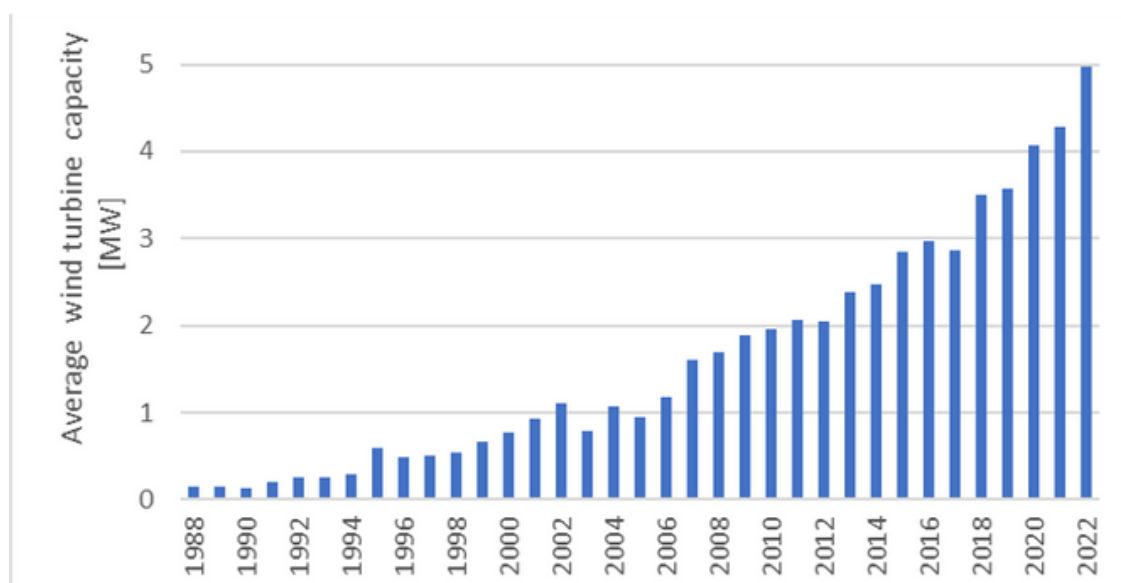


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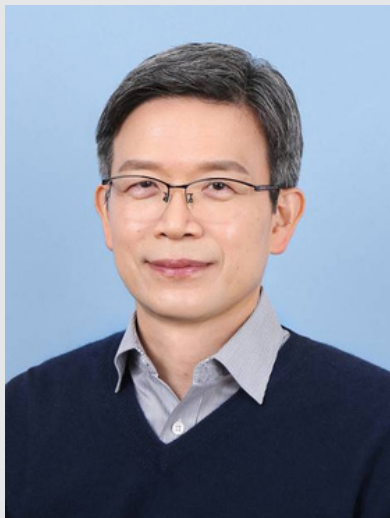
Key highlights

- Wind power in 2022 installed capacity reached 14,2 GW. Wind power accounted for 19% of electricity production (33 TWh).
- During 2022 new wind power was installed corresponding to approximately 7 TWh of annual production.
- Intensive development of offshore wind power projects is underway, and the Swedish marine plans are being updated.

Average nominal wind turbine capacity trend [MW] in Sweden



Republic of Korea Country Presentation

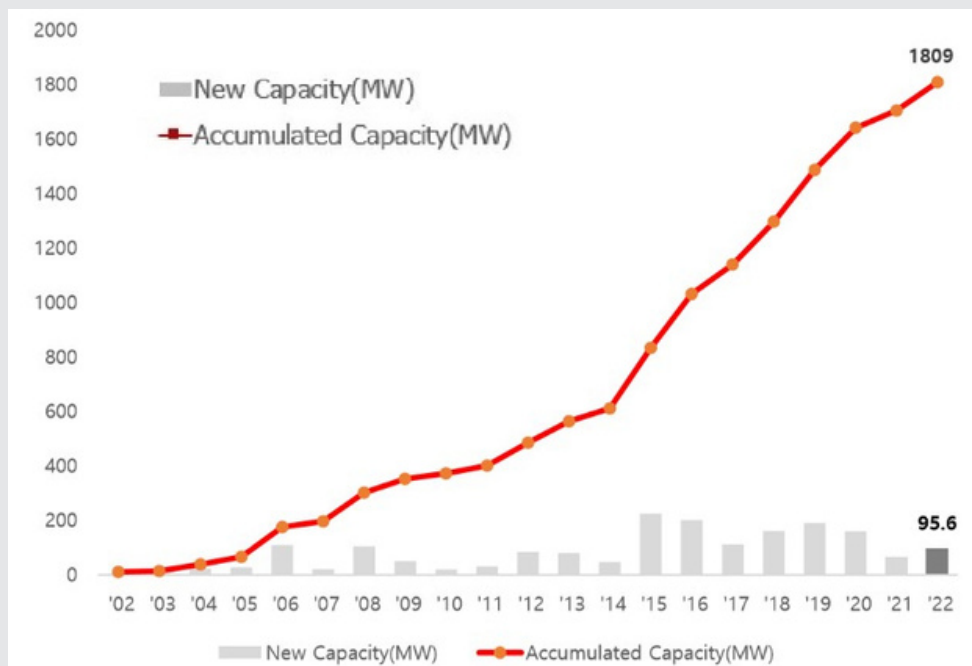


For more information please contact:
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Key highlights

- The slow deployment of wind energy during the last years shows big barriers such as complicated permitting processes and lack of social acceptance.
- According to the 10th Basic Plan on Electricity Supply and Demand, the renewable energy target is 21.6%(134.1TWh) of generation until 2030 and 30.6% by 2036 in Korea.
- The capacity of renewable energy in 2030 is expected to be 72.7 GW. This requires an additional 39.9GW to the current capacity with a major contribution of offshore wind power.

Wind energy deployment in Korea



China

Country Presentation

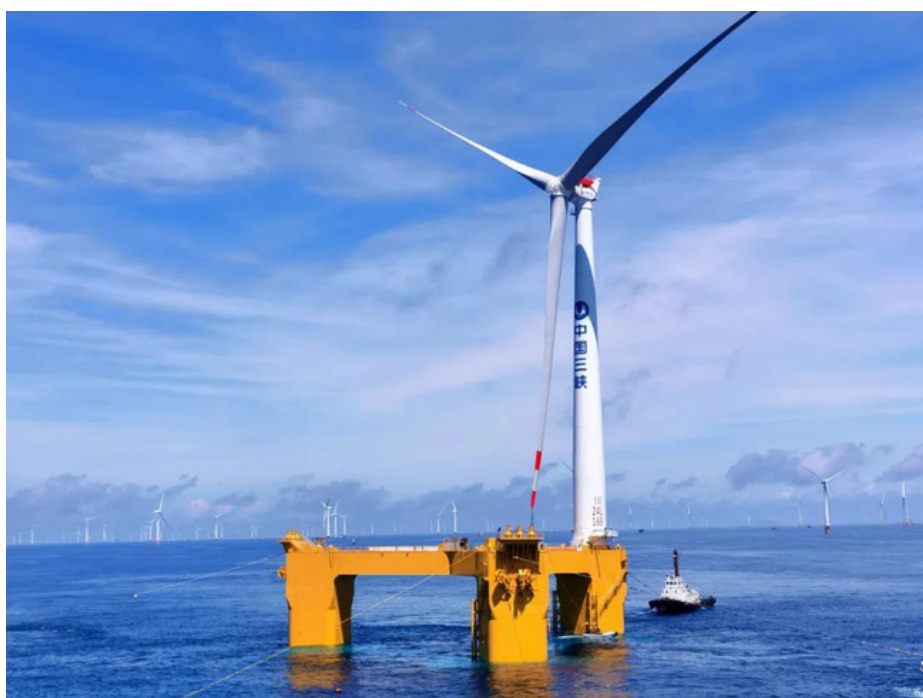


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Key highlights

- The installed capacity in 2022 reached 395.57GW (30.51GW offshore) with 49.83GW newly installed (5.16GW offshore).
- Wind power production was 759.9 TWh, accounted for 8.8% of China's electricity demand supplied in 2022
- Deep-sea floating wind turbines were put into operation, and the turbines with 10MW inland and 18MW offshore arose.

6.2MW-152 floating wind turbine



Task 25

Design and operation of Energy Systems with Large amounts of Variable Generation

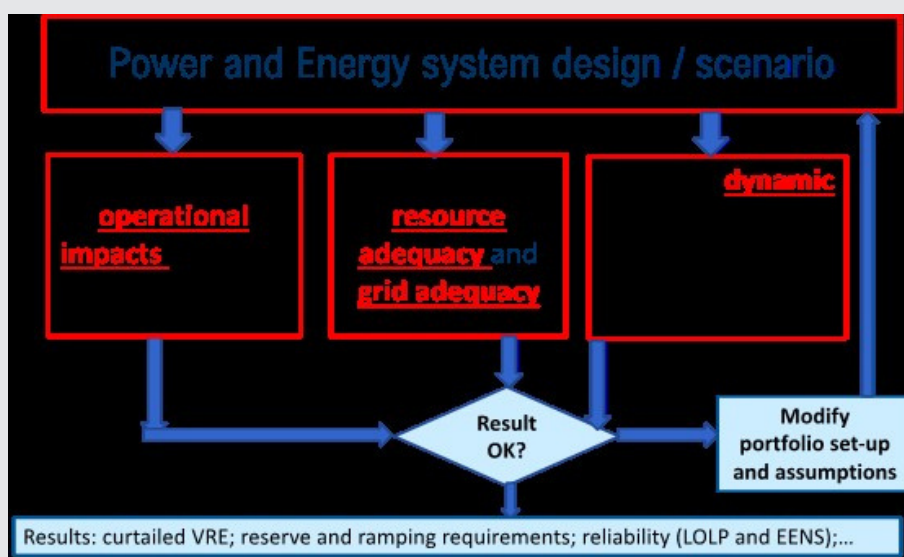


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Key highlights

- Public workshop disseminating renewable integration best practices in Kyoto Japan in conjunction with Task 25 meeting May 2023.
- New publication: "Flexibility From the Electrification of Energy: How Heating, Transport, and Industries Can Support a 100% Sustainable Energy System", IEEE PES Magazine, July-Aug. 2022.
- New publication updating data on wind Curtailments
<https://doi.org/10.1016/j.rser.2022.112212>

Task 25 is working to update Recommended Practice for Wind/PV Integration studies, adding recommendations for wind and solar dominated power systems.



Task 41

Distributed Wind Energy

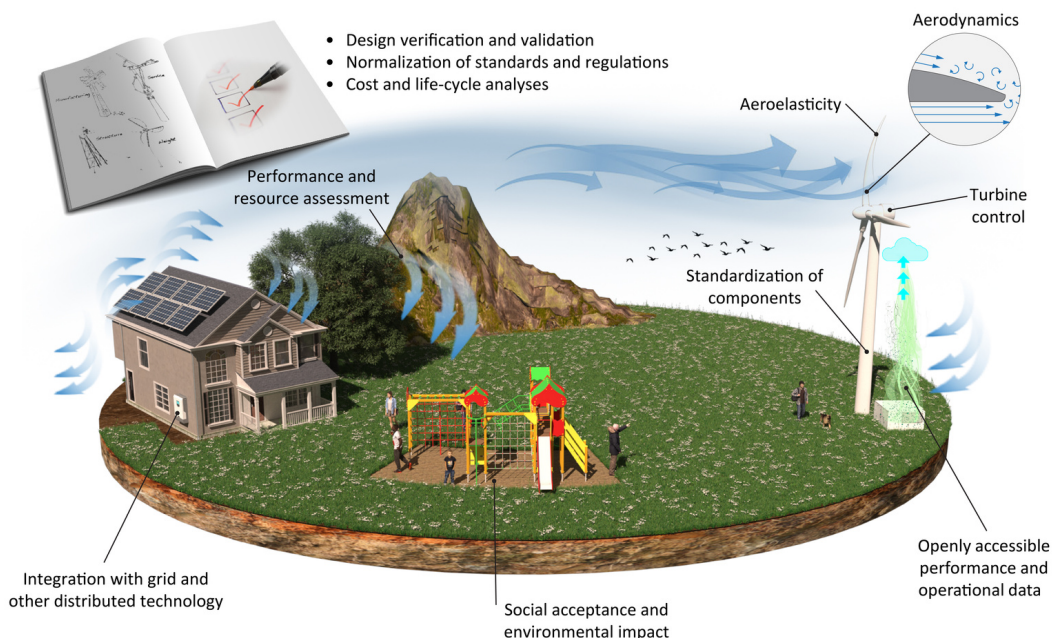


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Key highlights

- Kicked off the next four-year project phase, expanding work to include a new work package on the Human Dimension of Distributed Wind
- Planned revision of the International small wind turbine standard (MT-2) initiated based on work completed in phase I of this IEA effort, work efforts continue to support revision of the standard.
- Task members contributed to a journal article on the Grand Challenges for Small Wind Technology, building on the Grand Challenges in the Science of Wind Energy Technical Experts Meeting and publication.

Expanding on the Grand Challenge of Wind Energy: Need for small wind energy to contribute to a clean, distributed energy future.



Task 50

Hybrid Power Plants

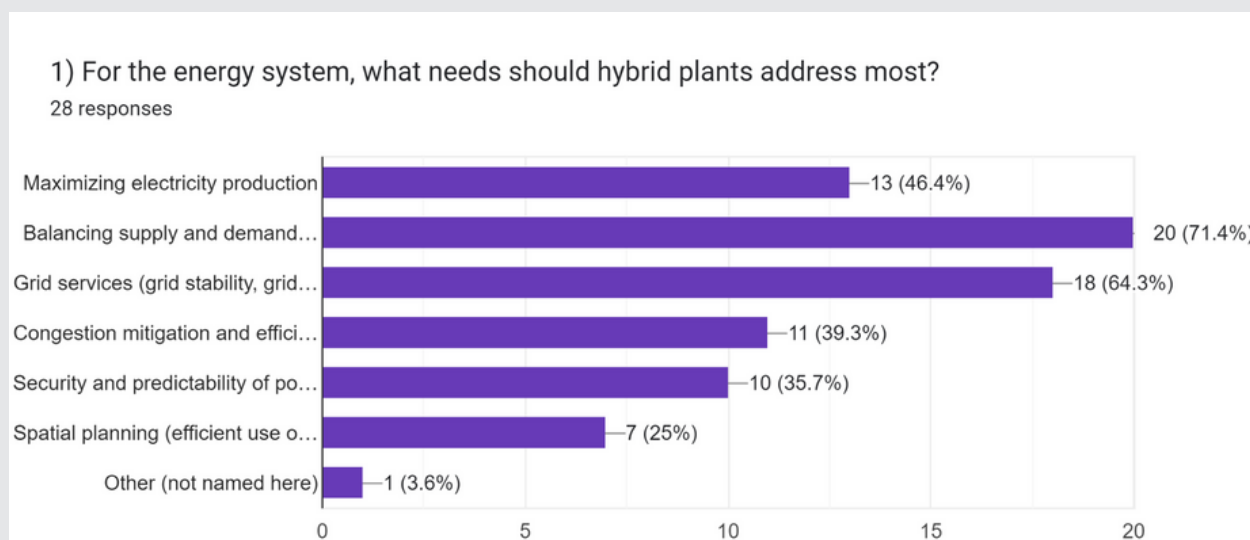


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Key highlights

- Task 50 is officially kicked off with all work packages having identified working groups and is making progress.
- A draft report is in progress for WP1 on global consensus on the definition of a “hybrid power plant”, which gathers input across academia and industry.
- Expert solicitations are being conducted for WP2, receiving insightful feedback for creating reference hybrid power plants.

An example of the expert solicitation results for WP2 helping to inform the creation of reference hybrid power plants



Video Series: Grand Challenges of Wind Energy Science

TEM 109 in Boulder, Colorado



For more information please contact:
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Key highlights

- Paul Veers and Katherine Dykes (main facilitators of the Topical Expert Meeting) recap the event that gathered around a hundred of the greatest minds in wind energy technology from across the globe.
- The focus was on interdisciplinary collaboration for a holistic approach to wind farm design and deployment.
- Breakout sessions paired different experts, like social scientists and wind turbine designers, atmospheric scientists and environmental scientists, and more.

Katherines Dykes and Paul Veers recap the IEA Wind conference on the Grand Challenges

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The **IEA Wind** conference on the Grand Challenges in the Science Wind Energy is just over. **Paul Veers** and **Katherine Dykes** - main facilitators of the Topical Expert Meeting - recap the event that gathered around a hundred of ...see mor

Play 2:29

Paul Veers and Katherines Dykes recap the IEA Wind conference on the G...

Grand Challenges of Wind Energy Science

The Perspective Piece



Key highlights

- In the past three years, the global wind energy research community identified urgent challenges in the design, development, and deployment of wind energy.
- These challenges must be swiftly addressed for wind power to fulfil its role as a significant carbon-free energy source.
- In a consensus-driven effort, 100 global wind energy experts have authored 10 articles for publication in Wind Energy Science (WES), synthesizing and clarifying the most crucial science needs in the field.

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The Perspective Piece: The Grand Challenges of Wind Energy Science

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4mo · 🌐

🔊 The Grand Challenges of Wind Energy Science perspectives piece is out! Video interview with **Paul Veers**: "Wind energy by a lot of measures has been very successful. And many people think that because of that, it's ess...see more

Paul Veers
Corresponding author
Senior Research Fellow, NREL

2:19

The Grand Challenges of Wind Energy Science - Paul Veers

Grand Challenges of Wind Energy Science

Small Wind Turbines



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Key highlights

- As the largest rotating machines on earth, wind turbines are set for future upscaling. However, there is a renewed interest in small wind turbines, driving energy transition and smart grid development.
- 1 million small wind turbines are installed around the world producing a total of 1.5 GW of power.
- This paper assesses the present state of small wind turbine technology, including its technical maturity, diffusion, and cost.

Introduction: Grand Challenges of Small Wind Turbines



Grand Challenges of Wind Energy Science

The Origin



Key highlights

- The origin of the Grand Challenges work came out of an IEA Wind topical experts meeting back in 2017.
- This collaborative effort focuses g on grand challenges like atmospheric flow physics, wind turbine system dynamics and materials, and control of wind power plant fleets with hundreds of generators supporting the electric grid.
- Later an article was published, outlining the progress, potential, and high-level scientific gaps while also noting opportunities in digitalization and integrated education.

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Paul Veers

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The Origin of the Grand Challenges Papers

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In a week, the IEA Wind's next topical experts meeting will take place in Boulder, Colorado. Hosted by NREL, the TEM no. 109 will gather close to a hundred experts from around the world to look at the results of the ten Grand ...see more

It was really important to have that in place 0:07

Interview with Author Paul Veers on the genesis of the Grand Challenge...

ExCo 91 & 92 Meetings

Next ExCo meeting in Germany, 17-20 October 2023

ExCo 92 will be held as a physical meeting at Koeniglicher Pferdestall in Hannover, Germany. Detailed agenda and invitations will be sent by the secretariat in due course.



Koenigl. Pferdestall, Exterior view

ExCo 91 took place at Kitakyushu International Conference Center in Fukuoka, Japan, 10-13 May 2023



Misc.



<https://www.linkedin.com/company/iea-wind/>

Coming up: Annual Report sneak previews on LinkedIn IEA

The IEA Wind Annual Report 2022 is in the final stage of preparation. Like last year, there will be chapter previews dropping on our LinkedIn.

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The IEA Wind TCP Annual Report 2021 is about to be finalized and published in full. In the meantime, we present sneak peeks at completed chapters. Today, the country report of the USA: ...see more

IEA Annual Report 2021 - USA Country Report - 7 pages

Report 2021 USA

In 2021, the Biden administration established a new target to deploy 30 gigawatts of offshore wind power capacity by 2030. In this photo, a wind turbine installation vessel from Seattle is 80 megawatt turbine that's part of Denmark Energy's Coastal Rights Offshore Wind project located 27 miles off the coast of Oregon Beach, Oregon. Photo: US Wind Energy Association

Author: U.S. Department of Energy's Wind Energy Technologies Office and National Renewable Energy Laboratory

Wind energy plays a critical role in national climate targets established in 2021. These include reducing greenhouse gas emissions by at least 50% from 2005 levels by 2030, achieving 100% clean electricity by 2035, and reaching net-zero emissions economically by no later than 2050 [1].

In the U.S., 10,475.6 GW of installed new clean energy capacity in 2021. Of these, 31,000 MW of wind capacity in 2021. The nation's largest operating wind farm, the 1000 megawatt (MW) Shepherds Flat in New Mexico [2], came online in 2021, and construction began on Granddunes [3], the nation's first commercial-scale offshore wind power project.

As of the end of 2021, the United States had 135 GW [4] of electricity generation capacity from wind turbines. The nation's largest operating wind farm, the 1000 megawatt (MW) Shepherds Flat in New Mexico [2], came online in 2021, and construction began on Granddunes [3], the nation's first commercial-scale offshore wind power project.

Wind power capacity in the United States continued to grow in 2021, adding nearly 30 gigawatts (GW) [5]. As the United States' top source of renewable energy production, wind power facilities accounted for 9.2% of electricity generation in 2021 [6].

27 4 reposts

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The IEA Wind Annual Report 2021 will be published soon! Here's a sneak preview of Austria's chapter. ...see more

IEA Annual Report: Austria Country Chapter - 5 pages

Report 2021 Austria

Photo: Shutterstock.com

Author: Bernhard Fuernberg, Paul Blomach, Austrian Windenergy Association and Andrea Krenn, Energiegesellschaft Austria

Austria has set ambitious renewable energy and climate protection targets, reaching 100% electricity generation from renewables by 2030.

The IEA Wind 2021 marked a moderate expansion of wind power. Austrian wind power increased by 268 MW. Many projects are part of a plan covered by moderate support schemes introduced in recent years and lengthy approval procedures.

In 2021, Austria installed 60 turbines compared to 7 turbines in 2020. By the end of 2021, there are more than 3,300 MW installed capacity, while 37 turbines with 102 MW were decommissioned. As a result, comparing established and decommissioned turbines in Austria, there was a slight net increase in existing wind power plants [1]. The estimated possible potential until 2030 is at 1000 MW with 22.5 TWh a.o. [2].

16 3 reposts



<https://www.youtube.com/@IEAWIND>

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