

Patents and the transition to renewables

Wind turbines

XXXV Nordic NIR Meeting
Oslo, 29 August 2022

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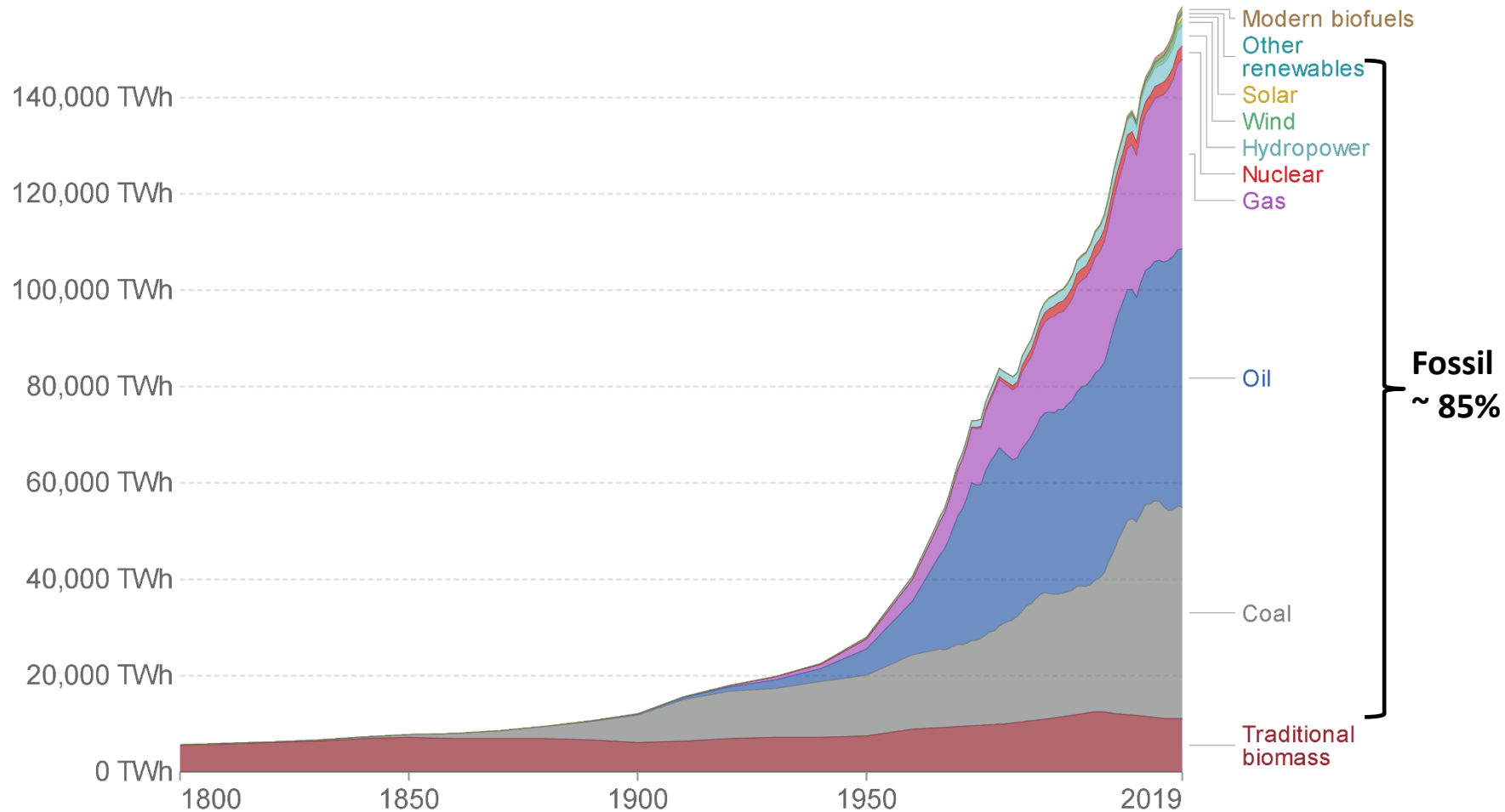


How good are we at cutting down on fossil energy sources?

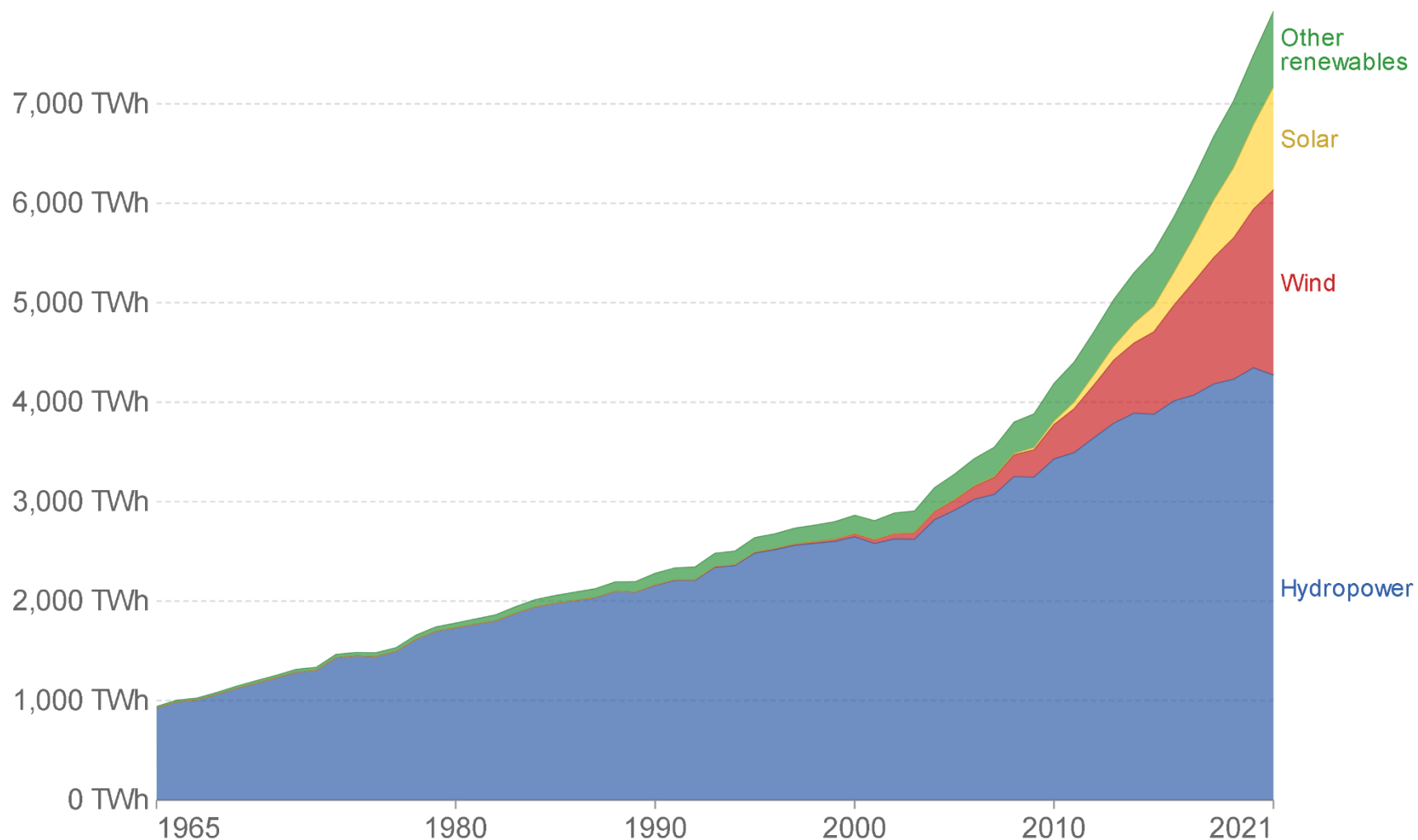
Global direct primary energy consumption

Direct primary energy consumption does not take account of inefficiencies in fossil fuel production.

Our World
in Data



Renewable energy generation, World



Source: BP Statistical Review of Global Energy

OurWorldInData.org/renewable-energy • CC BY

Note: 'Other renewables' refers to renewable sources including geothermal, biomass, waste, wave and tidal. Traditional biomass is not included.

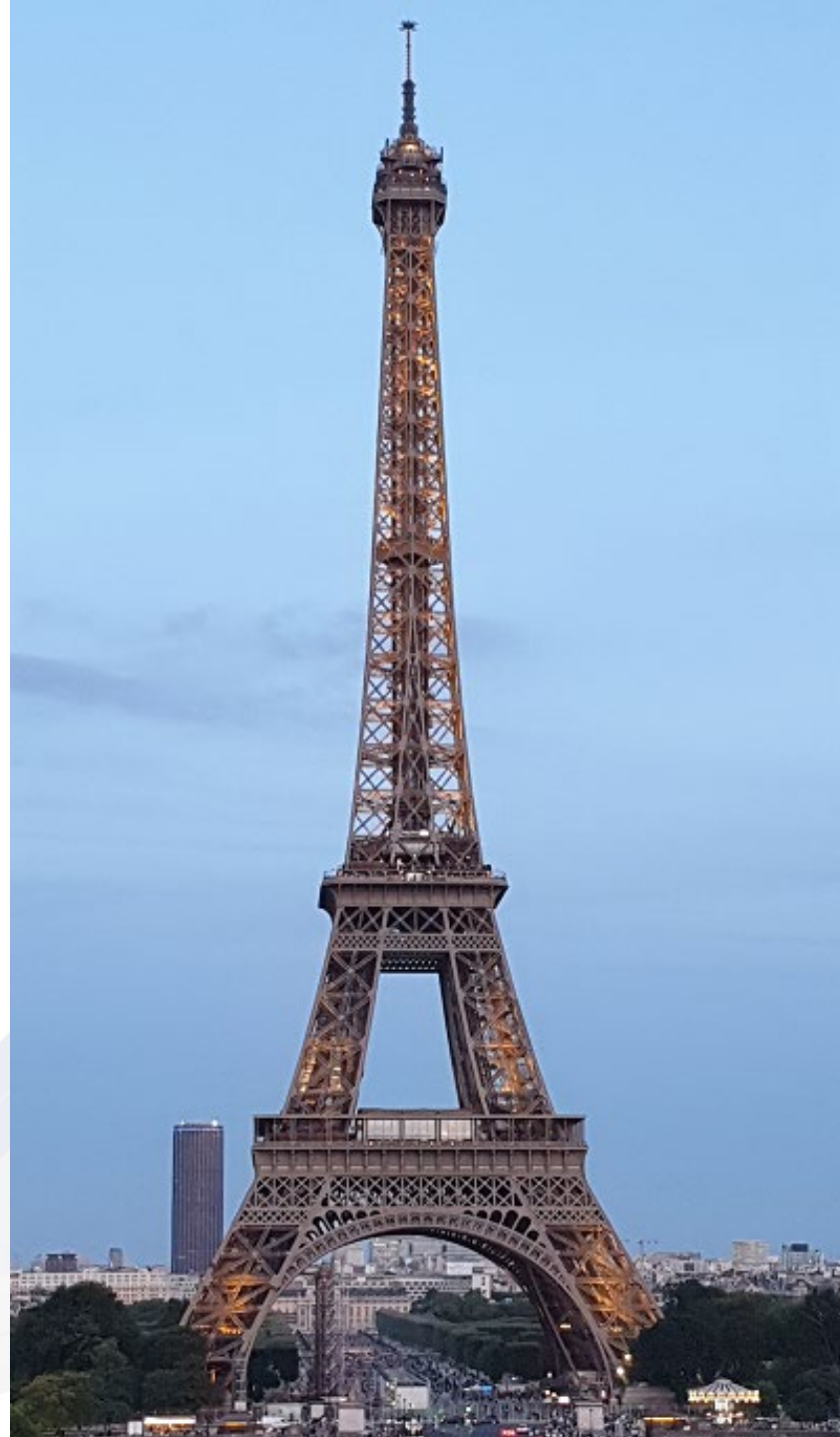
Wind turbines the size of the Eiffel Tower?

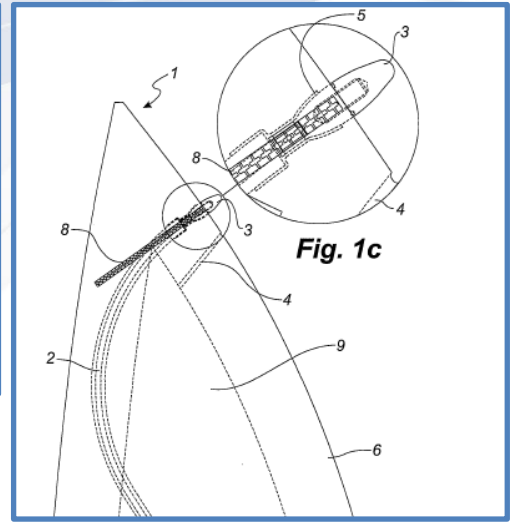
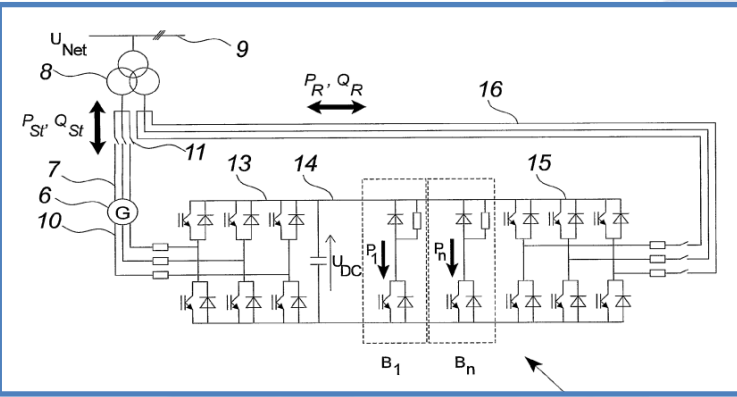
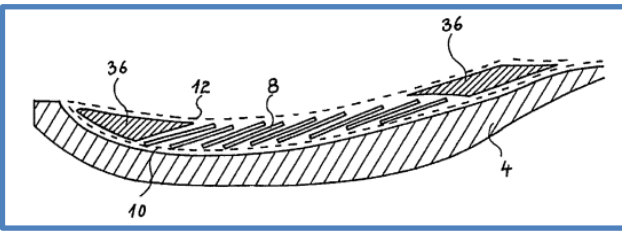
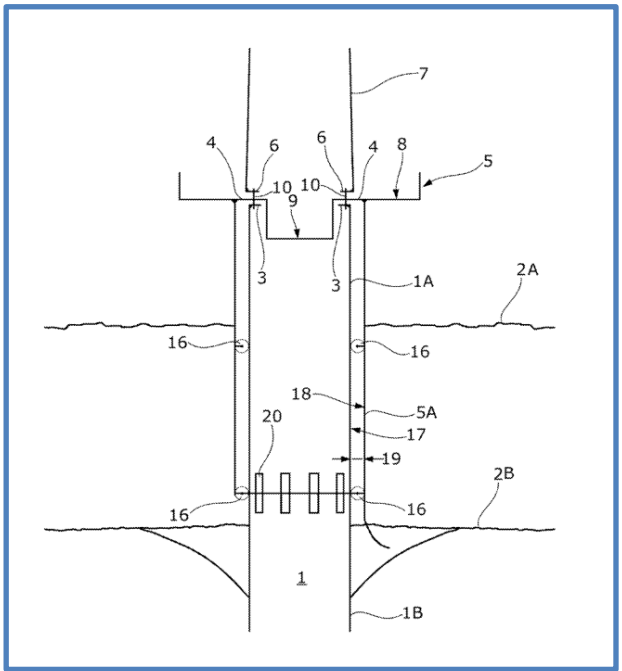
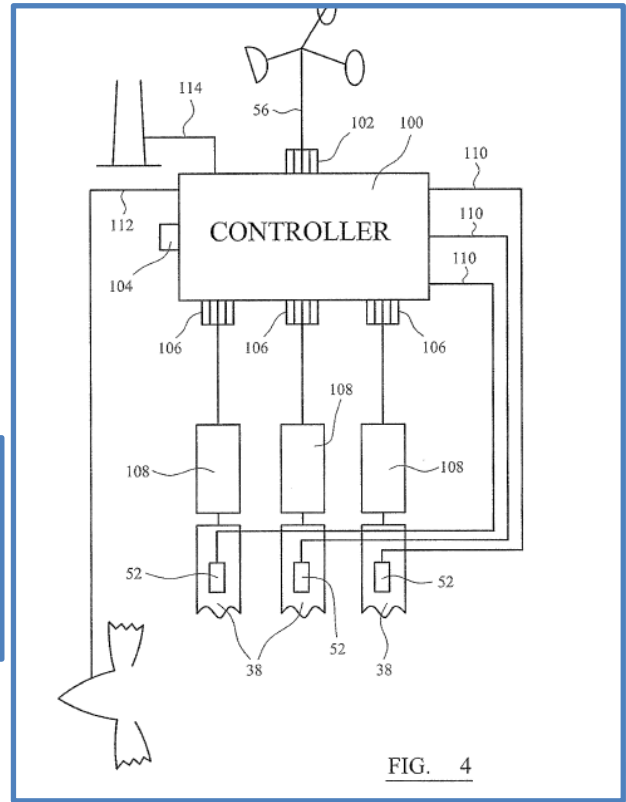
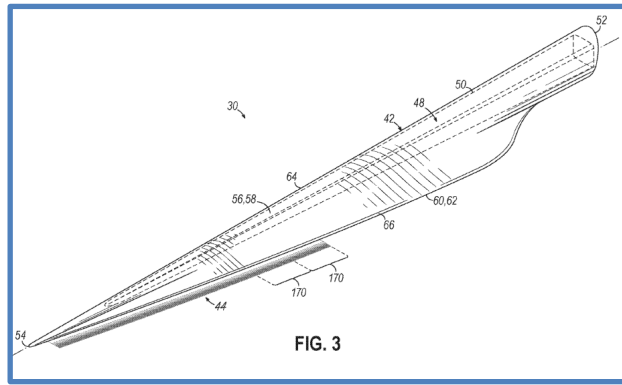
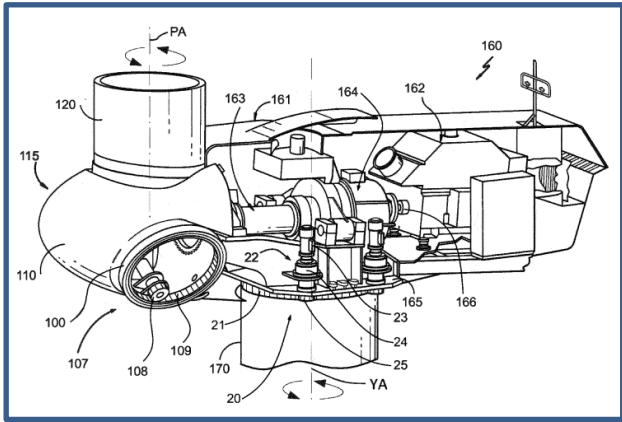
1995-2000: Commercial wind turbine rotors get up to a diameter of 50 meters – 0,75 MW

2022: [Vestas V236](#)*
15 MW ~ 10,000 households

2030: ??

*)
<https://www.vestas.com/en/products/offshore/V236-15MW/prototype/prototype-installed-osterild-Denmark>





Contentious field?

Siemens Gamesa to squeeze GE's flagship out of US market

The ongoing patent lawsuit between GE and Siemens Gamesa stands to greatly backfire for the US giant, which could force players such as Ørsted to find new offshore wind turbines. The power company itself claims this risks leading to "potentially irreversible" delays on a gigawatt-scale project.

Vestas and GE Renewable Energy Settle Multi-Patent Dispute

Denmark's Vestas says wins British patent case

Contentious field?

- Litigation is rare, but EPO oppositions are many. No. of oppositions*
 - filed by Vestas: 235
 - filed by Enercon: 234
- Comparison to the pharma industry:
 - Teva: 399
 - Sandoz: 213
 - Pfizer: 146
 - Novartis: 241

*) All-time number of oppositions according to the European Patent Register

World top 10 wind turbine manufacturers 2022*

1. Vestas (DK)
2. Siemens Gamesa (DE/ES/DK)
3. Goldwind (CN)
4. General Electric (US)
5. Envision (CN)
6. MingYang (CN)
7. Windey (CN)
8. Nordex (DE)
9. Shanghai Electric (CN)
10. CSIC (CN)

6 of 10 are Chinese corporations (2013: 2 corporations in top 10**)

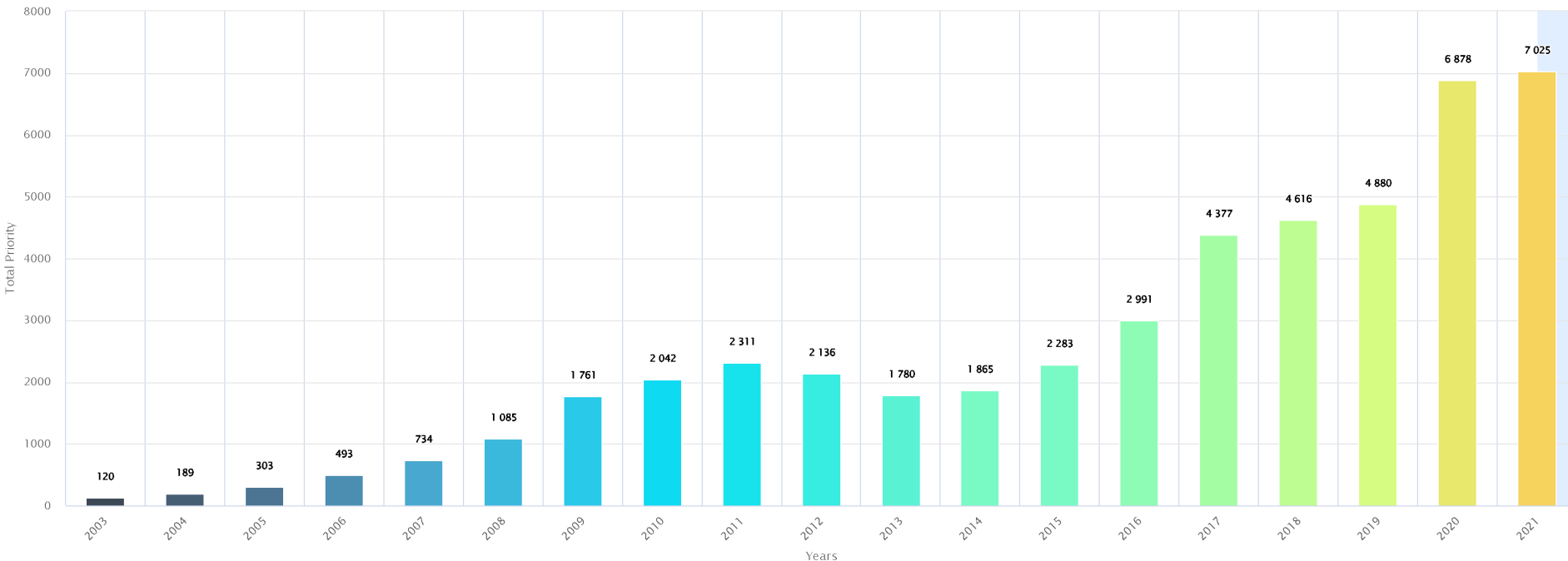
*) Source: BizVibe.com

***) Source: evwind.es

No. of patent applications in IPC class F03D in the past 20 years with a Chinese priority

Most Recent 20 Years by Priority

PR=(CN*) and IC=(F03D*)



● Earliest Priority

Wind turbine patents - Trends

- Growing market – significant political will to expand exploitation of renewable energy sources, including wind
- New players are emerging, notably from China
- Patent filings are high and will remain high
- Patent validity is frequently challenged – presumably this will not change
- Very few infringement disputes find their way to the Courts – this might change

Thank you for your attention!