

# Accelerating the growth of wind power under the pressure of energy security

MISTRA Electrification stakeholder webinar

**Jessica Jewell**, Chalmers University of Technology

**Marta Vetier**, Chalmers University of Technology

**Anastasia Pavlenko**, Lund University

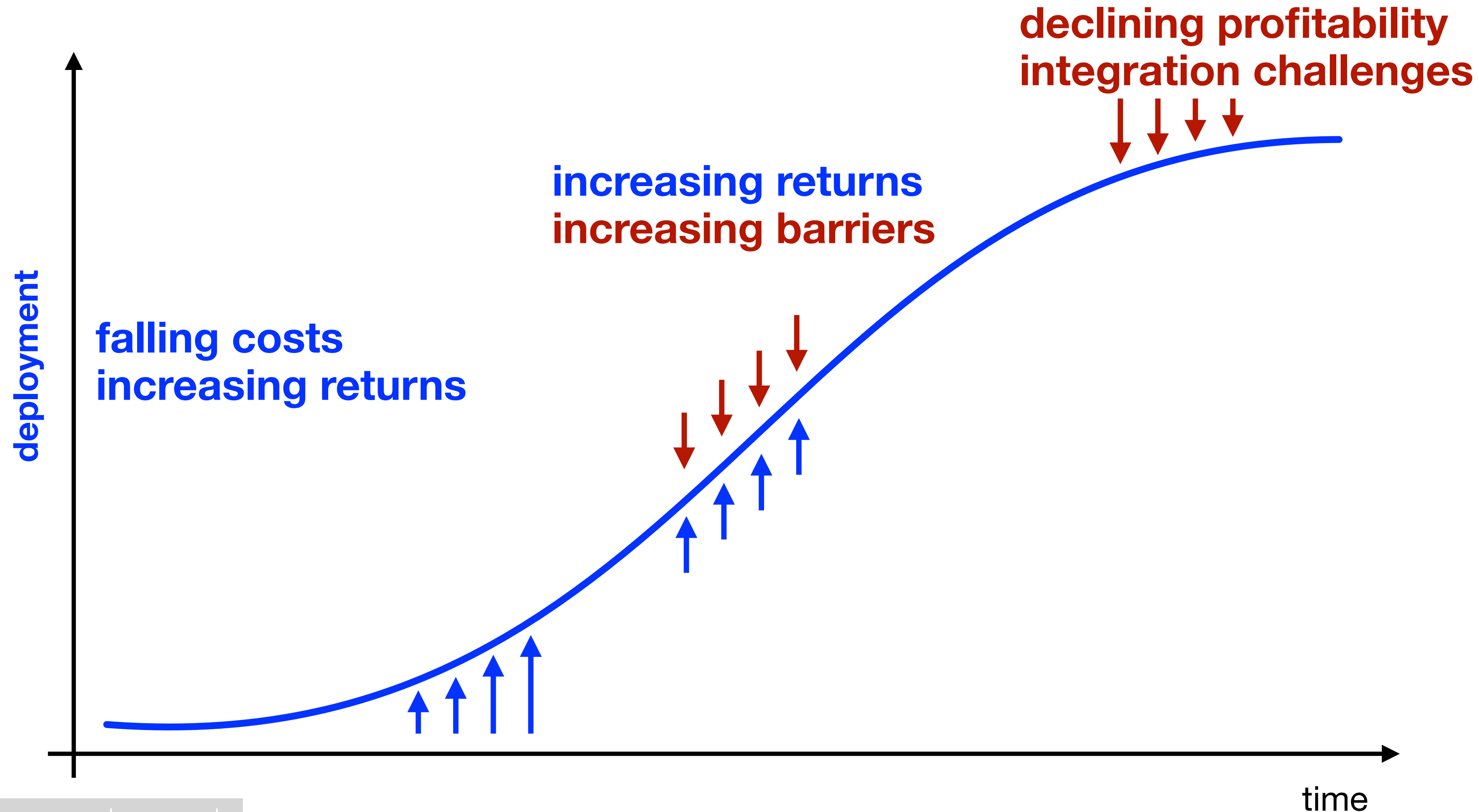
**Aleh Cherp**, Lund University

With input from Vadim Vinichenko

30 May 2023

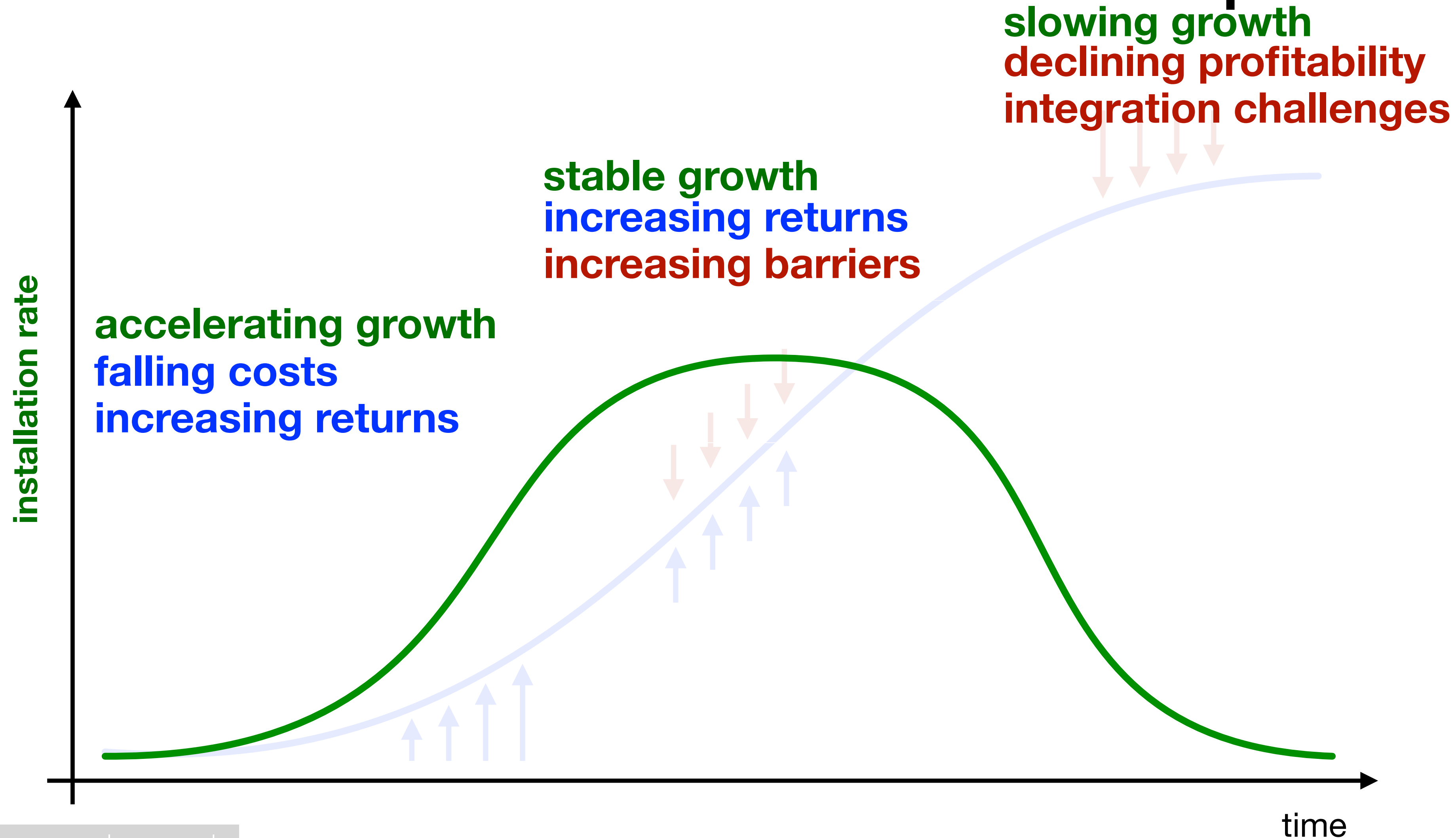
# Cumulative technology deployment

## Balance of drivers and barriers at different phases of S-curve

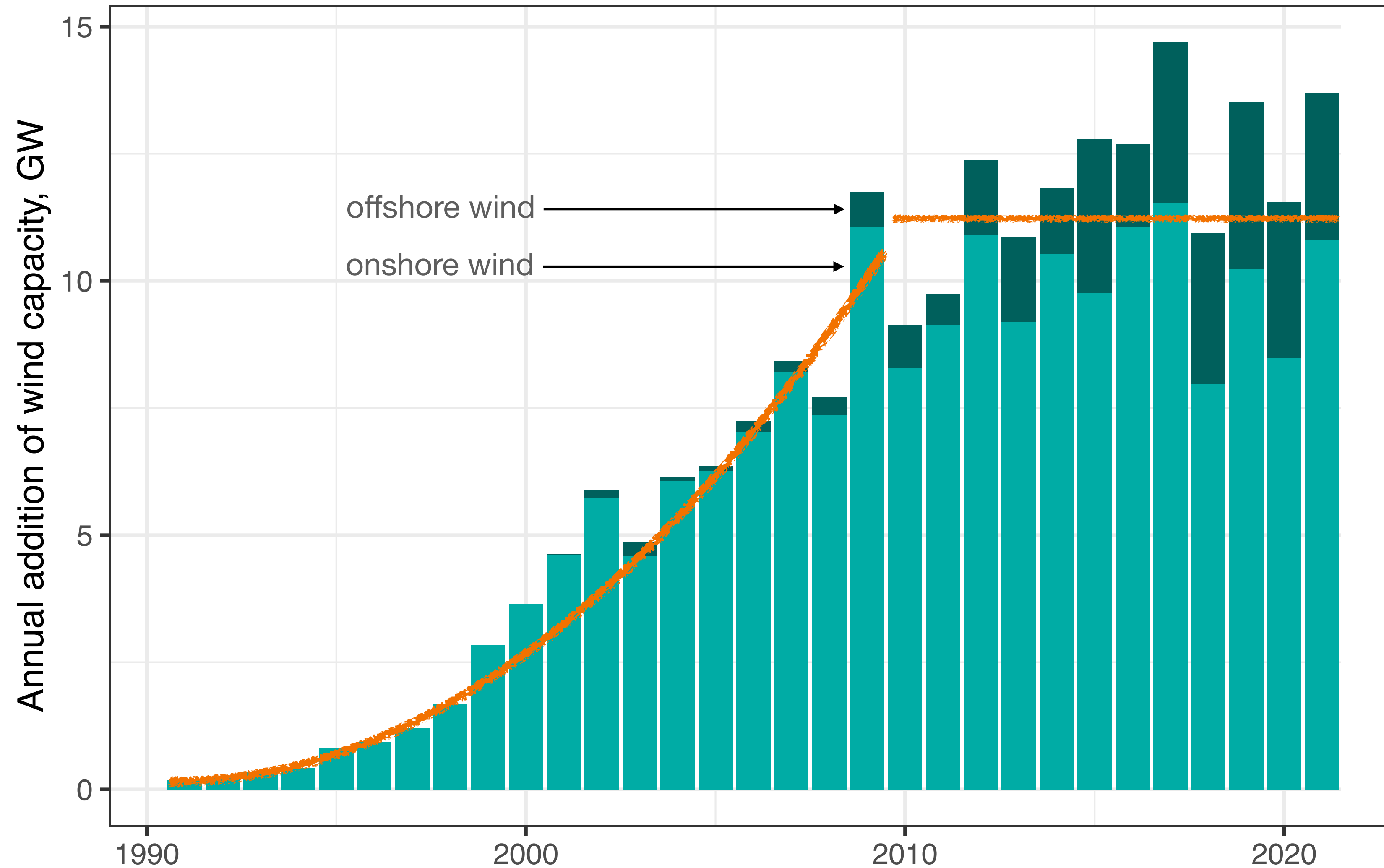


# The rate of technology additions

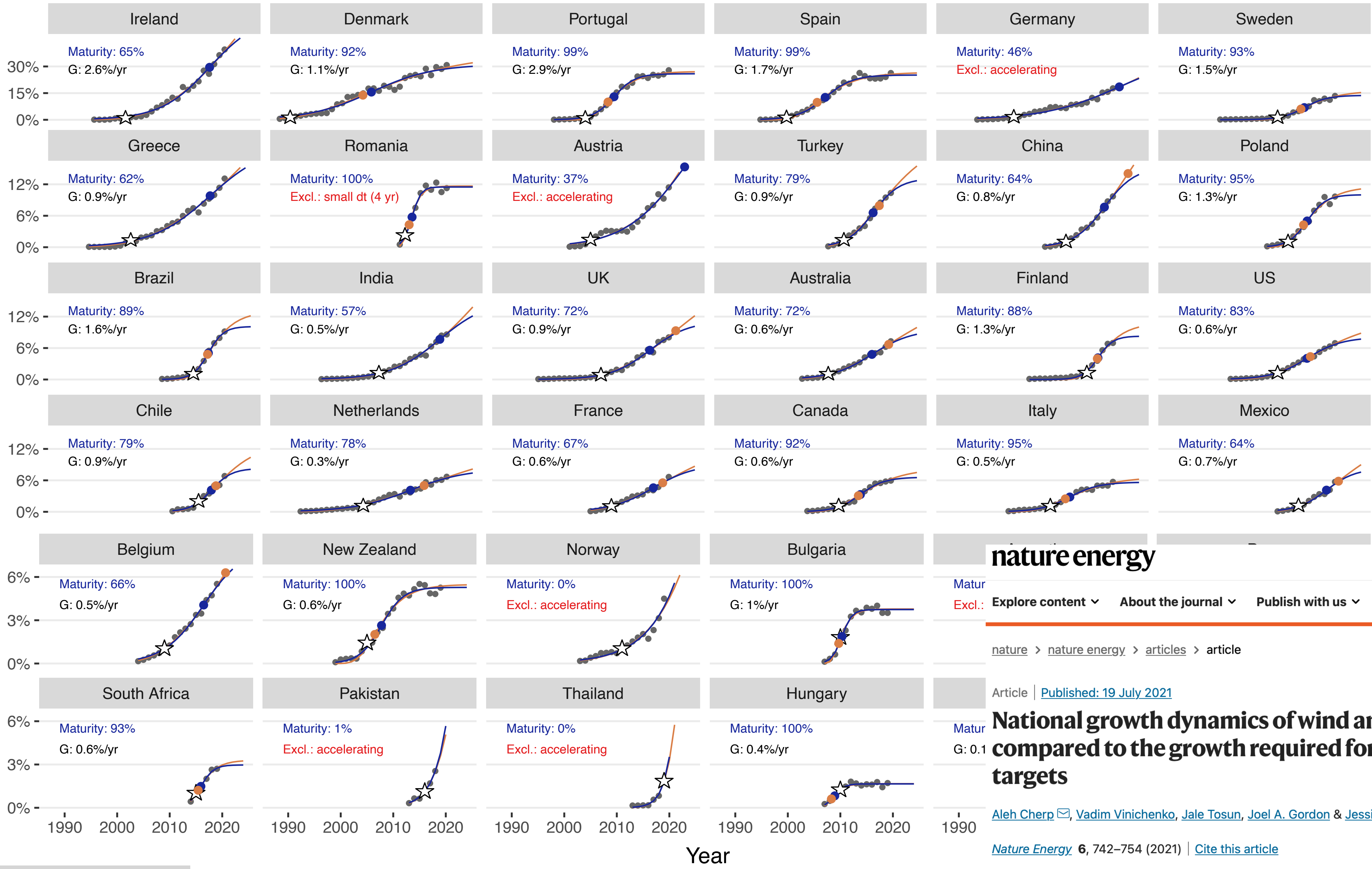
Balance of drivers and barriers at different phases of S-curve



# Wind power in Europe – stable growth



Wind power production as percentage of electricity supply in the take-off year



nature energy

Matur  
Excl.: [Explore content](#) [About the journal](#) [Publish with us](#)

nature > nature energy > articles > article

Article | [Published: 19 July 2021](#)

Matur  
G: 0.1

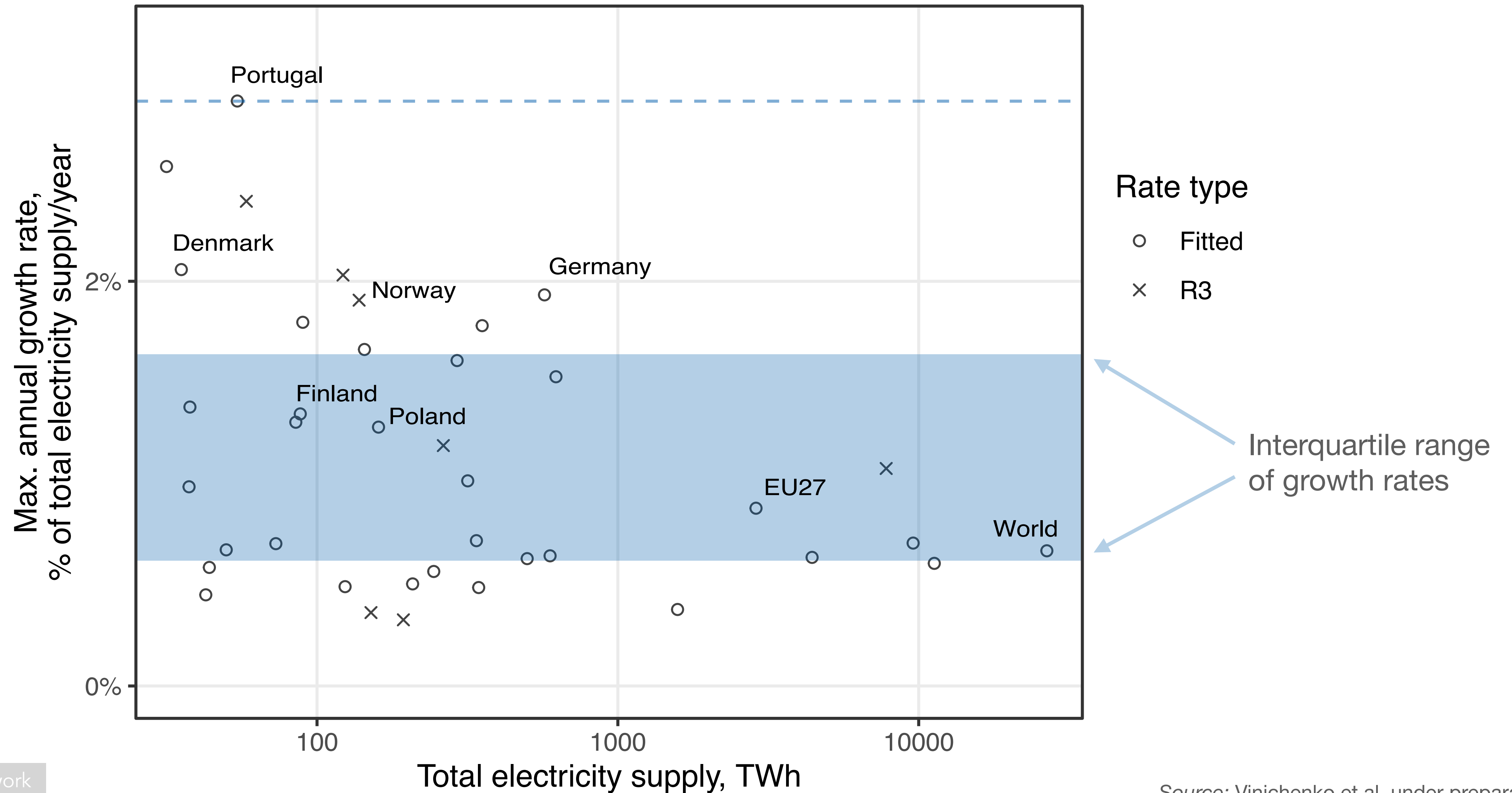
## National growth dynamics of wind and solar power compared to the growth required for global climate targets

[Aleh Cherp](#) [Vadim Vinichenko](#), [Jale Tosun](#), [Joel A. Gordon](#) & [Jessica Jewell](#)

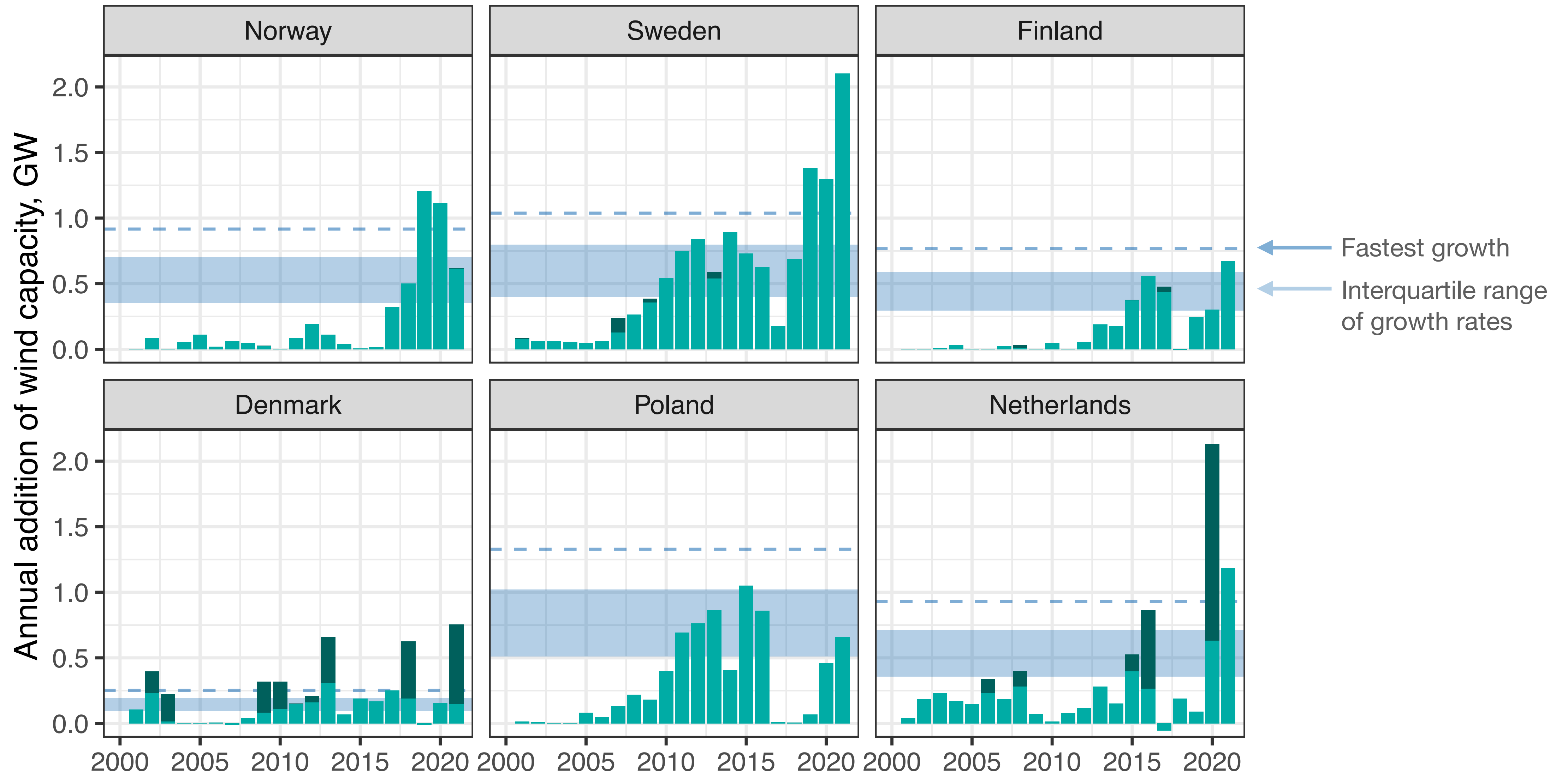
[Nature Energy](#) 6, 742–754 (2021) | [Cite this article](#)

11k Accesses | 95 Citations | 335 Altmetric | [Metrics](#)

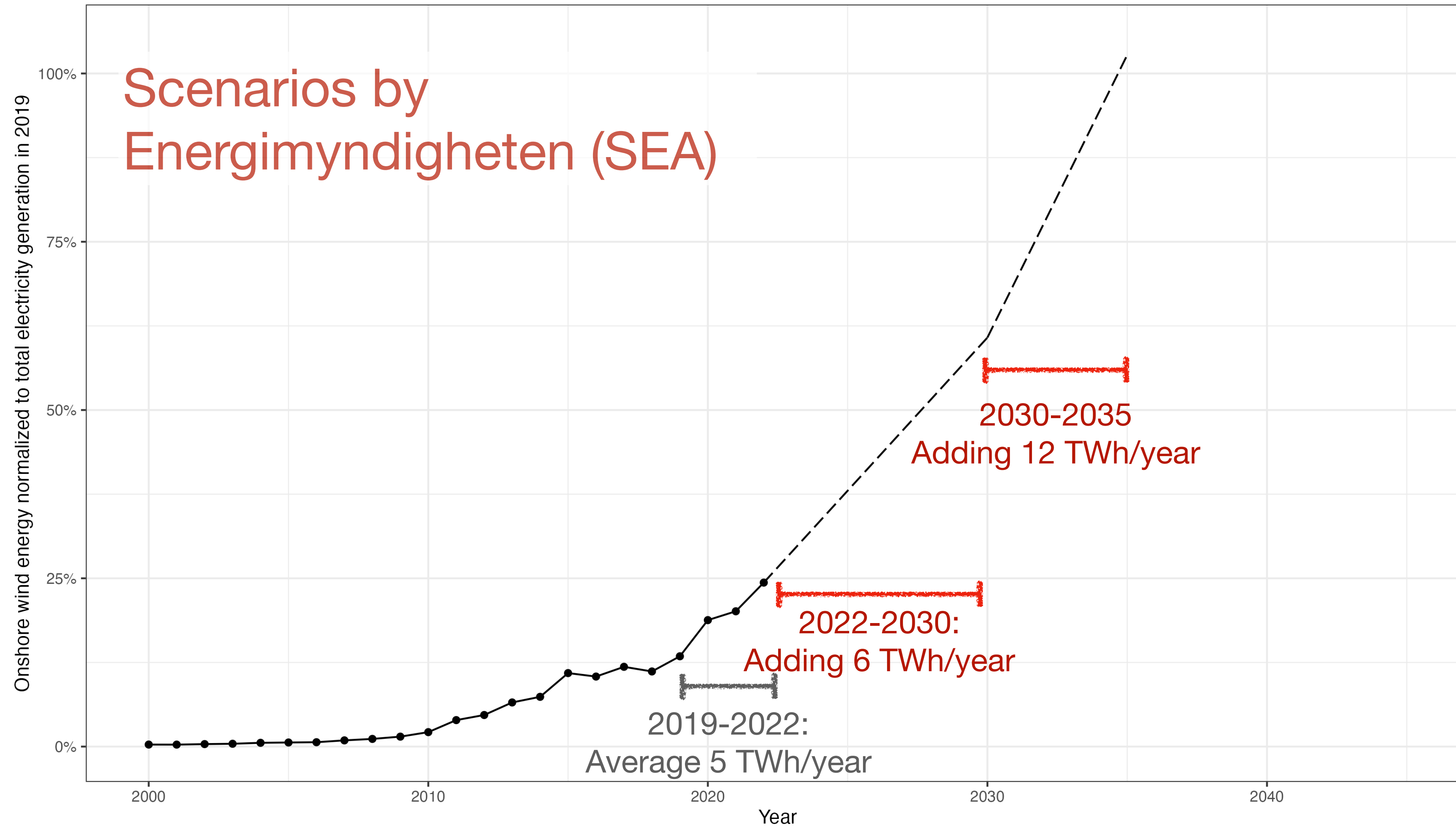
# Maximum annual growth rate of wind power



# How fast has wind power grown in Northern Europe?

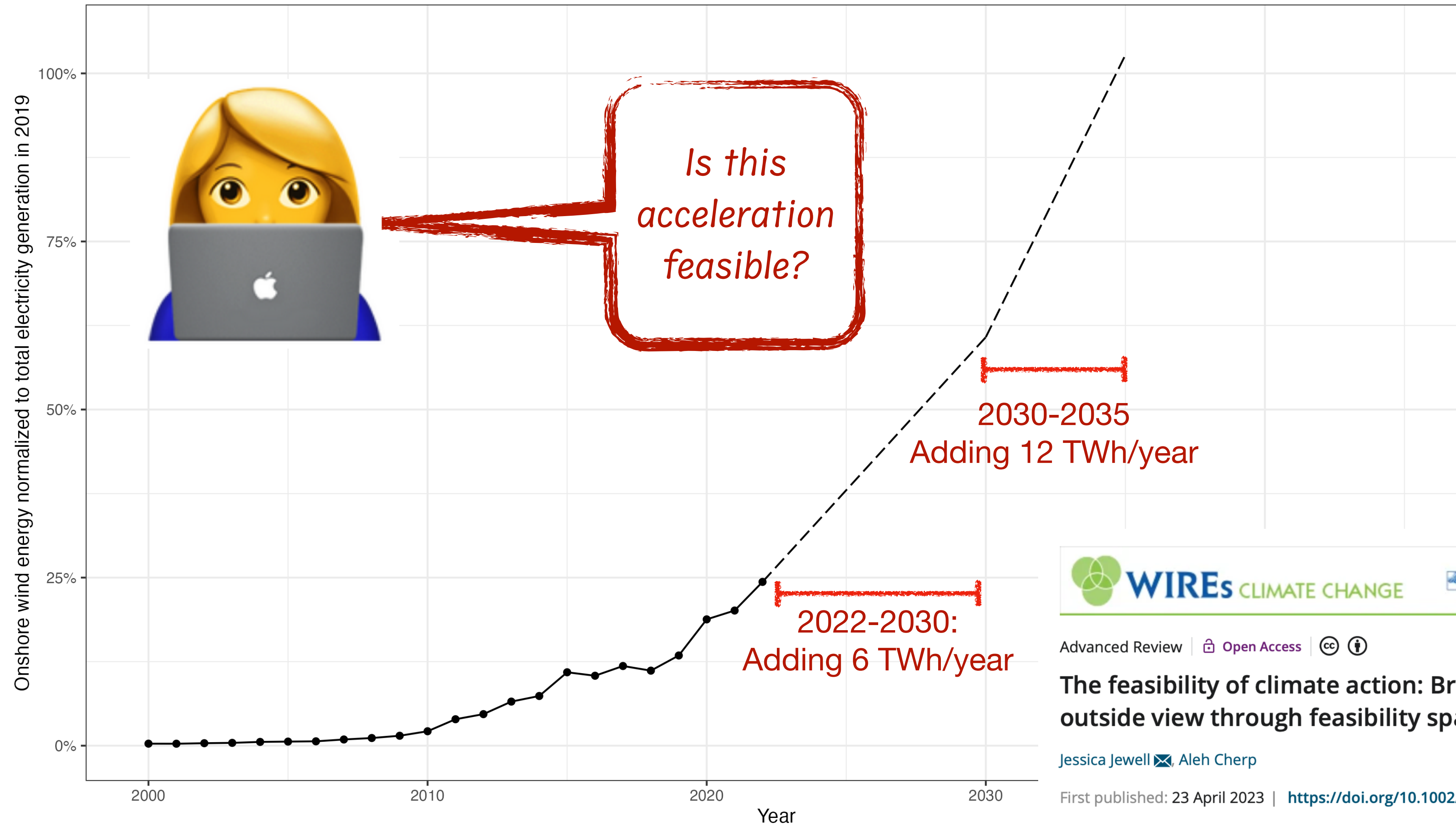


# Wind power in Sweden as share of electricity





# Wind power in Sweden as share of electricity



Advanced Review | [Open Access](#) | [CC](#) | [i](#)

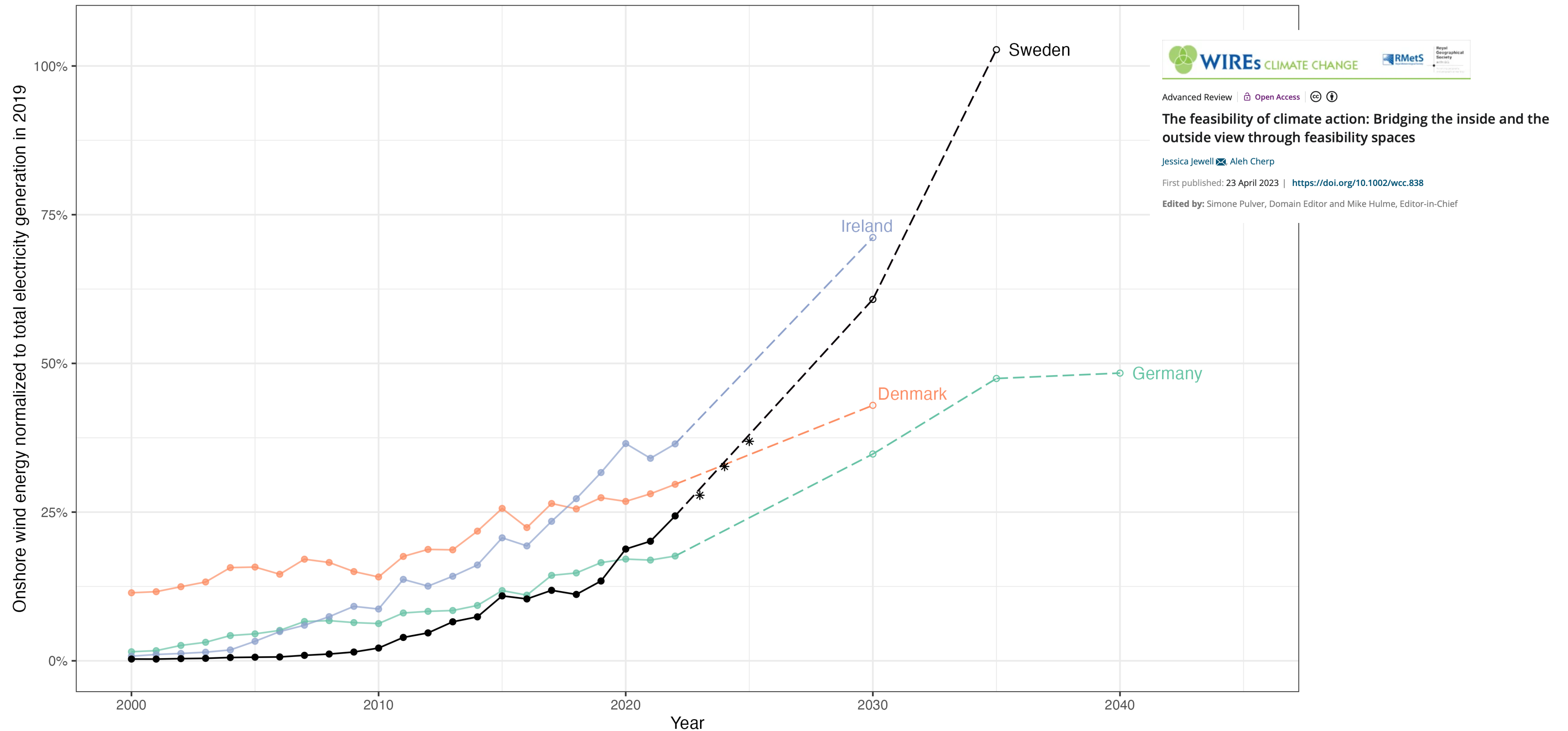
**The feasibility of climate action: Bridging the inside and the outside view through feasibility spaces**

Jessica Jewell [✉](#) Aleh Cherp

First published: 23 April 2023 | <https://doi.org/10.1002/wcc.838>

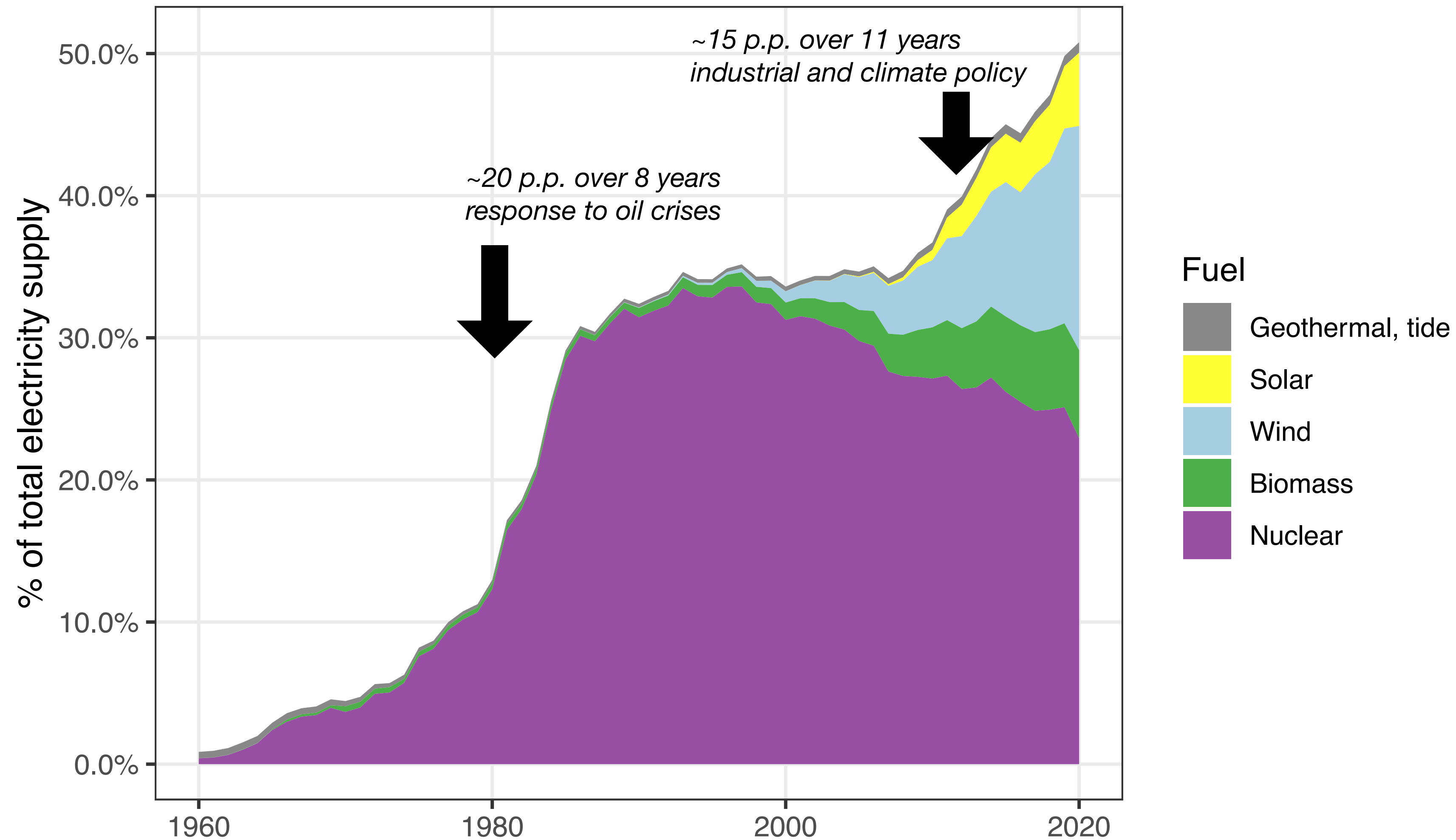
**Edited by:** Simone Pulver, Domain Editor and Mike Hulme, Editor-in-Chief

# Wind power in Sweden compared to other countries

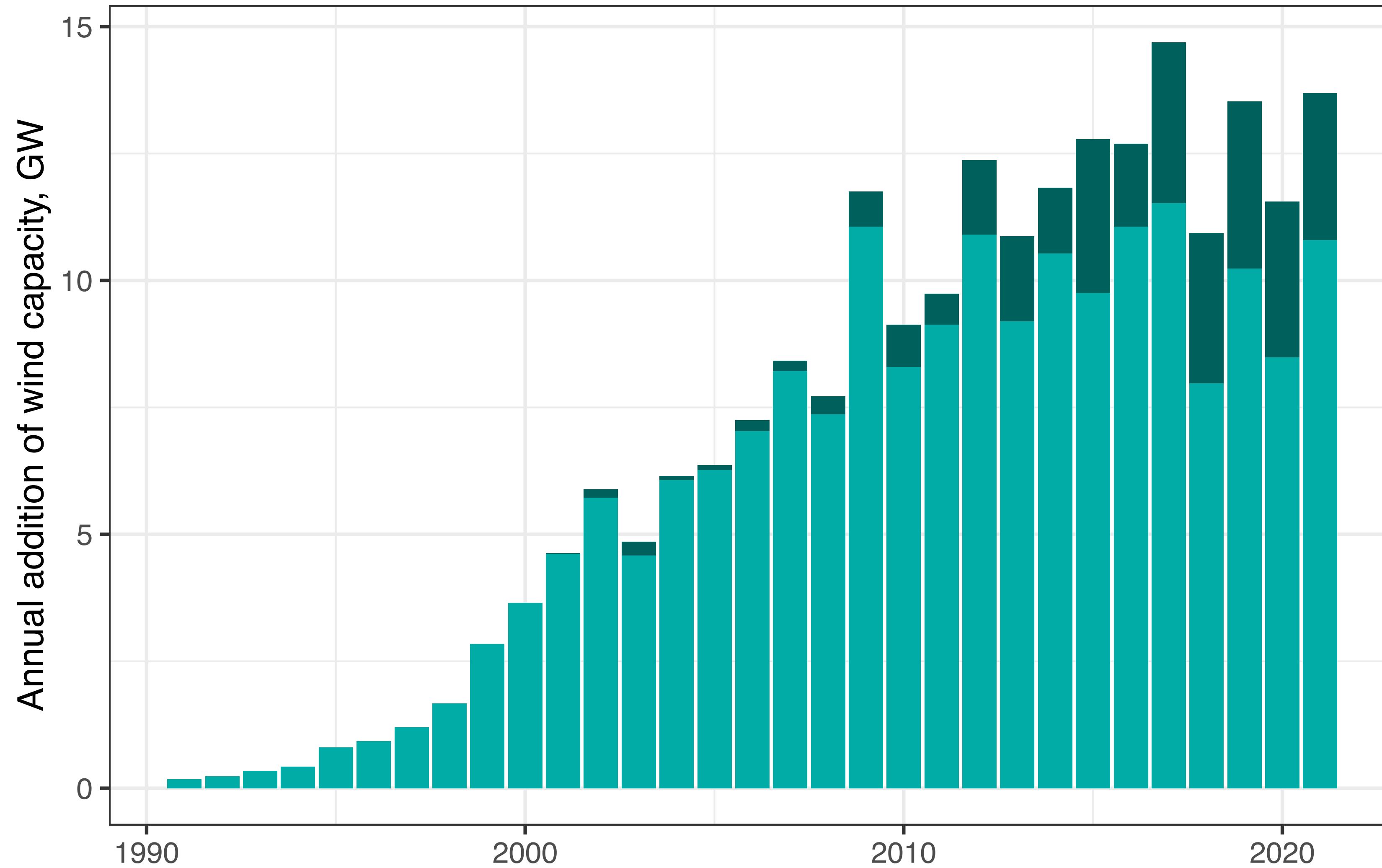


# Technology growth accelerates in response to crises

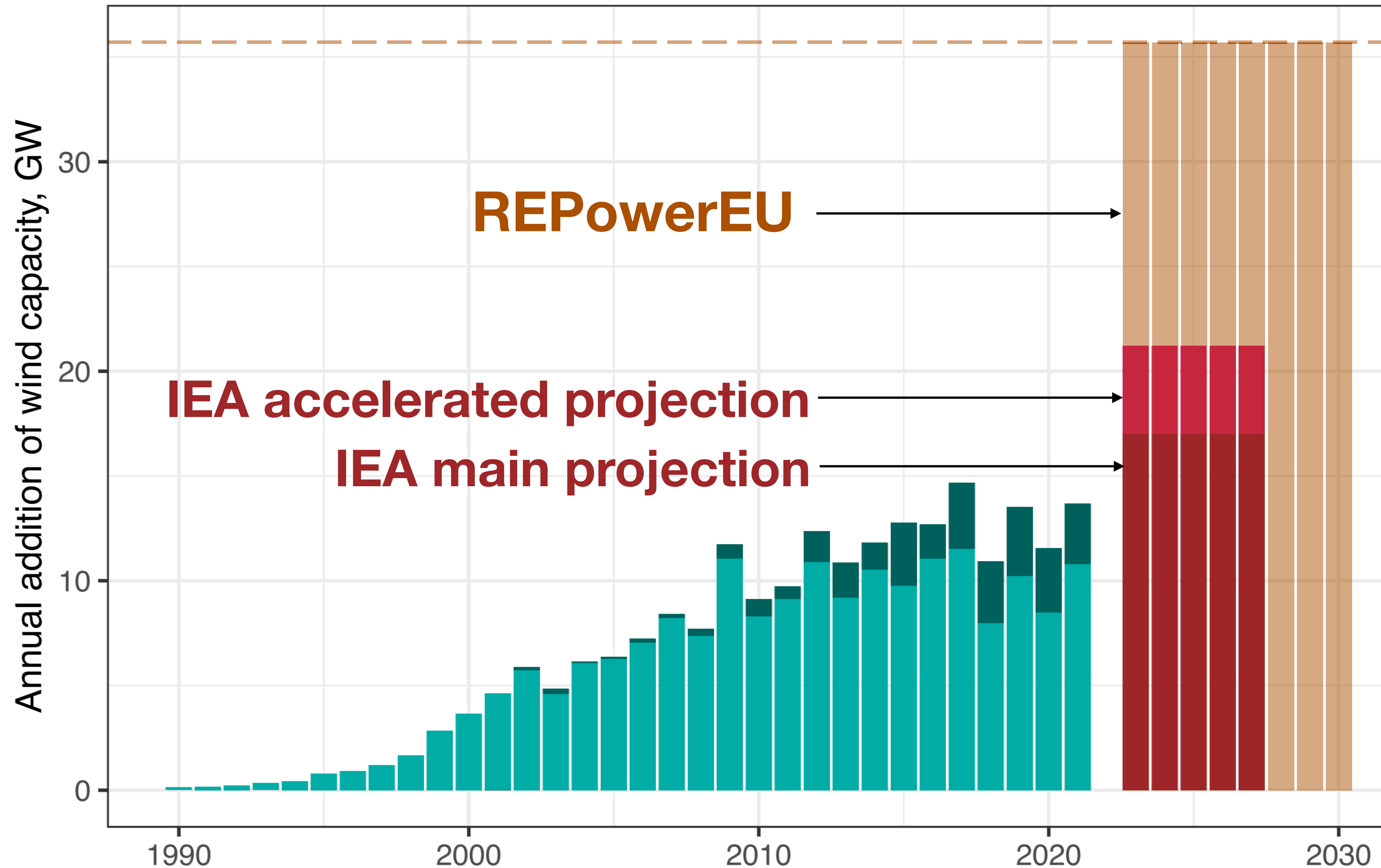
## Low-carbon energy growth in Europe



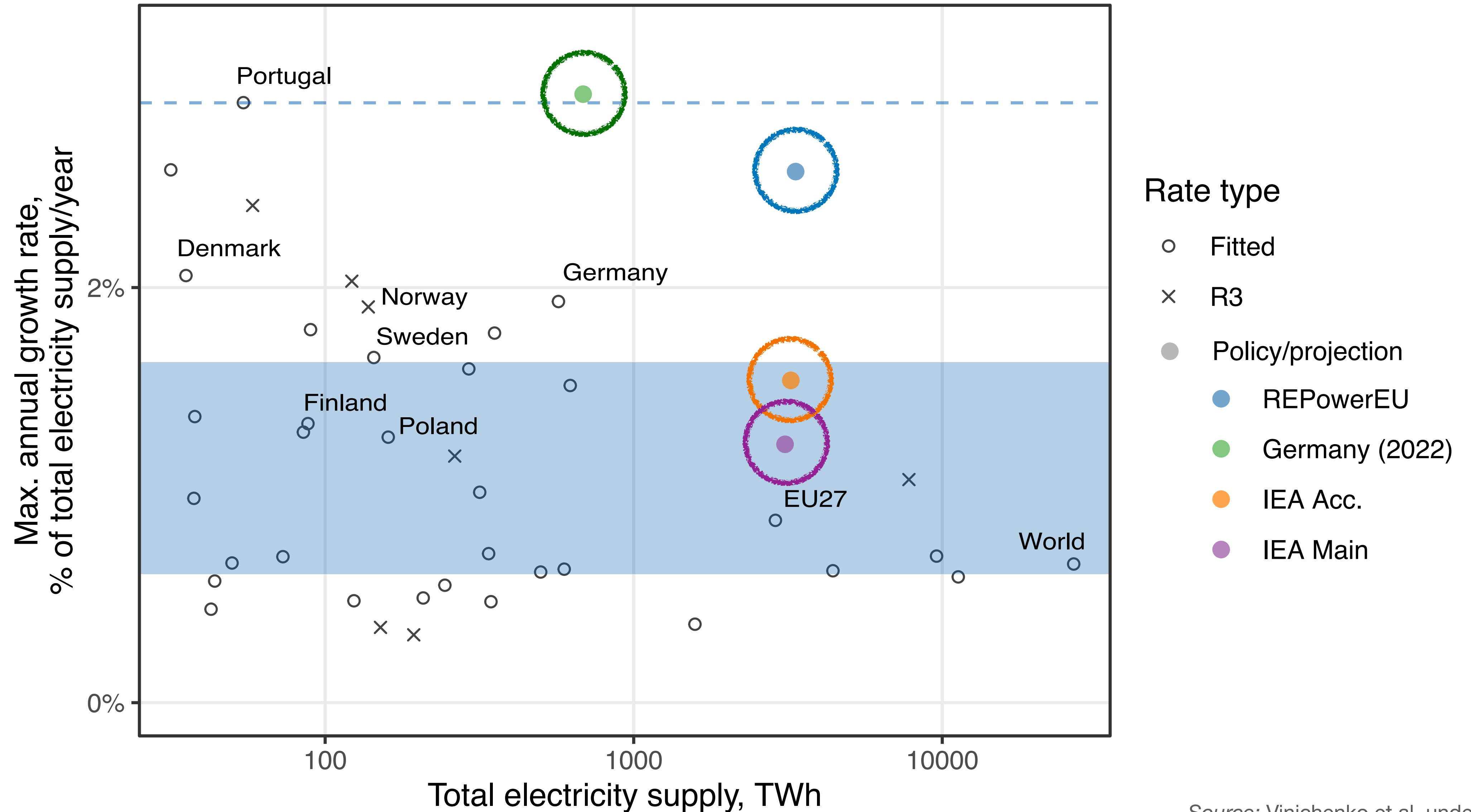
# Targets make historical growth faster



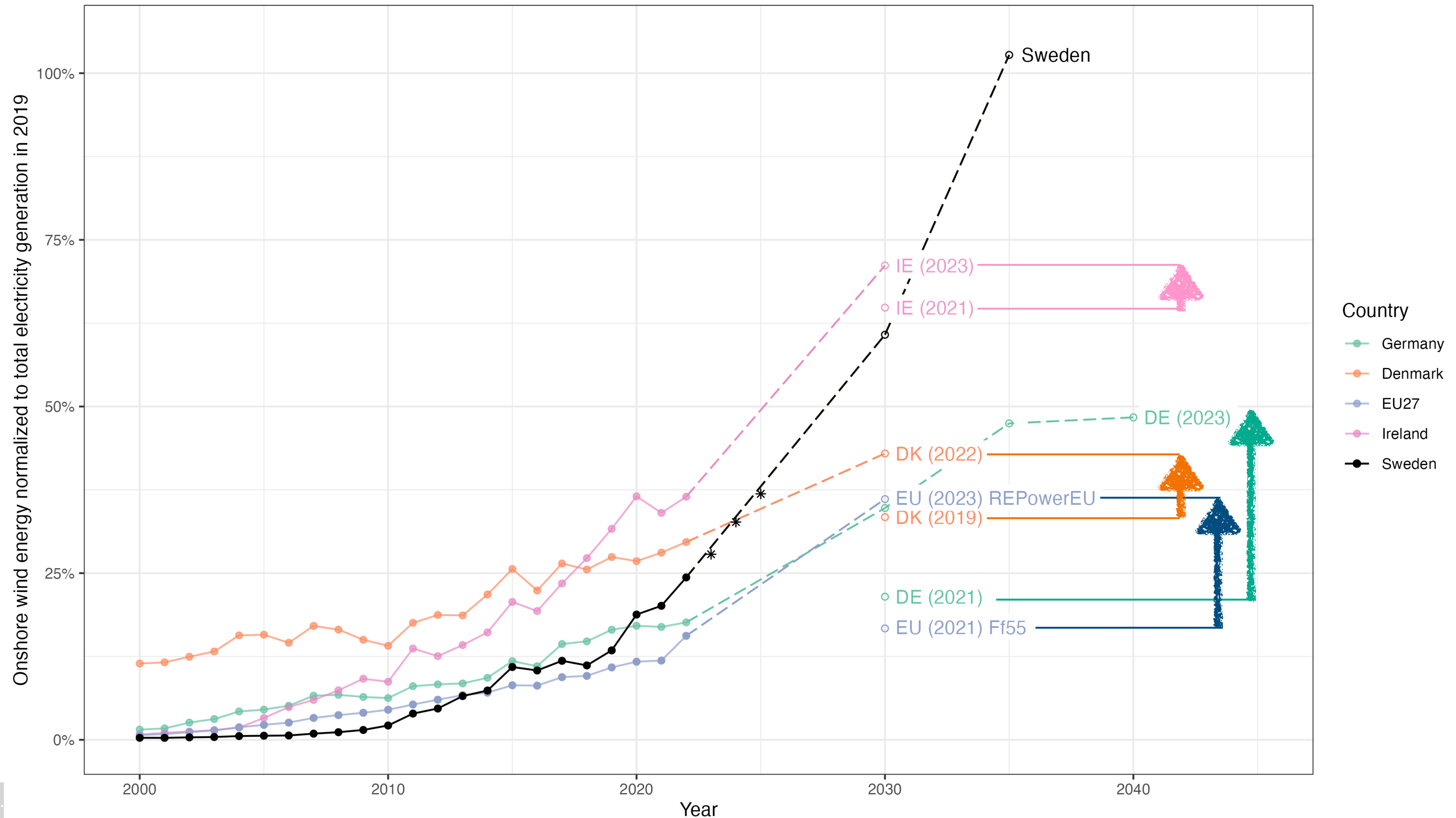
# Targets make historical growth faster



# Targets compared to maximum historical growth rates



# National targets scaled up since the war



# Policy solutions to (re)accelerate growth

- Compensating affected communities
  - profit sharing / compensations from developers
    - E.g. 0.2 cents/kWh in Germany
- tax sharing

SVERIGES RIKSDAG

Start Ledamöter & partier Utskotten & EU-nämnden Debatter & beslut

Start / Dokument & lagar / Värdet av vinden Kompensation, incitament och planering för en hå

## Värdet av vinden Kompensation, incitament och planering för en hållbar fortsatt utbyggnad av vindkraften, del 2

Statens offentliga utredningar 2023:18

[Värdet av vinden Kompensation, incitament och planering för en hållbar fortsatt utbyggnad av vindkraften, del 2 \(pdf, 4 MB\)](#)

ENGLISH FRANÇAIS KONTAKT DATENSCHUTZ

Menü | Energie und Klimaschutz

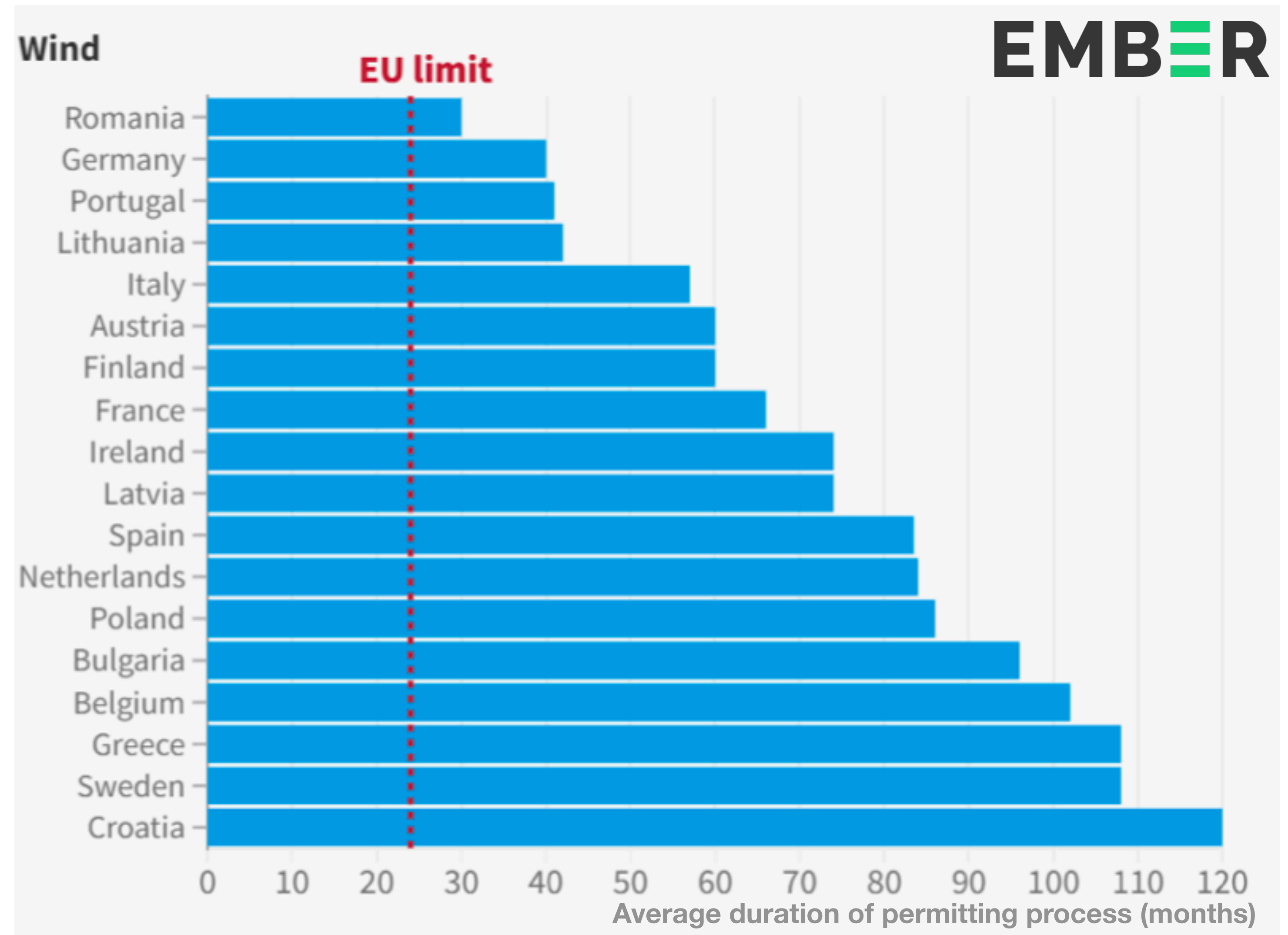
### Higher financial participation of municipalities for wind energy

Financial participation will also be possible for onshore wind farms with other forms of direct marketing from 2023. In addition, operators of existing onshore wind farms and existing ground-mounted plants can seek financial participation of the municipalities. Such participation in expanding renewables is intended to further improve local acceptance and is to become the norm in the future.



# Policy solutions to (re)accelerate growth

- Compensating affected communities
- Reducing uncertainties of the permitting process



# Policy solutions to (re)accelerate growth

- Compensating affected communities
- Reducing uncertainties of the permitting process
- Forceful designation of land



*“The use of wind turbines is in the overriding public interest and serves public security”*  
German Onshore Wind Energy Act

# Policy solutions to (re)accelerate growth

- Compensating affected communities
- Reducing uncertainties of the permitting process
- Forceful designation of land
- **We are open for collaboration!**



*Which of these work better, and where and why?*

# Conclusions

- Growth rates of wind in Europe are stable and have not been increasing
- Sweden is a frontrunner on wind power deployment but needs to maintain high levels of growth
- Current energy security crisis has led to ambitious national plans for accelerating growth in Europe
- Various policies are considered to reduce barriers to faster deployment
- More research is needed about the effectiveness of these policies