

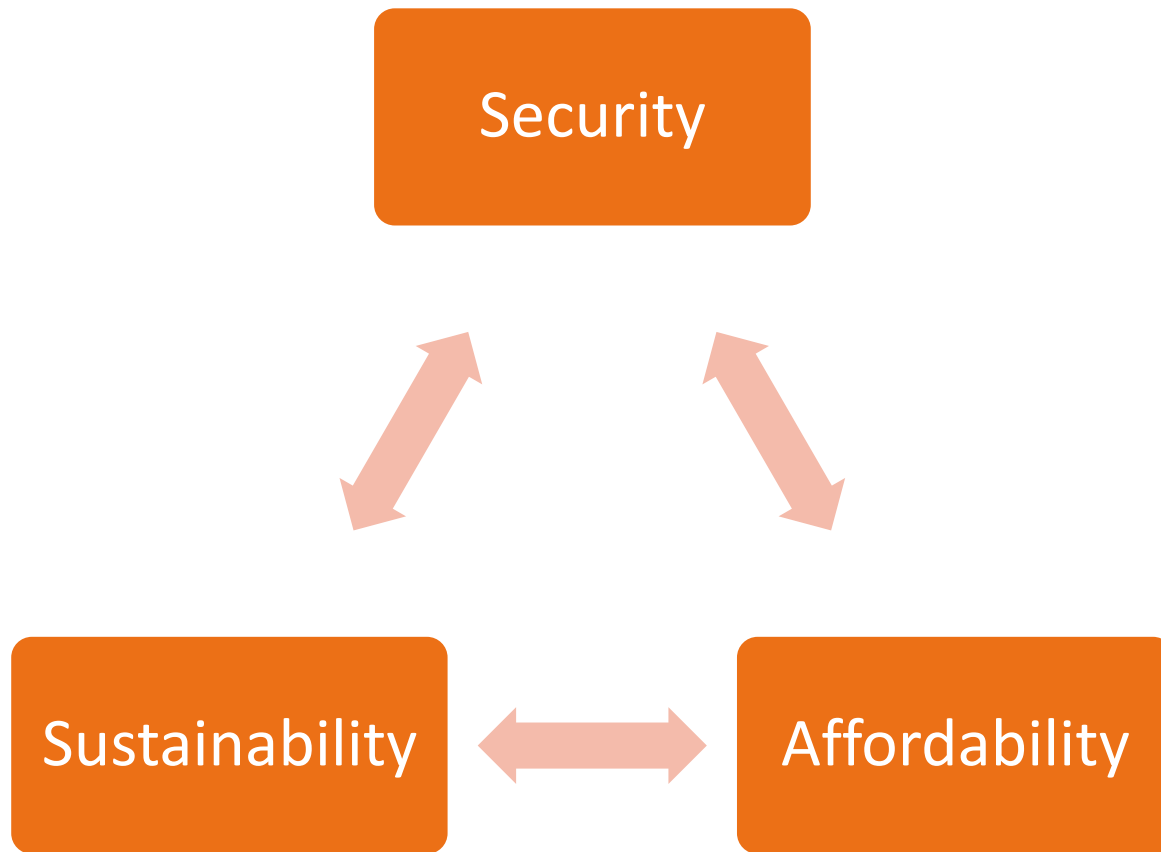
Sustainable and Resilient Connectivity in Asia-Pacific

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Why does connectivity matter?



Power systems involve trade-offs:

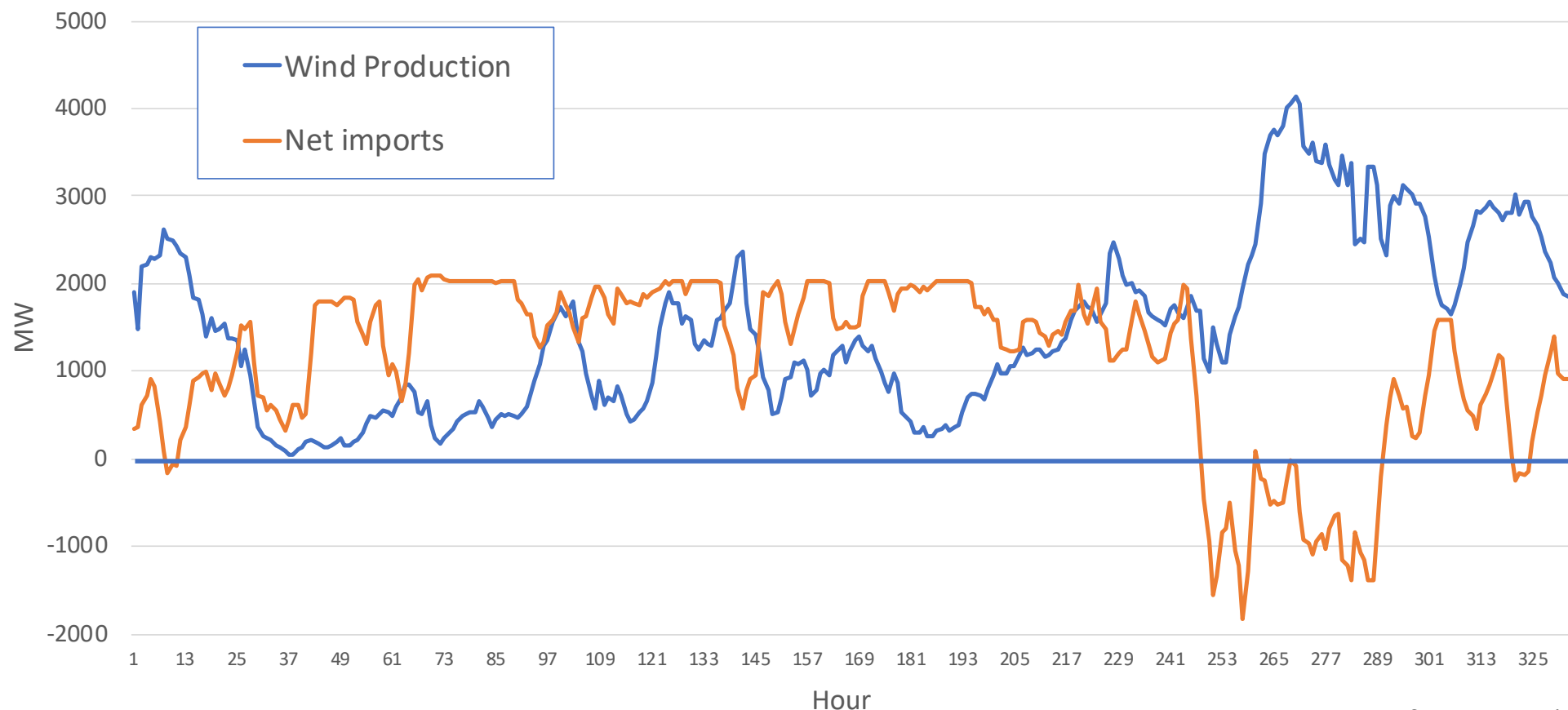
- Maintaining a sufficient level of **security**
- Ensuring power is **affordable** to all
- Limiting **environmental impact**

Connectivity helps resolve this **energy trilemma**



Sustainability implications of connectivity

Denmark wind production and net imports, October 1 to October 14, 2020

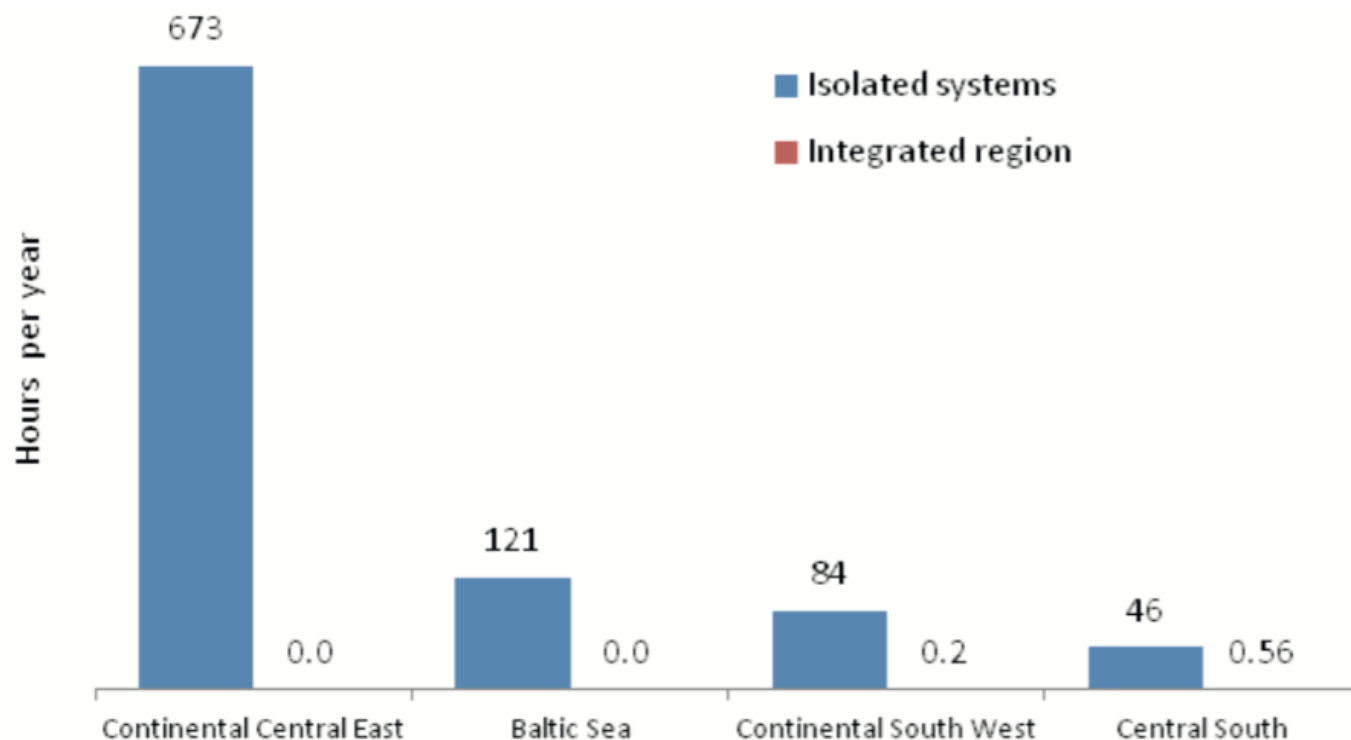


Wind contributes nearly **50%** of Denmark's power generation, on average.
Significant levels of interconnection helps to **balance variability**.

Source: Energinet.dk

Security implications of connectivity

Loss-of load expectation (LOLE), isolated vs integrated systems, Europe



Integrated grid = more secure grid

...if supported by regulatory and market harmonization.

Note: Scenario B of ENTSO-E.

Continental Central East region: Austria, Czech Republic, Germany, Hungary, Croatia, Poland, Romania, Slovenia and Slovak Republic;

Baltic Sea region: Denmark, Estonia, Finland, Lithuania, Latvia, Norway and Sweden;

Continental South West: Austria, Switzerland, Germany, France, Italy and Slovenia;

Central South: France, Spain and Portugal.

Source: IEA graph, based on [ENTSOE](#) calculations.

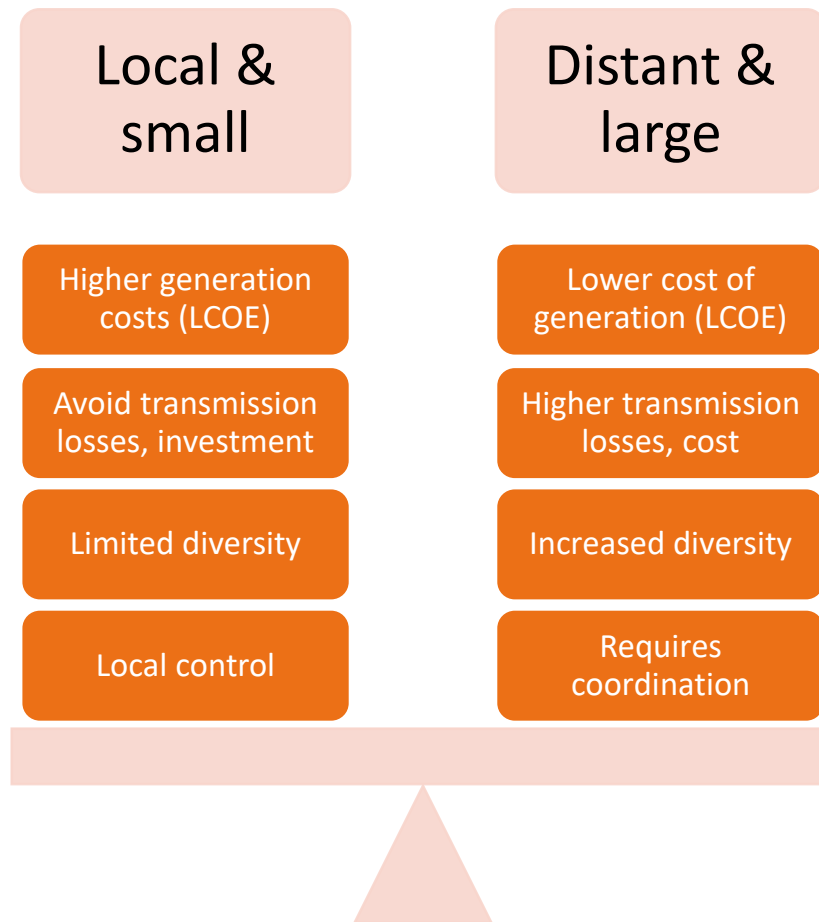
Local vs global: getting the balance right

Security:

- Local control
- Avoided imports
- Limits diversity of supply

Sustainability:

- Local resources
- High variability/correlation of resources
- Minimize transmission losses



Security:

- Requires coordination
- Exposure to external risks
- Increased diversity

Sustainability:

- Access to high quality RE resources
- Variability smoothing
- Requires transmission investments

ESCAP's draft **Electricity Connectivity Roadmap:** **Strategies towards interconnecting the region's grids**

Planning

- Regional Masterplan
- Coordinate cross-border transmission planning

Development

- Mobilise investment

Trading and operations

- Move toward multilateral trading and competitive markets
- Co-ordinate cross-border system operations

Cross-cutting

- Build trust and political consensus
- Develop intergovernmental agreements
- Capacity building, sharing of best practices and data
- Ensure coherence of connectivity with the SDGs

Thank you

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