Schleswig-Holstein Germany's True North

Renewable Energy Policies in Schleswig-Holstein



Schleswig-Holstein Ministry for Energy Transition, Climate Protection, Environment and Nature



Renewable Energy Policies in Schleswig-Holstein

- 1. Coalition agreement 2022: Schleswig-Holstein set the goal to become climate-neutral by 2040
 - > Energy Transition and Climate Protection Act
- 2. Climate Protection Programme 2030: Measures are defined with respect to greenhouse gas reduction and renewable energies expansion targets
 - > National and regional level as well as sector targets
- 3. Power generation target: 37 TWh of electricity from RE by 2025
 - > At least 22 % RE-share related to renewable energy heat usage by 2025
 - > In addition EWKB: at least 38% RE-share related to renewable energy heat usage by 2030
- 4. Renewable energy expansion targets (coalition agreement)
 - > 40-45 TWh power generation from renewable energies (land) by 2030



Climate Protection Program 2030 (CCP 2030)

Sectors in the CCP 2030

- A. Energy
- **B.** Buildings
- C. Transport
- **D.** Industry
- E. Waste
- F. Agriculture
- G LULUCF (Senken)
- H. Cross Section





Sector Coupling (Electricity, Heat and Transport)





Development of GHG emissions from 1990 to 2023 and GHG reduction targets for 2030





Economic Changes of Greenhouse Gas Neutrality – Costs and benefits of energy transition and climate protection

- 1. **Costs** due to investments, CO₂ pricing & rising energy prices
- 2. Economic impulses and chances:
- Significant funding for energy transition between 2017 and 2022 (EU: €0.4B, Federal: €2.1B, State: €0.8B) and additional

federal funding of €123M for real-lab projects & €17M for municipalities under the NKI

- EEG subsidies of €3.5B for grid-Connected facilities (2020)
- New company establishments (e.g., Northvolt), increased employment & value creation in renewable energy and construction sectors
- Skilled labour demand: good prospects for energy transition specialists
- Avoidance of high climate-related costs Lower generation costs for renewable energy vs. fossil fuels and nuclear power

Upscaling Solar Energy and Usage of Biomass as flexible capacity

- 1. We managed to be successful in upscaling solar energy usages
- Continuous growth of installed plants on buildings and ground-mounted photovoltaic systems
- Local planning ensures benefits for renewable energies, people and nature on communal level
- We encourage the growth with clear legal guidelines and targets
- We support with information and guidelines.

2. We use biomass as flexible capacity in the transformation process

The Energy system is increasingly dominated by wind and solar, nevertheless flexible biogas plants are the key to supplement volatile energies <u>Current task</u>: the Renewable Source Act on the national level will be revised by 2027.







Wind Energy in Schleswig-Holstein – a successful way

Success factors

- Joint state-wide planning for the designation of priority areas for onshore wind turbines. Currently, the state government has designated 2% of the state's area for wind energy
- 2. Expansion target of the state government Schleswig-Holstein At least 15 GW of installed capacity onshore wind by 2030 (currently, the total gross capacity onshore in SH amounts up to 8,742.5 MW with 3,516 turbines)
- 3. Improving the resources of licensing authorities Schleswig-Holstein Related to the installation of new turbines Schleswig-Holstein has regularly a leading role in Germany.
- 4. Citizen energy wind farms with regional financial participation have become a successful model for Germany.
- 5. Communication with communities and citizens: early and open communication with respect to plans and projects helps to foster transparency and lasting acceptance.









Upgrading Schleswig-Holsteins' Transmission Grid

Power Lines in SH by 2035

- As a wind pioneer region we started early planning the power grid extension in SH
- Important projects have been realised:
 - 380kV West Coast Line Brunsbüttel Klixbüll
 - 220→380kV Hamburg-Kassø
 - NordLink cable to Norway
- Additional grid expansion is needed to achieve carbon neutrality



Schleswig-Holstein. Germany's True North.



Transmission Grid Expansion by 2037 / 2045

Power Grid for the Carbon Neutral Energy System

- 2024: Confirmation of German power grid expansion plans by 2045
- 70 Gigawatts Offshorewind capacity must be connected to Germany
- New power lines planned in Schleswig-Holstein (SH)
 - AC (alternating current) overhead lines
 - DC (direct current) underground cables
- Largest project in SH: NorthOstLink
 - 2 x 2 Gigawatt onshore cable connection from Heide Hub to the Schwerin Region, ~ 190 km length, finalisation of first onshore project planned by 2031
 - 5 offshore grid connection systems are planned along a partially common route



Thank you for your attention!



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