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Press release

NEW SCENARIO FRAMEWORK DRAFT FOR A CLIMATE-NEUTRAL ELECTRICITY SYSTEM 2045

- **Broader scenarios for electricity grid planning with alternative transformation paths**
- **First joint market and grid operator survey with FNB Gas on future demand for electricity and hydrogen**
- **Photovoltaics most important generation source of the future**

The new Scenario Framework draft of the four transmission system operators (TSOs) 50Hertz, Amprion, TenneT and TransnetBW for the Network Development Plan (NDP) 2037/2045 (2025) provides an outlook for the second time on a “climate-neutral grid 2045”, an electricity transmission grid in a climate-neutral Germany. The TSOs have presented their scenarios for a climate-neutral electricity system in 2045 broader. This allows alternative transformation paths to be better included for robust grid expansion planning.

In the draft, the TSOs have calculated three scenarios for each of the years 2037 and 2045. They assume different dynamics in the expansion of renewable energies, domestic hydrogen production and electrification and flexibilization on the consumer side. According to the scenarios, gross electricity consumption in Germany will increase from 535 TWh last year to values between 967 and 1,351 TWh/year by the year 2045. In all scenarios, photovoltaics accounts for over 50 percent of total generation, followed by onshore and offshore wind.

Taking into consideration a complete phase-out of coal-fired power generation, all scenarios assume an expansion of controllable gas-fired power plants at system-supporting locations that exceeds the future capacity stipulated in the Power Plant Safety Act (Power Plant Strategy). The gas-fired power plants are to be fully converted to

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green hydrogen by 2045. In addition, battery storage, the flexibility potential of e-vehicles and heat pumps, among others, and the expansion of cross-border power lines (interconnectors) play an important role in transforming the energy system and achieving climate protection targets in Germany and Europe.

As the NDPs for electricity and gas are being harmonized for the first time, the Federal Network Agency (BNetzA) has only now initiated the consultation process. 50Hertz, Amprion, TransnetBW and TenneT submitted the draft to the authority on June 30 in accordance with the new statutory cycle.

First joint market consultation for hydrogen and electricity grid

For the draft Scenario Framework, the TSOs and the Association of Transmission System Operators for Gas (FNB Gas) conducted a joint market and grid operator survey on infrastructure requirements for the hydrogen and electricity grids for the first time. It provided important insights into the plans of major consumers such as industrial companies or municipalities as to what future requirements they expect for electricity, gas or hydrogen. The results were consolidated on the basis of connection requests to grid operators and classified accordingly.

System Development Strategy taken into account

The System Development Strategy, which is being jointly developed by the Federal Ministry for Economic Affairs and Climate Protection (BMWK) in a participatory process with many stakeholders from the energy sector, industry, society and politics, has been considered based on the interim report and relevant anchor points.

Participation in the BNetzA consultation

The BNetzA is now submitting the TSOs' draft for public consultation. The BNetzA will approve a Scenario Framework on the basis of the TSOs' Scenario Framework draft, the consultation and its own

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assessment. This is the binding basis for the TSOs' subsequent market and grid calculations in the NDP.

Further information can be found at www.netzentwicklungsplan.de/en

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