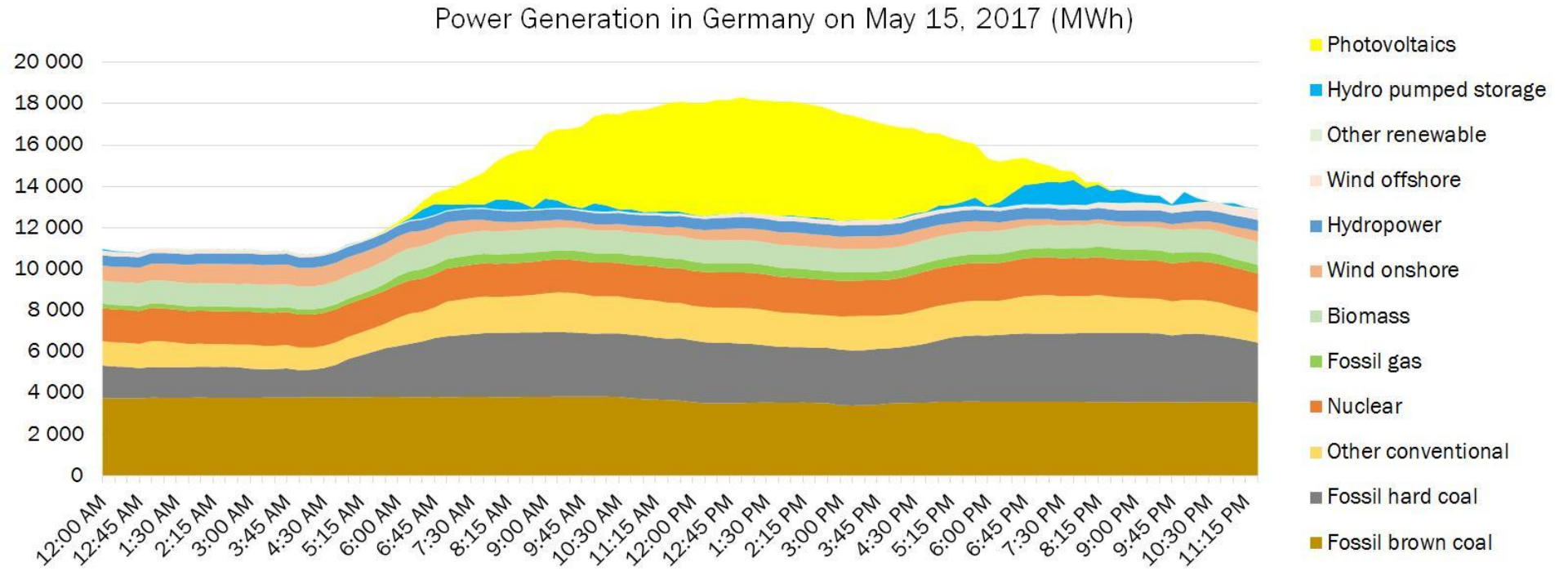
Role of Natural Gas in the Renewables-based Energy System

by Valery Nemov

Gazprom Export LLC
Deputy head,
Contract Structuring and Pricing Directorate

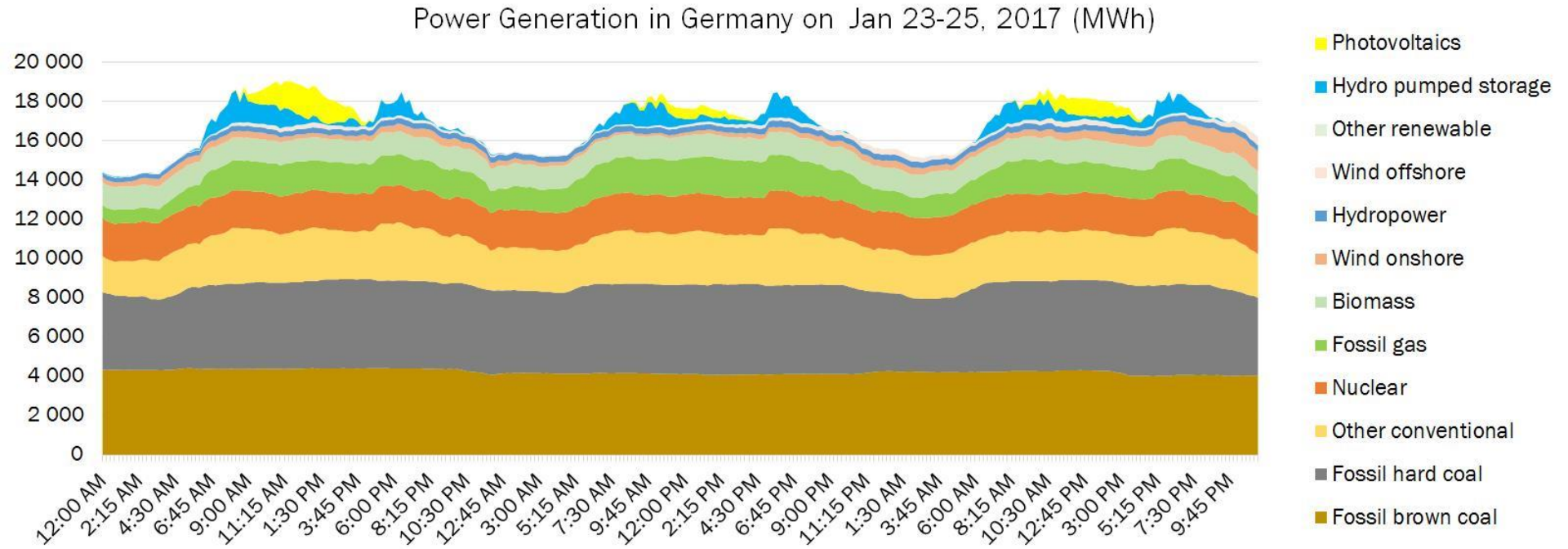
15th March 2018

Strong Dependence of German Energy System on Weather Conditions



Source: Federal Network Agency

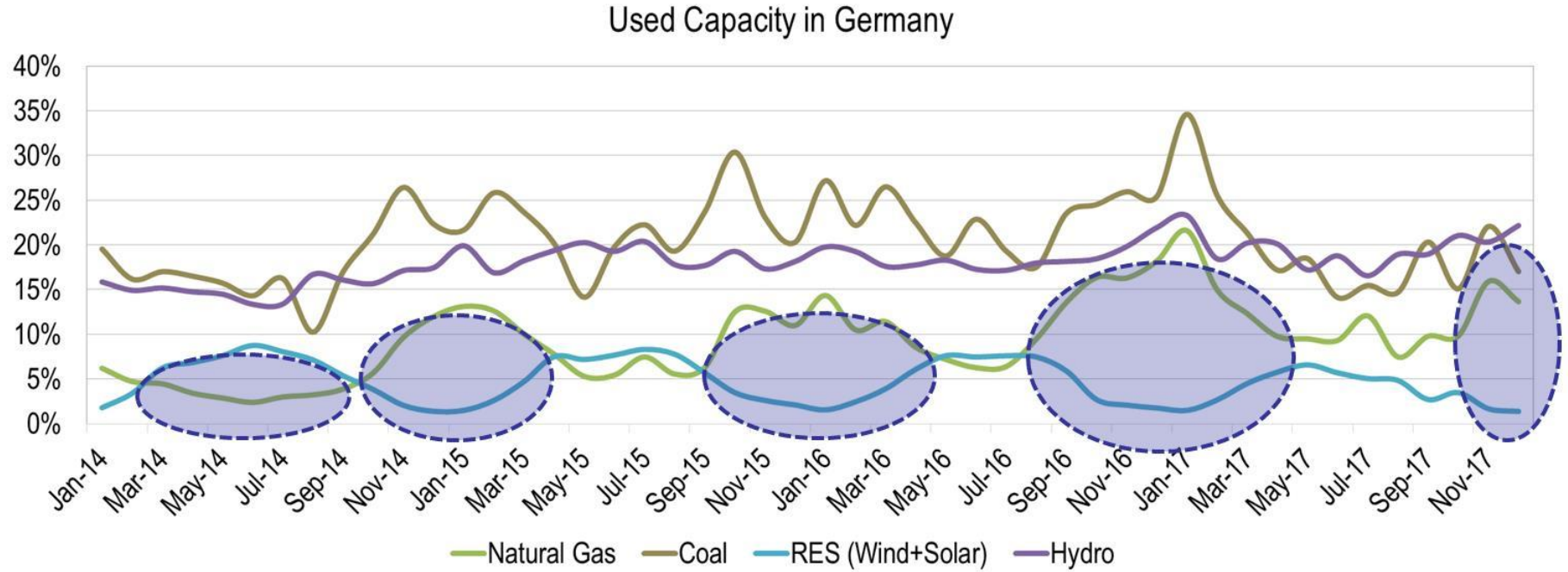
Strong Dependence of German Energy System on Weather Conditions



RES are not capable of providing energy system stability by inappropriate weather conditions and underdeveloped energy storage technologies

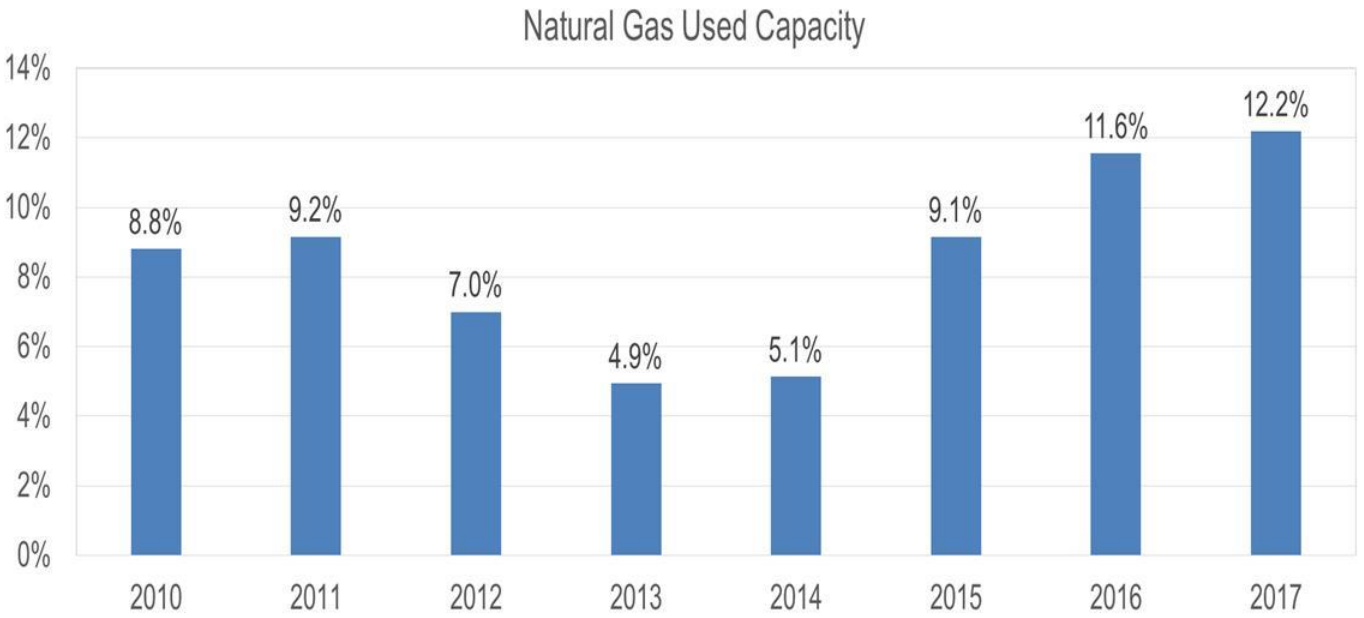
Source: Federal Network Agency

Natural Gas Serves as a Source of Flexibility



Source: Bloomberg, Fraunhofer ISE

Natural Gas Used Capacity is Increasing but Still There is Plenty of Space for Further Growth



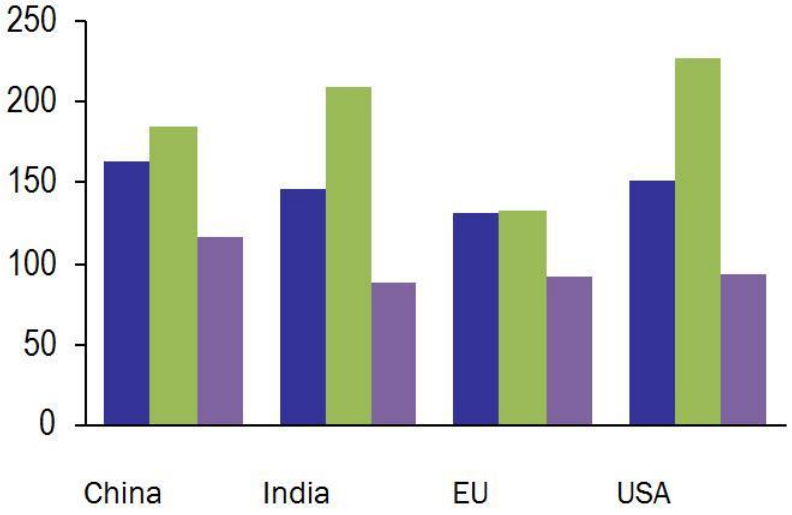
- 21 GWt of installed gas generation capacities in Germany are available
- Increasing utilization rate up to 25% will result in gas consumption growing by 9 bcm a year

Source: Bloomberg, Fraunhofer ISE

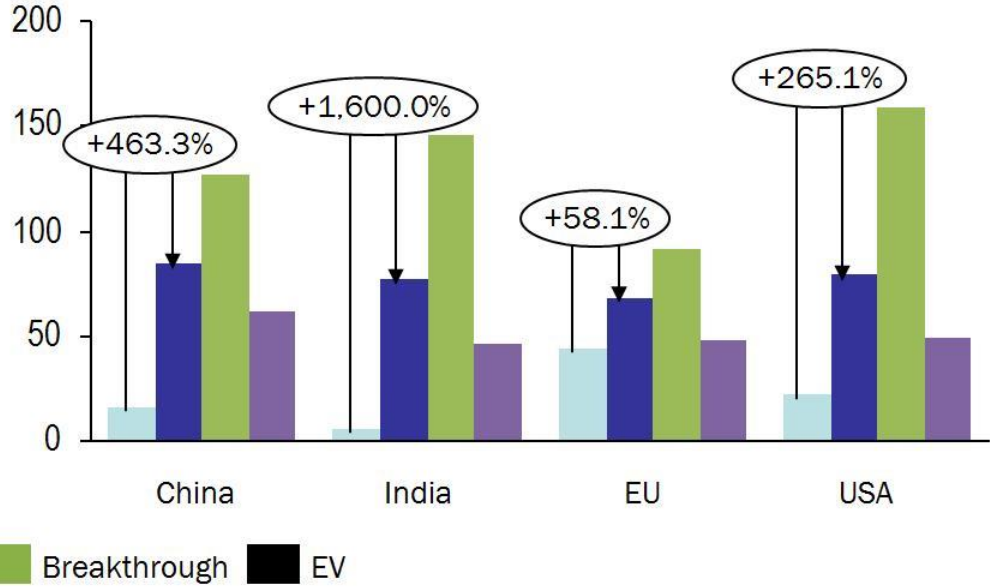
Renewables Development Requires Investments in Storage Capacities

310 GW of additional electricity storage capacities are required to achieve 27-44% RES share by 2050, what means additional investments.

Required investments (2010-2050), bln USD

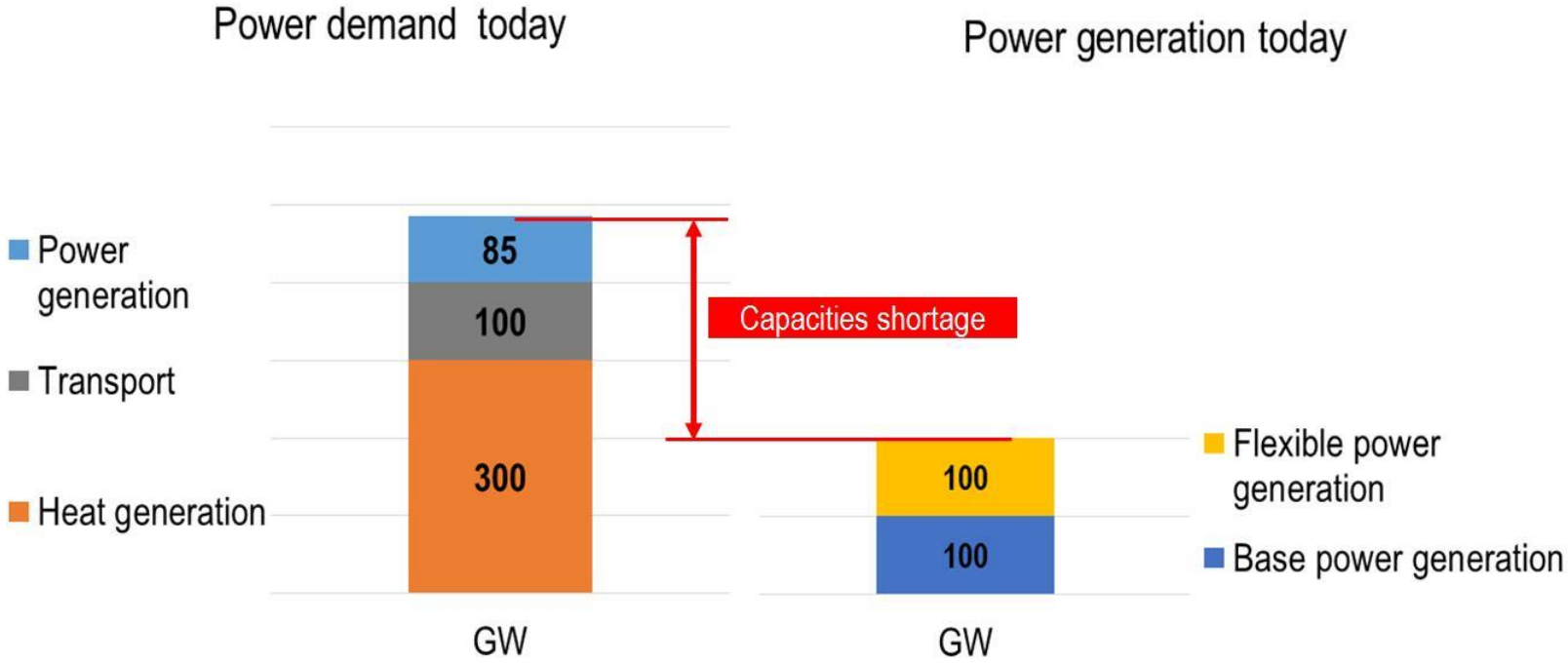


Electricity storage capacities, GW



Source: IEA

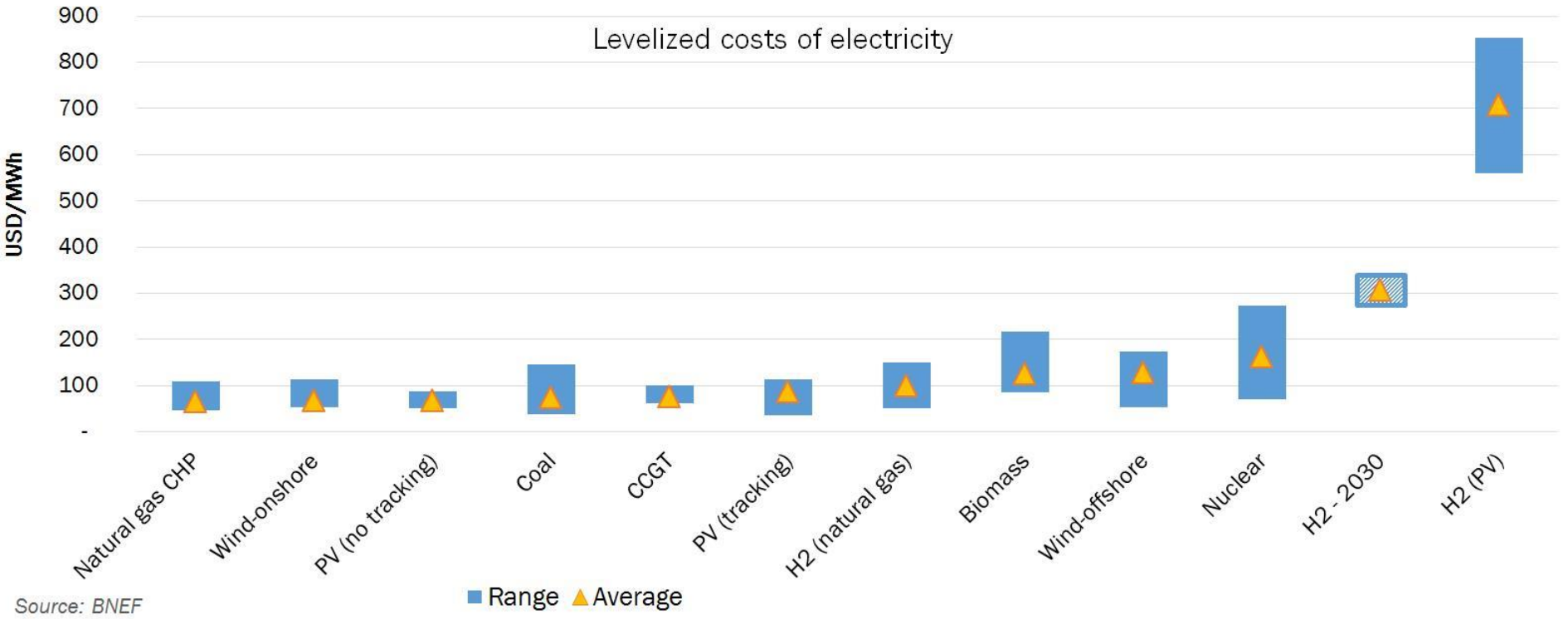
Transition to 100% Electric Power and Heat Supply Requires Explosive Capacity Increase



Source: WINGAS

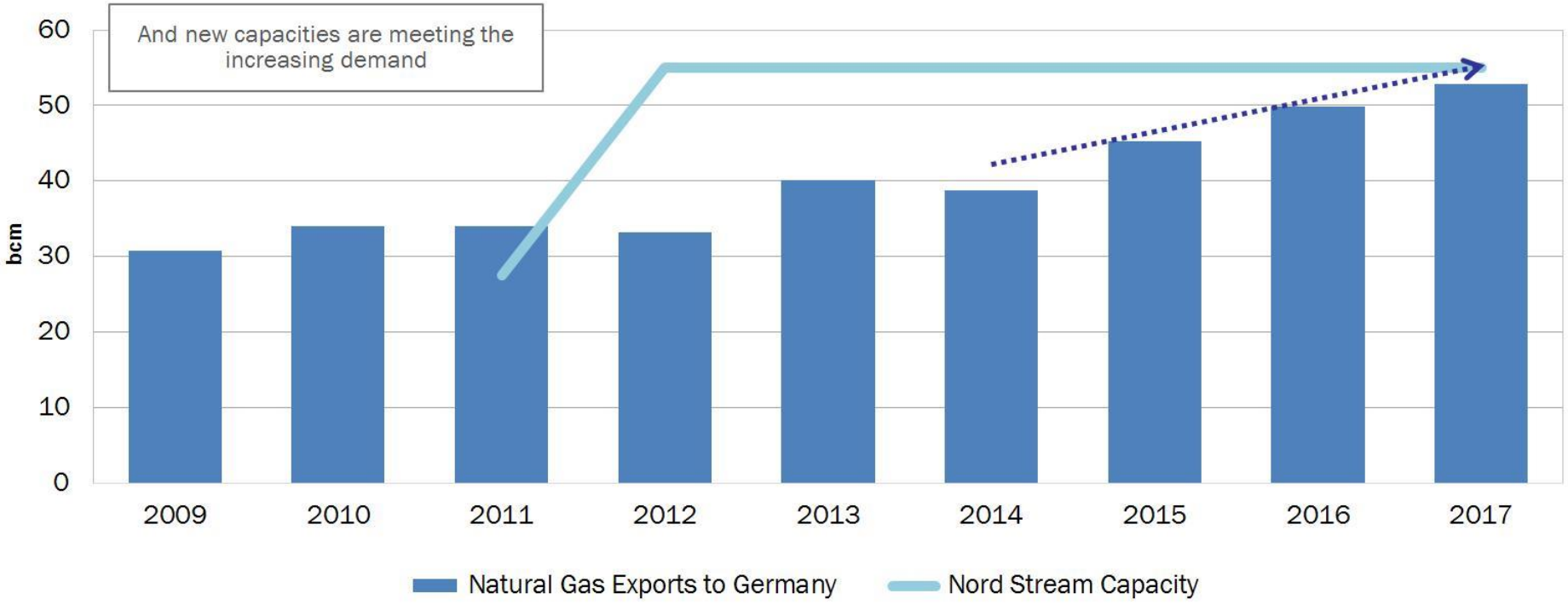
Apart from storage capacity, RES development requires huge land areas. For example, to achieve German climate plan goals each 2.6 km should be occupied with wind generator as high as Cologne Cathedral

Natural Gas Provides the Lowest Levelized Costs of Electricity

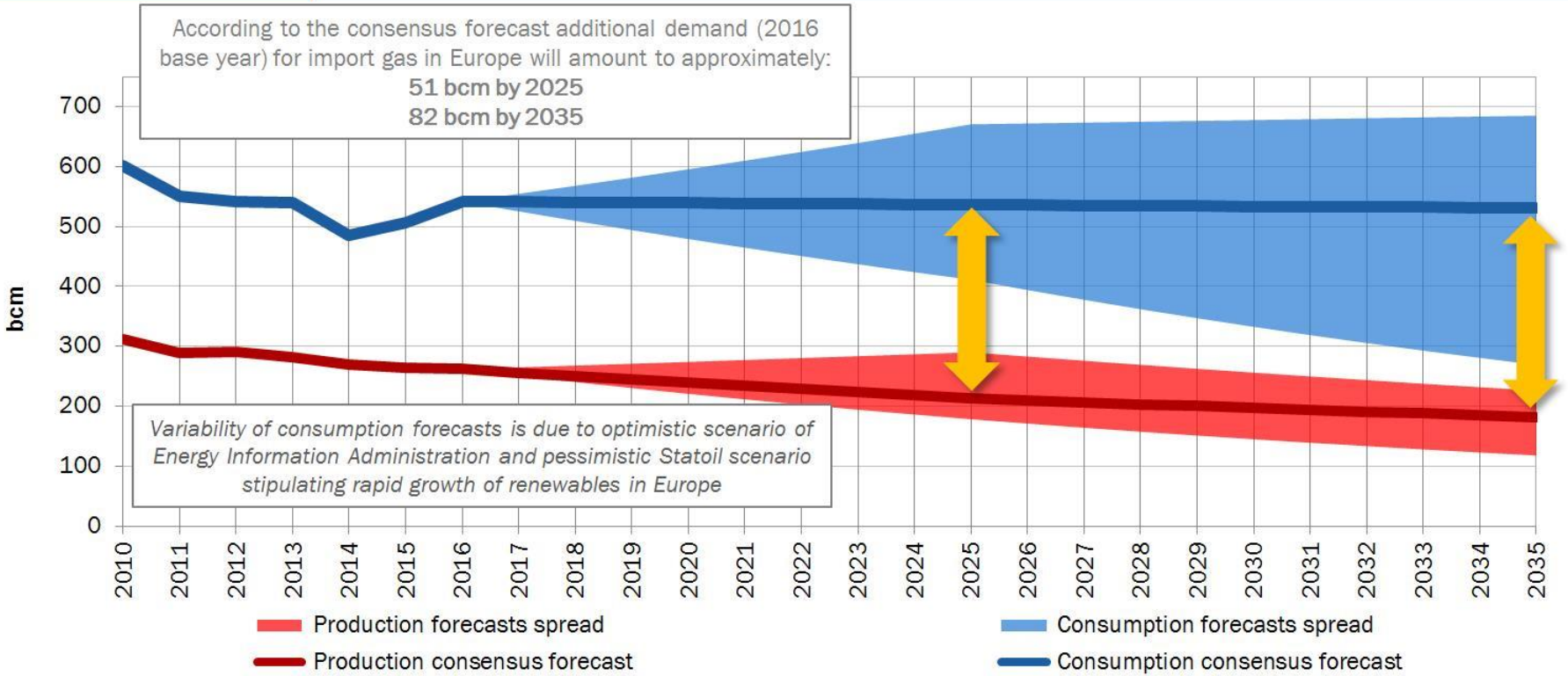


Source: BNEF

Natural Gas Exports to Germany Are on Upward Trend



Think Tanks Are in Average Positively Estimating Further Demand for Gas



Sources: oil&gas companies, European Commission, Cedigaz, PIRA, IEA, IES of RAS, OIES, IHS, ENTSOG, WoodMackenzie, Enerdata, DoE, GECF, OPEC

Thank you for your attention