

Need for New Technology in a Changing Energy Sector

04.11.2025 | Thomas Schiml | Bayernwerk Netz GmbH

The Network Behind the Transition

- Part of E.ON
 - Owner of **32%** of the distribution network in Germany
 - More than **1 million** renewable energy plants connected

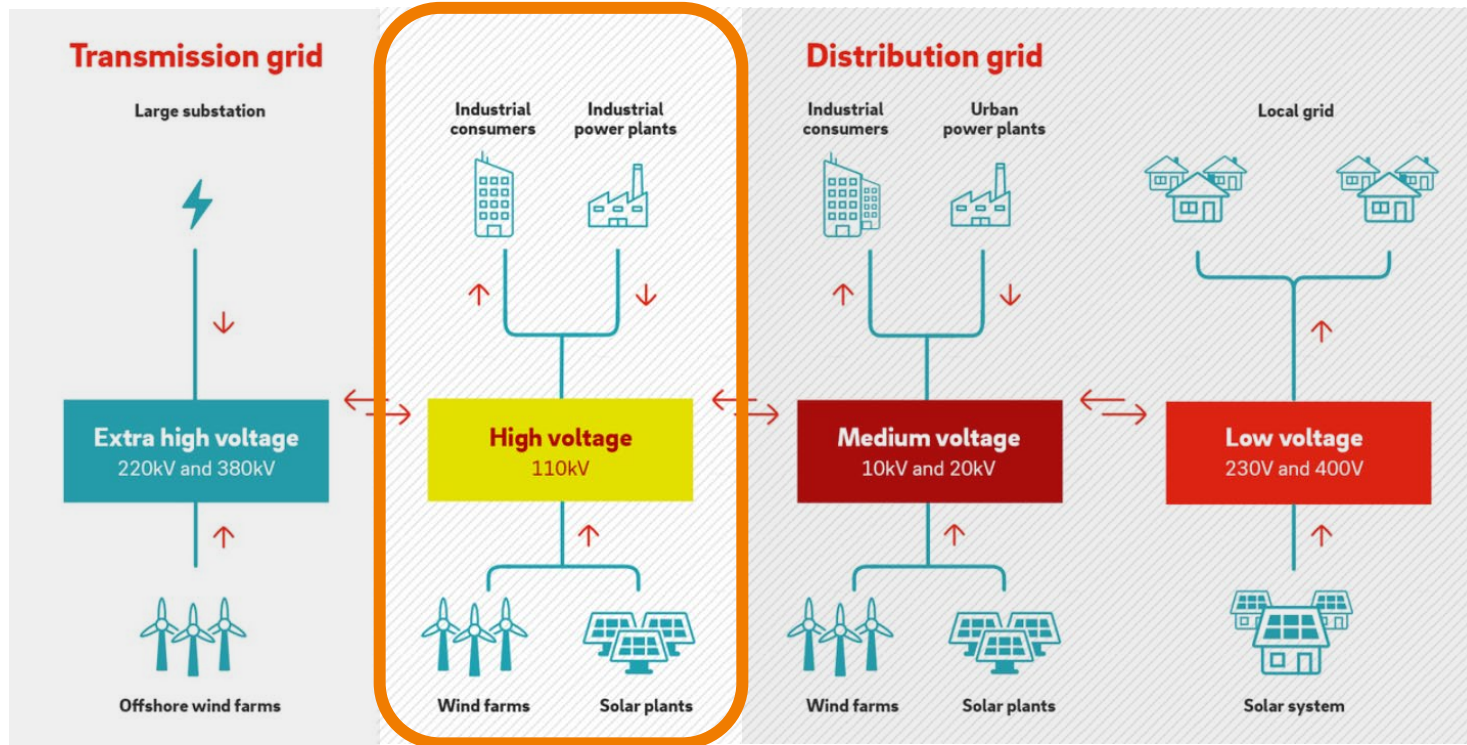


The Network Behind the Transition

- **Part of E.ON**
 - Owner of **32%** of the distribution network in Germany
 - More than **1 million** renewable energy plants connected
- **Bayernwerk Netz GmbH**
 - More than **500.000** renewable energy plants connected
 - About **27 GW** of solar power connected
 - High Voltage Grid (110 kV)
 - 8.800 km Overhead Lines
 - 337 km Cables

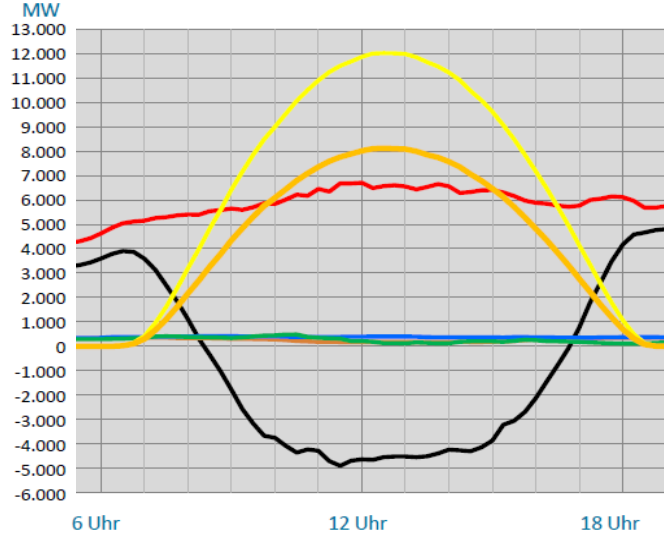


New Reality in the Power Grid



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18th March '25: Bayernwerk Network Area



Solar Power Peaks

Bayernwerk with feed-in record of **12.000 MW**
(whole Germany with **48.600 MW**)



Regulatory Goal for 2040

400.000 MW of solar power in Germany, thereof
up to **100.000 MW** in Bavaria



Redispatch Measures Increase Rapidly

Grid as **bottleneck** in the energy transition



“We cannot continue as we have in the past. We need to rethink our solutions and embrace innovation in order to overcome this generational challenge.”

Optimisation through Innovation – Evolution of Dynamic Line Rating



Indirect DLR

Innovation



Direct DLR



- Calculation of line capacity based on measured environmental conditions (central weather stations)
- No direct measurement of conductor temperature (theoretical calculation only)
- High safety margins for calculated line capacities



Suitable for areas where wind power is predominant

- Calculation of line capacity based on real-time measurement of conductor temperature and location-specific environmental conditions
- Integration of machine learning features
- No safety margins needed



Unlocks additional potential for solar power driven regions



**bayernwerk
netz**




Innovation Requires Courage

“Connecting an external cloud application to our grid control system – the very heart of our company?”

Unthinkable – until we did it!



Innovation Pays Off – Direct DLR as Game Changer

			Circuit No. 136	Circuit No. 145
Average additional potential compared to static operation ¹	 With high solar power feed-in	<i>Radiation >500 W/m²</i>	+43%	+51%
	 At high operating currents	<i>>50% of static rating</i>	+46%	+50%
Added value ¹	 Prevention of Redispatch	Redispatch prevented/ reduced/ delayed ²	>100 cases	>35 cases

¹ Observation period: June to September 2025 | ² Hourly analysis