

Battery Energy Storage Systems in Germany: Options and Potentials

LAURA HANNEKEN
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Statkraft – Renewable Energy for 125 Years



100%
Norwegian
state-owned

> 5 700
employees in 21 countries
> 650
employees in Germany

Europe's largest
producer
of renewable energy

Developed to date, globally

- > 45** PV projects
- > 100** Wind projects
- > 5** Storage projects



> 1 800 MW
PV, Wind and storage
project pipeline **in**
Germany

Creating value by
enabling a net-
zero future

BESS Development in Germany is booming

TOTAL KAUF BATTEIEPROJEKTIERER KYON

Energate Messenger, 24.01.2024

Brookfield's X-ELIO and NIC invest in German battery storage firm Eco Stor

Energy Storage News, 19.02.2024

Statkraft erhält Zuschlag für kombiniertes Photovoltaik-Speicher-Kraftwerk mit 63 Megawatt

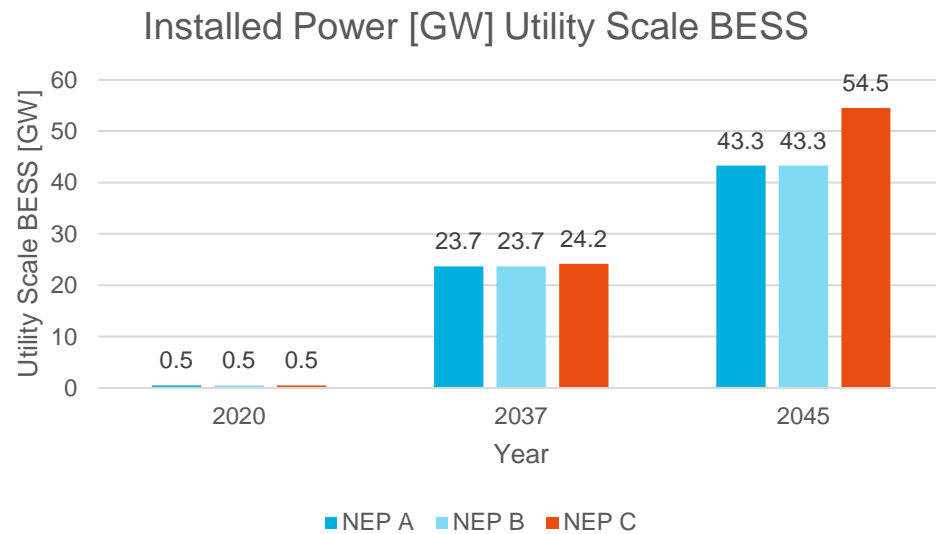
PV Magazine, 23.06.2023

Strategie für Energiespeicher möglicherweise im Januar

Tagesspiegel Background, 05.12.2023

Statkraft is ready for the growing BESS market in Germany

Utility scale BESS installation expected to increase in Germany, with up to 1.7 GW (2.2 GW) yearly growth



Bestätigung Netzentwicklungsplan Strom, 01.03.2024






Market Outlook Germany

BESS development is a key part of our 2030 goals and a strategic fit with our activities

- Statkraft to become a major developer of solar, wind, and battery storage
 - Worldwide with an annual delivery rate of 2.5-3 GW/a by 2025 and 4 GW/a by 2030
 - In Germany with an annual delivery rate of 300-500 MW/a by 2027
- Experience and resources across the value chain, incl. route-to-market and dispatch optimization

Statkraft Outlook

We pursue all BESS Options in Germany

Business model	 Subsidized	 Merchant	
 Project design	Hybrid PV+BESS under EEG Innovation Auction support scheme (CfD)	Co-located	Stand-alone
 Revenues	CfD secures a revenue floor over 20 years (higher than PV-only EEG) PV production optimized by BESS on Day-Ahead and Intraday markets; some limited potential on aFRR market	Full revenue stack flexibility Revenue modelling using Statkraft market expertise New possible revenue streams through introduction of capacity market by 2028	
 Challenges	Timeline risk: 30-months realization after CfD award, long lead times Profitability: Project size limited to 20 MWp Suboptimal setup: No grid charging, less arbitrage, no PRL	Merchant risk: Changing dynamics on wholesale and ancillary markets Regulatory Framework: Grid fees, "Baukostenzuschüsse"	

BESS offer many benefits for the energy system

Efficient energy utilization

- BESS ensure a consistent power supply from intermittent renewable sources
- BESS prevent renewables curtailment

Grid stability

- BESS respond quickly to fluctuations in electricity demand or supply and participate in all reserve markets
- BESS reduce grid congestion by local energy storage

Sector coupling

- BESS enable a reliable power supply of heat pumps from renewables
- BESS provide a reliable charging infrastructure for EVs from renewables and allow for V2G



To unlock the full potential, we need a stable regulation with transparent requirements.

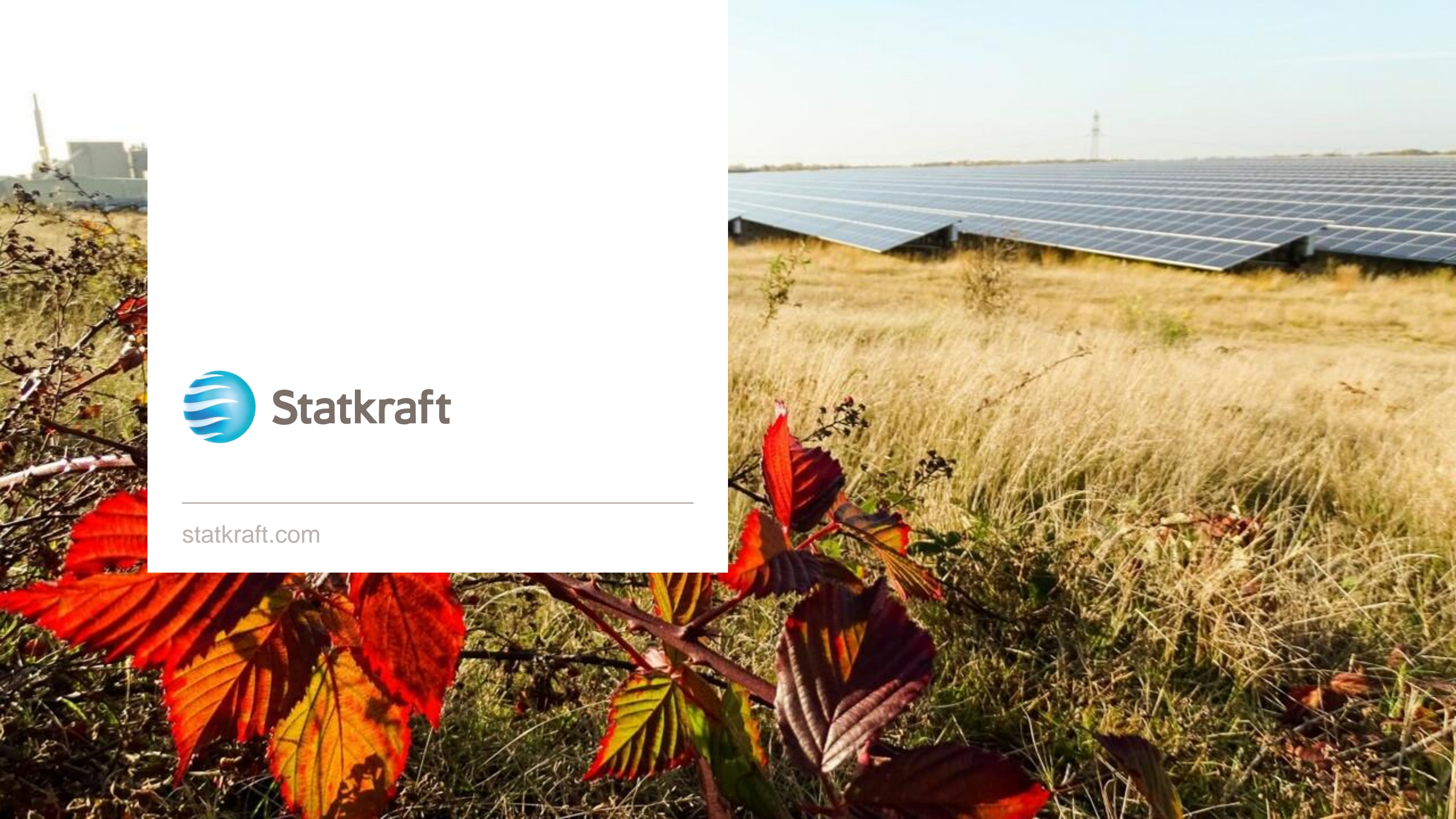
- *Subsidized BESS (Innovation Auction)*: 100 MWp limit, charging from the grid
- *Merchant BESS*: National standards in permitting, precise regulation on “Baukostenzuschuss”, exemption from grid fees

Thank you!

Comments or ideas: please reach out!

Laura Hanneken
Energy Storage Manager
Wind, Solar and Storage Germany
+49 175 20 83 114
laura.hanneken@statkraft.com





Statkraft

[statkraft.com](https://www.statkraft.com)