



**APRICUM**

THE CLEANTECH ADVISORY.

# The Potential of Utility-Scale Battery Energy Storage in Saudi Arabia

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For 16 years, Apricum's ~70 strong team has delivered client success in global cleantech, leveraging deep industrial expertise.



> € **3.8**BN

TRANSACTION VOLUME  
INVOLVEMENT

**30+**

COUNTRIES SERVED  
ON 5 CONTINENTS

**400+**

PROJECTS COMPLETED

Source: Apricum

# Saudi Arabia has committed to generating 50% of its power from renewables by 2030, but they need to be supported with BESS.

Why Saudi Arabia needs BESS

## 2030 Targets:

- 50% of power generated by renewables
- 278 mtpa reduction in carbon emissions
- >100 GW of renewable capacity tendered<sup>1</sup>

## Progress:

- 6.2 GW of renewable capacity deployed
- 44.2 GW of renewable capacity in development

## But:

- Renewable power intermittency requires flexibly dispatched assets to match supply and demand

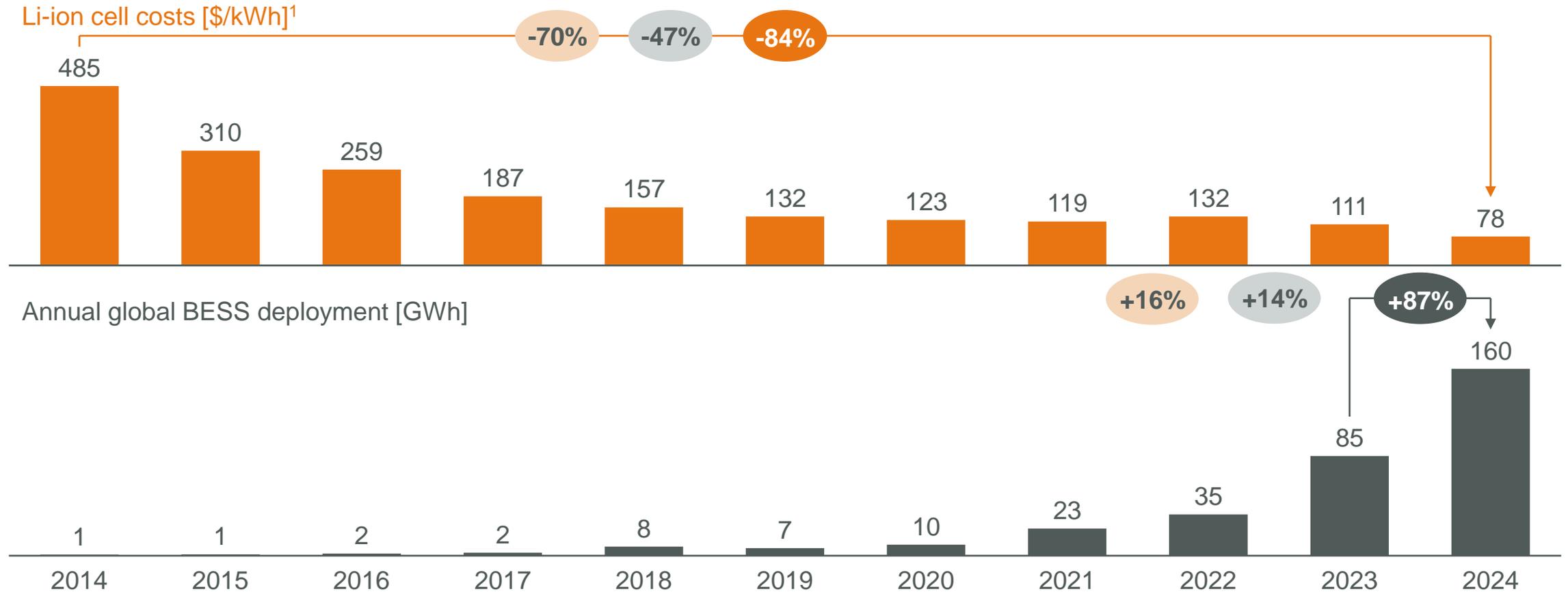
## Why BESS:

- Manage renewable curtailment as more renewable capacity comes online
- Fast deployment capabilities match KSA's renewables target and timeline
- Can provide additional grid stability value

Source: Apricum analysis, SGI; Image source: National Grid, Gexcon; 1) Ministry of Energy indicated a target revision of 130 GW by 2030

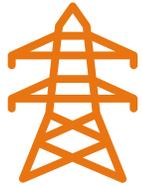
# Lithium-ion BESS has reached commercial maturity, with 160 GWh deployed in 2024 alone.

## Lithium-ion BESS cost and growth



# Li-ion BESS is being deployed in KSA at very-large scale through public tenders to meet growing flexibility needs.

KSA BESS market drivers and context



## Need for flexibility to support renewable energy deployment

- Matching renewable generation to demand
- Gas turbines are unable to meet the power ramping needs of solar and wind
- Grid voltage and frequency require additional support without as many spinning generators online



## Li-ion BESS is now cost competitive with gas turbines and diesel gensets

- Projects are very large utility-scale projects (for example, Bisha is the world's largest single-phase BESS project)
- Deployment occurs through public tenders, either through
  - Government entities such as SEC and SPPC
  - Megaprojects such as NEOM and The Red Sea

Source: Apricum analysis; Image source: ITP Media

# Over 19 GW / 76 GWh of BESS are planned for deployment in KSA by 2030, which would make it the world's third largest BESS market.

Current projects, developments and opportunities in Saudi Arabia<sup>1,2</sup>



Source: Apricum analysis, SPPC, Saudi Gulf Projects, company websites; 1) The quoted project energy capacities (MWh) are expected to be maintained until the end of the offtake agreement, allowing for increased capacity at project commissioning due to asset oversizing; 2) 4-hour discharge duration is considered for projects where the power capacity is not publicly disclosed; 3) indicated project locations include SEC's first two rounds of EPC tender awards. SEC recently awarded 12.5 GWh to BYD in the third round, however, the project locations remain undisclosed

# Apricum can help you succeed in the rapidly growing KSA BESS market on topics across the entire BESS value chain.

Challenges, considerations and how Apricum can help

Upstream

## Key challenge: Localization

- KSA does not have a domestic Li-ion BESS supply chain
- China's leading cost position has pressured margins and led to investment failures in other countries

Downstream

## Key challenge: Competition

- Downstream activities are less specialized, many local and international players already have the necessary capabilities, pressuring margins
- Local players have not built significant experience in BESS compared to international counterparts

## Services offered<sup>1</sup>

- **Market entry:** Enter the value chain where it is most attractive and best fits your core competencies and goals
- **Due diligence:** Invest your capital in the right Target or project at the right valuation
- **Bid advisory:** Find the right partners and structure to create the most attractive bid for public tenders

## Selected clients



Abdul Latif Jameel



ENEL



aramco



Source: Apricum analysis; 1) Selected services, talk to us about how we could help for a full overview of our capabilities