Berenberg Conference
From home to grid – powering up the stationary storage market
A utility perspective

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Berenberg Investor Forum on Batteries

State of Charge

1. Disruption?
2. Opportunity!
3. "To do" list
„It’s gonna be great“ – batteries are becoming much cheaper, opening up many new use cases
Batteries will change the way we think about the power system

- Market design
- Grid investments
- Pricing
Market design: Tailored to a portfolio of thermal and hydro power plants. Batteries challenge the status quo
Grid infrastructure: Maintaining a copper plate is going to be expensive. Batteries start to become an alternative.
Pricing: Batteries can optimise revenue and cost between capacity and energy components
1. Disruption?
2. Opportunity!
3. "To do" list
Batteries are relevant for all of innogy’s activities

Grid-friendly renewables
Hybrid-Systems
Duck curve management

Maximisation of PV usage
Demand charge management
Integration with existing infrastructure

Line deferral / alternative investment
Grid management & Ancillary Services
Ramp rate control
innogy is active across all battery system sizes

B2C

B2B

Utility scale
Some innogy battery impressions from the field
Enabling fast charging

Fast and intelligent charging

innogy eBox smart

innogy eStation smart touch

innogy eStation smart multi QC20

innogy eStation smart multi QC45
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Optimising existing infrastructure

Heat demand supplied by gas gen-set

Electricity from gas gen-set and PV power
innogy covers the whole value chain of commercial battery management

Customer contact or Project Lead
- Customer links
- Asset links

Commercial use case analysis
- Country-specific regulation
- Use cases
- Load & asset analysis

Battery & System Engineering, Procurement & Construction
- Battery system design
- Knowledge of converters
- Cell performance

Route-to market & commercialisation
- Pooling tools
- Links to TSOs & DSOs
- Market access
State of Charge

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Batteries need to become separate asset class in electricity market regulation
Stacking up use cases for customers that ensure smooth grid operations

Market  TSO  DSO  Customer
Scaling up: Managing thousands of small assets

- 100
- 10,000
- 10,000,000

Route to market
Pooling Tools
Customer/Battery size

Market
Retail Energy Management
SmartPool
kiwi grid
B2C
B2B
Utility scale
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- Statements of plans or objectives for future operations or of future competitive position;
- Expectations of future economic performance; and
- Statements of assumptions underlying several of the foregoing types of statements

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