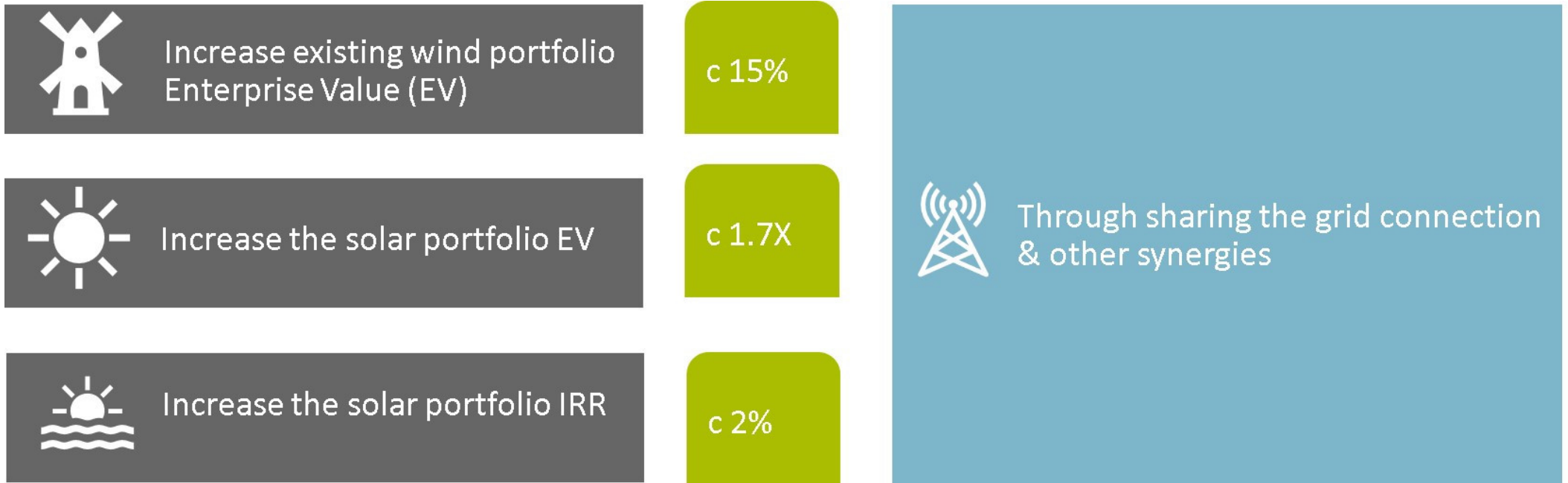


Hybrid Renewables Infographic



Order of magnitude KPIs subject to route to market and other factors

Hybrid Renewable Power Plant

DEFINITION

- HRPP**
Treated as one unit
Integrated control
Renewable generation +/- storage
- HPP**
Treated as one unit
Integrated control
Can include fossil generation +/- storage
- Colocation**
Separate units +/- storage
Separate control
Limited integration

MARKET

- Existing global HRPP market**
750-1500MW and growing
- UK market substrate**
13.7GW onshore wind
8.5GW solar PV and growing
- EU market substrate**
190GW onshore wind
137GW solar PV and growing
- Global market substrate**
655GW onshore wind
742GW solar PV and growing

ENABLERS

- Development**
Consenting synergies
Shared connection
Firmer offtake
- Construction**
EPC synergies
Construction staffing
Shared scope
- Operations**
Opex synergies
Cross generator/ storage O&M pooling
More revenue streams
Variety revenues
Diversification of risk at point of connection

CHALLENGES

- Development**
Resource correlation
Terrain
Existing financing
Market & regulations
- Construction**
Degree of synergies
Grid compliance
Differences in timing
Coordination
- Operations**
Dispatch conflict
Curtailment
Degree of synergies
Stranding

Hybrid Renewable Power Plant

VALUATION

Additional renewable generator

- Existing single renewable scheme
- Model is for additional unit only
- Ratio of capacities
- May be the curtailed unit

HRPP

- Composite model
- Impact to existing base case
- Quantify offtake benefits
- Battery as capital at risk

Stochastic treatment

- Upper limits in inputs
- Lower limits in inputs
- Costs, revenues, timing
- Probability distribution

DRIVERS

Funds

- Return upside
- Increasing ESG proposition
- Risk diversification

Utilities:

- Synergies for inhouse functions
- Innovation laboratory
- Enabler for pilots to then scale

Developers:

- Positioning
- Option value
- Higher sales price at exit

Global market substrate:

- 655GW onshore wind
- 742GW solar PV

STORAGE

Hydrogen

- Green hydrogen
- Longer duration
- Multiple end uses
- Alignment to policy

Lithium ion

- Developed model
- Range of revenues
- Cost reduction
- Dispatch ALGO

Other

- Flywheel
- Compressed air
- Hybrid lithium ion
- Flow
- EVs

EXPERIENCE

Feasibility

- Screening
- Energy yield analysis
- Correlation analysis
- Curtailed analysis
- Red flag

Services

- In-house hybrid screening and analysis tools
- Hybrid permitting
- Hybrid EIA
- Grid connection
- Site layout
- Power system study
- Inputs to financial models

Coverage

- Mainland
- Remote island
- UK
- Overseas