



HABITAT

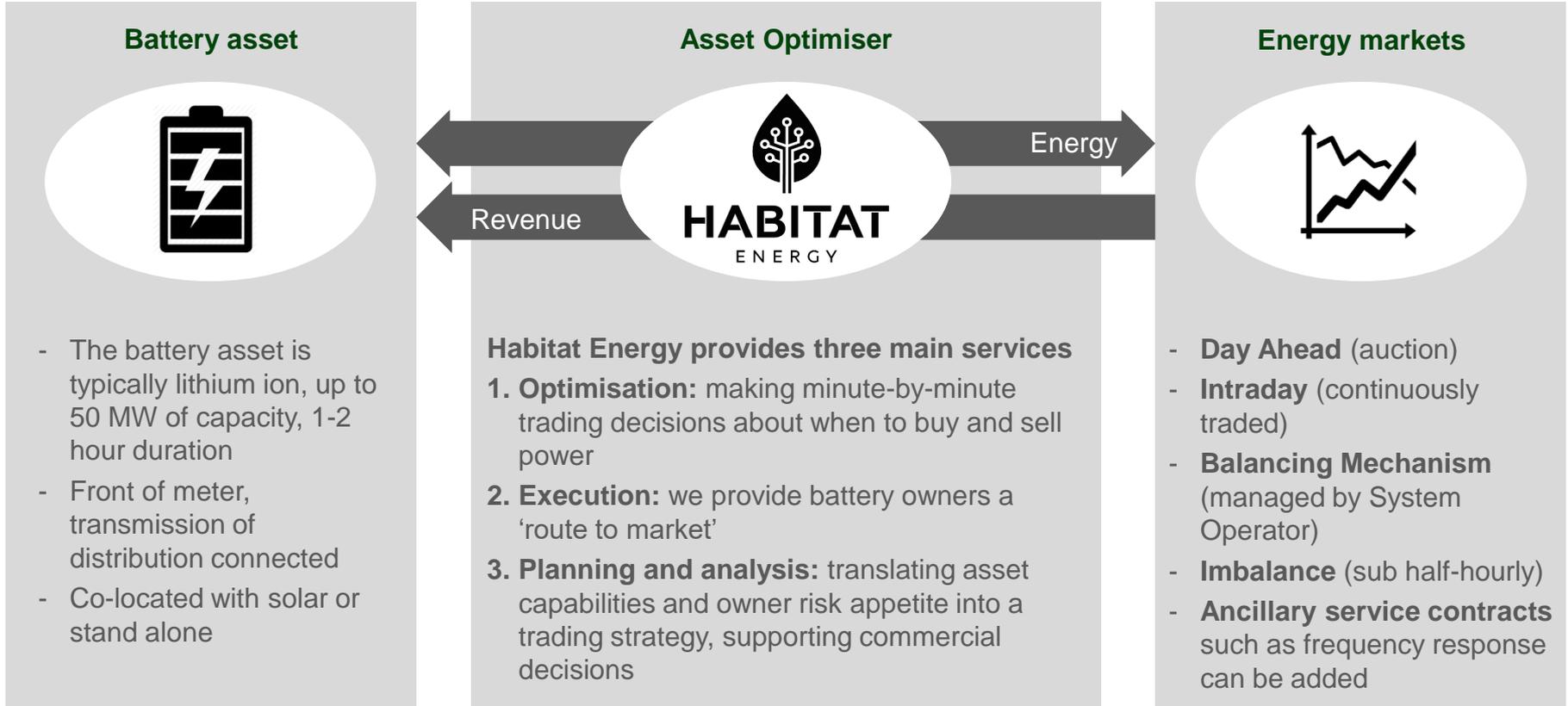
ENERGY

Unlocking the Merchant Solar
+ Storage Investment Case

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Habitat Energy provides optimisation services for battery storage



Our trading platform “PowerIQ” is live and operating physical assets today



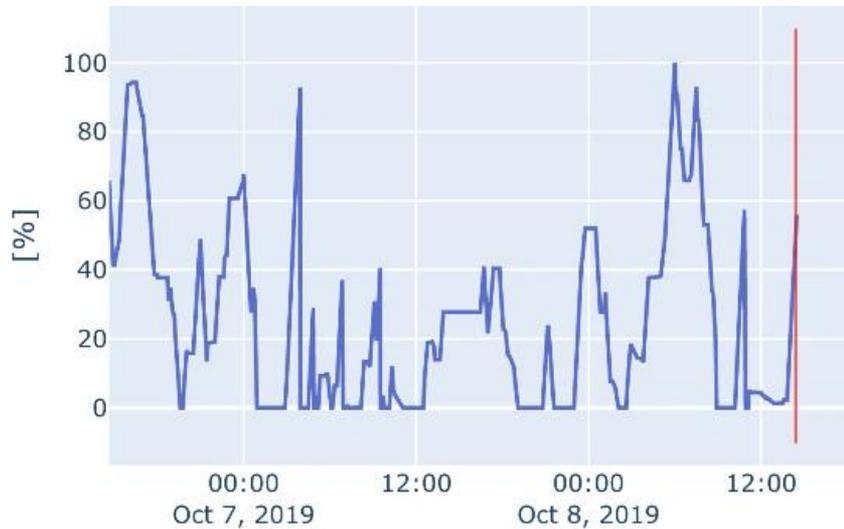
- Operating live assets since July 2019, with 300 MWh of GB merchant storage onboarding in coming months
- Fully algorithmic dispatch with human oversight
- Incorporates stochastic forecasting with machine learning, dynamic degradation management, cloud hosted and full route to market

Unlocking the merchant solar + storage investment case

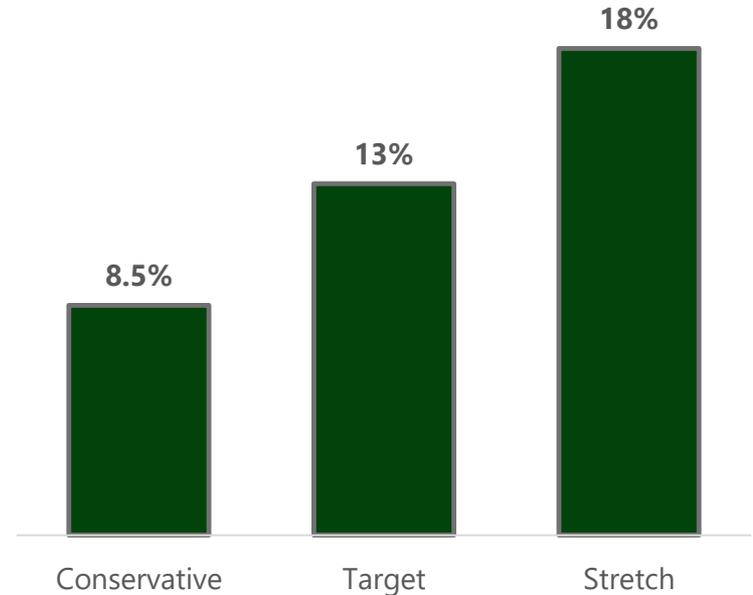
- 1. Stand alone battery storage IS investable today** with 13% unlevered IRRs achievable
- 2. Collocating storage with solar improves attractiveness of both investments,** but battery optimisation needs to go beyond simple time shifting
- 3. Design is key:** solar oversizing of 50%+, DC coupled configuration, symmetric grid connection and flexible warranties all add value to the investment case
- 4. Institutional investors should see storage as a risk mitigation strategy** as well as a way to enhance revenues

Our algorithmic optimisation approach cycles the battery aggressively in search of best possible spreads, delivering revenue commensurate with 13% project IRRs

Typical battery cycling patterns



Project IRR



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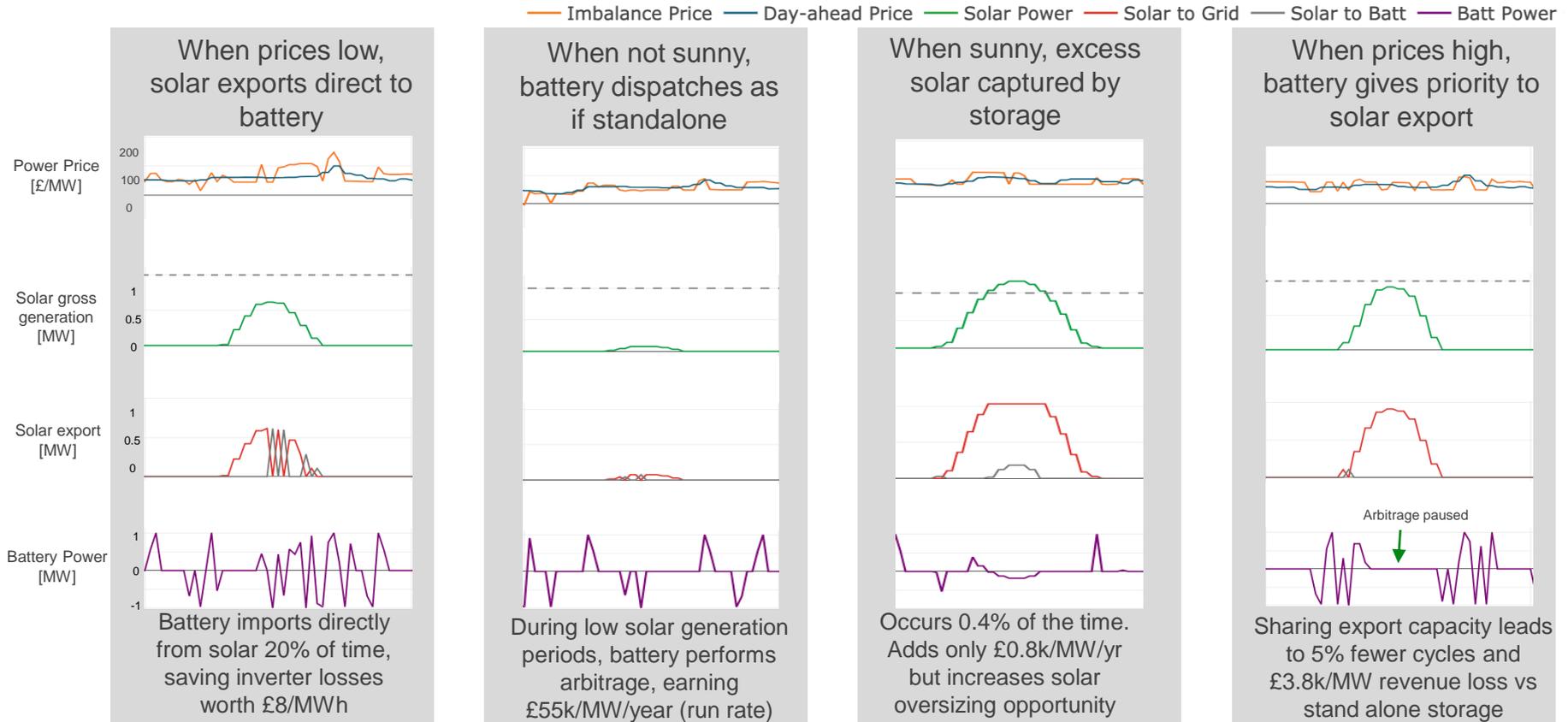
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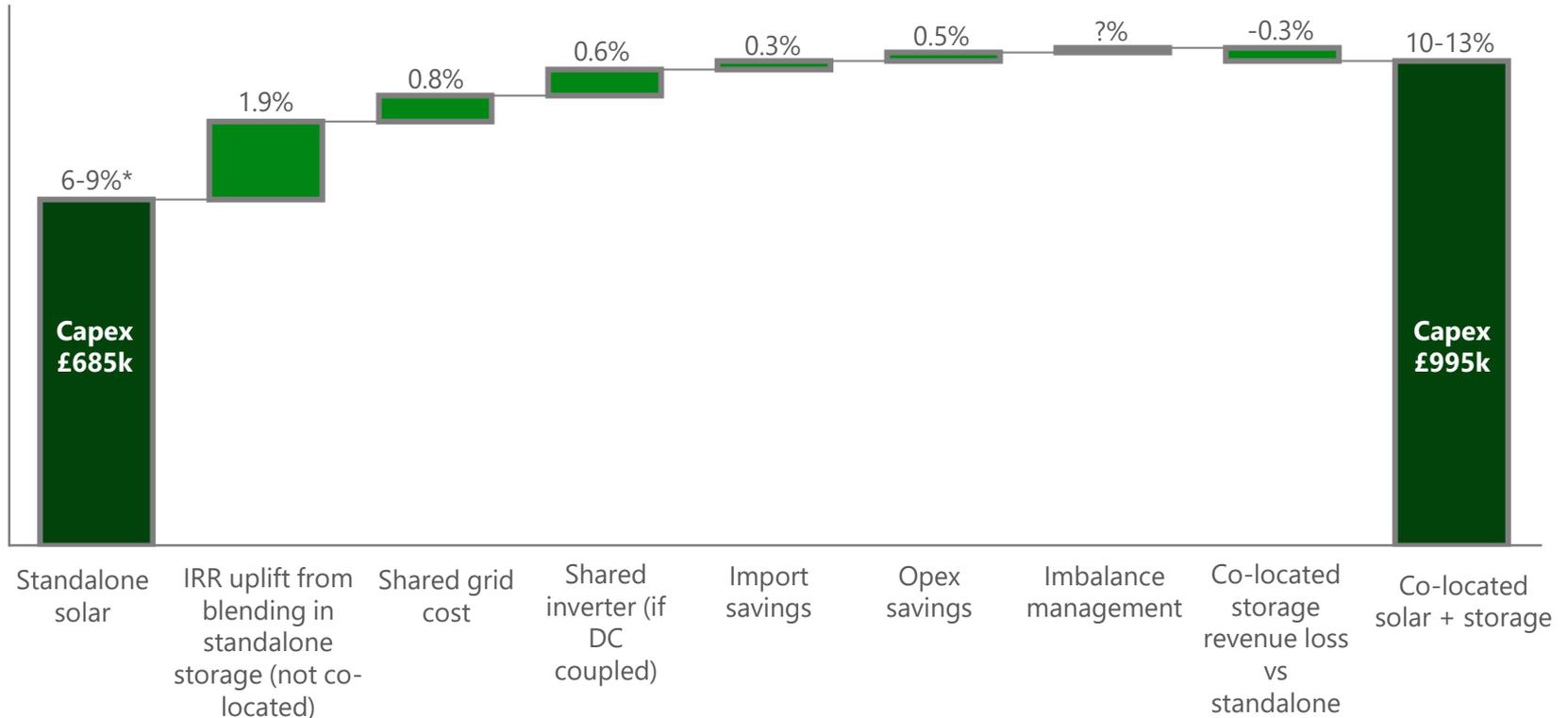
4. **Institutional investors should see storage as a risk mitigation strategy** as well as a way to enhance revenues

Storage optimisation should combine multiple different strategies beyond simple time shifting



We find that co-location of storage with solar adds up to 4% to IRR

IRR, % (unlevered pre-tax nominal)



* Depending primarily on PPA

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Adding 1.5 - 2 hour battery storage enables solar oversizing of 50% to 100%

NPV per unit of capex

Unlevered project IRRs

Solar MWh oversizing compared to grid connection

	0%	25%	50%	75%	100%	
Battery duration (hours)	1	0.37 12.5%	0.38 12.4%	0.39 12.3%	0.38 12.1%	0.35 11.8%
	1.5	0.38 12.9%	0.40 12.8%	0.42 12.7%	0.39 12.5%	0.36 12.2%
	2	0.34 12.6%	0.35 12.6%	0.36 12.5%	0.36 12.4%	0.34 12.1%

Assumes discount rates of 10% for battery and 7% for solar

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Habitat Energy can play a role at multiple stages of the project lifecycle

1. Support preparation of investment model

- Habitat Energy can provide bespoke revenue simulations using a real, operational battery trading strategy. These have been used successfully on a number of large UK transactions supporting both equity and debt raises.
- Customised to take into account the specifics of your sites, assets and investor preferences
- Includes a view on battery degradation and end of life that is aligned with the trading strategy

2. Optimise site design

- Habitat's trading simulations can be used to identify an optimal project design for any elements that have revenue implications
 - Solar oversizing and orientation
 - Battery duration
 - Battery warranty
 - AC vs DC coupling
 - PPA design

3. Operate

When built, Habitat can optimise the asset, giving comfort to investors that the trading strategy and revenue will be consistent with the investment case since the same algorithms underpin both.

- Full optimisation and route to market
- Revenue share commercial model with 'preferred return' structure
- Solar + storage PPA

We are looking to partner through the lifecycle with the biggest developers, helping them to bring large-scale projects to market and achieve maximum revenue

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