

Batteries: Ensuring expectations match reality

The devil is in the details



The World's First Hybrid Battery & Demand Network

Increasing sites resilience and flexibility

Supporting sustainability and green credentials



GridBeyond -Transform energy demand into opportunity

Hybrid battery & demand network in Dynamic FFR Case Study: Glass Manufacturer



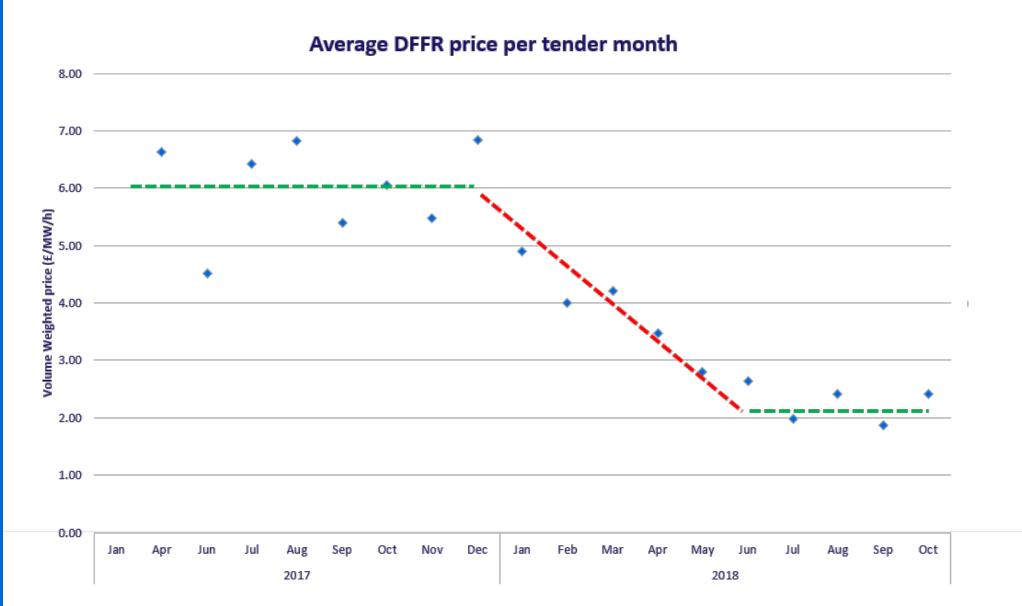
Project Facts:

- **12 MW** combined total of on-site assets connected
- 2 MW battery installed on 1 site
- **65% increase in flexibility** of on-site assets
- **Connected** to the hybrid battery and DSR network

Benefits:

- Boost site resilience, reduce the financial risk of installing an on-site battery, and enhance the Grid's ability to meet sustainability goals.
- Intelligently rotates energy consuming assets within the portfolio based on their flexibility capabilities, filling in any gaps with the flexibility of the network of batteries that underpins the system.

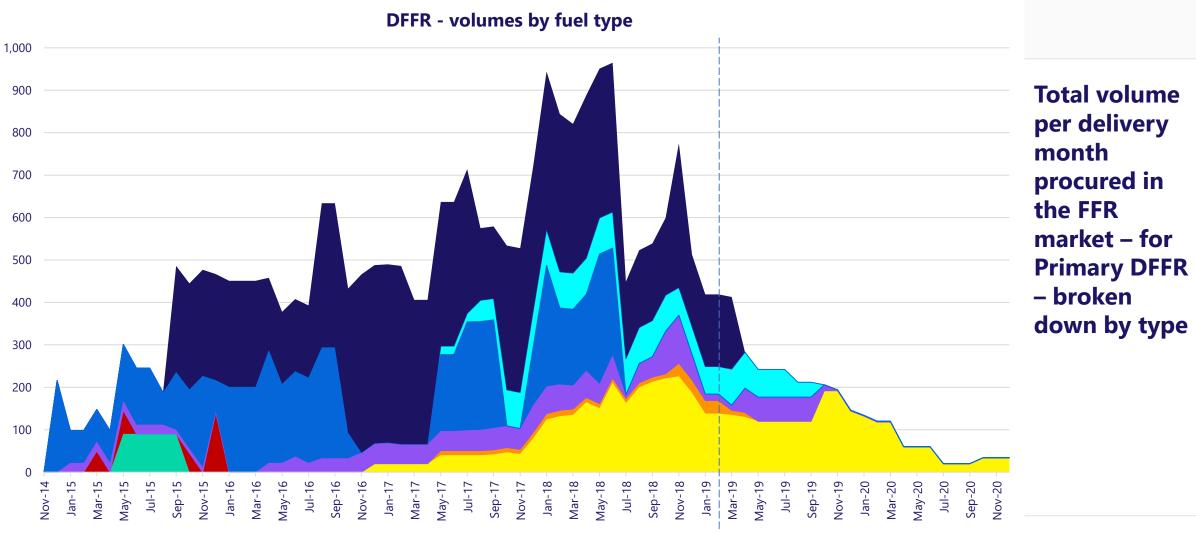
Dynamic FFR pricing





4

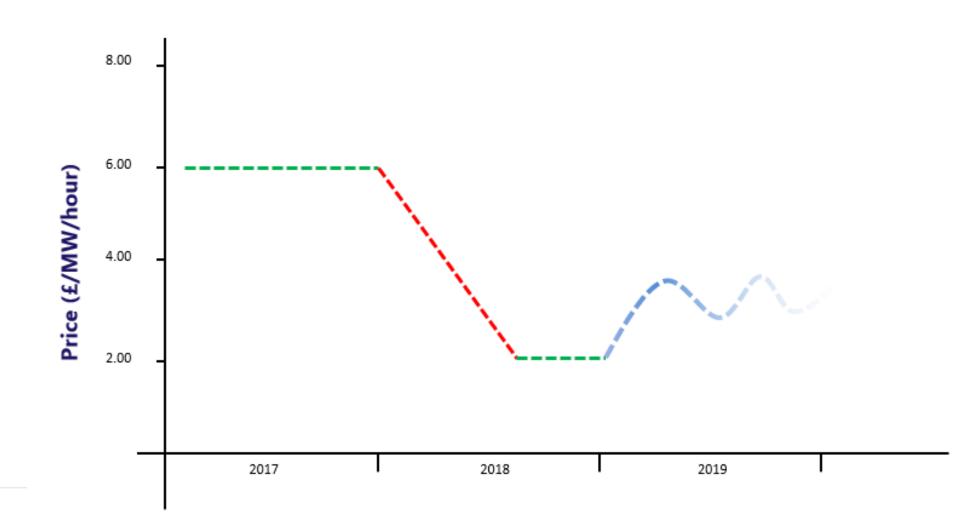
Volume procurement shortened



Battery ■ Bio Fuel ■ Coal ■ Diesel ■ DSR ■ Gas ■ Hybrid ■ Hydro ■ Voltage ■ Unknown



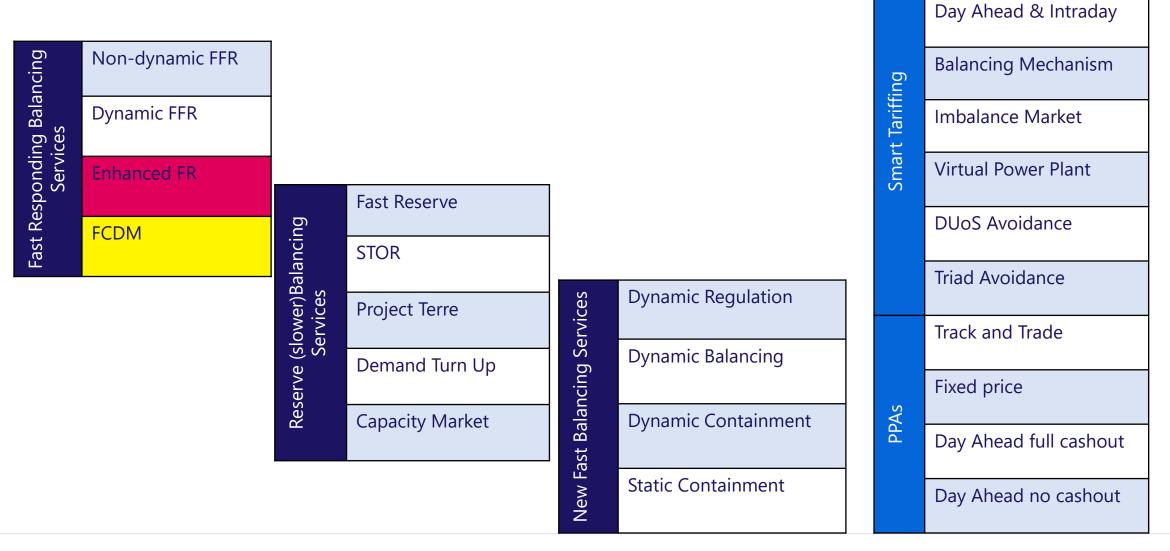
An optimists view of forward Dynamic FFR pricing...





6

Access to multiple markets/services

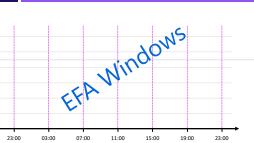




Forward Trading

Shorter-term procurement windows

Year Ahead Season Ahead		Ahead "Gate 24hr)		very Settle Ohr) (t + C	ment .5hr)
01 Grid Trade Master Agreement (GTMA) bila	ateral OTC forward markets				
02 Season and month ahead future contracts	;			Half-hour settlement period	
	03 Day-ahead (DA) Exchanges				
		04 Intra-day (ID) Spot			
	Generators and suppliers have to pro- notification of their likely generation a		05 National Grid's Balancing Actions		
	for the next operational day.		Balancing Mechanism	Balancing Services	
	"Final Physical Notification contracted positions. BSC parties will also submi		At gate closure, generators and supplies must provide "Final Physical Notification" (FPNs) as well as their contracted positions.		Imbalance Settlement
Market based imbalance actions					





Thank you.