



Making battery projects bankable

Felicity Jones, 22 September 2016

RenewableUK conference, Cardiff

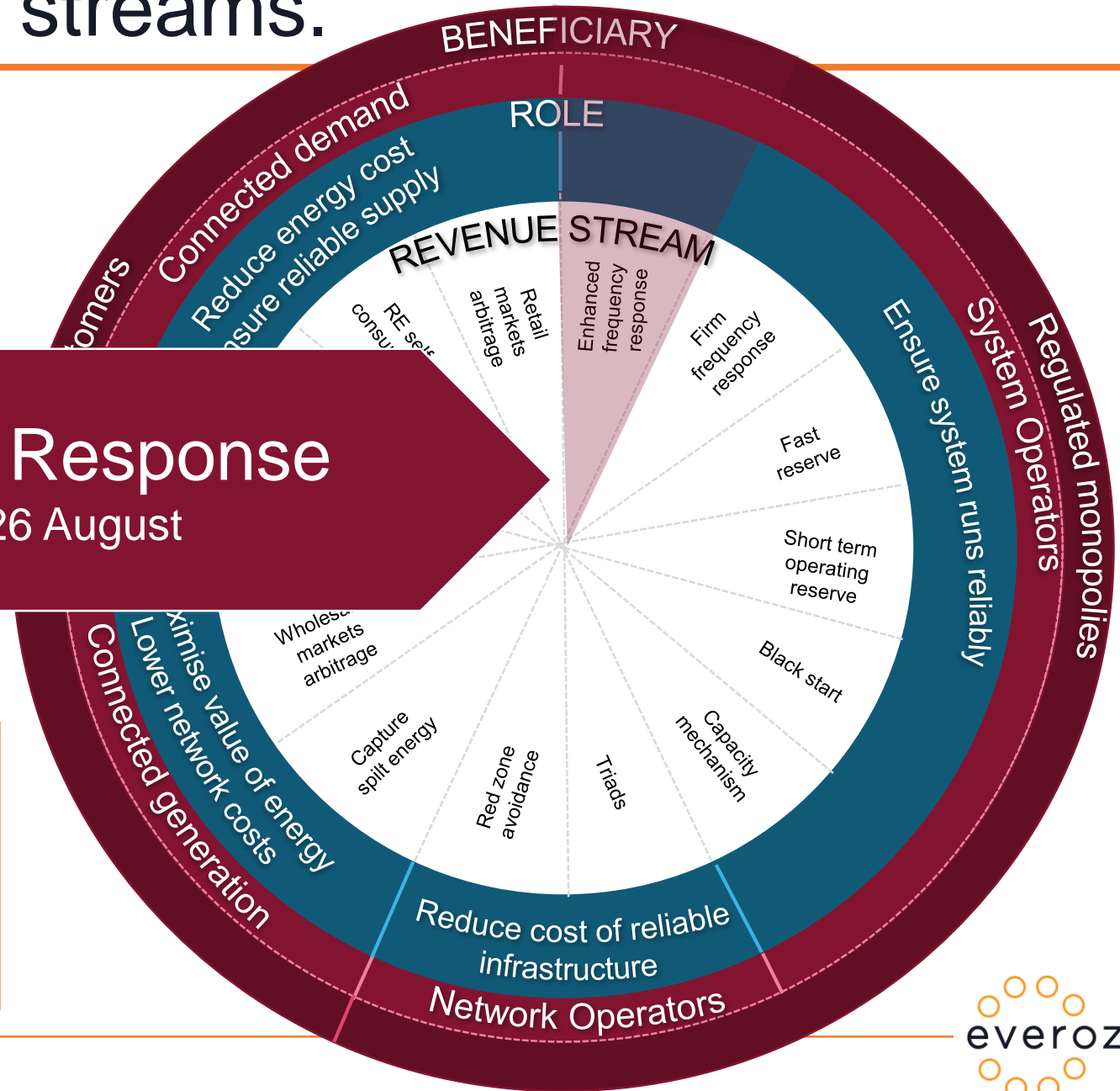
There are 14+ revenue streams.

This one is the most bankable.

Enhanced Frequency Response

4-yr contracts for 200MW: 26 August

EFR is a crucial test case for storage financing.



How I felt on 26 Aug...



EFR winners	MW	£/MW/hr
EDF Energy Renewables	49	7.0
Vattenfall	22	7.4
Low Carbon	10	7.9
Low Carbon	40	9.4
E.ON UK	10	11.1
Element Power	25	11.5
RES	35	11.9
Belectric	10	12.0
Total MW	201	

- Initial response: pricing shock
- Considered response: how to finance these projects? 2 barriers.

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BARRIER 1: CapEx is too small
SOLUTION: Portfolio approach

BARRIER 2: Risk complexity
SOLUTION: Rebooted due diligence...

Rebooted due diligence can help get financiers comfortable

In a simple world, we would copy-and-paste models from renewables

RENEWABLES DUE DILIGENCE

1. PRODUCTION RISK

2. CAPEX RISK

3. OPEX RISK

Risk Level	Production Risk	CAPEX Risk	OPEX Risk
High	>X% decrease in energy on average or >X% decrease in energy in a single year	>X% increase in CAPEX (above available contingency)	>X% increase in WTG OPEX on average or >X% increase in WTG OPEX in a single year
Medium	X% decrease in energy on average or X% decrease in energy in a single year	X% increase in CAPEX (above available contingency)	X% increase in WTG OPEX on average or X% increase in WTG OPEX in a single year
Low	<X% decrease in energy on average or <X% decrease in energy in a single year	<X% increase in CAPEX (above available contingency)	<X% increase in WTG OPEX on average or <X% increase in WTG OPEX in a single year
None	Negligible impact	Negligible impact	Negligible impact
Open	Risk still to be determined.	Risk still to be determined.	Risk still to be determined.

But storage isn't simple! Revenue risk assessment is key.

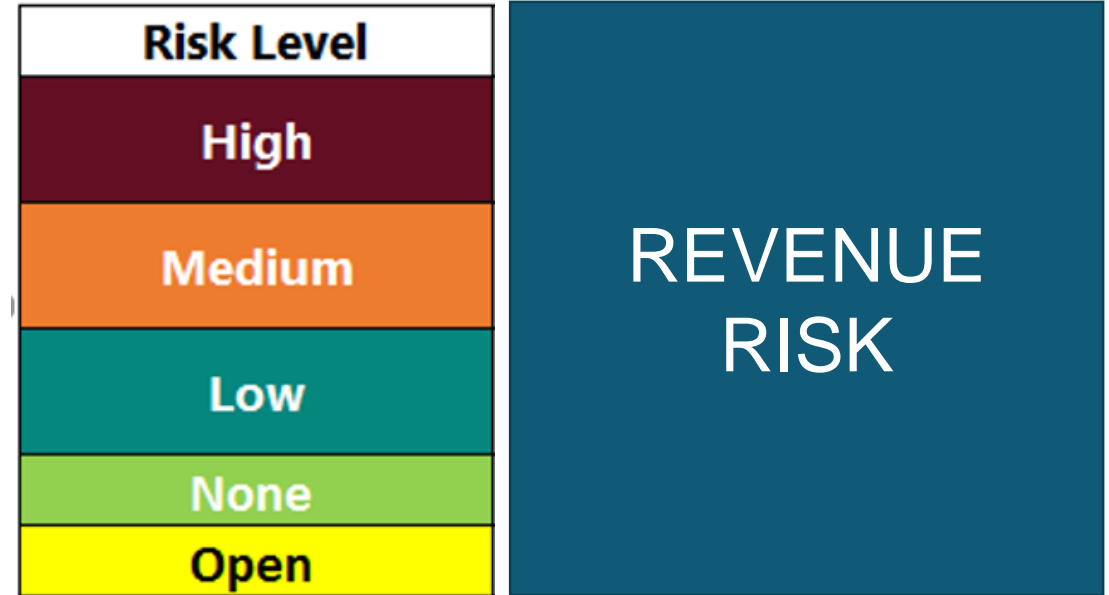
STORAGE DUE DILIGENCE

1. REVENUE RISK

2. CAPEX RISK

3. OPEX RISK

Conclusion



Everyone has focused on EFR prices BUT
It's time to examine how they'll be financed.

Due diligence will need to extend to revenue risk, to get financiers comfortable

Thanks for listening

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