



## Update from the Field – February 2018

A monthly analysis note from the energy storage experts

## **Table of Contents**

Executive Summary	2
Table of figures	4
New regulations and initiatives discussed this month	5
Americas	5
Europe	5
Asia-Oceania	7
Projects updates and announcements	8
Overview of the 2018 market for utility-scale energy storage projects	8
Projects announced this month	8
Americas	8
Europe	9
Oceania	10
Projects commissioned this month	10
Americas	10
Europe	10
Projects tendered this month	10
Focus of the month: Ancillary services redefinition in Ireland: the next European oppo	rtunity
for large scale energy storage	11
The DS3 programme is being finalized and will widely modify the ar services procurement process	cillary 13
The DS3 programme defines 14 system services to manage voltage frequency variations	e and
The DS3 programme enters its final phase of implementation procurements are starting to take place	, and 15
Battery storage is likely to become a key component of the Irish system implementation of the DS3 programme	n aftei 18
Operating Reserves and FFR payments are weighed by coefficients ain incentivizing certain behaviors from system service providers	ning at 20
The revenues of a storage asset depend on the performance of the assalso on external factors, making the business case complex to evaluate	
The Irish market offers apportunities for potential upsides and add	litiona

27

revenue streams



## Update from the Field – February 2018

A monthly analysis note from the energy storage experts

## Table of figures

Figure 1: Battery storage capacity registered and awarded a capacity contract in the 2018 T-1 and T-4 capacity auction in the UK6
Figure 2: Storage developers awarded with a capacity contract in the T-4 auction and their corresponding awarded capacity of storage7
Figure 3: Utility scale energy storage projects announced and commissioned for 2017 and beginning of 20188
Figure 4: Usage of available wind energy and logic for curtailment in 2016 in Ireland
Figure 5: Description of the 14 system services being implemented in Ireland under the DS3 programme14
Figure 6: Overview of the activation timeframe of the FFR and Operating Reserves15
Figure 7: Regulated remuneration of system services as proposed by the Irish TSOs 16
Figure 8: System services procurement timeline for capped and uncapped volumes in the DS3 programme
Figure 9: Representation of the system services payment calculation formula
Figure 10: Illustration of the differences between static and dynamic provision of reserve 21
Figure 11: Static response returning the highest product scalars22
Figure 12: Revenues available to a storage system providing system services (assuming the regulated tariffs apply)25
Figure 13: Estimation of the probable level of tariffs bid by storage system in the upcoming capped volume procurement
Figure 14: Example of de-rating factors applicable to battery storage systems in the Irish capacity mechanism