December 2024

# ENDURIUM<sup>™</sup> PRODUCT LAUNCH WEBINAR

# ENERGY SYSTEMS





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**ENDURIUM™** delivers best-in-class non-lithium LDES technology performance...



80% DC RTE 15 ms Response



75% Reduced O&M Streamlined Commissioning

100 MWh / Acre

...With the fundamental advantages of Invinity's VFB technology.



# **Configurable System Architecture**



### 3 MW / 12 MWh System

- 40 modules
- 10 Strings
- 1 Array
- I Gamesa Inverter

### Layout Advantages

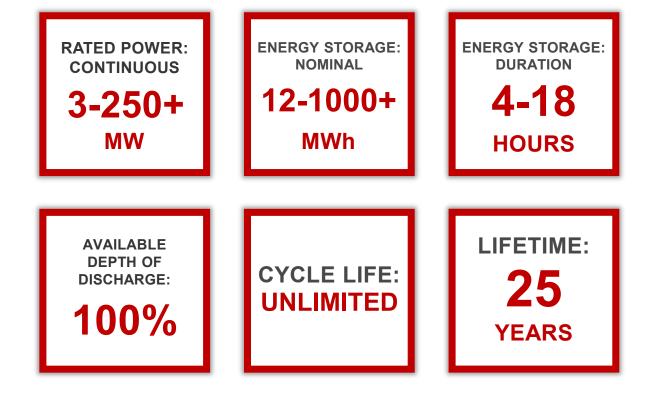
- Stackable
- No Exclusion Zone
- Integrated Wireways
- Simplified O&M

Example 3 MW / 12 MWh **ENDURIUM™** Configuration



## **Product Overview**







### **DNV Bankability Report**

- Third party product and company review
- Available under NDA

### **ENDURIUM™** delivers

- Reduced construction risk
- Easier planning & permitting
- Long-term performance capabilities
- Flexibility to address current and future market opportunities



Manufactured in the UK & Canada US domestic content by 2026

# **Project Economics**

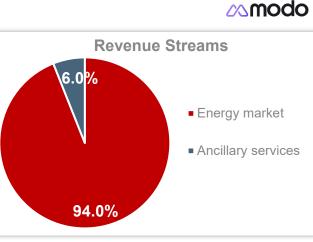


# ENDURIUM<sup>™</sup> can capture revenue from a wide range of streams and battery use cases.

### CASE STUDY 1

### ERCOT MERCHANT BATTERY SYSTEM

- 4-hour standalone vanadium-flow battery system that is distribution connected in West Zone
- Revenue breakdown is based on the annual average of 25-year lifetime revenues
- Ancillary services include contingency reserve service, non-spin, responsive reserves & regulation
- Operational flexibility ideal fit with wind generation



# 

North America's Largest Vanadium Flow Battery / California Microgrid Resilience 10 MWh

### CASE STUDY 2

### LONG-DURATION ENERGY STORAGE

- State and provisional LDES procurements are growing and will be funded by long-term contracts
- Utility integrated resource plans adding LDES too
- +3 GW of non-lithium LDES with durations of 6- to 12-hours have been announced in 2024 alone
- ENDURIUM<sup>™</sup> is an ideal fit due to its proven core technology, RTE, operational range, and scalability



- ENDURIUM<sup>™</sup> has the flexibility to capture current and future revenues in ever evolving wholesale markets
- Invinity's US DOE LDES awards (covering four projects) will all be deployments of ENDURIUM<sup>™</sup>
- Invinity can help partners win demonstration project funding and LDES procurements
- ENDURIUM<sup>™</sup> qualifies for the 30% ITC in both US and Canada; Will qualify for US 10% domestic content bonus by 2026

2023

# **Project Economics**

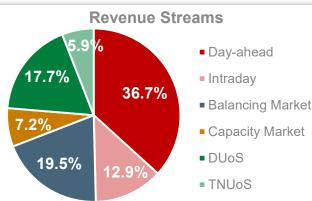


# ENDURIUM<sup>™</sup> can capture revenue from a wide range of streams and battery use cases.

### CASE STUDY 3

### **GB MERCHANT BATTERY SYSTEM**

- 4-hour standalone vanadium-flow battery system
- Distribution connected in South-East England
- Revenue breakdown is based on the annual average of 25-year lifetime revenues
- Similar revenue streams possible when system is co-located with Solar
- Also capable of capturing any ancillary services



modo

BRITAIN



### CASE STUDY 4

### LONG-DURATION ENERGY STORAGE

- UK Government's LDES Cap and Floor Scheme will provide long-term contracted revenues
- Stream 2 is expected to require proven novel technologies (i.e. – non-lithium) capable of delivering 300 MWh systems
- ENDURIUM<sup>™</sup> is a commercially-proven UK manufactured battery capable of meeting the Stream 2 objectives





- ENDURIUM<sup>TM</sup> has the flexibility to capture current and future revenues in ever evolving wholesale markets
- Invinity UK-made batteries have gained the internationally recognised Made in Britain trademark
- Through the UK's National Wealth Fund (formerly UKIB), Invinity Energy Systems has capital available for co-investing in UK storage projects

# **Project Economics**

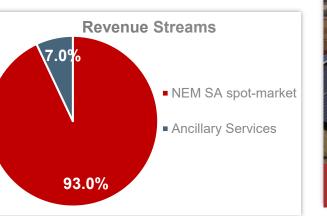


# ENDURIUM<sup>™</sup> can capture revenue from a wide range of streams and battery use cases.

### CASE STUDY 5

### NEM SA MERCHANT BATTERY SYSTEM

- 4-hour standalone vanadium-flow battery system that is distribution connected in South Australia
- Revenue breakdown based on historical revenues and 25-year asset life
- Fully capable of optimizing capturing relevant ancillary services
- Operational flexibility ideal fit with wind generation



Gridcoq

Gridcoq

Australia's First Dispatchable Solar Plant Solar plus Storage 8.3 MWh

### CASE STUDY 6

### **QLD SOLAR + STORAGE**

- Solar connected 4-hour vanadium-flow battery system in Queensland
- Increasing solar penetration has greatly reduced mid-day energy demand
- ENDURIUM<sup>™</sup> could not only shift solar energy to the evening peak but also could then fully recharge at night from the grid for an early morning discharge

### Autumn Summer Summer Summer Summer Summer Spring Spring Spring Spring Spring Spring Summer Spring Spring Summer Summer

- ENDURIUM<sup>™</sup> has the flexibility to capture current and future revenues in ever evolving wholesale markets
- Potential long-duration energy storage procurements are likely to have similarities to North American LDES programs, to which ENDURIUM<sup>™</sup> is especially well suited
- Australia has strategic interest in flow batteries because of its significant vanadium reserves

2023

# **Project Suitability**



Application	<ul> <li>12 MWh minimum capacity</li> <li>4-18 hour discharge duration</li> <li>High annual cycle count (250-750+)</li> </ul>
Site	<ul> <li>Network connection agreed or in progress</li> <li>Sufficient land to accommodate up to 100 MWh / Acre</li> <li>ENDURIUM can address planning challenges around fire risk or noise</li> </ul>
Funding	<ul> <li>Equity or debt funding in place</li> <li>Opportunities to access funding/grant support for innovative applications</li> </ul>
<b>Execution</b>	<ul> <li>Project delivery partner / EPC required</li> <li>~6-15 months lead-time from signed purchase order</li> <li>Delivered from UK or Canada today with deliveries from USA from 2026</li> <li>Regional partner deliveries (e.g. Everdura/Taiwan) from 2025</li> </ul>

# **Working Together**





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### **Next Steps**

- Alignment Conversation
- Mutual NDA
- Discovery Meeting
- Project Intake Form
- Generate Proposal

# Thank you! Q&A







# We Deliver Energy Storage Beyond Lithium