# ENERGY SYSTEMS

#### ANNUAL GENERAL MEETING

October 27, 2021



## **The Energy Storage Imperative**

Energy storage has always been critical to generating electricity.

> Energy storage at a coal power plant in North Carolina



Pre-production storage enables power plants to be what utilities call a *load*following asset. The global move toward primary energy sources introduces intermittency.

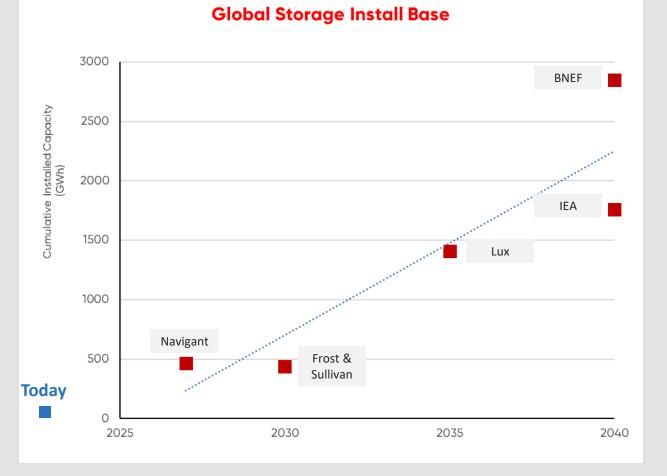


Post-production storage enables renewable energy to become a load-following asset.



#### **Market Size Projections**

Analysts & researchers forecast immense growth...



....aligned with political will.

**California:** "Governor proposes US\$350m support for long-duration energy storage"

**UK:** "Government's US\$100m long-duration energy storage funding competition underway."

**EU (IEA):** "[Market design and falling costs] are projected to drive... utility-scale deployments reaching 220 GW by 2040.

**US DOE:** The President's Fiscal Year 2022 Budget Request included a total of \$1.16 billion for (energy storage) activities



# **Utility Grade Energy Storage Characteristics**

	Lithium Ion	Vanadium Flow
Safe	Prone to catching on fire – difficult to put out.	No fire risk – electrolyte is mild, water- based, battery acid.
Long life	Degrades with use – five to seven years of daily cycling.	Unlimited cycles – over 20 years of continuous operation.
Economical	Lower upfront capital cost, but high cost per MWh over life (LCOS).	Low cost per MWh over life (LCOS).
Proven	Many installations at utility scale around the globe.	Invinity's first utility-scale installations currently underway

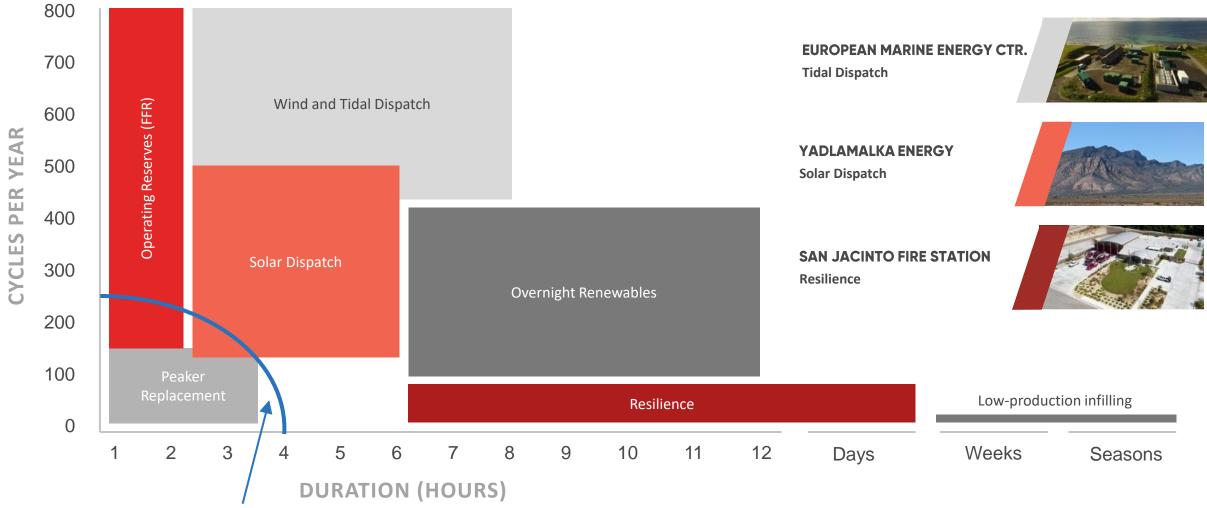


# **Energy Storage Market Targets**

ΙΝνινιτ

**ENERGY SUPERHUB OXFORD** Urban Decarbonization





"Lithium Barrier" (4 hours, 250 cycles per year)

### ESO – Cluster 2





## **Scottish Water**

# **Invinity VS3 Value Proposition**



COMPELLING ECONOMICS Superior levelized cost of storage (LCOS)



**MORE DURABLE** No degradation from heavy cycling 25 year lifetime



**SAFER** Non-flammable No risk of thermal runaway



#### LONGER DURATION

Optimized for requirements of 3 to 10 hours



SUSTAINABLE MATERIALS

No conflict minerals All components easily recyclable



#### FACTORY BUILT

Standardized product drives price down & quality up

THE RESULT: Energy storage superior to and complementary with lithium systems







