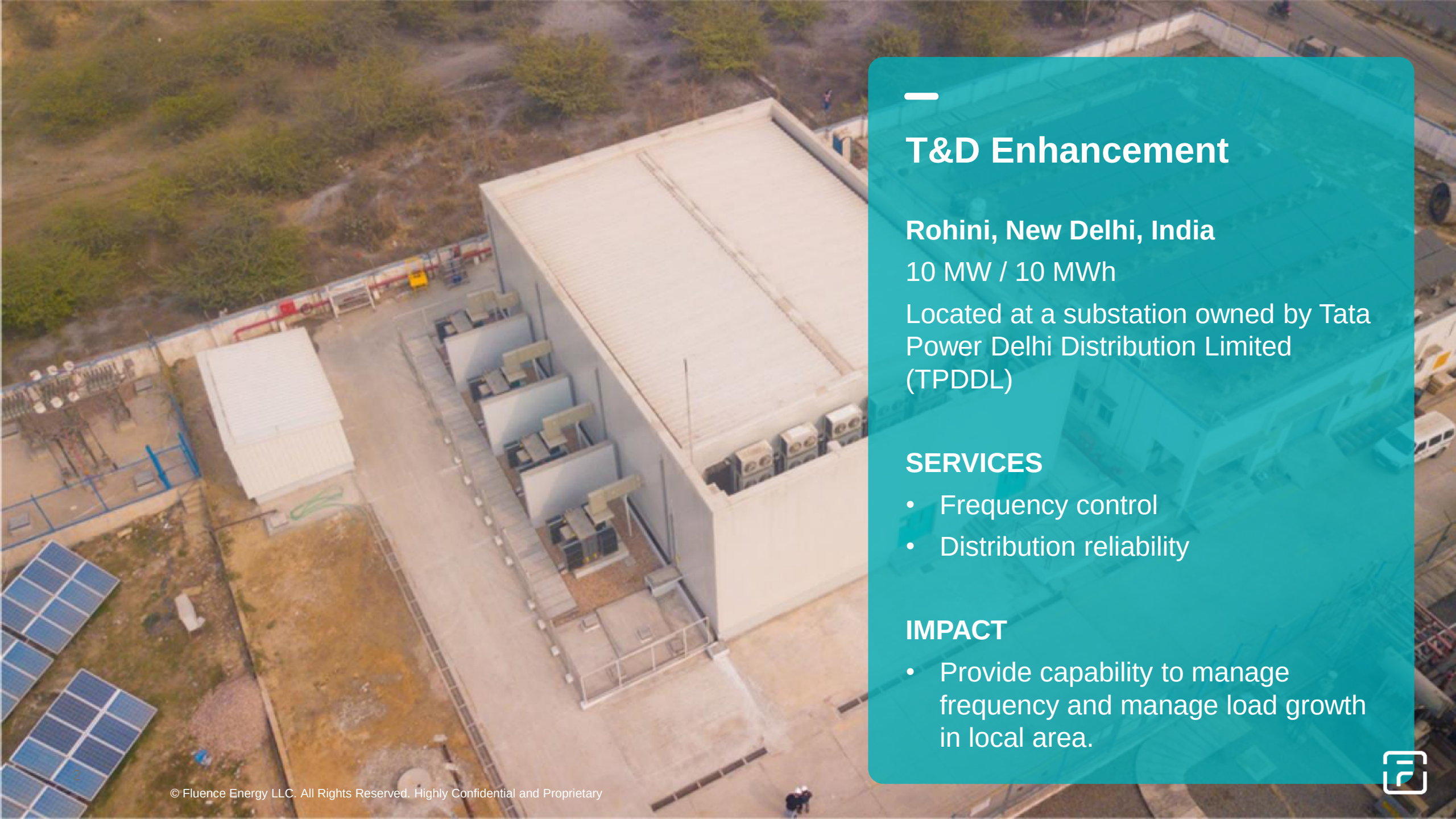
Grid Scale Energy Storage Systems: EU-India Smart Grid Workshop

March 2020 New Delhi

FLUENCE

A Siemens and AES Company



T&D Enhancement

Rohini, New Delhi, India

10 MW / 10 MWh

Located at a substation owned by Tata Power Delhi Distribution Limited (TPDDL)

SERVICES

- Frequency control
- Distribution reliability

IMPACT

- Provide capability to manage frequency and manage load growth in local area.

Renewable Integration & Fast Frequency Response (FFR)

Statkraft Ireland

Kilathmoy, Wind Farm

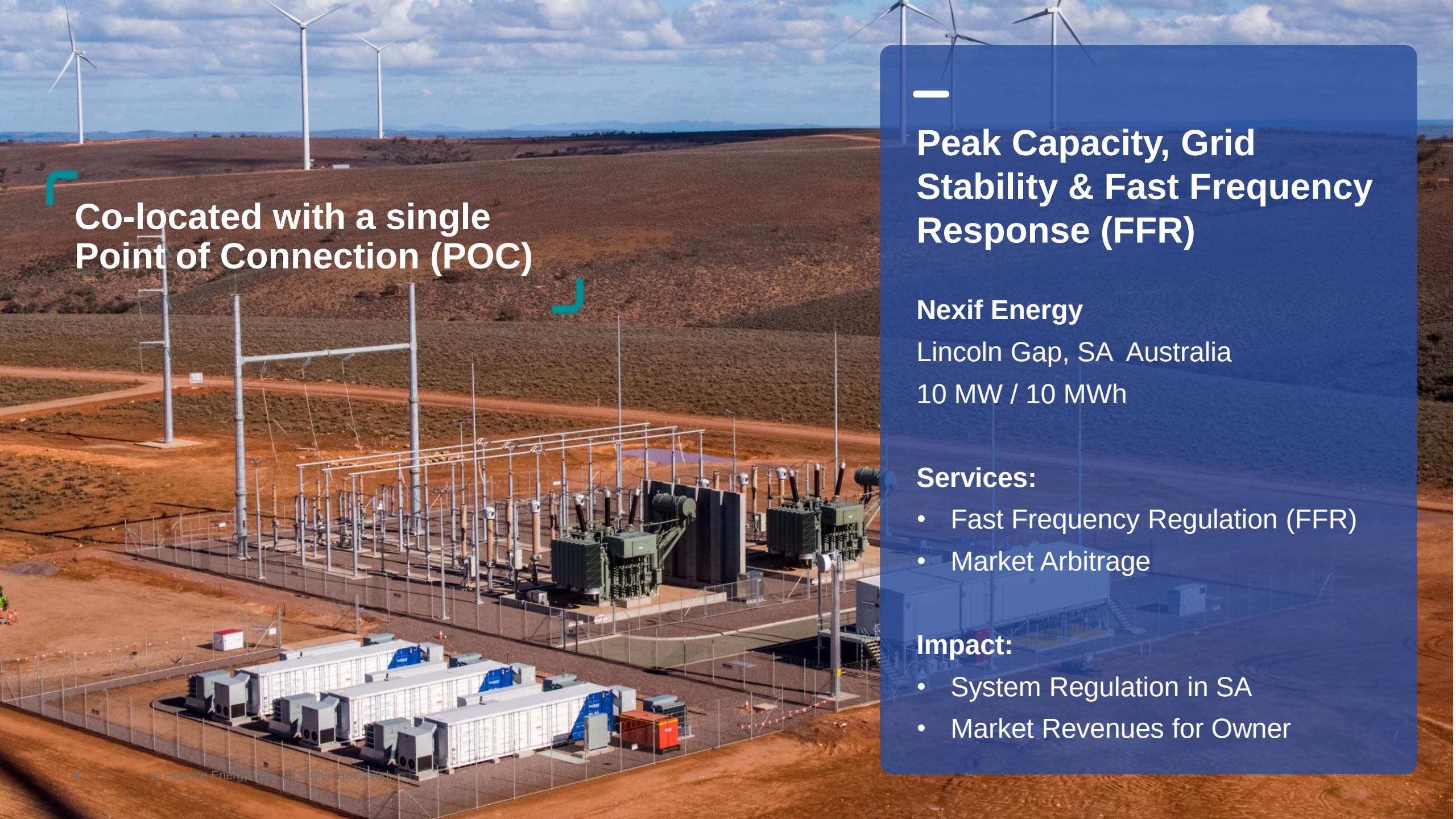
34MW Wind-Battery hybrid plant

Services:

- DS3 Services (150ms guarantee)
- Reactive Power compensation

Impact:

- Grid Code Compliance
- Deployment Synergies
- Increased RES-E integration
- First DS3 battery in Ireland
- World’s fastest software-controlled BESS



Co-located with a single Point of Connection (POC)

Peak Capacity, Grid Stability & Fast Frequency Response (FFR)

Nexif Energy

Lincoln Gap, SA Australia

10 MW / 10 MWh

Services:

- Fast Frequency Regulation (FFR)
- Market Arbitrage

Impact:

- System Regulation in SA
- Market Revenues for Owner

Flexible Peaking Power

AES Alamitos

Long Beach, California, United States

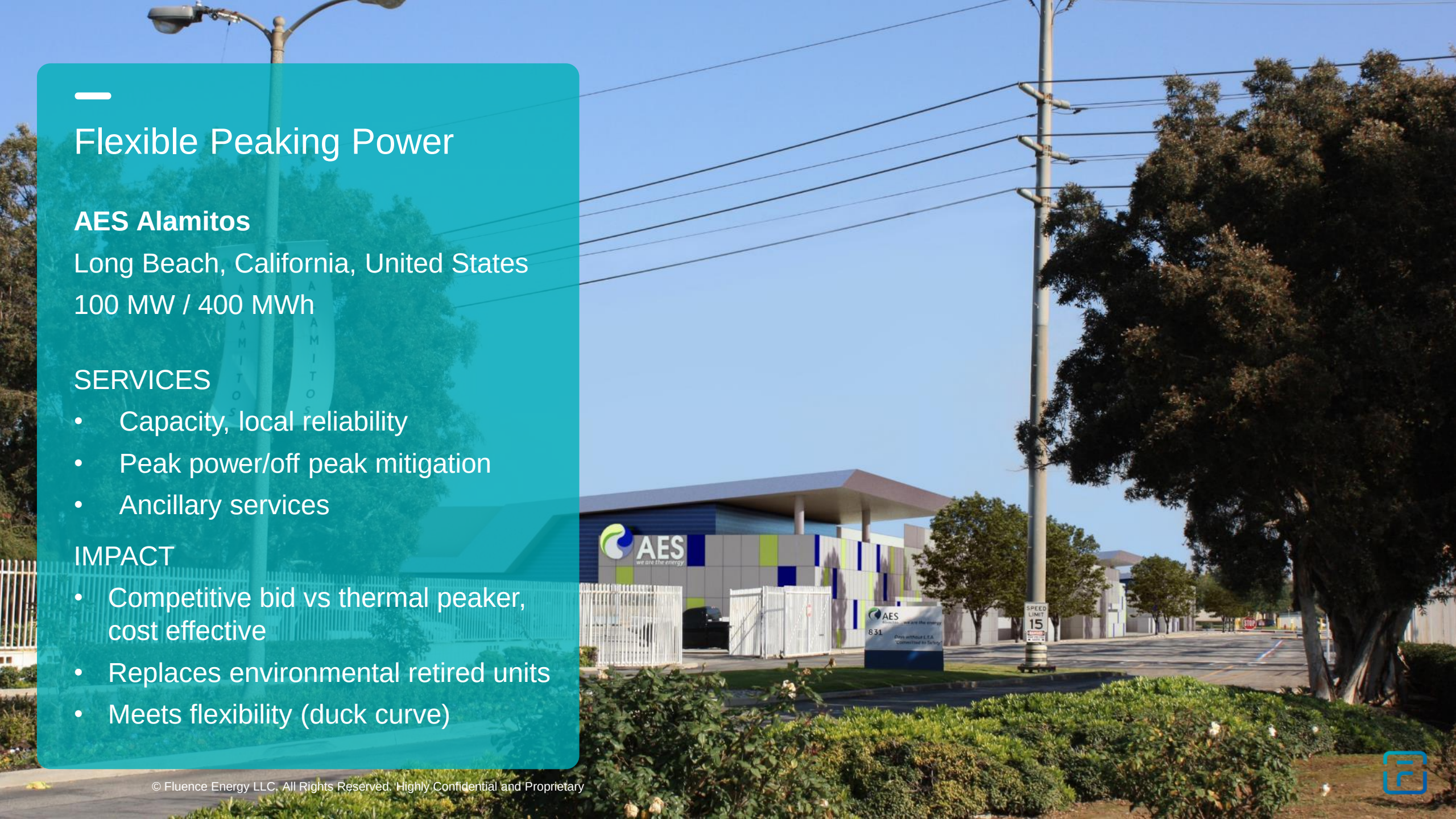
100 MW / 400 MWh

SERVICES

- Capacity, local reliability
- Peak power/off peak mitigation
- Ancillary services

IMPACT

- Competitive bid vs thermal peaker, cost effective
- Replaces environmental retired units
- Meets flexibility (duck curve)



South East Asia Portfolio

Key Developer

- Total Portfolio: 630MW
- Developer taking leading role to deploy needed assets to support Grid

To get the right answer, ask the right questions

6 key questions developers in India should ask about battery storage.

Is the System designed for Safety?

Guiding principles of grid connected battery storage design

INTELLIGENT SYSTEM DESIGN

SUPPLIER QUALIFICATION

PROTECTIVE COMPONENTS

FIRE SUPRESSION SYSTEMS

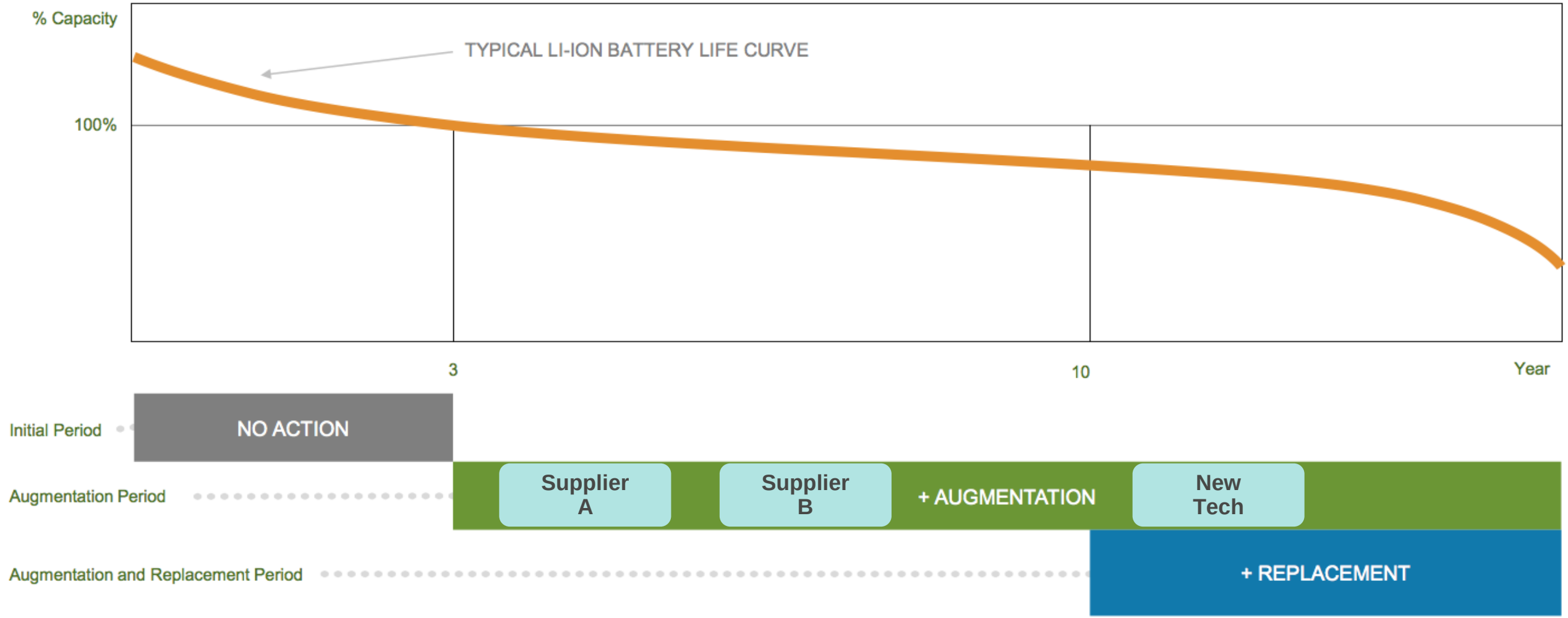
MONITORING

SAFETY PROCEDURES & CULTURE

Is the system being designed for your needs?

- Augmentation strategy
- Tradeoff between battery CAPEX and Revenue
- Power and Energy balance
- Inverter size
- Building versus Container
- NMC versus LFP batteries
- Air cooled versus water cooled

Is your integrator locking you with 1 supplier?



Is the technology bankable?

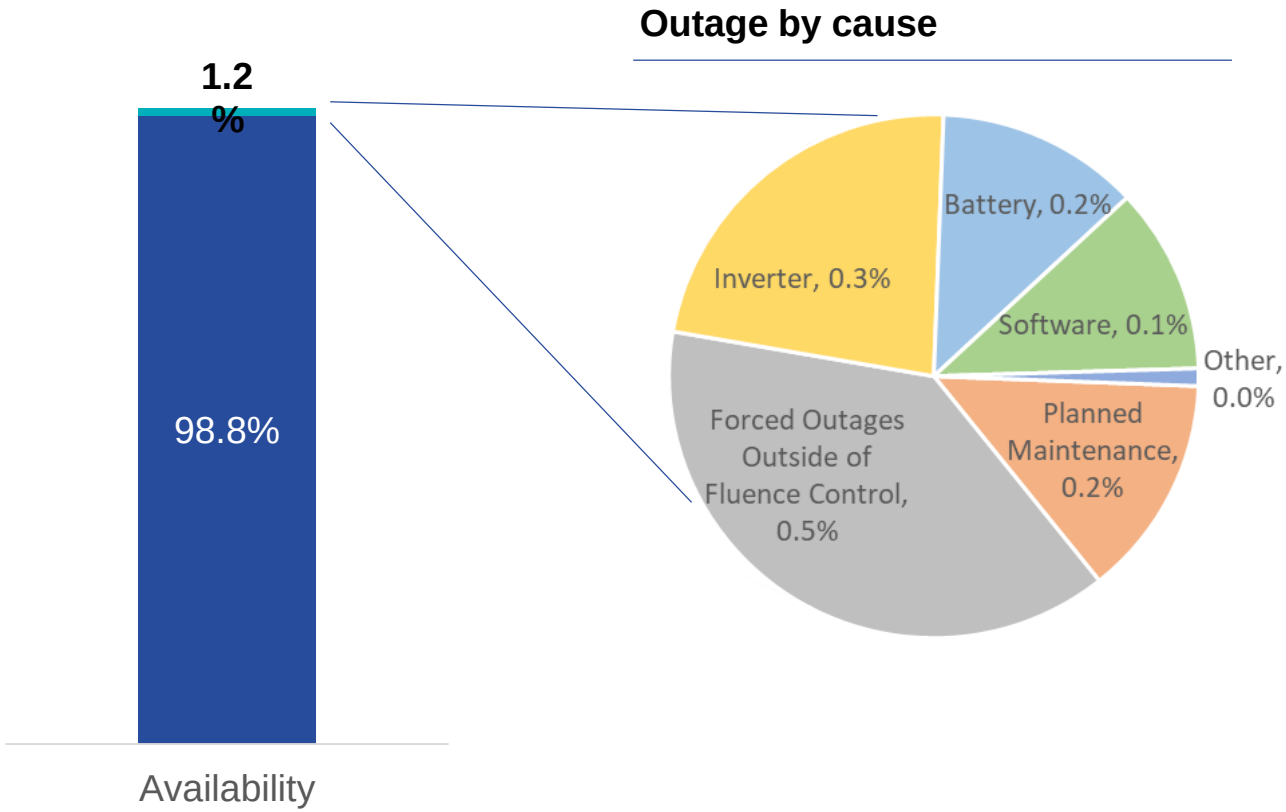
PRIORITIES	FOCUS AREAS CRUCIAL TO DELIVERING ON NPV
Minimize Total Cost	• Minimize project timeline risk and “learning pains”
Protect and Enhance Revenue	• Work with an expert on energy storage, able to lead adaptation to new market rules and conditions
Enhance Financial Options	• Who is backing the integrators warranties?

What are the Integrator’s delivery capabilities?

- Security of battery supply.
- Ability to localize equipment and services.
- Integration with plant controller.
- Understanding of country specific Code requirements.
- EHS laws.
- Experience with project logistics.
- Experience to build, operate and maintain grid connected battery storage in country.

Integrator’s focus on Grid Connected Energy Storage

- Track Record of the Integrator
- Will the Integrator be there in 10 years when you are calling in warranty?
- To what extent is your integrator offering to support your investment?
- Is grid connected battery storage core to the integrator’s business?



Created and backed by investment grade industry powerhouses

SIEMENS
Ingenuity for life

+

AES
we are the energy

Fluence - Energy Storage is the only thing we do

Fluence is the global leader in grid connected energy storage

OUR TRACK RECORD

12+
YEARS

100+
PROJECTS

21
COUNTRIES
AND TERRITORIES

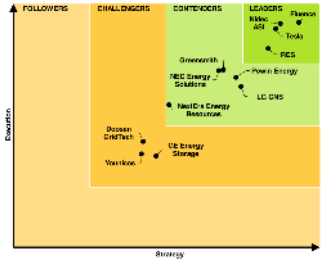
1,600+
TOTAL MW
DEPLOYED OR AWARDED

6,700+
GW-HOURS OF DELIVERED
SERVICE GLOBALLY

INDUSTRY RECOGNITION

NAVIGANT

#1
ON NAVIGANT
ENERGY STORAGE
LEADERBOARD



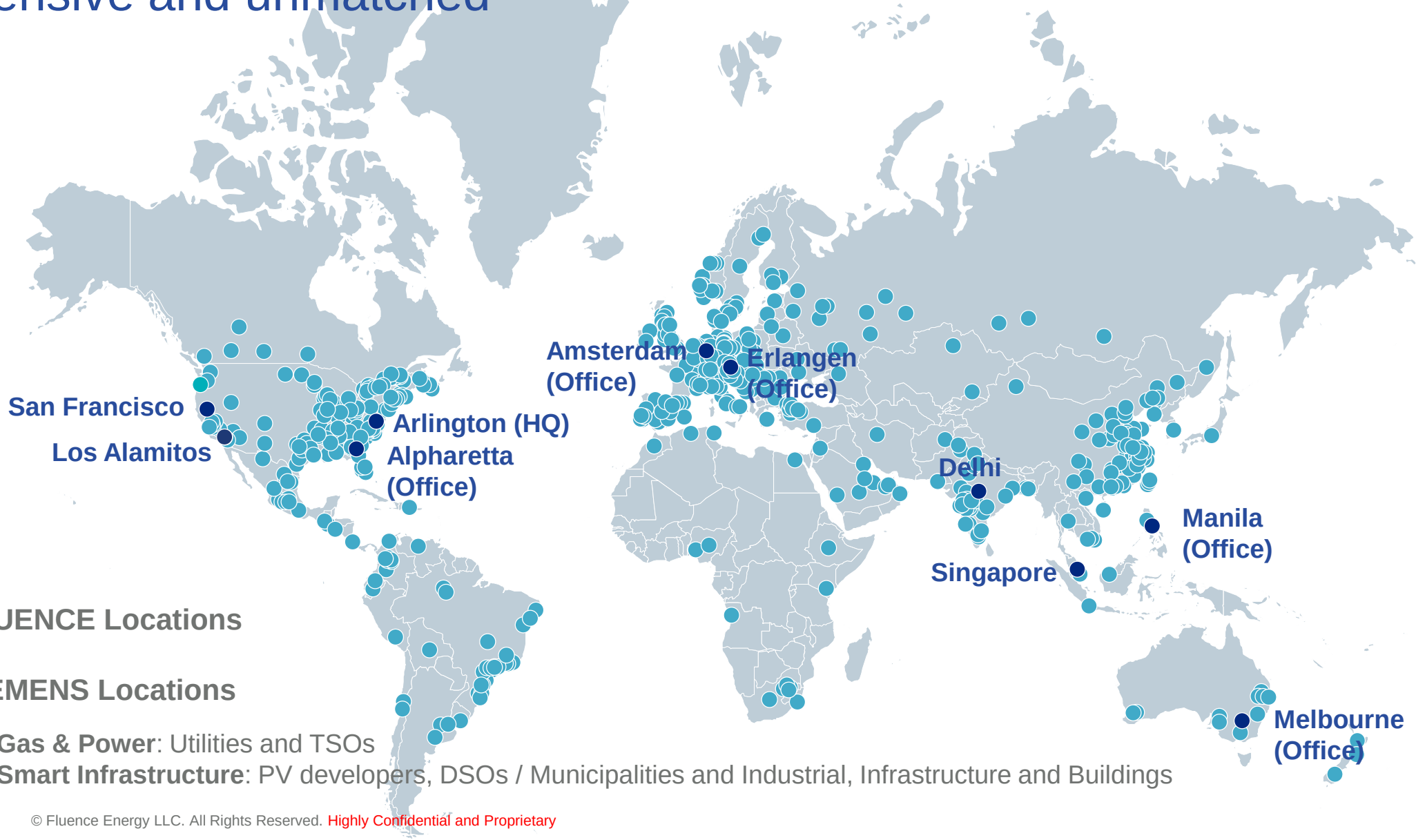
FAST COMPANY

#3
IN ENERGY,
FAST COMPANY
MOST INNOVATIVE
COMPANY

SOME OF OUR CUSTOMERS – COMMERCIAL TO UTILITIES

SEABOARD CORPORATION
SAN MIGUEL CORPORATION
SDGE
Sempra Energy utility
SIEMENS
Ingenuity for life
SWM
Stadtwerke München
AES India
enel Green Power
ukpowerreserve
PART OF sembcorp GROUP
NEXIF ENERGY
SPOTLESS
aps
TATA POWER-DDL
Mitsubishi Corporation
c-energy
AusNet services
AES
e·on
AES Dominicana

Leveraging Siemens' local capabilities Fluence's market reach is extensive and unmatched



- **FLUENCE Locations**
- **SIEMENS Locations**

Gas & Power: Utilities and TSOs
Smart Infrastructure: PV developers, DSOs / Municipalities and Industrial, Infrastructure and Buildings