

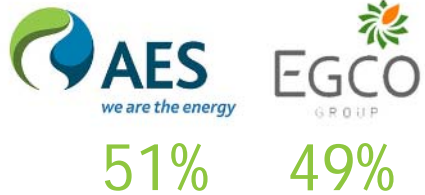


Masinloc Power Partners Co. Ltd. (MPPCL)

Presentation to
National Electrification Administration (NEA) Week
03 August 2017

Masinloc Power Partners Co. Ltd. (MPPCL)

Ownership:



 Generation:

-  Unit 1: 315 MW
-  Unit 2: 315 MW
-  BESS: 10 MW (20 MW resource)
-  Unit 3: 335 MW (on-going)
-  Unit 4: 335 MW (advance development)



6 MARKET-FACING
STRATEGIC
BUSINESS UNITS

4 CONTINENTS

17 COUNTRIES

\$15B
TOTAL 2015
REVENUES

\$37B
TOTAL ASSETS
OWNED & MANAGED

35,876 GROSS MW
in operation



AES serves
10M+
CUSTOMERS



8
UTILITY
COMPANIES

AES IS ENERGIZED BY A
GLOBAL WORKFORCE OF
21,000 PEOPLE

FUEL TYPES:

Coal, Diesel, Gas, Oil,
Pet Coke, Renewables

Led by

ANDRÉS GLUSKI
President & CEO

FORTUNE 200
Global Power Company

FOUNDED IN 1981

Named to
DOW JONES
SUSTAINABILITY
INDEX for North America for
the Second Year in a Row

Headquartered in
ARLINGTON, VA

5,620 MW
GENERATION CAPACITY
UNDER CONSTRUCTION

MISSION

Improving lives by providing safe,
reliable and sustainable energy
solutions in every market we serve.

VALUES

- Put Safety First
- Act With Integrity
- Honor Commitments
- Strive for Excellence
- Have Fun Through Work

AES
LISTED
NYSE

www.aes.com



THE AES CORPORATION



AES Philippines Awards and Recognitions

Occupational Health &
Safety Advisory Services
2014



18001:2007 Certification

International Organization
for Standardization
2014



14001:2004 Certification

Global Initiative Reporting
2014



GRI Application
Level A+ for 2012
AES Philippines
Sustainability
Report

American Chamber of
Commerce of the Philippines
2013



Masinloc Training
Facility - 2013 CSR
Excellence Award
for Sustainable
Livelihood

International Association of
Business Communicators -
Philippine Quill Awards
2014



Award of Merit
Masinloc Training
Facility - CSR category

**INVESTORS
IN PEOPLE** | Bronze

Masinloc Power Partner Co. Ltd.
AES Transpower Pvt. Ltd.
- Philippines ROHQ



**INVESTORS
IN PEOPLE** | Silver

Silver Award for People Management
AES Transpower Pvt. Ltd.
- Philippines ROHQ

- Environmental Upgrade of the Year – Gold Award
- Power Utility of the Year - Philippines

Asian Power Awards
2012



Coal Power Project of the Year -
Bronze Award

Asian Power Awards
2011



Best Operations and Management
Plant in Asia - Silver Award

Asian Power Awards
2011



Independent Power Producer
of the Year - Gold Award

Asian Power Awards
2011



Best Power Plant Upgrade in Asia-
Gold Award

Edison Electric Institute
2011



2011 The Edison Awardee
For distinguished leadership, innovation
and advancement of the electric industry

Power Magazine
2011



Recognized as one of the top
coal-fired power plants
in the world

Department of Labor and
Employment
2011



Safety Recognition Award 2011
No Lost Time Incident for the
period of January - December 2011

Department of Energy
2011



Silver Safety Award 2011
Department of Energy



CSR Excellence Awardee by the
People Management Association
of the Philippines (PMAP)
Foundation



6th Best CSR Practices

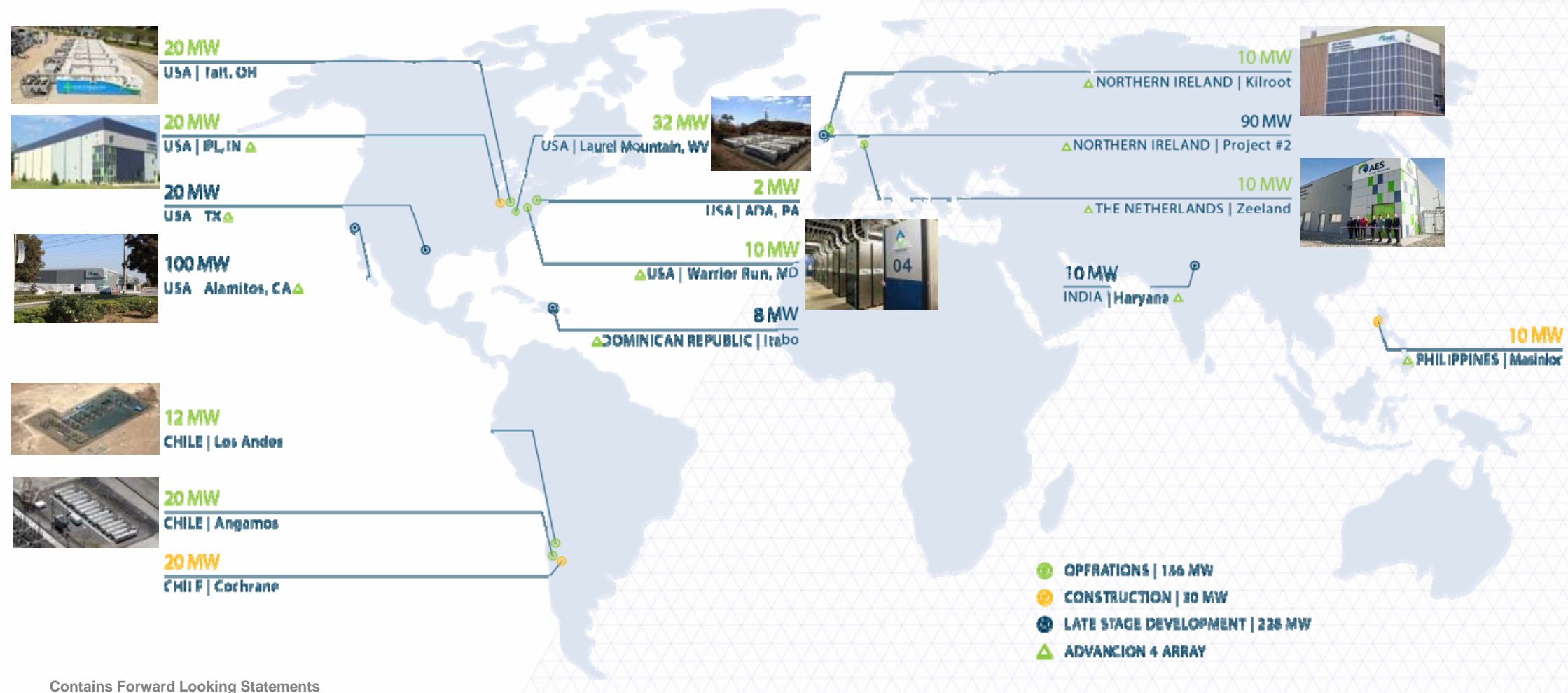
- Best Sustainability Report – 2013-2014 Sustainability Report
- Best CSR Integrated Business – AES Academy
- Best Community Development & Best CSR Impact – Masinloc Training Facility



Unlocking the Potential: Battery Energy Storage System



The leader in grid scale energy storage around the world



Leading ISOs and Market Operators are integrating Energy Storage

PJM

- Allowed ES into market in 08'
- Pay-for-performance expected 1Q12
- 32 MW installed at a wind farm in WV
- 1 MW installed at PJM HQ's parking lot
- Integration of EV to the FR market

NYISO

- ES resource tariff issued in 09'
- Implementing pay-for-performance
- 8 MW of Battery-Based ES in operation
- 20 MW of flywheels ES in operation

CDEC

- 12 MW installed in Los Andes in 09'
- Storage best performing operating reserve
- 20 MW under construction
- Offers Primary and Secondary FR

Others

- HECO requires wind-solar-storage integration for reliability
- CAISO ES program in 2012, planning calls for 1,000 MW
- ERCOT new law clarifying storage as generation, for renewable integration

"Energy storage is among the best means to ensure we can reliably integrate renewable energy resources into the grid"
– Jon Wellinghoff, Chairman, FERC

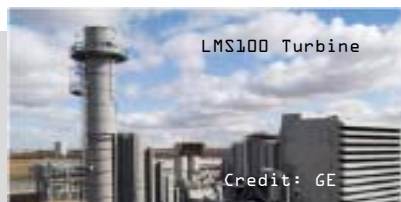
"Energy storage has the ability to change everything as we know it today. For example, PJM has successfully linked AES's lithium ion batteries to the grid to provide regulation service. These types of units provide grid operators with an efficient and accurate tool to deliver grid stability by balancing the varying load."
– Chantal Hendrzak, PJM's General Manager of Applied Solutions

- ❑ Efficient Operating Reserves (Frequency Regulation and Spinning Reserve)
- ❑ Release stranded capacity
- ❑ Eliminate out-of-merit dispatch
- ❑ Enable Wind and Solar integration
- ❑ Solve T&D congestion problems (deferral)
- ❑ Local voltage issues
- ❑ Low utilization peaking resources

Proven solution for multiple applications

SEGMENT

OFFERED SOLUTIONS



1. Generation Alternatives

1. Capacity Release
2. Frequency Regulation/Ancillary Services
3. Flexible Peaking Power
4. Renewables Integration



20 MWi Angamos BESS

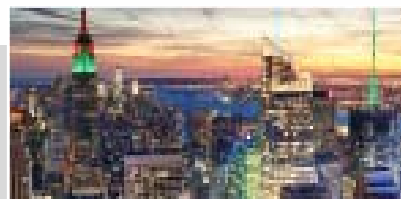


2. T&D Alternatives

5. Capacity Release
6. Investment Deferral, Replacement



10 MWi The Netherlands



3. Commercial & Industrial

7. Demand-charge Management & Reliability



10 Mwi India

BES has a wide range of utility applications

Release of Generator Capacity for Energy



24 MW Los Andes, Chile
2009



40 MW Angamos, Chile
2012



Angamos in 2012: Winner of the Edison International Award and "Plant of the Year" by Power magazine.

Renewable Energy Integration



32 MW Laurel Mountains
2012

Wind Energy with Ramp Control



Frequency Regulation



Combined Output



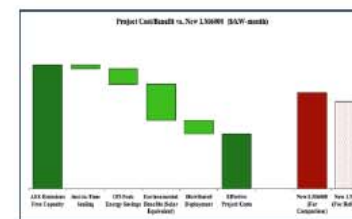
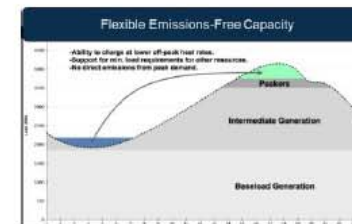
Reserve Capacity for ISOs and DUs



16 MW Johnson City, NY
2010



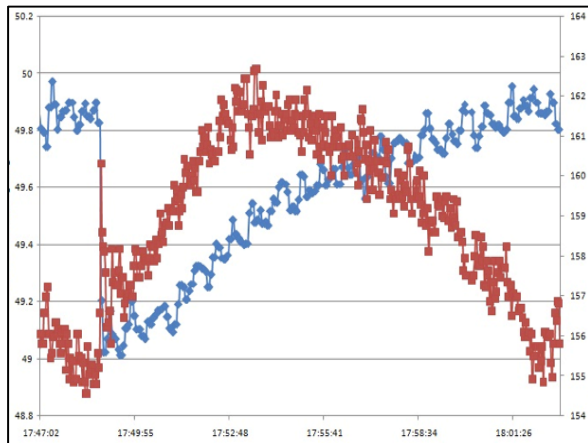
40 MW Tait, Ohio
2013



Peak/Offpeak Capacity

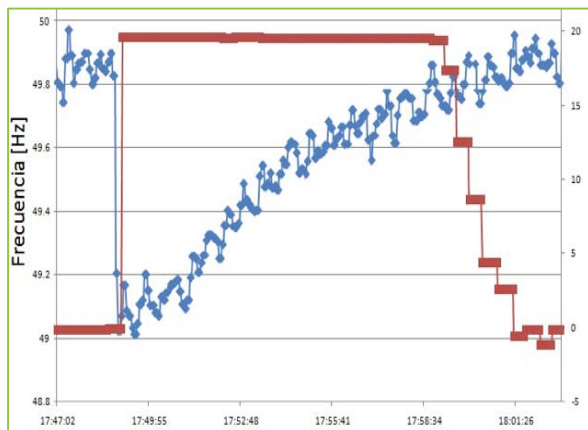
- ✓ Provides peak energy at off peak costs
- ✓ No direct emissions; lowers system emissions
- ✓ Avoids new transmission
- ✓ 2X the flexible range of a CT
- ✓ No minimum load
- ✓ Use of excess wind, gas, hydro at night

BES can respond precisely to grid events or signals in the blink of an eye



THERMAL UNITS' RESPONSE

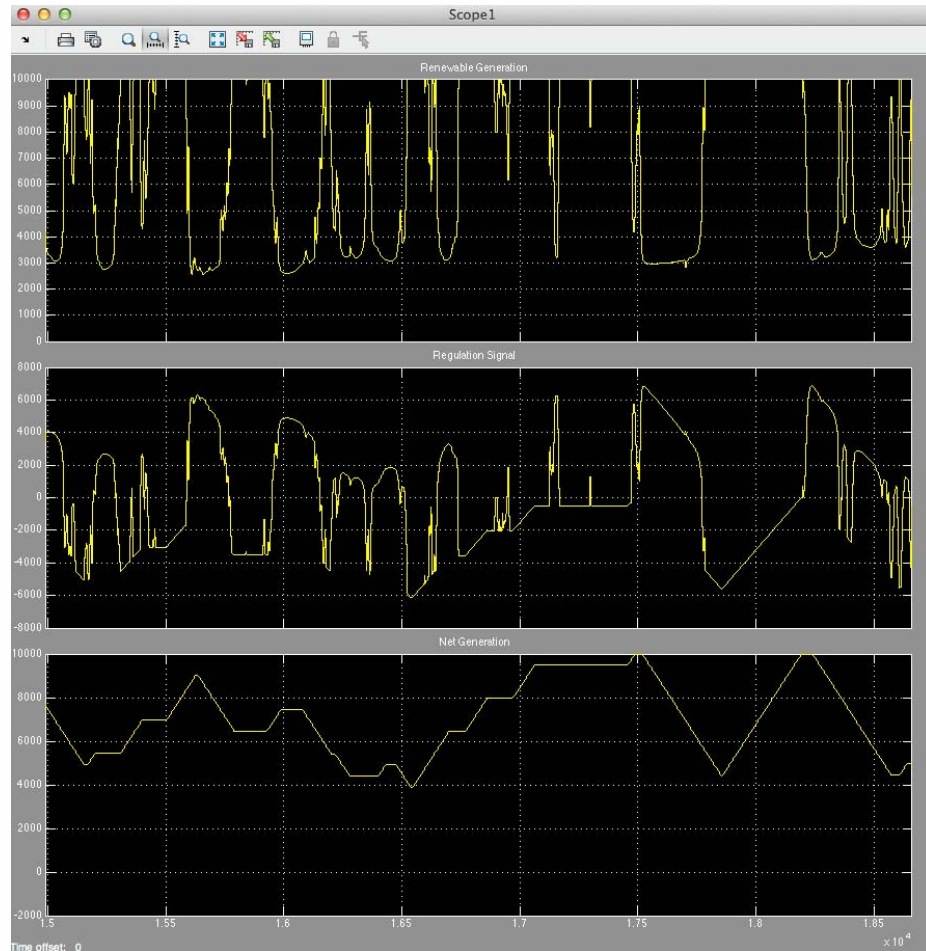
- 4MW burst, then output drops off
- Oscillating, unsteady ramp up
- Takes over 4 minutes to provide 7MW output increase



BES RESPONSE

- Automatic response
- Immediate output increase from 0MW to 20MW
- Output sustained until stability restored

Stabilizing Solar Power Output (ex. Puerto Rico)



Contains Forward Looking Statements

SOLAR

- Quick jumps between 30% to 100% of capacity

BES

- Mirror image charge and discharge

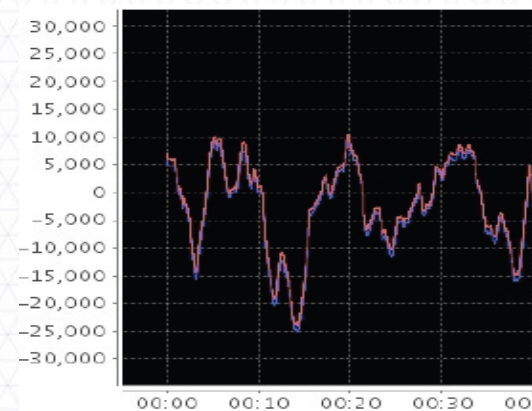
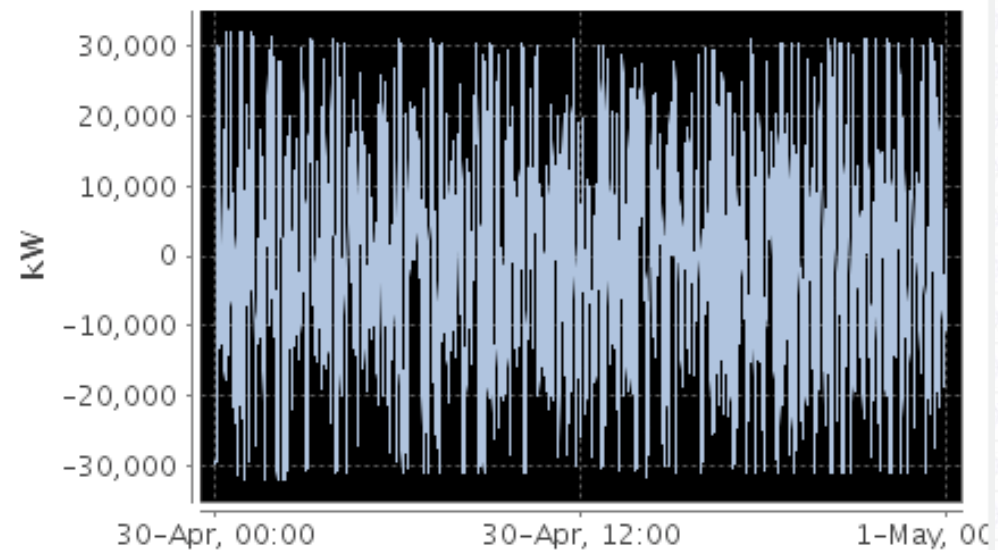
SOLAR + BES

- Slow, modest swings
- Output manageable by grid operator

Laurel Mountain 64 MW battery resource operating commercially in PJM since 2011



- Operating range of +32MW to -32MW
- Precise response to 4 second AGC
- Ramp rate mitigation
- Shows that a typical BESS can have a multiple charge/discharge cycles in minutes



Three T&D value plays for energy storage

1

N-1 Capacity Release

- Automatic power injection to support grid stability during contingency.
- Increase the operational capacity of existing line (value creation from existing assets).
- Arrests line overloads and frequency/voltage deviations until grid is redispatched

2

Peak Load Relief

- Injects power downstream of thermal constraints during peak hours
- Avoids or defers new transmission Capex to meet load
- Improves power quality and voltage conservation

3

Feeder reliability

- Supports greater penetration of intermittent distributed resources
- Injects real and reactive power to maintain voltage stability, improve power quality
- Reduces wear and tear on existing equipment
- Defers cost of traditional poles and wires solution

Improves reliability, lowers cost

Grid Stability and Peak Shifting in Load Center

Generation Alternative

World's largest battery providing peak power & capacity



SERVICES

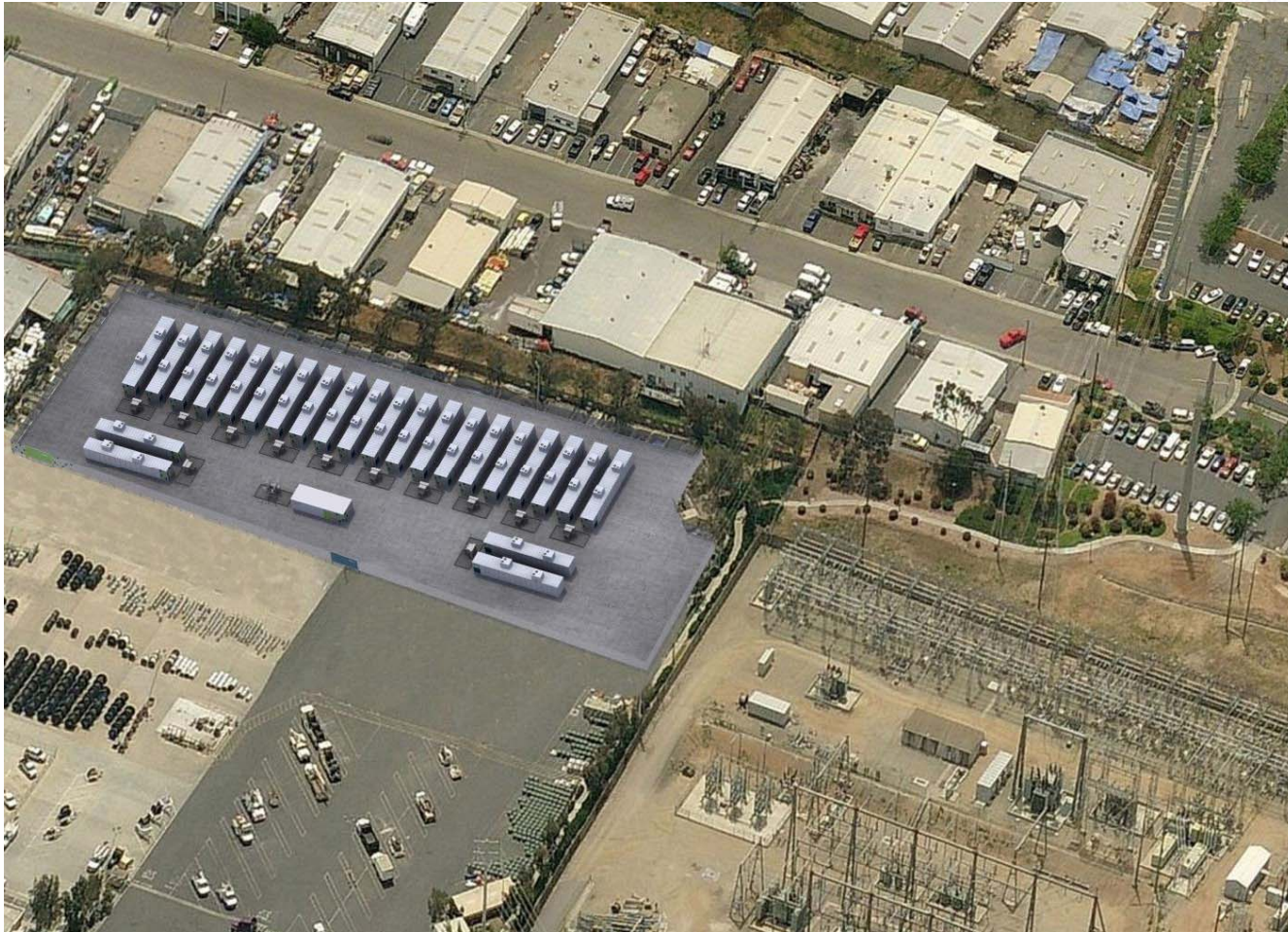
- Capacity, local reliability
- Peak power mitigation
- Ramping / flexibility
- Ancillary services

IMPACT

- ✓ Rapid deployment
- ✓ Competitive & cost effective
- ✓ Meets flexibility (duck curve)

30 MW Escondido Advancion Array
San Diego, California

Areal view (former parking lot next to substation)



- Provides a more cost-effective alternative to local grid investments to support renewables
- Advancion® can use renewable energy to provide peak capacity
- Reliable delivery of peaking energy with zero associated emissions
- Mitigates renewable over-production during off-peak hours

Substation and Feeder Support

Distribution Alternative

Embedding storage in the distribution network for reliability



SERVICES

- Peak demand management
- Renewable integration

IMPACT

- ✓ Support rooftop solar growth
- ✓ Manage local feeder reliability
- ✓ Alternative to substation upgrades

2 MW Buckeye Advancion Array
Buckeye, Arizona

Battery Energy Storage is the Ideal Solution

Proven

- ✓ Established technology based on AES' Patented Software.
- ✓ Installed around 200MW of resource deployed around the world to provide AS and a thousand more in development.

Fast & Precise

- ✓ Fastest Response (<1s) - Less than 1 second to fully dispatch.
- ✓ Precise in providing much needed AS when the grid instability happens.

Flexible & Modular

- ✓ Can be a Generator and a Load, twice the flexibility of a conventional power plant.
- ✓ Can be sized to fit the precise need and can be augmented over time as needed.

Easily Sited

- ✓ Not tied to a fuel source (e.g. Hydro), so can be placed anywhere the need is.

Frees up Capacity

- ✓ Frees up generation capacity allocated for reserve
- ✓ Lowers grid-wide energy cost



Thank you for your attention.