



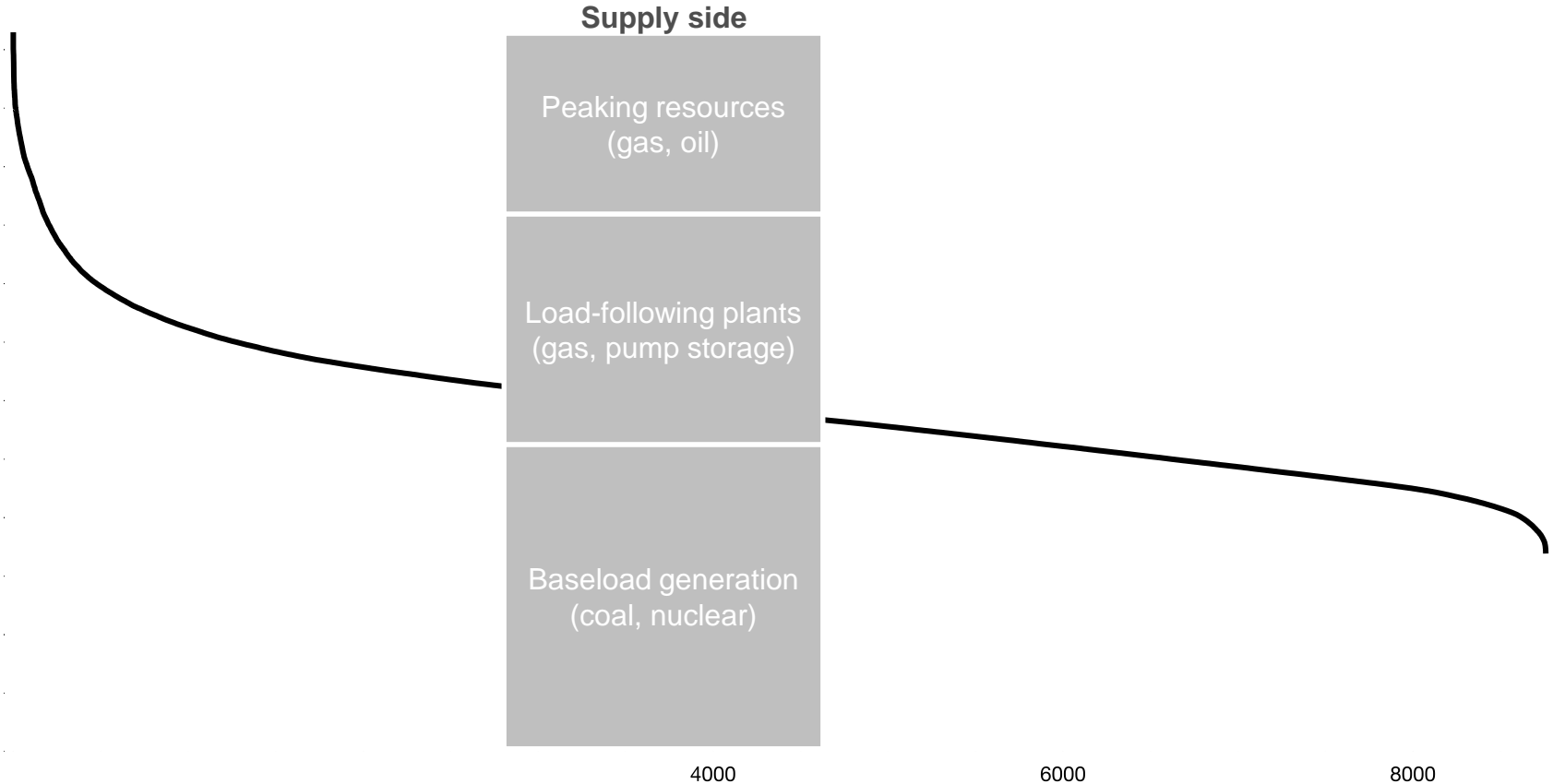
Customers and providers creating flexibility

Industry Breakfast – Perth, November 2015

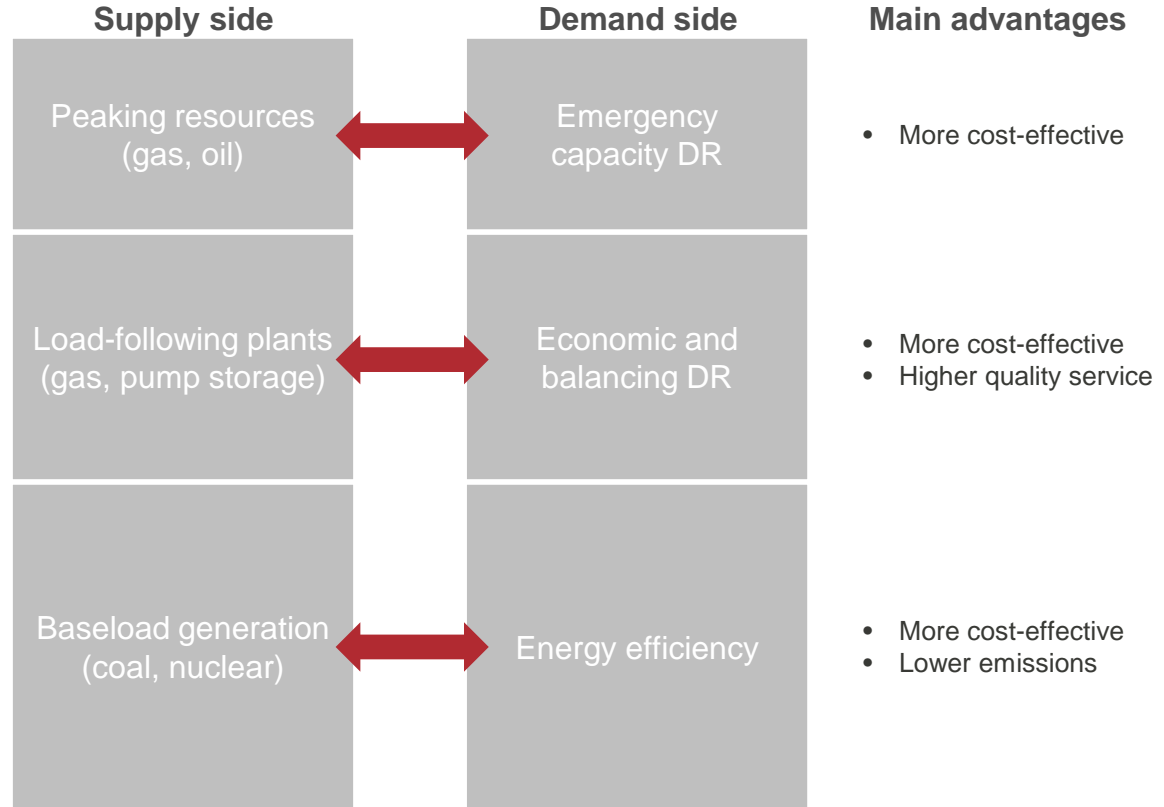
The background of the slide features a series of concentric circles in various shades of blue, creating a sense of depth and movement. The circles are centered on the left side of the frame, with the largest circle being a lighter shade of blue and the smaller ones becoming progressively darker as they move towards the right.

■ Why is customer participation important?

An efficient system includes all resources



An efficient system includes all resources



What do all of these have in common?

They all require engaged, participating customers.

Demand side

Emergency
capacity DR

Economic and
balancing DR

Energy efficiency

The background features a dark blue field with several large, overlapping, lighter blue concentric circular arcs on the left side. A thin, vertical, light-colored rectangular bar is positioned to the left of the text.

Who is EnerNOC?

About EnerNOC

Strong financial profile

- \$472m in revenues (2014)
- Publicly traded on NASDAQ (ENOC)
- 1 300+ employees and growing

Full value & technology offering

- Leading SaaS provider of Energy Intelligence Software (EIS)
- Combines technology, managed services, and market access
- ~\$200m invested in technology to date

Proven customer track record

- Thousands of enterprise customers across over 35 000 sites
- Over \$1 billion in customer savings delivered to date
- Market leader in demand response



Our Energy Intelligence Software serves 3 audiences

Small & Medium Enterprise (SME) customers



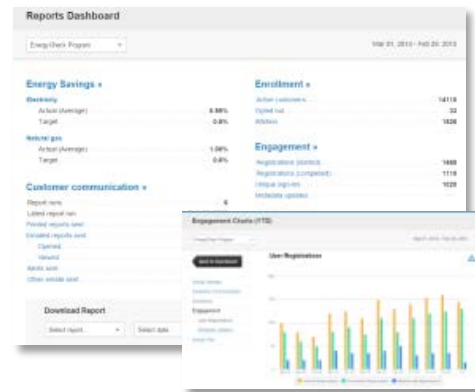
- Benchmarking tools compare customers to peers
- Custom energy plans for each customer
- Behavioural demand management

Large Commercial & Industrial (C&I) customers

- Insights into facility performance and savings opportunities
- High consumption alerts to minimise unexpected high bills
- Demand response



Regulated & unregulated utilities

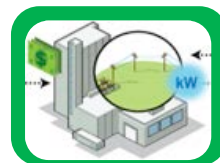


- Improved customer profile data and service
- Track programme performance including savings and engagement metrics
- Manage dispatches

Demand response is a multipurpose resource

Used by traditional regulated utilities:

Vertically-integrated utility



Avoidance or deferral of generation and/or network investments; optimisation of generation assets

Used in restructured markets:

Market or System Operator (TSO)

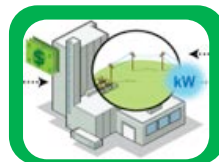


Network utility (DSO)



Substitute for generation resources in wholesale markets (e.g., capacity, ancillary services)

Retail supplier



Physical hedge for high wholesale prices, support for new retail tariffs, provision of TSO programmes, competitive differentiation

We provide the software layer to integrate all the pieces

Distributed Energy Resources



Tariff Engine



Occupant Engagement



Controls





Global DR experience

EnerNOC's global experience

50+ markets and programmes in 11 countries

Canada

Alberta Electric System Operator (AESO)
Ontario Power Authority (OPA)
BC Hydro
Enbridge
Fortis BC

Northwest US

Pacificorp
Idaho Power Company
Portland General Electric

California

Pacific Gas and Electric (PG&E)
Southern California Edison (SCE)

Midwest US

Midwest Energy
Xcel Energy
Consumers Energy
ComEd

Southwest US

Public Service Company of New Mexico (PNM)
Tucson Electric Power
Salt River Project

Texas

Electric Reliability Council of Texas (ERCOT)

New England

ISO-NE

New York

New York ISO (NYISO)
Consolidated Edison

Mid-Atlantic US

PJM Interconnection
AEP I&M

Southeast US

Tennessee Valley Authority (TVA)
Louisville Gas & Electric (LG&E and KU)
Tampa Electric Company (TECO)
Duke Energy

Ireland

Single Electricity Market Operator (SEMO)
Energia

UK

National Grid
British Gas

Germany

Amprion
50 Hertz
TransnetBW
TenneT TSO
DONG Energy

Austria

Verbund

Switzerland

BKW Energy

Japan

Tokyo Electric Power Company (TEPCO)
Kansai Electric Power Company (KEPCO)
Chubu Electric Power Company

Korea

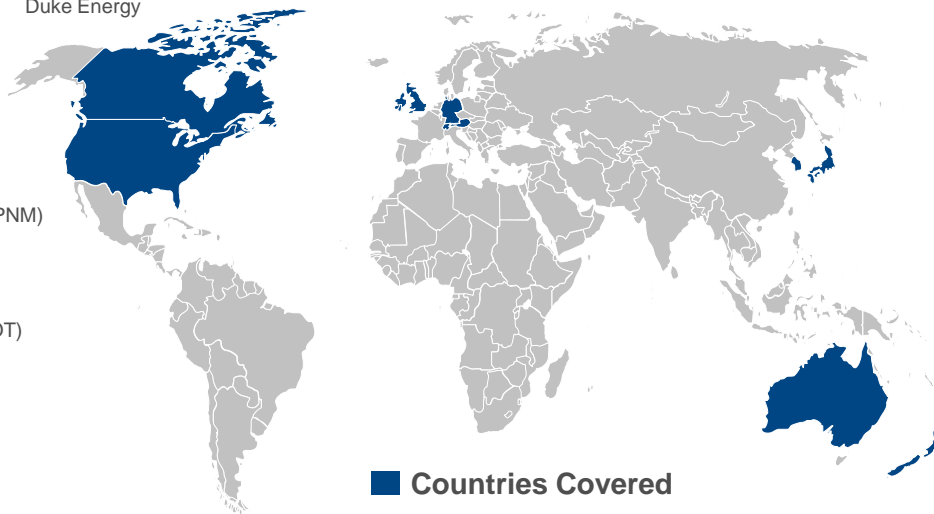
Korea Power Exchange (KPX)

Australia

Independent Market Operator (IMOWA)
Australian Electricity Market Operator (AEMO)
ERM Business Energy
TransGrid
Ausgrid
Ergon Energy

New Zealand

Transpower
Genesis Energy



■ Countries Covered

Example: PJM Interconnection – massive savings



Capacity

\$11.8 billion saved

2013/14 Base Residual Auction

Network

\$3.5 billion avoided

Cancellation of PATH & MAPP projects

Energy

\$650 million saved

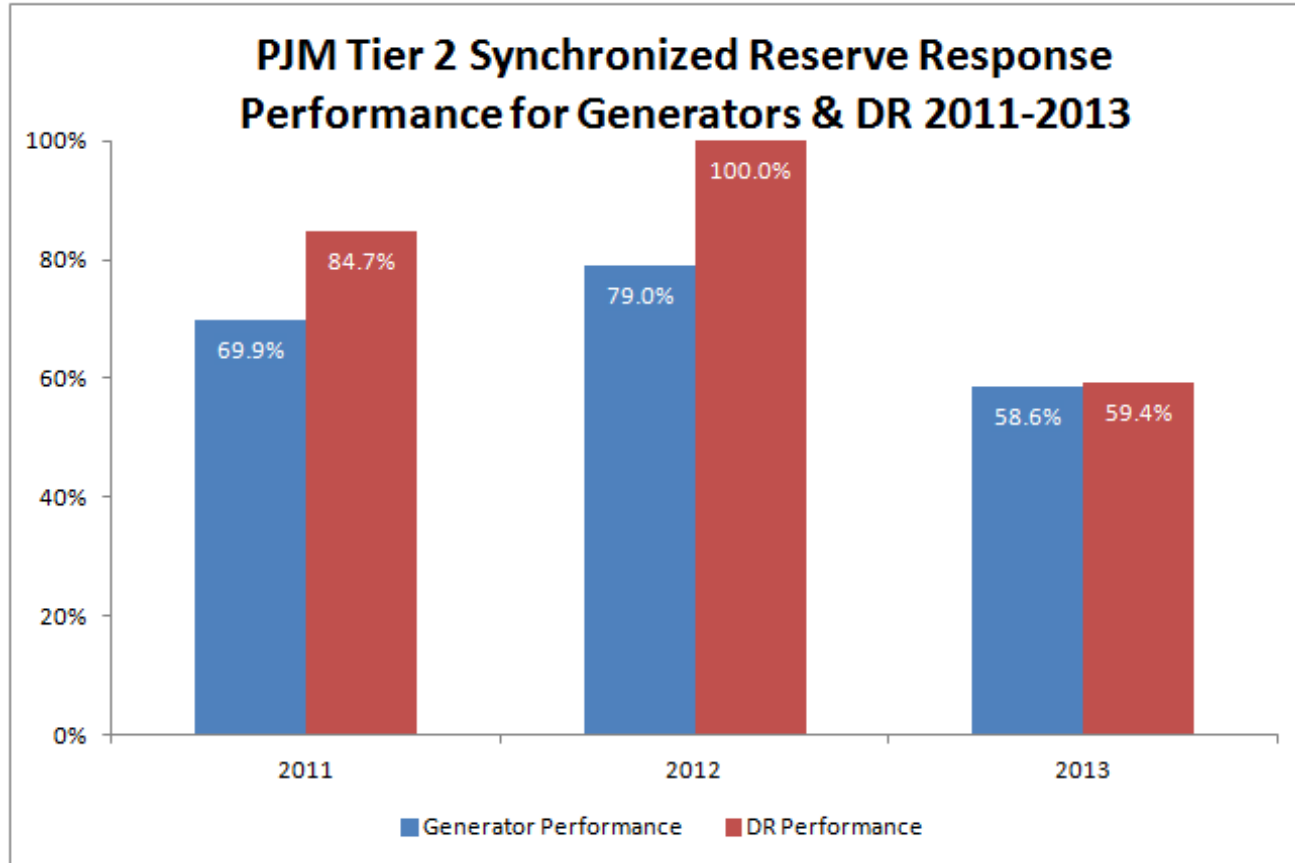
DSM price impact during 1-week heatwave

Ancillary services

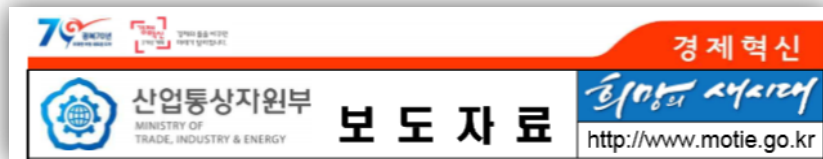
DR provides more than 25% of tertiary reserves

PJM Market Monitor, Analysis of the 2013/14 RPM Base Residual Action, Revised and Updated, September 2010.
PJM, Letter to Transmission Expansion Advisory Committee, 28 August 2012.
PJM, Demand Response Fact Sheet, 2008.

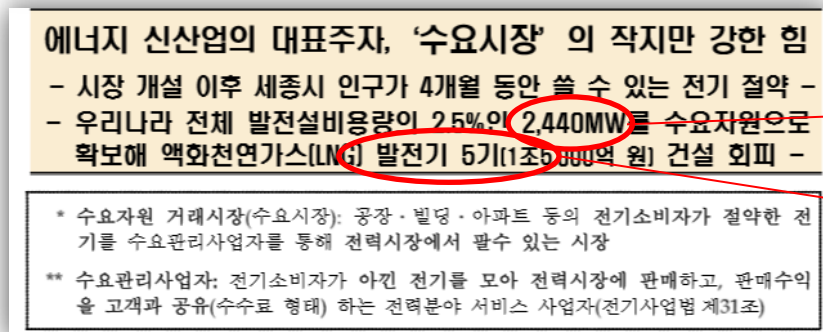
Tertiary reserves: DR more reliable than generation



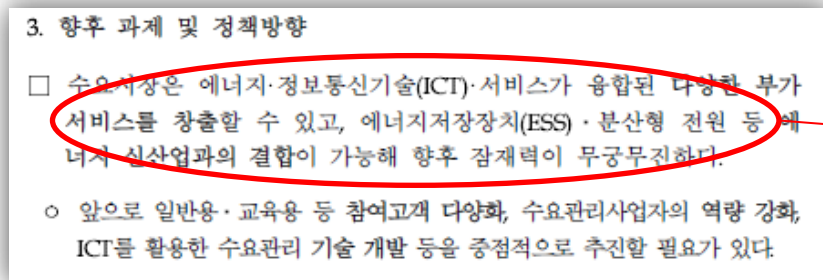
Example: Korea Power Exchange



Ministry of Trade Industry and Energy announced in August 2015 that Demand Response in Korea:

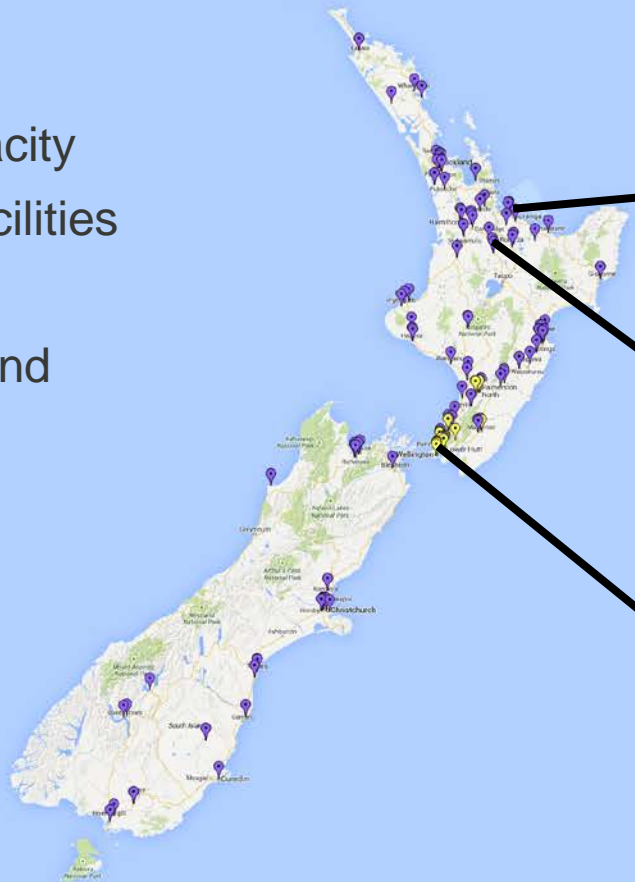


- Established 2.4 GW reliability DR within 1 year
- Replaced 5 LNG power plants and avoided \$1.3 billion in investment
- Saved energy that is equivalent to 4 months usage of Sejong city
- DR's success will provide a foundation for adopting ESS, distributed energy resources and other new applications

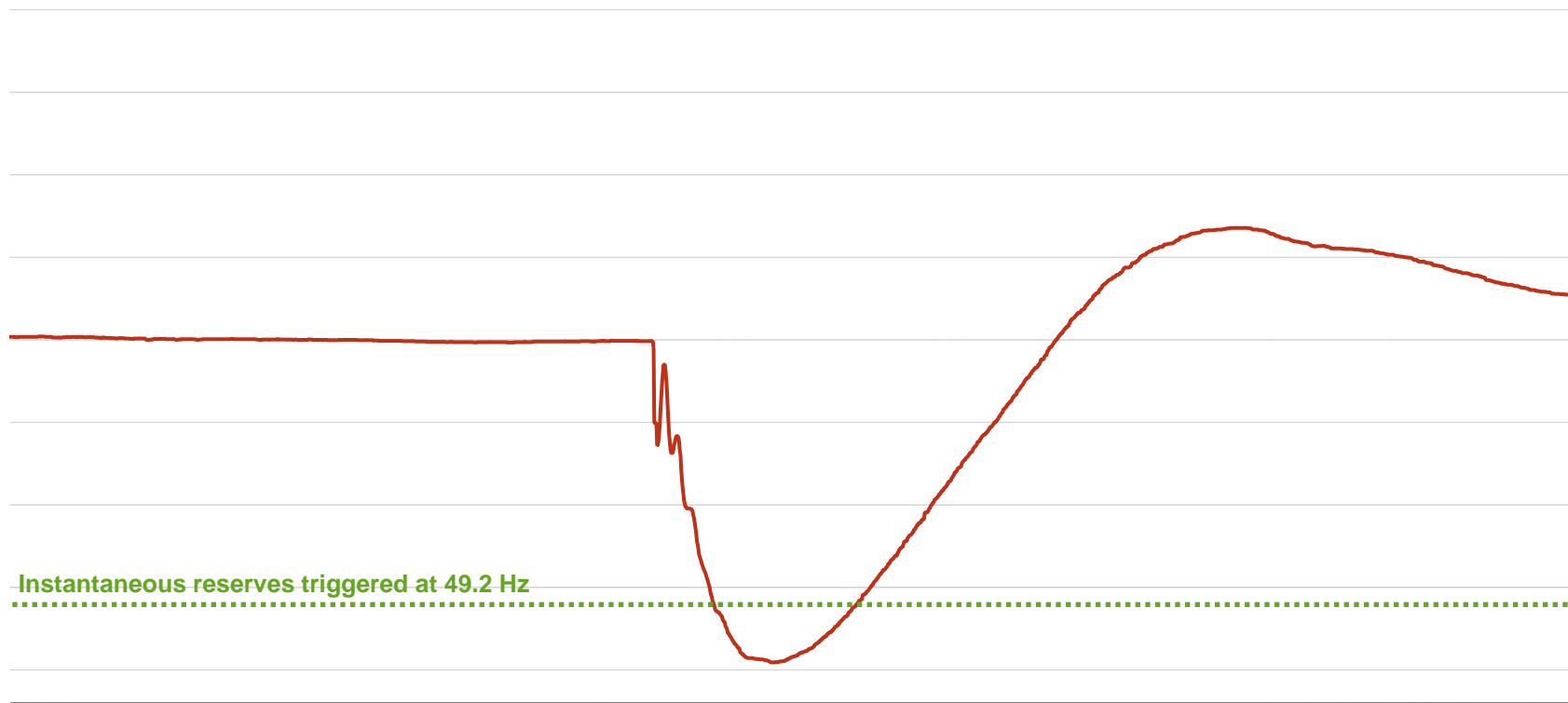


Example: Ancillary services in New Zealand

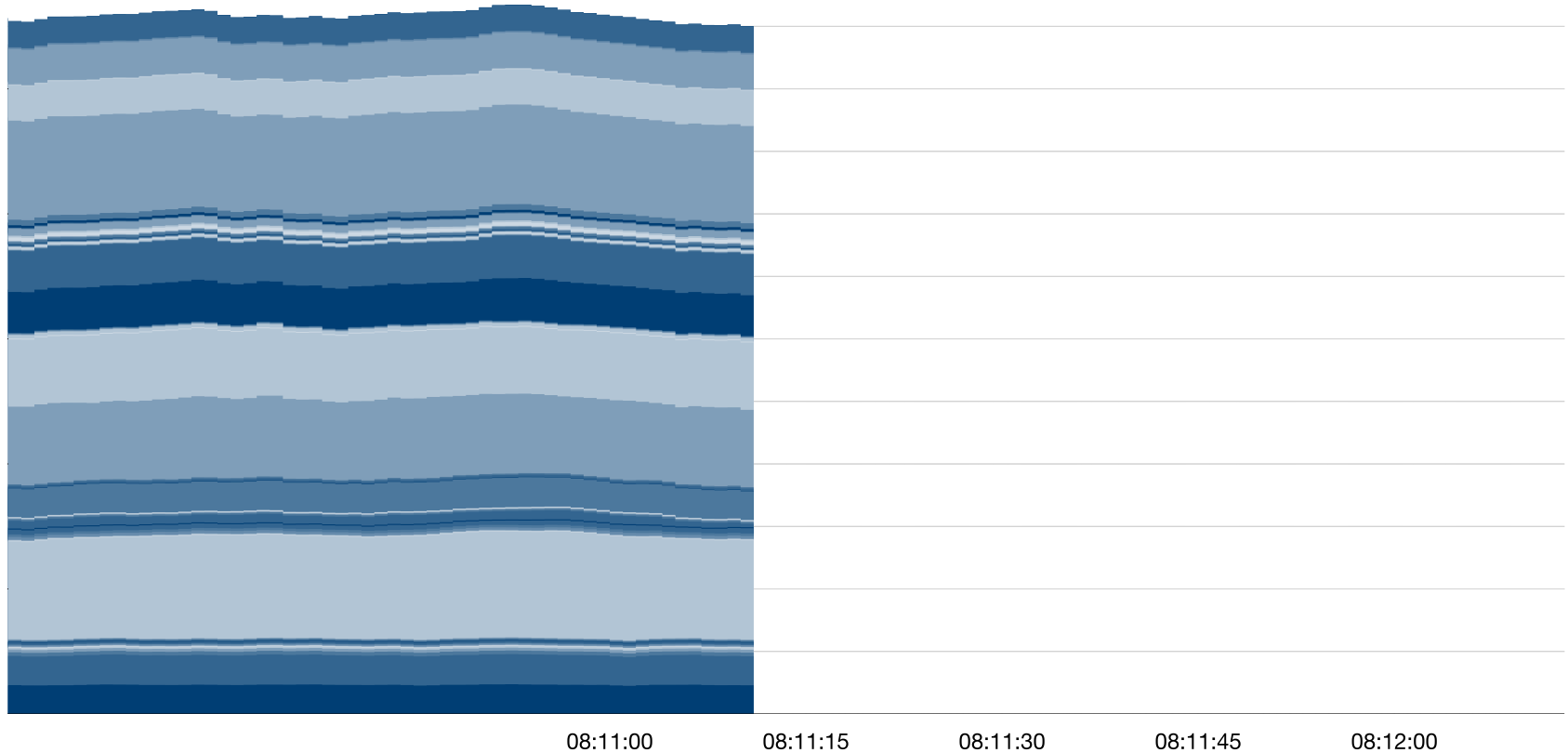
- Over 100 MW of capacity
- Over 150 separate facilities
- All fully automated
- Shut down in <1 second



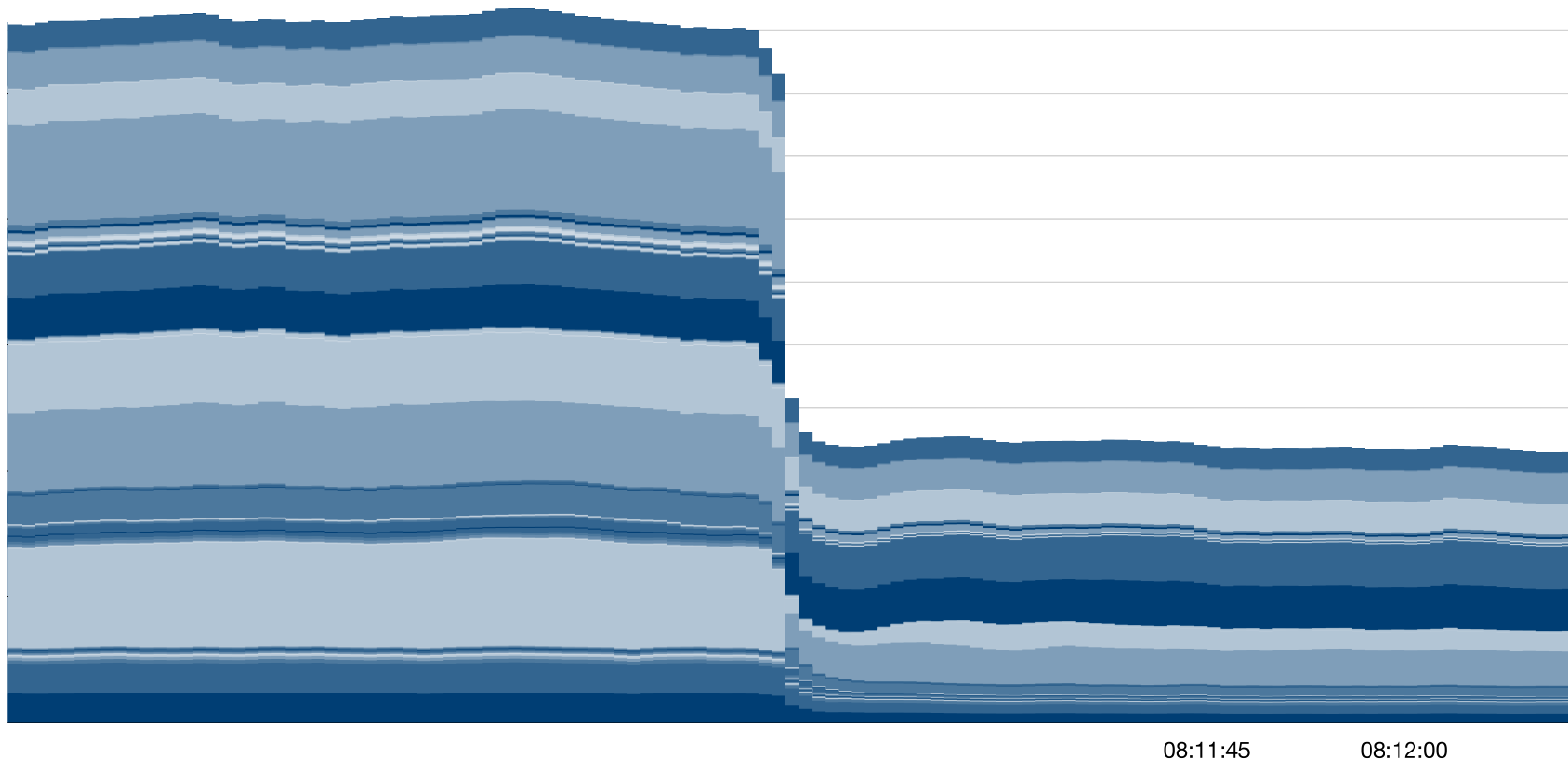
Typical New Zealand under-frequency event



Portfolio response to under-frequency event



Portfolio response to under-frequency event



Conclusion

- The energy system is changing, and will be harder to manage
- The demand side can maintain high reliability at lower cost
- To make consumers part of the solution, they must be engaged



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