TRANSPOWER

eea Electricity Engineers' Association

Connecting Solar - a System Operator Perspective

EEA - Grid Connected Solar Masterclass

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Overview

What keeps the power system running

Steps in the connection process

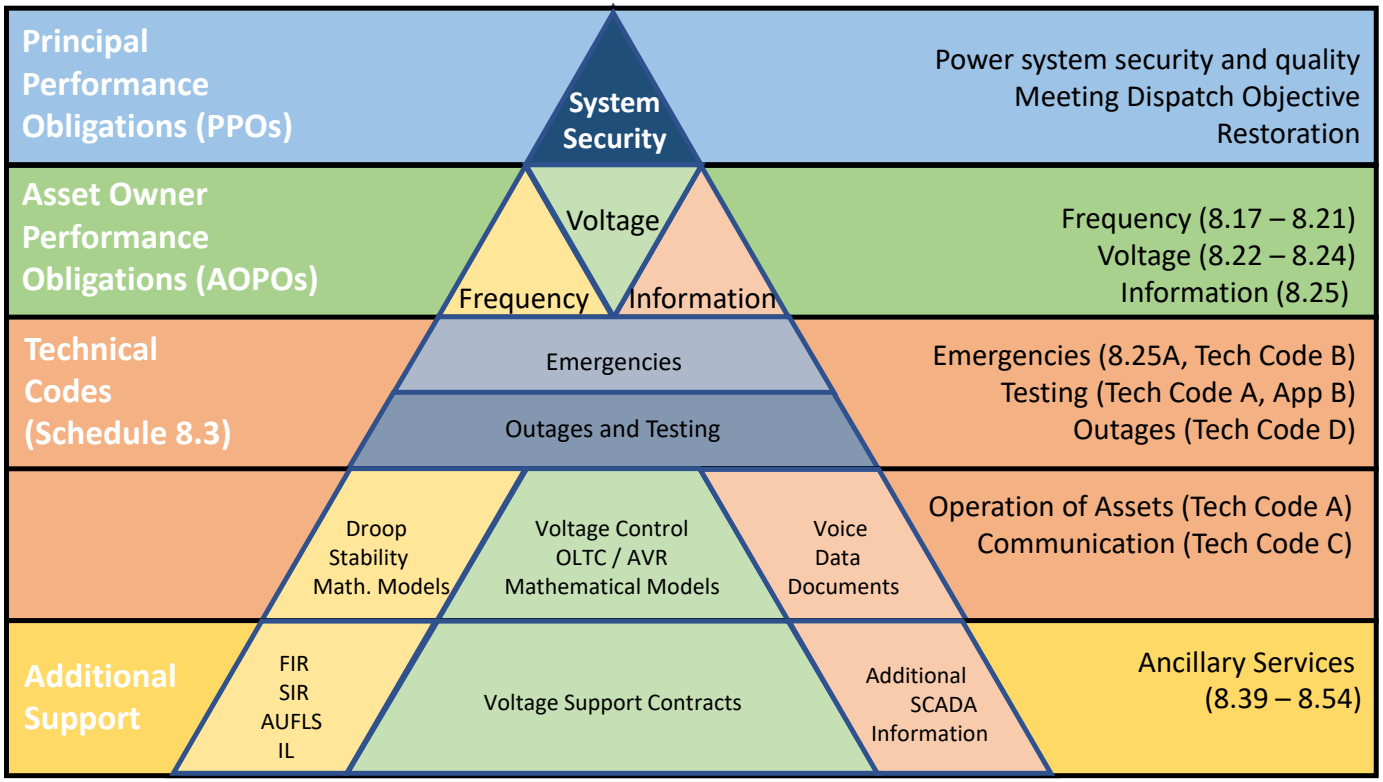
The challenges

Support Documentation

What keeps the power system running?

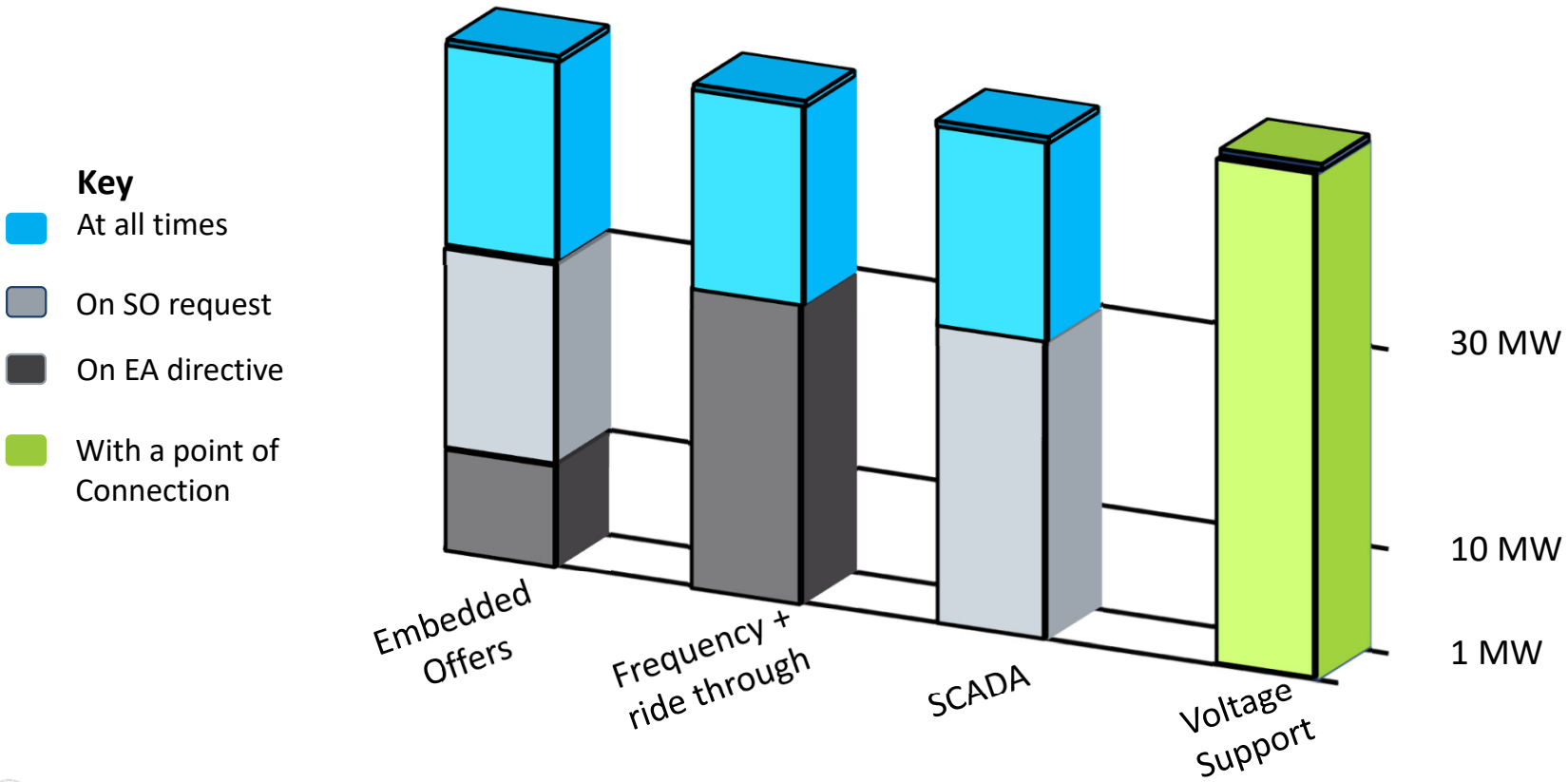
Everyone playing their part

For Generation 1MW or above



Reference: Electricity Industry Participation Code

Output ≥ 1MW


Key
At all times
On SO request
On EA directive
With a point of Connection
Embedded Offers
Frequency + ride through
SCADA
Voltage Support
30 MW
10 MW
1 MW

Output ≥ 1 MW (continued)

Provide an Asset Capability Statement

Submit an Intention to Connect form

Submit an Intention to offer form (if offering to the market)

Steps in the connection process

Feasibility

Distribution or Transpower connected?

- determines who you need to get an agreement with

Familiarisation with the Code, Act and regulatory requirements

Size and topology of the connection?

Planning

If output is 1MW or more talk to the System Operator

Review Code obligations to see which obligations must be met

- Performance
- Trading

These may impact final design

Before commissioning

Agree a commissioning plan

Agree how obligations are going to be demonstrated

Use power system simulation, where appropriate, to predict test results

Submit Operational Test Plans

During commissioning

Follow the commissioning, all test plans, and dispatches sent

Demonstrate obligations, checking for differences between simulations and test results

Collate results

After commissioning

Submit a report and test results to the System Operator in the required format

Obtain a final assessment of compliance

Continue to meet Code obligations at all times

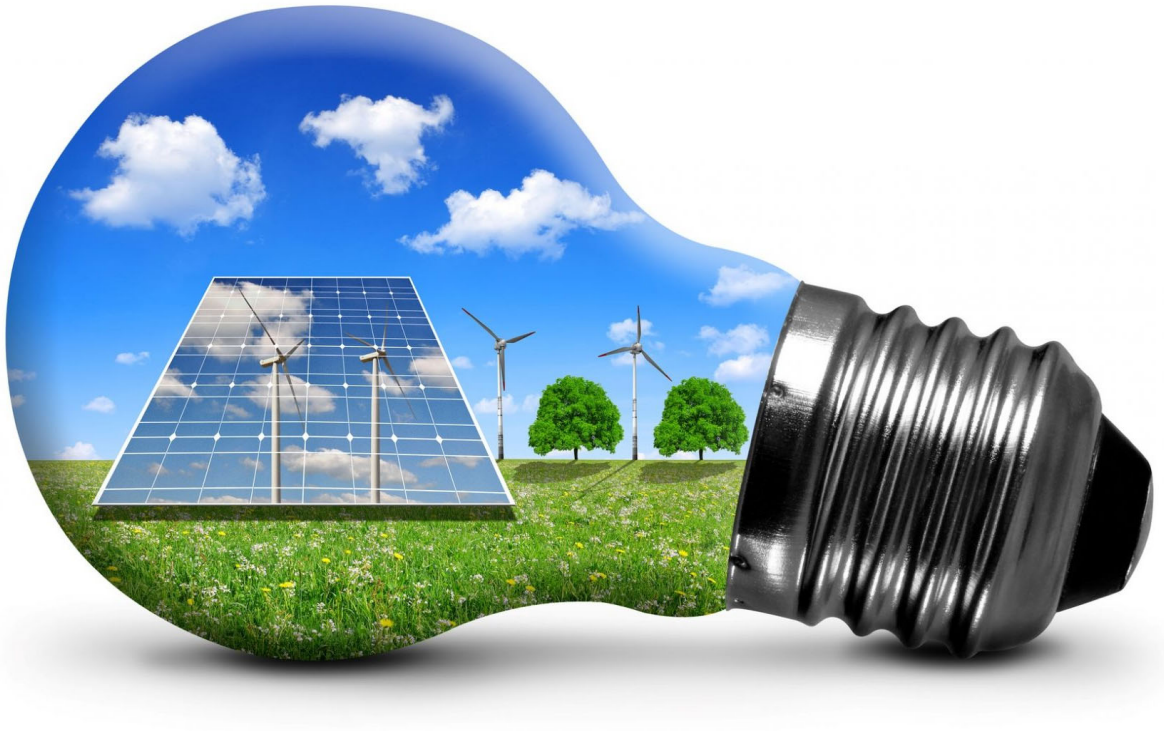
The challenges ahead

Capability of assets

Reverse powerflow

Changing generation profile

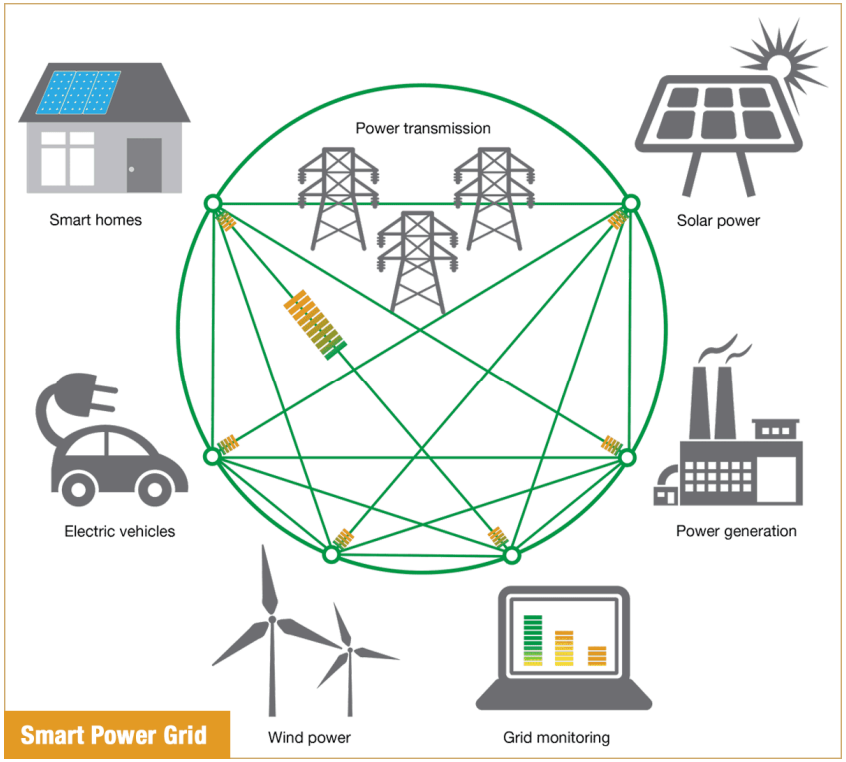
Congestion within distribution networks



Regulatory Environment

Adapting the Code to enable new technologies

Reviewing performance requirements and thresholds



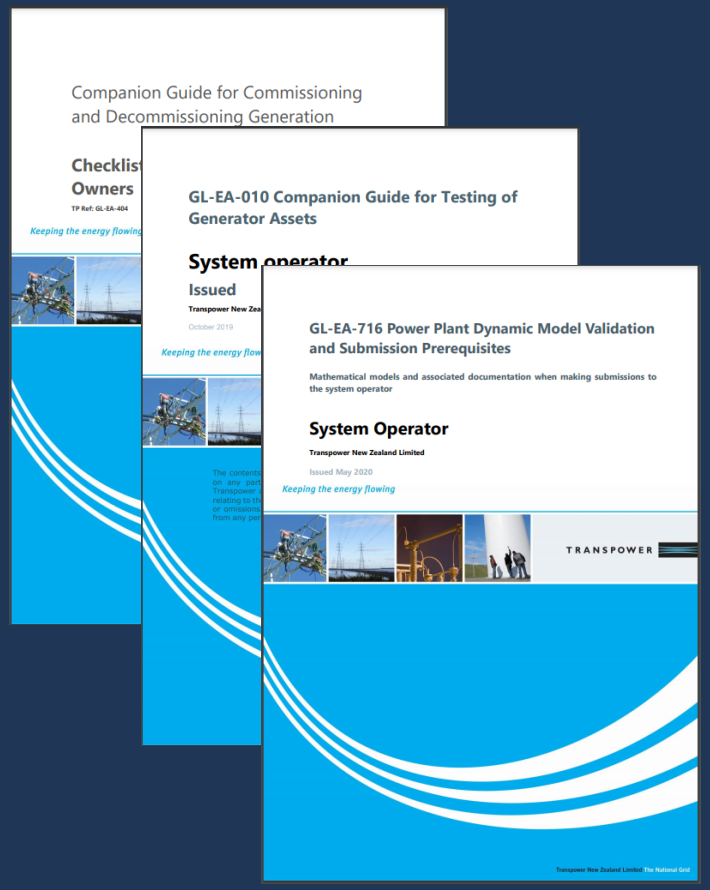

How we can help?

Guides available

- Summary of System Operator Interactions
- Generation Connection Guide
- Connection Study Guide
- Interim Operational Guideline for connection of new technologies

Guides available (continued)

- Companion Guide for Commissioning
- Companion Guide for Testing Generator Assets
- Model validation and submission pre-requisites
- Templates
  - Commissioning Plan
  - Intention to Connect
  - Intention to Offer



Summary

Owners of generation of 1 MW or above that has certainty of being built should:

- Advise your intentions to compliance@transpower.co.nz,
- Establish early any performance and trading requirements

The System Operator is becoming increasingly reliant on information and performance from distribution connected generators to operate the power system

Our guides can help introduce you to your obligations and help with you through the commissioning and testing process


Questions?

Thank you

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