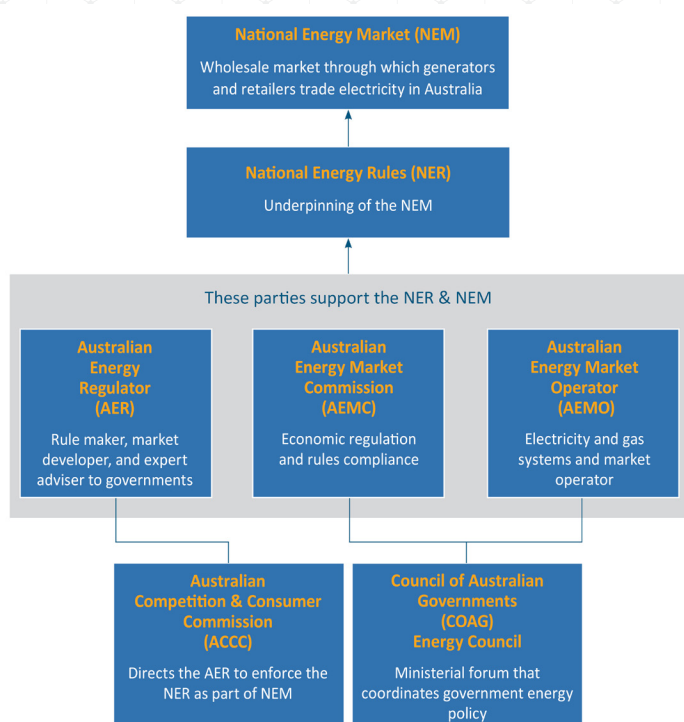


POWER NETWORKS

Generation compliance management for new operators

Overview

Australia has a uniquely 'long, skinny' energy network with a high penetration of renewable generation. Networks in comparable countries are very dense and interconnected, giving them a high level of protection against outages. However, Australia's geography and dispersed population centres means that the same levels of protection are not possible. This presents several challenges for the market operator (AEMO) in ensuring security and stability of supply on one of the world's largest energy networks. For this reason, renewable generation connected to the National Electricity Market (NEM) must meet a much higher compliance bar than is necessary in other countries.



Australia's energy governance structure

Australia's unique compliance requirements

All generators are required to demonstrate compliance with their Generator Performance Standards (GPS), as well as meet the expectation of other areas of the National Electricity Rules (NER). These include:

- Providing accurate models
- Planning
- Review
- Non-compliance reporting
- Change control

These requirements don't end with connection approvals. The Australian Energy Regulator (AER) requires that all generators have in place an active, Compliance Monitoring Program. These Programs are intended to be living documents that are regularly updated to reflect changes in plant and in the NER. In addition, operators/owners must carry out compliance reviews:

- Every time any part of the plant is upgraded or altered, including software or firmware upgrades
- Each time the Australian Energy Market Commission (AEMC) issues a rule change or a new version of the AEMC template for generator compliance that requires your plan to be updated. Owners/operators have a specified amount of time to complete required updates after the NER or AEMC templates are updated

Generation owners/operators may also find themselves subject to audits by the AER, regardless of whether they have committed a breach, or are seen to be at fault. The audit may come in response to issues on the grid near their generation asset, requiring the AER to ensure nearby connections are compliant with their GPS.

Key capabilities

If you are an owner or operator for whom energy generation is not a core part of your business, or you are from a jurisdiction that has a different compliance requirement, you may not be aware of the on-going compliance obligations that come along with owning a generation asset in Australia. You may also not have the technical depth necessary to fulfil these requirements. PSC is here to help.

Compliance reviews

PSC can review your compliance stance and planning, then give you a report outlining any additional steps you need to take.

Compliance monitoring programmes

- Prepare a compliance monitoring programme
- Review an existing plan against the current NER and the current AEMC template (i.e. does it meet the rules?)
- Regularly review (e.g. four yearly) the compliance program as a live document to ensure it's achieving its objectives based on the results of compliance monitoring (i.e. is it useful?)

Ongoing compliance management

- Documentation of changes to plant
- Submissions to the regulator (non-compliances, changes to plant, uprating, Section 5.3.9)
- Regular testing via the PSC Genassure team test services

Audit assistance

AER audits are - by necessity - highly detailed. PSC has been involved in multiple audits. While the operator is required to complete the reports, PSC assists with:

- Technical advice for the highly detailed technical section of the audit
- Project management and support to complete these audits, which generally run into the hundreds of questions



PSC relevant experience

Due to the sometimes sensitive details around compliance and auditing we will list our experience in this area in general terms. PSC has previous experience with:

- NER compliance reporting across a wide range of generation technologies including solar, batteries, diesel, hydro, steam turbines and gas turbines. Within our international PSC business, we've also been involved in offshore and onshore wind projects
- Preparing for the technical section of audit responses for the AER. This can result in hundreds of individual responses with significant detail on different aspects of the generation compliance clauses
- Compliance work across most of the states and territories in Australia
- Due diligence work for the market operator and transmission service providers.



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