

Reliability Panel AEMC

ISSUES PAPER

Template for Generator Compliance Programs Review 2015

13 November 2014

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About the AEMC

The AEMC reports to the Council of Australian Governments (COAG) through the COAG Energy Council. We have two functions. We make and amend the national electricity, gas and energy retail rules and conduct independent reviews for the COAG Energy Council.

About the AEMC Reliability Panel

The AEMC Reliability Panel (Panel) is a specialist body within the AEMC and comprises industry and consumer representatives. It is responsible for monitoring, reviewing and reporting on reliability, security and safety of the national electricity system and advising the AEMC in respect of such matters. The Panel's responsibilities are specified in section 38 of the National Electricity Law.

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Summary

The Reliability Panel (Panel) has commenced its three yearly review of the template for generator compliance programs (template) to help electricity generators to comply with performance standards. Effective compliance with these performance standards contributes to the delivery of reliable and secure electricity to consumers in the National Electricity Market (NEM).

In this review, the Panel invites interested stakeholders to engage on the key issues that have the potential to influence industry behaviours that are consistent with practical, efficient and flexible approaches to performance standards compliance. To facilitate this engagement, the Panel has included a series of questions in this Issues Paper to help stakeholders consider the issues that are relevant to them, and to inform the Panel of these issues through written submissions during the first stage of this review.

The template aims to provide assistance and clarity to stakeholders, particularly generators and the Australian Energy Regulator (AER), on what constitutes good electricity industry practice with respect to performance standards compliance. It may also be of assistance to other stakeholders.

In this review, the Panel will investigate whether the template it finalised with stakeholder input in June 2012 remains consistent with any subsequent changes to the National Electricity Rules (NER), technologies, performance standards and compliance methods. The Panel is particularly interested in understanding stakeholders' experiences in applying the template, what industry behaviours it has encouraged (or discouraged), and whether any improvements could be made.

In summary, issues to be considered on this review include:

- the clarity of the template (such as role, purpose and guidance), and the appropriateness of the compliance principles that are outlined in the template;
- the balance between prescription and flexibility of the template, so as to capture potential changes in technology, testing and monitoring methods;
- the usefulness of the template, in terms of supporting ongoing compliance with performance standards and the NER; and
- stakeholders' general views on, and experiences with, the template to date for the purpose of supporting performance standards compliance.

Stakeholder submissions on the first stage of this review are requested by no later than **18 December 2014**. In addition, and subject to stakeholder interest, the Panel may hold a stakeholder workshop in early 2015 on some of the key issues raised in the submissions. As part of the public consultation process being carried out on the matters contained in this paper, stakeholders are also invited to provide feedback to the Panel on the workshop.

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1 Introduction

1.1 Purpose of this review

The National Electricity Rules (NER) require the Reliability Panel (Panel) to determine, and modify as necessary, and publish the template for generator compliance programs (template).¹ The NER also require the Panel to conduct a review of the template at least every three years from the date the template is determined, and at such other times as the Australian Energy Market Commission (AEMC) may request.²

The template aims to provide clarity to stakeholders, particularly generators and the Australian Energy Regulator (AER), on what constitutes good electricity industry practice with respect to performance standards compliance. This may help individual generators to institute and maintain compliance programs that are consistent with the template. It may also be of assistance to other stakeholders.

On 15 September 2014, the AEMC provided a standing terms of reference to the Panel, included at Appendix A, to undertake this review of the template, and requested the Panel to complete the review by no later than 31 July 2015.³

This Issues Paper has been prepared to facilitate public consultation in this review and assist stakeholders in providing written submissions. It should be read in conjunction with the current version of the template, which is attached at Appendix B.

1.2 Scope of this review

Panel's considerations for this review

In undertaking this review, the terms of reference require the Panel to consider whether:

- there have been any material changes to the NER that impact the template;
- there have been any changes in technology that should be reflected in the template;
- there have been any changes in performance standards that should be reflected in the template;
- the experiences of the AER and generators with the template have identified ways in which the template may be improved; and

1 NER clause 8.8.1(a)(2b).

2 NER clause 8.8.3(ba).

3 NER clause 8.8.3(c).

- there are any other factors, including outcomes of any market incidents, that should be considered to further clarify and improve the template.

The Panel is to also consider the compliance principles, as set out in the current version of the template, and the National Electricity Objective (NEO).

Panel's obligations following this review

Following the completion of this review, the Panel may amend the template in accordance with any recommendations that it makes in a report that is submitted to the AEMC.⁴ That is, the Panel will be able to make amendments to the template, but not the NER.

To the extent that the Panel identifies any issues with the NER as a result of this review process, the Panel will consider whether it would be appropriate to submit a rule change request to the AEMC. Any such rule change request would then be considered by the AEMC in accordance with the rule change process under the National Electricity Law (NEL).

Registered participants' compliance obligations in relation to the template

Registered participants⁵ affected by this template are those who engage in the activity of planning, owning, controlling or operating a plant to which a performance standard⁶ applies. Generally, these would be electricity generators, who are required to institute and maintain a compliance program.⁷

If any amendments to the template are made by the Panel upon completion of this review, existing compliance programs that are maintained by generators will need to be modified in accordance with the amended template by no later than six months after the amendments are published (or by a date determined by the Panel).⁸

Notwithstanding the above, generators should treat the template as a guide that is one of a number of potential resources for developing and modifying compliance programs. It is not an exhaustive list of tests and methodologies. Generators should

⁴ NER clause 8.8.3(j).

⁵ A "registered participant" is defined in the NER as a person who is registered by the Australian Energy Market Operator (AEMO) in any one or more of the categories listed in rules 2.2 to 2.7 (in the case of a person who is registered by AEMO as a Trader, such a person is only a Registered Participant for the purposes referred to in rule 2.5A). However, as set out in clause 8.2.1(a1), for the purposes of some provisions of rule 8.2 only, AEMO, Connection Applicants, Metering Providers and Metering Data Providers who are not otherwise Registered Participants are also deemed to be Registered Participants.

⁶ The NER defines "performance standard" to be a standard of performance that: (a) is established as a result of it being taken to be an applicable performance standard in accordance with clause 5.3.4A(l); or (b) is included in the register of performance standards established and maintained by AEMO under rule 4.14(n), as the case may be.

⁷ NER rule 4.15(b).

⁸ NER rule 4.15(c)(3).

exercise their own judgement in determining how best to apply the template to meet their compliance requirements.

1.3 Consultation process

Timetable for this review

In carrying out this review, the Panel will follow a consultation process that is consistent with clause 8.8.3 of the NER and the terms of reference. The Panel will consult with stakeholders through seeking submissions on this Issues Paper and a subsequent Draft Report (as well as a public meeting, if requested). The following table outlines the key milestones for this review.

Table 1.1 Indicative timetable

Milestones	Date/Indicative date
Issues Paper - published	13 November 2014
Issues Paper - close of submissions	18 December 2014
Stakeholder workshop (tentative)	To be advised
Draft Report – publish	26 March 2015
Public meeting (if required)	To be advised
Draft Report - close of submissions	7 May 2015
Final Report - publish	18 June 2015

Submissions to the Issues Paper

For this Issues Paper, the Panel invites written submissions from interested parties by no later than 18 December 2014. All submissions received will be published on the AEMC's website (www.aemc.gov.au), subject to any claims for confidentiality.

Electronic submissions must be lodged online through the AEMC's website using the link entitled "lodge a submission" and reference code "REL0054". The submission must be on letterhead (if submitted on behalf of an organisation), signed and dated.

Upon receipt of electronic submissions, the AEMC's website will issue a confirmation email. If this confirmation email is not received within three businesses days, it is the submitter's responsibility to ensure the submission has been delivered successfully.

If choosing to make submissions by mail, the submission must be on letterhead (if submitted on behalf of an organisation), signed and dated. The submission may be posted to:

Reliability Panel
 Australian Energy Market Commission

PO Box A2449
SYDNEY SOUTH NSW 1235
Or by Fax to (02) 8296 7899.

1.4 Structure of this paper

The remainder of this Issues Paper is set out as follows:

- **Chapter 2 - Assessment framework:** describes the assessment framework that the Panel will have regard to in analysing issues raised in this review.
- **Chapter 3 - Issues for consultation:** outlines specific issues on which the Panel is seeking comment, including some discussion of these issues.
- **Appendix A - Terms of reference for this review.**
- **Appendix B - Current template for generator compliance programs.**
- **Appendix C - Historical development of the template.**

2 Assessment framework

This chapter describes the assessment framework that the Panel proposes to apply in this review, in accordance with the requirements set out in the NEL and NER.

2.1 National Electricity Objective

The Panel is required to have regard to the NEO when it undertakes its assessments, and makes decisions and recommendations for this review.

The NEO is set out in section 7 of the NEL as follows:

“The objective of this Law is to promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to:

- (a) price, quality, safety, reliability and security of supply of electricity;
and
- (b) the reliability, safety and security of the national electricity system.”

For this review, the relevant aspect of the NEO is the efficient operation of electricity services for the long term interests of consumers of electricity, with respect to the reliability and security of the national electricity system.

Any amendments to the template should have the potential to contribute to improvements in the efficiency with which compliance obligations are carried out by the AER and generators.

A primary reason for developing the template was to provide greater clarity and certainty in regard to compliance matters for new and existing generators, and the AER. Such clarity and certainty can contribute to an efficient operation of electricity services by reducing the compliance burden on generators and the AER. This, in turn, has the potential to provide confidence to consumers that generators are contributing to the delivery of a secure and reliable power system.

A sufficiently flexible, and regularly reviewed, template may also account for new technologies that enter into the market and other changes in future circumstances. Such flexibility supports the minimisation of any potential barriers to entry to the market that may exist for new generators in regard to administrative compliance.

In assessing any proposed amendments to the template, the Panel will also consider the likely long term costs and benefits of the proposed amendments compared to the counterfactual of not making the proposed changes to the template.

2.2 Factors to be considered by the Panel

In its consideration of the NEO, the Panel will have regard to the following factors to assist its review of the template:

- **Clarity of the template:** The template should provide clarity to generators and the AER as to what constitutes good electricity industry practice with respect to compliance with performance standards.⁹ Any amendments to the template should clarify how the provisions in the template should be applied to give effect to the template's overall role and purpose.
- **Balancing prescription and flexibility:** The template should be able to be flexibly applied within appropriate controls. It should be sufficiently flexible to accommodate different generation technologies, and a broad range of generation plants which may have unique attributes and varying requirements. At the same time, the template should provide a basis for generators to develop compliance programs that are suited to their facilities.
- **Usefulness of the template in terms of supporting compliance:** The template should cover all plant performance standards and define suitable testing and monitoring regimes. For the template to continue to be relevant and useful, and assist generators to meet their obligations, any changes to the performance standards or testing and monitoring regimes (as a result of a change in a relevant provision of the NER) should be reflected in the template.

Compliance principles

With respect to the first point above, to provide clarity with respect to the development of the template and its application by generators and the AER, the Panel will have regard to ten principles to help it assess whether any future amendments should be made to the template. These principles are:

- **Principle 1:** Where plant system performance may be variable with time, as for example with plant protection, control and alarm (PCA) systems, generators are accountable for managing the functionality and integrity of systems and settings in accordance with the performance standards compliance program.
- **Principle 2:** The corollary of Principle 1 is that where plant parameters are not subject to variability with time, the compliance regime should be restricted to confirmation that the plant continues to perform as intended with repeat testing

⁹ Chapter 10 of the NER defines "good electricity industry practice" to mean: "The exercise of that degree of skill, diligence, prudence and foresight that reasonably would be expected from a significant proportion of operators of facilities forming part of the power system for the generation, transmission or supply of electricity under conditions comparable to those applicable to the relevant facility consistent with applicable regulatory instruments, reliability, safety and environmental protection. The determination of comparable conditions is to take into account factors such as the relative size, duty, age and technological status of the relevant facility and the applicable regulatory instruments."

when there are reasonable grounds to believe that the plant performance may have changed.

- **Principle 3:** The materiality of the issue must be considered when contemplating a compliance testing regime.
- **Principle 4:** A generator's active use and implementation of a compliance program that is consistent with the approved template and the generator's compliance management framework will provide a reasonable assurance of compliance with the generator's registered performance standards.
- **Principle 5:** The template must therefore support the development of compliance programs which represent “good electricity industry practice”. The template should specify the objectives and outcomes to be achieved by the testing or monitoring, and an appropriate test interval. The generator should exercise diligence and good electrical industry practice to determine the detailed methods and procedures to be employed for its plant.
- **Principle 6:** The compliance testing regime must be efficient, and reflect an equitable balance between risk management and the risk created by the test regime itself.
- **Principle 7:** Where appropriate, analysis of performance during an event or disturbance could be used to demonstrate compliance in lieu of a performance test.
- **Principle 8:** Where compliance to a performance standard cannot be directly tested, the compliance program should include a range of other compliance testing methods to provide reasonable assurance that the performance standard continues to be met.
- **Principle 9:** When developing a compliance program and operating under that program, a generator can only be reasonably held accountable for the compliance of its plant to its registered performance standards and to equipment settings approved or provided by AEMO and/or the transmission network service provider (TNSP).
- **Principle 10:** Compliance programs should be reviewed and updated periodically.

3 Issues for consultation

This chapter sets out additional information on the issues that the Panel will consider in this review. It also includes a series of questions to facilitate public consultation. Stakeholders are encouraged to consider these questions, as well as any other aspects of the template, in their submissions to the Panel.

3.1 Clarity of the template

3.1.1 Role and purpose of the template

The role and purpose of the template is to provide clarity to all affected parties as to what constitutes good electricity industry practice with respect to compliance with performance standards.

Rule 4.15(ca) of the NER requires the template to: (1) cover all performance standards; and (2) define suitable testing and monitoring regimes for each performance standard so that a generator can select a regime that complies with the relevant obligations set out in the NER for their particular plant.¹⁰

The template has been designed on the basis that it forms part of a generator's overall compliance management framework. Ultimately, for the overall framework to function effectively, it is the responsibility of generators and the AER to be engaged in the process. The generator is required to exercise its own judgement in how it can best meet its compliance obligations, including developing and maintaining its own compliance program and implementing appropriate governance arrangements (such as independent compliance audits). The AER also has a role in enforcing and monitoring the generator's compliance, such as conducting regular audits of selected generators' compliance programs. The template should assist in this regard.

Stakeholders are invited to comment on whether the current template is still achieving its role and purpose.

Question 1

- (a) Could stakeholders comment on the role and purpose of the template?**
- (b) Do stakeholders consider that the role and purpose of the template, as explained in this Issues Paper, is still being achieved?**

¹⁰ The relevant obligations referred to are specified in rules 4.15(a), 4.15(b) and 4.15(c) of the NER.

Question 2 Do stakeholders consider that the template provides sufficient guidance to generators, in terms of helping them to demonstrate performance standards compliance? If not, what further guidance may be required?

3.1.2 Compliance principles

Section 2.2 above listed the ten compliance principles that the Panel has regard to when reviewing the template.

These principles may also be used by generators in developing and modifying their compliance programs.

Stakeholders are invited to comment on whether the compliance principles are still relevant.

Question 3 Do the current compliance principles still provide sufficient guidance to generators in developing and/or modifying their compliance programs, as appropriate?

Question 4 Does the template encourage efficient and effective compliance? Are there ways in which the template could be enhanced to improve compliance?

Question 5 Are the current compliance principles still appropriate for the purposes of reviewing the template?

Question 6 Are there any other compliance principles that should be reflected in the template?

3.2 Balancing prescription and flexibility

The template was not designed to be an exhaustive document. Generators are required to implement compliance programs that are consistent with the template, but these programs do not have to be a direct copy of the template.

The Panel took this approach in its 2009 review of the template because it recognised that different organisations have their own approaches or are certified to varying standards.¹¹ It also noted the difficulty in establishing a single template for the broad range of types of plant, and consequently decided not to consider a specific management approach or standard.

In order for the template to remain current, it has been designed so that it can take into account different technologies, types of plant, age of plant and size of plant. The

¹¹ Reliability Panel, *Template for Generator Compliance Programs*, Final Report, 31 July 2009.

template provides a number of different test and monitoring methods for each performance standard in the template. The definition of key terms in the template should also accommodate such differences, as well as potential changes over time.

For example, in the 2012 review, different technologies, plant types and testing methods were considered:¹²

- New technologies (such as large-scale solar generation) were identified as a type of technology that should be considered in a future review of the template, should such technology come to pass. These issues continue to be relevant as possible matters for consideration in this review, particularly in light of the growing contribution of renewables (such as wind) to the total generation mix.
- Stakeholders considered that a maximum period for the testing interval of each method should be included in template. However, the Panel indicated that such a review would require a preliminary assessment of the potential costs and benefits of incorporating this issue.
- Multiple separate templates for different plant types were proposed by some stakeholders. However, the Panel considered that sufficient evidence had not been provided to support such a change.

The Panel welcomes any information or suggestions that would contribute to maintaining the currency and effectiveness of the template.

Question 7

- (a) **What changes in technology have occurred (if any) which should be reflected in the template?**
- (b) **Does the template provide useful information to renewable energy generators (for example, wind farm generators)? If not, what improvements could be made to the template?**

Question 8 **Have there been any changes in testing or monitoring methods which should be reflected in the template? For example, this may include consideration of matters such as the appropriateness of testing frequency, among others.**

3.3 Usefulness of the template in terms of supporting compliance with the NER

In this review, the Panel will consider whether there have been any changes to the NER, including changes in performance standards, which may affect the operation of the template. Based on a preliminary examination of rules made since 2012, the Panel does not consider that there have been any changes that have affected the template since the 2012 review.

¹² See Appendix C, section C.4.

The Panel is also mindful of whether there have been any changes to the application of performance standards over time. To this end, the Panel is interested in stakeholders' views in order for it to assess whether the template could be improved in this regard.

Stakeholders are invited to comment on the questions below.

Question 9	Have there been any changes to the NER that have impacted the usefulness of the template?
Question 10	Have there been any changes to performance standards that have impacted the usefulness of the template?
Question 11	Have there been any changes to the application of performance standards that should be reflected in the template?

3.4 Other relevant issues

Stakeholders are invited to comment on any other relevant issues, including the assessment framework that the Panel proposes to apply in the review.

One of the key aspects of this review is considering the experiences of stakeholders in applying the template. The Panel is keen to understand how well the template has worked in practice, and whether stakeholders have any suggestions on how the template may be clarified and improved. For instance:

- Have generators experienced any difficulty in integrating the template as part of their compliance programs?
- Has the AER experienced any difficulty in assessing generator compliance with the template?
- What improvements could be made to the template such that it may better integrate with generators' compliance programs, and/or assist the AER in determining generator compliance?
- Are there any terms used in the template that require further clarification?
- Besides generators and the AER, are there any other stakeholders who rely on the template and/or generators complying with their performance standards? How do they use the template?

The Panel will consider any other relevant issues that are raised during the review, including whether there were any market incidents that have occurred in the last three years since the template was introduced which may affect its efficiency.

Question 12	What have stakeholders' experiences been with the template? Please provide examples, where possible.
Question 13	Could the template be improved or clarified in any specific area(s)? For example, this may include improvements or clarifications to better support efficient approaches to performance standards compliance, stakeholder understanding, and generator learning and information sharing? If yes, please give examples.
Question 14	Are there any other factors, including outcomes of market incidents, that should be considered in this review for the purpose of potentially improving or clarifying the template?

3.5 Proposed stakeholder workshop

The Panel is interested in hearing from stakeholders on whether there would be a benefit in attending a workshop convened by the Panel on performance standards compliance. A workshop may be of interest to generators, network businesses, AEMO, the AER, as well as other interested stakeholders. If sufficient interest is expressed, the Panel will consider holding a workshop in early 2015.

Possible issues that could be considered at a workshop, for example, may include understanding how, and the extent to which, the template:

- is applied by stakeholders in their compliance programs;
- influences the approach taken by stakeholders in instituting and maintaining their compliance programs;
- may encourage behaviours in performance standards compliance that are not considered efficient and/or in compliance with standards that do not reflect changes in NEM operations;
- is delivering value to stakeholders in terms of their approach to performance standards compliance; and
- could be used to facilitate greater flexibility and efficiency in the approach to performance standards compliance.

Abbreviations

AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
COAG	Council of Australian Governments
MCE	Ministerial Council on Energy
MNSP	market network service provider
NEL	National Electricity Law
NEM	National Electricity Market
NEMMCO	National Electricity Market Management Company
NEO	National Electricity Objective
NER	National Electricity Rules
NGF	National Generators Forum
NSP	network service provider
Panel	Reliability Panel
PCA	protection, control and alarm
template	template for generator compliance programs
TNSP	transmission network service provider

A Terms of reference for this review

(Please refer to the separate document on the AEMC's website.)

B Current template for generator compliance programs

(Please refer to the separate document on the AEMC's website.)

C Historical development of the template

This appendix provides background information on the historical development of the template, including a summary of the amendments made to the template when it was last reviewed in 2012.

C.1 Review of Enforcement of and Compliance with Technical Standards (2006)

In 2006, as directed by the Ministerial Council on Energy (MCE),¹³ the AEMC completed a review of the enforcement of, and compliance with, technical standards.¹⁴ At the time, the AEMC was concerned with the low level of approval by the National Electricity Market Management Company (NEMMCO) of generator compliance programs, and considered that the negotiate-agree model for compliance programs for generators (and lack of an approval/agreement process for network service providers (NSPs)) under the NER were flawed.¹⁵ The AEMC identified that the NER: was silent on how generators, NSPs and NEMMCO could reach an agreement on establishing a compliance program; provided little guidance on the factors that the relevant parties should take into account in agreeing to a compliance program; and did not make use of the AER in its capacity for monitoring and enforcement.

In its review, the AEMC considered a better approach to the compliance framework for determining generator compliance programs would be to develop clear and appropriate technical guidelines in place for all existing generators, as well as clear processes for establishing the performance standards of new generators. Therefore, the AEMC made a number of recommendations in its Final Report to the MCE, including that the AER should establish "compliance guidelines" to facilitate the enforcement and

¹³ The MCE is referenced in the AEMC's governing legislation and is a legally enduring body comprising the Federal, State and Territory Ministers responsible for Energy. On 1 July 2011, the MCE was amalgamated with the Ministerial Council on Mineral and Petroleum Resources. The amalgamated Council is now called the Council of Australian Governments (COAG) Energy Council.

¹⁴ AEMC, *Review of Enforcement of and Compliance with Technical Standards*, Final Report, 1 September 2006. As noted in the technical standards review, the term "technical standards" is not defined in the NER but, for the purposes of the development of the template, it was characterised as: the performance standards for generators, market customers and market network service providers (MNSPs) specified under NER clauses 4.13, 4.14 and 5.3.4A(g) that are prepared to be registered with NEMMCO; the automatic access standards, minimum access standards and performance criteria required for the connection of NSPs, generators, market customers and MNSPs set out in NER schedules 5.1, 5.2, 5.3, and 5.3a respectively, which in the case of generators, market customers and MNSPs, form the basis for specific performance standards to be registered with NEMMCO; and the obligations of NSPs, generators and market customers under NER clauses 5.2.3, 5.2.4 and 5.2.5.

¹⁵ At the time of the 2006 review, the NER required that each Generator must negotiate in good faith with the relevant NSP and NEMMCO to agree on a compliance monitoring program, including an agreed method, for each of its generating units to confirm ongoing compliance with the applicable technical requirements and the relevant connection agreement and the performance standards for that generating unit.

monitoring of generators' compliance with technical standards. The AEMC also recommended that the MCE submit a rule change request to address the issues in the NER.

C.2 Rule change request on Performance Standard Compliance of Generators (2008)

In response to the AEMC's recommendation for the MCE to submit a rule change request to establish "compliance guidelines", the National Generators Forum (NGF) submitted a rule change request on these issues instead in February 2008.¹⁶ The NGF proposed that the AEMC should make the changes recommended in the 2006 review with some modifications, including that the Panel - rather than the AER - should be responsible for developing the compliance template, and the Panel should undertake a review of the template at least once every three years.

In its rule determination in October 2008, the AEMC agreed with the NGF that the Panel should be the party responsible for the guideline (which was recast as the compliance "template"), and determined that the Panel would be required to undertake regular reviews of the template.¹⁷ Generators would also be required to institute and maintain their generator compliance programs, which must be consistent with this template (among other things). As part of the generator compliance framework, the rule change also clarified the processes associated with breaches of performance standards.

C.3 Initial development of the template (2009)

Following the AEMC's rule determination in 2008,¹⁸ the Panel carried out a review to establish the compliance template, which was completed in July 2009.¹⁹ This review involved substantive consultation with stakeholders, including assistance from a working group, comprised of industry representatives with extensive experience in the area, consultation on an Issues Paper and a Draft Report, and a public meeting.

In developing the template, the Panel adopted nine compliance principles, which were intended to be used as a guide for future revision and development of the template, and to assist generators to develop their own compliance programs.²⁰ The template also included a table, which lists the relevant performance standard/rules/code provision, suitable testing and monitoring methodologies, frequency of tests, and the bases for the compliance assessments.²¹

¹⁶ NGF, Rule change request, 14 February 2008.

¹⁷ AEMC, *Performance Standard Compliance of Generators*, Rule Determination, 23 October 2008.

¹⁸ AEMC, *Performance Standard Compliance of Generators*, Rule Determination, 23 October 2008.

¹⁹ Reliability Panel, *Template for Generator Compliance Programs*, Final Report, 31 July 2009.

²⁰ These principles are discussed in the section 2.2.

²¹ See Appendix B.

C.4 Previous review of the template (2012)

Following the establishment of the first template in July 2009, the AEMC provided the Panel with terms of reference to complete a review of the template by July 2012.²²

The Panel determined that the template should remain largely unchanged, with the exception of some minor amendments to improve its clarity and application. The amendments were made following consultation with stakeholders on the Issues Paper, Draft Report, and a public meeting to discuss comments on the Draft Report. These amendments, which were in response to stakeholders' feedback, can be summarised as follows:

- **Purpose of the template:** The Panel clarified the template's purpose.
- **Real-time monitoring:** The Panel introduced a new compliance principle in the template to highlight the option for real-time monitoring in demonstrating compliance.
- **Intent of methods for testing and assessing compliance:** The Panel clarified the intent of methods for testing and assessing compliance in the template.
- **Frequency of tests:** The template was clarified that generators have some discretion to determine the frequency with which compliance tests are to be carried out.
- **Test for synchronous and asynchronous generation:** Minor clarifications were made to the template to clarify which tests apply to synchronous and asynchronous generation.²³
- **Editorial:** Minor formatting and typographical clarifications were made to the template to improve its ease of use.

In addition to the above, some stakeholders raised matters that they considered should be addressed in the future. These matters, and the Panel's previous responses, are summarised as follows:

- **Separate templates:** There should be separate templates created to provide guidance according to the type of plant, the systems, the plant size, and the location. The Panel considered that sufficient evidence had not been provided to support a more thorough review in relation to this.
- **Minimum testing intervals:** Table 2.9 of the template (see Appendix B) should include a maximum period for the testing interval of each method to provide an

²² Reliability Panel, *Template for Generator Compliance Programs*, Final Report, 27 June 2012.

²³ A synchronous generating unit is defined in the NER to be the alternating current generators of most thermal and hydro (water) driven power turbines which operate at the equivalent speed of the frequency of the power system in its satisfactory operating state. An asynchronous generating unit is one that is not a synchronous generating unit.

indication of what a participant can interpret to mean "good electricity industry practice". The Panel considered that such a review would require significant technical advice, and a preliminary assessment of the potential costs and benefits of incorporating this issue would need to be undertaken. This would include considering whether it would be efficient and feasible to determine a set of minimum testing intervals that would apply to a range of plant types in the National Electricity Market (NEM).

- **New technologies:** Although new technologies, such as large-scale solar, had not been established at the time of the 2012 review, it should be examined in the future. The Panel agreed that should such technologies eventuate, then new provisions in the template would be needed, but at the time, it was not yet appropriate.
- **Process of commissioning power stations:** The process of commissioning power stations should be considered, such as the timing and expectation of compliance with performance standards at the time of commissioning. The Panel considered that this issue was not within the scope of the 2012 review, and encouraged stakeholders to propose a rule change to the AEMC should there be a demonstrated problem. Future Panel reviews could then consider whether such a rule change would affect the template.