

National Codes of Best Practice Hydrogen Production and Refuelling Facilities

Information for Participants

Background

National Hydrogen Codes of Best Practice are being delivered as part of the **National Hydrogen Regulatory Review**. The purpose is to deliver improved:

- **Safety and environmental protection:** Appropriate and adapted regulation is always a threshold requirement for any industry. For a high-risk industry, this is even more so. Ensuring effective regulatory frameworks for safety and environmental protection is essential for maintaining the support of the wider community for the industry as it grows.
- **Efficiency/streamlining of permitting/approvals:** Where the application of regulatory frameworks to a new industry not clear, creating transparency assists new industry entrants in more efficiently navigating those regulatory frameworks.
- **National consistency:** Improves both safety and efficiency for business and facilitates new entrants into Australian renewable energy projects.

Approach

The National Codes are an **adaptive approach** to achieving better regulatory outcomes. The Codes are sub-regulatory and do not involve regulatory reform at this time. In this way, they can be agile and adapt with the emerging hydrogen industry. The Codes will:

- **Identifying relevant regulatory obligations**, including existing legal obligations, and analogous/appropriate regulations which are in existing legislation but currently are not legally applicable to relevant hydrogen activities, associated with the activities of both production and refuelling facilities “behind the fenceline”.
- **Identifying regulators** associated with both the existing legal obligations and proposed ‘best practice’ regulations (analogous regulation) activities of the relevant hydrogen projects.
- **Drafting regulatory guidance, including technical compliance best practice**, on how existing international practice and precedence, technical specifications, case

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studies and standards can demonstrate compliance in with relevant regulatory obligations.

Code Structure and Content

Following is the current draft Chapter structure of the Codes:

Section 1 - Preliminary matters

- 1.1 Purpose of the codes
- 1.2 How to use this document (how its been put together/'program logic').
- 1.3 Scope of the code
- 1.4 Hydrogen properties relevant to this code including standard definitions of hydrogen as a dangerous good
- 1.5 Hydrogen appliances, plant and equipment relevant to this code
- 1.6 Hydrogen potential emissions, pollutants, and wastes relevant to this code
- 1.7 Hydrogen production and refuelling facility regulated job roles relevant to this code

Section 2 – the Regulatory Pathway

- 2.1 The Legislation Matrix
- 2.2 The Regulator Matrix

Section 3 – Regulatory obligations

- 3.1 Planning – siting/location
- 3.2 Environmental considerations
- 3.3 Training - skills/training/accreditation
- 3.4 Facility safety cases – hazard identification, risk assessment, mitigation.
- 3.5 Plant and Equipment – registration, installation, operation
- 3.6 Notifications and referrals
- 3.7 Hydrogen purity and quality
- 3.8 Measurement

How this consultation will inform Code development

For the purposes of developing the 'technical mapping' consultation, the existing national hydrogen regulatory review project team has been assisted by the procurement of a technical advisor. The technical advisor has brought hydrogen engineering competencies to the development of the first instance technical map to provide a baseline input document for a range of SMEs across the activities identified as in scope for the first iteration of technical mapping.

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In scope for the purposes of the first iteration of technical mapping includes:

- Simplified plant and equipment for the purposes of hydrogen production and refuelling facilities:
 - It only includes hydrogen specific plant, and balance of plant, production by electrolysis and current activities ‘behind the fenceline’ (ie not as yet, fire protection equipment, not pipelines or fuel cell vehicles that might use a refuelling facility, not full lifecycle, or end of life ‘best practice’ for plant.
 - It does not include broader facility safety or design issues, for example safety cases, or emergency plans (including fire fighting responses).

Technical Mapping

The function of the Facility Technical Mapping will be **to standardise the understanding of the operating environment** of production and refuelling facilities at different volumes and production methods. This will enable us to:

- Provide a detailed **summary of the operating environment** of hydrogen production and refuelling facilities as it relates to relevant regulatory obligations (i.e. sections 1.5, 1.6 and 1.7 of the Codes)
- **Draft regulatory and technical best practice guidance** for regulators and operators as to how they are going to meet their regulatory obligations (i.e section 3 of the Codes).

Reaching this standardised understanding will require:

- Collectively agreeing:
 - the plant and equipment present within production and refuelling facilities that have an interaction with legislative definitions and therefore obligations. For example, electrical or gas installations and pressure vessels.
 - the job roles and the nature of the competencies that have an interaction with legislative obligations required for the safe operation of all identified plant and equipment.
 - the environmental impacts, and in particular pollutants, wastes and contaminants materially associated with hydrogen production and refuelling facilities.
- Sharing that information with relevant stakeholders so regulatory approvals can be:

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- streamlined, and
- nationally consistent

Regulator Matrix

Once finalised, the Regulator Matrix will form section 2.2 of the National Codes.

The draft Regulator Matrix is a detailed summary of each statutory instrument that:

- contain legislative provisions (legal obligations) which apply to hydrogen production or refuelling facility activities,
- contain analogous obligations that are currently not legally applicable to hydrogen but there may be arguments that they ‘should be’ as a matter of regulatory best practice (e.g. regulating similar gases, fuels or in some instances petroleum), or
- based on the title or objects of the statutory instrument a reader may think the statutory instrument could apply to hydrogen but doesn’t (e.g. legislation with gas in the title or referring to the regulation of gas).

Once finalised, **the key functions of the Regulator Matrix** will be to provide:

- a snapshot of hydrogen regulation across Australia
- a high level summary of each potentially relevant statutory instrument and its application to hydrogen production and refuelling facilities
- contact details for the relevant government area should proponents have any queries about an approval or compliance obligation applying to their project.

Using the draft Regulator Matrix

For each relevant statutory instrument, the draft Regulator Matrix uses the following assessment:

- Does/Does not include **regulatory obligations that apply** to hydrogen production facility or hydrogen refuelling facility activities.

This means that there is a legal obligation in an existing statutory instrument that applies to one or more activities anticipated to occur in either a hydrogen production or refuelling facility.

- Does/Does not include **analogous (best practice) regulatory provisions** relevant to hydrogen production facility and hydrogen refuelling facility activities.

This means there is an existing statutory provision, or provisions, in the identified instrument that does not legally apply to one or more activities anticipated to occur in either a hydrogen production or refuelling facility, but the provision is regulating

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an analogous activity, and there may be arguments that the statutory provision 'should' apply in a best practice approach.

It is important to note that the draft Regulator Matrix is intended only to provide a summary of the application of Australia's regulatory framework to hydrogen production and refuelling facilities and to identify the best point of contact in relation to regulatory queries. At this time, the Regulator Matrix is draft only and has not been finalized in respect of the operation of all instruments. Ultimately, the Regulator Matrix will need to be read in the broader context of the National Codes. However, to facilitate the co-design approach to development of the Codes, a preliminary round of documents (including this draft Regulator Matrix) has been released for consultation.

The draft Regulator Matrix is separated into two documents for ease of reading:

1. 'Facility Safety' – this spreadsheet sets out the list of statutory instruments relevant to facility safety
2. 'Environment and Planning' – this spreadsheet sets out the list of statutory instruments relating to environmental obligations, planning approvals, and native title and First Nations cultural heritage.