

Queensland Hydrogen Investor Toolkit April 2024





Copyright

This publication is protected by the Copyright Act 1968.

Licence



This work is licenced by licensed by the Department of State Development and Infrastructure under a Creative Commons Attribution-Non-Commercial-No Derivative Works (CC BY-NC-ND) 4.0 Australia licence. To view a copy of this licence, visit: http://creativecommons.org.au/

You are free to copy, communicate and adapt this publication, as long as you attribute it as follows: © State of Queensland, Department of State Development and Infrastructure, April 2024.

Disclaimer

While every care has been taken in preparing this publication, the State of Queensland accepts no responsibility for decisions or actions taken as a result of any data, information, statement or advice, expressed or implied, contained within. To the best of our knowledge, the content was correct at the time of publishing.



The Queensland Government is committed to providing accessible services to Queenslanders of all cultural and linguistic backgrounds. If you have difficulty understanding this publication and need a translator, please call the Translating and Interpreting Service (TIS National) on telephone 131 450 and ask them to contact the Queensland Department of State Development and Infrastructure on (07) 3452 7100.

Copies of this publication are available on our website at <u>www.statedevelopment.qld.gov.au</u> and further copies are available upon request to:

Department of State Development and Infrastructure PO Box 15009 City East Queensland 4002 Phone: 13QGOV (13 74 68) Email: <u>info@dsdilgp.qld.gov.au</u> www.statedevelopment.qld.gov.au

Contents

1.0	Introduction	4
1.1	Background	
1.2	Purpose	4
2.0	Investor enquiries	4
3.0	Key considerations in Queensland	5
4.0	Choosing a site	6
4.1	Land tenure	6
4.2	Freehold land	6
4.3	Non-freehold land	6
4.4	Unallocated state land	6
5.0	State Development Areas	6
6.0	Economic Development Queensland	7
7.0	Renewable energy	7
8.0	Regulatory processes for development in Queensland	8
8.1	Development assessment	8
8.2	State Development Areas	9
8.3	Local government planning schemes	9
8.4	State Assessment Referral Agency	9
8.5	Coordinated projects	
8.6	Prescribed projects	10
8.7	Pipeline Licence	11
9.0	Safety and environmental regulation	11
9.1	Environmental regulation and thresholds	11
9.2	Safety regulation and thresholds	13
9.3	Wastewater	15
10.0	First Nations Participation	16
10.1	Government is seeking to reframe the relationship	16
10.2	Land, sea and culture rights	16

10.3	Maximising Indigenous businesses participation	17
10.4	Indigenous workforce participation	17
11.0	Water	. 18
12.0	Vehicles	. 18
13.0	Examples of other approvals that may be required	. 19
14.0	Useful resources and contacts	. 22

1.0 Introduction

1.1 Background

Around the globe hydrogen has a growing role in the drive to decarbonise energy markets and the demand for renewable hydrogen is growing rapidly. Hydrogen has many potential applications including providing emission-free fuel sources, electricity grid stabilisation and various industrial applications.

Already recognised as one of the world's great energy commodity exporters, Queensland is well positioned for the production and export of hydrogen having access to significant renewable resources, land and established ports.

The Queensland Hydrogen Industry Strategy 2019-2024 (QHIS)¹ was released by the Queensland Government in May 2019. The objective of the strategy is to drive the development of an economically sustainable and competitive hydrogen industry that creates economic growth, opportunities for new export markets and generates the highly skilled jobs of the future, while supporting the transition to a low-emission economy.

The National Hydrogen Strategy was released by the COAG Energy Council in November 2019 and is available here: <u>Australia's National Hydrogen Strategy - DCCEEW</u>.

1.2 Purpose

The Queensland Hydrogen Investor Toolkit (the toolkit) responds to two actions from the QHIS:

- Action 2.1 of the QHIS is to 'Prepare an investor toolkit to assist private sector proponents with information on developing projects in Queensland' and
- Action 2.2 to 'Provide project facilitation services, including investment facilitation and the application of the powers of the Coordinator-General, to eligible project proponents.

The toolkit has been prepared to assist investors with project planning for hydrogen developments in Queensland. It provides an overview of the planning and other regulatory approvals information in Queensland. Application of this toolkit is most relevant during the feasibility phase of a project, prior to final site selection and design.

This toolkit focuses on 'renewable hydrogen' produced from renewable energy via electrolysis. Not all sections of this toolkit will be relevant to all proposals. It provides general information, contacts and references to seek further detailed assistance. It is advised to seek professional advice in relation to proposals.

It is important to note that this investor toolkit will not be a static document. It will be regularly updated as new information emerges from engagement with project proponents and direct experience with hydrogen projects, as well as regulatory reform initiatives progressed by the government.

For information on renewable hydrogen projects in Queensland that are public, please refer to <u>Queensland</u> <u>Hydrogen Projects</u> and for <u>coordinated projects</u> under the *State Development and Public Works Organisation Act* 1971 (the State Development and Public Works Organisation Act)

2.0 Investor enquiries

Project facilitation support is provided across government. Agencies and business units with an active role include Economic Development Queensland, Office of the Coordinator-General, Queensland Treasury and the Department of Energy and Climate. The Department of State Development and Infrastructure also has sectoral teams and 14 regional offices across Queensland who have detailed local knowledge and are available to provide support at a regional level. Proponents with proposals for hydrogen developments are encouraged in the first instance to contact the department at hydrogen@qld.gov.au. Investment attraction and project facilitation services include:

• Assistance with identifying suitable locations and sites;

¹ <u>Queensland Hydrogen Industry Strategy (statedevelopment.qld.gov.au)</u>

- Information on local supply chains, potential industry partners and market intelligence;
- Information on eligible funding programs;
- Pre-lodgement meetings to discuss and plan approval pathways for projects with (or enquiring about) state referral matters.

The Coordinator-General is an authority to strengthen facilitation and expedite the delivery of large-scale and complex projects which will deliver new jobs and promote investment in Queensland. The Coordinator-General has a range of powers under the *State Development and Public Works Organisation Act 1971*. The Office of the Coordinator-General works with private sector project proponents to facilitate, develop, assess and manage major project development across the State.

The Office of the Coordinator-General has experience in facilitating the establishment of new industry in Queensland and played an important role in the efficient establishment, assessment and development of the LNG industry in Queensland, through the use of a range of powers under the State Development and Public Works Organisation Act.

3.0 Key considerations in Queensland

The approvals pathways for hydrogen projects will vary significantly depending on the nature and scale of the proposal, the intended location and other factors such as storage options, hydrogen carrier, transportation and use.

Some projects may be located and be of a nature and scale that will have minimal impacts and therefore require little assessment, while others may be complex and require detailed assessment through State and Australian Government processes. As a project proponent, you need to consider planning and environmental requirements under the relevant Australian, Queensland and local government legislation applying to the site.

Project proponents are encouraged to contact the Queensland Government as early as possible to discuss their proposal. There are a range of project facilitation services available that can assist a proponent with identifying the optimal location for a proposed development, advice on potential assessment and approval pathways and ensuring the proponent allows sufficient time in the project plan for the assessment and approval processes.

Initial inquiries can be directed to <u>hydrogen@qld.gov.au</u>. Contact details have also been provided for inquiries specific to planning approvals, land tenure, safety and other relevant issues in Section 14 of this document.

Other initial considerations for hydrogen proposals may include:

- surrounding sensitive land uses
- the zoning of the site (industrial, rural, strategic port land etc)
- existing approvals and constraints over the site
- access to appropriate transport infrastructure
- access to existing gas pipeline network
- proximity to ports for export opportunities
- capacity of surrounding area to accommodate new pipelines (if proposed)
- access to other services such as water, sewerage etc.
- access to skilled workforce
- risk factors and mitigation
- potential for co-location with proposed renewable energy projects.

4.0 Choosing a site4.1 Land tenure

The tenure of land in Queensland may be defined under two broad headings—freehold and non-freehold. Land tenure can be searched under the <u>Queensland Globe mapping system</u> (under the layer 'planning cadastre').

4.2 Freehold land

Approximately a third of land in Queensland is freehold land. Freehold land can be owned outright with no time limit. However, minerals or petroleum in Queensland are generally reserved to the State and the use of the land may be controlled by further legislation.

Freehold land is recorded in the Freehold Land Register and not ordinarily subject to native title considerations, however advice on native title should be sought. In general, it is viewed that freehold land provides the greatest security of tenure for investors.

4.3 Non-freehold land

Non-freehold land is land under the control of the State of Queensland, but may be subject to a lease, license or permit, reserved for a community purpose, dedicated as a road or subject to no tenure at all. *The Land Act 1994* (the Land Act) applies to non-freehold land and is administered by the Department of Resources (DR).

A term lease, perpetual lease or freehold lease may be granted over State land. A road license and a permit to occupy are available for shorter term, specific occupation. A term lease is granted for a set period of time (between 1–100 years) while perpetual leases have no fixed term and are issued for a specific purpose such as grazing. A freeholding lease is where the landholder previously held a grazing homestead perpetual lease, special lease or a non-competitive lease and agrees to purchase the land and pay the State via instalments over a number of years.

4.4 Unallocated state land

Under Schedule 6 of the Land Act unallocated state land is all land that is not:

- a) freehold land, or land contracted to be granted in fee simple by the State; or
- b) a road or a reserve, or a national park, conservation park, State forest or timber reserve; or
- c) subject to a lease, license or permit issued by or for the State, other than a permit to occupy under the Land Act issued by the chief executive.

There are a number of criteria to convert unallocated state land to freehold or to grant a lease over unallocated state land. In general land cannot be converted without competition or undertaking a 'most appropriate use assessment' and native title must also be considered.

5.0 State Development Areas

State Development Areas (SDAs) are clearly defined areas of land planned and managed by Queensland's Office of Coordinator-General to promote economic development in Queensland. SDAs are established by regulation. A number of these are established to support major industrial developments in close proximity to trading ports e.g. Gladstone, Townsville, Abbot Point.

SDAs are typically one of the following:

• industrial hubs for large-scale, heavy industry - mainly located on the coast of Queensland, close to ports, rail and major road networks

- multi-user infrastructure corridors for the co-location of infrastructure such as rail lines, water and gas pipelines, and electricity transmission lines
- major public infrastructure sites for example, the Queensland Children's Hospital.

Each SDA is subject to a development scheme which is a regulatory document that controls the planning and development in an SDA. Where the development scheme is silent on matters, other planning instruments (such as local planning schemes and other State legislation) are applicable. There are currently <u>12 SDAs in Queensland</u>.

The Coordinator-General can acquire land within an SDA to provide for the establishment of industry. For example, the LNG industry in Queensland was established with assistance of the Coordinator-General's powers to acquire land in the Gladstone SDA and the Callide Infrastructure Corridor SDA.

For further information on State Development Areas contact:

Email: sdainfo@coordinatorgeneral.qld.gov.au

Phone: 1800 001 048 (business hours 8.30 am to 5.00 pm Monday to Friday).

6.0 Economic Development Queensland

Economic Development Queensland (EDQ) is the Queensland Government's specialist land use planning and property development unit. They work with local governments, industry and the community to identify growth opportunities and deliver infrastructure and property projects for Queensland's economic benefit. EDQ operates under the *Economic Development Act 2012* (The Economic Development Act) and is a commercial business unit within DSDI.

The EDQ property portfolio includes almost 20,000 hectares of industrial land which they develop, sell and manage. This includes land located within SDAs across Queensland. EDQ also manages development projects in some Priority Development Areas (PDAs). PDAs are declared by the Minister for Economic Development Queensland and are parcels of land identified for development to deliver significant benefits to the community.

For further information on Economic Development Queensland contact:

Email: edq@dsdilgp.qld.gov.au

Phone: 07 3452 7880 (business hours 8.30 am to 5.00 pm Monday to Friday)

Web: Economic Development Queensland | State Development and Infrastructure

7.0 Renewable energy

The QHIS focuses on renewable hydrogen production to meet both domestic demand and international customers. Information on renewable energy resources is available through the <u>Australian Renewable Energy Mapping</u> <u>Infrastructure</u>.

Detailed information on electricity generation in Queensland (including proposed, under construction or existing generation) is available here: <u>Power plants map of Queensland (epw.qld.gov.au)</u>.

When planning or commencing a renewable energy project, you must obtain access to suitable and available land and follow the relevant development assessment processes. Detailed information is available here: <u>Renewable</u> <u>energy project planning and approvals | Business Queensland</u>. This covers the assessment process for both wind farms and large-scale solar projects.

Your project may also require a connection to the energy network. Depending on the project's size and energy demands your connection will be managed by either an electricity distributer such as Energy Queensland (Ergon Energy, Energex) or Essential Energy (<50MW) or, for larger projects (>50MW), through Powerlink who manage Queensland's transmission network. See this link: <u>Connecting to the Transmission Network | Powerlink</u> for information about the process of connecting to the transmission network.

The Queensland Farmers' Federation (QFF) has partnered with the Queensland Government to develop the Queensland Renewable Energy Landholder Toolkit (the Toolkit). The Toolkit provides information and practical guidance for landholders considering becoming a host to renewable energy projects. The Toolkit provides general background information and considerations for landholders who may be reviewing commercial agreements to host

renewable energy infrastructure on their property as well as for those landholders who are at subsequent stages of development. The toolkit can be found here: <u>QFF-Renewable-Energy-Toolkit-June23 web.pdf</u>

8.0 Regulatory processes for development in Queensland

There are various development assessment pathways in Queensland depending on the scale, complexity and location of a project. Development applications are usually assessed by the local government, while projects requiring multiple complex approvals may be eligible for management and assessment by the Coordinator-General. Development applications in SDAs are assessed by the Coordinator-General.

8.1 Development assessment

A planning approval is required when undertaking 'assessable development'. Development is not limited to just construction and can also occur when changing the use of the land, even if the use is located within the confines of existing built structures (constituting a material change of use).

The main types of development (further defined in the *Planning Act 2016* - the Planning Act) include:

- making a material change of use a new use of a building, structure or land, or intensifying an existing use (e.g. expanding a service station, or developing a new industrial use on land that was previously a house on a rural lot)
- carrying out building work includes building, repairing, altering, underpinning and some excavation
- carrying out operational work making other changes to the land itself (e.g. earthworks, vegetation clearing etc)
- reconfiguring a lot subdividing land, or carrying out other actions such as amalgamating lots or rearranging boundaries
- carrying out plumbing and drainage work.

Development applications are made by the 'applicant' and are assessed by an 'assessment manager'. Most commonly the assessment manager is the local council however there are instances where the assessment manager is not the local government. Schedule 8 of the *Planning Regulation 2017* (the Planning Regulation) identifies the assessment manager for different types of development.

All development applications go through a process of assessment (the 'DA process') resulting in a decision. The DA process is outlined by the Development Assessment Rules (statutory instrument). The application may also be assessed by a referral agency for specific matters and this process is further described below.

There are three categories of development applied by local governments through their planning schemes. Local governments may apply different levels of assessment to development types in their local area.

The three categories (or levels) of development are:

- prohibited applications for these circumstances cannot be made as these types of developments are not permitted
- accepted does not require an application to be made (may need to meet certain requirements outlined by local governments)
- assessable requires an application to be made and a development decision to be issued. There are two types of assessable development:
 - o code assessable no public consultation required
 - o impact assessable public consultation required

8.2 State Development Areas

Development Schemes regulate planning and development within a State Development Area (SDA) and:

- specify the development assessment process for SDA applications, change applications and requests
- specify development outcomes to be achieved
- outline a range of administrative matters relative to development in an SDA.

An SDA development scheme overrides local and State government planning instruments for development that is regulated by the scheme. Development not regulated by a development scheme is currently regulated under the *Planning Act 2016* (Planning Act) or in cases where Strategic Port Land applies, under a Land Use Plan prepared in accordance with the *Transport Infrastructure Act 1994*. In some instances (where a proposal has the potential to impact on matters of national environmental significance) assessment by the Australian Government may also be required.

All SDA development schemes regulate material changes of use (MCU) however some development schemes also regulate other processes relative to MCUs such as operational works (OWs) and reconfiguring a lot (RaL). Development schemes also contain processes for change applications for SDA approvals, requests to state a later currency period, requests to change an SDA application, and requests for prior affected development. More on SDAs is available here: <u>State development areas | State Development and Infrastructure</u>.

8.3 Local government planning schemes

Local governments prepare planning schemes to advance State and regional policies through more detailed local responses (in addition to other requirements under the Planning Act).

Planning schemes set out zones, tables of assessment and codes which outline the criteria which development applications are assessed against (in the 'DA Process').

Generally, an impact assessable application will take more time (sometimes significantly more time) to assess than a code assessable application. Public notification calls for the public to make submissions relating to the proposal which are then considered as part of the decision-making process. Submitters, who have made a properly made submission on impact assessable development applications also have the right to appeal to the court about the decision.

It is recommended that applicants take advantage of local governments pre-lodgement services to gain an understanding of the requirements and assessments related to their proposals that is specific to the local government area it is to be located in.

Queensland Government has issued guidance for local government in plan drafting for hydrogen developments.

More on the development application processes can be found at <u>Development assessment | Planning</u> (statedevelopment.qld.gov.au).

8.4 State Assessment Referral Agency

The Planning Regulation prescribes when certain types of development require referral to the State for assessment (e.g. development in proximity to state controlled roads, clearing of certain vegetation, development affecting waterways etc). The State Assessment and Referral Agency (SARA) provides a whole-of-government approach to this assessment, by facilitating specialised technical input from a range of state agencies. There are some limited circumstances where SARA may also be the assessment manager for an application and in these cases the application is made directly to SARA. Referral of development applications to SARA must be made through its electronic lodgement system MyDAS2.

The State Development Assessment Provisions (SDAP) provides assessment benchmarks to assess applications where the State is the referral agency (or assessment manager). For example, the relevant SDAP code detailing assessment benchmarks for the development of 'hazardous chemical facilities' is State code 21: Hazardous chemical facilities (see Table 1 of this document for further information).

SARA also offers a free pre-lodgement service to provide advice about elements of the proposal that will trigger state assessment and how proposals are assessed against the relevant performance benchmarks, prior to submitting an application. SARA is positioned within the Department of Housing, Local Government, Planning and Public Works (DHLGPPW).

More information on SARA's role in the development assessment process can be found here: <u>Planning</u> (<u>statedevelopment.qld.gov.au</u>).

8.5 Coordinated projects

The Office of the Coordinator-General uses powers under the State Development and Public Works Organisation Act to evaluate large scale, regionally significant and complex projects, which are declared a coordinated project. The Coordinator-General ensures that environmental, social and economic impacts of coordinated projects are properly managed.

Coordinated projects play a key role in the minerals, energy, manufacturing, transport, tourism, agricultural and infrastructure sectors. Coordinated projects are typically large and complex with the potential to generate significant impacts and benefits that require a comprehensive and coordinated whole-of-government assessment. Declaration of a coordinated project also allows for a more efficient and effective assessment of matters of national interest, via the bilateral agreement between the Queensland and Australian Governments.

A proponent of a project with one or more of the following characteristics may apply to have it declared a 'coordinated project' under the State Development and Public Works Organisation Act:

- complex approval requirements, involving local, state and or federal governments
- significant environmental effects
- strategic significance to the locality, region or state, including for the infrastructure, economic and social benefits, capital investment or employment opportunities it may provide
- significant infrastructure requirements.

The proponent of a coordinated project must prepare an environmental impact statement (EIS) or impact assessment report (IAR). The Office of the Coordinator General is available to meet with proponents to discuss proposals, the approvals pathways and the process of assessment. Further information about coordinated projects and the Office of the Coordinator General is available here: Planning (statedevelopment.qld.gov.au).

The coordinated project assessment pathway sets clear expectations for environmental assessment. For coordinated projects requiring an EIS, project-specific Terms of Reference, outlining assessment requirements, are developed. Terms of Reference may adopt international standards where there is no relevant State or National standards (e.g. hydrogen technologies and/or standards). Terms of Reference are developed in conjunction with proponents and may include public consultation before finalisation by the Office of the Coordinator-General.

Importantly, in evaluating the impacts of coordinated projects, the Office of the Coordinator-General may set conditions to be included in subsequent local, state and Australian Government approvals.

8.6 Prescribed projects

The Minister responsible for administering the State Development and Public Works Act may, by Gazette Notice, declare a project to be a 'prescribed project'. A prescribed project is one which is of significance, particularly economically and socially, to Queensland or a region.

The types of projects that may be declared prescribed projects include:

- a project in a state development area
- an infrastructure facility (as defined in the State Development and Public Works Organisation Act)
- a project declared a 'coordinated project'
- another project the Minister considers is economically or socially significant to Queensland or the region in which the project is to be undertaken or affects an environmental interest of Queensland or a region.

A prescribed project declaration enables the Coordinator-General, if necessary, to intervene in state and local government approval processes to ensure timely decision-making for the prescribed project.

The Coordinator-General may give notices to a decision-maker for making a decision on the development of a prescribed project to ensure that the assessment process proceeds without undue delay.

This decision-maker may be a state government agency, local government or a government-owned corporation responsible for providing approvals, permits or authorities. The Coordinator-General cannot issue a notice relating to a decision to be made by the Governor in Council or a minister, or decisions outside Queensland.

For prescribed projects, the Coordinator-General can issue a:

- progression notice, which requires the decision-maker to 'progress' the administrative processes necessary to complete the assessment process
- notice to decide, which requires the decision-maker to make the relevant decision within a specified timeframe
- step in notice, which allows the Coordinator-General (with the Minister's approval) to 'step in' and assume responsibility for assessing and deciding on a project, in place of the decision-maker.

8.7 Pipeline Licence

Changes to the *Petroleum and Gas (Production and Safety) Act 2004* and *Gas Supply Act 2003* were made at the end of 2023 that extended existing pipeline provisions to apply to the transmission of hydrogen and other hydrogen carriers. These changes will expressly authorise hydrogen and other renewable gases to be transported via a *Gas Supply Act 2003* distribution pipeline licence and provide for hydrogen and hydrogen carriers to be transported under a *Petroleum and Gas (Production and Safety) Act 2004* pipeline licence.

Pipelines transporting hydrogen and hydrogen carriers can be constructed and operated under a licence prescribed under Part 2 of the *Petroleum and Gas (Production and Safety) Act 2004.*

The pipeline licence gives the licensee the right to construct and operate the pipeline on designated 'pipeline land'. This is defined as land that you either own or over which you have:

- an easement
- a written agreement with the landowner to enter to construct and operate the pipeline, or
- a Part 5 permission.

Further information on this process can be found here: Pipeline and facility licences.

9.0 Safety and environmental regulation

9.1 Environmental regulation and thresholds

Environmentally Relevant Activities (ERAs) are outlined in the Environmental Protection Regulation 2019 (the Environmental Protection Regulation) and where forming part of a development application are made through SARA. Standalone ERAs can be applied for directly to the Department of Environment and Science (DES). Where hydrogen production or storage is proposed as part of an existing development (with current ERAs), it is possible that this new activity may fit into existing approvals. It is recommended that this be determined through a pre-lodgement meeting with SARA.

Thresholds are also prescribed under other acts and regulations. Note that fees are typically associated with applications, permits and licenses and cost is often determined by the scale of proposal.

ERAs that may be triggered are outlined in the following table. It should be noted that this list has been developed based on 'typical' investment interest to date and is not intended to be exhaustive. Proponents are encouraged to contact SARA as early as possible and seek advice on potential ERAs that may apply.

Table 1 – Potential hydrogen ERA triggers and thresholds

Link to the regulation: Environmental Protection Regulation 2019 (legislation.qld.gov.au)

ERA 7 Chemical manufacturing	Organic chemicals:		Inorganic chemicals:		
(part 2 of schedule 2, Environmental Protection Regulation)	Threshold	Aggregate Environmental		Threshold	Aggregate Environmental
'Chemical manufacturing' is		Score			Score
defined as manufacturing 200t or more in a year.	200t to 1,000t	30		200t to 1,000t	56
No approval is required for chemical manufacturing under 200t (unless specifically referred to in the Environmental Protection Regulation).	More than 1,000t to 10,000t	66		More than 1,000t to 10,000t	115
For instances where multiple chemicals are manufactured a cumulative threshold may	More than 10,000t to 100,000t	139		More than 10,000t to 100,000t	200
apply. Pre-lodgement meetings with SARA are encouraged to determine if an ERA is applicable.	More than 100,000	202		More than 100,000	268

ERA 8 Chemical storage	Organic chemica	s:	Inorganic chemica	als:
(part 2 of schedule 2, Environmental Protection		1	Γ	
Regulation)	Threshold	Aggregate Environmental	Threshold	Aggregate Environmental
<i>'Chemical storage'</i> is defined as storing (in containers of at least		Score		Score
10m ³) 200t or more of solids or gases or/and 200m ³ of liquids.	Storing 200t or more of	31	Storing 200t or more of	31
Note: The Environmental Protection Regulation points to the Australian Dangerous Goods Code to define the 'class' of chemical. Hydrogen (compressed, refrigerated liquid and fuel cell cartridges containing hydrogen in metal hydride) are defined as Class 2, division 2.1.	chemicals that are solids or gases, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)		chemicals that are liquids, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)	
For instances where multiple chemicals are stored a cumulative threshold may apply. Pre-lodgement meetings with SARA are encouraged to determine if an ERA is applicable.				

9.2 Safety regulation and thresholds

Petroleum and Gas (Production and Safety) Act 2004

Operations where hydrogen is used or intended to be used as a fuel source to generate heat, light or power (including vehicles) are regulated by the *Petroleum and Gas (Production and Safety) Act 2004* (the Petroleum and Gas Act). The Petroleum and Gas Act is administered by Resources Safety and Health Queensland (RSHQ).

RSHQ regulates gas safety for:

- pipelines and distribution of hydrogen for use as a fuel
- hydrogen refuelling stations
- hydrogen gas appliances (using hydrogen blends or pure hydrogen)
- fuel cells in hydrogen vehicles and other applications

RSHQ has prepared a <u>Hydrogen Safety Code of Practice</u> to inform industry of specific safety approvals and requirements for hydrogen fuel gas when it is supplied, stored, transported, and for devices and systems using hydrogen as a fuel. The Code will also inform proponents about what they need to do to comply with safety requirements.

Please contact the Petroleum & Gas Inspectorate to discuss requirements specific to a proposed project at:

HydrogenSafety@rshq.qld.gov.au.

Table 2 below outlines Petroleum and Gas Act requirements for hydrogen applications.

Table 2 – Petroleum and Gas Act

Potential Application	 Petroleum and Gas Act Provision chapters 7-9 of the Act chapters 5-7 of the Petroleum and Gas (Safety) Regulation 2018
 Pipelines and fuel gas distribution: blending hydrogen into a natural gas network¹ pure hydrogen pipelines pure hydrogen gas systems hydrogen fuel stations ¹ Hydrogen blended in the gas network at up to 10% is not likely to require any change to appliances or requirements for current users of the gas network. 10% hydrogen is within allowances of current Australian standards. 	 Distribution of hydrogen as a fuel gas (including fuel stations) and in pipelines triggers 'operating plant' obligations including: Information notices (safety executives, plant commissioning) – section 694A a safety management system - section 674 keeping risk to an acceptable level – section 699 compliance with relevant safety requirements – section 669 and section 708A incident reporting – section 706
Hydrogen refuelers	Hydrogen fuel stations are 'operating plant' and require a Safety Management System as outlined in s675 of the Petroleum and Gas Act.
 Gas appliances using hydrogen as a fuel: a combustion engine or another gas fired appliance fuel cells in a vehicle or a drone and other applications 	Section 731AA requires approval of gas devices for supply, installation or use, including gas devices using hydrogen as a fuel. Use of hydrogen as a fuel in a gas appliance requires the installer to have a <u>gas work licence</u> (gas device type A) or a gas work authorisation (gas device type B) – section 726 and section 727.

Workplace Health and Safety Act 2011

The *Work Health and Safety Act 2011* (WHS Act) and the Work Health and Safety Regulation 2011 (WHS Regulation), administered by Work Health and Safety Queensland (WHSQ), Office of Industrial Relations OIR), outlines duties for all workplaces. The health and safety requirements apply to hydrogen projects regardless of the hydrogen lead regulator. These include: hazardous chemical requirements, pressure vessel requirements, duty of care requirements etc.

In addition, WHSQ are the lead regulator for all major hazard facilities in Queensland. Schedule 15 of the WHS Regulation provides that a hydrogen facility storing 10% or more of the threshold may be determined as a major hazard facility. In addition to hydrogen, other chemicals that may be associated with hydrogen, such as ammonia, may trigger the threshold, which may require a material change of use under the planning scheme. For clarity, the major hazard facility trigger is 50t and all projects over 5t (10%) will be referred for assessment as possible major hazard facilities.

It is important that proponents seek advice from OIR as early as possible during the scoping of hydrogen projects, particularly around site selection and location to allow proponents to be better informed about the health and safety requirements before final investment decisions are made.

More information about hydrogen and WHSQ/OIR is provided here: <u>Hydrogen | WorkSafe.qld.gov.au</u>. OIR can be contacted directly via hcfplanning@oir.qld.gov.au for more information.

Table 3 below outlines storage thresholds and workplace health and safety requirements for hydrogen applications.

Table 3 – Hydrogen storage safety thresholds

Major hazard facilities			Major hazard facilities are managed by	
Schedule 15 of the Workplace Health and Safet	Chemical	Threshold	the Office of Industrial Relations (OIR) within Queensland Workplace Health and Safety.	
Regulation	Hydrogen	50t	Projects determined as Major Hazard	
Proposed facilities exceeding the threshold (eg > 50 t of hydrogen) will be major hazard facilities.			Facilities must comply with all parts of chapter 7 <i>Hazardous Chemicals</i> of the WHS Regulation, and part 9.3 <i>Duties of</i> <i>operators of determined Major Hazard</i> <i>Facilities while preparing a safety case</i> <i>and licence application.</i>	
Note:			State code 21: Hazardous chemical	
Aggregation of numerous chemicals stored in one location in addition to hydrogen may trigger the aggregate threshold.			<i>facilities</i> of the SDAP outlines the assessment benchmarks for design, siting and risk mitigation for proposed facilities.	
			Please contact OIR for advice.	
Hazardous chemical facilities	is 50t which mea	uantity for hydrogen ans facilities storing	<i>State code 21: Hazardous chemical facilities</i> of the SDAP outlines the	
Schedule 10, Part 7, Division 1 Planning Regulation.	less than 50t ma	of hydrogen, but ay be subject to an nine <i>if</i> they should ırd facility.	assessment benchmarks for design, siting and risk mitigation for proposed facilities.	
'Hazardous chemical facility' means the use of premises for a			Hazardous chemical facilities are managed by the Office of Industrial Relations (OIR) within Queensland	
facility at which a prescribed hazardous chemical is present or likely to be present in a quantity that			Workplace Health and Safety	

exceeds 10% of the chemical's threshold quantity under schedule 15 of the Work Health and Safety Regulation (WHSR).	OIR considers the maximum storage quantity, the proposed location and proposed design to decide if an inquiry is necessary. An inquiry will be held concurrently with the development assessment process.
	Facilities determined as a major hazard facility on inquiry must prepare a safety case and be licenced (see above). Please contact OIR for advice.

Australian Standards

<u>Australian standards</u> specific to hydrogen use are being developed and adopted by the ME-093 Hydrogen Technologies Committee, in alignment with international standards. This includes <u>information sheets</u> that provide guidance on the application of relevant standards to common hydrogen activities.

Electrical Safety Act 2002

The *Electrical Safety Act 2002* (the ES Act) and the *Electrical Safety Regulations 2013* (ES Regulation), administered by the Electrical Safety Office (ESO) within OIR apply to the application of a hydrogen plant.

Electrical safety matters are dealt with under the ES Act. These include:

- licensing of electrical workers and contractors,
- duties of persons in control of electrical equipment necessary for the operation of a hydrogen plant
- duties of a person conducting a business or undertaking who manufactures, designs, imports or supplies electrical equipment, and
- duties of electricity entities

During the construction phase of a hydrogen plant and prior to connecting or reconnecting to an electricity source, any high voltage electrical installation or an electrical installation in hazardous areas must be inspected by a Queensland Accredited Auditor.

Accredited auditors are appointed under Section 129 of the ES Act. Only an accredited auditor is authorised to satisfy the regulatory inspection requirements for inspections for high voltage installations or electrical installations in hazardous areas.

Section 225 of the ES Regulation deals with 'generation plant for interconnection of works of electricity entity'. The ES regulation requires a person to comply with the electricity entity's conditions for ensuring safe and stable parallel operation of the private generating plant with the works of the electricity entity.

Applicable Australian standards that may apply are as follows:

- AS/NZS 60079 series Explosive atmospheres (FYI this standard set out the requirements for the design, selection and installation of electrical equipment in hazardous areas)
- AS/NZS 3000 Wiring Rules
- AS/NZS 3820 Essential safety requirements of electrical equipment
- AS/2067 Substations and high voltage installations exceeding 1 kV a.c.

For further information refer to the Worksafe Queensland website: <u>Home | WorkSafe.qld.gov.au</u>.

9.3 Wastewater

The production of hydrogen by electrolysis requires high purity water with most production systems requiring demineralised water. The water purification process results in a wastewater stream with the volume and water quality dependent on the nature of the raw water supply. The wastewater will typically have slightly elevated concentrations of dissolved salts with industry estimates for Total Dissolved Solids (TDS) in the range of 1,000 –

3,200 mg/L. Potable or drinking water typically has TDS <600mg/L with a TDS >1,200 mg/L considered unacceptable for taste reasons (<u>https://www.nhmrc.gov.au/guidelines-publications/eh52</u>). Other chemicals may be used in the process for the purposes of cleaning the membranes, neutralising chlorine and as an anti-scalant with trace residuals left in the wastewater. Additional water is used in the production of hydrogen via electrolysis particularly for cooling.

Further information in relation to water use for the production of hydrogen is available here.

When developing a hydrogen project, the management of wastewater that is generated is an important consideration that should be addressed early in the design of the project. Proponents will be expected to provide detailed information about the volume and quality of wastewater expected to be produced and how the wastewater will be managed. This includes the management of saline waste from water treatment processes.

Wastewater can only be disposed of as permitted by a licence under the <u>Environmental Protection Act 1994</u> (EP Act) which is administered by the Department of Environment, Science and Innovation (DESI). Further information in relation to wastewater management is available <u>here</u>. This includes advice for industry in relation to how to manage wastewater effectively including:

- avoid generating unnecessary wastewater,
- minimise the amount of water used,
- minimise the strength of contaminants,
- treat and re-use wastewater,
- use evaporation ponds,
- dispose of wastewater to the sewerage system (with local government approval), and
- treat wastewater before discharge to waterways or the ocean.

You can request a pre-lodgement meeting with DESI by completing and returning the form <u>Application for pre-lodgement services (ESR/2015/1664 and ESR/2023/6440)</u>. If you have any questions or for more information, contact Permit and Licence Management on 1300 130 372 (select option 4) or by emailing <u>palm@des.qld.gov.au</u>.

10.0 First Nations Participation

10.1 Government is seeking to reframe the relationship

The Queensland Government is committed to reconciliation between Aboriginal and Torres Strait Islander peoples and non-Indigenous Queenslanders. The government's expectation of companies is that they will commit to a similar vision. Leading companies have already developed reconciliation action plans in consultation with Reconciliation Australia. More information about this can be found here: <u>Home - Reconciliation Australia</u>.

The Australian Government has developed interim guidance - *Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999*. This outlines expectations of the Australian Government from proponents regarding respectful and effective engagement with First Nations people and communities as part of the referral, assessment, and approval process under Chapter 4 of the EPBC Act.

The document is a useful guide for engaging with First Nations people, forming partnerships, and working towards shared decision making. The document can be found here: <u>Interim Engaging with First Nations People and</u> <u>Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act</u> <u>1999 (dcceew.gov.au)</u>

10.2 Land, sea and culture rights

Early engagement with relevant parties is strongly encouraged during project conception to suitably understand time frames and requirements. Aboriginal and Torres Strait Islander peoples are in some circumstances identified as the decision-making partners in projects taking place on Country via strong partnerships and meaningful engagement. There are legal obligations to comply with under the *Native Title Act 1993*, the *Aboriginal Cultural*

Heritage Act 2003 and the *Torres Strait Islander Cultural Heritage Act 2003* and more information about approval requirements can be found in Table 5 of this document.

Prescribed Bodies Corporate (PBCs) are a group of people chosen by native applicants to manage their rights and interests before a decision is made by the court. After a native title decision is made, the PBC becomes a Registered Native Title Bodies Corporate (RNTBC). Under the *Native Title Act 1993* (NTA) these groups hold, protect and manage native title in their specific area. PBCs look after country and culture according to the wishes of the members and native title group. You can find the relevant PBC for your project by searching here: <u>Find a PBC | PBC (nativetitle.org.au)</u>.

Further information about cultural heritage, Native Title, leasing Indigenous land, Indigenous water reserves etc can be found on these websites: <u>Environment, land use and native title | Aboriginal and Torres Strait Islander</u> peoples | Queensland Government (www.qld.gov.au) and <u>Getting started with the native title work procedures |</u> Queensland Government (resources.qld.gov.au)

10.3 Maximising Indigenous businesses participation

The Queensland Government expects that project proponents will maximise the opportunity for Indigenous business participation in projects. Procurement processes are expected to provide a fair and equitable opportunity for Indigenous businesses to participate in your supply chain. Companies can also register with organisations such as <u>Supply Nation</u> to assist with building Indigenous businesses into supply chain or search the <u>Black Business</u> <u>Finder</u>. This can assist with identifying Indigenous-owned businesses in the area.

10.4 Indigenous workforce participation

The Queensland Government expects that project proponents will maximise opportunities for Indigenous participation in the workforce and improve employment outcomes. <u>Paving the Way – First Nations Training</u> and Skills Development Strategy was released in September 2022 and aims to develop skills relevant to the local needs of First Nations people and their communities.

The Queensland Government's expectations are that proponents will voluntarily establish targets and work with regional stakeholders on strategies to increase employment and training of Indigenous peoples. Initiatives may include developing vocational training programs such as skills-based apprenticeships, Indigenous leadership courses and other employment initiatives leading to sustainable career pathways.

There are a range of government incentives, programs and packages available for businesses to assist with employing First Nations people and more on this can be found here: <u>Employing Aboriginal and Torres Strait</u> <u>Islander people | Business Queensland</u>. The Youth Employment Program (YEP) is an employment support program targeting Aboriginal and Torres Strait Islander people in Queensland who are finishing school and looking for work. The YEP can support you by providing access to a pool of job ready applicants and assist with matching suitable applicants for the job. For more information about YEP, contact your nearest <u>DSDSATSIP regional office</u> or email yep@dsdsatsip.qld.gov.au.

An action under the Hydrogen Industry Workforce Development Roadmap 2022-2032 is to expand the Gateway to Industry Schools Program (GISP) to create hydrogen jobs pathways and increase student engagement with industry. Further information about hydrogen initiatives under this program is available here: <u>Hydrogen |</u> <u>Department of Youth Justice, Employment, Small Business and Training (desbt.qld.gov.au)</u>.

Examples of initiatives to maximise Indigenous employment and business participation by industry partners that are progressing hydrogen projects in Queensland include:

Fortescue Future Industries and PBC traditional owners sign memorandum of understanding to begin establishing long-term relationship | Fortescue Future Industries (ffi.com.au)

Indigenous Employment Pathways Program (glencore.com.au)

Indigenous jobs and careers - Origin Energy

11.0 Water

A water authorisation may be required before taking or interfering with water. An authorisation may be in the form of a water allocation, water license or water permit. A development application may also be required for associated works such as pumps and bores.

Water allocations authorise the holder to take a certain volume of water from a particular source, such as a watercourse or aquifer. Allocations have a separate title, similar to a land title, and can be bought and sold on the <u>water trading market</u>. A water license is an authority granted under the *Water Act 2000 (the Water Act)*.

<u>Water licenses</u> are issued for long-term activities for taking water and are usually attached to land. In some parts of Queensland, water licenses to take water can be <u>relocated permanently or seasonally</u>.

Permits are issued for temporary activities with a foreseeable end date. Permits cannot be relocated, traded, amended, renewed or suspended. Permits specify the location of take, an expiration date and the conditions attached to the permit.

The Department of Regional Development, Manufacturing and Water is available to provide advice on water availability to support the development of the Hydrogen sector in Queensland. To obtain support and advice on the development of hydrogen opportunities please provide details of your project or query to water.investor.hotline@dnrme.qld.gov.au or call 13 QGOV (13 74 68).

12.0 Vehicles

Before a new vehicle can be registered for the first time in Australia, it must meet the requirements of the *Motor Vehicle Standards Act 1989* (the Act). Under the Act, new vehicles are required to be fitted with an identification plate (formerly known as a compliance plate). The identification plate provides a clear indication to the state or territory registering authority – and to the owner and the general public – that the vehicle is ready for use in transport on public roads in Australia.

The Australian Government maintains jurisdiction over road vehicles up to the point of first supply to the Australian market. State and territory governments are responsible for continued regulation after this point (e.g. vehicle registration, roadworthiness, the approval of modifications to vehicles in-service).

Table 4 below outlines options for import approvals and registration of hydrogen fuel cell electric vehicle (HFCEV's) in Australia.

Type Approval If the manufacturer holds Identification Plate Approval from the Department of Infrastructure, Transport, Regional Development and Communications and the Arts (DITRDCA), and the vehicle is fitted with an identification plate, then the access to the road network is available as a matter of right. The manufacturer can obtain an Identification Plate Approval by demonstrating the vehicle type complies with the Australian Design Rules (ADR). Vehicles will need to be registered with a state authority.	Type Approval of a Variant Vehicle In some cases, vehicle types can include known combinations or "variants". For example, a vehicle model with a hydrogen fuel cell (HFC) variant requires the manufacturer to demonstrate the hydrogen fuel system only. Manufacturers may apply to import and register variant models for test and evaluation, through the Evaluation Vehicle Option. State and Territory registering authorities have agreed on arrangements that apply for the registration of test and evaluation vehicles and their use on public roads. A permit from Vehicle Standards, Queensland Department of Transport and Main Roads (DTMR) will be required providing an exemption from	Alternate International Standards In making an application for a type approval (IPA), manufacturers may be able to provide evidence of compliance with United Nations Economic Commission for Europe (UNECE) Regulations where they are referenced as an alternative standard in the ADR. This streamlines the approval process for manufacturers that already meet UN standards. Currently 34 UN regulations are applied in the ADR.
--	---	--

Table 4 – HFCEV Approval Options

Gas System and Device Approval Fuel cells are Type B gas devices under Petroleum and Gas legislation and require approval prior to use in Queensland. Device approval is separate to vehicle approval. For more information contact	with the ADR) or be re-exported. Gas System and Device Approval of a Variant Vehicle The same approval requirements apply for new and variant vehicles. Once approved a vehicle may be sold in Queensland.	International Standards In making an application for a device approval, manufacturers may be able to provide evidence of compliance with United Nations Economic Commission for Europe (UNECE) Regulations and other recognised international standards for fuel cells used in vehicles.
	the requirement to fit an identification plate (as the hydrogen fuelled vehicle won't be fitted with one). After the approved time, the vehicle must either fit a vehicle identification plate (i.e demonstrate that it complies with the ADR) or be re-exported.	

13.0 Examples of other approvals that may be required

Table 5 – Other potential approvals for a hydrogen activity

Approval	Regulator/Authority	Relevance
 Other potential ERAs may include: 14 - Electricity generation 53 - Organic material processing 55 - Other waste reprocessing or treatment 61 - Thermal waste reprocessing 64 - Water treatment. 	Queensland Department of Environment and Science (DES) ERAs 14, 53, 55, 61 and 64 are concurrence ERAs.	Thresholds and details for all ERAs are listed in schedule 2 of the Environmental Protection Regulation.
Carbon capture and storage (CCS)	Queensland Department of Resources (DR)	Governed by the <i>Greenhouse Gas Storage</i> <i>Act 2009.</i> Greenhouse gas storage (or geosequestration) is the storage of captured carbon dioxide (CO2) in underground geological formations or structures. The CO2 is typically produced from the use of fossil fuels in electricity generation and industrial processes. CO2 may also be captured from bio-based processes, and directly from the atmosphere via direct air

		capture. The process is also known as carbon capture and storage (CCS). A company that wants to explore for greenhouse gas storage sites and eventually inject CO2 must first apply for a greenhouse gas exploration permit and an environmental authority. Any native title requirements will also need to be addressed before an exploration permit is granted. More information can be found here: <u>About</u> <u>greenhouse gas capture and storage]</u> <u>Business Queensland</u>
Generation authority (when connecting to a transmission network) and/or distribution authority	Department of Energy and Public Works (DEPW)	A generation authority application may be required as set out in the <i>Electricity Act 1994</i> . A generation authority is required before connecting to the transmission grid or distribution network. DEPW seeks public submissions during the approval process for a generation authority as well as considering any development approval associated with the project. Note: if you operate a generating plant with a
		capacity of 30 megawatts or less you have special approval (under section 130 of the <i>Electricity Regulation 2006</i>) to connect the generating plant to a transmission grid or supply network. In this case, you would not need to hold a generation authority but may rely on the special approval given by regulation.
Retail authority (when selling energy)	Australian Energy Regulator (AER)	As of 1 July 2015, and the commencement of the National Energy Customer Framework (NECF), all retail authorities are administered at a national level by the AER.
Native title	DR For protected areas – DES	The <i>Native Title Act 1993</i> provides for the recognition and protection of native title and establishes the processes in which future dealings affecting native title may proceed such as through Indigenous Land Use Agreements. This may be particularly relevant to proposals in remote or off-grid locations.
Cultural heritage management plan	Queensland Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (DSDSATSIP)	The Aboriginal Cultural Heritage Act 2003 and the Torres Strait Islander Cultural Heritage Act 2003 seek to provide effective recognition, protection and conservation of Aboriginal cultural heritage, including a significant Aboriginal area, object or archaeology. In some cases (including when an Environmental Impact Statement is prepared) a Cultural Heritage Management Plan (CHMP) may be required.

Permits required under the Environmental Protection and Biodiversity Conservation Act 1999 (Environmental Protection and Biodiversity Conservation Act)	Commonwealth Department of Agriculture, Fisheries and Forestry	Under the Environmental Protection and Biodiversity Conservation Act, actions that have, or are likely to have, a <u>significant</u> <u>impact</u> on a matter of national environmental significance require approval from the Australian Government Minister for the Environment.
Other secondary approvals for operational work may be required (i.e. building works,	For building works -local government	A building development approval (or building permit) is needed from the relevant local government before construction can start.
plumbing approvals etc)		The building approval sets out the mandatory inspections required at various stages in the construction process.
	For plumbing approvals - DEPW	The <u>Plumbing and Drainage Act</u> <u>2018</u> governs the approvals for plumbing works and introduced final inspection certificates. A <u>Form 19—Final inspection</u> <u>certificate</u> is used by local government or a public sector entity to certify that the permit work is compliant, operational, and fit for use.

14.0 Useful resources and contacts

Department of State Development and Infrastructure

For general hydrogen project information/facilitation enquires:

Email: hydrogen@qld.gov.au

https://www.statedevelopment.qld.gov.au/industry/critic al-industry-support/hydrogen-industry-development

State Assessment and Referral Agency (SARA)

Email: DApolicy@dsdmip.qld.gov.au

Office of the Coordinator General

Coordinated Project Delivery

Email: cpdinfo@coordinatorgeneral.qld.gov.au

Land Acquisition and Project Delivery

Email: PrescribedProjects@coordinatorgeneral.qld.gov.au

State Development Areas

Email: sdainfo@coordinatorgeneral.qld.gov.au

Economic Development Queensland for Stateowned industrial land enquiries

Email: industrial@dsdilgp.qld.gov.au

Department of Energy and Climate

https://www.energyandclimate.qld.gov.au/about/depart ment/business-areas/hydrogen

Resources Safety & Health Queensland

Petroleum and Gas Inspectorate Email: <u>hydrogensafety@rshq.qld.gov.au</u> Phone: (07) 3199 8027

Office of Industrial Relations

Workplace Health and Safety Queensland

Major Hazard Facilities

Email: hcfplanning@oir.qld.gov.au

Phone: (07) 37385010

https://www.worksafe.qld.gov.au/safety-andprevention/hazards/hazardous-chemicals/specifichazardous-chemicals/hydrogen/_nocache

Department of Transport and Main Roads

Standards and Accreditation

Email: vehiclestandards@tmr.qld.gov.au

Department of Regional Development, Manufacturing and Water

Water Enquiries

Email: water.investor.hotline@dnrme.qld.gov.au



Department of State Development and Infrastructure PO Box 15009 City East Qld 4002 Australia Tel 13 QGOV (13 74 68) info@dsdilgp.qld.gov.au www.statedevelopment.qld.gov.au Connect with us @GrowingQld



