Hydrogen

Strategic Community Engagement Framework

June 2020

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External consultation was not completed to inform this report. The information contained within this report is based upon desktop research and Advisian's direct previous experiences and knowledge.

This report has not been updated to reflect the impacts of COVID-19, as COVID-19 impacts are rapidly evolving (as at 22 June 2020).

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A	Issued for review	R Asnicar E Weatherstone E Miceski	T Graham	D Sezgin	30 June 2020		

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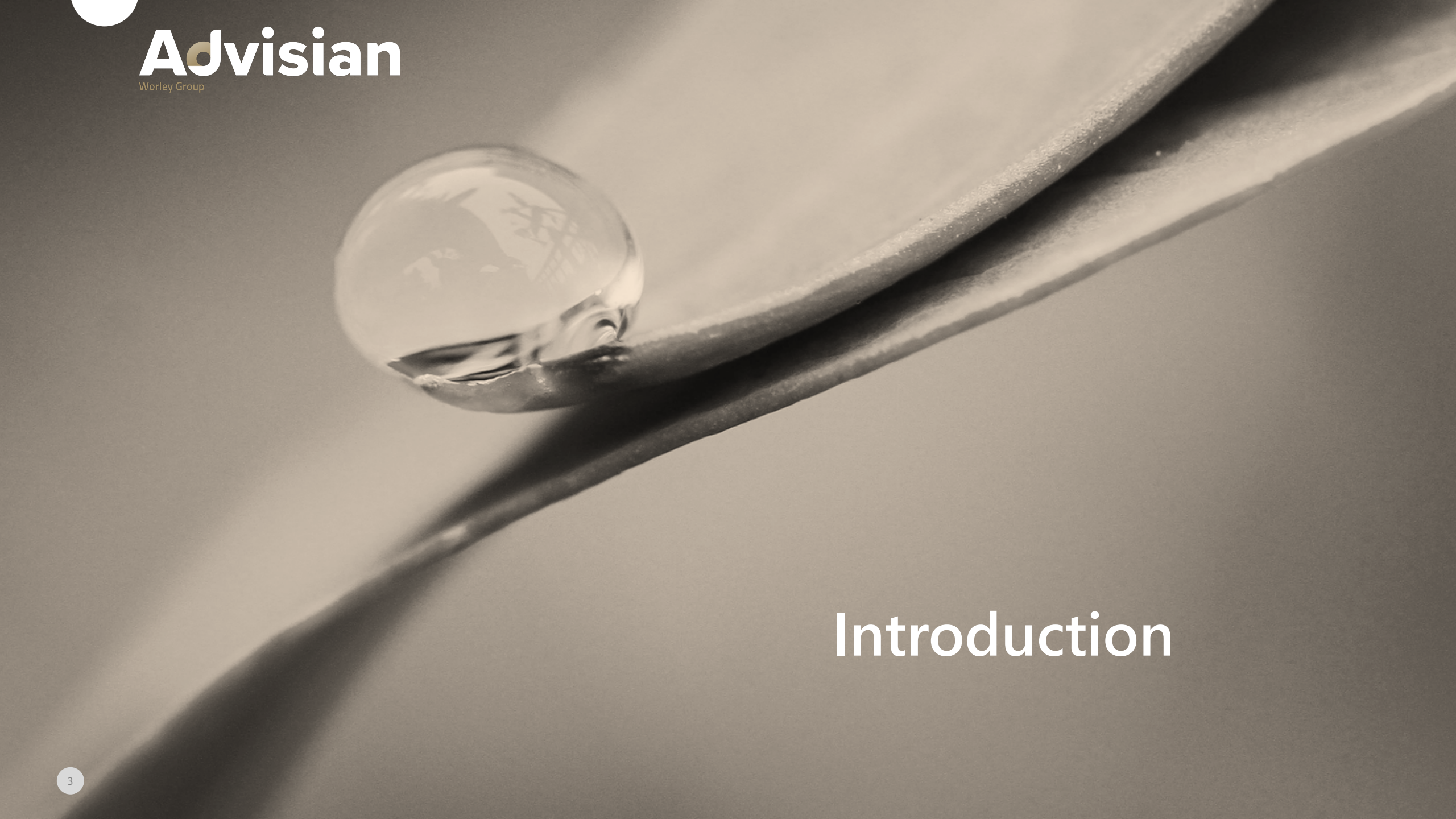

Introduction

Background

Hydrogen has been used industrially for over a century, however it has only recently emerged as a potential key enabler of global decarbonisation, and correspondingly as a key component of Australia's sustainable energy future, given our comparative advantages for the production of low carbon hydrogen.

Low carbon hydrogen comes in two forms – blue hydrogen, involving fossil fuel sources and carbon capture and storage, and green hydrogen, from renewable resources. The elements of both are maturing and at some point may commercially displace high emissions energy sources, which will allow decarbonisation of sectors, including heavy industry and transport. Hydrogen could be an enormous industry, equalling the oil and gas sector in scale. While hydrogen remains challenged by cost competitiveness, in the absence of a carbon price or similar, it may represent a least cost path to decarbonisation.

Australia's hydrogen opportunity has received significant interest from governments, industry and research organisations over the last five years. The Federal Government's Technology Investment Roadmap paper released in May 2020, most recently highlights how well Australia is placed to develop a major hydrogen export sector. Many hydrogen research, trial and demonstration projects are now underway in Australia, aimed at validating the use of hydrogen for a number of applications and to help build local capabilities, which could eventually open new low emission industries. The majority of the proposed hydrogen projects in Australia are in relatively early stages, such as feasibility study and demonstration trials*. Several of these have received or are seeking Australian Government funding through the Australian Renewable Energy Agency (ARENA) and / or funding from state and territory governments.

Reflective of the early stages of the projects, individual hydrogen developers have generally completed fairly targeted stakeholder engagement to date. **To facilitate the successful rapid expansion of the hydrogen industry, hydrogen developers and the government will need to effectively engage communities to build community understanding and acceptance of hydrogen and associated new technologies.** Positive community engagement would be enhanced through the delivery of correct and coordinated communications by industry and government regarding hydrogen development, as well as complementary public consultation approaches.

*As at June 2020.
Sources: ARENA website and various media, as accessed 8 June 2020.

Document purpose

The purpose of this document is to present a Strategic Community Engagement Framework which considers government involvement in the public engagement process regarding hydrogen development in Queensland.

The Community Engagement Framework has been informed by research, leading practice engagement guidance, and lessons learnt from previous Queensland experiences of community engagement regarding new technologies.

The Framework also considers and incorporates engagement activities completed to date regarding hydrogen by industry and government.

The Framework aims to respond to the Queensland Government's Advancing Queensland's Hydrogen Industry publication (September 2018), which states that the Queensland Government *will raise community and industry awareness of the potential for Queensland-made hydrogen…* And requested that the public respond to two key questions to faciliate its engagement:

- *Are there any 'best practice' examples from other jurisdictions the Queensland Government could consider for engagement with the hydrogen industry and the broader community?*
- *What are the key hydrogen related issues that require greater community awareness to increase confidence and help support the industry's growth?*

Contents of the Strategic Community Engagement Framework

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Engagement objectives

Engagement objectives

The Strategic Community Engagement Framework is to assist in meeting the following objectives:

- Raise community and stakeholder awareness and familiarity with hydrogen technology
- Build a positive social message around a future hydrogen economy that generates positive community sentiment regarding a local hydrogen industry
- Promote open and genuine engagement with communities
- Strategically implement engagement initiatives in a manner which proactively responds to stakeholders' potential interests, concerns and issues
- Deliver engagement in alignment with regulatory and industry good practice guidelines

- Build community trust in the hydrogen industry and Government
- Faciliate a supportive environment for hydrogen development in Queensland, and Australia

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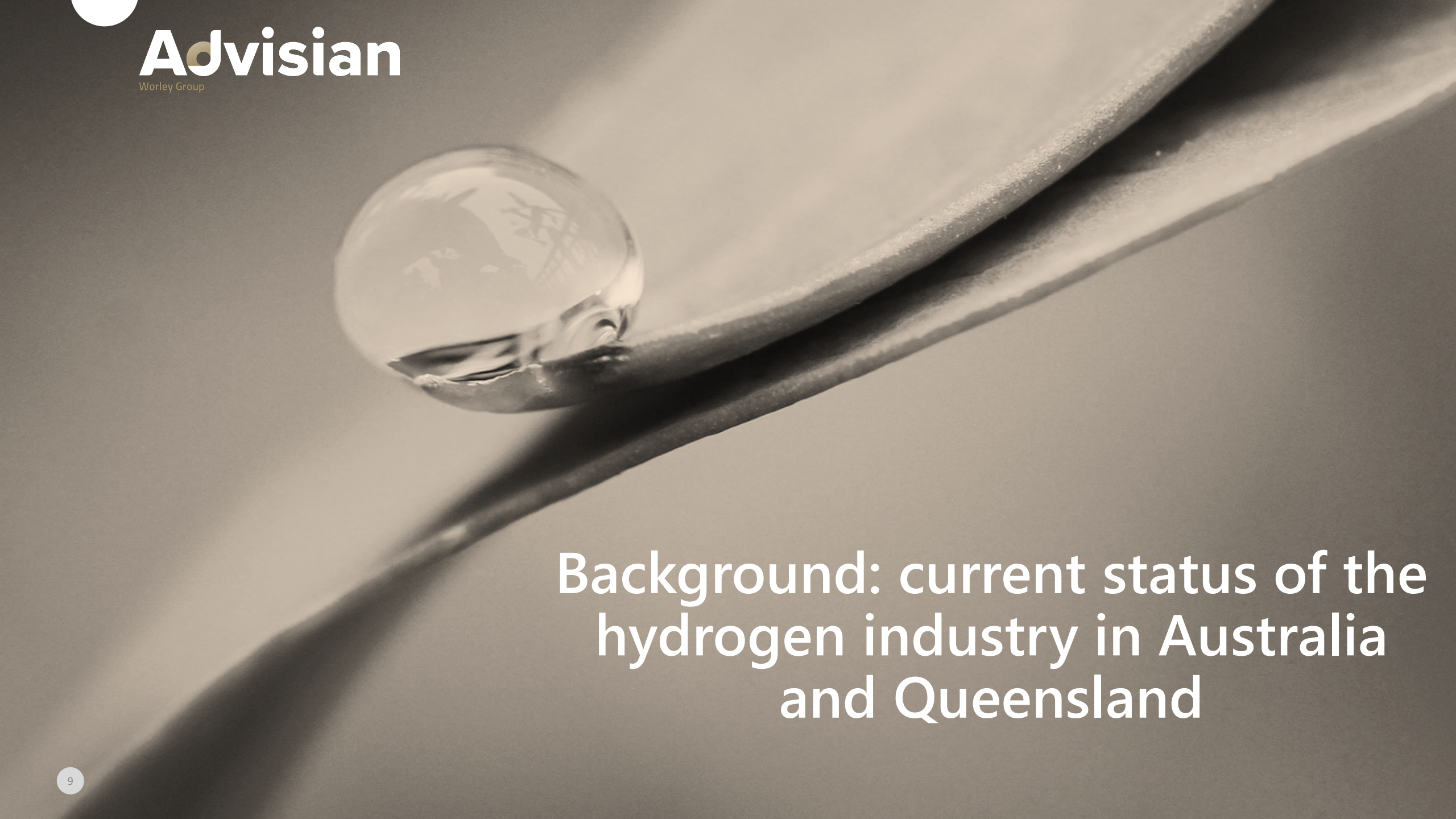


Background: current status of the hydrogen industry in Australia and Queensland

Current status of the hydrogen industry in Australia

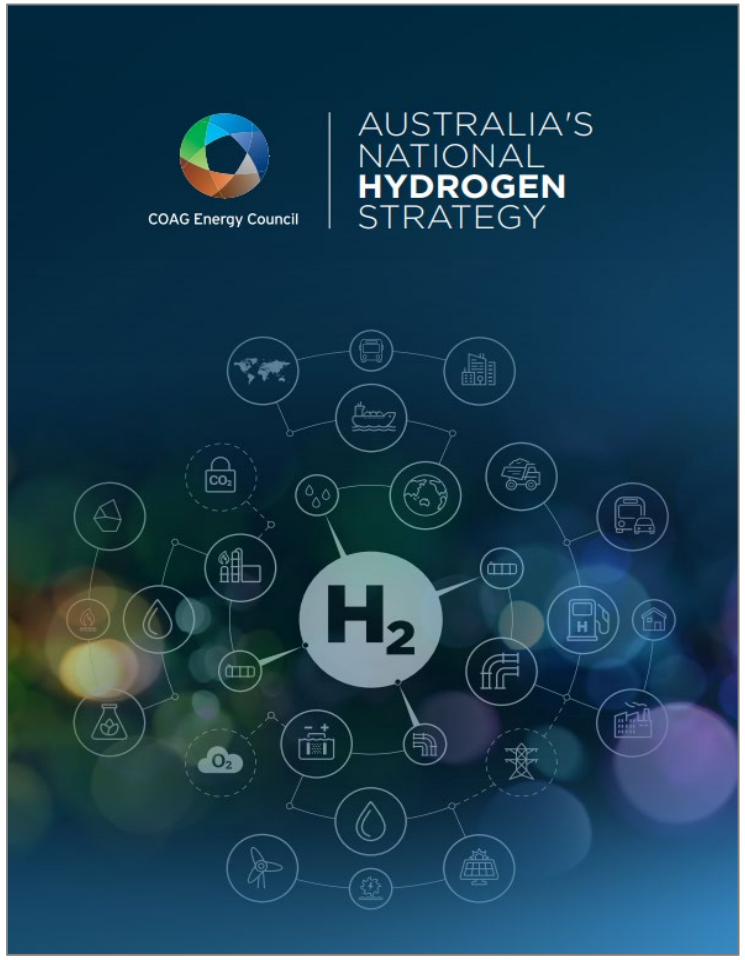
The Australian Government has shown a high level of support towards the emerging hydrogen industry.

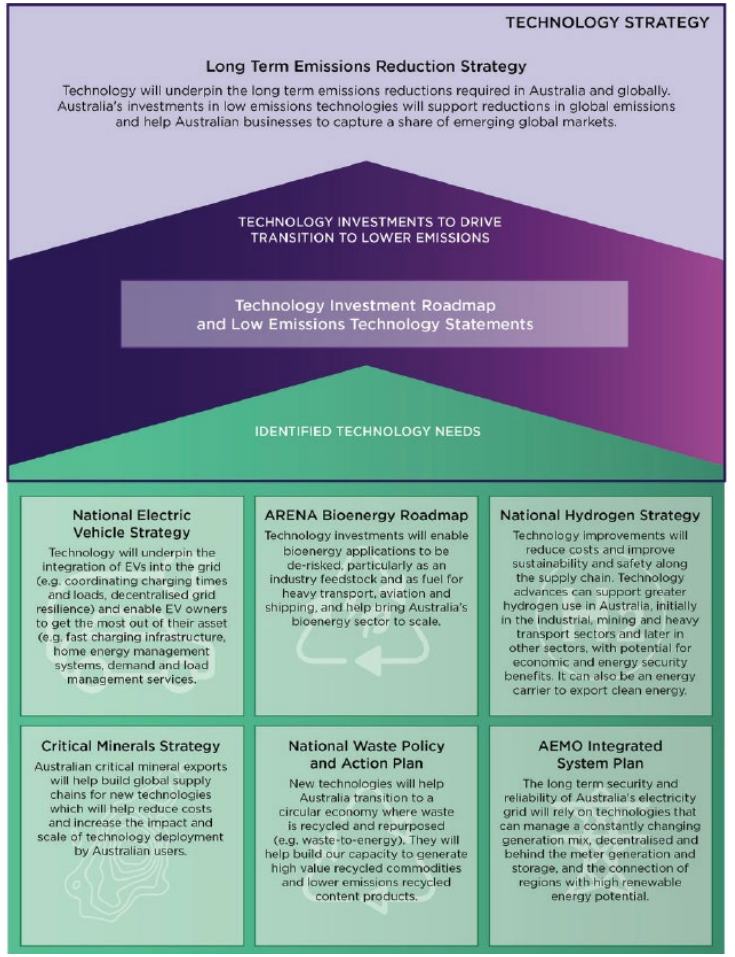
In 2019 the Australian Government developed a National Hydrogen Strategy to position Australia as a major player in the global hydrogen industry by 2030.

In May 2020, the Australian Government announced its national Technology Investment Roadmap to drive investment in low emissions technologies. The Roadmap highlights hydrogen as a priority technology.

The Australian Government has invested hundreds of millions of dollars to progress the industry via funding through the Australian Renewable Energy Agency (~$125M) and the Clean Energy Finance Corporation ($300M)*.

All Australian States and Territories have also publicly announced strategies, plans and or positions addressing the development of a hydrogen industry.





Source: Australian Government (2020) Australia's Technology Investment Roadmap.

Source: ARENA and CEFC websites, as accessed June 2020

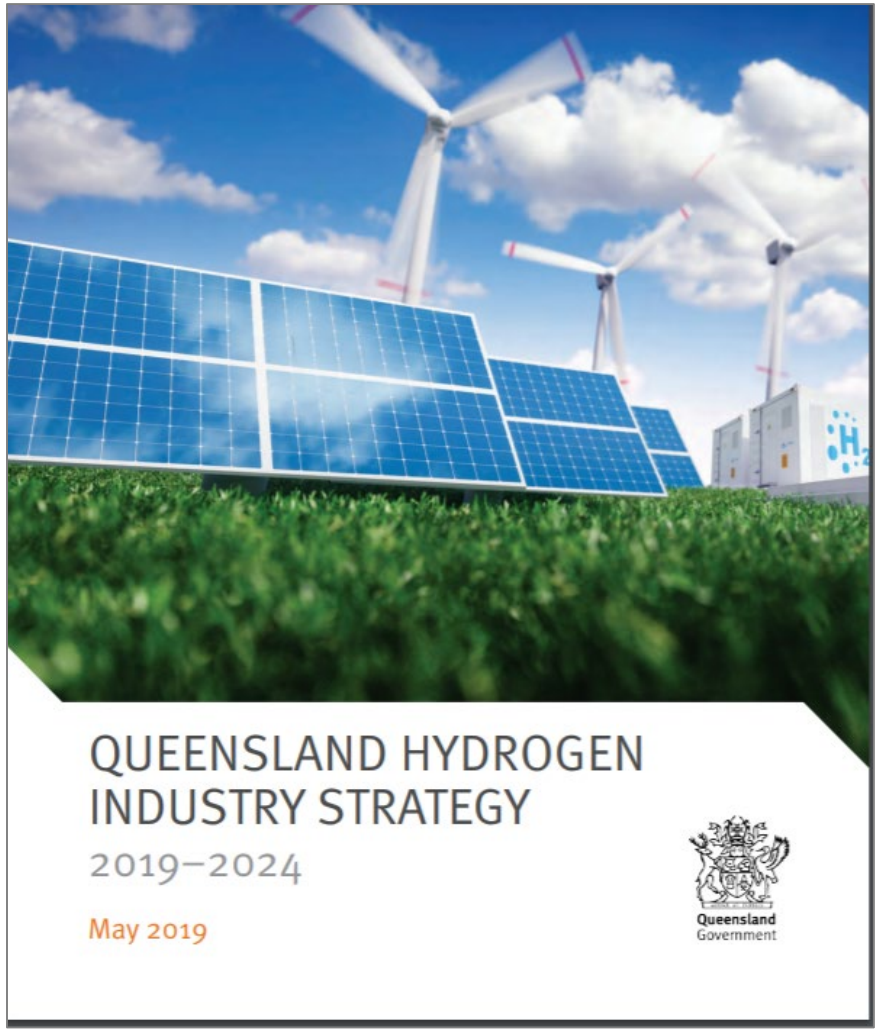
Current status of the hydrogen industry in Queensland

The Queensland Government is highly supportive of sustainable hydrogen development
and in 2019 released the Queensland Hydrogen Industry Strategy to '*... generate the highly skilled jobs of the future, while supporting the transition to a low-emission economy*'.

As part of the Strategy, the Queensland Government established a $15 million industry development fund to support hydrogen projects in Queensland.

In March 2020, the Queensland Government appointed three local members of parliament to act as Hydrogen Industry Champions in Gladstone, Townsville and Redlands.

The Government also established a Townsville Hydrogen Industry Working Group to promote hydrogen development in the local region.



Sources:
Queensland Government (2019) Queensland Hydrogen Industry Strategy 2019-2024.
H2View (2020) "Hydrogen champions' appointed to help achieve Queensland's hydrogen vision. Accessed 30 March 2020.
Mining Weekly (2019) Hydrogen working group formed in Qld. Accessed 30 March 2020.

Engagement context

Stakeholder engagement completed to date

The majority of the proposed hydrogen projects in Australia are in relatively early stages, such as feasibility studies and demonstration trials.

Stakeholder engagement completed to date by individual project proponents has generally been fairly targeted. Hydrogen developers have primarily engaged government, potential investors, industry working groups, relevant infrastructure and utility providers, and the media. Broader community engagement, such as via community information sessions, has been completed by a relatively small number of proponents.

As hydrogen developers advance their feasibility studies and demonstration trials, it is likely that more proponents will commence undertaking broader community engagement activities.

The Queensland Government has also completed targeted engagement, primarily with other governments, industry, potential investors, industry working groups, relevant research organisations, relevant infrastructure and utility providers, and the media.

Some State Governments have undertaken hydrogen public education events. For example, in September 2019, the South Australian Government hosted a hydrogen safety public forum, attended by students, representatives from community organisations, members of the general public.

The opportunity is now...

As more hydrogen developers prepare to engage local communities about their individual projects, the opportunity is paramount for the Queensland Government to faciliate the successful rapid development of the hydrogen industry by delivering a complementary community engagement process.

Sources:
COAG's Energy Council, Australia's National Hydrogen Strategy.
ARENA website. Accessed 08 June 2020.
Various website searches of individual Australian hydrogen projects.

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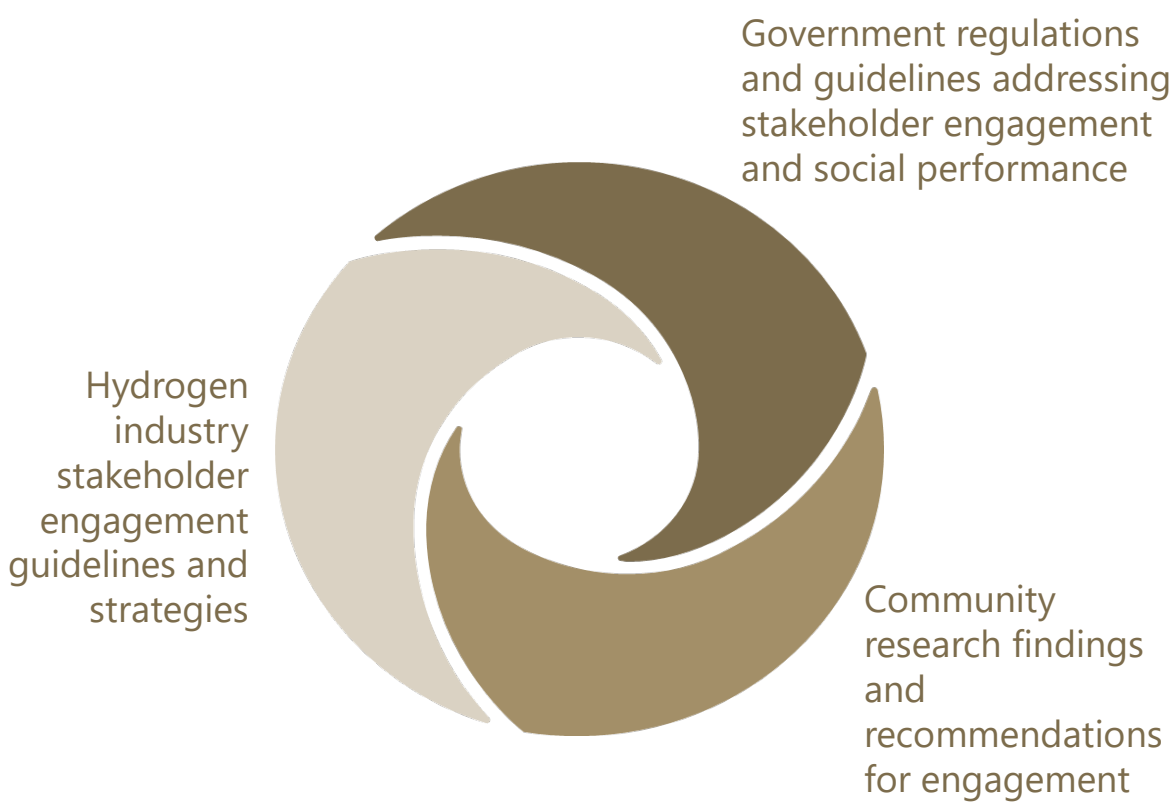
Guiding regulations and principles

Guiding regulations and principles

- Stakeholder engagement regarding hydrogen development in Queensland should be guided by relevant and applicable government regulations. For example the Queensland Governments' *Strong and Sustainable Resource Communities Act* (2017) and *Social Impact Guideline* (2018).
- Engagement approaches should also reflect industry guidance, such as the Australian Hydrogen Council's social licence principles, and relevant community research and consultation recommendations, such as those by CSIRO and University of Queensland*.
- Further, public consultation should incorporate the existing actions identified by the Queensland Government in the Queensland Hydrogen Industry Strategy to build community awareness and confidence, including:
  - Information provision and active engagement which considers a variety of audiences
  - Understanding community areas of interest
  - Raising community awareness about the safe and sustainable use of hydrogen.

<u>This Strategic Community Engagement Framework reflects:</u>



*Sources:
Australian Hydrogen Council. Social Licence Principles. Accessed from Australian Hydrogen Council website on 08 June 2020.
Carr-Cornish S., Lamb K., Rodriquez M., & J. Gardner (2019) Social science for a hydrogen energy future. CSIRO.
Ashworth, P., Witt, K., Ferguson, M., & S. Sehic (2019) Developing Community Trust in Hydrogen. University of Queensland.
Lambert, V. & P. Ashworth (2018) The Australian public's perception of hydrogen for energy.
Commonwealth Government of Australia (n.d) National Hydrogen Strategy Issues Paper 5. Understanding community concerns for safety and the environment

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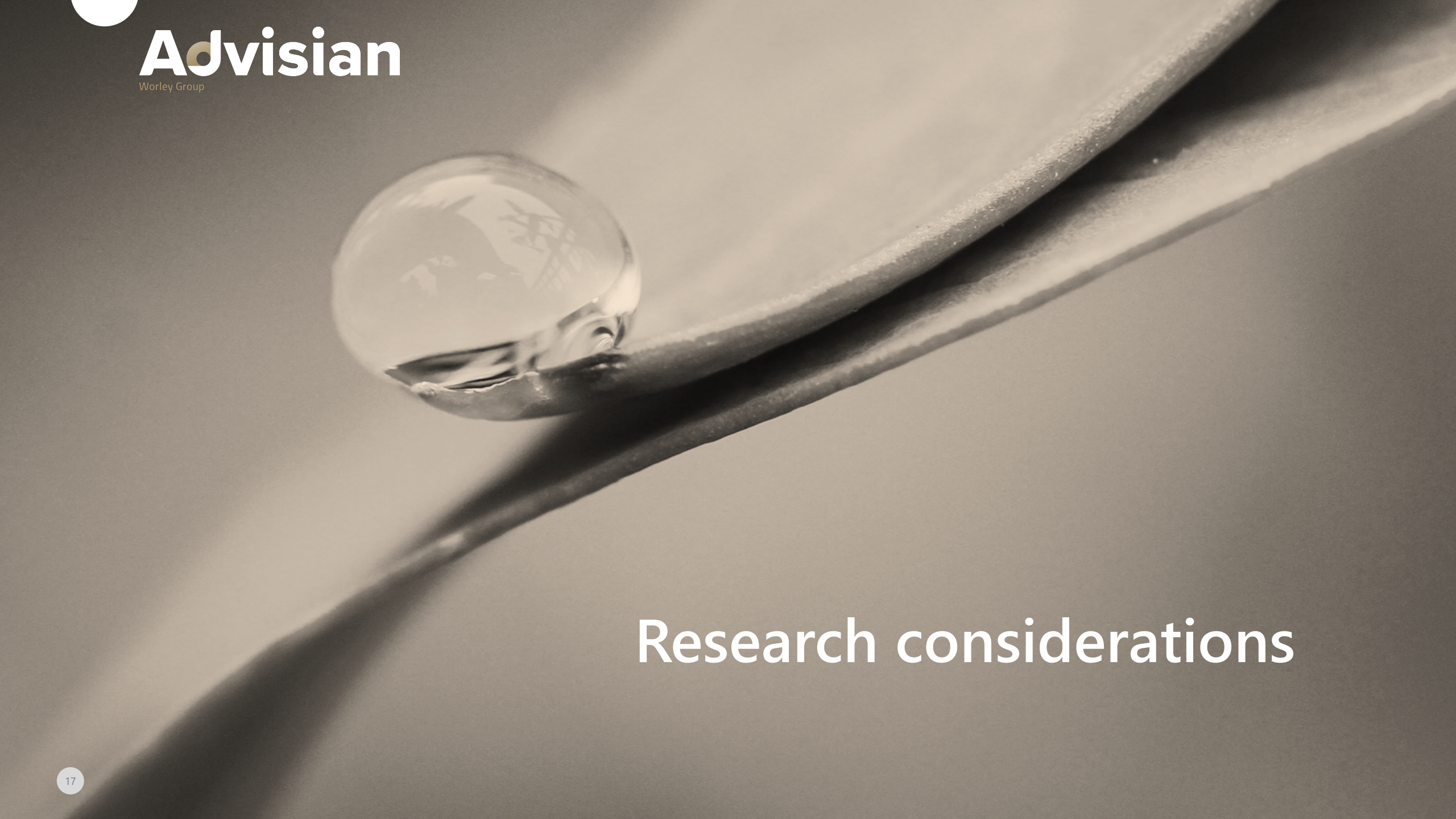


Research considerations

Research considerations

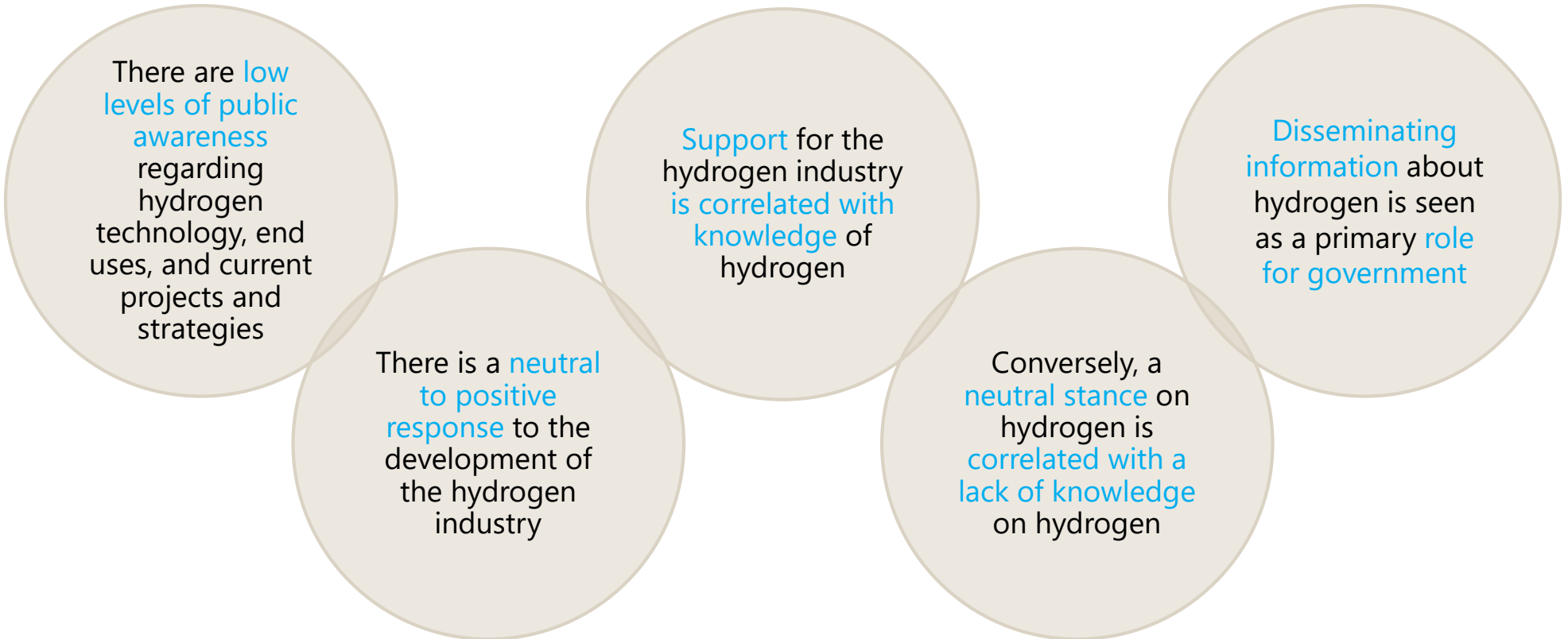
Several studies have been completed into community engagement about hydrogen and new energy technologies.

This section of the document summarises relevant research considerations as they apply to this Framework:

- Research regarding community sentiment and interests in the hydrogen industry in Australia
- Research advice regarding engaging about hydrogen and new energy technologies
- Research into the linkage between community trust, government regulation and engagement
- Lessons learnt from engagement about previous new technologies

Community sentiment towards Australian hydrogen industry

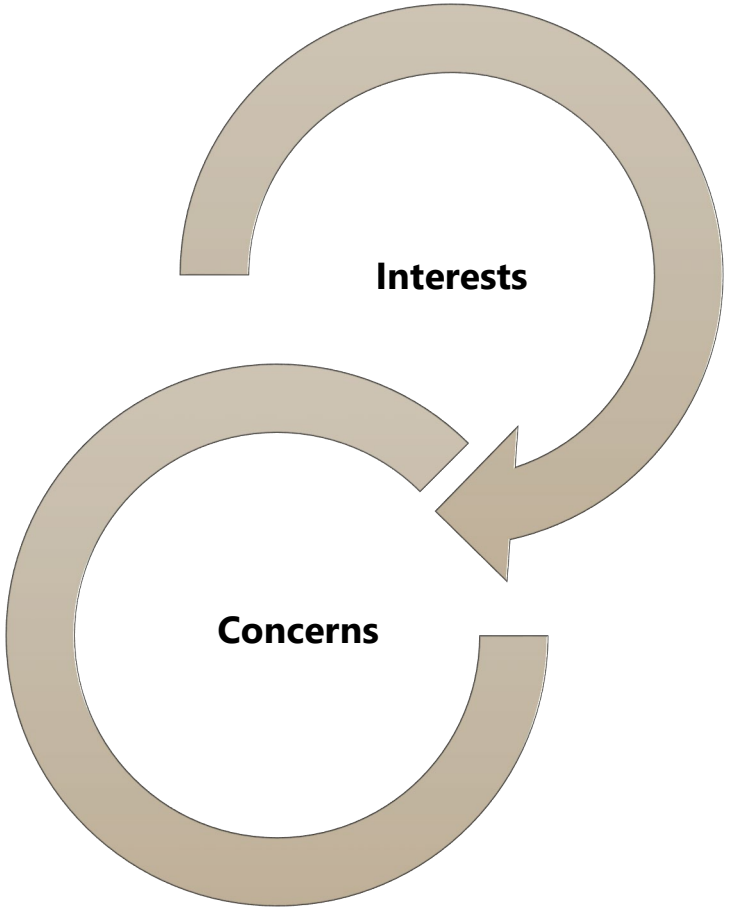
Recent research on community sentiment towards the hydrogen industry in Australia have generally found:



Sources:
Carr-Cornish S, Lamb K, Rodriquez M, & J. Gardner (2019) Social science for a hydrogen energy future. CSIRO.
Ashworth, P., Witt, K., Ferguson, M., & S. Sehic (2019) Developing Community Trust in Hydrogen. University of Queensland.
Lambert, V. & P. Ashworth (2018) The Australian public's perception of hydrogen for energy., University of Queensland.

Community interests in Australian hydrogen industry

Research has identified key likely community interests and concerns regarding the hydrogen industry:



- Employment and supply opportunities for regional communities, and Aboriginal and Torres Strait Islander peoples and communities
- Sustainable alternative energy solutions to faciliate Australia's transition from fossil fuels

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- The safe management of hydrogen as the gas is perceived as volatile and highly flammable
- Water stewardship and security as large amounts of water are required for production
- Complementary land-use, and the hydrogen industry's co-existence with established regional industries, such as agriculture and tourism
- The high cost of developing an Australian hydrogen industry

Source:
Carr-Cornish S, Lamb K, Rodriquez M, & J. Gardner (2019) Social science for a hydrogen energy future. CSIRO.
Ashworth, P., Witt, K., Ferguson, M., & S. Sehic (2019) Developing Community Trust in Hydrogen. University of Queensland.
Lambert, V. & P. Ashworth (2018) The Australian public's perception of hydrogen for energy., University of Queensland.

Engaging about new energy technologies

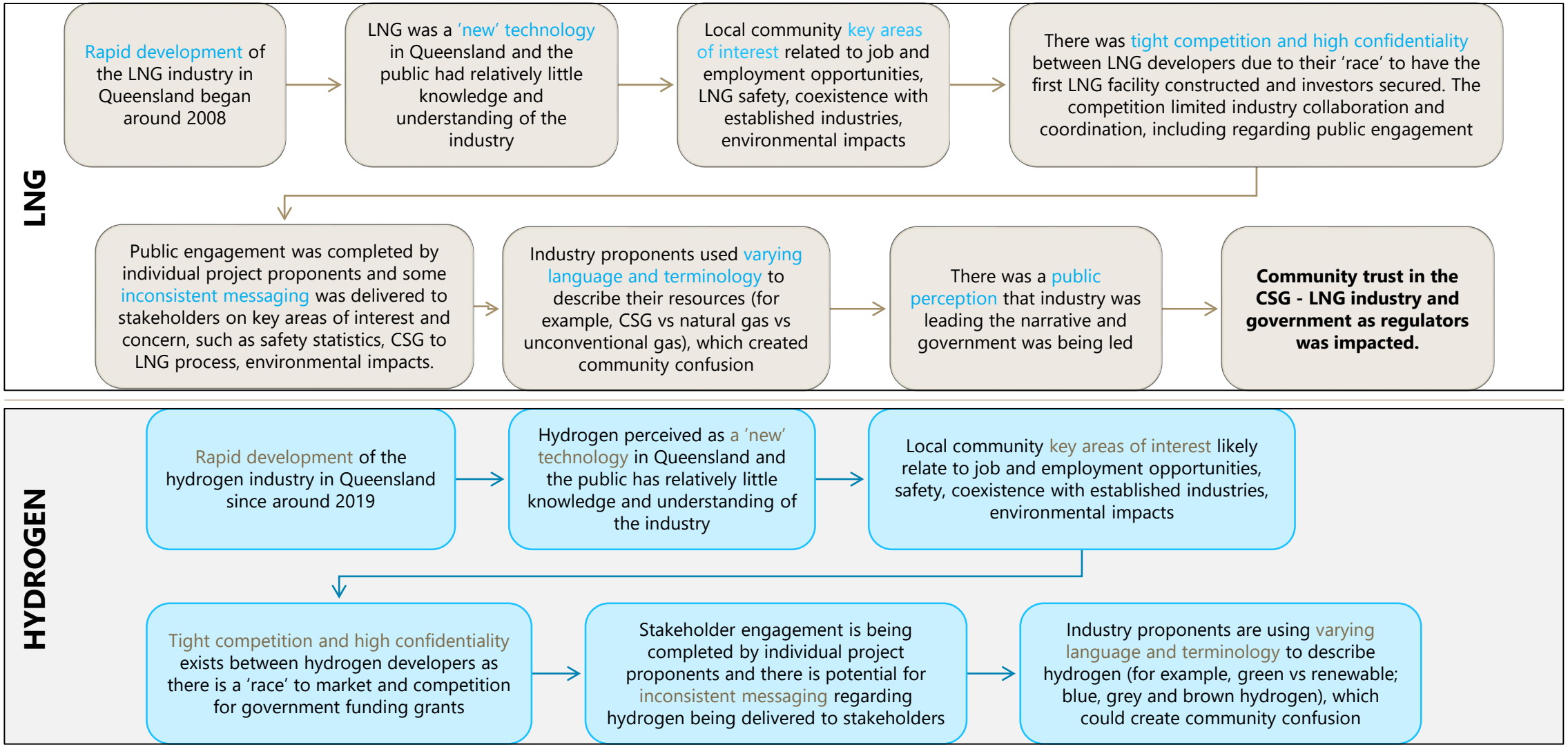
Similar to research findings regarding engaging about hydrogen, studies into public engagement regarding new emerging energy technologies have concluded:

An individual's acceptance of emerging technologies appears to generally increase with their knowledge
It is important for industry and governments to be proactive in informing and addressing public and stakeholder concerns around emerging energy technologies
Addressing public and stakeholder concerns relates to more than simply providing information about relevant technologies … it is also important to provide information about how projects will be governed
'Emerging technologies will need to work harder for acceptance than in days gone by and this will require increased engagement with the range of contested sources of knowledge'.

Source:
Lacey, J., Malakar, Y., McCreaa, R & K Moffat (2019) Public perceptions of established and emerging mining technologies in Australia. Resources Policy, Vol 62, pp 125-135

Lessons learnt from past engagement about new technologies

The rapid emergence of Queensland hydrogen projects draws some parallels to the rapid growth of the Queensland liquified natural gas (LNG) industry in the late 2000s.



Lessons learnt from engagement about coal seam gas to LNG

Recent research by the University of Queensland into whether Queensland's CSG to LNG industry met community expectations and good practice engagement standards purports that:

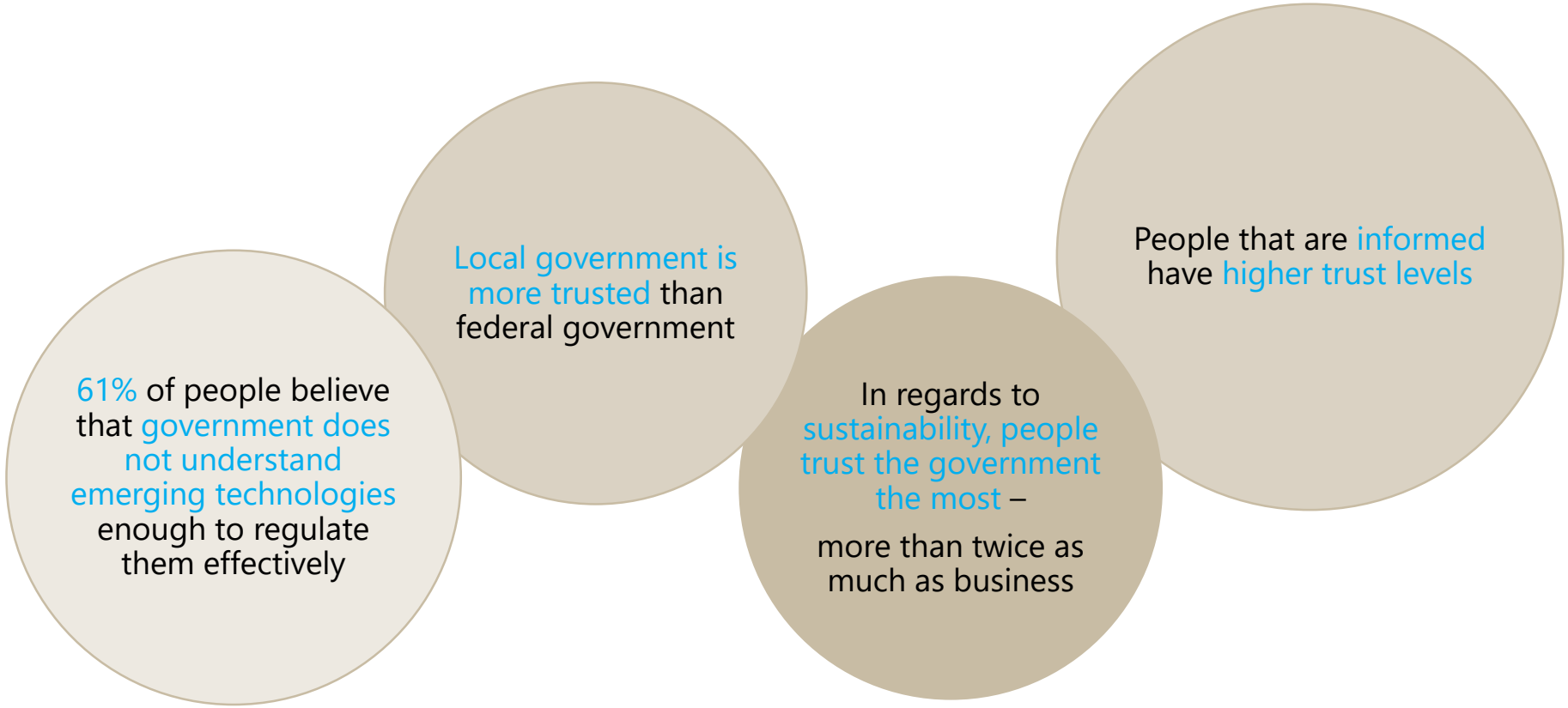
- Industry and Government were not seen as meeting community expectations, particularly with regards to benefit sharing
- Government had a complex role of educator and regulator and partner of the industry
- Some community members and stakeholders felt the government was 'absent' during initial community engagements
- Government was perceived at times to be lagging, but also in some instances displaying world-leading regulatory regime
- Where regulation was seen to adequately address a key risk area, trust and belief in industry performance was higher
- Bipartisan political support for the industry was a key factor in enabling the development of the industry in Queensland

Source:
Witt K, Garnett A, Staggs J & D Holm (2020), The coal seam gas industry in Queensland and the 'Golden Rules' of gas, The University of Queensland Centre for Natural Gas Project Report, The University of Queensland, Brisbane

Linkage between engagement, knowledge, acceptance and trust

Various studies show that successful community engagement and education regarding new technologies fosters community trust, which enhances community acceptance.

The 2020 Edelman Trust Barometer shows that public trust in industry and government is variable and recommends that industry and government collaborate to build community trust in both sectors.



Sources:
Lacey, J., Malakar, Y., McCreaa, R & K Moffat (2019) Public perceptions of established and emerging mining technologies in Australia. Resources Policy, Vol 62, pp 125-135
Edelman (2020) Edelman Trust Barometer 2020

Summary of key research considerations

In summary, the relevant research considerations that apply to this Strategic Community Engagement Framework include:

- Support for hydrogen and new energy technologies is positively correlated with knowledge. Therefore, a strong education campaign would likely faciliate community acceptance and support for the hydrogen industry.
- Communities expect governments, as well as industry, to engage regarding new energy technologies such as hydrogen. Further, industry and government collaboration would likely build stakeholder trust in both sectors. Therefore, the building of community trust in the emerging Australian hydrogen industry could be facilitated by a coordinated public engagement approach by government and industry.
- Communities are interested in understanding how governments will govern new energy technologies. Community confidence in governance can faciliate community acceptance of new technologies. Regulation of the industry will be an important component of public consultation efforts regarding hydrogen.
- Individual hydrogen developers are using different stakeholder engagement approaches and varying language and terminology to describe hydrogen. This could confuse the public and impact trust in the industry and government. The government therefore has a key role in influencing correct, consistent public messaging regarding hydrogen.
- Industry and Government were not seen as meeting community expectations regarding the LNG industry's benefit sharing. Applying this as a lesson learned, public messaging regarding the community benefits of developing the Queensland hydrogen industry should be conveyed realistically. It may be of benefit to focus public messaging on the sustainability of local / regional jobs, as opposed to placing an emphasis on the "new jobs" that will be generated. It will also be important to provide accurate and up to date information regarding the pace, scale, and viability of the development of the hydrogen industry.
- Local government has a role to play in public consultations.

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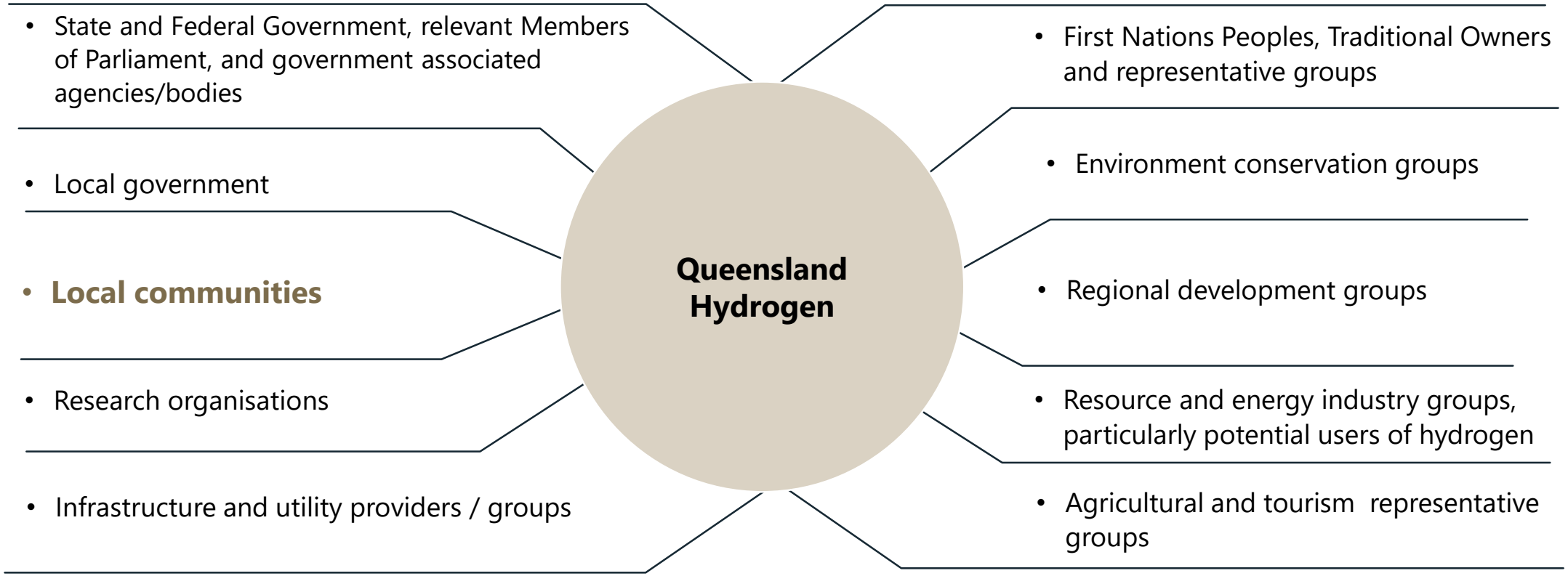
Key stakeholders

Key stakeholders

Key external stakeholders likely to have a high interest in the development of the Queensland hydrogen industry are shown below.

This Strategic Community Engagement Framework is focused on engagement with local communities to proposed hydrogen projects.



Communication tools and approaches

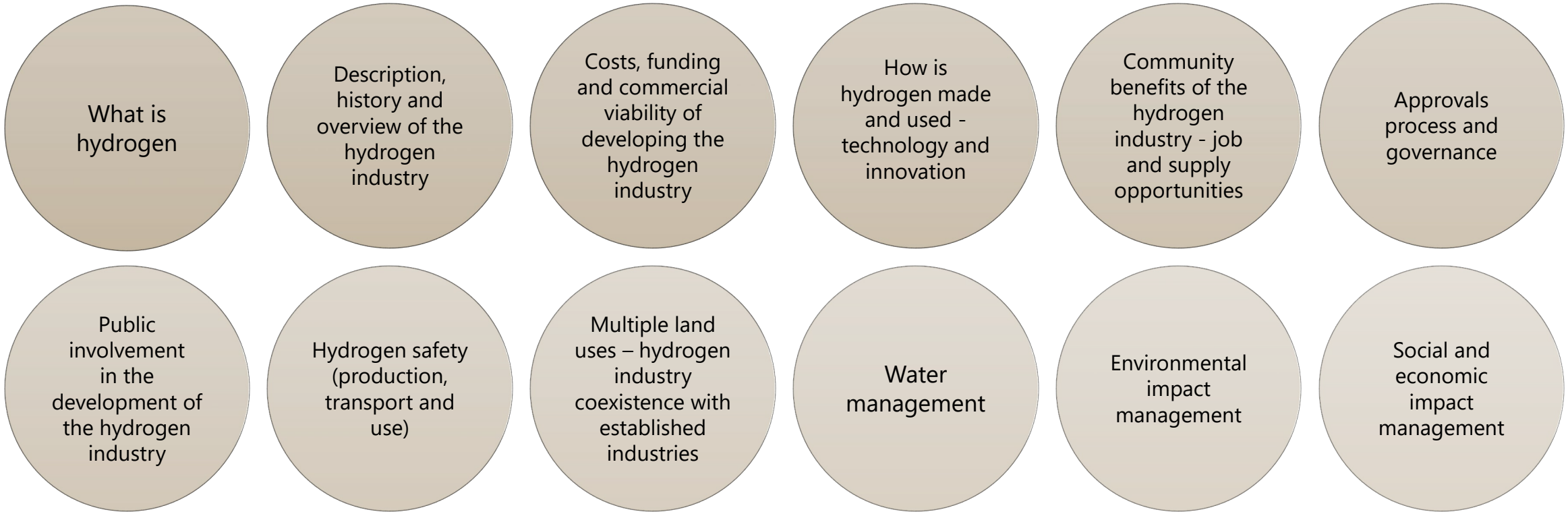
Communication tools and approaches

A variety of communication tools and consultation approaches could be implemented government to support an education-focused public engagement approach regarding hydrogen, including but not limited to:

- Key messages, frequently asked questions and responses, and ‘fast facts’
- Dedicated hydrogen educational website or webpages
- Electronic fact sheets and information booklets addressing key community interests regarding hydrogen
- Face to face briefings and meetings with stakeholder groups
- Presentations to community groups
- Community ‘drop-in’ information sessions
- Participation in existing community activities, meetings and events (for example, hosting a “hydrogen” stand at a local community fair)
- Media and social media releases
- Short educational videos that could be placed on the internet or social media

Communication materials – key messages

Key messages could be developed to respond to likely primary community interests, as identified by the various research studies.



Communication materials – frequently asked questions

In addition to key messages, frequently asked questions (FAQs) and responses and or 'fast facts' could be drafted to respond to anticipated key community interests*. Examples of relevant frequently asked questions include:

- What is hydrogen?
- Why the sudden interest in hydrogen projects?
- How is hydrogen made?
- What are the different types of hydrogen?
- How is hydrogen used?
- Will the hydrogen be used in Australia and or overseas?
- What are the factors that will influence the speed and scale of the development of the hydrogen industry?
- How has hydrogen historically been used in Australia?
- What is a demonstration plant?
- Why is the cost of creating commercial hydrogen still so high?

- Will all of the proposed hydrogen projects be built?
- How will the hydrogen be transported?
- How safe is hydrogen?
- How will the hydrogen be stored?
- How much water is needed to make hydrogen and where will it be sourced?
- How will potential social, economic and environmental impacts be identified, mitigated and managed?
- How will the government ensure that hydrogen won't increase electricity costs?
- What approvals are required to develop a hydrogen plant?
- How will the government regulate the industry?

- How can the public have a say on the development of the hydrogen industry?
- How will the government coordinate all of the hydrogen projects being developed?
- How will the government coordinate the hydrogen industry with other local existing industries, such as tourism and agriculture?
- How many local employment and business opportunities will be created?
- What types of jobs will be needed?
- What types of business contracts will be tendered?
- What will be the opportunities for Aboriginal and Torres Strait Islanders?

*FAQs should build from existing FAQs prepared by Australian Hydrogen Council

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Considerations for government involvement in engagement

Staged community engagement

Governments could implement a staged community education and consultation campaign to support the development of the hydrogen industry. Government's public engagement program would ideally be delivered in consultation with the hydrogen industry and key stakeholders.

The majority of government communication and engagement activities would preferably be delivered in the second half of 2020, in acknowledgement and support of the rapid pace of the development of the hydrogen industry.

Stage 1

Communication materials

- Develop key communication materials, including consistent agreed industry terminology, fast facts and educational reference material that can be used by government and industry

Stage 2

Online and targeted stakeholder engagement to confirm community interests and preferred engagement methods

- Implement online community engagement and education campaign
- Complete collaborative discussions with local government and key local stakeholder groups

Stage 3

Community engagement targeted at those ~~Queensland~~ communities likely to be initially impacted by hydrogen development

- Implement face to face community education campaign
- Inform and engage with key stakeholders, to raise awareness of the hydrogen industry, identify and respond to emerging areas of interest and expectations

Stage 1 – Preparation of communication materials

The table below details communication materials that could be prepared by the Government, in consultation with the Queensland hydrogen industry and other key stakeholders.

Activity	Detail	Timeframe
Draft Communication and Engagement Action Plan	• Draft Community Engagement Plan outlining key public consultation approaches and activities for Brisbane community and regional communities – The Community Engagement Plan would ideally consider coordination of engagement activities with local governments and hydrogen industry	Q3 2020
Develop standardised language guidelines	• Draft and agree on standardised language and terminology to be used when referring to hydrogen and hydrogen projects	Q3 2020
Develop hydrogen education campaign	• Consider scope for a community education campaign that could be delivered in a similar format to Australia Pacific LNG's – 'LNG Show' (https://www.youtube.com/watch?v=olJhMVMBQBE). The LNG Show included education-focused engagement with schools and the general public	Q3 2020
Develop key messages and FAQs	• Draft key messages, fast facts, FAQ's and responses, and refine based on stakeholder feedback	Q3 2020
Draft hydrogen specific fact sheets for use in both electronic and print format	• Draft visual, reader friendly fact sheet/s focussed on likely key community interests, and building from information contained in FAQs and key messages – Consider also drafting fact sheets that are culturally appropriate for Aboriginal and Torres Strait Islander people	Q3 2020
Draft website text	• Develop content for an educational website or webpages, and refine based on stakeholder feedback. The website content would ideally be appropriate for a range of stakeholder groups, including school-aged children	Q3 2020
Prepare stakeholder surveys	• Prepare content of online stakeholder surveys or online feedback mechanism to identify / confirm community interests and the community's preferred engagement methods	Q3 2020

Stage 2 - Initial community engagement

The table below details key initial engagement activities that could be completed by Government, that would build on the activities delivered in Stage 1.

Activity	Detail	Timeframe
Implement stakeholder surveys	• Implement online stakeholder surveys prepared in Stage 1 • Refine FAQs and key messages based on survey results	Q3 / Q4 2020
Publish communication materials	• Publish and distribute communication materials, as identified in the Community Engagement Plan developed in Stage 1	Q3 / Q4 2020
Complete key primary stakeholder briefings	• Brief primary stakeholder groups on the hydrogen industry and seek feedback on areas of interest – This could take the form of face to face meetings, phone calls, videoconferences, emails and presentations at existing group forums, as appropriate, and as identified in the Community Engagement Plan developed in Stage 1	Q3 / Q4 2020
Deliver consultation report	• At the end of initial consultations, draft a Consultation Report that would be made publicly available and summarises key stakeholder areas of interest and how they will be addressed	Q3 / Q4 2020

Stage 3 - Broader community engagement

The table below details broader Government-led public engagement activities targeted at regional Queensland communities likely to be initially impacted by hydrogen developments, including Townsville, Gladstone, Rockhampton, Moura, Moranbah.

Activity	Detail	Timeframe
Host community drop-in information sessions	• Organise and host community drop-in information sessions in Townsville, Gladstone, Rockhampton, Moura, Moranbah. The community information sessions could ideally take place outside key community hubs, such as public libraries to raise awareness of hydrogen and to address key community issues • Develop and refine community education materials based on community feedback obtained at the information sessions	Q4 2020 and repeated in 2021 as appropriate
Host hydrogen information stalls	• Host hydrogen information stalls at appropriate key community events, such as community environment fairs (for example, Gladstone EcoFest)	Q4 2020 and repeated in 2021 as appropriate
Implement education campaign	• Implement education campaign, as developed in Stage 1	Q4 2020 and continued into 2021 as appropriate
Continue key primary stakeholder briefings	• Continue face to face briefings with key stakeholder groups to raise awareness of the Hydrogen industry, and to identify and respond to emerging areas of interest	Ongoing, as appropriate
Deliver consultation report	• At the conclusion of broader community engagement efforts, draft a Consultation Report that will be made publicly available to promote the Government's engagement efforts and to inform the public of stakeholder feedback and progress of the industry	Q4 2020 and repeated in 2021 as appropriate

Additional stages of community engagement

It would be of benefit for the government to continue community engagement efforts as hydrogen developers commence construction and begin to explore commercial-scale projects.

Community interests and concerns will likely elevate once communities visually see projects progress (that is, start construction), and once they start to directly experience the impacts.

Continued community engagement by government and hydrogen developers will faciliate community dialogue, understanding, trust and acceptance.

References include

Advisian, (2020) Personal Communication regarding lessons learnt from the introduction of LNG/CSG in Queensland.

ARENA website. https://arena.gov.au/ Accessed 08 June 2020.

Ashworth, P., Witt, K., Ferguson, M., & S. Sehic (2019) Developing Community Trust in Hydrogen. University of Queensland, Brisbane.

Australian Government (2020) Australia's Technology Investment Roadmap

Australian Hydrogen Council website https://h2council.com.au/ Accessed 08 June 2020.

Carr-Cornish S, Lamb K, Rodriquez M, Gardner J (2019) Social science for a hydrogen energy future. CSIRO, Australia.

Commonwealth Government of Australia (n.d) National Hydrogen Strategy Issues Paper 5. Understanding community concerns for safety and the environment

Department of Industry, Science, Energy and Resources COAG's Energy Council, Australia's National Hydrogen Strategy. https://www.industry.gov.au/data-and-publications/australias-national-hydrogen-strategy#:~:text=Australia's%20National%20Hydrogen%20Strategy%20sets,a%20major%20player%20by%202030.

Department of State Development, Manufacturing, Infrastructure and Planning (2019) Queensland Hydrogen Industry Strategy

Department of State Development, Tourism and Innovation. Hydrogen industry development - https://www.dsdmip.qld.gov.au/industry/priority-industries/advanced-manufacturing/hydrogen-industry-development.htm

Edelman (2020) Edelman Trust Barometer 2020

H2View (2020) "Hydrogen champions' appointed to help achieve Queensland's hydrogen vision. Accessed 30 March 2020.

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Lambert, V. & Ashworth, P. (2018) The Australian public's perception of hydrogen for energy., University of Queensland, Brisbane

Mining Weekly (2019) Hydrogen working group formed in Qld. Accessed 30 March 2020

Queensland Government (2019) Queensland Hydrogen Industry Strategy 2019-2024.

Srinivasan, V., Temminghoff, M., Charnock, S., Hartley, P. (2019). Hydrogen Research, Development and Demonstration: Priorities and Opportunities for Australia, CSIRO.

Various website searches of individual Australian hydrogen projects

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