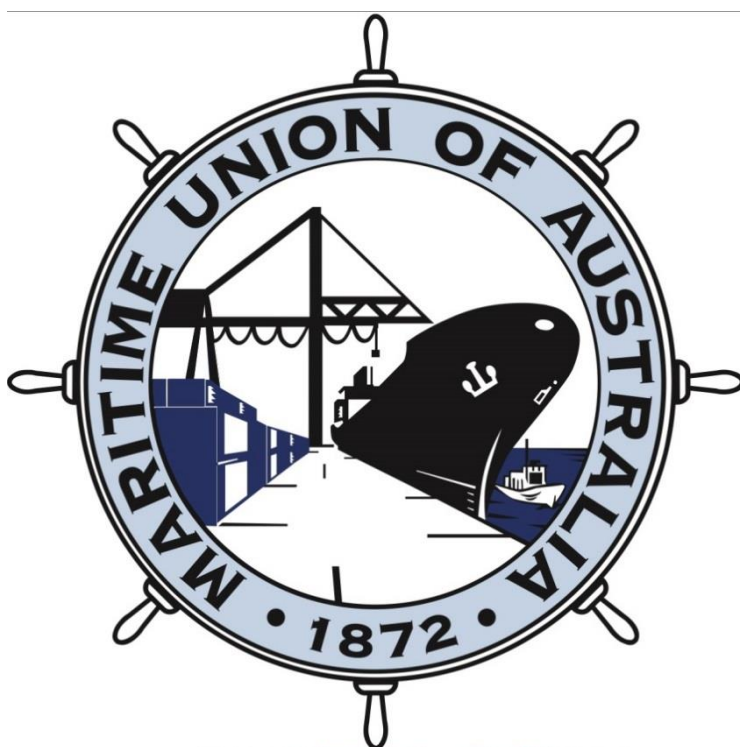


# **MUA Submission: National Hydrogen Strategy Issues Papers**



**5 August 2019**

*National Hydrogen Strategy Taskforce*

Submitted by email: [hydrogen@industry.gov.au](mailto:hydrogen@industry.gov.au)

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We agree with the Privacy Statement and would like to make a non-confidential submission.

## Introduction

This submission has been prepared by Maritime Union of Australia (MUA). The MUA is a Division of the 120,000-member Construction, Forestry, Maritime, Mining and Energy Union and an affiliate of the 20-million-member International Transport Workers' Federation (ITF).

The MUA represents approximately 14,000 workers in the shipping, offshore oil and gas, stevedoring, port services and commercial diving sectors of the Australian maritime industry.

Below we offer feedback on 3 of the issues papers:

- Hydrogen at scale
- Community acceptance and safety
- Hydrogen for transport

## Hydrogen at scale

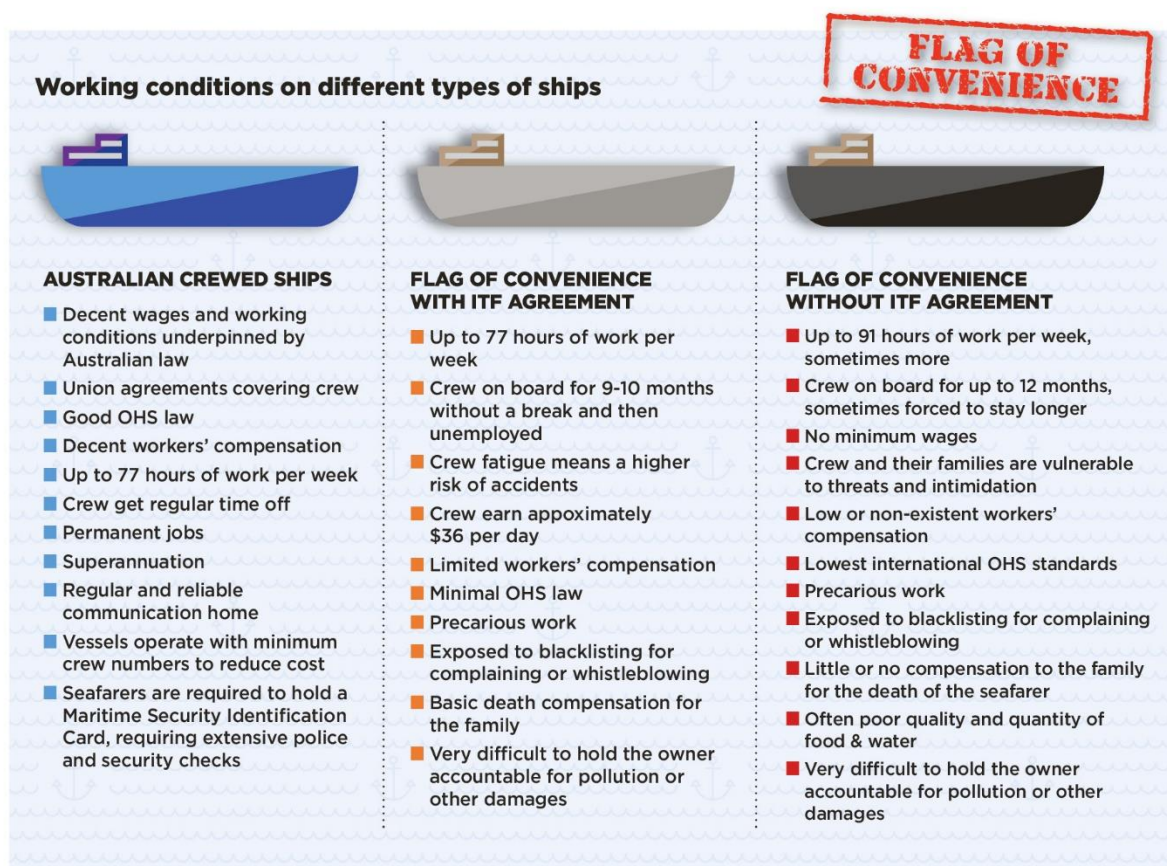
We welcome the initiative taken by the government and the National Hydrogen Strategy Taskforce to inquire into establishing a hydrogen industry in Australia. Hydrogen made from renewable energy has significant potential to reduce greenhouse gas emissions and establish a new industry and significant jobs in Australia.

## *Hydrogen exports*

Hydrogen is a dangerous, experimental and high-value cargo. We urge the committee to require that hydrogen exports from Australia take place on Australian flagged and crewed ships, governed by Australian WHS and fatigue standards. The costs of this are minimal in comparison to the value of the cargo, and the importance of safely establishing the industry.

There is too much at stake to leave the safe regulation and rapid development of the industry to other flag state authorities, or to flag of convenience shipping and crews. Figure 1 gives a comparison of working conditions on various types of ships.

**Figure 2: A comparison of working conditions on Australian and international ships.**



**Source:** Maritime Union of Australia and International Transport Workers Federation

Ensuring that hydrogen export vessels are Australian flagged and crewed will also ensure that the economic value of the transport directly contributes back to the Australian economy. This happens both through the vessel's management in Australia, but also the income taxes crew pay in Australia back to the Australian government, and the wages they spend in their (often regional) communities.

In the LNG export industry, four Australian-flagged and crewed vessels have been operating for 30 years to transport LNG from the North West Shelf (NWS) LNG Joint Venture project, with no industrial issues during that time.

### *Hydrogen and a just transition*

The Taskforce has canvassed a wide range of issues, but a significant gap that does not appear to have been fully examined is the role of a hydrogen industry to ensure a just transition to a low-emissions economy. This is imperative to ensure that the transition to a low-emissions economy happens with community support and is not subject to political backlash. Unfortunately, the history in Australia is that industrial transitions have increased

inequality, with only one half to one third of displaced workers finding equivalent employment.<sup>1</sup>

The need for a just transition is part of the Paris Agreement, which describes "the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities."<sup>2</sup> The creation of the LaTrobe Valley Authority following the closure of the Hazelwood coal-fired power plant and the Worker Transfer Scheme is one significant effort to establish a just transition in Australia. The Queensland Government has also established a Just Transition Group, which will be developing a transition plan for the state.<sup>3</sup>

Existing jobs in fossil fuels industries tend to be good secure union jobs. Ensuring that new low-emissions industries feature jobs of a similar quality is essential to combating inequality and ensuring that there is justice in the transition to a new low-emissions economy.<sup>4</sup>

The following measures should be taken in the hydrogen industry to ensure a just transition:

1. **Maximising local jobs.** Detailed procurement plans must be developed for the sourcing of materials and equipment that maximise Australian production capacity and potential production capacity.
2. **Ensuring good union jobs.** The government should ensure that procurement rules with good employment conditions, union agreements and responsible contracting policies are in place across the industry.
3. **A job guarantee and no forced redundancies** for workers from fossil fuel industries, allowing for direct transition into employment on hydrogen projects. In conjunction with the relevant unions, examine how the German job guarantee model could be implemented in Australia.<sup>5</sup>
4. **Carry out a detailed skills and training assessment** and ensure local training providers are in place and appropriate training is funded to ensure the workforce is prepared. Training should be provided through local TAFEs rather than privately.
5. **Reducing inequality.** Ensure the hydrogen industry has apprenticeship programs in place with minimum ratios, and include recruitment of workers from disadvantaged backgrounds, including women and Aboriginal workers.

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<sup>1</sup> ACTU, 2016, *Sharing the challenges and opportunities of a clean energy economy: A Just Transition for coal-fired electricity sector workers and communities*. <https://www.actu.org.au/our-work/policy-issues/actu-policy-discussion-paper-a-just-transition-for-coal-fired-electricity-sector-workers-and-communities>.

<sup>2</sup> UNFCCC, Report of the Conference of the Parties on its twenty-first session, held in Paris from 30 November to 13 December 2015, p.21, <https://unfccc.int/process/conferences/pastconferences/paris-climate-change-conference-november-2015/paris-agreement>

<sup>3</sup> Queensland Department of Employment, Small Business and Training, *Just Transition*, <https://desbt.qld.gov.au/employment/transition-programs/just-transition>

<sup>4</sup> Dr. John Falzon, *Goodbye Neoliberalism: Restoring democracy, supporting trade unions, protecting workers' rights*, December 2018, <https://www.cfmmeu.org.au/campaigns/goodbye-neoliberalism>.

<sup>5</sup> Commission on Growth, Structural Change and Employment, *Final Report*, January 2019, see p.97-98 for details of the job guarantee scheme.

6. **Ensuring community engagement and development**, to ensure that local communities benefit in the broadest possible sense.
7. **Safety and Training**. Work with Safe Work Australia and relevant training agencies to develop safety codes of practice and qualifications for the hydrogen industry at a national level. Establish hydrogen industry training centres in TAFEs to ensure they are publicly accessible and accountable.

## Community acceptance and safety

Community acceptance of the hydrogen industry will be significantly facilitated if:

1. The industry features good secure permanent jobs with decent wages.
2. Training and direct transition measures are in place to ensure workers from high-emissions industries can transition to work in the hydrogen industry.

Working with hydrogen will be hazardous, and somewhat experimental as new processes and technologies develop. Measures to ensure good secure jobs in the hydrogen industry will also significantly increase the safety of the industry. Australia's process-based safety laws rely on the participation of Health and Safety Representatives and full consultation with the workforce. Workers can only participate in these processes properly and with confidence if they are in secure work, are not fatigued, and have the support and protection of a union.

Casualisation of work significantly undermines safety, and this should not be allowed to develop in the hydrogen industry or it will significantly undermine the community confidence needed for the speedy development of the industry.

A new hydrogen industry must aim for best practice employment and WHS processes.

A hydrogen safety working group should be established through Safe Work Australia, and include the Australian Council of Trade Unions, unions from relevant industries including maritime unions, and the Australian Maritime Safety Authority. The Australian Maritime Safety Authority will need to be involved in the development of maritime regulation, and can play a role in the development of regulation at the International Maritime Organisation. This will be needed to support the development of international hydrogen shipping.

## Hydrogen for transport

We congratulate the Taskforce for their consideration of the considerable energy security issues currently facing Australia. Domestic manufacture of renewable hydrogen and use as a transport fuel has the potential to address both energy security and to reduce emissions.

Emissions from transport make up 19% of Australian emissions, but while energy emissions are decreasing, transport emissions are increasing – by 3% in 2018, largely driven by an 11% increase in the use of diesel.<sup>6</sup> There has been a 63% increase in transport emissions since 1990 – more than any other sector of the economy.<sup>7</sup>

The government must develop a comprehensive plan to systematically reduce greenhouse gas emissions from transport, and to improve energy security for the liquid fuels we currently rely on for transportation. One significant measure would be to shift domestic freight on to zero-emissions ships powered by domestically manufactured hydrogen or ammonia. Ships can carry freight in significantly greater volumes than trucks and require significantly less investment in infrastructure than trains. Small coastal container ships can carry 1,000-2,000 containers. Melbourne can handle ships carrying up to 7,500 Twenty Foot Equivalent Unit (TEU) and even larger ships can call into Sydney and Brisbane. Each ship is powered by only a single engine, creating significant efficiencies when investing in new technologies and the infrastructure to support them. It is much cheaper to invest in a single new hydrogen engine for a ship than the hundreds or thousands of hydrogen truck engines that would be required to carry the same quantity of cargo.

In their study of zero-emissions shipping, Lloyds Register and UMAS look at a number of potential fuels: hydrogen, ammonia, batteries, and biofuels (plant matter). They found that hydrogen and ammonia were the most realistic options for engines on the scale of cargo ships. They report that these fuels can go straight into specialised internal combustion engines, or into fuel cells.<sup>8</sup>

Lloyds Register and UMAS say that meeting IMO shipping emissions targets (which Australia is a party to) will require zero-emissions international cargo ships to be operational by 2030, which means that the technology and infrastructure for engines and fuel will need to start being put in place in the 2020s.<sup>9</sup>

The reports highlight that introducing hydrogen or ammonia powered cargo ships will require significant government investment and regulation. The Australian government could

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<sup>6</sup> Department of Environment and Energy, *Quarterly Update of Australia's National Greenhouse Gas Inventory: December 2018*, p.7-8, 14-15.

<sup>7</sup> Climate Council, *Waiting for the Green Light: Transport solutions to climate change*, p.6

<sup>8</sup> Lloyd's Register and UMAS, 2019, *Zero-Emission Vessels: Transition Pathways*.

<sup>9</sup> Lloyd's Register and UMAS, 2019, *Zero-Emission Vessels: Transition Pathways*.



begin developing and testing these fuels and technologies on ships in an Australian Strategic Fleet. Coastal routes are an obvious first step, and Queensland is one place where the capacity for such a route has been identified. This would match well with the support from the Queensland government for the development of a hydrogen industry there. Frequent coastal services also exist between Melbourne and Tasmania and these could be used to test new technologies.

However, the sharpest reduction in emissions would be achieved by transferring freight from road or rail onto hydrogen-powered vessels. Possible areas for this include:

- It was estimated that 200,000 annual TEUs of containers travelling on rail and road between Townsville and Brisbane could potentially be transported by coastal shipping. At the time it was estimated that there are 10 trains per week servicing one of the major grocery retailers between Rockhampton and Cairns from Brisbane, equating to around 1,200 TEU per week that could be delivered by ship; and
- 60,000 tonnes of fertilizer which travels from Townsville to Brisbane per annum by rail and road, could be transported by ship.<sup>10</sup>
- The potential to move more than 200 container shiploads (of 1,700 TEUs ships) off the road and onto ships in the Australian East-West corridor. That equates to reducing 26,637 truck movements (222 trucks) annually off the E-W highways, rising to 86,569 truck movements [or 594 trucks] if the N-S corridor is included.<sup>11</sup>

We urge the inquiry to further examine the possibilities for hydrogen to be used as a shipping fuel for domestic freight in Australia, and the processes required to facilitate this. Significant emissions reduction can be achieved, but this will require government investment to develop the technology at the speed and scale that is required.

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<sup>10</sup> Report of the Qld Parliament's Transport, Housing and Local Government Committee Report No. 59, *'Inquiry into Coastal Sea Freight'* P30 (referencing TMR, Sea Freight Action Plan, July 2014)

<sup>11</sup> MUA analysis based on data in: Andrew Macintosh, Australia Institute, *Climate Change and Australian Coastal Shipping*, Discussion Paper Number 97, October 2007 - <http://www.tai.org.au/node/1390> (accessed 8 July 2019).