Submission No 22

INQUIRY INTO DEVELOPMENT OF A HYDROGEN INDUSTRY IN NEW SOUTH WALES

Organisation: HYZON Motors

Date Received: 26 February 2021

HYZON

25 February 2021

Standing Committee on State Development
NSW Legislative Council
NSW Parliament
Parliament House
6 Macquarie Street
Sydney NSW 2000

Dear Standing Committee Members

Re: Inquiry into the development of a hydrogen industry in New South Wales

Thank you for the opportunity to contribute to the NSW Legislative Council's inquiry into the development of the hydrogen industry in NSW. As an organisation active within the state's hydrogen ecosystem, we appreciate the Standing Committee on State Development's interest in the sector and recognition of its significant potential for NSW.

Headquartered in the United States and with operations in Australia, Europe, Singapore and China, HYZON Motors (HYZON) is a leader in hydrogen mobility with an exclusive focus on hydrogen in the commercial vehicle market. Utilising our proven and proprietary hydrogen fuel cell technology, HYZON will produce zero emission heavy duty trucks and buses for customers across North America, Europe, Asia and Australia.

HYZON was established in 2020 as a new business of Horizon Fuel Cell Technologies (Singapore) and leverages Horizon's almost two decades of experience in hydrogen fuel cell development including the supply of around 500 hydrogen fuel cell systems powering zero-emission trucks and buses to customers globally to date.

HYZON's next-generation Titan-3 automotive fuel cell technology has been confirmed as the highest power density fuel cell stack in the world by third party testing, making it ideally suited to power trucks and buses in commercial environments, including those operating over long distances on Australian roads.

The company is contributing to the escalating adoption of hydrogen vehicles worldwide through our demonstrated technology advantage, leading fuel cell performance and history of rapid innovation. We expect to serve a significant share of this global demand with our expected turn-key capacity to be more than 40,000 fuel cell vehicles annually from 2025.

Hydrogen mobility for the Australian commercial vehicle sector holds enormous potential as fleets look to smoothly transition from fossil fuels to clean energy solutions that decarbonise their operations. HYZON is progressing several opportunities with progressive fleet operators in NSW and we believe a significant opportunity now exists within the state to introduce hydrogen commercial vehicles in volume over the coming years.

HYZON's product offering is unique in the Australian marketplace in that our vehicle range of heavy and medium duty trucks, city buses and coaches are available for Australian customers to order today and are fully Australian design rule compliant.

Our first customer delivery in Australia will take place from mid-2021 with Fortescue Metals Group acquiring a fleet of 10 HYZON fuel cell coaches to be deployed in the Pilbara, Western Australia for mine site operations. We expect to make additional customer announcements for the Australian market over the coming months.

With hydrogen commercial mobility now readily available and a pressing need for fleets to minimise their environmental footprint to meet climate change objectives, we believe the time has arrived for greater

government-industry collaboration to facilitate the entry of these vehicles into Australia. This includes co-designing the supporting frameworks, structures, policy and regulation as well as setting overall targets and objectives to see the technology play a larger role in our transport fleet.

This trend is being seen worldwide, with governments and industry working together to accelerate the uptake of commercial hydrogen mobility. Such examples include:

- California and 15 other US states have set ambitious targets to transition not only passenger cars but also trucks to zero emission status by 2035[1]
- Switzerland has eradicated road taxes for zero emission trucks, which nearly equalises the costs per kilometre compared with diesel[2]
- The first EU-wide CO2 emission standards for heavy-duty vehicle were adopted in 2019 and set targets for reducing the average emissions from new trucks for 2025 and 2030 encouraging the introduction of zero emission options[3]
- Over 25 cities have pledged to buy only zero emission buses from 2025 onwards with many more expected to follow[4]
- Stakeholders are targeting 10,500 hydrogen refuelling stations by 2030 demonstrating the infrastructure supply chain is truly starting to emerge enabling accelerated hydrogen mobility deployments[5]

Both industry and government have an important role to play in developing and implementing initiatives such as those outlined above. As a dedicated hydrogen mobility company, we recognise that we must play a lead role in facilitating and supporting these types of measures while driving the development of hydrogen supply chains. To this end, we have established the HYZON Zero Carbon Alliance (the Alliance) to spearhead these efforts bringing industry together to develop localised hydrogen ecosystems while advocating for the supportive measures required to realise their full potential.

The Alliance is focused on identifying and developing clusters of hydrogen demand in locations such as industrial centres and port areas to drive scale and reduce costs of hydrogen production which in turn will improve the operating the costs of hydrogen vehicles. We are working with partners on opportunities in NSW for such a model and we are excited by the potential of these projects to bring cost-effective hydrogen to fleet operators within the state.

Ultimately, our objective is to offer a more attractive total cost of ownership in comparison to diesel to NSW fleet operators through the provision of low-cost hydrogen from a clean, reliable sources. We are confident we can deliver on this aim, however government support, coordination and leadership will be a critical enabler of this.

Specifically, there are a number of key areas where NSW Government must play a role if it is to position itself as a leading hydrogen jurisdiction and reap the benefits of hydrogen mobility in its own right, but also as a pathway to future export:

Government trials and demonstrations – The NSW metro and regional bus fleet presents a significant opportunity for scale-level transition to zero emission vehicles. We commend the government on its 2019 announcement that it will replace its entire 8,000-bus fleet with electric-powered vehicles by 2030 and the buses it has integrated to date. Trials of hydrogen fuel cell buses within the fleet have yet to be announced and we urge the NSW Government to ensure their inclusion in future projects. Similarly, the government also oversees a sizeable truck fleet which presents attractive opportunities for hydrogen adoption.

Infrastructure support – Consistent with international approaches, government co-investment targeted at hydrogen supply chain development to incentivise private sector investment is critical

[1] CARB 2021 15 states and the District of Columbia join forces to accelerate bus and truck electrification California Air Resources Board [online] Available at <https //ww2 arb ca gov/news/15-states-and-district-columbia-join-forces-accelerate-bus-and-truck-electrification> [Accessed 19 February 2021]

[2] FCA F 2021 HVC - General / Rates [online] Ezv admin ch Available at <http //ezv admin ch/ezv/en/home/information-companies/transport--travel-documents--road-taxes/heavy-vehicle-charges--performance-related-and-lump-sum-/hvc---general---rates html> [Accessed 19 February 2021]

[3] European Commission 2021 Reducing CO2 emissions from heavy-duty vehicles - Climate Action - European Commission [online] Available at <https //ec europa eu/clima/policies/transport/vehicles/heavy en> [Accessed 19 February 2021]

[4] Hydrogen Council 2021 Hydrogen nsights 2021 [online] Available at <https //hydrogencouncil com/en/hydrogen-insights-2021/> [Accessed 19 February 2021]

[5] bid

during this nascent stage of the sector. Areas that should be targeted include hydrogen production facilities and refuelling infrastructure networks to drive down the price of hydrogen and provide access to fuel for fleet operators with the objective to encourage the accelerated switch to hydrogen vehicles in the state.

Vehicle entry facilitation – Government support to navigate the regulatory and accreditation requirements for hydrogen vehicles entering the state as well as assistance with government procurement requirements would be highly valuable for manufacturers and local assemblers of these vehicles. Entry requirements may not only differ state by state, but also at the LGA level for vehicles such as refuse trucks, with council specific requirements often in place. Assistance to address these as well as pursuing opportunities for harmonisation wherever possible will facilitate greater entry of hydrogen vehicles at reduced cost.

Education and training – A lack of hydrogen-specific skills could put a handbrake on the sector's development. Automotive mechanics trained in servicing fuel cell vehicles and gas fitters certified in hydrogen equipment, such as refuelling stations are two examples of skill sets that will be essential to scale the NSW hydrogen mobility sector. HYZON has an immediate need for these skills today and we are engaging closely with TAFEs. State government prioritisation of these important skill sets will expedite the introduction of dedicated hydrogen curriculum within the TAFE system in NSW to the sector's benefit.

NSW has an exciting opportunity to develop a new industry sector experiencing unprecedented global momentum. We urge the state to capitalise upon this significant opportunity and act swiftly to support the sector to realise its full potential.

We thank the Standing Committee for the opportunity to contribute to this important inquiry. Should you have any questions regarding this letter, please contact the lead of the HYZON Zero Carbon Alliance, Claire Johnson by email on e: or m: .

Yours sincerely,

Dr John Feenan
Operations Director – HYZON Motors Australia