

FUTURE FUELS STRATEGY: DISCUSSION PAPER

The Chamber of Minerals and Energy of Western Australia (CME) is the peak representative of the Western Australian (WA) resources sector. CME has a diverse membership, covering over 70 mining and energy companies both up and downstream. In 2018-19, members supported more than 20,000 businesses across Australia.¹ In 2020, the WA resources sector accounted for 57 per cent of Australia's mining new capital expenditure.²

In preparing this submission, CME will broadly comment on common themes such as strategic opportunities and policy, regulatory and taxation challenges relevant to the sector. No commentary is provided on the technical or commercial aspects of different low emission transport technologies. CME, however, recognises the various technologies can be complementary depending on different fleet requirements and barriers to entry, with some members actively trialling technologies to gain a first-mover advantage.

Hereafter, electric vehicles (EV) include battery EVs, hybrids, plug-in hybrids or hydrogen fuel cell EVs.

1. Charging and refuelling infrastructure – Questions

Some of the largest users of energy in transport may rely on private infrastructure in future. For smaller companies however, the cost of privately connecting to public infrastructure will be a significant inhibitor. Private recharging and refuelling infrastructure that demonstrates public or considerable benefit should be considered eligible for the Future Fuels Fund. Like reforms to the Northern Australia Infrastructure Facility, the definition can be expanded to consider jobs and opportunities created for local businesses. This definition will encourage public-private partnerships in regional and remote WA, where most CME members operate.

Refuelling infrastructure should be co-located near established transport routes and existing roadhouses. In the metropolitan region, any infrastructure developed will need to be phased to meet changes in demand. Where possible, infrastructure should be strategically co-located close to intermodal hubs to protect the development of existing and future commercial and industrial land uses. It will also require an end-to-end supply chain assessment of production, storage, carriers, transport, and end-use across the various technology applications in the public and private space.

It is vital land use planning for future fuel infrastructure does not inadvertently trigger new planning processes or compliance requirements. Modification of existing requirements should be favoured instead to reduce the regulatory burden. Planning should also allow for future expansion as demand scales up, ensuring interfaces between competing land uses is avoided, to the extent reasonably practical. To enable a future for EVs, greater protection from encroachment needs to be afforded to infrastructure and transport corridors.

CME generally supports an opt-in principles-based approach to regulating infrastructure, given it is effective and fit-for-purpose. Where there is a public interface, the government could consider acting as a conduit for aggregating private demand into one consolidated load, like a strategic industrial area or an intermodal hub which is geographically concentrated. This aggregation, however, will need to be coordinated with a framework established at the outset to maximise the efficiency gains of shared supply, rather than retrofitted in existing networks and risk eroding competitive advantage.

Notwithstanding the above comment, CME strongly recommends that any public investment into charging or fuelling infrastructure should not be awarded on an exclusive, non-competitive basis as this can lessen market efficiency and discourage productivity. With some markets considered monopolies or oligopolies and requiring significant capital, efficient investment and an appetite for innovation (or contemporaneity) is crucial to ensure the cost of energy remains affordable in the longer term.

While CME welcomes the government's assistance with supply-side infrastructure, the merits of stimulating demand for those transport modes where price parity and whole-of-economy uptake of alternative technologies will not be reached within the next decade should be considered. Recognised by the King Review, 'hard-to-abate' sectors like heavy industry, freight transport and aviation will need assistance to accelerate the uptake of technologies that are not currently cost-competitive.³ There is little incentive to convert or retrofit the engines of existing fleets because the upfront costs of sunk capital and new technology

¹ [CME](#), *2018-19 economic contributions*, national factsheet, 20 July 2020.

² [Government of WA](#), *WA economic profile – March 2021*, Department of Jobs, Tourism, Science and Innovation, 13 April 2021.

³ [Commonwealth of Australia](#), *Report of the Expert Panel examining additional sources of low cost abatement*, Department of Industry, Science, Energy and Resources, 14 February 2020.

are high. Some members have indicated the fleet conversion cost can be three times as much as diesel. Establishing a new method of awarding Australian Carbon Credit Units under the Emissions Reduction Fund (ERF) for significant fleet conversions or retire earlier than its technical life could be considered.

Given the interconnectedness of these recharging and refuelling infrastructure projects, CME supports their integration and inclusion into Infrastructure Australia's Infrastructure Priority List.

2. Early focus on commercial fleets – Questions

CME welcomes the early focus on commercial fleets. However, other fleet types such as heavy haulage (e.g. 16 tonnes and above) that may be ineligible for the yet to be announced Freight Energy Productivity Program should not be discounted from the government's focus. The government must continue to consider transport modes not sufficiently covered by ARENA, CEFC or the ERF. A focus on light commercial fleets may be insufficient for achieving the economies of scale required to support a whole-of-economy transition.

For the WA resources sector, off-road, open pit and underground performance of non-diesel vehicles in remote, high-temperature climates are yet to be demonstrated at scale. For example, it has taken more than two years for BHP to plan and trial the performance of light EVs at Olympic Dam⁴ before announcing a second rollout trial at Nickel West.⁵ Some of the operating performance criteria which need to be satisfied to enable the wide-scale transition from diesel-based vehicles include:

- Distances travelled
- Weight carried – Varying grades and payloads
- Duration to recharge or refuel
- Swap times and utilisation
- Durability – Dust and corrosion resistance, storage conditions and temperature management (e.g. ventilation and refrigeration requirements)
- Interoperability and compatibility with sensors, logic control and automation systems
- Maintenance schedules and procedures
- Safety – Heat generation, fire or fast charging risks.

The government is encouraged to consider other pathways for heavy industry fuel conversion, such as trials in shipping, for possible opportunities and learnings. The International Maritime Organization for example recognises the role gas could play as a short- to mid-term measure for transition from 2023 onwards.⁶

3. Improving information for motorists and fleets – Questions

In addition to the criteria listed in the discussion paper, sharing information on the following in a readily accessible format for comparing the various types of new technologies would be welcome:

- Suitable commute activities and patterns
- Daily and lifetime cost profiles – point-in-time recharging or refuelling pricing
- Locations to recharge or refuel – to differentiate slow and fast stations and help journey planning
- Vehicle weights
- Credible emissions data
- Braking performance
- Travel range in remote and regional areas, not just metropolitan
- Smart charging strategies.

Some consumers may also want to understand or scrutinise the country of origin, fuel sources and integrity of supply chains used to manufacture their EVs.

⁴ [BHP](#), *Creating the future of mining – integration and automation*, 1 November 2017.

⁵ [BHP](#), *BHP and Toyota partner for light electric vehicle trial*, 8 January 2021.

⁶ [IMO](#), *Reducing greenhouse gas emissions from ships*.

General information on where to place chargers, add stations, number of EVs per charger or amount of stations in designing the layout of the recharging or refuelling infrastructure in brownfields or greenfields applications may assist with decision making for those companies with smaller fleets.

4. Integrating battery electric vehicles into the grid – Questions

CME supports the vast potential of EVs but recommends rigorous scenario modelling across multiple seasons and pilot testing (market trials) before integrating EVs into large-scale transmission and distribution networks. It will need to demonstrate network reliability and performance is unaffected (or positively affected) and meets the tolerance of industrial users dependent on grid reliability.

For example, the increasing penetration of intermittent distributed energy resources (DER) in the South West Interconnected System (SWIS) has led to an increased reliance on gas generation and therefore pipeline infrastructure to prevent blackouts. Integration of new technologies will need inter-and intra-agency coordination across governments in energy (not just electricity), transport, land use planning, regulatory safety and infrastructure to ensure externalities are minimised where possible.⁷

To prevent the potential worsening of the duck curve due to EV uptake (i.e. rooftop solar photovoltaics have a one in five uptake in WA), approval processes for enabling connection to the SWIS or North West Interconnected System may need to be considered. Market mechanisms like pricing or consumer guidance to facilitate smart charging practices to encourage EVs to act as batteries and lessen the duck curve will need consideration. Like gas and electricity, some form of modernised economic regulation may also be needed. For example, WA has recently launched a DER Register to understand the growing installation of solar PVs across the SWIS but there are currently no plans to incorporate EVs and batteries into the DER Register. Governments should also be aware market and operational intervention may be required if battery EVs disrupt grid security and stability, particularly in fringe-of-grid areas where infrastructure need to be upgraded. CME, therefore, encourages visibility in the infrastructure rollout.

Further to the Economics and Industry Standing Committee's findings,⁸ CME is not convinced network tariff arrangements are cost-reflective and appropriate during peak times on the SWIS. Time of use pricing between different uses and users will need to be reviewed to support the rollout of charging or refuelling infrastructure and, in turn, positively influence efficient usage behaviours in consumers.

5. Supporting Australian innovation and manufacturing – What are Australia's market niches in future fuels to maximise high-value domestic and export outcomes?

As noted above, increasing competition in markets can promote efficiency and technological innovation. Markets will need clearer signals on planned policy pathways and targets. A transparent mechanism for coordinating buyers and sellers will need to be considered to facilitate a well-functioning and competitive market, while certainty in the value of providing essential system services (where EVs can play a role) is needed to support the demand in these domestic markets.

WA has an existing competitive advantage in the supply of minerals and energy. However, this is primarily upstream. The ability to convert this opportunity into a market niche for high-value domestic and export outcomes (i.e. downstream processing) will depend on the delivery of federal-state solutions in consultation with industry and other stakeholders. Solutions will need to incentivise significant capital investment, reduce commercial or technological risk, improve labour productivity, and address the longer-term costs of energy and gaps in common user infrastructure. Some member companies believe the opportunities will be in essential system services, diesel displacement, LNG in heavy transport like deep-sea shipping, ammonia production or hydrogen bus manufacturing, leveraging existing knowledge and relationships present in WA.

To incentivise investment in future fuels, the Research and Development (R&D) Tax Incentive Program needs to remain stable and predictable. The introduction of thresholds and intensity premiums in the last few years without grandfathering considerations created investment uncertainty on those companies with pilot projects.

⁷ In WA, this may require collaboration of the Department of Mines, Industry Regulation and Safety, Energy Policy WA, Western Power, Horizon Power, Australian Energy Market Operator, Department of Transport, Main Roads WA, Public Transport Authority, Department of Planning, Lands and Heritage, DevelopmentWA, WorkSafe, Economic Regulation Authority, port authorities, local governments and Infrastructure WA.

⁸ [Parliament of WA](#), *Taking charge – WA's transition to a distributed energy future*, final report no. 8, Legislative Assembly, February 2020.

Equally, certainty around fiscal settings, including existing frameworks for foreign investment, royalty rates, various fuel and vehicle duties is critical. Reductions in taxes or targeted incentives should be considered where the net public benefit of creating new value-adding jobs and industries is quantifiably demonstrated. In other cases, where the evidence base is justified, some cost elements should be exempted to remove a distortion in costs and correct market behaviour.

Currently, pilot tests and commercial-scale demonstrations can be deemed ineligible in accessing the R&D tax incentive offset. The King Review also acknowledges this gap between R&D and commercial deployment at scale. Therefore, the government should incentivise a higher investment into collaborations with original equipment manufacturers, particularly where individual companies may not have the economies of scale to broker such relationships. In the resources sector for example, mine site electrification is more likely to be company-driven rather than supplier driven.⁹

CME would also like to caution public investment in technologies that are unlikely to achieve whole-of-market or industry uptake. Any investment to support Australian innovation and manufacturing should be supported by rigour and transparency, pursued on a competitive and scientific merit basis.

Lastly, the sector is reliant on diesel-based technicians and trades for scheduled maintenance programs. A phased transition away from liquid fuels will need to be carefully managed and consider the reskilling of 200,000+ individuals employed as motor mechanics, fitters or machinists across Australia.¹⁰ For example, the tooling requirements and spare parts for these vehicles are significantly less and could negatively affect the automotive servicing workforce.

6. Other comments

Wherever possible, CME recommends existing forums are leveraged for obtaining input and driving coordination of the Future Fuels Strategy. Synergies between industry sectors will need to be realised to avoid a siloed or duplicative approach – particularly as affordability and reliability of energy sources will need to underpin the success of commercially transitioning away from liquid fuels.

For example, CME currently contributes to the following related groups:

- WA Future Battery and Critical Minerals Industries Strategy > Energy Storage Systems Working Group
- Future Batteries Industries Cooperative Research Centre (CRC)
- Infrastructure WA's External Stakeholder Reference Group
- Economic Regulation Authority Consumer Consultative Committee.

CME and many of our member companies are also engaged in related matters via the WA Renewable Hydrogen Strategy, WA LNG Jobs Taskforce, NERA's Sector Competitiveness Plan, ARENA's delivery National Hydrogen Strategy, Electric Mine Consortium, Future Fuels CRC and Future Energy Exports CRC.

It is not possible to limit future fuels to transport applications. Policies and regulation for logistics, electricity, domestic gas, coal, liquid fuels and biofuels, hydrogen, renewables and emission reduction will need to be integrated and treated as a single energy system. The cumulative effect of these policies on Australia's fuel security (diesel storage) and dependent industries will also need careful consideration.

Finally, the government should recognise an increased demand for EVs globally will lead to demand growth for battery minerals or hydrogen. WA has most of these required inputs, therefore getting mines and processing facilities up sooner for domestic or export outcomes will need to remain an immediate strategic priority for all government levels. For these reasons, CME recommends delivery of the Future Fuels Strategy is linked to Australia's Critical Minerals Strategy and Modern Manufacturing Strategy.

⁹ [SOP](#), State of Play – Electrification, 12 October 2020.

¹⁰ [ABS](#), 6291.0.55.001 EQ08 Employed persons by occupation unit group of main job (ANZSCO), February 2021 reference period, released 25 March 2021.