Transport and Infrastructure Net Zero Consultation Roadmap

Take the survey

Department of Climate Change, Energy, Environment and Water

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9 Who are you answering on behalf of?

Organisation

10 Organisation name

Ampol Limited

11 What best describes you or your organisation?

Not answered

12 What sector do you represent?

Not answered

13 What state or territory do you live in?

New South Wales

14 Postcode

2015

15 What area best describes where you live?

City

16 1. Do you support the proposed guiding principles?

Not answered

17 1.1 Please add details to your response.

Not answered

18 2. Do you support the use of the avoid-shift-improve framework as a tool to identify opportunities for abatement?

Not answered

19 2.1 Please add details to your response.

Not answered

20 3. Do you agree the development of a national policy framework for active and public transport will support emissions reduction?

Not answered

21 3.1 Please add details to your response.

Not answered

22 4. What should be included in a national policy framework for active and public transport and how should it be developed?

Not answered

23 5. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure the movement of people contributes to transport emissions reduction?

Not answered

24 6.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure that the movement of goods contributes to transport emissions reduction?

Not answered

25 6.2. How would these actions address the identified challenges and opportunities for emissions reduction in the movement of goods?

Not answered

26 7. Do you agree with the proposed net zero pathway for light road vehicles?

Not answered

27 7.1 Please add details to your response.

Not answered

28 8. The Australian Government is currently developing an Australian New Vehicle Efficiency Standard and has already begun to implement actions in the National Electric Vehicle Strategy.8.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce light vehicle emissions?

Not answered

29 8.2 How would these actions address the identified challenges and opportunities to reduce light vehicle emissions?

Not answered

30 9. Do you agree with the proposed net zero pathway for heavy road vehicles?

Not answered

31 9.1 Please add details to your response

Not answered

32 10. The proposed pathway for heavy road vehicles relies on a mix of battery electric, hydrogen fuel-cell and low carbon liquid fuels.Rank from 1 to 3, the order in which these should be prioritised for emissions reduction.

Not answered

33 10.1 Please add details to your response. Why did you rank them in that order?

Not answered

34 11. What role should low carbon liquid fuels play in the heavy vehicle

decarbonisation?

Not answered

35 12. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce heavy vehicle emissions?

Not answered

36 13. Do you agree with the proposed net zero pathway for rail?

Not answered

37 13.1 Please add details to your response.

Not answered

38 14. The proposed pathway for rail relies on a mix of battery electric, hydrogen fuel-cell and low carbon liquid fuels.Rank from 1 to 3, the order in which these should be prioritised for emissions reduction.

Not answered

39 14.1 Please add details to your response. Why did you rank them in that order?

Not answered

40 15. What role should low carbon liquid fuels play in rail decarbonisation?

Not answered

41 16. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce rail emissions?

Not answered

42 16.1 How would these actions address the identified challenges and

opportunities to reduce rail emissions?

Not answered

43 17. Do you agree with the proposed net zero pathway for maritime?

Not answered

44 17.1 Please add details to your response.

Not answered

45 18. The Australian Government is engaging in consultation as part of the development of the Maritime Emissions Reduction National Action Plan and those consultations will also inform the final Roadmap and Action Plan. 18.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce maritime emissions?

Not answered

46 18.2 How would these actions address the identified challenges and opportunities to reduce maritime emissions?

Not answered

47 19. Do you agree with the proposed net zero pathway for aviation?

Not answered

48 19.1 Please add details to your response.

Not answered

49 20. The Australian Government has already engaged in consultation on aviation decarbonisation through the development of the Aviation White Paper and those consultations will also inform final Roadmap and Action Plan.

Not answered

50 20.1 What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce aviation emissions?

Not answered

51 21. Do you agree with the proposed net zero pathway for transport infrastructure?

Not answered

52 21.1 Please add details to your response.

Not answered

53 22. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to reduce transport infrastructure emissions and ensure that transport infrastructure is ready for and enables low-emission transport modes?

Not answered

54 22.1 How would these actions address the identified challenges and opportunities to reduce transport infrastructure emissions?

Not answered

55 23. What additional actions by governments, communities, industry and other stakeholders need to be taken now and in the future to ensure the energy mix is ready to support transport emissions reduction?

Not answered

56 24. How should the use of low carbon liquid fuels (LCLFs) be prioritised across different transport modes over time to achieve maximum abatement?

Not answered

57 25. What are the best ways for the Australian Government to work collaboratively with industry, business, governments and communities to implement the proposed pathways?

Not answered

58 25.1 What are good domestic or international examples of partnership and collaboration on transport and transport infrastructure emissions reduction that could inform the final Roadmap and Action Plan?

Not answered

59 25.2 What opportunities can Government leverage to show leadership in Australia and internationally?

Not answered

60 26. What measures and metrics should be used to evaluate the final Transport and Infrastructure Net Zero Roadmap and Action Plan?

Not answered

61 26.1 What other data and evidence could governments use and how could this offer further insights on the pace, scale and location of transport emissions reduction pathways?

Not answered

62 27. Do you have any feedback on the proposed review process?

Not answered

63 28. Do you have any further feedback on the Consultation Roadmap and proposed pathways?

Not answered

64 28.1 Is there anything missing? Are the sections appropriately integrated? Is the Roadmap appropriately ambitious?

Not answered

65 29. Is there any further information or documentation that you wish to be considered with your submission?

Not answered

66 Would you like to upload a document?

Yes

67 Have you removed any identifying information from your submission?

Yes

68 Upload a submission

231 Redacted
Ampol_Submission_Transport_Sector_consultation_roadmap.88017b3e.pdf

69 Upload a submission

Not answered

70 Upload supporting file

Not answered

71 Upload supporting file

Not answered

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2 August 2024

Department of Infrastructure, Transport, Regional Development,
Communications and the Arts

Submitted via email to NetZero@infrastructure.gov.au

Response to Transport and Infrastructure Net Zero Consultation Roadmap:

Part 1 – Introduction:

Ampol Limited (**Ampol**) welcomes the opportunity to make a submission to the Department of Infrastructure, Transport, Regional Development, Communications, and Arts (the 'Department') consultation on the Transport and Infrastructure Net Zero Consultation Roadmap ('Consultation Paper').

Addressing transport sector emissions, which currently contribute around 19% of Australia's total greenhouse gases, will be critical if Australia is to reach net zero by 2050. Through undertaking our own research and working with our customers, Ampol understands no single technology will help decarbonise the transport sector, with different solutions needed for different market segments. Therefore, to facilitate an orderly decarbonisation of the transport sector, Ampol believes we will need a collective effort by governments and industry to develop clear and appropriately targeted policy interventions.

In developing this submission, we consulted with internal stakeholders and our Industry Association partners to identify design features to consider when developing a policy to support the transport sector.

About Ampol

As Australia's leading fuel supplier with over 120 years of operations experience, Ampol manages Australia's largest fuel and convenience network as well as refining, importing, and marketing fuels and lubricants. With our extensive experience, we have grown to become the largest transport fuels company listed on the Australian Securities Exchange.

In Australia, our robust supply chain is underpinned by our market-leading infrastructure, including 14 terminals, six major pipelines, 53 wet depots, approximately 1,800 retail sites (including over 630 company owned and operated sites), and one refinery located in Lytton, Queensland.

We have also expanded our operations into international markets, including our Trading and Shipping business operating out of Singapore and Houston, USA and our acquisition of Z Energy, a leading New Zealand transport fuels supplier. In total our operations are supported by over 9,000 people.

Ampol – powering better journeys, today and tomorrow

Ampol believes we have an important role to play in Australia's decarbonisation journey and we are currently pivoting our market leading position in fuels towards a lower carbon future.

In May 2021, Ampol released its Future Energy and Decarbonisation Strategies, which outline our plans to transition our business to succeed in a low carbon economy through decarbonisation of our Australian operations (Scope 1 and 2) and offering low carbon energy solutions to our customers to assist them with their own transition.

Ampol is currently rolling out our AmpCharge network, with close to 100 fast charging bays already deployed – we are looking to leverage our existing market position to establish the leading EV charging network in Australia by 2030.

We recently launched Ampol Energy and we are investigating the viability of establishing a wider electricity business. Beyond electrification of transport, we are working towards developing hydrogen products and Low Carbon Liquid Fuels (LCLF) to maximise our ability to support customers in their decarbonisation journey.

Ampol has also commenced importing Renewable Diesel (RD) to demonstrate the potential to decarbonise heavy industry and **we are exploring options to produce LCLFs at the Lytton refinery, through the Brisbane Renewables Fuels (BRF) project at Ampol's Lytton Refinery**. We are investigating the feasibility of establishing a world-scale advanced biofuel manufacturing facility that can produce at least 500 million litres of renewable fuels annually.

Part 2 - Transport sector decarbonisation – a sector in transition:

The energy transition is under way and gaining momentum in the transport sector. This is an economy wide transformation, which depends on a complex and interconnected global web. This transition has many component parts including auto manufacturers, charging infrastructure, feedstock providers, electricity network capacity and broader community acceptance and adoption.

Across these components, challenges remain that will require time, supportive regulatory interventions, and substantial investment to address. For example, Bloomberg estimates that reshaping Australia's mobility sector in line with its net zero commitments will require over AU$1 trillion in investment (Bloomberg, 2022).

Ampol believes that there are numerous challenges at the policy, infrastructure, and investment levels that need to be identified. **Key to this is understanding what technology is available to be deployed at scale to realise emissions abatement and what policy can help facilitate this transition.** Addressing these fundamental considerations will not only facilitate the energy transition in the transport sector but also ensure it occurs in an efficient and orderly way.

Decarbonisation technology overview

Australia currently relies on liquid fuels for more than half of its overall energy use, with the transport sector accounting for c.75% of Australia's consumption of refined liquid fuel products. Within the total volume pool of 57 billion litres of fuel sold in Australia around c.30% of this volume is gasoline, with the remaining 70% being middle distillates (diesel and aviation fuel).

The consumption of gasoline is largely driven by passenger and light commercial vehicles (i.e. light duty vehicles). Within middle distillates, a portion of this is consumed within the light duty fleet, primarily in the commercial category rather than passenger. The remainder is consumed by what are collectively known as the hard to abate sectors of long-haul trucking, off-road industrial, and aviation.

Due to continued economic and population growth, demand for liquid fuels in hard to abate sectors continues to grow, despite awareness of the need to decarbonise. For example, Ampol estimates that jet fuel demand will increase from 8.4 billion litres in 2023 to around 12-14 billion litres per annum by 2040 (inclusive of international flights).

There are multiple technologies including Electric Vehicles (EVs), LCLFs and hydrogen that are either commercially proven or under development that can help support the decarbonisation of the transport sector. **Ampol believes that no single technology will decarbonise the transport sector, with different use cases requiring distinctive solutions**.

While technologies under development like hydrogen may play a role in the medium to long-term (in certain circumstances), **Ampol believes that the Government should focus initial efforts on driving the uptake at scale of proven technologies**.

Passenger and most light commercial vehicles (and therefore gasoline) **have a broadly accepted and reasonably mature decarbonisation solution in EVs**. Therefore, we believe the Government should consider policies to support not only their uptake, but **successful integration by ensuring suitable infrastructure and systems are deployed through regulatory settings that enable the private market to deploy EV charging solutions.**

On the other hand **aside from LCLFs, there are no other mature technologies available to materially impact the hard to abate sectors in the near term**. Ampol believes under all credible emissions scenarios (based on today's proven and emerging technologies), Australia's heavy industry and transport sectors will require LCLFs to reduce their emissions in the foreseeable future.

In line with this, **Ampol's submission focuses on the issues and policies that relate to the passenger / light commercial vehicles and the hard to abate sectors (heavy and aviation)**. We first provide comments on the decarbonisation technology pathway of our core focus areas, before providing advice on some of the policies needed to support emissions reduction in the transport sector.

This includes acknowledging the role a transport wide policy market mechanism like a Low Carbon Fuel Standard could play in supporting and orderly transition.

Net Zero Pathways – light vehicles

Ampol broadly supports the Consultation Paper's proposed decarbonisation pathway for light vehicles.

EVs represent the most promising pathway for light vehicle decarbonisation. The continued development of battery technology, including increased energy density, faster charging times, and longer lifespans, is making EVs more accessible and practical for a broader range of consumers.

There are already existing examples of comparable light vehicle models (BEV vs. non-BEV) that are at upfront price parity in Australia, spurred by increasing model availability and new market entrants. The successful transition to electric vehicles will however rely on more factors than upfront cost parity. Among these will be increasing model availability, perceived maturity and longevity of technology, access and availability of infrastructure, and compatibility with user expectations and use cases (particularly around charging and distance).

A near-term barrier to *total cost parity* remains in the form of higher insurance premiums and lower resale values for BEVs, which Ampol expects will be resolved over time as the light duty vehicle maintenance and services "aftermarket" develops capabilities relating to BEVs.

Based on current technology and manufacturing processes, we understand there is a use-case for "mild" hybrid vehicles (i.e. not a primarily battery-driven "Plug-in" Hybrid) in the short term for carbon reduction, particularly for vehicles that are not driven substantial distances and therefore do not 'break even' in respect to their embodied emissions.

A hybrid vehicle is also likely to find use cases in areas far from urban centres, where charging infrastructure will take time to develop. As the grid decarbonises and battery technology and manufacturing processes evolve, these concerns will likely diminish.

Governments **will play a crucial role in this transition by creating the ecosystem needed to support EV uptake, including investing in the energy network and charging infrastructure in locations where the market may not support a timely roll out**.

Net Zero Pathways – Heavy Vehicles

Ampol broadly supports the proposed decarbonisation pathway for Heavy Vehicles.

Decarbonising the heavy road transport sector will require cross-industry collaboration and a phased approach. Given their specific technology requirements to meet longer ranges and weight / load demands, heavy vehicles will require substantial support for decarbonisation efforts.

While heavy vehicles constitute a relatively low percentage of the vehicle fleet in Australia, they contribute significantly to emissions. Diesel use in heavy duty vehicles accounts for c.20% of all transport emissions (road + aviation) in Australia. Similarly, aviation itself also accounts for c.20% of transport emissions, meaning that together these two hard-to-abate sectors represent some 40% of total transport emissions. Decarbonisation of these two sectors is thus crucial to reducing overall transport sector emissions.

A range of low carbon emissions heavy vehicle technologies, including battery electric vehicles (BEVs) and hydrogen fuel cell vehicles (FCEVs), are being tested and deployed globally. Ampol believes that while BEVs and FCEVs may play a role in the long term, **LCLFs provide the only pathway for at scale emissions abatement in the near term, particularly those known as "drop-in" fuels that are chemically equivalent to fossil fuels**.

BEVs could be suitable for short-haul and urban routes, where range limitations are less of a concern and hydrogen fuel cell vehicles may present a solution in the long term. However, for each of these technologies, continued research and development is needed to improve their efficiency, reduce costs, and enhance their practicality for widespread adoption.

Many FCEV and BEV commercial / heavy vehicle equivalents are also not yet available in the Australian market, with some types including long-haul B-doubles unlikely to arrive until the end of this decade. We also understand that, where they are available, the high cost of commercial / heavy vehicle FCEV equivalents remains a significant barrier for many vehicle operators, as is their limited range. For example, the Total Cost of Ownership for many FCEV and BEV heavy vehicles can be up to three times the cost of equivalent ICE commercial / heavy vehicles.

Significant infrastructure development will also be required to support the transition to low-emission heavy vehicles. The adoption of BEVs and FCEVs will require a network of high-power charging stations and hydrogen refueling stations. Additionally, upgrading the electric grid to support the increased load from widespread electrification and developing renewable hydrogen production facilities will be necessary steps to ensure that the energy used for these vehicles is sustainable.

Within LCLFs, those that are known as "renewable, or 'drop in' fuels", provide the greatest opportunity for early decarbonization of transport. The use of LCLFs means investment in additional new vehicles and infrastructure can be avoided in the near term. **This provides the Australian market the opportunity to commence decarbonising heavy vehicles using existing equipment and supply chain, while allowing industry to stagger the pace of any investment in new infrastructure as other technologies mature**.

Effective decarbonisation of this sector will require technological advancements, infrastructure development, and supportive policies. **We believe the Government should continue to support research and development for technologies like FCEV for potential long-term use, alongside supporting at scale usage of LCLF for near term abatement.**

Net Zero Pathways – Aviation

Ampol broadly supports the proposed decarbonisation pathway for aviation.

The aviation sector plays a crucial role in global connectivity, economic growth, and cultural exchange. However, it is also a significant contributor to greenhouse gas (GHG) emissions, which pose a critical challenge to global climate objectives (c. 20% of Australia's total transport emissions).

Aviation decarbonisation is a complex challenge due to the high energy density required for flight and the long lifespan of aircraft. While new propulsion technologies, such as batteries, hydrogen fuel cells, and hydrogen, are being explored for aviation use, **they are not likely to reach commercial-scale production for airlines until well into the 2030s**. Once that happens, it will take several more decades for the current fleet of fossil fuel-propelled aircraft to be replaced entirely by new planes with low-carbon technology for short and medium-haul flights.

Sustainable Aviation Fuel (SAF) represent the most promising avenue for reducing aviation emissions at scale in the near term. SAF is produced from renewable resources and has the potential to reduce the carbon footprint of aviation significantly. SAF can reduce lifecycle emissions by up to 80% compared to traditional jet fuels and can also lead to reductions in particulate matter and sulfur emissions, contributing to better air quality around airports.

There are several different production pathways that can be used to produce SAF, including Hydro-processed Esters and Fatty Acids (HEFA), Alcohol to Jet (A2J) and Power to Liquids (PTL). HEFA based SAF is derived from feedstocks including tallow, used cooking oil (UCO) and canola oil.

Australian ethanol could be utilised as an essential feedstock to produce SAF through A2J. There are also emerging solutions and innovations in agriculture that will further enable Australian farmers to meet the rapidly rising demand for these renewable feedstocks while improving their productivity and sustainability.

Importantly, **the HEFA production pathway is being deployed globally at scale, meaning that there is an ability to start driving abatement in the near term**. This means that **governments and industry can support the deployment of HEFA based SAF, while research continues to improve other production pathways reliant on alternative feedstocks**.

SAF is designed to be a "drop-in" replacement for conventional jet fuel, meaning they can be used in existing aircraft and infrastructure. Like for the heavy vehicle sector, this means **the Australian market can phase its decarbonisation investment to align with the maturity of other technologies**.

A local SAF industry would create further demand, increasing supply and strengthening domestic production capabilities. **We believe the Government should continue to support research and development for emerging technologies for potential long-term use, alongside supporting at scale usage of SAF for near term abatement.**

Part 3 Supporting transports Net Zero Pathways – policy proposals

In line with the above positions, **Ampol has outlined below a range of policies aimed at supporting decarbonisation across light vehicles, heavy vehicles and aviation**. In line with our view to prioritise those technologies that can support abatement in the near term, **the policies are focused on electrification and LCLF uptake**.

This includes acknowledging the role a transport wide policy mechanism like a Low Carbon Fuel Standard could play in supporting an orderly transition.

Electrification policies

Charging availability and location

Ampol acknowledges the Government's commitment to promoting EVs and emphasises the necessity of parallel investments in infrastructure to fully realise the benefits of transitioning to electric transportation.

As the New Vehicle Efficiency Standard (NVES) unlocks supply and increases EV uptake, the Government will need to **focus policy reform efforts on providing or incentivising the services needed to support the industry**.

We understand that up to **40% of charging will occur in public** and it will be crucial for many metropolitan locations where community members do not have access to off-street parking, or to private charging facilities.

However, we understand that not only is Australia's existing public charging network underdeveloped, but industry's ability to deploy new assets is also constrained. For example, *Bloomberg* estimates there are over **120 EVs for one ultra-fast public charging station in Australia, a higher ratio than in the EU or US**.

Not only does this mean that due to Australia's low population density there are still large drivable areas without any charging, but there is also often vehicle queuing where infrastructure exists. This situation is likely to worsen as the New Vehicle Efficiency Standard continues to support increased EV uptake.

Governments need to focus on policies that will support the deployment of charging infrastructure, to help address potential customer access constraints. Some key areas of focus are highlighted below.

Electric Grid Infrastructure

Industry's ability to respond to growing charging demand is constrained due to several challenges impacting infrastructure deployment.

Not only do Australian Charge Point Operators need to compete for resources in a highly competitive global market, but the cost of deploying assets is also significant. Installing a single fast-charging asset suitable for public charging rated at 150kW and above often requires significant time working with the relevant Distributed Network Service Provider (DNSP) and investment capital to upgrade both the grid connection and the grid.

Alongside EV charging stations, significant investment in supporting electrical systems and infrastructure is required. For example, AEMO's *2022 Integrated System Plan* estimates that power consumption will increase by 30% from today's usage, resulting in the need for an additional 70TWh in generation capacity, by 2050.

Due to the highly regulated nature of the energy sector, **we believe governments should focus resources on addressing infrastructure constraints rather than providing further significant demand side vehicle incentives.**

Streamlining and supporting grid connection processes

In addition to the upgrade costs, **the installation process can take between 6-12 months on average**.

This is for a single fast charger in an environment where **EV uptake is relatively low at around 7-8% of new car sales.** As noted above, with the NVES expected to increase EV uptake, **there is a risk of infrastructure supply not meeting charging demand.**

Based on our experience key considerations related to deliver constraints include:

- **Skills** – appears to be a need for additional resources to support this work, so training programs may be needed.
- **Processes** – need for processes to streamline connection processes including self-serve DNSP initial enquiry tools (not only helps the project, but also the DNSP with reduced strain on resources).
- **Knowledge sharing** - there is an opportunity to foster platforms for knowledge sharing of best practices among DNSPs across Australia.

Ampol believes **the Government will need to coordinate efforts to help support the market with policies to encourage the streamlined delivery of EV chargers to help ensure it keeps pace with customer demand. Primarily, this can be achieved by removing grid infrastructure constraints and smoothing the process for connecting to the grid.**

EV charging planning rules

Industry's ability to respond to growing charging demand is also constrained due to inconsistent and at times conflicting planning regimes that are impacting infrastructure deployment. We at Ampol involve local councils when we deploy EV chargers through Development Applications (DAs). However, we have seen timelines vary significantly across councils.

While Ampol understands the need for rigorous planning governance processes, we believe there is a need for better coordination to ensure EV charging projects are delivered in a timely fashion. An example to call out is NSW's planning exemptions for EV charging installations which can act as a guideline for EV charger project proponents. Another good example could be using planning and regulations to set future requirements, such as mandating EV chargers in new developments.

Tariff Reform

Ampol is also of the view that the different load profile of EV charging sites, versus a traditional small/medium business, justifies consideration of the introduction of a specific/customer specific tariff to better incentivise and reward customer behaviour that reduces costs for all network users.

DNSP tariffs need to be designed to both allow for EVs to be integrated into the grid and incentivise the deployment of EV infrastructure.

Current default commercial and industrial tariff assignments for public EV charging sites do not provide appropriate market signals for encouraging EV uptake. Currently, public EV charging assets are characterised as on demand infrastructure with high peak loads, yet when demand tariffs are applied to public EV chargers, it can more than double the charging cost for customers, establishing a significant cost barrier in the market.

We believe that the transition to EVs should consider the development of aspecific tariff for EV charging infrastructure. Options include not applying a demand charge for each DNSP's current regulatory 5-year pricing period. During this time, relevant data could be collected and analysed to develop a new tariff for adoption during subsequent 5-year regulatory periods.

Once appropriate scale is reached for EV uptake to make the industry viable, a new tariff with a demand charge component may be introduced.

EV Charging Infrastructure Standards

Ampol believes that well defined standards are beneficial for the industry to protect consumers, with the focus being on developing acceptable minimum standards specially relating to charging equipment including consistent vehicle plug-types, metering, and smart infrastructure orchestration for electric vehicles.

We also support the adoption of international standards wherever practical and note that separate state and territory standards can be counter-productive, often adding costs to consumers. Therefore, we would prefer to avoid creation or application of uniquely Australian standards unless there is a compelling rationale for doing so.

Review and, where appropriate, **alignment of any proposed minimum standards should also consider proposed EV updates to the National Construction Code and jurisdiction-specific service installation rules**.

Ampol supports the use of open interoperability standards where possible (for example Open Charge Point Protocol (OCPP)). This will ensure that customers can then have the choice to 'opt in' to programs without needing to change their equipment and thereby future proofing installations.

Other standards for consideration include **exploring options for co-locating ICE refuelling and EV charging on service station forecourts** as experienced in Norway. We also support existing work being undertaken to develop hydrogen refuelling standards and we will continue to engage in this process.

In developing these minimum standards, consideration in the context of home charging should also be given to different types of housing stock, particularly multiple occupancy and semi-detached or terraced housing where there is limited off-street parking, or strata managed off-street parking. This should include addressing the issue of how best to facilitate the cost-efficient retrofitting of the existing housing stock, to ensure the right solutions are delivered for all housing type and customers.

Low Carbon Liquid Fuel policies

Supply side policy - Production Tax Credits

Ampol is of the view that the most appropriate mechanism to support the development of a **domestic LCLF production industry is through a Production Credit (PC) scheme administered via the tax system and explicitly linked to a demand-side volumetric mandate**.

Ampol believes any production credit should be structured as a **refundable tax offset** against corporate income taxes, to any domestically located production project's equity owners. A PC scheme can be designed upfront to have a predictable dollar cost to the Government/taxpayers through specifying an upfront rate (e.g. $/L of production) that is also linked to a certified lifecycle Carbon Intensity (CI, typically in gCO2/MJ). The total outlay to Government each year will therefore be within a predictable range, while also providing financial support to project margins.

The credit PC should be made available to any domestic producer of LCLFs whereby a project has reached its Final Investment Decision (FID) and is producing during the eligibility period. Its value should be tied to differing carbon abatement values of different feedstocks (i.e. the green premium).

Demand side policy

Ampol notes that, due to the cost premium of LCLF in the near term, **demand side mechanisms are fundamentally critical to establishment of both domestic production and consumption**.

Therefore, we strongly encourage **the Government to progress the demand side regulatory impact assessment alongside work to develop a supply side mechanism**.

Noting this, Ampol is of the view to encourage at scale consumption of LCLFs in the Australian market we will need robust demand signals. Two internationally proven examples of demand signals are SAF mandates and a broad-based LCFS.

A consumption or production target does not overcome the price premium hurdles and in isolation is unlikely to see any at scale consumption of LCLFs.

As the smaller of the two hard to abate fuel markets (jet vs. diesel), **Ampol believes the Government should look to establish structural demand for LCLFs through the establishment of a mandate for SAF**. More extensive policy coverage of diesel can be considered as the market matures.

Ampol notes it may also be possible to design a SAF mandate in such a way that a Low Carbon Fuel Standard (LCFS) could be implemented later. For example, an LCFS could provide equivalent incentive to increasing mandate percentages at a future point in time.

Ampol supports the adoption of an emissions reduction threshold being included as part of eligibility criteria for both a PC mechanism and a mandate. The volumetric mandate must also include a mechanism for obligated suppliers of SAF to pass through higher costs of SAF production plus an appropriate margin that covers return on capital.

Please refer to Ampol submission on Unlocking the Low Carbon Fuel Opportunity for further information on our views on LCLF supply and demand side policies.

Certification

Ampol supports the development or integration of sustainability certification schemes that address social, environmental, and economic factors. Ampol would like to support the Government in the development of robust sustainability certification schemes that align with international best practice in a local context.

Ampol is currently working to achieve International Sustainability Carbon Certification (ISCC) for its renewable fuels offering. The manufacture of SAF will also align with CORSIA sustainability eligibility criteria. We are engaged with and supportive of how the Guarantee of Origin Scheme may incorporate SAF.

Of interest is how to support customers in gaining clarity and confidence in the sustainability characteristics of renewable fuels. In particular, the greenhouse gas emissions savings and how they can utilise this in their emissions reduction accounting and reporting.

In addition to policy to drive the supply and demand of LCLF, the Government will need to consider the regulations and standards needed to establish the broader industry. The below highlights some of these key industry considerations. While we appreciate some of these may not be within the remit of the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts, we believe they are important considerations noting the broad remit of regulating the aviation sector.

Feedstock Development:

The Government will also need to explore developing a feedstock strategy. The Government should focus on the exploration of diversifying feedstock sources including novel crops. These novel crops hold the potential to enhance feedstock accessibility without competing for food or arable land, fostering industry growth by bolstering feedstock supply.

Given the evolving landscape of energy transition and its impact on efficient land use, sustainability, and cross-sectoral decarbonisation benefits, the development of a government feedstock strategy becomes imperative.

A feedstock strategy could outline the necessary steps to commercialise feedstocks at scale, acknowledging their potential to contribute to the sustainable growth of the aviation sector.

Product Quality

LCLFs including SAF must meet technical specifications to ensure the fuel is compatible with existing aircraft engines and airport fuel infrastructure and can meet rigorous safety and operational flight requirements.

The industry is currently focused on producing SAF as a "drop-in" replacement to conventional jet fuel for example. The 'drop-in' condition is a significant requirement for the aviation industry. Below, we outline some of the product quality considerations the Government will need to consider for uptake of LCLFs like SAF.

Any SAF that does not meet this condition could present safety issues associated with mishandling risks and require a parallel infrastructure to be implemented in all connected airports, creating unnecessary risks and costs. The standard regulating the technical certification of SAF is ASTM D7566. This evaluates which technologies, under specific circumstances and characteristics, can be used for producing on specification neat SAF.

An important element in supplying jet fuel is the safety of the travelling public and the rigorous quality control and operational regime that is required to deliver safe jet fuel. Any review of the jet fuel market must be cognisant of the quality control standards, and the exacting requirements to source, test and ensure the highest standards that underpin the excellent safety record in Australia. This should be applied to SAF as well.

We prioritise the safe and reliable supply of quality products throughout our operations, from offshore sourcing to refining, distribution, transportation, and storage. Ampol's quality policy mandates that our products meet stringent specifications and serve their intended purpose. All industries but especially the

aviation sector will need to prioritise the safe and reliable supply of SAF when implementing the product across the system.

Quality Management and continuous improvement are embedded within our Operational Excellence Management System (OEMS). We actively pursue relevant accreditation for our management systems, aligning with the International Quality Standard ISO 9001:2015 or other applicable standards.

We encourage the Government to use similar policies as we transition to LCLFs.

Quality Assurance:

Quality assurance will play a key role in the uptake of LCLFs, which should be considered by the Government as it considers relevant policy frameworks.

For example, Ampol has established key requirements in the Ampol Aviation Fuel Quality Assurance Standard. The purpose of this standard is to define the Quality Assurance System and set out how Ampol will meet the product quality and system requirements of the ICAO Manual on Civil Aviation Jet Fuel Supply (ICAO 9977), EI/JIG 1530, AFQRJOS and Defence.

The Standard also defines the roles and responsibilities of Ampol, its contractors, joint venture operators, and other third parties involved with the quality control of jet fuel from the point at which Ampol takes control of the product, through to the point at which the product risk and title is transferred.

Rather than developing separate company proprietary procedures and standards in order to meet its obligations under ICAO 9977, Ampol relies upon international industry standards as the basis of its Aviation Fuel Quality Assurance and robustly manages any variation. These quality assurance measures should help with maintaining strong confidence in Ampol's ability to uphold the standards in all fuels.

Risk Management:

Ampol is unwavering in its commitment to protecting the health and well-being of its people and its obligations to the community and environment. The oversight and management of material business risks play an important part in ensuring that Ampol upholds that commitment.

When decarbonising the transport sector and transitioning to LCLF, developing and utilising appropriate risk management frameworks will be important to ensure risk is minimised.

Transport Sector Market Mechanism

While each of the policies outlined above will play a role in driving transport sector decarbonisation, Ampol believes that the Government will need to introduce a structural market reform to drive emissions reduction.

One international example of this is a Low Carbon Fuel Standard (LCFS), which can play a role in bringing together policies to help facilitate decarbonisation at the sector level.

LCFS

In addition to mandates, **the establishment of a policy mechanism with tradeable credits/debits that impute value on the carbon abatement of different renewable fuels will also drive confidence and certainty for both producers and customers**.

An LCFS could be introduced following a defined period post the implementation of a SAF mandate to allow broader industry participants time to gain comfort with the various properties of LCLFs (e.g. 3-5 years post-mandate start).

Conceptually, an LCFS seeks to establish an annually declining CI target for specific fuel pool(s) (petrol/diesel/jet) and obligates suppliers of fuels to meet this target. By targeting a declining CI schedule, suppliers will have a signal for supplying lower-emissions intensity renewable fuels.

Suppliers that are ahead of schedule (i.e. below), will generate credits (effectively pricing the carbon abatement value), while suppliers behind schedule (i.e. above), will have to either purchase credits or pay a penalty.

In doing so, a market-based trading scheme to incentivise additional supply of LCLF that prices some/all the "green premium" gap to fossil fuels is established while enabling more volumes of LCLF to be sold/blended into the existing transport fuel markets.

Depending on the design of the scheme, an LCFS can also be used to support the uptake of EVs. The Californian model provides a credit for the deployment of EV chargers, helping to ensure infrastructure can accommodate customer demand.

Road User Charge

We also note that revenue from fuel excise is dependent on the fuel efficiency of vehicles and is particularly vulnerable to the introduction of EVs. Therefore, a shift to road pricing is likely to be required to provide a long-term sustainable road tax revenue, to help fund public infrastructure, including to help support the energy transition.

Due to this, the Government could consider developing a nationally consistent road pricing scheme for both light and heavy vehicles, and for all fuel types. Ampol broadly understands models can be designed to both incentivise EVs and phase in a new tax system as the market matures.

Part 4 Conclusion

Ampol appreciates the opportunity to provide feedback to the Government on this consultation paper. We believe EVs and LCLFs provide significant opportunities to help drive decarbonisation in the transport sector.

However, potential emissions reduction benefits across the transport sector will not be realized without a robust policy framework driving both supply and demand of LCLFs.

Ampol welcomes further discussion with the Government on possible supply and demand policies to ensure they are fit for purpose and help unlock Australia's lower carbon liquid fuels opportunity.

To discuss Ampol's view in further detail, please contact [redacted]