bp Australia Pty Ltd
A.B.N. 53 004 085 616
717 Bourke Street
Docklands, Victoria 3008
Australia

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bp Australia submission in response to the Transport and Infrastructure Net Zero Consultation Roadmap.

bp Australia is pleased to provide views in response to the Transport and Infrastructure Roadmap discussion paper. Reducing the transport and infrastructure sector's greenhouse gas emissions will be an essential part of achieving Australia's emission reduction goals.

This submission builds on previous submissions bp has made to related consultations. We encourage you to also consider these when finalising the Roadmap:

- Electricity and Energy Sector Plan Discussion Paper
- Inquiry into the transition to electric vehicles
- Pre-budget submission
- FMIA: Unlocking Australia's low carbon liquid fuel opportunity (refer to the consultation hub)

About bp

bp's purpose is to reimagine energy. Our ambition is to become a net zero company by 2050 or sooner. Globally, bp aims to be net zero across our operations (scope 1 & 2), in our oil and gas production (scope 3) and in the energy products we sell (life-cycle emissions intensity). For each of these we have also set short-term (2025) and medium-term targets (2030). You can read more about our net zero plans and progress in our Net zero ambition report.

bp has been operating in Australia for over 100 years with operations in every state and territory. Our customers are diverse, from passenger and light vehicle owners, to heavy on and off-road transport, rail, aviation and maritime. bp's operations in Australia also include a prominent convenience offer, which customers in all states of Australia trust to deliver quality products and services.

In Australia, bp is in action to:

- Service some of the country's largest commercial fleets and partners through an established retail-convenience and B2B fuels business.
- There are currently around 1,400 bp branded fuel and retail convenience sites across Australia, of which approximately 350 are company-owned. The others are branded bp and owned by independent business partners (they are not franchisees).
- Roll out electric vehicle charge points through our bp pulse brand. Over 120 bp Pulse charge points have been installed across the country, which commences the initial wave of approximately 600 charge point nationwide.
- Serve Australian customers by safely delivering energy where it is needed, working in partnership with bp's global trading and shipping business.
- Transform our former Kwinana refinery into an integrated energy hub (Kwinana Energy Hub) to produce low carbon liquid fuels such as sustainable aviation fuel and renewable diesel, alongside the existing import terminal.
- Advance three renewable hydrogen projects (each yet to take a final investment decision)
    - Project GERI with up to 14GW of integrated renewables (100% owned by bp)
    - The Australian Renewable Energy Hub (AREH) with up to 26GW of renewable capacity (operated by bp as part of a joint venture)
    - H2Kwinana – a 70MW electrolyser for production of green hydrogen for renewable fuels and industry decarbonisation.
- Grow our partnership with Lightsource bp with 1GWp of solar generation in operation and under construction. Subject to regulatory approvals, we plan to take full ownership of Lightsource bp by 2024.

Finalising the Transport and Infrastructure Net Zero Roadmap

Without action, the transport sector is on track to be the largest source of emissions in Australia. We are encouraged that the Transport and Infrastructure Net Zero Roadmap is intended to set out the pathways and confirm the policies government intends to implement to achieve potential emission reductions. bp looks forward to further consultation on the policies and actions planned for the Roadmap.

bp agrees with the guiding principles set out for the development of the final Roadmap and Action Plan, though would like to see greater recognition of the need to balance emission reduction outcomes with reliability, safety and accessibility of transport for Australians.

Consistent with the pathways laid out in the consultation Roadmap, bp's view is that transport decarbonisation will require different technologies and supporting infrastructure across transport modes, dynamically over time. We see a role for electrification, low carbon liquid fuels, and hydrogen with viability dependent on the vehicle type and transport mode, shifting over time as technologies develop. There is no one solution and all possible options should be prosecuted in the Roadmap.

Many abatement options for transport will face a green premium compared with the continued use of fossil fuels. Policy intervention will be required to drive the uptake and achieve the potential laid out in the pathways identified in the consultation Roadmap. bp recommends government consider policy that reduces emissions across all transport modes, accommodates different decarbonisation technologies allowing them to compete, and provides transport users the flexibility to choose the technology that best meets their needs. It is bp's view that effective policy will typically be market-based and underpinned by regulation that supports demand and supply.

bp acknowledges a range of actions and policies are already in place to support transport's transition. For example, the recent introduction of the Australian New Vehicle Efficiency Standard is an important policy to drive the uptake of lower emissions vehicles. But additional policy intervention will be needed.

bp recommends a regulated demand mechanism to drive the uptake of low emissions fuels and other abatement options should be a central pillar of the Roadmap. Designed well, this can provide the incentives to reduce the emissions intensity of Australia's fuel use, allowing LCLFs, electrification and hydrogen to compete and play their respective roles. Further details on bp's views are outlined in our recent submission to the Low carbon Liquid Fuels consultation.

Policy announced as part of the Future Made in Australia package to support the production of LCLFs and renewable hydrogen will also benefit transport decarbonisation. Further details of bp's views on these policies are outlined in our recent submissions to Low Carbon liquid fuels consultation and the Hydrogen Tax incentive consultation.

Many of the abatement options for transport are also relevant for off-road uses. Given these synergies, we recommend that policy is designed to cover all of Australia's fuel demand, including off-road. While we understand these emissions are the subject of other sectoral

decarbonisation plans, we recommend government design cross-cutting policy to address emissions from fuel use.

Movement of people and freight

bp supports policies to promote behavioural change, including ride sharing, walking, cycling, remote and home working and public transport. These can all contribute to reducing road transport emissions. The fastest and cheapest way to reduce emissions from road transport is to use it more efficiently. Behavioural change, enabled by technology and the provision of convenient public transport and infrastructure options is a good way to do this. Policy aimed at moving freight more efficiently will also have a role to play in the Roadmap.

Road – light vehicles

Consistent with the consultation pathway, bp considers electrification, powered by renewable electricity, key to lowering emissions from passenger cars and light road vehicles.

bp welcomes the Government's National Electric Vehicle Strategy, the draft National Road Transport Technology Strategy and Australian New Vehicle Efficiency Standard. These initiatives will support the increase in supply and encourage the adoption of lower emissions vehicles, including electric vehicles.

The transition to electrified light road vehicles will take time (the average age of a car in Australia is 10.6[1] yrs, which could mean that an ICE car purchased today could still be on our roads in 2045). In the short to medium term, low carbon liquid fuels can also play a role to reduce the carbon intensity of ICE vehicles. bp recommends that LCLFs be considered as an option to decarbonise light vehicles when finalising the Roadmap.

Electric vehicle (EV) charging

In bp's view a public network of rapid and ultra-fast EV chargers is critical to the transition – the role and visibility of public fast charging will be critical to mainstream EV uptake. To this end, bp through its EV charging brand, bp Pulse is building ahead of demand. Our focus is on high-speed charging with ~79% of our charge points today being rapid (>50 kW) or ultra-fast (>150 kW).

There have been considerable challenges in building a public charging network notwithstanding the existing policies and grants offered by governments to de-risk private sector investment. Accelerating a rollout of EV charging requires timely network connections, supportive tariff

[1] https://www.abs.gov.au/statistics/industry/tourism-and-transport/motor-vehicle-census-australia/latest-release

reforms and ultimately, a steady and growing penetration of EVs. These will be critical to the ongoing commercial viability and sustainability of public EV charging.

bp recommends government quickly address network connectivity issues for EV charging which can average more than 18 months in some states. Ongoing incentives to support fast charging, including in regional and remote areas where the commercial case is challenging, would be welcomed. Stronger incentives to promote commercial fleet turnovers will also help to underpin a supply including a secondary EV market. Government should also look for opportunities to allocate land and partner with charge point operations to develop dedicated EV gigahub charging stations. Further details of bp's views and policy recommendations are outlined in our recent submission to the House of Representatives Standing Committee on Climate Change, Energy, Environment and Water Inquiry into the transition to electric vehicles .

Road – heavy vehicles

bp agrees that a combination of low emission technology and fuels will be required to decarbonise heavy road vehicles in Australia. Australia's heavy road task reflects its vast geography and particular economic structure. The Roadmap will need to focus on abatement options that are suited to these unique circumstances. For example, Australia relies to a greater degree than other countries on prime movers with 60+ tonne gross combination mass (CGM).

Electrification in the short to medium term may not be commercially or technically feasible for much of Australia's heavy road vehicles given the long distances they travel often in regional and remote locations. Electrification may become feasible on shorter routes. Other technologies such as low carbon liquid fuels (LCLF) and hydrogen will be required where electrification isn't a viable option. bp notes that hydrogen internal combustion engines and hydrogen dual fuel may also have a role to play and recommends these are considered when finalising the Roadmap.

bp does not think it is particularly helpful to rank these different technologies. Instead, bp encourages government to develop actions and policy that lets the market decide what the most efficient abatement technology is for the specific heavy road task. For example, a low carbon fuel standard can be designed to cover a broad range of transport demand and incorporate known and emerging technologies like LCLFs, BEV, FCEV as well as other hydrogen technologies.

In bp's view LCLF will play an important role because these can be used today to reduce emissions from Australia's existing heavy vehicle fleet. It will take some time for BEV and H2

technologies to mature and increase in availability. LCLFs provide a solution in the meantime. For some of Australia's freight task that is serviced by heavier payloads and moves over long distances LCLFs may remain the primary abatement technology even in the long-term.

There will be an ongoing role for government funding to support the development and demonstration of these heavy road technologies. bp encourages government to ensure that funding eligibility does not unintentionally disadvantage certain technologies or freight tasks. For example, we recommend that ARENA's funding be extended to include technologies like hydrogen internal combustion and hydrogen dual fuel.

There will also be a role for government to coinvest in the infrastructure needed to support the uptake of some of these emerging technologies. For example, planning and investing in the electricity system to ensure it can accommodate ultra-fast charging that is likely to be needed for heavy vehicles. Similarly, public investments to support hydrogen refuelling infrastructure may be necessary while the technology is maturing. Our recommendation is to focus initially on transport hubs and then to look at supporting hydrogen refuelling along Australia's key freight highways.

bp welcomes the recent announcement in the Safer Freight Vehicles package and other progress being made to remove the regulatory barriers to the uptake of lower emissions vehicles.

Rail

bp agrees with the abatement technologies identified for decarbonising Australia's rail. Again, it is not particularly helpful to rank or prioritise a single technology because the nature of Australia's rail task is varied and it is not yet clear what the best solution will be. The shared nature of rail infrastructure does mean there will need to be a degree of coordination.

bp agrees that it will take some time to build the supporting infrastructure to support battery electric and hydrogen technologies. LCLFs can play a role in reducing emissions in the meantime and for some heavy loads potentially in the long-term.

As for other transport modes, we consider a broad-based demand mechanism such as a Low Carbon Fuels Standard can be designed to provide incentives for the uptake of low carbon technologies and fuels by rail. We believe that rail and other ground fuel users will have similar abatement options and that there may be synergies in the roll out of these and supporting

infrastructure. We also see rail and heavy road transport competing for both freight and passenger transport tasks. It makes sense to design policy to align incentives across these segments.

Careful consideration will be needed when designing the emission reduction policy across transport modes to ensure that different coverage and relative incentives do not lead to adverse emissions outcomes. For example, many rail operators are covered by the safeguard mechanism and are required to reduce their emissions, but very few road operators are covered. This tends to increase the cost of rail compared to road transport and risks moving freight from rail to road which isn't consistent with the consultation Roadmap that indicates freight task should be moving to lower emissions intensive transport modes.

Maritime

bp agrees with the pathways proposed within the consultation roadmap to decarbonise the maritime sector in Australia. As a difficult to abate sector, we see a significant role for LCLFs to reduce Australia's maritime emissions in the long term, including bio-distillates, low carbon methanol, ammonia and potentially hydrogen. Continued ship efficiency improvements and other measures, such as biomethane, on board CCUs and e-distillates can also help reduce maritime emissions.

Electrification in maritime has low viability as the current technology for electric propulsion systems and energy storage is not yet capable of meeting the high energy demands of maritime vessels, especially for long voyages. There is opportunity for electrification of smaller vessels, which have shorter ranges and lower speeds, but this comes with clear limitations.

The maritime sector is considering multiple technologies in its efforts to decarbonise and policy should be flexible to a range of low emission fuels. bp recommends that government implements a low carbon fuel standard, with a sub-target for maritime reflecting its different abatement options and cost curves compared to other transport segments.

bp acknowledges that only emissions associated with Australia's domestic maritime will contribute to its national greenhouse gas inventory. However, as a strategic partner of the Global Centre for Maritime Decarbonisation, we are encouraged the consultation Roadmap recognises how integrated domestic maritime is with international maritime. We support the Maritime Emission Reduction National Action Plan considering both domestic and international maritime.

bp considers global regulation by the International Maritime Organisation (IMO) to be the most effective approach to maritime decarbonisation. Global regulation minimises the risk of increased fuel costs in one country or region leading to bunkering or routing distortions. We encourage the Australian Government to work with the IMO on the adoption of a framework that sufficiently incentivises the introduction of low carbon fuels into the market. We also recognise that progress under the IMO can be slow and encourage Australia and other member states to implement their own policies to accelerate maritime decarbonisation.

Aviation

bp agrees with the consultation roadmap that sustainable aviation fuel (SAF) will be a key technology for reducing emissions from aviation. Ongoing operational and efficiency gains will continue to have a role, but alone are unlikely to achieve the scale of reductions required. There may also be some opportunities to electrify and some potential for hydrogen in the medium to long term, but for today, we see sustainable aviation fuel as the most viable option.

Much of Australia's aviation travel is over long distances and less suited to modal shift. Unlike in other markets, Australia would need significant investment in new high-speed rail infrastructure to make this a real possibility to address aviation emissions. bp does not expect demand for aviation to decline significantly in the period to 2035.

bp notes the consultation Roadmap identifies that high-quality carbon offsets can play a role in reducing Aviation emissions. Aviation, along with other hard to abate sources of emissions across the economy, could use offsets to contribute to Australia's targets. Alone the supply of high-quality offsets will not be sufficient to achieve the Paris Agreement goals. Investments in direct emissions reductions will be needed, with high quality offsets used to address residual emissions. For aviation, this means deployment of SAF and other low carbon fuels will be necessary.

As for other transport modes, we recommend government implement a regulated Low Carbon Fuels Standard. While we expect SAF to be the primary solution, allowing other technologies like electrification and hydrogen to compete would ensure the most efficient deployment across technologies. Given aviation's different abatement cost curves, we believe that aviation should have a sub-target within a broader LCFS. bp's submission to the Low Carbon Fuels Industry consultation provides more details on our views regarding a demand mechanism.

Although emissions from international flights do not count toward Australia's national inventory, bp considers that Australian policy to drive the uptake of SAF should include fuel supplied for international flights.International aviation accounts for around 60 per cent of jet fuel supplied in Australia. This demand is expected to increase over time. . We encourage the Australian government to continue its active engagement under IMO and to fully implement CORSIA. Such global action to reduce aviation emissions is essential. However, we encourage Australia and other member States to go further and faster via domestic policy. Consideration of international aviation in the final Roadmap is warranted.

Transport energy use

bp agrees with the consultation roadmap that electricity and LCLFs including renewable diesel, sustainable aviation fuel and hydrogen will displace fossil liquid fuels as the main sources of energy for transport.

We are encouraged with the policies governments have already committed to transition Australia's electricity grids and ready them for the increased demand from transport. As discussed above, a public charging network will be important to provide consumers confidence in the move to electric vehicles. Consideration will also be needed for the electrification of transport in geographies not currently serviced by one of Australia's electricity grids. Please refer to bp's submission to the electricity and energy sector plan for more detailed views.

bp supports the focus on developing a domestic low carbon liquid fuels industry in Australia under the Future Made in Australia plan. With the right policy settings Australia can be an advantaged producer of LCLFs. It has access to the sustainable feedstocks (both biogenic and other feedstocks) needed to produce LCLFs at scale. It also has potential for material demand for LCLFs over the medium to long-term from hard to abate fuel users like aviation, mining, long distance freight and shipping to the economy. To secure investments in a domestic industry and unlock Australia's potential, both a production incentive as well as a regulated demand mechanism are needed. bp's submission to the recent Low Carbon Liquid Fuels consultation provides our detailed views on these essential policies.

Conclusion

Thank you for the opportunity to provide our feedback on the Transport and Infrastructure Net Zero Roadmap. There are many challenges that come with decarbonising this sector, but with a clear roadmap and timely policy implementation the transport and infrastructure sector can

contribute significantly to reducing the economy's emissions.

We welcome the opportunity to contribute further to these discussions and look forward to future engagement with you.