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

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bp Australia response to the Aviation Green Paper

Thank you for the opportunity to respond to the Aviation Green Paper. We acknowledge the paper covers a broad range of aviation matters including competition and consumer protections, regional access, planning and general aviation. However our responses in this submission are focused on *Maximising aviation's contribution to net zero.* This submission should be read in conjunction with our advocacy work covered within our seat on the Jet Zero Council.

Decarbonising aviation is important to Australia achieving its net zero ambition (including 2030 targets) and we believe central to this will be effective policy measures which support the growth of a domestic renewable fuels industry.

We recommend the future White Paper clearly sets out the role that the aviation sector will play in meeting Australia's emission reduction targets through early commitment to established policy measures and timelines.

Our key recommendations

- Promptly develop and implement an aviation sector-specific, market-based, Low Carbon Fuel Standard (LCFS) that enables an even-playing field for market participants to access Sustainable Aviation Fuel (SAF).
- Leveraging established international frameworks tailored to the Australian market, develop and adopt sustainability criteria based on greenhouse gas (GHG) emissions, environmental and social impacts, as well as utilise capacity being developed under the government's guarantee of origin (G.O) scheme.
- Pursue decarbonisation opportunities beyond Sustainable Aviation Fuel including the power that airports use, the on-ground operations of airports and role that airports play as a gateway to Australia's broader transport system.

About us

bp's purpose is to reimagine energy for people and our planet. Our ambition is to become a net zero company by 2050 or sooner; and to help the world get there too.

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 released earlier this year.

Globally, our strategy is to transition from an international oil company to being an integrated energy company. That transition is underway – between 2019 and 2022 the share of our annual capital investment going into what we call out transition growth engines (bioenergy, convenience, EV charging, renewables and power, and hydrogen) grew from 3% to 30% But we also continue to invest in oil and gas – investing in meeting the needs of today's energy system alongside investing to help scale lower carbon alternatives.

We believe that the global energy transition needs to be not just rapid enough to meet the Paris climate goals, but also orderly. We aim to:

- Reduce our oil and gas production by 25-30% (from 2019 levels) by 2030 and lowering emissions while keeping up cash flow by high grading our hydrocarbon portfolio and growing bioenergy.
- Invest in low-carbon energy to rapidly scale up in solar and offshore wind and develop new opportunities in carbon capture and clean hydrogen.
- Install 100,000 EV charging points and opening more than 1,000 new strategic convenience sites worldwide.
- Progress five transition growth businesses: bioenergy, convenience, EV charging, renewables, and hydrogen by 2025.
- Be a leading marketer of Sustainable Aviation Fuel (SAF).

bp has been operating in Australia for over 100 years. We employ some 5,200 employees and long-term contractors with operations in every state and territory.

One of bp's five global biofuels projects under consideration is the Kwinana Renewable Fuels project (KRF). It is based in Western Australia and is currently in front end engineering design (FEED), approaching a final investment decision (FID) in 2024. KRF is part of our planned multi-billion-dollar investment to develop low carbon energy. The project will leverage existing infrastructure and assets from the former Kwinana oil refinery to produce some ten thousand barrels per day (in aggregate) of Sustainable Aviation Fuel (SAF), Hydrotreated Vegetable Oil (HVO), or bio-Naptha.

If sanctioned, KRF would be the largest planned bio refinery plant in Australia, playing an important role in unlocking an Australian domestic SAF industry. As such, bp currently holds a rotating position on Australia's Jet Zero Council, collaborating with Government and broader industry to support policy development and build consensus to deliver net zero aviation. With our global insights and longstanding experience in SAF, we chair / co-chair two of the Council's workstreams:

- Work stream 1 – SAF sustainability certification
- Work stream 6 – Advice on the development of a SAF industry and eco-system in Australia (co-chair with SAFANNZ).

bp is also one of the world's largest aviation fuel suppliers and has been supporting the industry for more than 90 years, supplying 6.6 billion gallons of aviation fuel a year globally. Air bp has been selling aviation fuel in Australia since the 1920s, refueling an average of 45 aircraft per hour and servicing private, corporate and commercial airlines and airport operators. It has over 5,000 Australian based general and commercial aviation customers and a network of more than 75 sites.

In 2008 Air bp was involved in fueling the first SAF flight by an airline, and since then we've been enabling ground-breaking test flights and investing in sustainable alternatives. Our fuel research and development team and product quality experts have played a key role in the development of supporting processes and industry approvals. This includes working with Johnson Matthey to develop Fisher-Tropsch technology for biofuels production and pioneering the first commercial supply of SAF through an existing hydrant fueling system in 2016.

Air bp is now one of the leading marketers of SAF globally and has supplied SAF to over 30 locations and counting. Through collaboration across industry, including airlines and peers, bp is working to advance the uptake of SAF. For example, the world's first 100% transatlantic SAF flight recently took place as a result of partnership between bp, Virgin, and Rolls Royce.

Beyond SAF, we also believe that electrification can meaningfully contribute to decarbonising aviation. The bp team has innovated to help decarbonise airfield operations through developing the world's first electric refueller and launching the first generation of electric hydrant dispensers. With a focus on driving down greenhouse gas emissions and increasing efficiency, bp has since introduced Australia's first all-electric hazardous goods vehicle and refueller. This work has recently been recognized, winning Australian Aviation's Sustainability Initiative of the Year Award in August 2023.

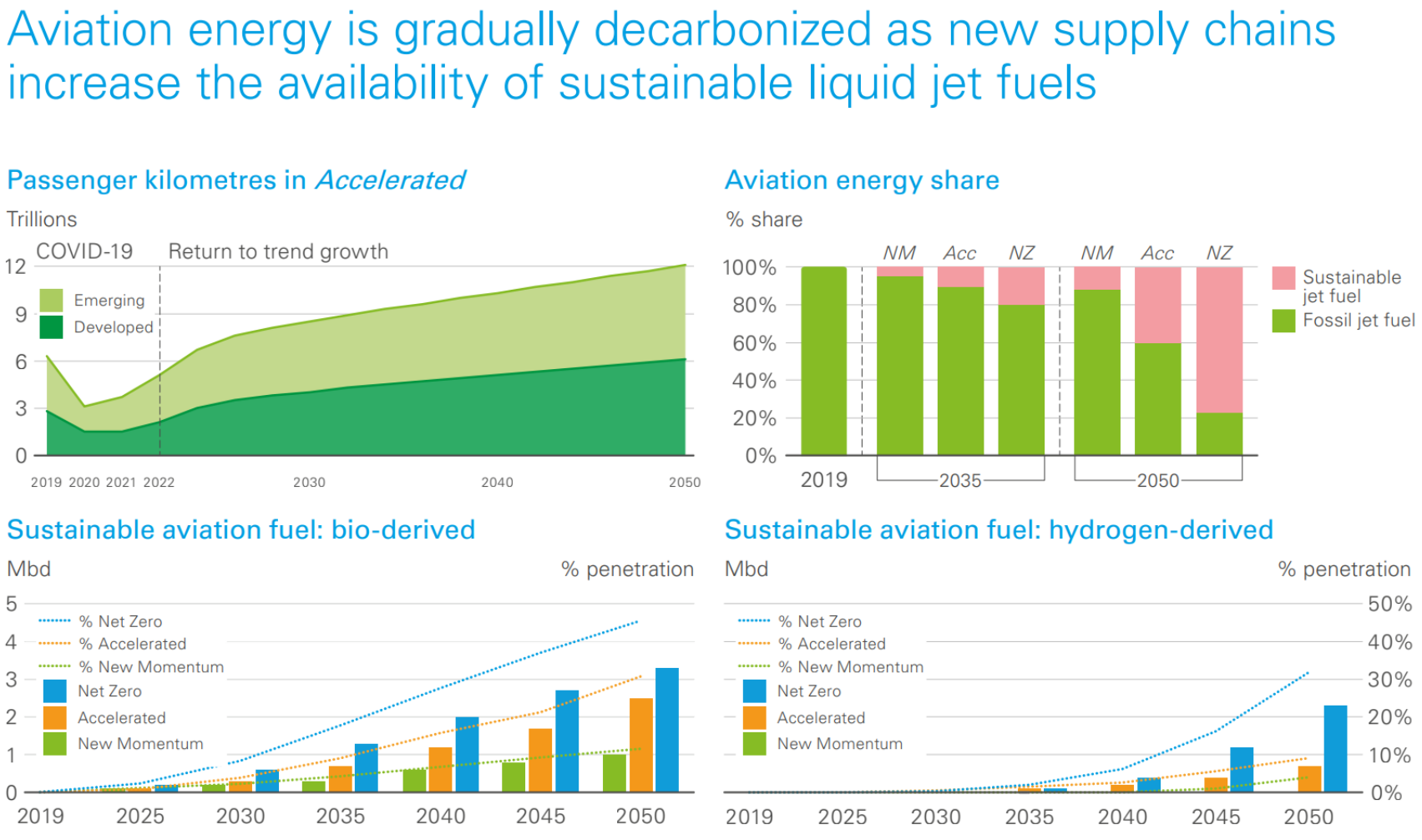
bp also invests in electrification through our electric vehicle charging brand, bp pulse, which launched in Australia in November 2022. We currently operate over 100 charge points, growing the network with the aim of having 600 charge points across Australia.

In the United Stated, bp pulse is collaborating with Hertz to launch an EV fast-charging Gigahub near Los Angeles International Airport (LAX). These types of fast-charging hubs are designed to serve ride-hail and taxi fleets adjacent to high-demand locations, supporting the role out of electric car-hire fleets (in turn electrifying the passenger car fleet at scale).

The role of SAF in decarbonisation

Transport accounts for 18% of Australia's total emissions, and of this - aviation accounts for 8%[1] Behind energy (33.6%) and stationary energy such as manufacturing, mining, and commercial fuel use (20.4%), transportation is the third largest contributor to Australia's GHG emissions[2].

bp's 2023 Energy Outlook[3] outlines that aviation (global) demand recovers strongly from COVD-19 disruption and grows significantly to 2050 across all three of our outlook scenarios.



In line with this, we note Australian domestic and international passenger movements growing over time, with scenarios estimating growth rates of up to 3.5% per annum for domestic travel and 6.1% per annum for international travel[4] by 2050. As demand grows and other sectors decarbonise, addressing aviation's share of carbon emissions is increasingly important to reach Australia's 2050 net zero ambitions.

Jet fuel is responsible for the highest proportion of the aviation sector's emissions and will need to be the primary focus to decarbonise the industry at pace and scale. Sustainable aviation fuel (SAF) is a drop-in fuel which is the most accessible solution in the near term that addresses this challenge. SAF is available today and can be produced domestically.

bp's Energy Outlook describes that a combination of the slow turnover of the current liquid-fuel based fleet and the range requirements for longer haul flights mean that electric and hydrogen-based solutions play a limited role in the decarbonisation of the aviation sector.

Instead, the decarbonisation of aviation is driven by the increasing role of SAF. In the *New Momentum* (scenario), SAF reaches around 5% of the jet pool by 2035, based largely on bio-based SAF. In *Accelerated* and *Net Zero* (scenarios), the combination of bio and hydrogen based SAF reach between 10% and 20%. By 2050, in *Accelerated* and *Net Zero*, penetration grows to between 40% and 70%

How can Government work with industry to ensure a strong and sustainable aviation sector that supports emissions reduction targets while growing jobs and innovation?

1https://www.climatechangeauthority.gov.au/reviews/light-vehicle-emissions-standards-australia/opportunities-reduce-light-vehicle-emissions

2 https://www.csiro.au/en/research/environmental-impacts/climate-change/climate-change-qa/sources-of-co2

3 https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2023.pdf

4 https://www.infrastructure.gov.au/sites/default/files/documents/aviation-white-paper-scenario-analysis-september-2023.pdf

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Given there are a number of measures that industry and government could pursue to help achieve net zero by 2050 in aviation, are there specific measures that more emphasis and support should be given to?

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What should be included in relation to aviation in the Australian Government's *Transport and Infrastructure Net Zero Roadmap* and *Action Plan* (including for sectors, such as GA and airports)?

From our observations across a broad range of markets, we believe setting clear and time bound expectations for all market participants is the most effective approach to build a strong and sustainable aviation sector.

Whilst the Government has set economy-wide targets, we believe there's a need to specify how different sectors, including aviation, contribute to these targets. Furthermore, due to the particular characteristics of the aviation sector – including available technology to abate GHG emissions- we've observed those markets with the highest rates of SAF penetration have aviation-specific policy.

We recommend to the government that the upcoming *Transport and Infrastructure Net Zero Roadmap* and *Action Plan*, alongside the *Aviation White Paper*, commit to policy that is supportive of a sustainable aviation pathway, including the use of SAF. This would provide clarity across industry as well as capitalise on the opportunity to domestically grow, refine and supply SAF – rather than be consigned to import only status, as other countries enable SAF manufacturing at scale.

Central to creating an Australian SAF industry is creating certainty of domestic demand. Such certainty would:

- Underpin investments to develop and scale the industry. In particular, regional Australia will benefit via additional agricultural opportunities.
- Value-add to Australia's existing agricultural output. Currently some 1.8 million tonnes of Australian canola is shipped to the European Union for use in the European biodiesel market[5].
- Enhance Australia's overall fuel security by providing a renewable and domestically grown feedstock with a sovereign production capability.
- Ensure Australia access to the value chain created through the production, refining, distribution and supply of SAF.

Without adequate domestic demand, there will be limited justification for domestic SAF production and investment with industry players inevitably required to import low carbon fuels (including fuels produced using Australian-grown feedstocks).

Appreciating the sensitivities creating 'demand-based' policy, bp supports implementation of an aviation sector low carbon fuel standard (LCFS), or a broader LCFS with an aviation sub-target to support the development of a strong and sustainable aviation sector. We recommend the attributes of such a policy include:

- Contribute to economy wide targets, while also considering the abatement costs of the aviation sector. We support a target of 5 to 10% Carbon Intensity (CI) improvement on lifecycle GHG emissions compared to fossil jet by 2030, with ambition beyond 2030 increasing in line with the aviation sector's capacity to achieve. Notably, the CSIRO estimates that Australia has the potential to supply up to 90% of its jet fuel demand with SAF by 2050[6].
- Be market-based and enable a range of fuels (SAF, hydrogen, electricity) to play a role – all based on their relative CI and adherence to established sustainability criteria. This will allow the broadest range of fuels and industry players to participate, compete, and drive the most efficient outcomes.
- Separate emissions reduction claims from the location of fuel in Australia. Sometimes referred to as 'book & claim', this provides an even-playing field across the country while avoiding duplicative investment in infrastructure.
- Cover all domestic aviation travel. Exemptions for essential services should be carefully considered while also contemplate extending coverage to include fuel supplied in Australia for international flights.

[5] https://www.csiro.au/en/news/all/news/2023/september/greenhouse-credentials-of-canola-industry-recognised-by-european-commission
[6] https://www.csiro.au/en/news/all/articles/2023/august/sustainable-aviation-industry-australia

- Progressed without delay. In order to realise the benefits prior to 2030 following a design, legislation and advance notice – we recommend an immediate start for the development process to be in effect by 2027.

Our experience across the globe has led us to the conclusion that an LCFS (or SAF target) is the best approach to drive the sector towards its emission reduction targets. It will support the development of the entire supply chain, giving feedstock producers, fuel suppliers, customers and investors' confidence.

Experiences from overseas markets are also instructive with several examples demonstrating effective policy measures including:

- RefuelEU aviation initiative in the European Union. The intention of the initiative is to increase both demand and supply of SAF through the use of SAF targets.
- Closer to home is the Japanese regulation from 2030 which requires flights entering and leaving the nation to use 10% sustainable fuel. This will affect local airlines who have routes between Australia and Japan.

What are the benefits and risks associated with updating the National Greenhouse and Energy Reporting (NGER) scheme and/or other policy mechanisms to enable unique claims on sustainable aviation fuel (SAF) sourced through common infrastructure? How can risks be managed?

The NGER scheme is a critical component of Australia's climate change policy. The Government should from time to time amend the National Greenhouse and Energy Reporting Act (NGER), in consultation with industry stakeholders, to ensure it remains fit for purpose.

We note that SAF has been added to NGER as a biofuel where it is acknowledged the fuel leads to lower CO2 emissions. However, under current NGER accounting when SAF is supplied via shared infrastructure (as aviation fuel typically is), it will reduce the overall emissions intensity of all fuel with the associated emissions reductions shared across all users whether they paid for it or not.

Since NGER is used to underpin the emission obligations of airlines under the Safeguard mechanism, there is a need to shift towards a mass balance or market-based accounting approach for SAF under NGER. This ensures that buyers of SAF receive the full emissions benefit and incentives provided by the safeguard mechanism work as is intended.

Separately the Government should develop a Life Cycle Assessment (LCA) emissions accounting approach for SAF produced and used in Australia, which complements the NGER scheme. LCA will become critical in supporting the implementation of a LCFS in the aviation sector.

What types of arrangements are necessary to support industry confidence in the quality standards and sustainability certification of SAF?

The technical quality standards for SAF have been agreed as part of the international fuel specification ASTM D7566. However, since much of the value of SAF related to the emission reductions and other sustainability characteristics it is typical that SAF would also undergo some certification process that can provide assurance to the carbon intensity and other sustainability characteristics.

Australia currently does not have a sustainability standard to define the criteria required for SAF to make sustainability claims. Experience in other markets indicates establishing a credible and widely accepted sustainability standard will be essential for the development of an Australia SAF market.

A clear and comprehensive sustainability standard should be developed and adopted, which considers greenhouse gas emissions and broader environmental and social sustainability factors (aligned to relevant state and Commonwealth laws). The standard should:

- Leverage the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) sustainability criteria as a foundation, and tailor to suit Australia's circumstances.
- Cover LCA GHG emissions, as well as other environmental and sustainability impacts.

- Be aligned with other international certification systems (where appropriate) but stand as an Australian verification system that is endorsed by government to add credibility and confidence in the system. Additional safeguards may be required for certification on imported feedstock and fuel, having a risk-based approach to audit against fraudulent claims.
- Leverage the regulatory framework and administrative capacity being developed under the Guarantee of Origin scheme (for Renewable Energy and Hydrogen) – but made fit for purpose for SAF such as using a 'well-to-wing' Life Cycle Assessment (LCA), market-based chain of custody (not a strict mass balance) and incorporating non-GHG sustainability aspects.
- Establish an Australian lifecycle emissions accounting approach to function alongside the NGERs system which:
  - Accommodates differing feedstocks and production pathways
  - Draws on established international models (e.g that developed under CORSIA) but tailored for Australian circumstances.
  - Establishes defaults for Australian feedstocks and domestically produced fuel and also allow for case-by-case assessment where evidence can be presented of improvement in actual LCA. Where possible seek to have these Australia defaults recognised/adoped in international standards such as CORSIA.
  - Use established international defaults for imported feedstocks and fuels.
  - Leverage capacity of international certification providers such as ISCC.

How can policy and regulatory settings support research and development and subsequent investment in emerging low and zero emission technologies and related infrastructure?

We recommend the focus of government funded research and development to decarbonise aviation should be to improve the commercial viability of nascent SAF production pathways. An example is Power-to-liquid (PtL) technology (producing eSAF). Still in its infancy, PtL is only being produced on a small scale and at a high cost and would benefit from additional development as a promising and sustainable SAF pathway in the longer term that would play to Australia's strengths in generating renewable energy.

Government could also invest in research and development that reduces the carbon intensity of Australian feedstocks and improves productivity of existing feedstocks that can help to meet growing demand.

What information and guidance is needed to support regional aviation's net zero transition in the context of these emerging technologies?

We recommend the Government implements flexible policy to enable different emission reduction technologies and production pathways to encourage competition and provide incentives for innovation.

Broader than 'regional aviation', we believe regional Australia can benefit from a well-developed SAF industry. Such benefits include:

- The generation of agricultural bio feedstock, providing optionality for Australian agricultural markets.
- The generation of renewable energy to, in turn, generate hydrogen.
- As a domestic SAF production capability develops – the related process of producing hydrotreated vegetable oil (HVO), known as Renewable Diesel will also occur. Renewable Diesel will make a material impact to decarbonising large liquid fuel users in mining and agriculture (farming operations) across rural and regional Australia.

Across regional Australia, the preferences of customers will change as societal expectations to decarbonise increase. Regional aviation will not be immune from this and will need its own transition plans.

As SAF (or other low carbon fuels) are not likely to be available in all regional locations for some time, a market-based ('book and claim') approach where emission reduction claims are separated from the actual location of the fuel will be key for regional airlines.

Lastly, consultation across industry through existing forums such as the Jet Zero Council, will assist in ensuring policy does not create unintended impacts on certain communities.

What opportunities do emerging aviation technologies present for regional and remote Australia?

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How can we build on Australia's strengths to ensure that Australian industry in the sector is able to be competitive internationally?

Australia is an advantaged feedstock producer due to its natural resources such as land, favorable climate and well develop agricultural sector. Australia is also an established exporter of feedstock to Europe.

As SAF technology develops and domestic demand grows there will be further opportunity for regional Australia to supply bio feedstock, benefitting Australia's economy and energy security.

Targeted policies, such as an LCFS or SAF target can be used to drive existing bio feedstocks to a domestic production capability, as well as further develop and deploy next generation technologies. Crops being trialed or have already been approved as HEFA feedstocks include algae, camelina, pennycress, tallow tree and carinata.

Australian also has a comparative advantage in renewable energy which could see it emerge as an advantaged low carbon hydrogen producer. This would mean Australia has an advantaged for power to liquids production pathways for SAF as well. Similarly, Australia may have opportunities under the alcohol to jet SAF production pathway.

Decarbonising aviation on the ground

The combustion of jet fuel accounts for the majority, but not all emissions from aviation. We believe the sector's broader emissions can be abated along the following three areas:

- The power airports use. As significant users of electricity, opportunities exist for airports to better utilise, such as wind and solar (including on airport land) to generate renewable power to assist decarbonisation goals.
  - Christchurch International Airport, in New Zealand, is an example of this. In partnership with Lightsource bp and Contact Energy, it has been proposed that a 170MW solar farm is developed on some 400 hectares of land adjacent to the airport to support decarbonisation[7].
- The on-ground (mobility) operations of airports. Decarbonising ground operations and service-related vehicles as a role to play, most likely seen in the form of electrification, as well as hydrogen for larger service vehicles and trucks.
  - At Brisbane Airport (among others globally), in collaboration with SEA Electric, bp has commenced operation of an all-electric refueling vehicle – capable of carrying 16,000 litres of fuel and operating for a full day with overnight charging. In addition to decarbonisation benefits, Air bp anticipates the electric refueller will reduce operational and maintenance costs relative to similar diesel-fuel refuelers[8].
- The role of airports as hubs in Australia's transportation network. Airports do not exist in a vacuum – they are often the entry and exit points to a broader transportation system. In addition to the importance of supporting passengers travelling to and from airports using low emission modes of transport, airports also offer an opportunity to decarbonise the broader vehicle fleet.
  - Adjacent to Los Angeles International Airport (LAX) bp pulse has announced plans to establish an EV fast charging hub in collaboration with Hertz and the California Energy Commission (CEC). bp pulse is undertaking such plans as more and more ride-hail and taxi fleets make bold commitments to electrify and need charging experiences that are convenient and cost-optimized[9].
  - We note that car hire companies operating out of Australian airports are also beginning to introduce EVs into their hire fleets, which over time will require similar hub solutions. The trend of more easily enabling car-hire fleets to electrify, will bring a downstream benefit of higher EV penetration as hire fleet turnover occurs.

[7] https://www.christchurchairport.co.nz/about-us/sustainability/kowhai-park/overview/
[8] https://www.bp.com/en/global/air-bp/news-and-views/press-releases/Air-bp-introduces-new-custom-designed-all-electric-refuelling-vehicle-at-brisbane-airport.html
[9] https://www.bp.com/en_us/united-states/home/news/press-releases/bp-pulse-to-launch-gigahub-ev-fast-charging-hubs-for-ride-hail-fleet-charging-near-airports-and-other-high-demand-us-locations.html