Australian Bioenergy Roadmap

bp submission

ARENA Bioenergy Roadmap call for submissions

June 2020

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1 About bp

bp has a proud history of operations in Australia, having helped fuel this country for just over one hundred years, and has operations in every state and territory. bp is the only oil and gas company engaged in the Australian market from well to bowser – from exploration and production of crude oil and natural gas, to refining, marketing and retailing of petroleum products.

bp in Australia is focused on advancing the role of Australian resources in meeting the region's demand for significantly more energy with fewer, and in time, no emissions. Being part of the bp group enables bp in Australia to share global expertise, research and development with Australian business partners, customers and community stakeholders.

On 12 February 2020 bp announced a new purpose: to reimagine energy for people and our planet; and set a new ambition: to become a net zero company by 2050 or sooner and help the world get to net zero[1].

Globally, this requires bp to reduce its greenhouse gas emissions by around 415 million tonnes – 55 million from bp's operations and 360 million tonnes from the carbon content of bp's upstream oil and gas production. Importantly these are absolute reductions. bp is also aiming to cut the carbon intensity of the products it sells by 50% by 2050 or sooner.

This ambition is supported by **ten aims**:

1. Net zero across bp's operations on an absolute basis by 2050 or sooner.
2. Net zero on carbon in bp's oil and gas production on an absolute basis by 2050 or sooner.
3. 50% cut in the carbon intensity of products bp sells by 2050 or sooner.
4. Install methane measurement at all bp's major oil and gas processing sites by 2023 and reduce methane intensity of operations by 50%.
5. Increase the proportion of investment into non-oil and gas businesses over time.
6. More active advocacy for policies that support net zero, including carbon pricing.
7. Further incentivise bp's workforce to deliver aims and mobilise them to advocate for net zero.
8. Set new expectations for relationships with trade associations.
9. Aim to be recognised as a leader for transparency of reporting, including supporting the recommendations of the TCFD.
10. Launch a new team to help countries, cities and large companies decarbonise.

1.1 bp's global bioenergy portfolio

As part of its new purpose to reimagine energy, bp recognizes that the energy mix must evolve quickly, and is investing accordingly.

bp's global near-term approach is to lower carbon and reduce emissions by reducing operational emissions, improving its products and creating low carbon businesses. Bioenergy, predominantly in biofuels, features in this approach.

bp is involved in a number of bioenergy operations around the world as an operator, an investor and as a developer of technology that can help deliver innovative low carbon fuels.

[1] https://www.bp.com/en/global/corporate/who-we-are/reimagining-energy.html

One of bp's largest bioenergy projects is bp Bunge Bioenergia, a 50:50 joint venture with US agricultural trader Bunge to create a bioenergy company in Brazil. bp and Bunge have combined their Brazilian biofuels and biopower businesses to create a world-scale, highly-efficient producer of sugarcane ethanol. The joint venture includes 11 biofuel plants in five Brazilian states. It has a total crushing capacity of 32 million metric tons of sugarcane per year. The joint venture can produce 1.5 billion litres of ethanol and 1.1 million tons of sugar. It also generates renewable electricity through its cogeneration facilities – fuelled by waste biomass from the sugarcane – to power all its sites and sell surplus electricity to the Brazilian power grid[2].

bp is also an active participant in the biogas market and has invested to process renewable feedstocks alongside traditional fossil fuel feedstocks to produce diesel at several of its refineries. During 2019 bp continued to scale up co-processing, growing the volume of lower carbon bio-feedstock processed. It is piloting a growing range of bio lubricants and continues to develop new technologies in this area.

bp is also an active participant in the emerging sustainable aviation fuel (SAF) supply chain, having invested in Fulcrum Bioenergy, a company planning to use bp technology (also licensed by bp's partner Johnson Matthey) to convert domestic waste into SAF[3].

bp is expanding its investment in bioenergy and positioning for future growth, with further details about its near-term plans to be announced in September 2020.

1.2 bp Australia's gas, low carbon and bioenergy portfolio

In Australia, bp is involved in a number of low carbon businesses, including:

- bp's strategic partnership with Lightsource bp. The first 200MW solar project in Wellington, NSW is currently under construction – and will supply enough energy to power 70,000 homes and save 336,000 tonnes of carbon emissions, which is the equivalent of taking 121,580 cars off the road.

- bp Australia has commenced a feasibility study into an export-scale renewable hydrogen production facility in Western Australia. The project includes an initial investment from bp of (AUS) $2.7 million with a further $1.7 million being funded by the Australian Renewable Energy Agency (ARENA).

- bp are joint venture partners in the North West Shelf LNG and gas plant and Browse development. The role of gas in reducing emissions in the region is profound, switching can lead to a 50 per cent reduction in some cases[4].

- bp has invested $20 million in Santos' Moomba carbon capture and storage (CCS) project in South Australia. CCS can achieve deep emissions reductions in existing power infrastructure and energy-intensive industries that rely on the use of fossil fuels.

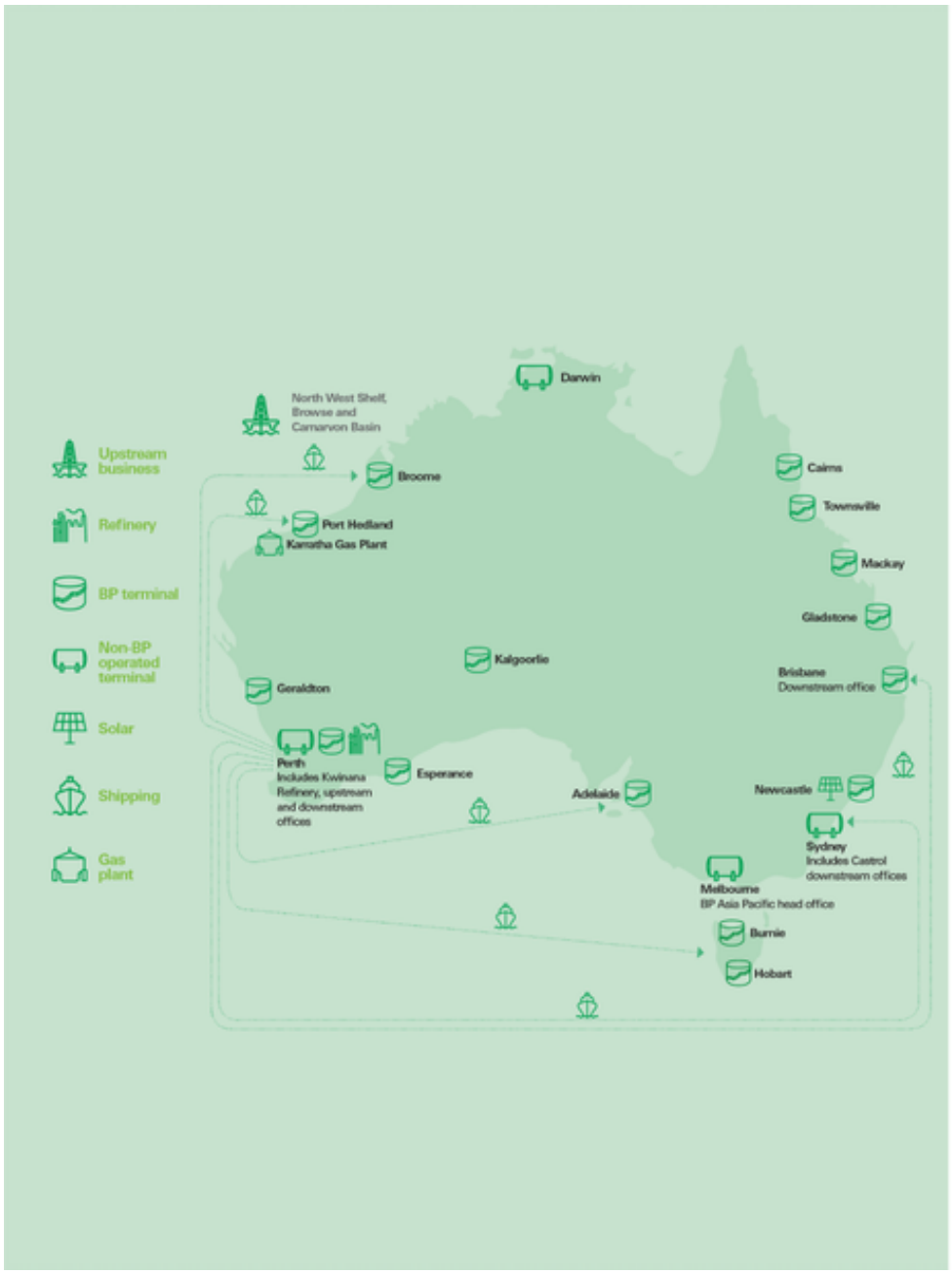
- bp participates in biofuel value chains in New South Wales and Queensland consistent with state bioenergy policies.

[2] http://bpbunge.com.br/

[3] "BP and Johnson Matthey License Innovative Waste-to-Fuels Technology to Biofuels Producer Fulcrum BioEnergy." *BP Global*, www.bp.com/en/global/corporate/news-and-insights/press-releases/bp-and-johnson-matthey-license-innovative-waste-to-fuels-technology-to-biofuels-producer-fulcrum-bioenergy.html.

[4] Iea. "The Role of Gas in Today's Energy Transitions – Analysis." *IEA*, www.iea.org/reports/the-role-of-gas-in-todays-energy-transitions

bp operations in Australia



BP's contribution

100 years in Australia

Australia's 4th largest manufacturer (by revenue, 2018)

Australia's largest oil refinery (Kwinana)

Australia's first oil refinery (1924)

Supplying 24.4% of Australia's fuel in 2018

5,700 employees

1,400 BP retail sites

26 depots and terminals

Supplying more than 75 airports

$1.5 billion direct + $29.4 billion indirect tax (2013-17)

Foundation North West Shelf partner

Invested $3.6 billion in North West Shelf (2008-2018)

Invested $1.44 billion in downstream (2013-2017)

Supplying Qantas since 1920s

Invented Opal low aromatic fuel

2 Introduction

bp welcomes the opportunity to contribute to the development of the Australian Bioenergy Roadmap. bp shares the Australian government's ambition to support technologies that will provide affordable and reliable lower emissions energy.

bp's 2019 Energy Outlook forecast the increasing pace of transition, with renewable energy the fastest growing source of energy, contributing half of the growth in global energy- its share in primary energy increasing from 4% today to around 15% by 2040[5].

bp has a long-established record of investment and development in the bioenergy value chain. Indeed, bp has been producing, trading on international markets, and selling bioenergy to end users for over 30 years internationally.

In Australia, bp is involved in the purchase, blending, storage and sale of:

- ethanol, an alcohol produced from fermented feedstocks; and
- biodiesel, or Fatty Acid Methyl Esters (FAME)— oil produced from a variety of sources such as waste cooking oil, vegetable oils, tallow and canola.

These are blended with conventional fuels (petrol or diesel) for use as motor fuels. The sale of these fuels is predominately to abide by the biofuel mandates in NSW and Queensland.

Prior to changes to the Cleaner Fuels Grants Scheme, bp produced hydrotreated vegetable oil or HVO, also known as renewable diesel, at bp's Bulwer refinery.

Bioenergy is an increasingly important part of a lower carbon energy system and advanced biofuels offer one of the best large-scale solutions to reduce emissions in hard-to-abate sectors such as aviation, marine and haulage.

An Australian bioenergy industry requires well-designed, stable and long-term policy frameworks to incentivize and support investment in sustainable biofuels. In this submission bp will present policy principle considerations and key recommendations for inclusion in the Australian Bioenergy Roadmap.

[5] *Bp Energy Outlook 2019*, p.79 www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019.pdf

3 Key policy principles

The following principles should be applied to development of the Australian Bioenergy Roadmap and any subsequent policies:

- **Equity:** ensures a level playing field for all sectors, industries and technologies, provide market signals that engender confidence to investors and detail long-term pathways to guide future investment. Any policy settings and incentives need to be competitive with those in more advanced markets to ensure Australia captures investment and leverages existing proprietary technology.

- **Sustainability:** throughout the value chain, environmental and social considerations should be assessed and verified to ensure that a net positive environmental and social outcome is achieved.

- **Market-based:** policy that uses flexible market mechanisms and outcome-based regulation to deliver efficiencies and liquidity.

- **Technology neutral:** policies should be flexibly designed, outcome based and support access to a range of technology pathways, at pace.

- **Circularity:** A circular economy is based on the principles of avoiding waste by designing it out, keeping products and materials in use, and regenerating natural systems. It builds long-term resilience, generates business and economic opportunities, and provides environmental and social benefits.

- **Innovative:** the Australian bioenergy sector is slow in transitioning from first generation biofuels and FAME biodiesel (Fatty Acid Methyl Ester) to more advanced fuels. There is an urgent need to move from a first-generation biofuel market to supporting next generation advanced biofuels including renewable fuels.

4 Key recommendations

1. The bioenergy roadmap should articulate broad economy wide market mechanisms.

2. National policy should supersede state-based mechanisms with the same policy objectives.

3. Any obligation with regards to bioenergy should be applied to the whole value chain, this includes production, sale, distribution and end users.

4. Policy design should encourage heavy industry and logistics operators to use low carbon fuels.

5. Sustainable aviation fuel (SAF)
   - The policy framework supports the development of an international approach to the use of SAF.
   - Technology neutrality is encouraged to help ensure efficiency in the market achieving compliance.
   - SAF should be counted as a low carbon fuel in regulated emissions trading and/or offsetting schemes.
   - Policy should also support consumer-led initiatives that promote the use of SAF.

6. For advanced biofuel technologies where technology risks are still relatively high, the policy design should support additional transitional support mechanisms to provide greater certainty on investment decisions.

7. Policy design must foster innovation by being technology neutral and incentivizing technology investment decisions

8. Excise rate reductions as an incentive mechanism to encourage the production of bioenergy, in particular domestically manufactured renewable diesel; and imported biofuel products.

9. Promote the export of domestically produced bioenergy through alignment with international sustainability accreditation on feedstocks.

10. Feedstocks:
    - The policy design should support a broad range of feedstocks.
    - A bioenergy roadmap must ensure feedstock is sustainable including a minimal indirect land use change (ILUC) impact.
    - Accreditation on feedstocks should be aligned with the EU and International Sustainability & Carbon Certification (ISCC), supporting international consistency and markets.
    - Consistent with the current treatment of biodiesel feedstock, international feedstocks should be eligible for use in local manufacturing.

11. End-of-life plastics
    - Domestically produced fuel sourced from an end-of-life plastic feedstock should be treated as a renewable fuel and therefore eligible for reduced excise rates.
    - Policy should be developed that encourages a circular economy and drives industry to extract calorific value from waste.

5 State government biofuel policy design

As a fuel wholesaler and distributor in Australia, bp is subject to the biofuel policy mandates set in Queensland and NSW. The Queensland and NSW biofuel mandates were introduced to encourage growth of a biofuels industry in the respective states and aimed to encourage investment in regional areas in new or advanced biofuel technology.

The policy design of the mandates has been faced with a number of implementation challenges, including:

- A limited number of biodiesel and ethanol producers;
- lack of customer uptake of the products;
- federal excise concession settings which have limited the importation of alternate ethanol or biodiesel products.
- The potential under these settings to divert feedstock from the food to fuel value chains, for example wheat being diverted for use as ethanol feedstock.

Despite ambitious intent, the policy design has struggled to achieve the policy objectives, with neither state realizing any significant increase in private sector investment in bioenergy since the introduction of the mandates, except for some smaller producers working towards producing market level volumes of biofuel in Queensland.

However, the fuels industry has invested significantly in biofuels related infrastructure to support the terminals and logistics supply chains, and at retail sites. Despite significant investments, consumer uptake continues to be a barrier to achieving compliance with the ethanol mandate.

Many consumers in both jurisdictions, especially NSW, choose to purchase premium fuels instead of ethanol blended fuels. Compared to other fuel options, the cost differential of E10 is historically insufficient to encourage consumers to switch products.

Coupled with this is a lack of understanding of the use of E10 in the community. An E10 educational campaign was introduced by the NSW government in partnership with the NRMA called 'Fuel for Thought', but industry saw little change in consumers' buying patterns following the campaign.

The Queensland government's campaign, 'E10 Ok' preceded the commencement of the ethanol mandate and led to slightly higher sales of E10 in Queensland as compared to NSW, however consumers also continue to choose premium unleaded petrol (PULP) or regular unleaded petrol (RULP) – whichever is available – over E10.

In 2016 the ACCC observed in a regular petrol monitoring report that the NSW biofuels mandate is costing NSW motorists up to $85 million per year in fuel costs[6].

Contributing to these challenges are federal excise concession settings which have limited the importation of a variety of alternate ethanol or biodiesel products, which has limited consumer choice, maintained less competitive prices of existing products and in-turn prevented the development of a competitive local market.

[6] ACCC, 2016, *Report on the Australian Petroleum Market September Quarter 2016*, www.accc.gov.au/system/files/Report%20on%20the%20Australian%20petroleum%20market%20September%20quarter%202016.pdf

This lack of a competitive local market has led to sub-optimal outcomes for supply security, quality of product, market structures and cost of product, that has ultimately disadvantage consumers.

In its 2015 report "*Ethanol Mandate – options to increase the uptake of ethanol blended petrol*", the NSW Independent Pricing and Regulatory Tribunal (IPART) concluded that a large beneficiary of the NSW mandate was the single producer and dominant supplier of ethanol in NSW[7]. There is a significant lack of competition in NSW as volume fuel sellers must purchase ethanol to comply with the mandate, and there is little prospect of competition from imported ethanol in the foreseeable future, given the Australian Government's concessionary excise arrangements for local ethanol producers.

bp recommends the bioenergy roadmap articulate broad economy wide market mechanisms and a national policy approach that supersedes state-based mechanisms with the same policy objectives. A consistent national approach would support greater market liquidity.

Recommendations:

1. The bioenergy roadmap should articulate broad economy wide market mechanisms.
2. National policy should supersede state-based mechanisms with the same policy objectives.
3. Any obligation with regards to bioenergy should be applied to the whole value chain, this includes production, sale, distribution and end users.

6 Markets and technology

6.1 Decarbonising the transport sector

As a company that has for more than a century been focused on keeping the world moving, bp is focused on the challenge to significantly reduce emissions while meeting the growing global need for mobility. Transport accounts for around a quarter of carbon emissions from the combustion of fossil fuels. This contribution will need be significantly reduced if the world is to achieve net-zero emissions.

bp analysis suggests that while electric vehicles will account for 15% of all passenger vehicles by 2040, half of all cars in Europe, and over two thirds in the world, could still have internal combustion engines (ICEs) by 2040[8]. It is important therefore to identify cleaner and more efficient fuels and lubricants, increase the use of biofuels and improve the efficiency of ICEs.

It is also important to consider that electrification may not be commercially or technically feasible in many parts of the transport sector, including long-distance haulage, shipping and aviation, or in certain geographies.

Decarbonization in the transport sector will require a range of technologies including biofuels, 'e-fuels' and green and blue hydrogen, as well as making use of developments in the broader mobility transition such as autonomous vehicles and shared mobility services.

[7] IPART NSW, 2015, *Ethanol Mandate - Options to Increase the Uptake of Ethanol Blended Petrol*, p. 75 www.ipart.nsw.gov.au/files/sharedassets/website/trimholdingbay/final_report_-_ethanol_mandate_-_options_to_increase_the_uptake_of_ethanol_blended_petrol_-_may_2015.pdf

[8] *Bp Energy Outlook 2019*, p.47 www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/energy-outlook/bp-energy-outlook-2019.pdf

It is not possible to predict the energy mix with precision, so policies must be developed that support a range of technologies. Stable yet adaptive policy, technology development, and competition should determine the technology mix.

6.2 Freight and logistics

Australia's reliance on heavy vehicles and road transport logistics is a key opportunity in Australia's bioenergy roadmap.

Renewable diesel is a drop-in replacement for petroleum-based diesel, it is an interchangeable substitute for conventional petroleum-derived hydrocarbons, meaning it does not require adaptation of the engine, fuel system or the fuel distribution network. This has been corroborated by two major manufactures of heavy-duty engines and trucks, Volvo Trucks North America[9] and Mack Trucks[10], which have approved the use of renewable diesel fuel in all their diesel engines.

Policy design should encourage heavy industry and logistics companies to use lower emission modes of transport. As it stands, most logistics operators will choose the most economical and efficient way to move freight. It is important to encourage a change in behaviour, where the emissions intensity of a journey would be given appropriate weighting relative to cost and time.

Recommendation:

4. Policy design should encourage heavy industry and logistics operators to use low carbon fuels.

6.3 Aviation

Globally Air bp fuels more than 6,000 flights every day and supplies fuel at around 900 locations in over 50 countries.

The volume of jet fuel used by bp alone presents an opportunity to make a material reduction in greenhouse gas emissions over the lifecycle of fuel by using sustainable aviation fuel (SAF) in place of regular jet fuel.

In 2016 bp was the first operator to start commercial supply of SAF through an existing hydrant fuelling system, at Norway's Oslo airport. bp SAF has been supplied at 16 airports worldwide across three continents – including in Norway, Sweden, France and in the US. Air Transport Action Group (ATAG) statistics show that over 240,000 commercial flights had been made on sustainable aviation fuel by May 2020.

SAF is made by converting sustainable material such as certain vegetable oils, recycled cooking oil or solid household waste to a high-quality synthetic product which is then blended with regular jet fuel. It can drop straight into aircraft and is approved for use in jet engines with no technical changes to aircraft necessary.

SAF gives a reduction of up to 80% in CO_2 emissions depending on the sustainable material used, production method and the supply chain to the airport.

The development of SAF has been incentivised by the aviation industry's own emissions targets. The International Air Transport Association (IATA) is aiming for zero growth in carbon by 2020 and a 50%

[9] https://www.volvogroup.com/en-en/news/2015/dec/news-151323.html
[10] https://www.macktrucks.com/mack-news/2016/mack-trucks-green-lights-renewable-diesel-fuel/

reduction in carbon emissions by 2050, when compared to 2005[11]. The UK aviation industry aims to reach a net zero-carbon target for 2050. To achieve this the industry will employ more efficient aircraft and increase use of SAF and offsets.

Achieving the industry's long-term low carbon goals could ultimately require close to 100% SAF in long-haul flights. Scaling the production of SAF up to this level will require collaboration with aviation regulators to support this effort and long-term policy certainty. This will enable the necessary investment into commercial production, alongside continued research, to improve the technologies.

Many of the SAF production technologies are immature, but bp believe the best way to make them viable is a stable long-term policy framework that gives confidence for investors to back these projects.

- In such an international industry, increased fuel costs in one country or region may lead to tankering and increased emissions from aircraft taking on board more fuel than necessary to reduce the need to refuel in those countries or regions with mandates. Care needs to be taken to avoid such situations.

- Technology neutrality is encouraged to help ensure efficiency in the market achieving compliance. bp sees this as a temporary measure until there is stability of supply at scale.

- Fuel suppliers are the most obvious point of obligation for policy compliance, as aggregators of fuel demand. However, other points of obligation could be considered as a mitigation for market distortion and CO_2 leakage due to fuel tankering, for example to obligate airports to ensure a defined portion of fuel at their airport to be SAF, with the incremental cost shared between all users of the airport through landing fees, or similar.

- The cost of SAF is typically higher than that of conventional biofuels for ground transport due to tighter quality specifications. Therefore, bp supports policies allowing SAF to be on an equal footing with other biofuels. bp supports SAF to be counted as a low carbon fuel in regulated emissions trading and/or offsetting schemes.

- For advanced biofuel technologies such as gasification, pyrolysis and electro-fuels where technology risks are still relatively high, bp supports additional transitional support mechanisms to provide greater certainty on returns on investment.

Recommendations

5. Sustainable aviation fuel (SAF)
   - The policy design supports the development of an international approach to the use of SAF.
   - Technology neutrality is encouraged to help ensure efficiency in the market achieving compliance.
   - SAF should be counted as a low carbon fuel in regulated emissions trading and/or offsetting schemes
   - Policy should also support consumer-led initiatives that promote the use of SAF.
6. For advanced biofuel technologies where technology risks are still relatively high, bp supports additional transitional support mechanisms to provide greater certainty on investment decisions.

[11] https://www.iata.org/en/policy/environment/climate-change/

6.4 Marine

bp Marine supplies most of the major marine bunker fuel ports around the world, offering various grades of fuel oil, marine diesel, or gas oil.

Marine fuels is a large and complex global industry, and bp Marine has a presence in more than 50 ports around the globe.

As the shipping industry looks to rapidly decarbonise by 2050, low-carbon fuels, such as biofuels, will need to become commercially available. Additionally, it is expected that the International Maritime Organisation (IMO) will make changes to the International Convention for the Prevention of Pollution from Ships (MARPOL Convention) requiring lower carbon emissions in the short term.

bp Marine is currently supplying biofuel for use in ship bunkering in Rotterdam and is actively exploring expanding this into other jurisdictions through its supply portfolio.

Although, like most sectors, there are technical and logistical issues that need to be resolved before biofuels can be introduced at a larger scale in the shipping sector, there is interest in progressing low carbon fuels from both the fuel and shipping industry.

Volumes of marine fuel sold in Australian waters are lower than larger shipping ports such as Rotterdam and Singapore, however Australian policy settings should be conducive to biofuel usage in marine fuels as demand from the shipping sector continues to rise.

6.5 Mining

bp is a major supplier of energy to the Australian mining industry, offering various fuel sources including natural gas, liquified natural gas, aviation fuels, lubricants, motor spirit and diesel.

A recent McKinsey & Company report indicates that the mining industry is currently responsible for up to 7% of the worlds GHG emissions, much of which is scope 3, or coming from indirect emissions[12].

The mining industry made significant progress towards reducing their GHG emissions footprint, but these levers have largely represented fixed plant equipment that utilise electricity or gas as a feedstock. This is evident in the industry's move towards a renewable electricity source such as solar or wind energy.

Mobile plant and equipment such as haul trucks, that predominately run off diesel, have largely remained unchanged, and whilst the mining industry has identified low carbon solutions such as electrified or hydrogen fuelled trucks, these alternatives will not be available in the short term due to:

- Technological and economic restrictions of the production and use of hydrogen;
- Availability of OEM equipment;
- The high cost of replacing an entire fleet of heavy equipment before end-of-life.

bp is actively working with over 10 mid to large scale mining companies across Australia to find an interim solution before hydrogen and electrification becomes practicable.

[12] "Climate Risk and Decarbonization: What Every Mining CEO Needs to Know." *McKinsey & Company*, www.mckinsey.com/business-functions/sustainability/our-insights/climate-risk-and-decarbonization-what-every-mining-ceo-needs-to-know

Unlike most sectors, mining is unique in that some biofuels can be rolled out immediately, such as renewable diesel. It is also logistically simpler due to the natural clustering of minerals and metals resources, typically across four geographical locations including the Pilbara, Gold Fields, Hunter Valley and Bowen Basin.

The barriers to the mining industry transitioning to biofuels are the same as the barriers in other sectors:

- Unavailability of locally produced biofuels in the quantities required has been a consistent blocker since the abolishment of the cleaner fuels grant scheme in July 2015.
- Globally sourced biofuels are incentivised to be imported into California or the European Union, rather than Australia.
- Biofuels, in their current state, are largely uneconomic in comparison to conventional fossil fuels.

6.6 Technological advances

It is vital that policy not only keeps pace with technological advances but drives it, and investment in advanced biofuels should not be discouraged by current policy that favours first generation biofuels. If policy development is unable to keep pace with technological advances, policy must be developed in support of technical neutrality and with the necessary flexibility to enable emerging fuel technology. This is relevant to all areas of policy including tax and environmental policies.

For example, when the reduced excise rate for biodiesel replaced the cleaner fuels grant scheme in July 2015, renewable diesel was not included as producing second-generation biofuels in commercial quantities is a relatively recent development.

Renewable diesel, also known as hydrotreated vegetable oil or HVO, is a second generation biofuel made from organic biomasses; the production process makes renewable diesel chemically identical to petroleum diesel and meets the same ASTM specification (D975), but with 80% less greenhouse gas emissions and better cold storage properties than traditional biodiesel.

Renewable diesel and biodiesel are currently treated separately under the excise scheme based on their different manufacturing processes. However renewable diesel has been identified as holding a much greater potential to reduce carbon emissions than conventional biofuels (such as biodiesel) in the joint ARENA and CEFC report *Biofuels and Transport: An Australian opportunity*.

bp supports policy reform to reduce the excise rate on domestically manufactured renewable diesel, as per the treatment of first-generation biodiesel. bp believe there exists a clear policy rationale for a change in Australian policy to similarly encourage renewable diesel.

The extension of the biodiesel excise tariff to renewable diesel could be achieved through updating the definition of biodiesel under the existing excise tariff framework (subsection 3(1) of the Excise Tariff Act 1921).

Recommendations

7. Policy design must foster innovation by being technology neutral and incentivizing technology investment decisions.
8. excise rate reductions as an incentive to encourage the production of bioenergy, in particular domestically manufactured renewable diesel; and imported biofuel products.

7 Opportunities - Export markets

In recent years the production and trade of biofuels has increased as policy settings around the world have matured and focused on reducing emissions through incentivising the production and use of biofuels. Traditionally trade has been in ethanol and biodiesel as they are the most established biofuels, however the trade of second-generation biofuels, including renewable diesel is increasing.

Promoting the export of domestically produced bioenergy, especially advanced biofuel, would stimulate the domestic bioenergy market and have broader positive impacts on the Australian economy.

The promotion of this could be supported through ensuring trade-related measures are flexible; and through alignment with international sustainability accreditation on feedstocks.

bp has extensive experience trading bioenergy within mature and complex market-settings globally, including:

- The European Union's Renewable Energy Directive (RED II) which overlays various European countries renewable quotas and mandates.

- The United States Renewable Fuel Standard (RFS) which works alongside state regulations to encourage the use and production of biofuels, including the California Low Carbon Fuel Standard (LCFS), which is one of the first low-carbon fuel standard mandates in the world and is probably the most developed mechanisms to encourage decarbonization of the energy supply chains.

Recommendations

9. Promote the export of domestically produced bioenergy through alignment with international sustainability accreditation on feedstocks.

8 Resources

8.1 Feedstocks

Feedstocks that are scalable as well as sustainable will be required for the industry to meet its low carbon goals. Sustainable biofuel production must consider impacts on land use, food production and sensitive environments and human rights.

bp prefers waste and residue feedstocks where they are available and cost effective. This includes waste cooking oil and end of life plastics.

However, bp supports all feedstocks that have a certified carbon reduction and minimal indirect land use change (ILUC) impact, including e-fuels produced from renewable power and CO_2 and low-ILUC risk vegetable oils.

Accreditation on feedstocks should be aligned with the EU and International Sustainability & Carbon Certification (ISCC), supporting international consistency and markets.

Consistent with the current treatment of biodiesel feedstock, international feedstocks should be eligible for use in local manufacturing, as Australia does not have the necessary volume of local feedstock.

Recommendation

10. Feedstocks:
    - The policy design should support a broad range of feedstocks.
    - A bioenergy roadmap must ensure feedstock is sustainable including a minimal indirect land use change (ILUC) impact.
    - Accreditation on feedstocks should be aligned with the EU and International Sustainability & Carbon Certification (ISCC), supporting international consistency and markets.
    - Consistent with the current treatment of biodiesel feedstock, international feedstocks should be eligible for use in local manufacturing.

8.2 Circular economy

One of bp's objectives is to deliver renewable, low carbon energy without the need for agriculture to switch from food production to feedstock. bp's refining technology and engineering team are working with bp refineries to transform waste into high quality fuel using renewable carbon sources.

bp recommends that fuel domestically produced from an end-of-life plastic feedstock is treated as a renewable fuel and therefore eligible for reduced excise rates, similar to the treatment of biodiesel and ethanol.

Policy should also be developed that incentivises a circular economy and drives industry to extract calorific value from waste. This would help the development of a viable biofuel market and would support Australia's national waste policy.

A circular economy is based on the principles of avoiding waste by designing it out, keeping products and materials in use, and regenerating natural systems. Where it is no longer possible to reuse an item in its current form, using enhanced, chemical or mechanical ways to recycle it into a new product should be used. The most optimum form of this is closed loop recycling, where materials are brought back to an equal or comparable level of quality.

For example, bp is helping commercialize Fulcrum technology that converts household rubbish into fuel for transport. bp has an agreement with Fulcrum BioEnergy, to use bp and Johnson Matthey (JM) technology in the Sierra BioFuels Plant located in Nevada, US to convert approximately 175,000 tons of household garbage into approximately 11 million gallons of biojet fuel each year: equivalent to the fuel needed for more than 180 return flights between London and New York.

The world needs to use its scarce resources in radically new ways; moving from a 'take, make, waste' approach towards one in which materials are re-used, recycled, repurposed and redirected to extend their purposeful life for as long as possible.

In Australia 6 million tonnes of plastic is produced every year, 50% of which is single use plastic. Up until recently, waste recyclers have exported waste to avoid the cost of processing waste locally. Since 2018, the crackdown on exporting waste to China means waste must be processed close to the source.

The technology to convert waste plastic into fuel exists, and small-scale projects are already in progress in Australia, but the capital expenditure required to scale up to market level production is expensive. Government support for the market scale development of infrastructure to convert end-of-life plastics back into fuel would support investment decisions while the market is developing. Financial support would be short-term and aimed at offsetting some of the up-front capital costs.

The process of converting end-of-life plastics into fuel at commercial levels requires a sustained and consistent amount of good-quality feedstock to function effectively. Plastics must be collected, sorted and cleaned in advance of the process. There is a strong market for clean plastic, currently $400/tonne[13]. Like many advanced biofuels, at current production levels the cost of the feedstock makes most projects uneconomical.

An Australian government led waste recovery scheme that works with local government collection and processing of end-of-life plastics for use as renewable fuel feedstock would provide a practical solution to problems with processing waste onshore and provide access to a clean feedstock for fuel processing.

Recommendations

11. End-of-life plastics:
    - Domestically produced fuel sourced from an end-of-life plastic feedstock should be treated as a renewable fuel and therefore eligible for reduced excise rates.
    - Policy should be developed that encourages a circular economy and drives industry to extract calorific value from waste.

[13] https://www.sustainability.vic.gov.au/Business/Investment-facilitation/Recovered-resources-market-bulletin