



Proposal Content Form

Kwinana Renewable Fuels

Table 1: General proposal content description

| Proposal title | bp KRF |
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| Proponent name | bp |
| Short description | <p>The Proposal is for the construction and operation of a Renewable fuels processing facility that produces renewable diesel and sustainable aviation fuel (SAF) from vegetable oils, animal fats and other biowaste products.</p> <p>The biorefinery will reuse the existing processing infrastructure formerly used for hydrocarbon refining (such as hydrofiner units, storage tanks, pipelines and utilities such as the flare and waste water treatment plant) combined with some additional new infrastructure such as a Hydrogen Generation Unit (HGU), Pre-Treatment Unit (PTU), Product Fractionation Unit (PFU) and Anaerobic Bio Digestion Unit.</p> <p>The Proposal is located at the former oil refinery site in the Kwinana Industrial Area and will use existing disturbed footprint to implement this project. No clearing will occur as part of the Proposal.</p> <p>The Proposal Project Development Envelope covers the whole bp boundary which is an already disturbed area. The Proposal is considered to be achieving sustainable outcomes via creation of new job opportunities, production of sustainable fuels from waste feedstocks and by underpinning bp’s Kwinana Energy Hub development which will help industry, the State and bp customers achieve decarbonisation strategy and reduce greenhouse gas emissions.</p> |

Table 2: Proposal content elements

| Proposal element | Location / description | Maximum extent, capacity or range |
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| Physical elements | | |
| Tanks (existing Tanks – these tanks are already part of the terminal and will be overhauled as per bp’s maintenance program) | See Figure 1-2 in Section 1.1 of the Supporting Document | Existing infrastructure approved under existing licence L5938/1967/12. 29 tanks containing raw feed, treated feed, bio-naphtha, sustainable aviation fuel (SAF) and renewable diesel with a combined total tank capacity < 200ML. |
| Hydrofiner 2 (HYD2) (existing unit that will be revamped for the new proposed activities) | | 4,000 klpd feed |
| Hydrofiner 3 (HYD3) (existing unit that will be revamped for the new proposed activities) | | 2,850 klpd feed |
| Product Fractionation Unit (PFU) (new build) | | 1,550 klpd HVO based on design feedstock basis |

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| | | <p>300 klpd Bionaphtha based on design feedstock basis</p> <p>1,300 klpd SPK based on design feedstock basis</p> |
| Hydrogen Generation Unit (HGU) (new build) | | 65 TPD Hydrogen |
| Pre-treatment Unit (PTU) (new build) | | 1,600 TPD feed capacity |
| Anaerobic Bio Digestion Unit (BDU) (new build) | | 54 TPD feed |
| Cooling tower (new build) | | 2,572 tph recirculation rate |
| Existing utilities such as steam and wastewater treatment | | Existing utilities covered under existing licence L5938/1967/12 |
| Construction elements | | |
| Laydown areas, workshops, crib rooms and carparks | Existing infrastructure as shown in Section 1.1 Figure 1-2 of the Supporting Document. | Existing facilities onsite are being used, however several new areas will be developed on existing bp plot. No clearing will occur as part of these activities. |
| Dewatering | | <p>Several sewers, including stormwater drains, will be constructed below ground and dewatering activities may occur.</p> <p>Should this be required after detailed designs have confirmed that groundwater has been reached, and where water abstraction activities cannot be undertaken under the current GWL60605(6) licence, application will be made under the Rights in Water and Irrigation Act 1914.</p> <p>Should dewatering capacity be less than 25,000 KL, dewatering exemption may apply under the RIWI Act.</p> |
| Operational elements | | |
| Natural gas supply | N/A | <p>5,556 kg/hr</p> <p>Natural gas usage will range from 4,897 kg/hr when the facility is maximising SAF production to a maximum of 5,556 kg/hr when maximising renewable diesel production</p> |
| Water supply | | Water will be supplied from the Kwinana Water Reclamation Plant (KWRP) at a rate of 86 tonnes per hour water. |
| Solid waste | | <p>Solid waste will be produced from the BDU as a sludge at a rate of up to 37 tonnes per day.</p> <p>Solid waste will comprise organics such as bentonite, sludge.</p> <p>Given that the solid waste produced is considered organic, bp is planning to reuse the waste stream via either composting or in the waste to energy incinerators via third party operators.</p> <p>The waste is expected to be non-hazardous and not a controlled waste.</p> |

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| | | It is expected that all hydrocarbons will be fermented into biogas in the BDU and therefore the sludge will mainly be bentonite and organics. |
| Wastewater effluent | | <p>An average of 150 kL/day of effluent are expected to be produced from the Proposal and will be treated at the existing wastewater treatment plant.</p> <p>The existing wastewater treatment plant is licensed under the existing Prescribed Premises Part V Department of Water and Environmental Regulation DWER Licence (L5938/1967/12) for 7.93ML/day therefore has sufficient capacity to treat the Proposal wastewater streams.</p> |
| Power generation | | Internal generation of 2.3 MW from BDU gas engines. |
| Emissions to air | | <p>There are several combustion stacks and flares from the new processing units that will create air emissions. Air quality modelling is progressing, and considered to be well within ambient air quality standards from comparison with the oil refinery modelling.</p> <p>Sulphur Dioxide emissions to air from stack emissions has been estimated to be approximately 150,000 kg/year.</p> <p>Oxides of Nitrogen (NOx) emissions to air from stack emissions has been estimated to be approximately 150,000 kg/year.</p> <p>Minimal dust is expected from construction as the plot is a brownfields site and dust suppression will be managed in the Construction Management plan.</p> |
| Odour | | <p>Odour is expected from the renewable feedstocks storage tanks, PTU and BDU operation. Management of the odour will be via odour devices such as a caustic odour scrubber fitted to the PTU and managerial controls such as ensuring feedstocks are processed in a timely manner.</p> <p>A consultancy has been engaged to undertake a detailed odour assessment for the proposal with reference to Guideline: Odour Emissions (DWER, 2019). The odour risk assessment showed that the proposed activities will have low residual impacts regarding odour.</p> |
| Noise | | <p>The noise from the proposal has been modelled and shows predicted noise levels are;</p> <ul style="list-style-type: none"> at least 7dB below assigned noise levels at any time of day for the nearest sensitive receptors below 65 dB(A) for neighbouring industrial premises |
| Proposal elements with greenhouse gas emissions | | |
| Construction elements: | | |
| 10,000 tpa | Scope 1 | |
| Operation elements: | | |
| 120,000 tpa | Scope 1 | |
| 144,000 tpa | Biogenic CO ₂ emissions | |

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| | Biogenic emissions are expected to be reported under <i>National Greenhouse and Energy Reporting Act 2007</i> but separate to Scope 1 emissions (aligned with the reporting requirements of IPCC reporting guidelines for national inventories and practice) | |
| 71,400 tpa | Scope 2 unmitigated GHG emissions | |
| 0 tpa | Scope 2 mitigated GHG emissions | |
| Rehabilitation | | |
| <p>Upon completion of operations, the site will be remediated and rehabilitated to ensure the premises are left in a safe, stable, and non-polluting condition.</p> <p>This project is at an early stage in its development. A decommissioning & rehabilitation plan will be submitted prior to the cessation of operations. Timeframe for submission of the decommissioning & rehabilitation plan will be further discussed with the EPA.</p> | | |
| Commissioning | | |
| <p>Commissioning of the proposed activities is planned to commence in 3Q 2025. Commissioning plans are being developed and will include mitigations to reduce environmental impacts (such as flaring and water use). The environmental commissioning plan will be submitted to DWER as part of the DWER Works Approvals application and assessment process under Part V of the EP Act</p> <p>Commissioning of the processing facility will be undertaken subject to the operational limits above.</p> <p>An environmental commissioning plan will be developed and submitted to DWER as part of the DWER Works Approvals application and assessment process under Part V of the EP Act.</p> | | |
| Decommissioning | | |
| <p>Upon completion of operations, the site will be remediated and rehabilitated to ensure the premises are left in a safe, stable, and non-polluting manner.</p> <p>This project is at an early stage and therefore a decommissioning & rehabilitation plan will be submitted prior to cessation of operations. Timeframe for submission of the decommissioning & rehabilitation plan will be further discussed with the EPA.</p> | | |
| Other elements which affect extent of effects on the environment | | |
| Proposal time* | Maximum project life | Design life of 20 years |
| | Construction phase | 18 months |
| | Operations phase | 20 years |
| | Decommissioning phase | 5 years |