Bell Bay Powerfuels

ABEL Energy – Australian Hydrogen Council

September 2023

Bell Bay Powerfuels (BBPF) is a green hydrogen and methanol project being developed by ABEL Energy

Bell Bay Powerfuels Project ownership structure

- Owned by 100% **subsidiary** of **ABEL Energy**
- ABEL Energy is a pioneering **developer of green hydrogen and methanol** production projects
- Dynamic team of **experienced industry experts** and **developers**
- Long-term perspective as **co-owner and operator** of new green hydrogen and methanol assets
- **Three Australian Projects** in active development target 900’000tpa Green Methanol
- **BBPF** is ABEL Energy’s **flagship project**
- Spanish renewable power company **Iberdrola** has a right to a future minority stake in **BBPF** via an investment made in December 2022

Key personnel leading BBPF development

Michael van Baarle
ABEL Energy Co-founder & CEO

Co-Founder of ABEL Energy with significant experience in developing projects for synthetic fuel production since 2006 following a 20-year legal career

Simon Talbot
ABEL Energy Director Commercial

20 years experience in agriculture and forestry product development, new market entry and investment partnerships

Rhys Tucker
ABEL Energy Chief Technology Officer

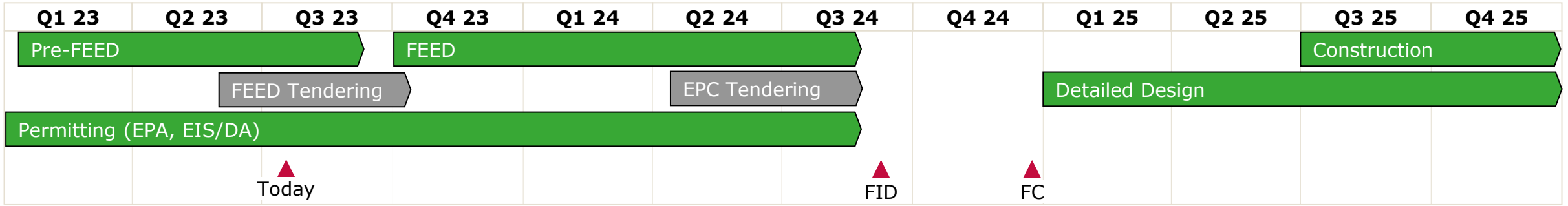
Project implementation and technical leadership expertise with 20+ years local & international experience in gasification, green hydrogen and methanol technologies

Kaspar Hebblewhite
ABEL Energy Director Business Development

15 Years professional experience in the energy sector including 8 years oil and gas project development and 7 years strategy consulting

Development of a commercial-scale green hydrogen and methanol production asset at Bell Bay, Tasmania

- ✓ **SITE CONFIRMED AND ESSENTIAL TERMS FOR PURCHASE AGREED**
  Former Bell Bay Power Station, decommissioned in 2009
- ✓ **BIOMASS AVAILABILITY CONFIRMED**
  Bell Bay is a major woodchip export hub offering strategic access to biomass feedstocks
- ✓ **TECHNICAL DESIGN AND PRE-FEED ONGOING**
  Pre-FEED engineering work nearing completion with studies from major technology suppliers
- ✓ **HEALTHY DEMAND FOR OFFTAKE**
  Significant market interest from national and international offtakers with opportunities also identified for local Tasmanian offtake
- ✓ **POWER ADDITIONALITY VIA NEW WIND FARM GENERATION**
  Renewable power generation developers form subject of power input negotiations
- ✓ **FRESH WATER CONFIRMED AND UNDER EOI**
  Discussions underway with fresh water supplier; supply confirmed to be available; access to salt water from Tamar Estuary as back-up



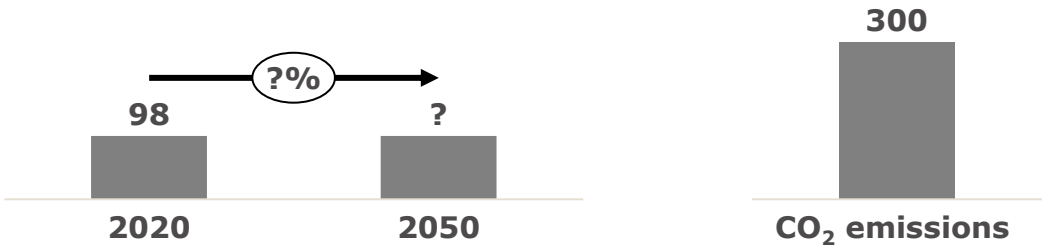
Green methanol is a strong growth market and has an important role to play in our energy transition journey

Grey methanol

Produced via steam methane reforming or coal gasification

- One of the seven base chemicals from which other chemicals are made
- Developed market, highly competitive and price sensitive
- Emissions intensive production process
- Supply and demand concentrated in Asia
- Strong growth since 2000 but slower future demand growth expected

Global grey methanol demand and CO_2 emissions
Per year, million tonnes



Main application areas

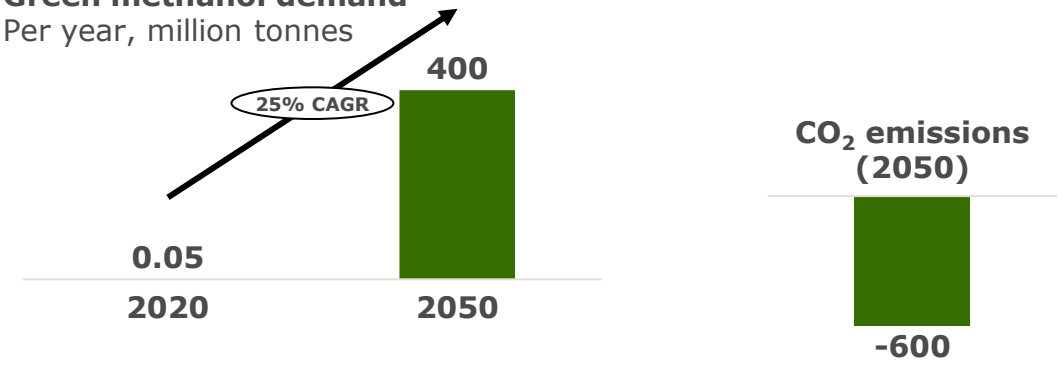
Formaldehyde	*Acetic Acid*	*MTBE*	*MTO*	*DME*

Green methanol

Produced using green hydrogen and carbon from biosphere

- ✓ Significant demand expected to grow to 400 million tonnes by 2050
- ✓ Negative production emissions due to CO_2 capture during biomass cultivation or carbon capture activities
- ✓ Ultra-clean burning, reduced NOx, no SOx, no particulate emissions
- ✓ Applications as renewable fuel and as a sustainable chemical feedstock

Green methanol demand
Per year, million tonnes



Main application areas

Marine fuels	*Chemical feedstock*	*Diesel replacement*

Source: Methanol Institute – Carbon footprint of methanol

1) Assuming CO_2 absorption from biomass and / or CO_2 capture (CCU, DAC)

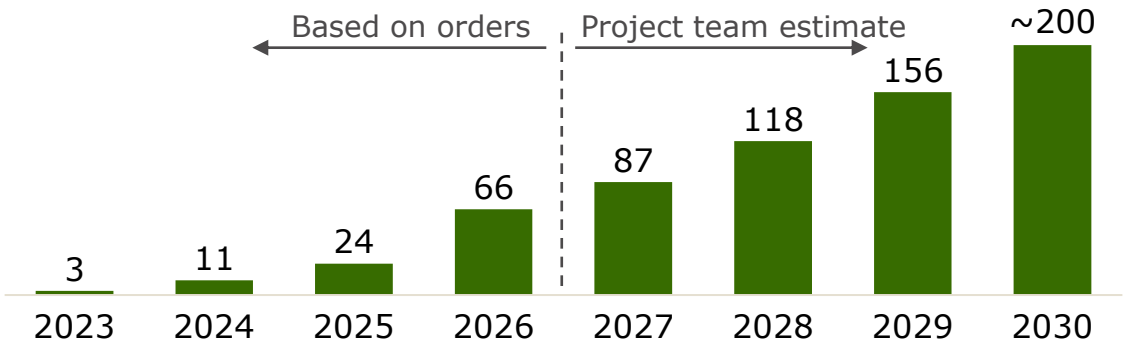
Maritime industry represents the majority of demand where a methanol fleet is emerging with firm orders

EU Fit for 55 package introduces binding CO_2 targets
- RFNBO fuel mandate of 1.2% by 2030
- Decarbonization mandate of 6.0% emission reduction by 2030[1]

IMO decarbonisation strategy
- Carbon intensity ratings to be introduced
- Target to reduce carbon intensity of shipping by 40% by 2030[2]
- ETS Scheme agreed to cover 40% of their emissions, rising to 70% in 2025 and 100% in 2026

Methanol is a proven net zero fuel
- Safe and easy to transport – easily integrated into supply chains
- Dual fuelling possible to ease transition
- Technology already available with clear implementation pathway

Global methanol fleet size
Cumulative # of vessel launches



1) Based on 2022 emissions levels 2) Based on 2008 emissions levels

Source: Tradewind; DNV; Maersk interview feedback; Company announcements; BBPF Analysis

Early adopters initiating fleet conversions to meet and exceed future emissions reduction targets

MAERSK

Decarbonisation efforts
- 24x 16000 TEU methanol dual-fuel ships ordered
- €2bn+ investment
- 5000 ktpa+ demand by 2030
- 70% Emission reduction by 2030
- Net 0 emissions target by 2040

Other shipping lines

Decarbonisation efforts
- Most carriers are following Maersk lead with dual-fuel methanol ship orders
- CMA CGM, COSCO, Evergreen, etc
- More and more ports undertaking methanol bunkering trials and studies, eg. Singapore, Melbourne

Tasmania is ideally suited to green hydrogen and methanol production with renewable hydro, wind and biomass resources

Tasmania's natural resources

Renewable Hydro Power

- ~85% share of grid
- 2.3GW installed hydro capacity
- Baseload renewable power

Renewable Wind Power

- ~15% share of grid
- 0.6GW installed capacity, 10GW by 2040

Renewable carbon (as biogenic CO_2 emissions)

- Under-utilised forestry residue streams as carbon source
- Biogenic CO_2, valuable for end customers

Main Conversion stages

Green hydrogen electrolysis

Methanol synthesis

Biomass gasification

Local Success Factors

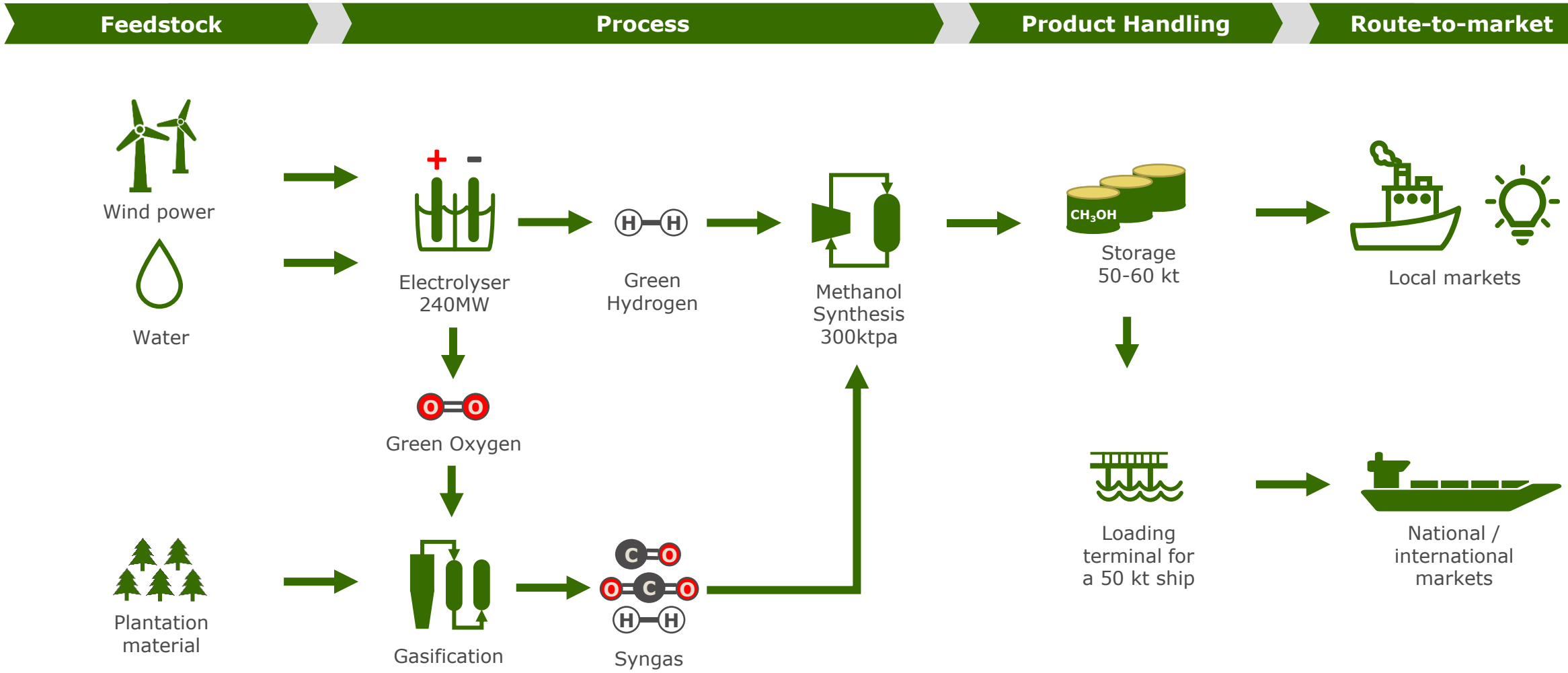
Stranded renewable power: Semi-stranded power market in Tasmania with limited mainland interconnectivity and increasing renewable supply

High plant utilisation: Baseload renewable power available enabling high utilisation of plant for green hydrogen production

Biogenic carbon availability: Biogenic carbon is scarce, Tasmania's forestry sector provides an abundant source of un-utilised biocarbon in forestry residues

Temporal and geographical correlation: Tasmania's near 100% renewable power grid addresses temporal and geographical correlation considerations

The Bell Bay Powerfuels Project aims to sustainably produce 300,000 tonnes of green methanol per year



The project site is strategically located and offers inherent advantages over other development sites

Methanol Storage

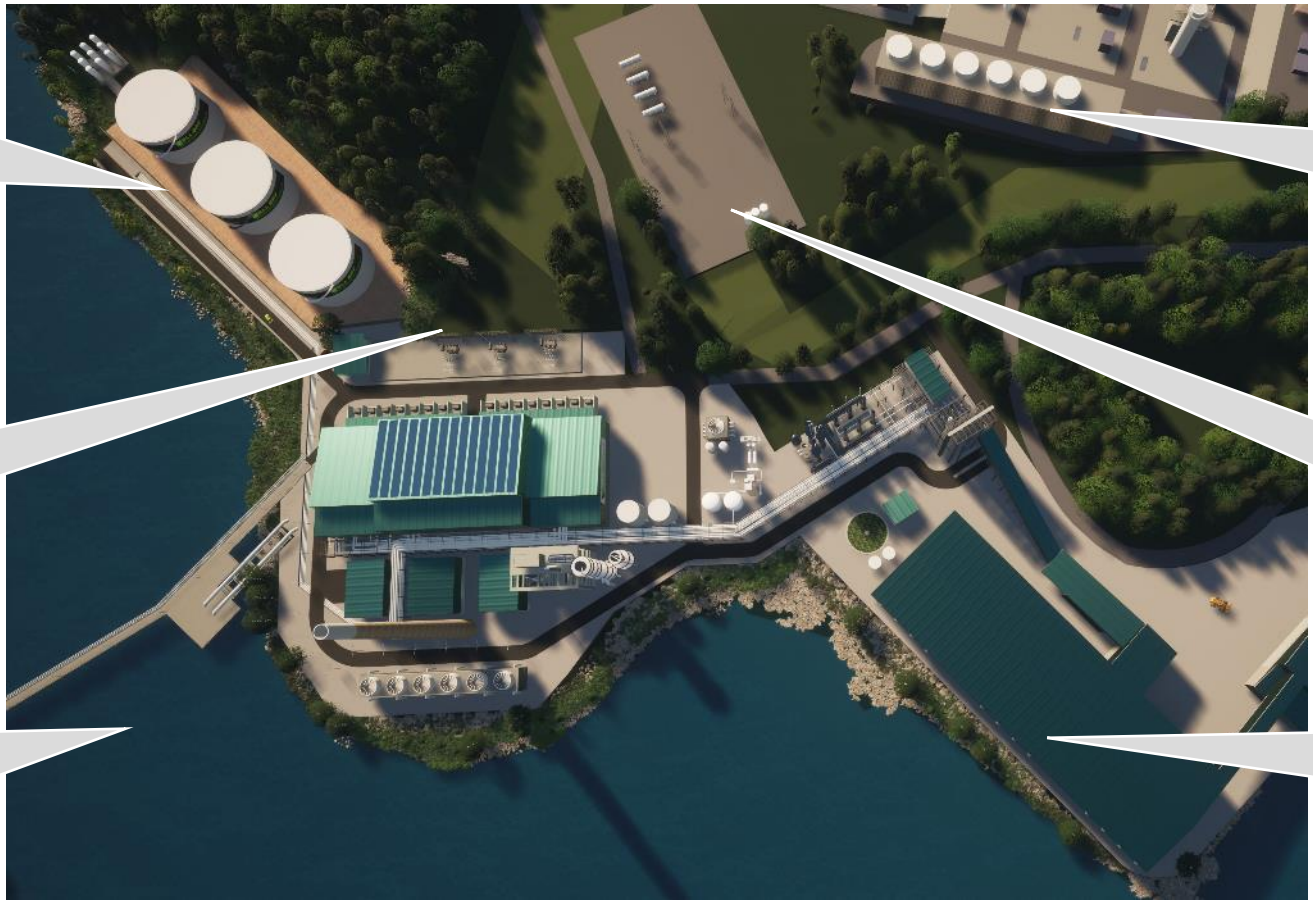
Existing oil tank beds to be repurposed for methanol storage tanks

Grid Connection

~280 MW grid connection within 220 kV transmission network

Methanol Offloading

Existing wharf for methanol export



Operational synergies

Operational synergies with adjacent power station

Natural gas connection

Natural gas pipeline backed for small natural gas consumption, if ever required

Biomass Terminal

Dedicated area for biomass storage and drying

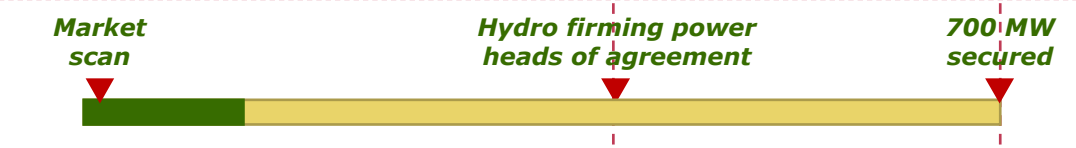
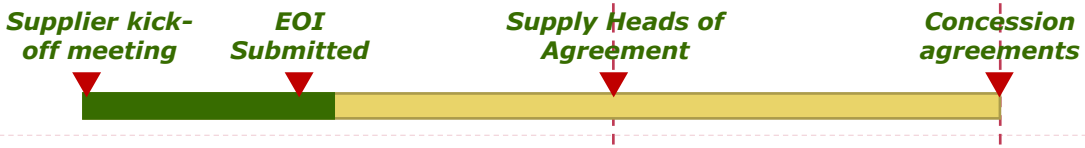
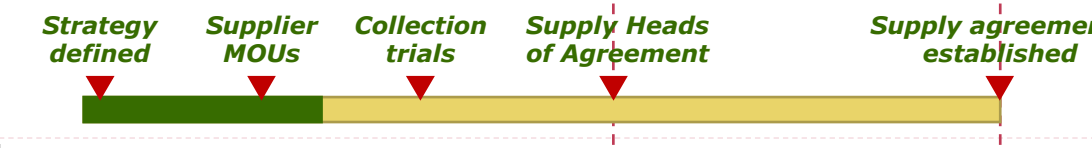
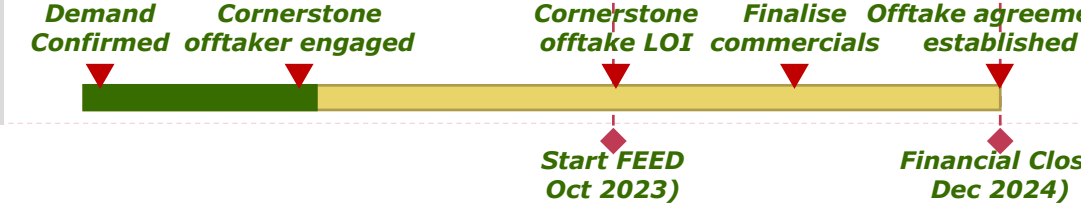
Road and rail integrated

Site located within industrial zone with road and rail connections

Concentrated biomass supply

Site located within Tasmania's biomass export hub with >80% volumes processed within 10km

Project team working to align heads of agreement with suppliers and offtakers by Oct 2023 prior to FEED

Workstream	Progress against key events	Achievements to date	Status
Land and Grid		• *Site secured via in-principle agreement* • *Site includes ~280MW grid connection, export wharf and is strategically located*	✓
Power		• *Discussions ongoing with local Tasmanian wind farm developers seeking PPAs with new load to underpin development*	✓
Water		• *Kickoff with water supplier complete* • *Water confirmed as available* • *EOI Submitted*	✓
Biomass		• *Local biomass availability confirmed* • *MOUs with leading suppliers established* • *Price points to be confirmed*	✓
Technical Design		• *Technology Packages received* • *Request for FEED Proposal issued* • *Pre-FEED activities ongoing*	✓
Construction/offtake		• *Strategy for early engagement and ongoing alignment with offtakers, and FEED and EPC contractors*	✓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