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Frontier Energy - Site Visit

An analyst has visited the material operations of Frontier Energy Limited. No payment was received for the related travel costs.

We recently visited Frontier Energy's (FHE-ASX | Not Rated) 100%-owned Bristol Springs green hydrogen project, located 120km south of Perth. We spent a day touring the main aspects of this potentially +1GW project with management and the development team which is seeking to establish first mover advantage.

Big and bold

FHE controls 846ha of undeveloped, relatively flat, predominantly cleared and boring land. On 3 August, FHE released a Pre-Feasibility Study (PFS) for a 4.4mn kg per annum green hydrogen project powered by a 114MW solar farm. Subsequent to this, the company released an Expansion Study which incorporated the total land under the company's control and assessed the various renewable energy solutions available. It concluded the optimal outcome was a solar-only solution that would produce at least 438MW.

The company is currently reviewing additional land opportunities in the region, given its long-term ambition to produce >1GW of renewable energy for green hydrogen production.

PFS outlines a low cost estimate

The clear highlight from the PFS, completed by Xodus Group, was a low total unit cost estimate (inclusive of capital) of \$2.83/kg of hydrogen. This company expects this to place the project at the bottom end of the cost curve for producers of green hydrogen in Australia. The primary reason for the low cost estimate is access to existing surrounding infrastructure resulting in significantly lower capital costs in comparison to more remotely located projects.

Location trifecta: water, grid connection and market access

Accessible infrastructure is a clear differentiating factor for this development which includes: 1) grid connection via the Landwehr Terminal; 2) existing water sources; and 3) infrastructure that could be utilised by potential early offtake partners such as the Dampier to Bunbury Natural Gas Pipeline (DBNGP has capacity to take 10% hydrogen).

The potential to access the grid is in the company's view a "game-changer" as it removes the requirement for battery storage which is highly capex intensive and enables the ability to export excess electricity during peak solar generation periods.

With regard to water access FHE, in consultation with Water Corporation (the principal supplier of water to WA), has agreed the preferred option is to access water through the existing Stirling Trunk Main pipeline. This pipeline is 3.5km from the Project and the proposed capacity is 1,250kl/d, which is sufficient for an 150MW electrolyser, some four times greater than the size proposed in Stage One (36.6MW).

On the offtake front, sales via the DBNGP (tie-in only 0.3km from the project) remain the most likely option and negotiations with customers recently commenced. In January 2022 the owners of the DBNGP completed a study which confirmed the potential of this 621TJ/d pipeline to blend less than 10% of hydrogen with natural gas.

Smoothing the approvals process

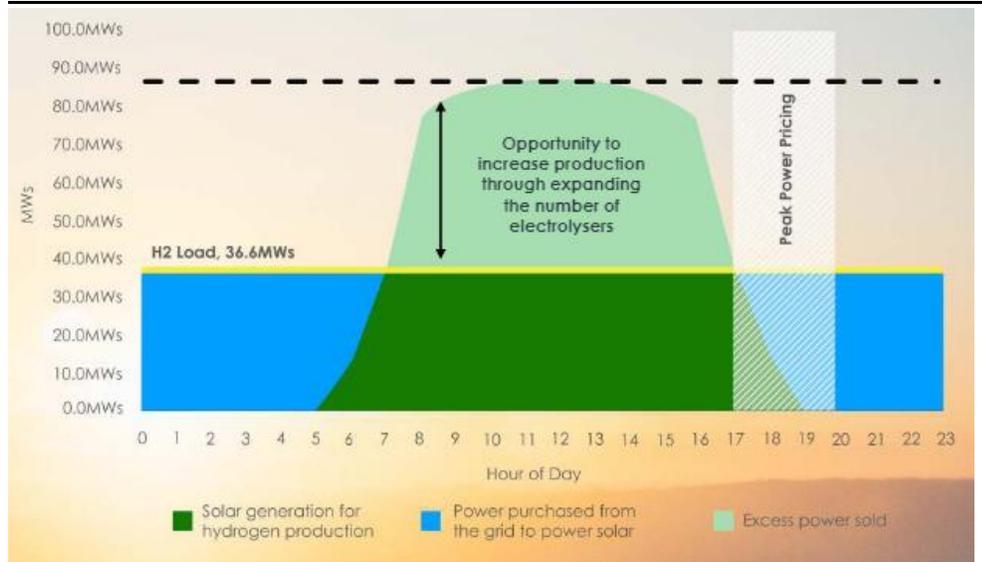
In November 2022 the WA government awarded Bristol Springs "lead agency status". The Lead Agency Framework is designed to ensure proponents can be guided effectively through approvals processes, know what is expected of them and don't fall through the cracks.

Figure 1: PFS total unit cost estimate stack (inclusive of capital) @ \$2.83/kg



Source: Company reports

Figure 2: The opportunity to export electricity during peak generation and access the grid as virtual storage is considered a "game-changer" by the company



Source: Company reports

Figure 2: Big projects need big signs



Source: Canaccord Genuity

Figure 3: The proposed solar farm location benefits from a flat, cleared and undeveloped topography



Source: Canaccord Genuity

Figure 4: DBNGP connection point is only 0.3km from the proposed hydrogen plant site



Source: Canaccord Genuity

Figure 5: Stirling Main Trunkline is only 3.5km from the project



Source: Canaccord Genuity

Figure 9: The Landwehr Terminal...



Source: Canaccord Genuity

Figure 10: ...and a more of informative/elevated view of said terminal



Source: Company reports

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Date and time of first dissemination: November 30, 2022, 20:08 ET

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Distribution of Ratings:

Global Stock Ratings (as of 11/30/22)

Rating	Coverage Universe		IB Clients
	#	%	%
Buy	636	66.32%	27.99%
Hold	147	15.33%	17.69%
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Speculative Buy	155	16.16%	38.71%
	959*	100.0%	

*Total includes stocks that are Under Review

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