



30 July 2021

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**Tlou Energy Limited**  
("Tlou" or "the Company")

**Heads of Agreement with Synergen Met**

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Tlou Energy Limited is developing power solutions in Sub-Saharan Africa through gas-fired power, solar power and hydrogen projects. The Company is listed on the ASX (Australia), AIM (UK) and the BSE (Botswana).

**Binding Heads of Agreement – Hydrogen & Solid Carbon Prototype**

As part of advancing the Company's clean energy strategy, Tlou is pleased to announce a binding Heads of Agreement (HOA) with Synergen Met Pty Ltd (Synergen Met), a leading hydrogen developer using plasma technology <https://www.synergenmet.com/hydrogen-production>.

The HOA envisages the construction and commissioning of a hydrogen and solid carbon prototype to be installed at the Lesedi Project in Botswana.

Synergen Met utilises unique intellectual property in the form of plasma technology to convert methane to hydrogen and potentially valuable solid carbon via a carbon neutral process. They have already built a first-generation working prototype developed in conjunction with the University of Queensland that has produced hydrogen and NaCN (Sodium Cyanide) for commercial applications.

Design work has commenced to modify this unit to produce hydrogen and solid carbon using Tlou's existing gas flows and approvals. The prototype will be constructed and tested in Queensland prior to transport to Tlou's Lesedi Project in 1Q22.

The post-prototype objective is to grow this segment of Tlou's clean energy business via a Joint Venture with Synergen Met throughout the Southern African Development Community (SADC) region and potentially beyond, subject to mutual agreement. The HOA also contemplates Tlou's potential participation in Synergen Met's proposed initial public offering (IPO), currently scheduled for later this year.

**Potential benefits for Tlou include:**

- A new market for the Company's gas in conjunction with an experienced hydrogen development partner;
- Utilises Tlou's existing gas flow which is currently being flared;
- The ability to diversify Tlou's saleable products and customer base;
- Huge expansion potential beyond a successful prototype.

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### Potential benefits for Synergen Met include:

- A working prototype approximately coincident with Synergen Met's IPO;
- Working with an experienced development partner with gas available, approvals and an in-country operating team;
- Potential to leverage from Tlou's existing Lesedi Project;
- Huge expansion potential in Africa beyond a successful prototype.

### Costs and ownership under the HOA

Third party costs to build the prototype will be shared on a 50:50 basis whereas associated in-house costs will be covered by each party. Tlou will supply the input gas and electricity at no cost to Synergen Met for the prototype. An input gas price will be negotiated on expansion of the project. Tlou will retain ownership of the input gas and Synergen Met will retain ownership of the plasma technology and associated IP. Hydrogen and Carbon products will be owned 50:50.

**Tony Gilby, Tlou's Managing Director, said** *"The HOA with Synergen Met is a truly exciting development for both companies. It potentially creates another major market for our gas that will complement, and be in addition to, the Lesedi gas to power project. While the gas to power project is steadily progressing, the hydrogen-carbon prototype can be done using Tlou's gas flow from Lesedi 4P and existing approvals for gas and solar.*

*We look forward to working closely with Synergen Met in a symbiotic relationship to achieve significant upside for both of our shareholder groups."*

### Project Process

Tlou's methane will be fed into the plant to be converted via a plasma torch into hydrogen and solid carbon and producing no greenhouse gas emissions. In addition to methane as an input, electricity is required to power the plasma torch. Tlou intends to supply solar power to the plant which will assist in achieving carbon neutrality.

The hydrogen will be compressed and stored for use as a clean vehicle fuel as well as to produce electricity for the Lesedi gas to power project assisting with carbon neutrality objectives. The solid carbon will be transported by road to a point of sale. Design modifications are intended to be introduced with time to increase the value of the solid carbon products produced.

## Background on hydrogen and solid carbon

### Hydrogen

Hydrogen has a large corporate, industrial and research presence due to its ability to generate thermal energy (via combustion), electrical energy (via fuel cells) and as a reducing agent for bulk chemical production (e.g., ammonia, polymers, etc) without end-user carbon emissions.

As an energy carrier, hydrogen has the highest energy value per kg and lowest energy value per volume (at atmospheric conditions). It can therefore be easily piped, but to be transported long distance, needs to be compressed (to >200 bar), or liquefied. Conversion to ammonia as a fuel is widely promoted, albeit with challenges.

### Solid Carbon

Carbon as carbon black and graphite have well established markets. Carbon black is used as a tyre input (wear resistance and pigment), while graphite is the single largest input to lithium (and many other) batteries.

Battery manufacturing is progressively shifting towards use of synthetic graphite, mainly due to contamination of natural graphite and 95% of battery production now uses synthetic graphite

The carbon black, graphite and hydrogen markets are growing and the potential for value growth in graphite in particular is high due to the increasing need for high purity graphite in battery production.

### **By Authority of the Board of Directors**

Mr. Anthony Gilby  
Managing Director

The information contained within this announcement is deemed to constitute inside information as stipulated under the Market Abuse Regulation (EU) No. 596/2014 which is part of UK law by virtue of the European Union (withdrawal) Act 2018. Upon the publication of this announcement, this inside information is now considered to be in the public domain.

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### ***Forward-Looking Statements***

This announcement may contain certain forward-looking statements. Actual results may differ materially from those projected or implied in any forward-looking statements. Such forward-looking information involves risks and uncertainties that could significantly affect expected results. No representation is made that any of those statements or forecasts will come to pass or that any forecast results will be achieved. You are cautioned not to place any reliance on such statements or forecasts. Those forward-looking and other statements speak only as at the date of this announcement. Tlou Energy Limited undertakes no obligation to update any forward-looking statements.