ALPHA PROJECT TEST PROGRAM 7 ADVANCES WITH BULK SAMPLE PRODUCTION ON SCHEDULE

Highlights

- Test Program 7 (TP7) for the Alpha Torbanite Project has the single objective of producing a bituminous product that can be independently certified to commercial C-170 specification.
- TP7 Milestone 3 – the production of a bulk sample – continues to progress as planned, with six of nine contracted production runs completed.
- Weekly process reviews have identified optimisation opportunities in the initial test runs, leading to changes to mechanical equipment, peak temperature and reaction retention times.
- Current production runs are achieving consistent results with ~99wt% conversion of torbanite, resulting in an average ~32wt% of toluene soluble yield as the primary pressure leach intermediate product.
- Initial samples have been sent to Technix in New Zealand for product characterisation and preliminary testing for the next phase of processing and product certification.

Greenvale Energy Limited **ASX: GRV** ("Greenvale" or "the Company") is pleased to provide an update on the current phase of work for the Alpha Torbanite Project, Test Program 7 (TP7). TP7 continues as planned, the Monash University processing team has completed one production run a week, commencing in December, and will continue through to the first week of March 2026.

Greenvale has initiated discussions with Monash regarding the possibility of extending the bulk sample production phase if needed. The bulk sample production is being undertaken for the purpose of independent product certification, initial product characterisation work will commence in the coming weeks.

Greenvale CEO Alex Cheeseman said:

"Milestone 3 is advancing as planned, with six bulk pressure leach runs completed so far and three remaining under the current contract scope. This phase of work has always been about deriving a bulk sample to allow further refinement and ultimately certification. We may choose to extend the production phase if needed, and those discussions have commenced.

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"As part of the downstream process development, Greenvale will engage Technix to apply their own proprietary process to the product derived by Monash University. We are getting this work started early with an initial sample dispatched, we are pleased to be initiating this concurrent phase of work."

Bulk Leach Production Runs

TP7 bulk leach runs have utilised drill core GM12C[1] from the LT seam of the Alpha Project. The core sample is pulverised and sieved to a P80 of 200µm, with oversize material removed to ensure particle size consistency. A homogeneous sample blend was prepared and used across all bulk production runs to maintain repeatability and feed product consistency.

Each production run employs a charge of approximately 400g (dry basis) of GM12C material, together with ~10g (dry basis) of Zinc Acetate ($Zn(CH_3COO)_2$) as catalyst and ~1,200 grams of toluene as solvent. The system is pressurised with hydrogen to 90 bar (cold), and the reaction conducted in the leach reactor under controlled operating conditions. An induction heating system is used to achieve the desired temperature ramp rate.

For the initial production runs, a retention time of 60 minutes at target conditions was maintained. These runs achieved consistent temperature and pressure profiles, with a reaction temperature of approximately 400°C and a reaction pressure of approximately 26MPa. These operating parameters were aligned with those established during TP7 Milestone 2 and the previous Test Program 6 (TP6) work program.

Temperature and pressure profiles for the first four production runs are shown in Figures 1 and 2. Figure 1 highlights the consistent and repeatable operating temperatures achieved by the Monash processing team. Figure 2 illustrates varying pressure profiles for the same process conditions, highlighting the opportunity for process optimisation.

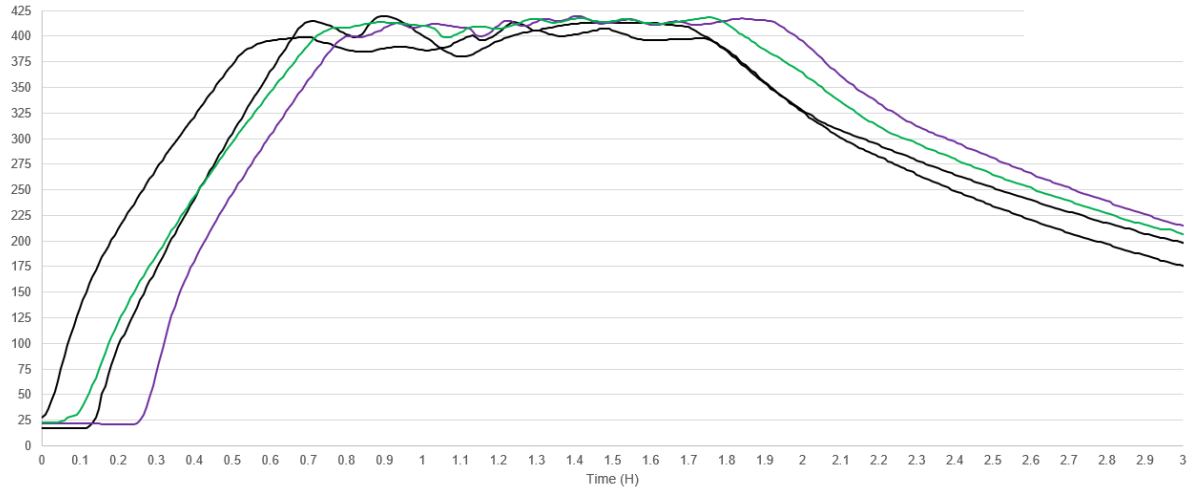

Figure 1 – Temperature ramp profile and 1 hour of retention time at target rates (first four production runs)

[1] Refer to ASX Announcement *Key milestone achieved with Alpha Project TP7 – bulk sample production to commence* released 16 December 2025.

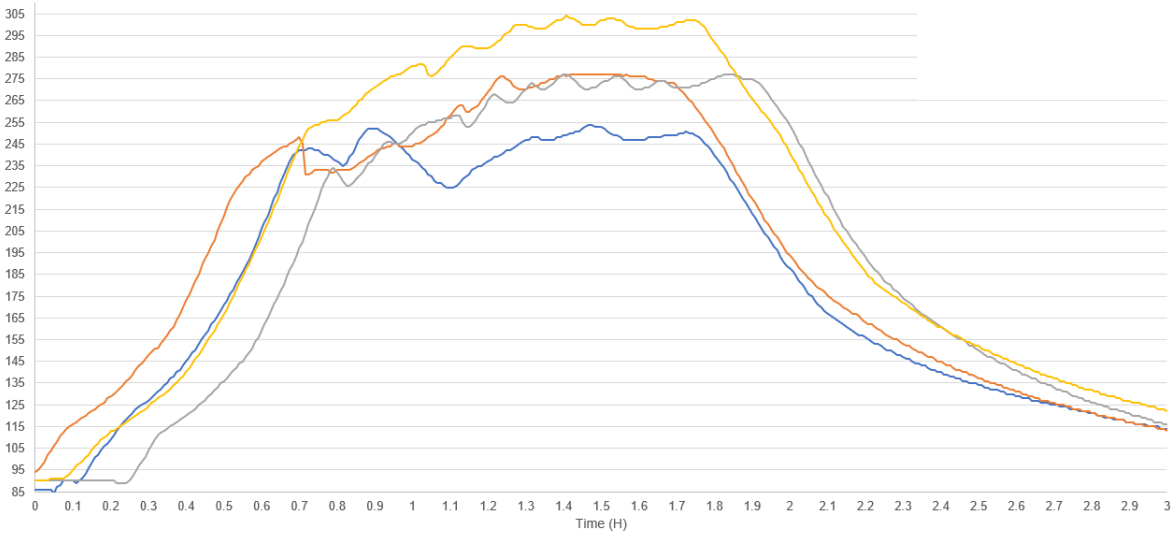

Figure 2 – Pressure ramp profile and 1 hour of retention time at target rates (first four production runs)

Test Program 7 – Scaling and Optimisation

As previously announced[2], the key findings from Greenvale's prior test programs had determined the optimal process conditions and controls to maximise product yields from Alpha's torbanite. Specific controls include temperature ramp profile, reaction pressure, temperature cooling profile, optimal catalysts and optimal carriers.

TP7 was design to repeat the performance of TP6 but at a significantly increased operating scale (from 100ml reactor to 4l reactor) in order to both test scalability and also efficiently derive a bulk sample. This scale increase required custom designed and procured equipment and the validation of TP6 operating parameters. TP6 optimal conditions were achieved in TP7 Milestone 2, and the production of a bulk sample began in December 2025[3].

Weekly process reviews between the Company and Monash University identified potential optimisation opportunities. For the most recent production runs (runs five and six), the system was pressured with hydrogen at 94 bar (cold) with an increase of 4 bar compared to runs 1-4, which also saw a reduced retention time from 60 mins to 30 mins. Under these conditions, an overall recovery of 99wt% with a gas yield of approximately 1.5wt% at dry basis has been achieved. The retention time reduction by a material factor of 50% is a significant gain for the project as it has immediate impacts on the ability to reduce the size of a pressure leach reactor at pilot/commercial scale – assessed at this stage as delivering a potential CAPEX and OPEX cost saving.

Further optimisation opportunities identified included the need for a change in impeller design in the reactor to improve mixing consistency during the pressure leach process. A new impeller was designed, manufactured and installed into the Monash reactor and has been utilised from production run four onwards. An immediate improvement was observed with reduced solid residue in the reactor – the improved flow dynamics of the material giving confidence that the hydrometallurgical process will continue to scale up.

[2] Refer to ASX Announcement *TP6 delivers positive results with highest product conversion to date and the introduction of catalysts improving viscosity of the final product* released 8 April 2025.
[3] Refer to ASX Announcement *Key milestone achieved with Alpha Project TP7 – bulk sample production to commence* released 16 December 2025.

The net result of optimisation efforts are currently delivering high overall conversion (~99wt%) with a 32% yield in primary product. The remaining test runs will replicate the optimised processing parameters to maximise the bulk sample production yield and thoroughly validate the operating parameters. The processing yields and recovery for each run are shown in Table 1.

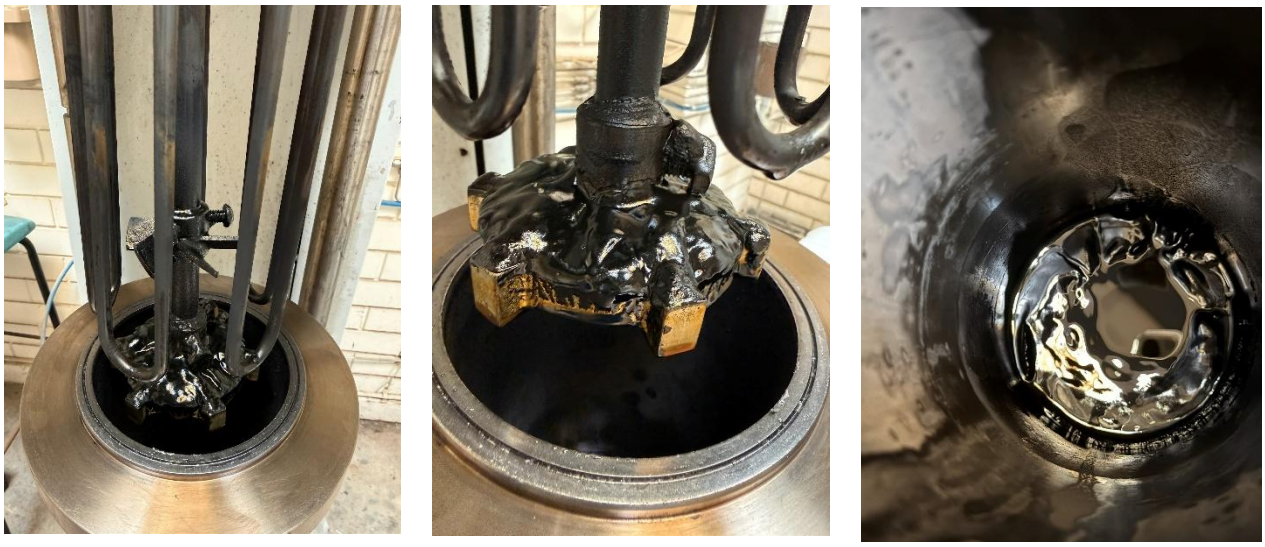

Figure 3 – Upgraded Reactor Impeller design to achieve mixing consistency

Table 1 – Bulk sample production - process conditions and yields

Production Run	Sample	Catalyst	Solvent	Peak Temperature (°C)	Retention Time (hours)	Conversion yield (Wt%)	Toluene Soluble yield (Wt%)	Toluene Insoluble yield (Wt%)
1	GM12C	$Zn(CH_3COO)_2$	Toluene	400	1	99.5	40.7	57.8
2				400	1	97.2	28.2	67.2
3				400	1	98.2	27.3	72.7
4				400	1	95	27.6	72.4
5				410	0.5	99	32	65
6				410	0.5	99	32	65

Notes:
Conversion yield includes gas produced during reaction
Production run 1 derived much higher yields and a different product characteristics and has been deemed an outlier and not representative.

Technix Preliminary Assessment

Technix of New Zealand has been engaged to conduct a preliminary assessment of the material produced thus far. A sample has been dispatched to Technix to allow for preliminary characterisation and assessment of further beneficiation requirements to derive a final product.

Future Work

Following the successful optimisation of bulk pressure leach conditions in production runs five and six, TP7 will continue to replicate the optimal conditions for the remaining production runs (seven, eight and nine). Consideration of additional production runs is being discussed and will be guided by the preliminary assessment work undertaken by Technix.

The Company expects a preliminary assessment by Technix to be undertaken over the next three weeks with a decision to be made on next steps in mid-March. Data generated from TP7 will be used to inform future technical and economic assessments of the Alpha Torbanite Project.

Authorised for release

This announcement has been approved for release by the Board of Directors.

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About Greenvale Energy Limited

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