

**TEES  
VALLEY  
LITHIUM**

A SUBSIDIARY OF  
ALKEMY CAPITAL INVESTMENTS plc

# Social, Economic & Environmental Impact Report

How Tees Valley Lithium is delivering lasting value for Teesside, the UK and the global energy transition.

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*This report has been produced by Tees Valley Lithium Limited. Economic, environmental and social projections are drawn from TVL internal data, independent Life Cycle Assessment, and published government statistics.*



# Executive Summary

## KEY FINDINGS

Tees Valley Lithium Limited (TVL) is developing the UK's first dedicated lithium hydroxide monohydrate (LHM) refinery, located at Billingham in the heart of the Tees Valley. With a capital investment of £185 million and a site benefiting from world-class port and industrial infrastructure, TVL is positioned to deliver measurable, lasting benefit across three dimensions: economic, environmental, and social.

TVL's Billingham facility is not being built in isolation, it is rooted in Teesside's century-long chemical engineering heritage, from the birthplace of ICI on the same Billingham site, and connect that

industrial legacy directly to the supply chains of tomorrow's electric vehicle industry.

This report presents TVL's impact across all three pillars. It draws on internal financial forecasts, an independent Life Cycle Assessment (LCA) commissioned by TVL, and published government and ONS statistics.

At a time when the UK Government has set ambitious targets for domestic lithium production and EV transition, TVL's Billingham refinery is positioned to make a material contribution to both.

**£2.1bn**

Projected UK economic contribution over 25 years (nominal)

**~1,700**

Jobs supported across construction, operations and supply chain

**550,000+**

Electric vehicles supported per year by TVL's 25,000 tpa LHM output



## Economic

- TVL is projected to contribute £2.1 billion to the UK economy over 25 years (nominal), of which approximately £1.0 billion will remain in the Tees Valley and wider North East (discounted)
- Every £1 of capital invested is projected to represent more than £11 of economic value.
- 100% of operational roles are projected to pay above the Tees Valley median salary, with site, operational, maintenance and quality roles averaging £55,308, above the 70<sup>th</sup> percentile of the regional pay distribution

## Environmental

- TVL's 25,000 tpa LHM output will support over 550,000 electric vehicles per year
- Sourcing feedstock from brine deposits rather than hard rock mining and refining at TVL instead of in China saves approximately 300,000 tonnes of CO<sub>2</sub> per year
- TVL will operate on 100% renewable electricity from day one



## Social

- Approximately 80% of TVL roles are suitable for non-graduates, providing high-wage employment to the existing Tees Valley workforce.
- TVL is committed to a programme of apprenticeships throughout the operational life of the facility, partnering with regional further and higher education providers to build local skills pipelines.
- TVL's investment directly supports the government's levelling-up agenda in one of England's most economically deprived regions.



# Introduction

Tees Valley Lithium (TVL) is a UK lithium-processing company in advanced development and a subsidiary of Alkemy Capital Investments plc. TVL is developing a purpose-built lithium hydroxide monohydrate (LHM) refinery at Billingham in the Tees Valley, one of the most strategically important industrial development opportunities in the UK.

TVL operates at the processing stage of the critical minerals supply chain. Rather than mining raw lithium ore, TVL will receive lithium carbonate feedstock, sourced from ethical, traceable primary producers and from recycled battery materials, and convert it into battery-grade LHM for direct sale into the battery supply chain in the UK and Europe.

This processing-first model means TVL can reach production faster, with lower permitting risk, lower capital requirement, and with an immediately addressable commercial market.

The strategic case is unambiguous. The UK currently has no domestic LHM refining capacity at a meaningful scale. Approximately 75% of global LHM supply is currently refined in China. TVL directly resolves this structural vulnerability. The Billingham site offers deep-water port access, an established chemical industry cluster, and a skilled available workforce: locational advantages that are exceptionally difficult to replicate elsewhere in the UK.



**Vikki Jeckell**

CEO of Tees Valley Lithium

*“We believe TVL represents a genuinely additive opportunity for the Tees Valley, the wider North East, and the UK’s critical minerals strategy.”*

# Purpose of this Report & Methodology

This report sets out TVL's projected impact across the three pillars: **economic**, **environmental**, and **social**. It is produced by TVL and draws on internal financial and headcount forecasts, an independent Life Cycle Assessment, and published ONS and government statistics. TVL is publishing this report to demonstrate the full breadth of value this project will generate for the Tees Valley, the North East, and the United Kingdom.

## Economic Impact

Gross Value Added (the standard ONS/HM Treasury measure) is calculated as operating surplus plus employee compensation; feedstock is treated as a pass-through cost and excluded, consistent with standard toll-processing methodology. Indirect and induced effects use ONS Input-Output ratios and standard multipliers. TVL's UK feedstock procurement target is reported as a separate benefit. 25-year totals are shown both discounted (green Book) and nominal.

USD figures use the long-term exchange rate \$/£ 1.35, applied consistently throughout.

## Environmental Impact

Figures are from the independently commissioned preliminary LCA, following standard carbon accounting principles.

## Salary Benchmarking

Salaries are benchmarked against ONS ASHE data. The published figure covers site and operational roles - the majority of TVL's workforce - rather than a whole-company average.

## Limitations and forward-looking statements

This report contains forward-looking projections based on TVL's current financial model, commercial assumptions, and published third-party data. All figures are estimates and subject to change as the project develops through detailed engineering and into construction.



*"We are not just building a factory. We are building a supply chain that the UK does not currently have, and doing it in a place that needs it most."*

# Economic Impact

INVESTMENT  
JOBS  
SUPPLY CHAIN  
INDUSTRIAL STRATEGY



TVL's Billingham facility will generate substantial economic activity throughout its construction and operational life. The analysis below covers the full 25-year project horizon, drawing on TVL internal forecasts benchmarked against HM Treasury Green Book methodology and ONS Input-Output tables.

## Headline Economic Figures

**£185m**

Capital investment in the Billingham Refinery

**£2.1bn**

Total UK GVA contribution over 25 years (nominal)

**£1.0bn**

Tees Valley / NE GVA contribution over 25 years (discounted)

**£83m/yr**

Total annual GVA impact (direct, indirect and induced)

**~1,700**

Jobs supported across construction, operations and supply chain

**£11.20**

Generated economic value per £1 capital investment

# Quality Jobs for Teesside

The Tees Valley faces persistent structural economic challenges. Median salaries sit approximately 20% below the national average, with the regional median of £29,500 significantly behind the UK full-time median of £37,430. TVL’s employment profile directly addresses this: high-quality, technically skilled roles that pay substantially above local and regional norms, with approximately 80% accessible to non-graduates.

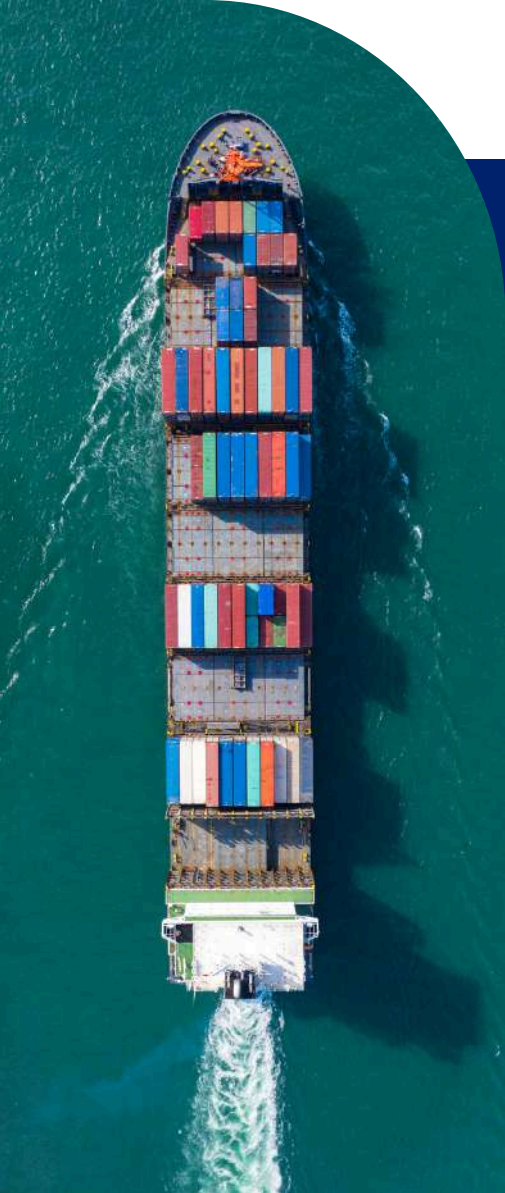
	Tees Valley	North East	UK
Median salary	£29,500	£29,266	£37,430
70th percentile	£39,000	£38,097	£44,500
TVL operational average salary	£55,308	£55,308	£55,308
TVL vs median	87%	89%	48%
TVL vs 70th percentile	42%	45%	24%

Source: ONS ASHE

TVL’s employment impact extends well beyond its 66 direct roles. The construction of the Billingham refinery is expected to support up to 1,110 jobs, while the direct operational roles are expected to support a further 517 jobs in the wider supply chain and induced economy, giving an operational total of approximately 583 jobs. Across construction and operations combined, TVL’s project is therefore expected to support approximately 1,700 jobs. The construction figure represents temporary employment over the build period, and the 583 operational jobs represent an ongoing annual footprint sustained throughout the facility’s 25-year operational life.

<h2>~1,110</h2> <p>Jobs supported during construction</p>	<h2>66</h2> <p>Direct roles at the Billingham Refinery</p>	<h2>517</h2> <p>Additional supply chain and induced jobs during operation</p>
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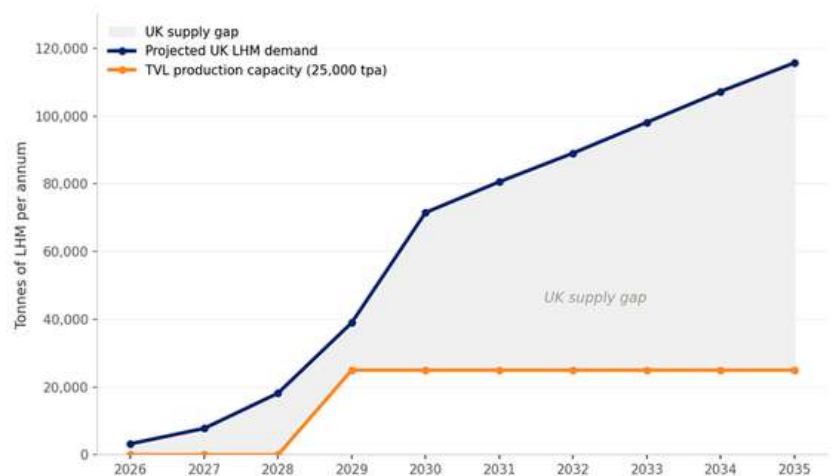




# Supply Chain Resilience

The UK does not yet have an established domestic LHM supply chain. As battery manufacturing capacity scales rapidly in the UK and Europe to meet EV demand, LHM will need to be sourced, and the default position, absent domestic alternatives, is dependence on Chinese-refined product. TVL's domestic production established the UK's first meaningful LHM supply capability, giving the battery value chain a secure, traceable, low-carbon alternative when they need it most.

- At 25ktpa, TVL alone would represent almost 50% of the UK Government's Critical minerals target of domestic lithium carbonate equivalent production by 2035.



Source: UK LHM demand derived from Faraday Institution UK battery manufacturing capacity projections (110 GWh by 2030, 200 GWh by 2040), converted to LiOH tonnage at 0.65kg/kWh. TVL production shown at full 25,000 tpa capacity from first production. Chart is illustrative; actual demand will depend on the pace of UK gigafactory build-out.

- Domestic capacity provides a buffer against international LHM supply disruptions.
- TVL generates ~£71m/yr in net UK economic retention from processing alone, rising to ~£200m/yr with its UK lithium feedstock sourcing strategy.
- A binding 10,000 tpa Glencore offtake, plus further agreements under negotiation, demonstrates strong market validation



## Industrial Strategy Benefits

Access to a stable, domestic supply of battery-grade LHM is a prerequisite for battery value chain investment in the UK. Without it, battery manufacturers face a fundamental sourcing risk that undermines the investment case for UK-based production. TVL removes this bottleneck, enabling the UK to capture a greater share of the EV value chain and supporting the localisation of high-value advanced manufacturing.

TVL's operations are projected to support approximately £33 million per year of indirect and induced GVA through supply chain and employee spending effects.

£485 million of UK supply chain GVA from TVL's lithium feedstock procurement strategy alone over 25 years.

Impacts extend across chemicals, advanced manufacturing, logistics, and engineering services, all sectors with significant North East presence.

# Environmental Impact

LCA  
CARBON  
WATER  
NET ZERO

TVL has commissioned an independent Life Cycle Assessment (LCA) of its Billingham refinery, covering the gate-to-gate environmental impact of LHM production. The LCA provides a rigorous baseline against which TVL's environmental performance can be measured, reported, and improved over time.

The findings demonstrate that TVL is positioned to be one of the lowest carbon LHM producers globally.

*"TVL's LCA demonstrates that domestically-refined LHM carries a substantially lower environmental footprint than imported alternatives, across carbon, water, and transport dimensions."*



This section sets out TVL's environmental impact across three dimensions: the direct emissions avoided through TVL's design choices; the broader decarbonisation enabled by TVL's LHM supply; and TVL's contribution to the UK's next zero trajectory.

## Life Cycle Assessment: Key Findings

**1.06m tpa**

GHG emissions avoided annually by enabling switch from ICE to EV

**300,000t**

CO<sub>2</sub> saved per year vs Chinese-refined LHM from hardrock feedstock

**100%**

Renewable electricity from day one



# Carbon Intensity

Emissions Area	Annual CO <sub>2</sub> saving tCO <sub>2</sub> /yr
EV enablement (ICE to EV switch)	1,056,000
TVL vs Chinese LHM*	300,000
Scope 2: 100% renewable energy	11,237
Transport: domestic vs China shipping	3,525
<b>Total quantified saving</b>	<b>1,370,762</b>

\*TVL using brine lithium carbon feedstock, vs Chinese refined hard rock

The carbon intensity of lithium hydroxide production varies significantly by production route and geography. Approximately 75% of global LHM supply is refined in China, where coal-powered electricity results in high Scope 2 emissions. TVL's UK-based refinery will operate on 100% renewable electricity from day one.

TVL's Billingham location, close to PD Ports and the Port of Middlesbrough, significantly reduces transport emissions compared to equivalent facilities positioned further from the port. Shipping LHM from Shanghai to the UK generates approximately 3.18 tCO<sub>2</sub> per 20ft container, versus approximately 0.36 tCO<sub>2</sub> for domestic delivery of the same volume; an 88% reduction in transport emissions per shipment.



# Water Efficiency

Water efficiency is an increasingly critical dimension of ESG assessment for critical minerals, particularly given growing regulatory scrutiny under the EU Battery Regulation and customer Scope 3 disclosure requirements.

TVL has designed water reuse into its operations from the outset: process water will be recirculated within the refining process to minimise freshwater consumption and wastewater discharge. TVL's water strategy includes a commitment to prioritise feedstock sourced from brine operations with responsible water management practices, as well as increasing the proportion sourced from recycled battery material over time; the lowest water-intensity feedstock pathway available.

Process water reuse is built into refinery design, reducing freshwater intake and wastewater discharge

TVL's water consumption will be subject to the Environment Agency permit conditions

Recycled battery feedstock pathway carries significantly lower upstream water intensity than virgin brine extraction

TVL will annually report as part of its Social Impact Report from Year 1 of operation

# Contribution to UK Net Zero



TVL's 25,000 tpa LHM output directly enables the acceleration of EV adoption in the UK, supporting the government's Zero Emission Vehicle mandate (100% EV new car sales by 2035). Based on high-nickel battery chemistry requiring approximately 45.5kg of LHM per 70kWh battery pack, TVL's output supports the production of over 550,000 electric vehicles per year.

Based on the emissions saving of replacing a diesel vehicle with an EV over its lifetime; calculated at approximately 14.78 tonnes of GHG per vehicle (211.2g CO<sub>2</sub>/mile x 7,000 miles/year x 10-year vehicle life), and attributing 13% of that saving to the LHM input (based on LHM cost contribution to battery pack at \$100/kWh average battery price), TVL's first-phase output is associated with approximately 1.06 million tonnes of GHG emissions avoided per year. This is a significant contribution to the UK's Sixth Carbon Budget pathway and the government's ZEV mandate.

TVL's total quantified annual emissions saving across all measured categories is approximately 1.4 million tonnes of CO<sub>2</sub> equivalent per year, equivalent to powering almost 700,000 UK homes.

TVL's commitment to publishing an annual Social and Environmental Impact Report, ensures that this progress will be independently measured and publicly reported

# Social Impact

EMPLOYMENT  
SKILLS  
COMMUNITY  
LEVELLING UP

The Tees Valley is one of England's most economically deprived regions. It has higher-than-average unemployment, lower-than-average wages, and a legacy of industrial decline that has left communities across Teesside without the anchor employment that once sustained them. TVL's investment represents precisely the kind of high-quality, sustained industrial employment the region needs.

TVL's social impact extends across three dimensions: the direct quality of the employment it creates, the skills and talent investment it makes in the region, and the community benefit it commits to delivering over the life of the project.

## Employment Quality

**~1,700**

Jobs supported across construction, operations and supply chain

**~80%**

Of direct operational roles suitable for non-graduates

**100%**

Of operational roles paying above the Tees Valley median salary



*"TVL's investment in Billingham is not a short-term project. It is a 25-year commitment to the Tees Valley; to its people, its economy, and its future."*

TVL's direct workforce of 66 roles will be drawn predominantly from the Tees Valley and the Wider North East. The occupational mix - admin, process operators, maintenance engineers, laboratory analysts, logistics coordinators, and plant engineering specialists- reflects precisely the technical skills base that already exists in the region, built up through decades of chemical and process industry employment.

Including construction and the wider supply chain, TVL's project is expected to support approximately 1,700 jobs in total. As an operational workforce, the average of £55,308, all TVL production roles sit above the Tees Valley 70<sup>th</sup> percentile threshold of £39,000.

Approximately 80% of TVL roles will be suitable for non-graduates. These are not low-wage positions. This combination of accessibility and wage quality is a defining feature of TVL's social impact case.

TVL is led by a female Chief Executive Officer; a notable position in the critical minerals and mining sector, where women remain significantly underrepresented in both executive leadership and the broader workforce. TVL's leadership team reflects a wider commitment to building a diverse organisation from the ground up, at a stage where hiring practices and workplace culture can be shaped deliberately rather than retrofitted.

This commitment extends to TVL's wider recruitment strategy for the Billingham refinery. TVL aims to: ensure recruitment processes are designed to attract candidates from underrepresented groups and monitor workforce diversity from first hire.

The critical minerals sector is at a formative stage in the UK. This represents a genuine opportunity to build a workforce that reflects the diversity of the Tees Valley and wider North East from day one.



# Skills and Talent Investment

## Apprenticeship Programme

TVL is committed to a sustained apprenticeship programme throughout the facility's operational life, spanning process engineering, chemical science, and maintenance engineering. TVL is committed to working with regional further and higher education providers to develop bespoke pathways aligned with the specific technical requirements of LHM production.

## Education and Skills Fund

Following the start of production, TVL will establish an Education and Skills Programme to support training provision, scholarships, and course development aligned with the critical minerals and battery technology sectors. The fund will be governed in partnership with local education providers and the Tees Valley Combined Authority (TVCA).

## Local Employment Commitment

TVL has adopted a local employment preference policy. Subject to skills availability, candidates from the Tees Valley and North East will be prioritised. TVL will work with the TVCA, local employment agencies, and DWP to maximise local access to vacancies through the construction and operational phases.

## STEM Outreach

TVL will participate in regional STEM outreach programmes aimed at secondary school students in the Tees Valley, building awareness of careers in critical minerals, chemical processing, and advanced manufacturing. This long-term investment in the local talent pipeline is integral to TVL's social license to operate.





# Community Benefit

TVL is committed to ensuring that the communities of Billingham and the surrounding area share tangibly in the benefits of the project. This commitment is embedded in the company's governance from the outset, not treated as an afterthought once construction is complete.

- A Community Benefit Programme will be established at the start of operations to support education, community facilities, and green space in local settlements.
- TVL will conduct regular community liaison meetings throughout the construction and operational phases, with transparent reporting on commitments and progress.
- TVL's supply chain localisation programme, which has already seen over 300 companies register to be suppliers, will continue to work with local business bodies and the TVCA to maximise the share of procurement spend retained in the regional economy.
- TVL will publish an annual Social Impact report from Year 1 of operation, reporting against agreed metrics across employment, skills, community benefit, and environmental performance.



## Levelling Up



The Tees Valley sits at the heart of the government's levelling-up agenda. The region has been the focus of significant regeneration investment. TVL's investment is complementary to and reinforcing of these programmes.

Unlike many regeneration investments, which create low-wage or temporary employment, TVL's facility will create high-wage, technically skilled, permanent jobs in an advanced manufacturing sector that is growing globally. The facility will be operational for 25 years or more, providing sustained economic and social benefit to the region throughout that period.

# Conclusion

TVL's Billingham refinery represents a rare alignment of commercial readiness and national need. With £185 million of capital investment, TVL will be positioned to deliver £2.1 billion in UK economic value over 25 years, an 11x return on investment.

Beyond the headline economics, TVL's impact is felt across every dimension of this report. Up to 1,700 jobs across construction, operations and the supply chain will bring high-quality, well-paid employment to a region that needs it. Over 550,000 electric vehicles per year will be supported by TVL's output, accelerating the UK's transition to net zero while building the domestic supply chain the country currently lacks.

TVL is determined to deliver lasting value for the Tees Valley, the North East, and the UK as a whole.

## £185 m

Capital to be deployed

## ~1,700

Jobs supported across construction, operations and supply chain

## £2.1bn

Nominal UK GVA over 25 years, 11 x return on investment

## 550,000+

Electric vehicles supported per year by TVL's 25,000 tpa LHM output

## £11.20

Generated economic value per £1 capital investment



# Data Sources

This report draws on TVL's internal financial and operational models, together with the following third-party sources:

## Economic Data

- Office for National Statistics (ONS) - Annual Survey of Hours and Earnings (ASHE)
- HM Treasury - Green Book (discount rate methodology)
- ONS - Input-Output Analytical Tables

## Environmental Data

- International Energy Agency (IEA)
- TVL LCA
- Benchmark Mineral Intelligence
- Minviro
- DEFRA / BEIS - emissions conversion factors
- UK Department for Transport (DOT)
- RAC Foundation
- Fastmarkets
- The Faraday Institution
- SCient Direct LCA Study (Yoo et al, 2023)

## Government Policy References

- UK Government - Critical Minerals Strategy (Vision 2035)
- UK Government - Zero Emission Vehicle (ZEV) mandate

The figures presented in this report represent TVL's best estimates as of the date of publication, based on the data sources and methodology set out above. These figures reflect the completed FEED study and are subject to change as the project progresses through subsequent stages of development, including procurement and contracting activity, and financial close. Third-party data sources cited in this report reflect the most recently published figures available at the time of writing and may themselves be revised or updated by their originating bodies. TVL intends to review, and where appropriate, update the figures in this report as the project matures, and will reflect any material changes in future publications. This report should not be relied upon as a static or guaranteed representation of TVL's future performance.

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