



**Breakaway
Research**

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Oil & Gas Team

Stephen Bartrop, Research Manager

www.breakawayresearch.com

Company Information

ASX Code	TMK
Share Price (EOT 23/2/22)	\$0.013
Ord Shares	2880 *
Market Cap (fully diluted)	A\$37.4
Cash (Est @ 23/2/22)	A\$3.8m
Debt	A\$0.0m
Enterprise Value	A\$33.6

*Excludes unlisted performance shares of up to 1.6B which may vest or lapse

Directors: Refer to page 15-16

Company Details.

Address:

1202 Hay Street,
West Perth WA, 6005

Website: www.tmkenergy.com.au

Price Chart



Source: ASX

TMK Energy Limited (TMK)

Big gas resource in an energy short region

Key Points

- **TMK Energy was revitalised in February 2022, following shareholder approval for the acquisition of private company, Telmen Energy. The Telmen acquisition significantly changes the scale and scope of TMK's activities, with the flagship project being the Gurvantes XXXV coal seam gas Production Sharing Contract (PSC) in the South Gobi region of Mongolia**
- **The exploration opportunity is significant:**
 - **NSAI assign Prospective risked resource of 5.96 Tcf (gross)**
 - **The coal geology is well known from extensive mining in the region, and a small number of historic wells identified thick, gassy coal seams over a large area**
 - **Exploration wells designed to test the coals, and establish reserves, is about to commence with a 4-well program.**
 - **TMK is free-carried through the upcoming phase of activity, and potentially additional phases, with expenditure up to US\$4.65M being committed by partner Talon Energy (ASX: TPD). Should TPD complete all work phases, it will earn a 33% working interest and TMK's will reduce to 67%**
- **Mongolia needs gas, and so does China:**
 - **The Gurvantes PSC is very close to the China border and major gas pipeline bringing gas from central Asia**
 - **Chinese demand for gas is rampant and increasingly met by imports. Mongolia is strategically well located to become a supplier.**
 - **Local mine operators are a nearby ready market for gas to displace diesel for mine-site power.**
- **TMK has approx. \$3.8m of cash, and combined with the TPD commitment, has sufficient funds to execute the initial Gurvantes program. In addition, TMK has exploration acreage offshore WA, in which a large gas prospect called Napoleon has been identified, which could be potentially farmed out or monetized.**

TMK offers huge leverage to exploration success, if it proves a large gas resource, on the doorstep of the world's largest gas importer. We value TMK's E&P assets between A\$37M and \$122M with a best estimate of A\$80M (1.4--4.4 cents per share (cps): best estimate 2.9 cps) based on current shares on issue).

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Big gas resource in energy short region

On February 11, at a General Meeting, Tamaska Energy shareholders approved the acquisition of Telmen Energy, a private Mongolian Coal Seam Gas exploration company, and the combined entity was renamed TMK Energy. This secures a potentially world class asset and transforms TMK Energy to become an Operator of an imminent drilling program which is highly leveraged to the ever growing Chinese gas market.

TMK's key asset is the Gurvantes XXXV Production Sharing Contract encompassing 8400 km² of acreage which is prospective for coal seam gas. Independent reserves auditor NSAI assign a best estimate of Risked Prospective Resource of 5.96 Tcf (2U, on 100% basis).

The coal geology is well understood from over ~2500 holes penetrating coal seams however exploration for gas has been minimal and took place long ago, before the emergence of China as the world's largest gas market. The limited data available provides support for a potentially world class gas resource. The coal seams are very thick, extend over a very large area, have very high gas content, and are believed to be fully gas saturated with methane content in the 96-98% range and low CO₂. However, there has been no production testing or pilot production and exploration and appraisal wells are required to define permeability, flow rates, de-watering and inform drilling and completion techniques.

Exploration in Gurvantes is set to commence in March 2022, following a farm-out to Talon Energy (ASX: TPD) in February 2021. TPD are fully funding this initial phase of exploration, and potentially future phases to earn a working interest of 33% in the Gurvantes XXXV project. The upcoming initial phase focuses on the Nariin Sukhait deposit which is already well defined. The immediate work program is for 4 wells and ~2500m of cored holes, with coals to be tested on-site following the establishment of a desorption laboratory. The objective of this immediate drilling activity is to confirm key geological and reservoir parameters, and inform the next phase of activity which anticipates more wells, testing and pilot production. 2D seismic is being planned for exploration in other areas, and 3D seismic may be used in the future over development areas.

The location, very close to the China border, is strategic. China's rampant demand for gas is met by expensive LNG imports and pipeline gas. The South Gobi area is strategically well located and should enjoy transport cost advantages for supply into China, compared to imports from far away places. There is also a sizeable local market in the mining sector, for gas to displace expensive imported diesel for mine-site power.

Valuation range \$37M-\$122M and preferred estimate of \$80M, (1.4 – 4.4 cents per share (cps), preferred 2.9 cps) by way of reference to numerous listed ASX companies that are active in CSG exploration, including several in Mongolia. However, this does not really reflect ultimate upside longer term, as TMK works through the various exploration phases and possibly future production.



Figure 1: Location of the Gurvantes PSC in southern Mongolia

The Gurvantes XXXV project.

The Gurvantes PSC covers 8400km² of acreage located in the South Gobi region in Mongolia. It is 20km from the China border and close to the extensive Northern China transmission and distribution network. The geology for coal is well known, with 6 mines active in the license area, where coals outcrop and are surface mined. TMK has collated a database of ~2500 historical drilling records for coal, however previous CSG exploration has been limited with only 5 wells drilled after 2004 and which were drilled before the emergence of China as a major gas importer. Data from this early exploration supports a number of positive enablers for successful coal seam gas development, with thick, gassy coal seams, high methane content, and low CO₂. However, important parameters such as permeability, gas saturation and de-watering need to be determined, and the upcoming exploration phase aims to inform these parameters, leading to a maiden contingent resource booking.

Brief chronology

- January 2019: Prospecting Agreement for Gurvantes XXXV awarded
- Feb 2019-June 2020: completion of the initial work program, including 20 km of 2D seismic
- January 2021, farm-out agreement with Talon Energy (ASX: TPD)
- July 2021: Production Sharing Contract (PSC) awarded
- August 2021: Independent reserves assessor NSAI estimates a “best case” prospective resource of 5.96 Tcf (risked, 100% basis)
- September 2021: Exploration licence awarded with 15 year term
- January 2022, Environmental Impact Assessment (EIA) submitted
- December 2021-current: preparation for commencement of 4 wells drilling program, construction of site facilities including gas desorption laboratory, as well as engagement with local communities and stakeholders.
- 3 February, 2022, EIA approved by the Mongolian Ministry of Nature, Environment and Tourism, being the last regulatory consent required before the commencement of drilling.



- 11 February 2022, TMK shareholders pass all resolutions at a General Meeting, to approve the Telmen acquisition, elect two new Board members, and change the company name to TMK Energy (while still retaining the TMK ASX ticker)

The resource

Table 1 documents risked prospective resource estimates, as provided by Netherland Sewell in August 2021, and by RISC in January 2022 included in the Independent Expert Report associated with the acquisition of Telmen. The figures assume TPD earn-in as per the farm-out, in which case TMK’s working interest in the PSC will fall from 100% to 67%. Differences in the figures reflect differing input assumptions about the coal properties and differing interpretation of limited data. However both of these resource auditors outline what is a very large resource.

Gurvantes: assumed 67% working interest			
Prospective risked resource	1U	2U	3U
NSAI assessment (Bcf)	2090	3990	7540
RISC (Bsf)	2054	3574	7096

Table 1: Estimates of prospective recoverable risked reserves, by NSAI and RISC, as contained in Expert Report to TMK shareholders

Geology.

There is a significant body of geological information from extensive coal exploration and open-cut coal mining. There are ~2500 drill holes to determine the nature of the coal seams, depth and thickness, although the majority of these are shallow holes with total depths <300m. Nevertheless, there are ~230 wells with total depths between 300m - 800m depth range which is likely the most economic range for CSG. Coals are laterally extensive and trend for 120km east-west.

There are 5 historic CSG wells and 131 desorption results from wells drilled between 2004 and 2016, in exploration programs conducted by Stormcat Energy Corporation (in 2004 and 2005, and later by Mongolian company Uzukh Zoos LLC.

Broadly there are two main coal sequences, an “upper” and “lower” seam groups, which are separated by 100-200m of sediments. Coal seams are thick but vary widely, and gas contents from desorption tests from the 5 historic wells up to 15m³/t (Refer to Figure 2) with an average value of 10.5m³/t. NSAI in its analysis assume a range 8.5 m³/t (low), 10 m³/t (best) to 12.5 m³/t. There is only one isotherm from adsorption testing, which would indicate the coals are gas saturated. The coal seams are mono-clinal, out-cropping in the north where they are mined, and dipping to the south. The absence of a water system or aquifer to recharge the coals may aid efficient de-watering and minimise future costly water handling.

Historic sampling indicates the coals are gas saturated, with methane content ~96% and CO₂ and nitrogen content less than 2%. However, these data are from the early wells drilled almost 18 years ago and must be considered in the context of the techniques and technologies available at that time.

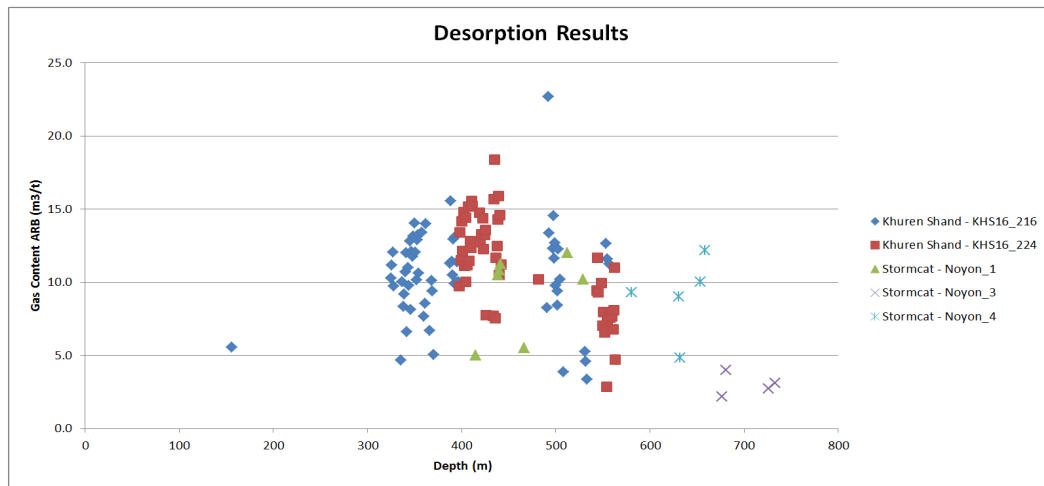


Figure 2. Gas content from desorption tests at previous wells. Source: Telmen Energy

A summary of the key parameters is shown in table 2, albeit from a limited number of wells. A constraining factor at this time, is that previous wells were not placed on pilot production, so little is known about permeability, gas and water flow rates in an economic setting

Area	8400km2. Coal outcrops along 160km
Coal thickness	Multiple thick seams (>50m in parts). Net coal thickness av. 80m
Coal rank	Low ash, sub-bituminous
Gas content	~10 m3/t
Gas composition	Low CO2, > 96% methane
Gas saturation	Likely saturated-limited data
Permeability	Limited data suggests > 20 mD
De-watering	Monocline structure, no re-charge

Table 2: Key geological parameters. Source Telmen Energy

Upcoming exploration

Commencing in March 2022, TMK and TPD will begin the “Initial work program” with expenditure of up to US\$1.5M, for the 2500m of drilling and coring in 4 exploration wells. The wells will target coal seams at the Nariin Sukhait location, where historic drilling has identified coal seams as thick as 85m and where historic sampling has returned gas saturations as high as 15m3/t.

According to RISC, in its Export report included in the TMK acquisition scheme booklet, the geological probability of success here is 90%, and recovery factors are interpreted to range from 45-70% of gas-in-place, and these recovery factors are used to generate the low, preferred and high case prospective resource estimates.

A laboratory has been established on-site to test the coals for gas composition and quality, and desorption. In addition, the wells need to confirm critical reservoir properties such as permeability, gas saturation and de-watering profile. If the initial work program meets its objectives, then the JV is expected to move to the second stage work program. This second stage work program is expected to include pilot production, additional seismic, and feasibility and concept studies.

Logistics & operational considerations

The area where the Gurvantes joint venture is drilling is sparsely populated, and mostly flat desert with no vegetation. See Figure 3.

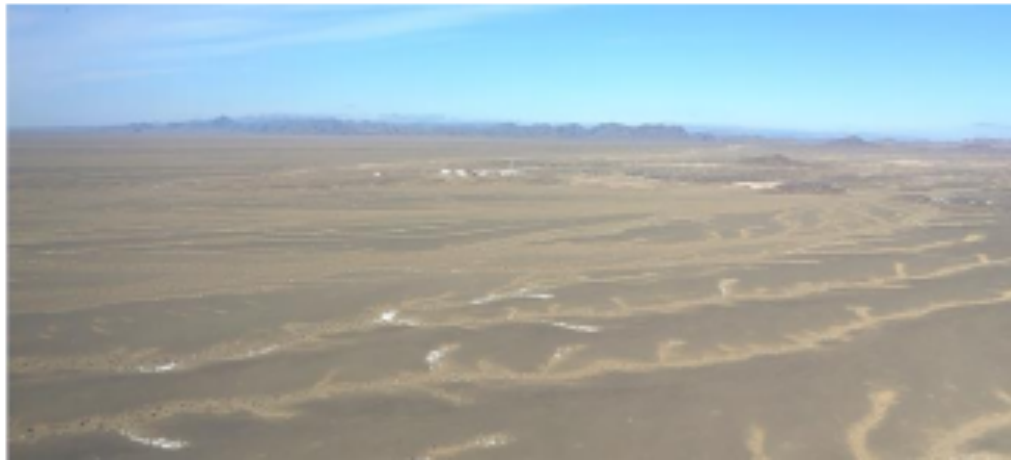


Figure 3: Topography of the South Gobi region

There are no local landowners. However, coal and minerals exploration and mining are carried out extensively in the region and this activity supports a number of related services and nearby communities. However, the JV and others that are active (Elixir and Jade) will effectively have to build the Mongolian CSG industry from the ground up.

TMK has an existing operational office in Mongolia's capital, Ulaanbaatar, with 18 full and part time employees experienced in commercial, legal, accounting, environmental, site logistics and field operations. The previous Telmen Energy CEO, Brendan Stats, is based in Sydney and has been appointed the TMK CEO. The TMK board has been restructured to include two former TMK Directors Brett Lawrence, Tim Wise, and two previous Telmen Board non-executive Directors, Gema Geralsaikhan and Stuart Baker. In addition, Mr Tsetsen Zantav, is appointed as an advisor to the Board. Mr Zantav is currently TMK's major shareholder as a result of his 27.4% ownership of TMK ordinary shares, and is CEO of the Telmen Group, a large Mongolian joint-stock company operating in property development, import and export, and logistics enterprises.

In addition, many of TMK's Mongolian-based employees have shares in TMK, and are incentivised to deliver success.

Fiscal terms & tenure.


Fiscal terms for the Production Sharing Agreement (PSA) are not publicly disclosed, however are referenced in the documents accompanying the Shareholder EGM. Broadly, the profit splits and state royalty are considered to be "in line with accepted industry standards". The PSA was awarded on 21 July 2021 and expires in July 2031.

There is a minimum work program in 3 phases over 10 years. Work commitments for years 1-4 are budgeted at US\$1.7M for geological studies, drilling and seismic. The budget for years 5-8 is US\$3.7M for geological studies, pilot wells and seismic. The budget for years 9-10 is US\$3.6M for pilot wells, seismic, production testing and feasibility studies.

These are minimum terms, and it allows the JV to invest greater amounts to accelerate activity if this is supported by the initial exploration.

Other economic considerations. There are potentially several advantages that a large gas resource in South Gobi may enjoy, in a commercial sense.

- the topography is flat, not vegetated, lowly populated and not privately owned. This would aid future land access and benefit surface facility costs.
- Well productivity and de-watering is to be determined from the current phase of exploration. With the coals structural setting, and the fact that South Gobi is a desert, it is expected that after water that is trapped within the coal is pumped out, it is unlikely



to be recharged. This may positively impact future costs for de-watering, which from the Australian experience, can be substantial.

- Gas contents are very high, and the gas is high quality with few observable impurities such as CO₂ and Nitrogen. This will help reduce the number of wells required, and complexity of processing plant to generate pipeline quality gas.

The Talon farm-in.

In January 2021, Talon Energy (ASX:TPD) announced a farm-in to the Gurvantes project, which if fully executed, will earn TPD a 33% working interest in the license in return for funding and free-carrying TMK through a staged work program and expenditure commitment of up to US\$4.65M, as follows

- Cash considerations of US\$0.1M on execution of the term sheet, and US\$0.25M upon award of the PSC. (Already awarded)
- TPD to pay 100% of the costs of an agreed work program of at least 4 core holes with a cost up to US\$1.5M (Initial work program)
- At the conclusion of the initial work program, TPD can elect to either terminate the agreement without earn-in, or proceed to enter a second work program to commit up to an amount of US\$3.15M, with TMK free-carried through this expenditure.
- TPD to pay a deferred consideration, of between zero and US\$1M, in the event Contingent 2C resources are booked in the range 0.5 Tcf to 1.5 Tcf (gross), on a pro-rata basis for any figure between 0.5 and 1.5 Tcf.

Conceptual development scenarios

It is very early days into this project, but in its Expert Report, RISC outlines a staged development concept, which could exploit ~1000 Bcf of gas, initially to displace diesel from mine-site power generation. The concept is to produce 55 TJ/d (20 PJ p.a) over 25 years. Export agreements to China would be needed to underwrite a larger project. To fully exploit the 3292 Bcf resource identified in the Nariin, Enkhen and Biluut regions, RISC postulates 400-1500 wells would be needed, and which would be a major undertaking for any company. At this time, the JV does not have the financial capacity and organisational depth that would be required to deliver a large production project. Securing funds and finding partners with development skills are critical to TMK's progression beyond an exploration phase.

To put some perspective around the value of ~1000 Bcf, if proved to the level of 2P reserves, in Australia currently, companies that have commercial 2P gas production are priced between A\$1.20/GJ and \$2.10/GJ and so a ~1000 Bcf resource, would command a value of between ~A\$1 and A\$2B.

A ~20 PJ p.a. gas contract, from the perspective of revenue potential, with gas prices at ~\$10/GJ, would deliver a revenue stream in the order of \$200M p.a.

Thus a key observation is that if the TMK can progress and prove and produce such volumes, then the upside compared to the current market valuation is multi-fold

Gas markets

There is no infrastructure to support gas production within Mongolia, and given the large area and sparse population, development of a national grid and reticulation system is unlikely. However, there are numerous mining operations for coal and copper in southern Mongolia, which use a combination of imported power from China and expensive imported diesel fuel for mine-site power generation. Natural gas would be a logical replacement fuel.



Importantly for TMK, the China border is 20 km to the south, and there are major long-distance gas pipelines bringing gas from central Asia to China. As detailed later in this report, China's demand for gas outstrips its domestic production, growth rates in consumption are close to double digit, and so the incremental demand can only be satisfied from either LNG imports and/or pipeline gas from central Asia. Both sources of gas are expensive, relative to closer points of supply, such as southern Mongolia.

Early pioneer Stormcat Energy discontinued exploration in 2005 citing the lack of infrastructure, rather than the geology, would render development un-economic. However, this early drilling predates the emergence of China as a market, as at that time, China was broadly self-sufficient in gas, did not import LNG, and the central Asian pipeline to Turkmenistan and beyond did not exist. In the subsequent 17 years, the situation has changed radically.

Additionally, there are now established methods available to monetise so-called stranded gas, all of which could be deployed by TMK and others in southern Mongolia, including:

1. Conversion on site of natural gas to compressed natural gas (CNG) which can be delivered by road tankers to in most cases, bulk users (such as mine sites)
2. Similar to #1, use of mini-LNG processes to liquify the gas for transportation. Compared to CNG, the liquid gas takes up a fraction of the space in a tanker or vessel, compared to CNG and may be cheaper to transport to consumers.
3. Conversion of the gas to Hydrogen, directly, or via the production of Ammonia or Methanol, which in turn can be converted to Hydrogen. Technology is moving rapidly in this area, and capital appears to be available from many sources beyond just the traditional debt and equity providers.

In retrospect, the early CSG pioneers in Mongolia did not have the market opportunities that the current participants have, and in that regard, we think it will be easier for TMK to find commercial solutions to any producible gas, compared to precedent companies.

The Tamaska/ Telmen Energy transaction.

On 16 December 2021, TMK (formerly Tamaska) announced it had executed a Binding Term Sheet to acquire 100% of Telmen Energy, under terms set out below. On February 11, a Tamaska shareholder meeting approved the transaction, along with change of company name to TMK Energy Limited and re-structuring of the Board and executive positions.

The directors of the Tamaska and Telmen Boards were aligned on this transaction satisfying a number of objectives for both companies.

For Tamaska, it achieved an immediate entry into a potentially world class project, after several years of inconsequential outcomes from exploration variously in the USA and Canada. For Telmen, it enables the Gurvantes project to be publicly priced and creates a route for future capital market funding, without the attendant risks, and considerable expense of the alternative being an IPO

Telmen shareholders received as a consideration, up to a maximum of 3.2 Billion shares in TMK, as follows:

- Immediate issue of 1.6 Billion shares to Telmen shareholders,
- and up to an additional 1.6B "Performance shares", to be issued in three tranches of 600M, 600M and 400M upon reaching specific project benchmarks as follows
 - Tranche 1: 600M "performance shares" to vest and be convertible into ordinary shares, upon **both** of the following occurring (1) the volume weighted average share price of TMK being greater than or equal to 2cps for 20 trading days **and**



(2) the commencement of a drilling program in the Gurvantes PSC within three years

- Tranche 2: 600M “performance shares” to vest upon **either** of (1) the intersection of 25m of coal seams in any 2 of the first 4 wells, **or** (2) the booking of 100 Bcf of 2C (best estimate contingent resource) within 5 years
- Tranche 3: 400M performance shares to vest upon booking of 100 Bcf of 2C gas resources within 5 years.
- The vesting of each of these tranches are independent events. For example, with exploration imminent with the 4 well program, and a high probability of finding coal seams greater than 25m thick, then it’s likely that Tranche 2 will vest during 2022.

In addition to the shareholder consideration, Tamaska issued additional securities as follows:

- Issue of up to 250M performance shares to specific Telmen Directors and key management personal, also to vest in 3 tranches governed by the same performance hurdles as described above
- 50M shares, and 75M options exercisable at 0.008 cps, to be issued to Chieftain Securities Pty Ltd, as compensation for lead managing the \$1.96M capital raising and for facilitation and advice specific to the Telmen transaction

Table 3 shows the post transaction capital structure.

At this time, there are 2.88B ordinary shares on issue and we use this figure to calculate our per-share valuations. The reason being that the Performances shares may never vest, if TMK is not successful or the time-line for vesting is exceeded. The issue, quotation and vesting of the Performance shares is speculative, however in the upside event that all performance hurdles are met, then the issued capital will expand to 4.73M shares. Our valuation section of this report, shows per-share outcomes based on both current capital and fully diluted in the event all Performance shares are issued.

Post transaction TMK capital structure				
	Ord. shares	Perf. Shares	Perf.shares-TEL management	Unlisted options
Current securities	985			
Placement (at 0.008c)	245			
Advisory fees	50			75
TEL management			250	
TEL acquisition	1600	1600		
Proforma total	2880	1600	250	75

Table 3 TMK capital structure as approved at the Tamaska GM on February 11, 2022

Other TMK Assets: Napoleon prospect, offshore Carnarvon Basin WA

TMK has minor interests in two small oil projects in the USA, the value of which we consider inconsequential and we don’t document further.

Much larger and closer to home TMK has a beneficial interest in the “Talisman Deep” petroleum rights, in production license WA-8-L, located in the offshore Carnarvon Basin, WA. Refer to figure 3. WA-8-L contains a number of small, shallow oil discoveries and originally produced from the

Talisman oil field, which depleted and was abandoned in 1992. Subsequent exploration discovered another small oil field at Amulet, but this has not been developed.

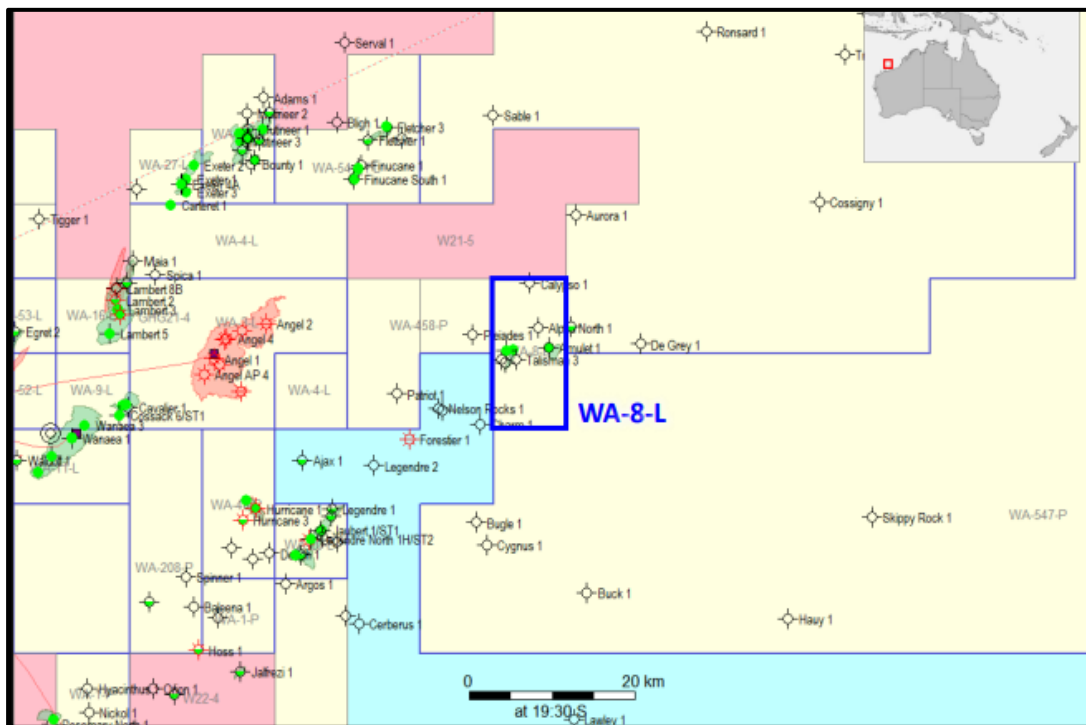


Figure 4: Location of Talisman Deeps production license.

Private company Skye Petroleum acquired this production license from previous owners Santos, Tap Oil and Kufpec in 2018. Tamaska acquired a 20% shareholding in Skye Petroleum in 2020 for A\$450,000.

Skye Petroleum has 100% ownership of rights to petroleum below 2700m, and from an extensive historical data set and offset wells, have identified a deep gas prospect, the ‘Napoleon prospect’ Gross risked prospective resources are in table 4, and show a very wide range. TMK has the option to convert its 20% interest in Skye to a 20% working interest in the project.

Skye Petroleum plans to farm-out a portion of its 80% beneficial interest in return for a free-carry through exploration.

To explore this target, a 4900m deep well is required and capex to drill the well is estimated to be A\$38m. This is a significant technical and financial event, beyond Skye and TMKs resources and would require a well-funded incoming participant.

Napoleon prospective resources (Bcf)- risked-100%	1U	2U	3U
ERCE Resource estimates.	50	240	1124

Table 4. Source: Tamaska

In the TMK Notice of Meeting documentation, expert RISC valued this project at \$0.45M (low) to a high of \$8M. The low figure is sunk cost. The high figure assumes a farm-out on a 2-for-1 promote, i.e. the farminee pays 100% of the capex to earn a 50% of the project. From our observation of the farm-out market in recent years, such terms if achieved would be a high-side outcome.

The Expert Report details the geological aspects of Napoleon, which are not documented here for brevity, and compares with the findings of ERCE. The latter concluded that the presence of an



effective reservoir at depth was a key risk. RISC further added risks of lack of an effective trap and reliance on faults to form an effective seal. These are significant uncertainties for any incoming party to resolve ahead of postulating a ~\$38M expenditure on a single well, in our opinion.

From a valuation perspective, we assign no dollar value to the deep exploration rights, as we are unable to form a view of if, and when, a farm-out may occur, and if TMK participates under some sort of bi-lateral agreement, and if a farm-out did occur, under what terms. There are too many uncertainties and scenarios to inform a valuation in our view

In terms of work programs and commitments, these have largely been satisfied and expenditures and license fees to secure tenure are not significant.

Financial position & Capex

As per the ASX release dated December 16, and following a \$2M capital raising by Tamaska, TMK now has A\$3.8M on completion of the Telmen transaction. Combined with the Talon free-carry, there is sufficient funds to pay for over-heads and the Gurvantes phase 1 and 2 programs, which are likely to see activity extend into 2023.

Additional funds may be required in the future in the event that:

- TMK participates in the drilling of a well at Napoleon, in the absence of finding a farm-in partner.
- The Gurvantes joint venture elects to conduct additional exploration or appraisal, beyond the US\$4.6M of carry provided by Talon.

If required, and until there is cashflow from production, there are only two avenues for additional funds and which are either:

- raise additional equity, and /or
- endeavour to sell for cash or a carry, some of TMK's 67% working interest in Gurvantes, or its interest in Napoleon


Capex for the 2022 drilling and testing program is budgeted at US\$1.4M, predominantly funded by Talon. The budget for 2023, for pilot testing is US\$3.7M

Valuation: \$37M-\$122M with best estimate of \$80M. (1.4-2.9-4.4 cents per share)

Documentation accompanying the Tamaska shareholder meetings includes Independent Expert reports compiled by accounting firm BDO, and valuations for Telmen and Tamaska exploration acreage conducted by RISC. The valuations are summarised as follows:

	Low	Preferred	High
	A\$M	A\$M	A\$M
Tamaska- Cash & liabilities	2.2	2.2	2.2
Exploration- Napoleon	0.4	4.2	8
Total Tamaska (pre deal)	2.57	6.37	10.17
Telmen-Gurvantes project	3.8	10.3	16.2

Table 5.: Extract from Expert reports from documentation provided to Tamaska shareholders



The Expert's conclusion is that the fair value of the combined assets is in the range of \$7.5M to \$26.3M, excluding notional premiums for control.

The method adopted to value the Napoleon acreage & Gurvantes PSC is a combination of sunk cost (book value of historical expenditure) combined with expected future expenditure from a farm-out. In Telmen's case, this is constrained by the Talon farm-in, with the low case assuming that TPD pull out after the initial exploration phase and commit no further funds.

In the case for the Napoleon prospect, a future farm-out is assumed, on a 2-for1 promote, which would be at the high end of farm-out promotes, if achieved. The latter is a speculative event, and the likelihood, timing and nature of a notional farm-out are all uncertain at this time

The global gas industry, the Mongolia gas resource potential, the China gas market opportunity, the exploration objectives and work program, were extensively addressed in the Expert Report. However, none of this was applied to determine value, for either of Telmen or Tamaska. Regulatory rules constrain the tools experts can use and in particular, and in our observation, almost all recent export reports on companies in the exploration phase, adopt the sunk-cost / farm-out approach.

Market relativity and Peer Group

There are numerous small CSG exploration companies with similar strategies and objectives to TPD. In general, there is good investor understanding regarding CSG in Australia, and also in other countries where small companies listed here are active, including Botswana, Indonesia, South Africa, and Mongolia. Table 7 lists ASX-listed small gas exploration companies, and of particular relevance to TMK are those highlighted in orange, which are for all practical purposes, "pure-play" CSG exploration companies, with similar strategies and objectives to TMK.

We believe investors looking at the investment case, will primarily focus on the resource and gas market potential, and the upside outcomes if reserves are booked, as is the objective of the exploration program.

Of particular relevance to TMK, are companies already active in Mongolia, specifically Elixir Energy (ASX: EXR) and Jade Gas Holdings (ASX:JGH), while a third TalonEnergy is a direct participant in the Gurvantes PSC. None of these small exploration companies have booked any contingent resources of significance, so it's apparent that investors are valuing the prospective resource.

Elixir Energy (EXR) has a 100% interest in a 30,000 km² PSC in the South Gobi Basin. The PSC was awarded in 2018 and to date EXR has drilled >20 wells. It reports a Prospective resource of 14.6 Tcf (2U). EXR has already booked some contingent resource around its flag-ship Nomgon wells, albeit the figures at this time a small and not really reflective of the greater prospectivity.

Jade Gas Holdings (JGH) has a 60% interest in a 665 km² PSC ringed-fenced by the much larger Elixir acreage, but near to the Tavan Tolgoi coal mine, one of the largest in southern Mongolia. The remaining 40% interest is owned by the State. Jade drilled 9 wells in 2019-2020 as a private company before listing as a public company in 2021. In 2022, Jade has commenced a 6-well drilling & testing program. Jade reports a net un-risked prospective resource of 138 Bcf (Low) 669 Bcf (Best) and 1960 Bcf (High), and plans for a resource booking this year at the completion of the current work program.

Talon Energy (TPD) will earn a 33% working interest in Gurvantes. If TPD exercises its option to enter the second phase of exploration and earn-in. Although TPD has some other Australian exploration assets, we view its market value is directly relevant to TMK. Following the announcement of the farm-in, TMK shares rose there-after to ~1c giving the company a market valuation of ~\$70M at that time

Talon's current EV is ~\$48M (at 0.8 cps) underpinned by the value for its share of Guravtes and not allowing for the possibility that TPD may not move to a second phase in which case it will not earn any interest in Gurvantes. Given TMK has twice the Talon working interest (after satisfaction of the



farm-in), then it would be reasonable to attribute a “look-through” value for TMK’s 67% diluted interest in the order of A\$96M, offset by value in non-aligned assets such as TPD’s Perth Basin exploration

Resource based valuation: very wide range reflects subjective factors

We document A\$/GJ for net, risked prospective resource at the 1U, 2U and 3U level, in Table 6.

Net risked prospective resources (Bcf)			
	1U	2U	3U
TMK (NSAI figures)	2094	3993	7537
Elixir	5000	14600	40300
Jade	138	669	1960
Talon	1254	2030	4484
EV / mmcf (A\$)			
TMK (@.13 c)	0.018	0.009	0.005
Jade (@0.67c)	0.559	0.115	0.039
Elixir (@ 16c)	0.022	0.008	0.003
Talon (@ 0.8c)	0.035	0.022	0.010

Table 6. Source: ASX reports and Breakaway data. Prices at EOT February 23

The EV per prospective molecule for TMK and EXR are broadly similar, in the context of a wide range of outcomes. But Jade Gas which has smaller acreage and lower prospective resources is ~10-20X greater in terms of EV. Partner TPD, which is earning-in to 33% of Gervantes, is a relevant market analogue and is at a ~100-120% premia to TMK in all resource categories.

For context, this group of companies prices 3C contingent resources between 1c and 14c/GJ with a median of 4 c/GJ and while TMK does not have any 3C or 3P, it aims to achieve resource bookings by year end 2022. Currently TMK is being price at a fraction of a cent for prospective resources, offering substantial leverage should it succeed in booking resources and reserves.

From a review of market peers active in CSG in Australia and internationally, we have derived a market-related asset enterprise valuation in the range of \$37M to \$122M with a best estimate of \$80M, based on CSG peers with similar strategies and in particular Talon which has assets in common. Refer to Table 7. There is a reasonably consistent value being placed by the market on these companies, in the ~\$50-100M market capitalisation range and it would be reasonable for TMK to trade into this range given successful exploration.

There is no alternative valuation method at this time as none of the small exploration companies listed here have cashflow, and there have been no recent asset trades or farm-outs.

Company	Type/ region	Price	Mkt Cap	Cash	EV	3P	3C	EV/3C
Blue Energy (BLU)	CSG/ Aust	0.053	81	10	71	298	4476	0.02
Comet Ridge (COI)	CSG/ Aust	0.13	112	0.7	111	262	2456	0.05
Pure Hydrogen (PH2)	CSG/ Aust, Botswana	0.38	134	12.1	122		1014	0.12
Talon (TPD)	CSG/ Mongolia	0.008	54	7	48		0	
Vintage En. (VEN)	Conv, Aust	0.084	63	10.3	52	105	31	1.69
Galilee Energy (GLL)	CSG, Aust	0.36	106	11	95	0	5314	0.02
Empire Energy (EEG)	Shale, NT	0.355	217	26	191	0	1809	0.03
Tlou (TOU)	CSG, Botswana	0.038	23	4	19	454	3237	0.01
State Gas (GAS)	Conv/ CSG, Qld	0.315	63	6	57	0	384	0.15
Armour Energy (AJQ)	Conv, Aust	0.02	40	-32	72	370	0	
Elixir (EXR)	CSG, Mongolia	0.16	143	28	114	0	0	
Jade (JGH)	CSG, Mongolia	0.067	81	4.37	77			
Kinetiko (KKO)	CSG, South Africa	0.085	52	0	52	0	4533	0.03
Blue Star (BNL)	Helium, USA	0.054	86	15.6	70	0	0	
Grand Gulf (GGE)	Helium, USA	0.028	36	3	33			
Red Sky (ROG)	Conv, Aust	0.006	32	7	25	0	71	0.35
NuEnergy (NGY)	CSG, Indonesia	0.025	37	-0.1	37			
TMK Energy (TMK)	CSG-Mongolia	0.013	37	4	34			
Tamboran (TBN)	Shale, NT	0.265	198	69	129	0	362	0.36
Average					73			
Median (Ex. TMK)					71	1490	23325	0.04

Table 7. Australian gas exploration companies considered to be peers. Share prices at EOT February 23, 2022

Per share valuation: 1.4c (low)- 2.9c (best)- 4.4c (high) on current capital

In Table 8, we document the peer group enterprise valuations, which are market valuations adjusted for cash or debt and derive market valuations for TMK based on the current issued capital of 2.88B shares, and on a fully diluted basis, 4.48 B shares in the event that in the future, all the “Performance shares” vest and are issued. Prima-facie, issuance of Performance Shares is dilutive, however this does not take into consideration that such shares don’t vest unless value-adding milestones are achieved, specifically the drilling of wells, booking of contingent resources, and achievement of a share price hurdle of >2 cps.

TMK EV and per share value	Low	Best	High
Asset EV	37	80	122
Plus cash	4	4	4
Equity Market value	41	84	126
Shares on issue	2880	2880	2880
Value/share	0.014	0.029	0.044
Fully diluted basis			
Asset EV	37	80	122
Plus cash	4	4	4
Equity market value	41	84	126
Issued capital	4480	4480	4480
Value/share- fully dilutes	0.009	0.019	0.028

Table 8: Per share valuations on current issued capital and fully diluted if all Performance Shares vest



Key risks

TMK is an exploration phase company and there are technological, geological and financial risks. Asset specific risks are documented as follows.

Country Risk.

Although the resources and mining industries have emerged as key driver of the Mongolian economy, there are legacies of the former “command economy” and some foreign operators and investors have experienced challenges. There is a risk that should the CSG industry emerge as a major economic contributor, that fiscal terms could be altered, or tenure challenged.

Geology.

There are operational and geological risks. The operational risks relate to the drilling of a new well. The geological risk is that associated with the reservoir quality. The coals are geologically well understood but the geology is complex and not well defined for CSG.

Key parameters such as permeability and gas content are not known and the upcoming exploration phase aims to inform these parameters.

Access to markets. It is early days and there are competitors in the industry with a view to commercial production. There is risk that TMK cannot find customers, or that prices are insufficient to justify investment in a development. If markets cannot be found for gas then it will be stranded.

Financial. TMK is a small company and development on a commercial scale will require major future investment. At this time, such an investment is not funded, and ultimately development partners would need to be secured, or debt and equity raised.

Logistic support. There is no gas production industry in Mongolia, drilling and support services are scarce. It’s possible that TMK cannot secure contractors in a timely manner which may impact its exploration plans

Talon elects not to proceed to the second stage work program. If the initial phase of activity returns poor results, it is possible that TPD could choose not to proceed with the next phase. If so, funding from the TPD farm-in would not be forthcoming and TMK would need to find alternative sources of funds in order to continue field activities.

Lack of production infrastructure. There is no existing gas processing or transportation infrastructure in southern Mongolia. Future production will need to be in tandem with processing and transportation. It is not certain partners or funds will be forthcoming or who would undertake such downstream development.

Commodity price risk. Although gas prices are currently very high globally, they are volatile and more-over, as there are no nearby pricing hubs, gas prices would need to be agreed with customers on a bespoke basis. There is no certainty that TMK could achieve the high-prices currently being enjoyed by large producers with pricing power

China & Mongolia gas markets

Gas exploration in Mongolia has historically been minimal, with no local market infrastructure to underwrite production. Early attempts to commercialise CSG in Mongolia were not successful in resolving the infrastructure but that was more than 15 years ago and since then, gas markets and gas prices within the region have changed dramatically.

Undoubtedly the major driver of resurgent activity though, has been the emergence of China as a major gas consumer, increasingly reliant of imports from central Asia via pipelines, and LNG imports



which were nil in 2006, but in 2022 China is expected to be the world’s largest LNG consumer and importer, overtaking Japan.

In 2020, China gas consumption was 32 Bcf per day, accounting for 9% of all global demand, and cagr growth in the past 10 years has been a staggering 12% p.a. However, Chinese own production has not been able to keep up with run-away demand and the balance is met by LNG imports and pipeline imports.

LNG imports into China in 2021 were 74 MT. China now accounts for 19% of all global trade in LNG.

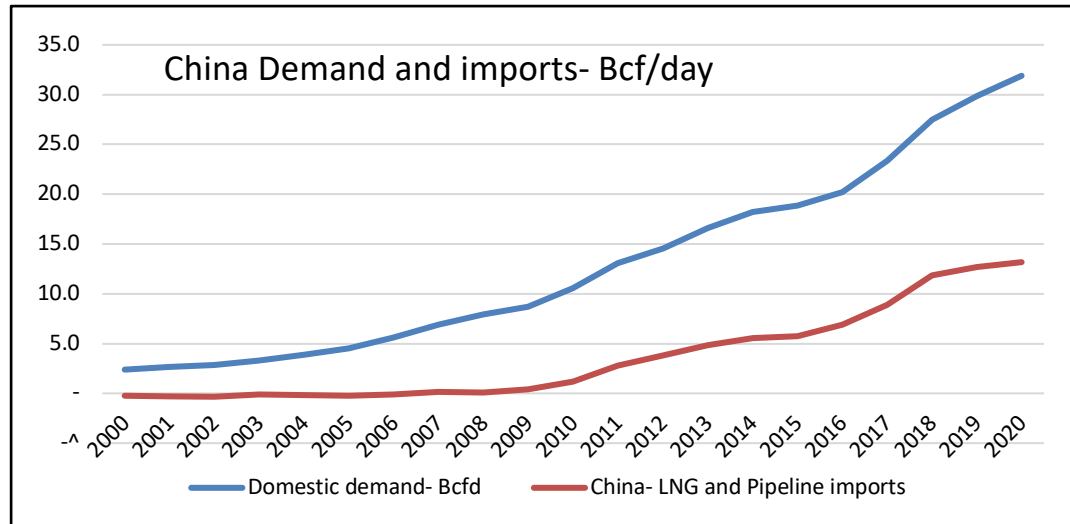


Figure 4: China gas demand and LNG+pipeline imports. Source: IEA

Mongolia

There is no production infrastructure for gas. There are no gas networks in the major cities or the capital, and all primary energy is generated from coal, or imported diesel. Given the relatively sparse population, it would appear impractical to try to set up a gas distribution system, and the capital is hundreds of km away from the south Gobi region.

However, there are opportunities to displace diesel which is widely used for mine-site power generation. The natural resources industry is large and well established in Mongolia, accounting for 35% of GDP

Other idea being considered among the various industry participants are:

- Use of small mini-modular LNG or CNG plant to compress and ship the gas to consumers
- Use of gas in the hydrogen generation chain, potentially including production of Ammonia and Urea, or methanol
- Petrochemical or fertiliser production. Abundant gas, at potentially low prices, is lacking in many countries. Record prices for gas in Europe, and a sharp supply-crunch driven rebound in the USA, have impacted many minerals smelting and pet-chem industries which rely on gas.

Board & KMPs: TMK Energy.

The TMK Board has 4 non-executive Directors, two from the former Tamaska Energy (Brett Lawrence and Tim Wise), and two from Telmen Energy (Stuart Baker, Gema Gerelsaikhan)

In addition, the Telmen Energy CEO, Brendan Stats was appointed CEO of TMK, while Telmen’s Dougal Ferguson was appointed TMK CFO. Brett Lawrence, the former CEO and MD of Tamaska, remains on the Board as a non-executive Director.



Brett Lawrence (B.Eng-Mining, MSC Petroleum Engineering and B.Comm (Finance))

Mr Lawrence has 16 years of diverse experience in the oil and gas industry. He worked for Apache Energy for over 9 years, performing roles in drilling engineering, reservoir engineering, project development and commercial management before seeking new venture opportunities with ASX listed companies. Mr Lawrence holds a Master of Petroleum Engineering, a Bachelor of Engineering (Mining) and Bachelor of Commerce (Finance) from Curtin University in WA.

At this time, Mr Lawrence also serves as a non-executive Director for ASX-listed Calima Energy (ASX: CE1)

Tim Wise

Mr Wise is a corporate executive experienced in the growth of early stage businesses and providing strategic advice to a broad range of companies. Mr Wise is a founder and former CEO of the Tap Doctor, and Kalina Power (ASX: KPO). At this time, Mr Wise is also a non-executive Director of Phos Energy Ltd

Stuart Baker (B.Eng-Electrical. MBA, member AICD)

Mr Baker has more than 4 decades of experience in the oil and gas industry and currently provides strategic advice to corporates in the Australian energy sector. Mr Baker spent ~30 years in stock-broking as a top-rated company analyst specialising in oil & gas, at Morgan Stanley, Macquarie Equities and Bankers Trust. Prior to his career in financial services, Mr Baker worked as a well-site engineer for oil-field service company, Schlumberger Inc, at drilling locations in Australia, Indonesia, India, Papua New Guinea. Mr Baker is a non-executive Director at Central Petroleum (ASX: CTP), and serves on the Investment Committee for the ASX-listed investment fund, Lowell Resource Fund (ASX: LRT).

Mr Baker's qualifications include Bachelor of Engineering (Electrical) from the University of Melbourne, M.B.A from the Melbourne University Graduate School of Management. He is a member of the Australian Institute of Company Directors (AICD)

Gema Gerelsaikhan. (B.Economics, Master of Business Administration)

Ms. Gerelsaikhan has more than 10 year's experience in marketing and communications and business development in real estate, mining and hospitality sectors. Previously she was Director of Communications & Marketing at Shangri-La Hotel, Ulaanbaatar. She also headed the Singapore and Hong Kong offices of Asia Pacific investment Partners (APIP) as Chief Marketing and Business Development Officer. Prior to joining APIP, Ms Gerelsaikhan was Business Analyst at South Gobi Resources, a TSX and HKEx listed coal mining company (TSX: SGQ & HKEx:1878). She is a founding member of the Mongolian Chamber of Commerce in Hong Kong, as well as the Mongolian Chamber of Trade & Commerce in Singapore, where she currently serves as President. She holds Masters and Bachelor degrees in Economics and Business Administration from Roskilde University, Denmark.

Key management personal

Tsetsen Zantav

Mr Zantav has been appointed as an Advisor to the Board. Mr Zantav is currently the largest shareholder in TMK, with ownership of 27.4% of the ordinary share capital in TMK. In the event that all the performance shares are vested, Mr Zantav will end up owning



Mr Zantav was the founding Director of Telmen Resources LLC, the 100% owned subsidiary of Telmen Energy Ltd. Mr Zantav held a number of corporate roles prior to founding the Telmen Group where he is currently the CEO. The Telmen Group has completed a number of high-profile property developments in Mongolia, as well as Russia and China. He was awarded the Polar Star by the Mongolian President, for his contribution to low-income housing in the Nalaikh district. Mr Zantav brings a wealth of expert skills in strategic management, business leadership, project management, contracts and negotiations.

Brendan Stats, CEO. BSC (Hons, Melbourne)

Brendan is a geologist with 15 years of experience in the natural resources industry. Brendan has been living or working in Mongolia since 2011, predominantly focused on coal projects located in the South Gobi region. Brendan's role will be to lead the company through its early stages in exploration and will be responsible for operations, stakeholder relations. Brendan holds a Bachelor of Science (Geology) with honours, from the University of Melbourne.

Dougal Ferguson. CFO

Dougal is an experienced oil and gas industry executive with substantial international experience in the execution of corporate transactions. He is a former CEO / MD of several ASX listed oil and gas exploration companies, and of specific relevance to Mongolia, former CEO of Elixir Energy until 2019. Mr Ferguson is a qualified CPA and member of the AICD

Ganzorig Vanching. (Country manager, Mongolia)

Ganzorig is Country Manager of Telmen Resources LLCC. Ganzorig is a geologist with 12 years experience in the resources industry, working at Mongolian company Energy Resources LLC, and ASX listed company RPM-Global (ASX: RUL). Ganzorig has experience in exploration project management, due diligence and feasibility studies, and resource estimation, gained from projects in Mongolia, Australia, Indonesia, Russia and Laos. Ganzorig holds a degree in Applied Science from the Mongolian University of Science and Technology.



Analyst Verification

I, **Stephen Bartrop** as the Research Analyst, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

Disclosure

Breakaway Research Pty Ltd (AFSL 503622) and its associates, or consultants may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of **TMK Energy** and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

We acknowledge that Senior Research analyst, Stephen Bartrop, holds shares in TMK Energy

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[Breakaway Research Pty Ltd](#)
AFSL 503622 ABN: 39 602 490 906,
T+61293928011
169 Blues Point Road
McMahon's Point, NSW 2060