TTR's World Class Vanadium Rich Titanomagnetite Iron Sands Project
Briefing Paper 2020

TTR PROJECT BACKGROUND

TTR's offshore South Taranaki Bight (STB) vanadium rich titanomagnetite sand resources is one of the largest known drill defined vanadium deposits in the world.

Since 2008 TTR has spent over $80 million and undertaken extensive engineering development work and environmental research to establish a new low impact sustainable production and export operation in the STB that will deliver a range of significant environmental, social, economic and technological benefits to the region and New Zealand.

The attached TTR Project Update, Fact Sheet and Media Commentary Facts summarises the key information regarding the economic benefits and environmental impact of the STB Project as provided to EPA hearing for our marine and discharge consent approvals. All the information has been prepared by independent experts and internationally peer reviewed.

TTR PROJECT APPROVALS

TTR proposes to recover vanadium rich titanomagnetite iron sands in an approximately 66km^2 area of seabed in New Zealand's Exclusive Economic Zone (EEZ) around 22km to 36km offshore in the STB.

TTR has completed extensive exploration and drilling of the seafloor deposit, reported a JORC 3.2 billion tonne recoverable resource and holds a Mining Licence issued under the Crown Minerals Act 1991. In order to carry out the sand recovery activities TTR also requires marine and discharge consents issued under New Zealand's Exclusive Economic Zone and Continental shelf (Environmental Effects) Act 2012 (EEZ Act).

In 2013 TTR lodged a marine consent application with the Environmental Protection Authority (EPA), the first seabed mining company to do so under the EEZ Act. In June 2014 the Decision Making Committee (DMC) of the EPA declined TTR's marine consent; TTR's technical team re-engages the engineering, economic and scientific experts to address the shortfalls of the application.

In August 2016 TTR reapplies to EPA for marine and discharge consents, having spent over $70 million by that stage on defining the resource, engineering studies, marketing research, economic analysis and extensive independent research on the STB marine environment and the likely impact of the proposed operation.

By June 2017 industry groups and government officials advised the then government ministers that the EEZ Act was flawed as regards statutory purpose, adaptive management, sediment definitions and information principles, among others, in relation to the grant of marine and discharge consents by the EPA's DMC and needs fixing.

In August 2017 TTR were granted their environmental consents to operate with a comprehensive set of agreed conditions by a properly constituted DMC.

The DMC's grant of the consents was then challenged in the High Court (HC) by a range of submitters on 29 points of law. In August 2018 the HC ruled against TTR and ruled the EPA had adopted an adaptive management approach in granting the discharge consent that is prohibited by the EEZ Act and dismissed the other 28 appeals.

In September 2018 TTR lodged an appeal to the Court of Appeal (CoA) seeking reversal of the HC ruling that the EPA adopted an adaptive management approach. The CoA Judgment released on 3 April 2020 ruled in favour of TTR and overturning the HC ruling and dismissed cross appeals on a further 8 points of law.

However, the CoA upheld 6 cross appeals on questions of law resulting in the consents remaining quashed and referred back to DMC for reconsideration in the light of the clarifications in the CoA Judgment.

THE LAW AND OUTCOMES

The outcome of the HC and CoA Judgments, and rulings on specific points of law in the EEZ Act, is the EEZ Act is now inoperable and cannot be remedied in the Courts, by TTR or any other party.

The CoA Judgment is complex, and in some cases novel, with the likely outcome, should the rulings go unchallenged, that environmental consents, and especially discharge consents, would effectively be unable to be granted outside the 12 nautical mile limit within New Zealand's Exclusive Economic Zone (EEZ) under EEZ Act. This would mean a prohibition on such consents for all commercial activity within the EEZ including mineral recovery and oil and gas exploration and production. This was clearly not the intent of Parliament in 2012 when it passed the legislation to allow for responsible utilisation of the extensive natural resources of New Zealand's expansive Exclusive Economic Zone.

It has resulted in any Court decision being referred back to the DMC who will have to either decline (as is now the case) taking into consideration the rulings of the Court, or if it is possible, reissue the consents in accordance with the law and these "grants" are then again challengeable in the Courts. The result is a "Catch 22" scenario where, whilst the current Act remains, the only outcomes are further court challenges or declined grants by DMC.

The political solution is to have TTR's environmental approvals for the project confirmed in the "national interest" by Government "Covid action" by retroactively "overriding" the "legal defects" of the EEZ Act.

The legislation fix required to the EEZ Act, is necessary, but will take too long for TTR and, in any event, would then require TTR to reapply under the "new" EEZ Act by applying to the EPA for consents for a third time. This would require significant additional funding of TTR; ***except***

The legislation fix is a possibly part of the political solution, if under the "Covid footing" of the cabinet Ministers are prepared to "fast track" the required EEZ Act amendments and they are applied retrospectively to include TTR's consents being approved and unchallengeable by further court action.

THE OPPORTUNITY

TTR holds a granted mining licence and environmental consents (quashed by the Courts but under appeal to the Supreme Court) to recover vanadium rich titanomagnetite sands in the STB.

With a 3.2 billion tonne resource TTR's STB vanadium rich titanomagnetite sand resources is one of the largest known recoverable vanadium deposits in the world capable of delivering a new high technology industry with a range of significant environmental, social, economic and technological benefits to the region and New Zealand.

THE ECONOMIC BENEFITS

Based on TTR's current resource, commodity prices and international currency exchange rates at 16 April 2020 the mineral exports would, for every year of the twenty (20) year project, generate:

- *Government revenues in royalties and corporate taxes in excess of $120 million a year ($41m annual royalties and $80m annual corporate taxes);*
- *Over $250 million direct spend each year on employment and operations in the Taranaki region;*
- *Direct employment of over 300 Taranaki based professional and skilled and jobs;*
- *Further 165 indirect employment opportunities in services and support in the region;*
- *Up to 1,665 positions nationwide;*
- *Training and logistics facilities established in Hawera;*
- *Service infrastructure in Port Taranaki and the Port of Whanganui; and*
- *Foreign exchange earnings of around US$195 million (NZ$325m) a year.*

THE ENVIRONMENT

Major environmental benefits include the potential recovery of strategic minerals for the green low carbon emission energy sector. Vanadium is now in demand for use in vanadium batteries to store renewable energy and, with titanium, in high quality lower emission steel production, white goods and electronics.

Despite fanciful claims to the contrary, the unchallengeable facts are that the operation, located 22km to 36km offshore over the horizon, will have minimal *if any impact* on the STB marine ecosystems, existing users, commercial activities or the near shore environments, recreational use or cultural values.

Ironically, Taranaki rivers regularly discharge far more sediment (from current land use activities) into the most valuable and sensitive near shore and coastal marine environment, of valid concern to iwi and environmental organisations, than will ever arise from TTR's distant offshore sand mining operation. Around 30km offshore, where the mineral recovery operation will take place, the seabed areas directly impacted by removal and re-deposition of the titanomagnetite sand are not ecologically valuable and are readily restored in relative short timeframes as part of the consent requirements.

DEPARTMENT OF CONSERVATION, COMMERCIAL FISHING AND OIL & GAS

Department of Conservation (DoC) reviewed TTR's 2016 environmental application to EPA and agreed it was comprehensive, well researched, provided all the information required to assess the effects and the proposal posed no significant adverse environmental effects to the STB, or elsewhere, and supported the application.

With regard to commercial and recreational fisheries, NIWA reported there would be no impact by the mineral recovery operation on either which is in an area where Sanfords hold quota and no recreational fishing occurs. Sanfords attended the DMC hearing, supported TTR's application and have entered into an operation and management agreement (OMA) with TTR.

The OMV Joint Venture partners, operators of the Kapuni and Maui oil and gas fields, were also provided with TTR's operation's engineering details, plans and the comprehensive environmental data and operational details of the sand recovery operation and also supported the environmental applications with the EPA and entered into an OMA with TTR.

PROJECT APPROVAL

Should TTR's project have its environmental approvals confirmed these significant economic benefits, employment, training and business opportunities will not be lost to the people of Taranaki, the South Taranaki Region and New Zealand.

The effect of the proposal would have an immediate impact in the Taranaki and Whanganui regions by:

- *The immediate engagement of 30 largely senior professional and highly skilled and trained staff and further expert consultants and contractors mostly located in Taranaki to undertake the marine monitoring and final project development documentation required to build and commission the project;*

- *To bring forward from at least two years away to this year, and early next year the commencement of marine monitoring, final feasibility, metallurgical and marketing activities spending, much of it in Taranaki of between $25 and $35 million;*

- *To bring forward by at least two to three years (compared with awaiting the outcome of the legal process) the commencement of capital spending, much of it in Taranaki of between $800 million and $1 billion to build and commission the project;*

- *To bring forward by at least two years the hiring and training of around 250 skilled staff to be located in Taranaki and Whanganui areas and nearby towns;*

- *The generation of a further 1,665 jobs in the wider region and nationally;*

- *To bring forward by at least two years the annual operations expenditure (regardless of metal prices), mostly in the Taranaki and Whanganui region, of $250 million on payroll, goods and services, technical and industrial services and scientific research;*

- *Immediate delivery of a range social and community benefits including training and logistics facilities in Hawera, service infrastructure in the Port of Whanganui and Port Taranaki; and*

- *To bring forward by at least two years the commencement of a tax and royalty revenue stream to the government of annual royalties and corporate tax payments per annum totalling $120 million pa at current metal prices and foreign exchange receipts of US$195m (NZ$325m).*

The opportunity is a major new export industry employing best practice sustainable environmental approach to mineral recovery that will help meet the demand for the strategic metals required as New Zealand transitions to a low carbon energy economy.

The project will deliver significant number of new jobs, skills training, port infrastructure, direct government revenue and export earnings without the government having to deliver any economic support or hand-outs, additional services or infrastructure.

It will also post the message that New Zealand is open for business, including the minerals and oil & gas sectors, can manage and approve sustainable low impact development of its extensive EEZ (14 times the size of NZ's land area and one of the largest in the world) and international investment is welcome.

Alan J Eggers
Executive Chairman
16 April 2020