

AGENDA ITEM 6

**REPORT TO THE TEES VALLEY
COMBINED AUTHORITY CABINET**

28th SEPTEMBER, 2018

REPORT OF INVESTMENT DIRECTOR

**FUNDING SUPPORT RE INNOVATIVE RESEARCH AND DEVELOPMENT
PROJECT - LIBERTY POWDER METALS**

SUMMARY

The report considers and proposes a response to the request from Liberty Powder Metals Ltd ('Liberty') for total investment of £4.6m (£1m grant and £3.6m loan) from TVCA to support an R&D project focused on developing and manufacturing new speciality alloy metal powders for end users to use in net shape and additive manufacturing applications like 3D printing engine parts, to be hosted at The Material Processing Institute.

RECOMMENDATIONS

It is recommended that the Combined Authority Cabinet:

- i. notes the request for Combined Authority for £4.6m funding from Liberty to support the R&D project as described in this report;
- ii. approves the request for funding on the basis of the recommendations of the funding appraisal; and
- iii. authorises the Managing Director to take all necessary steps to complete a funding agreement (including appropriate collateral/ security arrangements) with Liberty on the basis set out in this report.

DETAIL

Summary Project Description

1. Liberty are seeking a total investment of £4.6m (£1m grant and £3.6m loan) from TVCA to support a project focused on developing and manufacturing new speciality alloy metal powders for end users to use in net shape and additive manufacturing applications like 3D printing engine parts, to be hosted at The Material Processing Institute. This is very new technology with only 940 tonnes per annum of metal powder currently being used worldwide and only 20 alloys available which limits the component properties. However, Liberty believe that this market is due to grow very quickly and wishes to secure a share in the international market using Teesside based facilities.
2. Liberty has led a UK Government funded project since January 2015, known as CASCADE and the funding sought is to complete and extend the remit of CASCADE, which is due to come to an end on 31st December 2019. The outputs of CASCADE R&D include the production of new speciality alloy metal powders in (commercial, as compared to laboratory) volumes which requires them to purchase of a 250kg batch vacuum atomiser.
3. The CASCADE funding cannot be used to fund the purchase of the atomiser which will have a vacuum production capacity of 335 tonnes per annum, with 25% of this dedicated to industrial R&D to develop new steel and nickel alloys. The application to TVCA seeks funding in relation to the purchase of the atomiser and associated equipment and the next stage of development costs.
4. The atomiser, and associated processing, handling and testing facilities, will be built inside the unused Tuyere Building at Grangetown, Middlesbrough, which will become a learning base for the research and development of advanced nickel based alloys. The atomiser will be set up on an open access basis and will enable collaborative research programmes. Many end users and research establishments are working on the development of vacuum atomised metal powders and require the use of this type of equipment but there are only 2 vacuum atomisers currently in the UK. Liberty anticipate that other research organisations will be keen to use the atomiser to make development powders.
5. The atomiser would allow Liberty to develop this technology to produce initially modest amounts of regular 316L stainless powder. This would enable Liberty to build capability, brand recognition and customer trust, which in turn it hopes will lead to the development of Ni-based powders and other highly valuable alloys, few of which are available commercially. Income from 316L will be re-invested to fund the development of the new alloys and improve processes.
6. The longer term vision is that Liberty creates a long term, high value, leading edge advanced manufacturing business in Tees Valley based around optimised atomisers and facility designs to produce high purity, specialist powders and the formation of semi-finished components via 3D printing, hot isostatic pressing or other technologies. This would involve in due course establishing a larger advanced manufacturing facility in Tees Valley, which would become a centre of expertise for powder metal production and know-how.

Evidence of Need

7. Liberty state that if the funding is not granted then the project will not progress until Liberty can raise the funds, impairing the UK's strategic advancement into Additive Manufacturing and the digital industrial revolution. Liberty state that unless they

receive the funding quickly for further development and powder production, other worldwide competitors will monopolise the market.

8. Liberty has provided continuing resource, expertise and management direction into developing a business position in the new and rapidly developing powder metals supply chain over a number of years, even prior to the CASCADE Project. Liberty state that this work has clearly shown the potential for significant business benefit. However, Liberty acknowledge that, as with all research activities in this relatively early stage, certainty of success cannot be guaranteed 100%.
9. Liberty is a newly established company (July 2018) set up to focus on developing the powders business. No funds are available in the Liberty Group to prioritise the required level of capital expenditure to support a successful powder manufacturing facility. Liberty would continue to invest in powder but necessarily this would be at modest levels and likely to be from the steel-business R&D budget which is itself limited.

Strategic Fit and Benefits

10. The project addresses three of the six priority themes of the Strategic Economic Plan (SEP): Business Growth: a high growth potential business and possible wider supply chain impact; Research Development, Innovation and Energy: provision of open innovation testing facilities; and Education, Employment and Skills: the creation of 20 net additional jobs, all of which are at NVQ level 4 and above. The project also delivers growth in one the SEP's seven priority sectors: Advanced Manufacturing.
11. The project is in alignment with both the emerging UK Industrial Strategy and Northern Powerhouse agendas, as it is both testing and putting into commercial usage an enabling technology which will have direct productivity and reshoring benefits for a range of sectors, including but not limited to: aeronautics, aerospace and the wider advanced manufacturing sector.
12. The project affords the opportunity to create a new cluster within the region, combining a viable powder metals production centre, which will service both national and international markets, as well as establishing a key R&D function which will augment the existing sectoral innovation ecosystem in MPI, TWI and Teesside University and which cumulatively strengthens the argument for the subsequent creation of a materials catapult in the Tees Valley: a cornerstone of our emerging Circular Economy proposition.
13. As noted above the direct economic benefits are 20 jobs and an increase in GVA of circa £4million per annum (subject to due diligence). The presence of the R&D testbed function may be viewed as an additional income generator through the provision of applied research and a potential attractor of further spinout activity/ inward investment (valued by Liberty at £60million of investment and the creation of up to 70 additional jobs beyond 2025) but in the interests of prudence these have not been included in the appraisal. The project (subject to confirmation at the due diligence stage) will create a net benefit to the local economy.

Funding

14. The total cost of the project is £9.83m of which £2.8m is the cost of the atomiser, £1.782m is set up cost and £5.248m is cost associated with research activity. Of this £9.83m, £4.6m is requested from the Combined Authority - £3.6m in loan (required in October 2019) and £1m in grant (to be received in Q2 20).

15. Of the £5.23m match funding, £1.239m is funding from the CASCADE project and relates to the continuation of the research activity from that project.
16. £3.991m of the match funding from Liberty is income generated by sales of powder and other internal Liberty sources.
17. TVCA's loan will start to be repaid from September 2022 (Year 4) and should be fully repaid (including interest) by the September 2023 (Year 5).

Assurance and Appraisal Outcome

18. A full appraisal process of the Liberty business case for investment has been carried out in accordance with TVCA's standard procedure. The appraisal has recommended that the business case be approved subject to a number of conditions.
19. The appraisal does not consider that Liberty has evidenced the need for grant funding (as opposed to loan funding) as the project starts returning a surplus in Year 3. In the light of this, the appraisal recommends that the Combined Authority offers a £4.6m loan to Liberty, rather than the grant/loan split requested. The loan could be repaid over a longer term than is currently suggested if required and will be made at a state aid compliant interest rate.
20. Given the risk associated with R&D activity and the lack of track record of Liberty (as a new business entity), the appraisal recommends that a parent company guarantee is sought from Liberty. They have confirmed that they are prepared to give this. The appraisal suggested that equity in Liberty should perhaps also be sought given the longer term profitability of the project. Liberty have however confirmed that this would not be acceptable to them.
21. The appraisal acknowledges that the TVCA funding will be subject to TVCA's standard capital funding terms and conditions which will include the appropriate restrictions on the disposal of funded assets while the funding is yet to be repaid. As the asset here is moveable, the appraisal recommends that TVCA consent is required to move the asset (to prevent the asset from being removed from Tees Valley in particular).
22. In agreeing to make this investment, TVCA is seeking to secure the long term vision described in this report: the establishment of an advanced manufacturing facility in Tees Valley, which would become a centre of expertise for powder metal production and know-how and the eventual creation of 70 high value, skilled direct jobs in Tees Valley and up to 185 indirect jobs created in the supply chain. The appraisal therefore recommends that if the longer term vision is developed by Liberty outside of the Tees Valley, then any outstanding loan payments should become immediately repayable.

FINANCIAL IMPLICATIONS

23. Assuming the recommendations from the appraisal set out above are accepted, the financial implications are that the Combined Authority would make a £4.6m loan (£3.6m required in October 2019 and £1m required in Q2 FY20). The loan will be at a state aid compliant rate to be agreed, depending on the financial standing of Liberty taking into account the availability of an appropriate parent company guarantee.
24. This funding will be subject to appropriate due diligence through the Tees Valley Assurance Framework.

LEGAL IMPLICATIONS

25. State aid advice obtained by Liberty from a reputable legal firm has made the case that a £1m grant would be state aid complaint in the circumstances. However, as the appraisal recommends that the grant should be replaced by loan, which would be at a state aid complaint rate, this is no longer a consideration.
26. Any funding would be subject to standard Combined Authority terms and conditions which will allow for immediate clawback of the funds if Liberty fail to meet the project outputs or acts in breach of those terms and conditions. Special conditions will be included to ensure that the issues raised by the appraisal are appropriately addressed.

RISK ASSESSMENT

27. In addition to the key risk described in paragraphs 18 to 20 above, the key risks in relation to this request for Combined Authority funding are as follows:-

Risk	Proposed Mitigation
<ul style="list-style-type: none">• Loan is not repaid	<ul style="list-style-type: none">• To seek an appropriate parent company guarantee to secure loan.
<ul style="list-style-type: none">• Reputational damage if the R&D project is not a success	<ul style="list-style-type: none">• To seek an appropriate parent company guarantee to secure loan.• To offer all loan rather than loan/grant split sought by Liberty.
<ul style="list-style-type: none">• Reputational damage if the R&D project is a success and Combined Authority is seen as funding the success without taking an appropriate share in that success	<ul style="list-style-type: none">• Ensure financial return through commercial interest rate on loan.
<ul style="list-style-type: none">• Business is developed outside TV	<ul style="list-style-type: none">• Addressed through specific loan conditions.

28. Provided that the safeguards set out above are achieved in terms of the proposed funding conditions, this funding proposal is categorised as low to medium risk on the basis of the appraisal recommendations. Existing management systems and daily routine activities are sufficient to monitor and reduce risk.

CONSULTATION AND COMMUNICATION

29. Consultation has been undertaken with Tees Valley Management Group and Tees Valley Chief Executives.

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