European Investment Bank

Environmental and Social Data Sheet[1]

Overview

Project Name:	TECHEU VD AMSILK ADVANCED MATERIALS (IEU GT2)
Project Number:	2024-0895
Country:	Czech Republic, Germany
Project Description:	The Project concerns i) the capital expenditure (65% of project costs) for an innovative industrial scale line for spider silk protein-based fibre production (spinning and yarning, chemical recycling, industrial infrastructure and EPC) and ii) R&D operational expenditures (35%). The former investment will be located at a contract manufacturing organisation facility in Lovosice, Czech Republic, while the latter will be carried out at AMSilk pilot plant in Neuried, Germany. The investment plan covers the period 2026-2028.

Invest EU sustainability proofing required	no
E&S Risk categorisation	High
Project included in Carbon Footprint Exercise[2]:	No

(details for projects included are provided in section: “EIB Carbon Footprint Exercise”)

Environmental and Social Assessment

Environmental Assessment

The Project includes two components:

- CAPEX investments related to spinning and solvent recovery equipment for the production of AMSilk spider silk yarns. These investments will be located in Lovosice, Czech Republic.
- RDI activities on the optimisation of the AMSilk precision fermentation technology for the production of spider silk protein powder, the spinning into spider silk yarns and the development of applications for AMSilk spider silk in other domains (e.g., consumer care solutions). These activities will take place in the AMSilk research laboratory and pilot facility, located in Neuried (Germany).

The Project R&D activities will be implemented in the existing AMSilk laboratories and pilot plant, both located in Neuried (Germany) having all the required permits and authorisations to perform these activities.

[1] The information contained in the document reflects the requirement related to the environmental, social and climate information to be provided to Investment Committee as required by the Invest EU Regulation and it represents the equivalent of the information required in the template of the InvestEU sustainability proofing summary

[2] Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 20,000 tonnes CO2e/year absolute (gross) or 20,000 tonnes CO2e/year relative (net) – both increases and savings.

The CAPEX investments for the AMSilk spider silk yarns production, will be carried out in an existing industrial facility owned by Indorama Ventures Bohemia, located in an industrial area in Lovosice, Czech Republic. This industrial facility carries out spinning operations to produce viscose fibres at large scale and holds all required authorisations for these activities. It is expected that the project will not generate additional environmental risks and impacts that could not be mitigated by the Promoter.

The CAPEX investments may fall under the scope of the EIA Directive 2011/92/EC as amended by Directive 2014/52/EU and hence might require a screening procedure. The Promoter will notify the bank about the specific permitting requirements and provide documental evidence that the required permits have been granted.

The main solvents used in the spider silk spinning activities are ethanol and formic acid, these chemicals do not fall under the Seveso III directive. A large part of these solvents will be recycled in the process, minimising the overall amounts of solvents stored at the facility and consumed in the process.

The facility will implement the required safety measures for the handling of chemical solvents, in line with industrial safety regulations, to avoid fire and explosion hazards, as well as the exposure of personnel to unsafe levels of these chemicals. Ethanol and formic acid are well known chemicals used in many industrial processes, so the relevant safety measures to implement in industrial facilities that handle them are well-established.

The spinning investments in Lovosice have a strong focus on resource efficiency, in fact, a key element is the chemical recovery plant. This plant will allow the recovery of the chemical inputs used by the process, namely, formic acid and ethanol. Such efficiency measures will also contribute substantially to decrease waste streams from the spider silk spinning operations.

Climate Assessment

The production of Mulberry silk yarns is a complex process carried out at small scale and in a labour-intensive way. As such, silk production, compared to other natural fibres has a higher environmental footprint. Silk yarns are mostly produced in Asia, their import in Europe adds to the overall footprint. According to an LCA carried out by an independent third party, and peer reviewed by experts in textiles, biotechnology and LCA, the AMSilk spider silk yarns production process results in a lower carbon footprint compared to standard Mulberry silk yarns production.

The Project is not part of the EIB carbon footprint exercise as the estimated relative and absolute emissions fall below the threshold i.e., 20,000 tonnes CO2e/year absolute (gross) or 20,000 tonnes CO2e/year relative (net). The absolute emissions have been estimated based on the carbon footprint of energy and raw materials required for the production of AMSilk spider silk yarns, including precision fermentation and spinning. The relative emissions have been calculated by subtracting the absolute emissions, from the estimated emissions of producing the same volume of traditional Mulberry silk yarns.

The project has been assessed for Paris alignment and is considered aligned to the policies set out in the Climate Bank Roadmap, notably in terms of the development and production of sustainable biomaterials, table E (Bioeconomy)

EIB Paris Alignment for Counterparties (PATH) Framework

The counterparty AMSilk is in scope (Corporate) and screened out of the PATH framework because it is not considered as high emitting or high vulnerability.

Public Consultation and Stakeholder Engagement

Depending on the EIA screening decision, a public consultation might be organised if an EIA is required, in line with the regulatory requirements. The Promoter and the site owner, Indorama Ventures Bohemia, have already engaged with local and regional authorities in relation to the Project.

Other Environmental and Social Aspects

The Promoter, AMSilk holds the ISO certification ISO 9001:2015 and the AMSilk spider silk yarns obtained an OEKO-TEX STANDARD 100, this is a safety certification proving that the yarns have passed tests for harmful substances.
Indorama Ventures Bohemia, the owner of the site where the CAPEX investments will take place, holds ISO certifications 90001:2015, 14001:2015, 50001:2018, 45001:2018 and 22000:2018.

The Project supports the scale up of an innovative start-up, which will generate employment opportunities.

Conclusions and Recommendations

Sustainability proofing conclusion

Due to the characteristics of the financial product (venture debt) a simplified sustainability proofing was carried out and it was concluded that the Promotor has appropriate environmental, climate and social risk management procedures in place.

Disbursement conditions

For the CAPEX investments in Lovosice, Czech Republic the Promoter shall provide to the Bank:

- A copy of the screening decision (if required) issued by the competent authority.
- A copy of the Environmental permitting issued by the competent authority.

Undertakings

The Promoter shall:

- If the Project will be required to perform a full EIA, provide to the Bank a copy of the Environmental impact Report, as soon as available, for the CAPEX investments in Lovosice, Czech Republic.

During the course of the Project implementation, notify the Bank about any subsequent change/modification/extension of the Project that could trigger an EIA-IED permitting process, following EIA Directive 2011/92/EC as amended by Directive 2014/52/EU, and submit the relevant assessment reports and permits to the satisfaction of the Bank.

Subject to the above, the Project is acceptable for Bank financing in environmental and social term