



Luxembourg, July 2022

Public

Environmental and Social Data Sheet

Overview

Project Name:	GEN3 PRODUCTION PLATFORM (EDP)
Project Number:	2021-0712
Country:	Netherlands
Project Description:	Installation and operation of machines for the production of a novel silicon anode material, to be used in the manufacturing of advanced lithium-ion battery cells. The project is needed to run large-scale qualifications with OEMs and battery manufacturers, and to demonstrate serial production at scale. The project will be implemented by an innovative start-up that invented and developed the new silicon anode technology. The new product will enable significantly increased energy density in lithium-ion batteries. The start-up has demonstrated production of its anode material at promising specifications in limited volumes at pilot plant scale. It now needs to develop and install a set of larger machines to demonstrate the first-of-its-kind production of the anode material at industrial scale. The machines will be installed in phases. The project is critical to reduce the time-to-market of this new product.
EIA required:	no
Invest EU sustainability proofing required	no
Project included in Carbon Footprint Exercise ¹ :	no

Environmental and Social Assessment

Environmental Assessment

The project concerns the installation and operation of innovative machines for the production of a novel silicon anode material. This anode material will be subsequently used in the manufacturing of high-tech rechargeable lithium-ion batteries primarily dedicated to e-flight, smart devices, longer range EV's, and renewable energy storage applications.

The process uses monosilane gas (SiH₄). Because monosilane gas is pyrophoric, its handling and storage requires specific safety standards and protocols. Monosilane is a common basic feedstock in the solar photovoltaic industry and others, and proper safety codes and regulations have been established over many years.

There are no GHG emissions caused by the manufacturing process itself. Electricity is the only form of energy used in the manufacturing process, which does not entail any heating nor drying

¹ 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.



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processes (and is thus much more energy efficient than other battery anode manufacturing processes). In addition, the project may have minor use of natural gas for room heating and/or some auxiliary systems, such as burner-scrubber, depending on the adopted solution.

The product will help to significantly improve the performance of batteries in the future, which is expected to accelerate the adoption of e-mobility and renewable energy storage, and thus the mobility and energy transition.

The type of activities to be undertaken by the project are not specifically covered by Annexes I & II of EU Directive 2014/52/EU amending the EIA Directive 2011/92/EU. Nevertheless, the Dutch legislation that transposes the EIA Directive requires a screening decision by the competent authority for such activities. The Annexes are thus not specific to the intended activity of the project, but must be followed as a guideline for the approach to the EIA assessment.

The installation and operation of the machines will take place inside buildings, partly in manufacturing facilities already being used for these activities, with no required modifications, and are not expected to have a significant environmental impact on the surroundings. More precisely, the project includes ramping up innovative manufacturing process machines within an existing and permitted facility, followed by installation of machines in a new location, still to be selected. The sites are located within existing industrial zones that already host similar activities. The project will not impact on any nature protection sites. The existing facility is covered by a screening-out decision and the relevant permits. The factory building with its utility connections (electricity, district heat, water and waste water) already existed before the project; the promoter rents the building without applying any significant modifications to it. Regarding the planned new facility, the promoter will apply for the screening decision and permits in due time.

Climate Assessment

The project's manufacturing capacities are small. According to a Life Cycle Assessment completed by Asplan Viak on behalf of the promoter in December 2020, the annual absolute CO₂ emissions of the project in a standard year of operation are estimated at 16.8 kt CO₂ eq. The project introduces a much more energy efficient production process, significantly reducing the CO₂ footprint of the current state-of-the-art anode manufacturing process. The project falls below the 20kt CO₂ eq. threshold defined for the Carbon Footprint Exercise.

The product enables higher battery performance, which in turn enables product innovation for a range of European industries, from e-flight, to smart devices, consumer electronics, cheaper & longer range EVs and renewable energy storage. The scaling up is expected to bring cost down to levels that are competitive in the automotive sector. The project therefore supports the acceleration of the transition to e-mobility and renewable energy.

The project's climate risks have been assessed as minimal. Climate change adaptation does not apply for this project. The project is therefore considered to be 'Paris aligned', both against low carbon and resilience goals, and is in line with the EIB Group Climate Bank Roadmap 2021-2025.

Social Assessment

Environmental and social sustainability is high on the company's agenda. Being a start-up, still in capacity expansion phase through the adding of lines, the company is today not ISO certified, but works already in accordance with ISO 14001 and OHSAS 18001.



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Public Consultation and Stakeholder Engagement

Not applicable. The first part of the project is already screened out without the need for a public consultation and stakeholder engagement. The project is small, and its production sites are/will be located in buildings within existing industrial zones that already host similar activities.

Other Environmental and Social Aspects

The promoter intends to bypass Chinese silicon suppliers and source the monosilane from US or European suppliers, thereby avoiding the Xinjiang supply chain issue.

The anodes are key components for high performance batteries, needed to enable the deployment of electric vehicles for the transition to e-mobility, and the deployment of energy storage systems for the energy transition. The project thus indirectly supports the EU and global decarbonisation scenarios, and fulfils the Paris Alignment criteria.

In addition, the process represents a leapfrog technology for the manufacturing of anodes, and is much more energy and resource efficient than the current conventional anode process.

Conclusions and Recommendations

The project is small, and its overall impact is not significant, taking into consideration the Environment Climate and Social impacts, the mitigation measures being implemented, the capacity of the promoter to implement them, any residual impacts, and the project's overall positive benefits (including social benefit).

A significant proportion of the products resulting from the project will help accelerate the deployment of electric vehicles and energy storage systems, and thereby support the decarbonisation of transport and energy. In addition, the process represents a leapfrog technology for the manufacturing of anodes, and is much more resources and energy efficient than the conventional anode process.

Overall, and with regard to the contractual conditions below, the project is acceptable for EIB financing in environmental and social terms.

Disbursement condition:

Regarding the new facility, the disbursement of the corresponding tranche is subject to the reception of the decision of the competent authority that this sub-project is screened out, i.e. no EIA is required. Should an EIA be required after all, the disbursement is subject to the reception of the EIA decision.