Luxembourg, 25 May 2022

Environmental and Social Data Sheet

Overview

Project Name:	ADVANCED SEMICONDUCTOR SILICON WAFER DEVELOPMENT
Project Number:	2021-0652
Country:	Germany
Project Description:	The project relates to the RDI activities for the development of the next generation of hyper pure silicon wafers and ingots for the semiconductor industry as well as the adaptation of the promoter's state-of-the-art ingot production for most advanced wafer types. The project includes RDI activities in the promoter's RDI locations in Germany as well as the extension of the promoter's production facility in Freiberg, Germany, a cohesion region.
EIA required:	No
Project included in Carbon Footprint Exercise[1]:	Yes

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

Environmental and Social Assessment

Environmental Assessment

The project consists of two main components: RDI activities for the development hyper pure silicon wafers and the adaptation and extension of the promoter's existing production facility to allow the manufacturing of more complex wafers without increasing the overall production capacity. The RDI activities will take place mainly inside existing facilities already being used for similar activities and are not mentioned in any Annex of the EU Directive.

In respect to the extension of the existing facility, semiconductor wafer manufacturing facilities are not specifically mentioned in the EU Directive 2014/52/EU amending the EIA Directive 2011/92/EU on Environmental Impact Assessment (EIA), though Annex II of the Directive in relation to "Industrial estate development projects" covers the project. The proposed investment programme includes clean room expansions for the manufacturing wafers within existing manufacturing facilities as well as the construction and fit out of a new ingot manufacturing building adjacent to the existing building. All of these manufacturing related investments will be performed within existing industrial sites already used for similar activities. The promoter confirmed that the Competent Authority while issuing the relevant building permits has requested no EIA.

The implementation of the project is expected to increase the facility's water needs by around 20% compared to the existing needs. The water is mainly used as process water and for cooling purposes and nearly 70% of the water used will be discharged either through direct or indirect discharge.

[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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EIB Carbon Footprint Exercise

The estimated annual absolute CO_2 emissions of project in a standard year of operation amount to 23.7 kt CO_2 eq. The main contributors to the CO_2 emissions is the use of electricity for the operation of the ingot manufacturing process and cooling/heating of the manufacturing equipment.

The estimated annual relative CO_2 emissions amount to zero as the promoter will make use of the most advanced equipment, abatement systems and energy efficiency tools.

For the annual accounting purposes of the EIB Carbon Footprint, the project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of project cost.

Other Environmental and Social Aspects

The sites covered for the manufacturing component of the project falls under the Seveso directive as upper tier establishment and has the relevant emergency plans and risk management in place.

The project includes some measures to improve the energy efficiency of the manufacturing process, such as heat recovery via heat pump to convert process heat to building heating amongst others.

The promoter's reporting on corporate responsibility issues is based on the CSR-RUG and in accordance with the reporting standards of the Global Reporting Initiative (GRI), the Sustainable Development Goals and the principles of the United Nations Global Compact.

The promoter is member of the Responsible Business Alliance (RBA) initiative since 2019 and has launched initiatives related to CO_2 emission reductions, water management and pollution prevention and control. Regarding circular economy, the promoter has launched initiatives to increase reusing and recycling within the company, particularly with regard to primary packaging for wafers and secondary packaging used for transportation.

Semiconductors are the basic components for the digitalisation of all sectors of the economy. They are therefore essential to enable the deployment of low carbon and decarbonisation scenarios leading to significant sustainability benefits across the whole economy and fulfil the Paris Alignment criteria as set out in the EIB's CBR (Climate Bank Roadmap).

The availability of advanced wafers will also support the development of more powerful and more energy efficient solutions and applications aiming at CO_2 emission reduction, energy efficiency, etc., such as the smart grid or electric vehicles.

Conclusions and Recommendations

As the project covers RDI activities and construction works within or close to the existing facilities, no significant impact is expected on the environment.

Overall, the project is eligible for EIB financing in environmental and social terms