

Environmental and Social Data Sheet

Overview

Project Name: Sisecam Bulgaria
Project Number: 20110404
Country: Bulgaria
Project Description: Capacity increase of the Bulgarian glass plant of the Turkish company Sisecam AS with a) a second floatglass line of 240 kt/a capacity and b) a second glass tableware line of 50 kt/a capacity.

EIA: Required YES

The two NTS for the floatglass line and the tableware line will be put on the EIB website.

Carbon Footprint Exercise:

Project included in Carbon Footprint Exercise¹: YES

Project emissions are estimated to exceed the absolute (gross) emissions thresholds of 100,000 t CO₂e/year of the EIB Carbon Footprint Pilot exercise. Details are provided in section: "Carbon Footprint"

Summary of Environmental and Social Assessment, including key issues and overall conclusion and recommendation

Production of glass falls under Annexe II, 5(d) of Directive 97/11. Two separate EIAs have been established covering a) the second float glass line, the future coating and lamination lines and b) the second glass tableware line. The project is located within the perimeter of an existing industrial plant. Natura 2000 areas are not concerned. The public has been consulted and the competent authority has approved both EIAs and the execution of the project.

The main emission will be CO₂, the amount of which will be in line with best industry practice. Natural gas will be used as combustion fuel, the second tableware furnace will be operated with an oxy-fuel burner and energy efficiency measures will be applied as per industry standard. Other emissions and effluents after treatment are within statutory limits and are considered low.

Environmental and Social Assessment

Environmental Impact and Mitigation

With regard to environmental matters, the project complies with EU and national legislation. Respective EIAs have been established and accepted and the execution of the project has been approved.

The main **environmental** impacts, mitigating measures and comments are as follows:

- The existing plant has certifications of: ISO 14001, OHSAS 18001 and ISO 9001. It is intended to extend those also for the project.
- The total plant has already an environmental management structure and will have two environmental engineers.
- The project complies with BAT as per the reference document for the glass manufacturing industry (BREF 2001).
- All lines have off-gas filters according to European norms: electrostatic dust precipitation, followed by selective catalytic NO_x and SO_x reduction.

¹ Only projects that meet the scope of the Pilot Exercise, as defined in the EIB draft Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: above 100,000 tons CO₂e/year absolute (gross) or 20,000 tons CO₂e/year relative (net) – both increases and savings.

- The existing plants and the project comply with national limit values for emissions and effluents.
- HAZOP studies and emergency plans have been established.
- The existing plant and the project use gas as a combustion fuel.
- The plant has two industrial waste water treatment plants, one for the tableware section and one for the mirror line. They are of sufficient capacity to treat also the waste water of the project.
- The second tableware glass line will use an oxy-fuel burner, thus reducing both gas consumption and NO_x emissions.
- For quality reasons, there is only internal recycling of glass cullets.
- The project will reduce product transportation, reducing deliveries from Turkey to mainly south-east Europe.

A second phase of the intended capacity expansion (projected for 2013/2014, but not being part of the project) will produce value added products with a coating line and a lamination line. It also will comprise an additional off-gas energy recovery system for both floatglass lines with waste heat boilers and a steam turbine with an electricity generation capacity of some 5 MWe.

Biodiversity:

- None, the project is located with the perimeter of an existing industrial site

Carbon Footprint

- The estimated absolute emissions of the project in a standard year of operation amount to 183 kt/a
- The estimated relative emissions of the project in a standard year of operation amount to minus 2 kt/a
- These above figures include scope 1 and scope 2 emissions. Electricity generation related CO₂ emissions use the European average grid factor of 0.35 t CO₂/MWh.
- Supplying a fast expanding market, the project will meet new market demand, which would otherwise be met by glass produced elsewhere involving the construction of facilities with the same technologies and with a similar level of emissions. In the case of the floatglass line, the ETS-BAT benchmark value as per the 2008 benchmark study (Fraunhofer 2009) is therefore taken as baseline. This amounts to 0.606 t CO₂/t glass (scope 1 only). In the case of the glass tableware line, no such benchmark value exists. From examples given, such benchmark value has been assumed to amount to 0.7 t CO₂/t glass
- The loan amount requested from EIB (80 M EUR) will cover some 48% of the expected project cost of 167.8 M EUR. Therefore the EIB pro-rated absolute and relative emissions amount to some 87 and minus 1 kt CO₂/a respectively.

Other Climate change relevant aspects:

- The project will use the high temperature off-gas energy efficiently in recuperators, as is standard practice in this type of installations.
- The project will use the low temperature off-gas energy efficiently with heat exchangers and economizers for heating purposes, as is currently already the case with the existing plants.
- The second tableware glass line will use an oxy-fuel burner. This will reduce its gas consumption by some 10% compared to the existing glass tableware line.
- The *indirect* insulation effect of the flat glass produced and the respective reduction in CO₂ emissions during a single year (not considered in the carbon footprint calculation) amounts to a multiple of the CO₂ emissions used for the respective

production. Glass produced in the project facilities and used for the renovation and upgrade of thermally inefficient windows have shown a multiple of 61 over a window's lifetime. This equates to a CO₂ pay-back time of about 4 months.

Social Assessment

- No involuntary resettlement required
- No vulnerable groups affected
- Labour standards are respected: efficient labour unions are existing, no forced nor child labour.
- Occupational health and safety: no issue has been identified. Personal protection equipment is used throughout the plant.
- Overall, the existing plant is already the largest foreign direct investment in Bulgaria and the local population is acknowledging the job opportunities provided in view of the unemployment rate in the project, which is well above the national average.

Public Consultation and Stakeholder Engagement

- Public consultation has been carried out according to the respective law. The point of most interest amongst the population concerned the creation of jobs.

Other Environmental and Social Aspects

- Respect of the environmental management and mitigation measures as described in the approvals of the Ministry of Environment and Water of 3.7.2008 (floatglass line) and 9.8.2011 (tableware line) will form a contractual condition.