















## Additional Norwegian requirements

### Greenhouse gas emission from the use of electricity in the manufacturing phase

National production mix with import, on low voltage (included production of transmission lines, in addition to direct emissions and losses in grid) is applied for electricity in the manufacturing process.

Data source	Process	Amount	Unit
<b>Norway:</b> (ingot and wafer production), Ecoinvent v3.6	Medium voltage, NO	0,025	kg CO <sub>2</sub> -ekv/kWh
<b>USA:</b> (solar grade silicon production), Ecoinvent v3.6	Medium voltage, US	0,654	kg CO <sub>2</sub> -ekv/kWh
<b>Germany:</b> (solar grade silicon production), Ecoinvent v3.6	Medium voltage, DE	0,640	kg CO <sub>2</sub> -ekv/kWh

### Dangerous substances

- The product contains no substances given by the REACH Candidate list or the Norwegian priority list
- The product contains substances given by the REACH Candidate list or the Norwegian priority list that are less than 0,1 % by weight.
- The product contain dangerous substances, more then 0,1% by weight, given by the REACH Candidate List or the Norwegian Priority list, see table.
- The product contains no substances given by the REACH Candidate list or the Norwegian priority list. The product is classified as hazardous waste (Avfallsforkiften, Annex III), see table.

### Transport

Transport from production site to market according to scenario A4:

A4a: Transport to Shanghai, China

A4b: Transport to Europe, Germany

A4c: Transport to Kuala Lumpur, Malaysia

Assumptions for transport are described in detail in scenario description for A4, page 4.

### Indoor environment




Not relevant, product is not used in indoor environment.

### Carbon footprint

A specific Carbon footprint declaration is not provided in this declaration. For the carbon footprint value of the product, please see environmental impacts result parameter "GWP".

## Bibliography

NS-EN ISO 14025:2010	<i>Environmental labels and declarations - Type III environmental declarations - Principles and procedures</i>
NS-EN ISO 14044:2006	<i>Environmental management - Life cycle assessment - Requirements and guidelines</i>
NS-EN 15804:2012+A1:2013	<i>Sustainability of construction works - Environmental product declaration - Core rules for the product category of construction products</i>
ISO 21930:2007	<i>Sustainability in building construction - Environmental declaration of building products</i>
Ecoinvent v3.6	<i>Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.</i> <a href="https://www.ecoinvent.org/">https://www.ecoinvent.org/</a>
Simapro	<i>LCA software, developed by PRé Sustainability</i> <a href="https://simapro.com/">https://simapro.com/</a>
NPCR Part A, 2017	<i>The Norwegian EPD Foundation, 07.04.2017. Construction Products and Services.</i>
NPCR 029, v1.1, Part B	<i>NPCR 029, v1.1, Part B for photovoltaic modules used in the building and construction industry, including production of cell, wafer, ingot block, solar grade silicon, solar substrates, solar superstrates and other solar grade semiconductor materials</i>
Andvik, Oddbjørn Dahlstrøm et al. (2020)	<i>LCA Rapport: NorSun mono-crystalline silicon wafer.</i>

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