

Ingots and wafer production in Europe and Access to polysilicon

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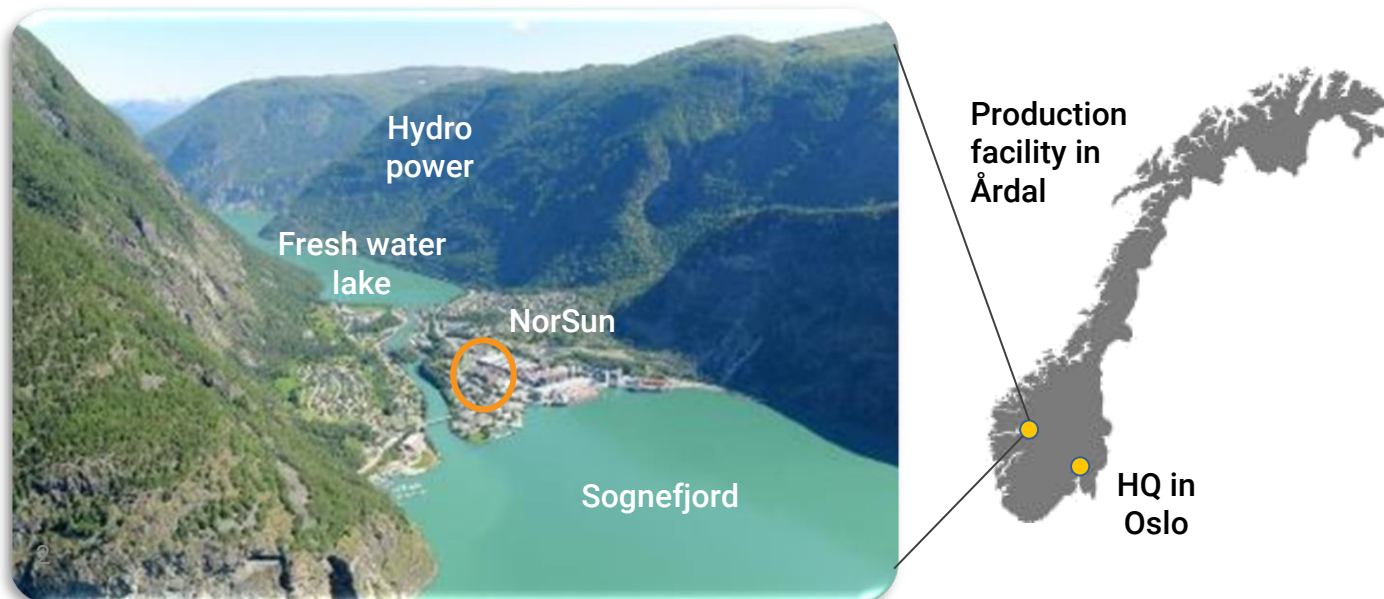
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NorSun is the leading ingot and wafer manufacturer in Europe

Company overview

- Production of premium monocrystalline silicon ingots and wafers
- Long-time supplier to tier-1 solar cell manufacturers
- Uniquely low CO₂ footprint based on hydropower and natural cooling water
- 230 employees

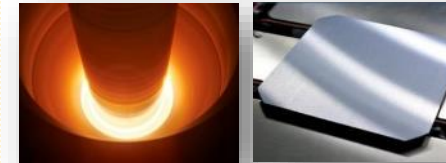


NorSun solar value chain position

Polysilicon



Ingots & Wafers



Premium products:

- Highest efficiency
- Lowest CO₂ footprint
- Extensive track record

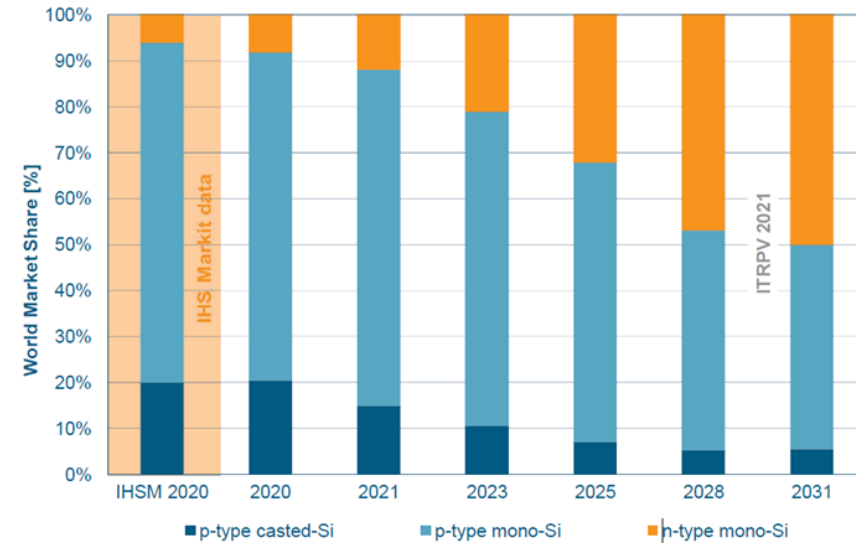
Cells & modules



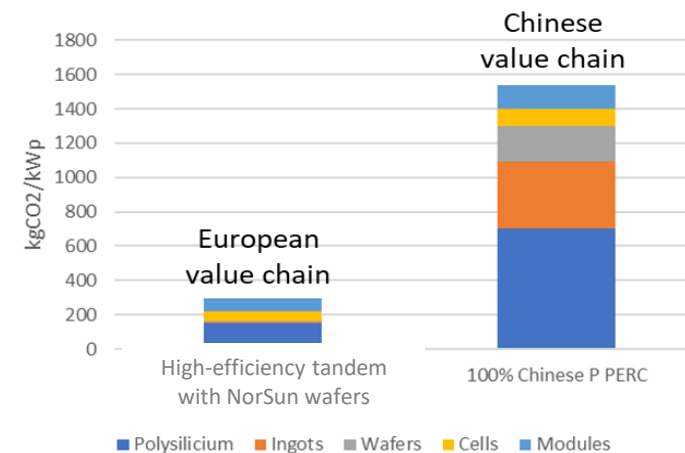
NorSun uniquely positioned in fastest growing segments

- ⦿ 14 years of expertise on high-efficiency n-type material
 - ⦿ Basis for next generation PV technology
- ⦿ Only significant non-Asian wafer manufacturer
 - ⦿ Could play a key role in re-establishing local manufacturing sites in Europe and the US
 - ⦿ Full traceability and no exposure to forced labor
- ⦿ Uniquely low CO₂ footprint, certified
 - ⦿ French CO₂ market
 - ⦿ Korean CO₂ market
 - ⦿ Environmental Product Declaration (EPD) markets
- ⦿ Continued growth of low CO₂ markets
 - ⦿ France and South Korea
 - ⦿ Europe EPD/EcoDesign markets
 - ⦿ USA

N-type gaining market share



Low Carbon Footprint



Expansion to 4-5 GW

will give NorSun scale

- Required to grow with customers and market
- Access to land available in Årdal
- Pre-project ongoing
- Project start in 2022
- Start ramp-up in 2023/24



Based on own technology and innovation

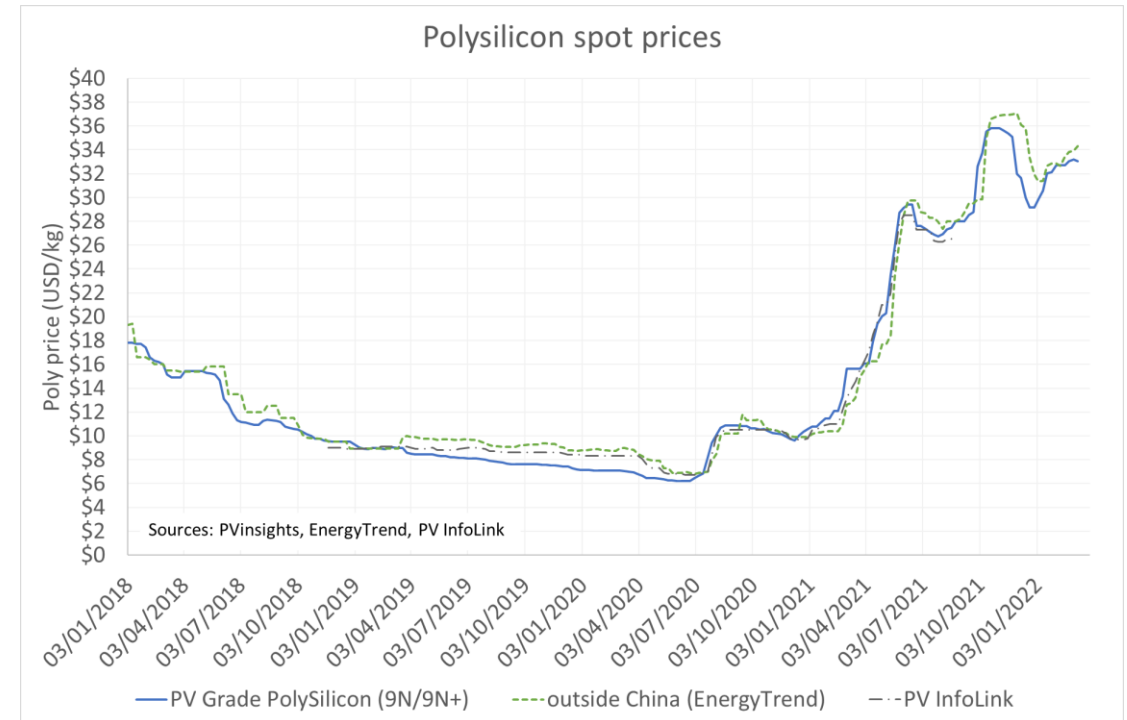
- Highest ingot productivity – highest material quality – safe operations
- Processing of ingots into wafers by use of latest diamond wire technology
- High degree of automation enabling reduced labour cost

Competitive advantages

- Highest quality
- Clean products
 - Uniquely low environmental/carbon footprint
 - High social standards, no forced labour
- Western/European value chain

Access to polysilicon

- 🔗 Tight poly market globally => very high prices
- 🔗 Fast growing demand
- 🔗 Polysilicon capacity additions in the pipeline, but mainly in China
 - 🔗 High carbon footprint
 - 🔗 Potential issue with social standards and forced labour
 - 🔗 Question mark about timing and quality
 - 🔗 High quality poly required for transition to n-type/high-efficiency
 - 🔗 => High quality clean poly expected to remain short in supply => high prices
- 🔗 Chinese producers buying European/Western poly on long-term contracts with high deposits
 - 🔗 Crowding out potential European/Western ingot and wafer producers
 - 🔗 Competition on financing capabilities



- 🔗 Innovative alternative polysilicon such as REC Solar Norway producing polysilicon based on silicon kerf (silicon waste from sawing process)
 - 🔗 Circular process
 - 🔗 Very low carbon footprint
 - 🔗 Local value chain => short lead-time, transport, working capital

What we need

- 🏠 More poly capacity in European/Western countries to build local value chains
- 🏠 Incentivize environmental criteria including low carbon footprint
 - 🏠 French tender system, EcoDesign
- 🏠 Incentivize social standards
 - 🏠 Potentially through sustainability criteria in EcoDesign
- 🏠 Capex and Opex financial incentives for manufacturing in Europe
 - 🏠 Ref. China, India, USA
 - 🏠 Recognize PV manufacturing as strategically important (=> IPCEI)
- 🏠 Improve financing facilities
 - 🏠 Access to attractive loans, credit guarantees, ...
- 🏠 Support for innovative alternatives

Our vision

is a sustainable future
with clean energy for all.

Our mission

is to be a leading
manufacturer of silicon
ingots and wafers for
premium solar cells,
through innovative
technology, sustainable
production and
operational excellence.

Our values

Dedication,
Innovation,
Inclusivity and
Integrity

"It simply feels good
to use hydro power
to produce solar cell
materials."