Elkem Biocarbon Konferansen Skog

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Sustainability is an integrated part of our value chain: From raw materials through the production to end products

Low cost sustainable input factors


Quartz


Coal


Biocarbon


Power

High temperature/chemical production processes


Silicones


Silicon, ferrosilicon, foundry products and microsilica


Carbon solutions

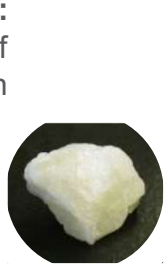
Examples of high value applications and markets

Silicon is included in the EU's list of critical raw materials and is considered a critical "transition element" during the EU's energy transformation under Green Deal / Fit for 55

Carbon is necessary chemical component for Si-production
- any burned carbon constitutes a pure loss to the process

Coal , coke, charcoal and woodchips
The source of carbon as
a ***chemical*** component

Quartz:
The source of
silicon



Electric power:
The source of
energy to the
process

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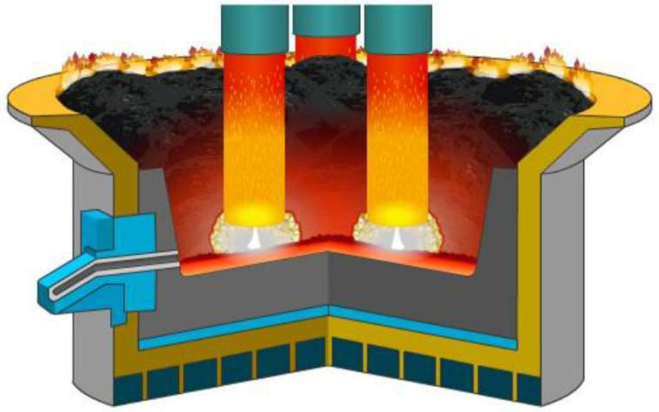
Unit B.2 – ETS (II): Implementation, Policy Support & ETS Registry

Guidance Document

Biomass issues in the EU ETS

MRR Guidance document No. 3,
Updated Version, 17 October 2022



The main process: $SiO_2 + C = Si + CO_2$

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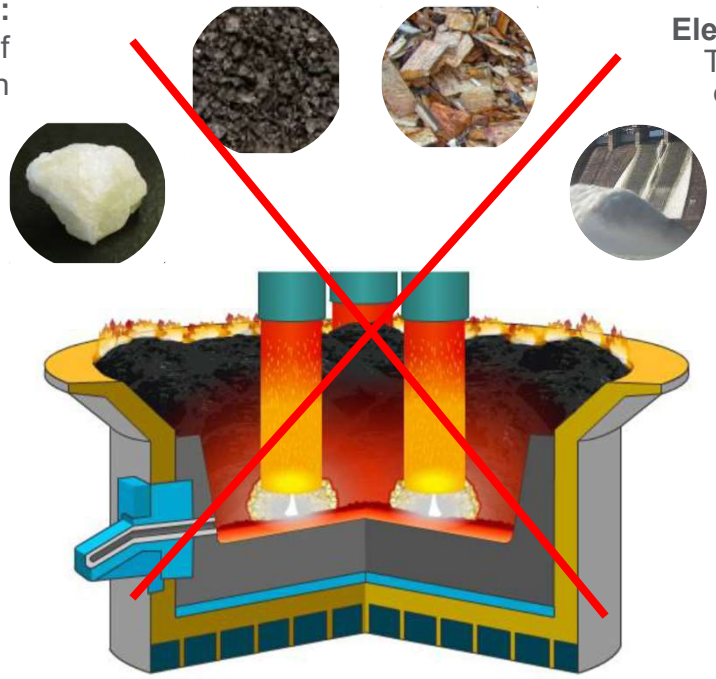

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Biocarbon essential to achieve our climate goals

Elkem will reduce fossil CO_2 emissions in line with the Paris agreement: We will contribute to limiting long-term temperature increase to well below 2°C.

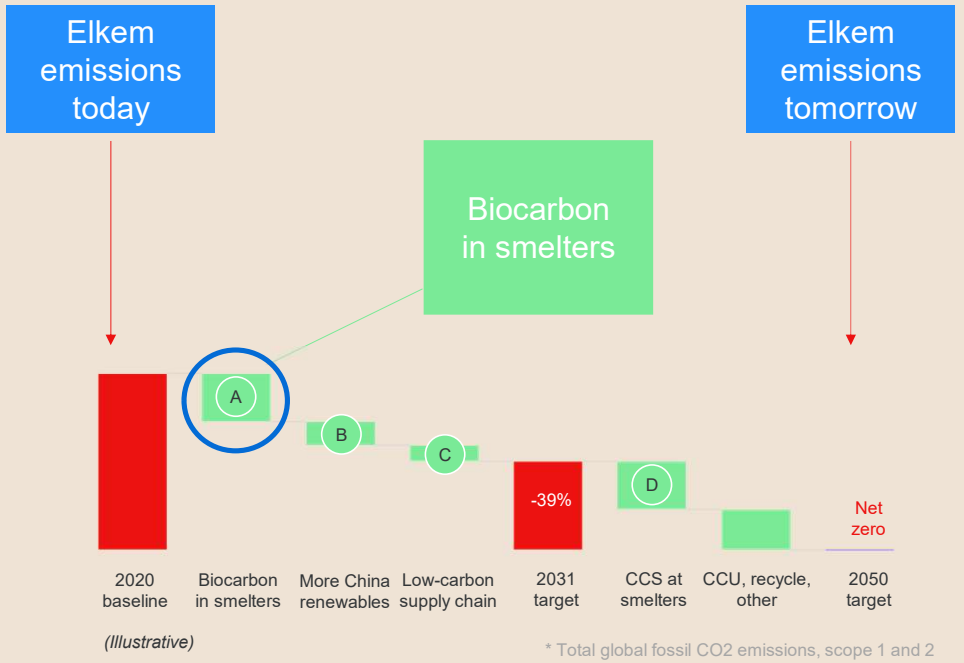
By 2031:

- Reducing absolute emissions* by **28%** from 2020-2031
- Delivering **39%** improvement in product footprint

By 2050:

- Achieving fully carbon neutral production (zero fossil emissions) globally

To reach 2031 target – require up to 250 000 MT new biocarbons



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* Total global fossil CO2 emissions, scope 1 and 2

High future demand requires multiple biocarbon projects and predictable raw materials

To reach the ambitions climate targets, Elkem will need additional 200-250 000 MT of biocarbon within 2031

- No biocarbon ready for permanent industrial scale use today
  – development of technology for new product and process
- Raw material access and logistics limit size of projects
  – multiple projects and factories necessary to meet demand
- Long term, predictable and competitive raw material

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Developing partners is important for Elkem

- with long term access to competitive raw materials

Elkem cooperating with projects internationally at different stages

- Elkem own technology development constructing pilot industrial scale in Canada
- Continuous evaluation of projects world-wide
- Actively supporting value creation for local forestry and recycling
- Elkem cooperation with multiple partners to establish biocarbon production

Target to accelerate access to long term and competitive resources

- Elkem able to provide long term security for offtake – predictability for all
- Support schemes related to extraction and handling of biobased side- and waste streams from forestry, sawmills, recycling and other

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Biocarbon for Si is optimal use of biobased materials

Biocarbon for Si favorable in most areas:

Key considerations:	Value creation	GHG reduction	Energy efficiency	CCU/CCS opportunity	End use
Biocarbon for Si	High	Direct	Surplus	Yes	Energy efficiency products required for Green Shift

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Delivering your potential