

Salzgitter AG's contribution to the consultation on the establishment the Innovation Fund

We all have a common goal: Securing the global competitiveness of our industry in Europe in the context of the ambitious EU carbon emission reduction targets 2030 / 2050. Only urgently needed breakthrough technologies can deliver emissions reductions at the rate necessary to achieve EU climate objectives.

Our project **SALCOS** can meet both - maintaining steel production in Europe and meeting the reduction targets, if we can build on a stable framework facilitating the economic feasibility of breakthrough projects.

Achieving this goal is a truly Herculean task which cannot be shouldered by the industry alone. It is an effort that must be borne by both the industry and the authorities, and more generally by society as a whole.

In this context, we welcome the Innovation Fund (IF) acknowledging the necessity of public funding for the considerable investment needed. To be truly effective the IF should follow these core principles:

- The focus should be on abatement technologies in industry rather than in the power sector.
- Funding mechanisms should better promote risk sharing.
- The timeline of funding has to be shorter and more reliable.
- The IF must be combinable with other funding mechanisms on EU or national level.

Our Basic Concept – Carbon Direct Avoidance

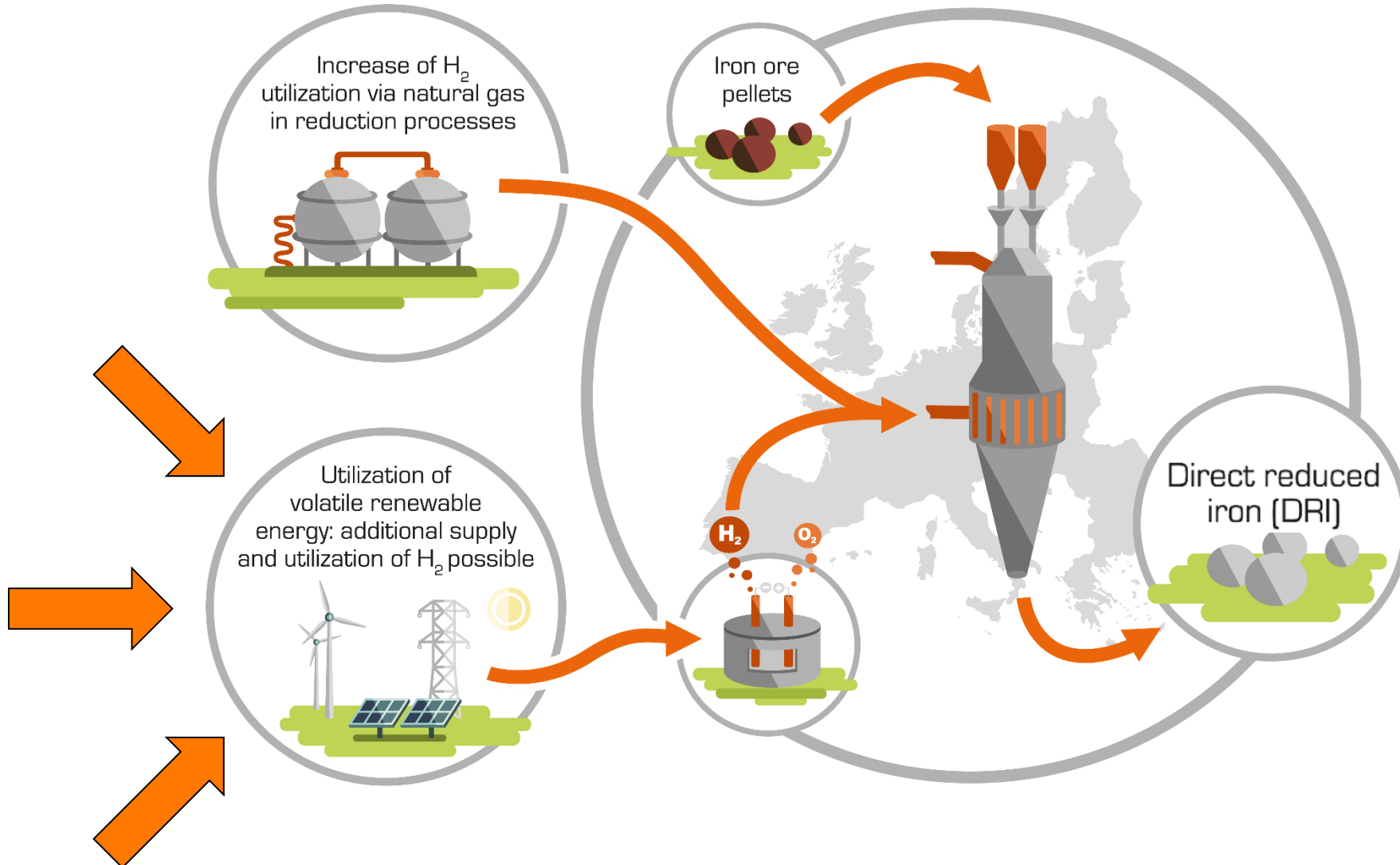
The core of the technical approach chosen for **SALCOS** (after surveying also several other approaches like e.g. CCU) is the **avoidance of CO₂ formation** in future steelmaking processes to a very large extend:

- Through **replacement of carbon by** (electrolytically produced) **hydrogen** as reductant in ironmaking
→ indirect use of electricity
- By **implementation of electric arc furnace (EAF)** based primary steelmaking
→ direct use of electricity

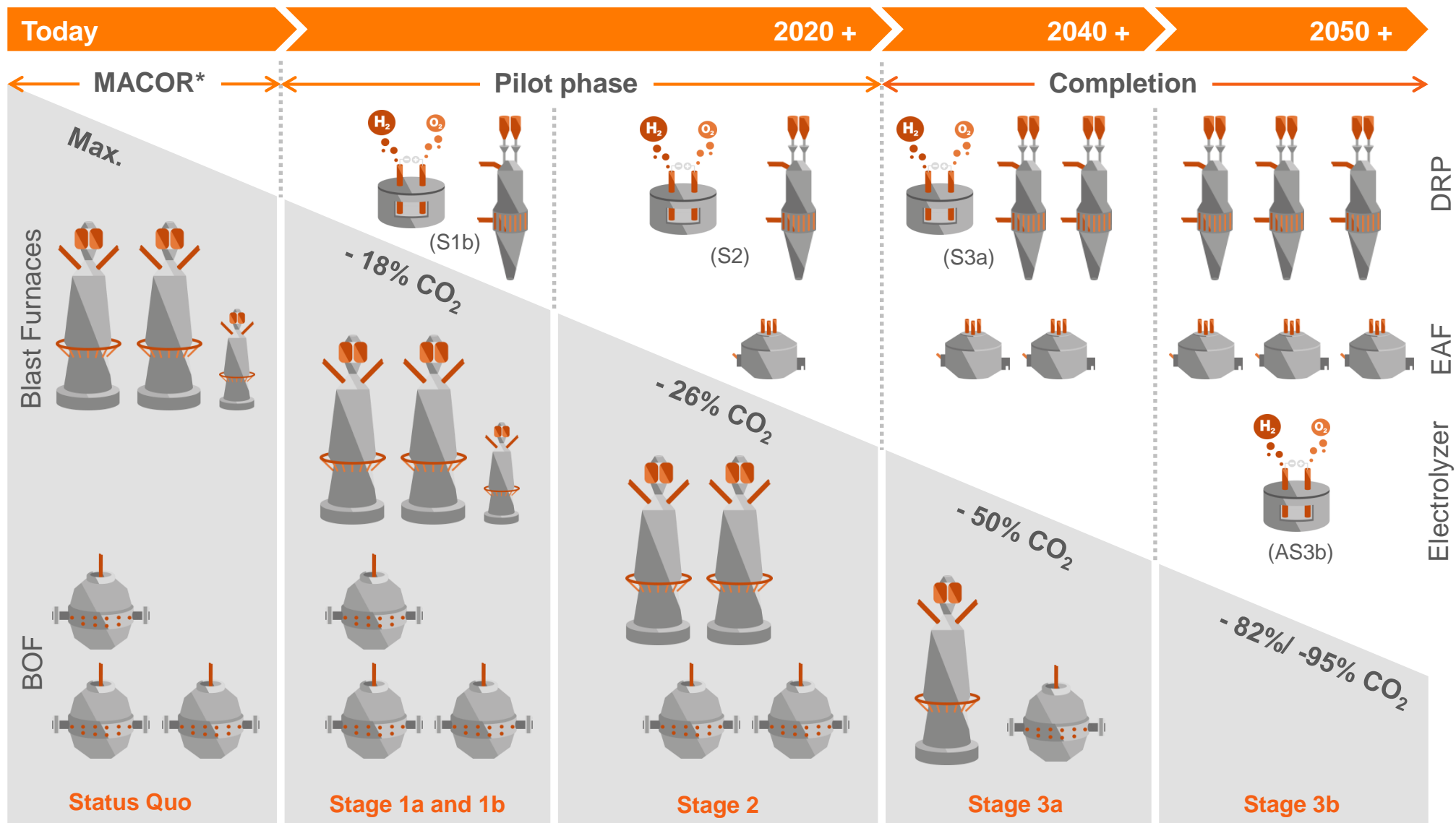
As we address the problem of CO₂ formation by the root and thus differ significantly from “end-of-pipe” approaches like e.g. CCS and CCU, which keep carbon based steelmaking processes largely unchanged, we introduced the term **Carbon Direct Avoidance (CDA)** for our concept.

Carbon Direct Avoidance
=
Incremental Electrification of Steelmaking

Electrolytical Hydrogen Input in Direct Reduction Process



Summary: Transformation of Integrated Steelmaking to DRP/EAF Based Steelmaking in Three Stages



*MACOR: Feasibility study for **SALCOS**

SALCOS „Stage 2“

