POHJOIS-
POHJANMAA
COUNCIL OF OULU REGION

BothH_2nia goes Oulu & Raahe 5.–6.5.2022

This is a presentation given at the event $BotH_2nia$ Goes Oulu & Raahe on 5.–6.5.2022.

$BotH_2nia$ is a network of operators interested in hydrogen. The objective of the network is to create a Nordic hydrogen cluster around the Baltic Sea, beginning with the Bothnian Bay. $BotH_2nia$ strengthens the position of the north in the European hydrogen industry!

$BotH_2nia$ invites all businesses, research institutes, investors, municipalities and cities to roll up their sleeves for a greener future.

Please notice that the presentation has been modified to comply with the Accessibility Directive. In case for need the original material, please contact Minna Näsman (minna.nasman@both2nia.com).

SSAB's new Nordic strip production system

Jarmo Lilja, SSAB Europe Oy

Raahe, 6th May 2022

BotH2nia goes Oulu & Raahe

SSAB is a global steel company with a leading position in high-strength steels and related services.

SSAB

SSAB in brief

96 **BILLION SEK**
Revenue in 2021

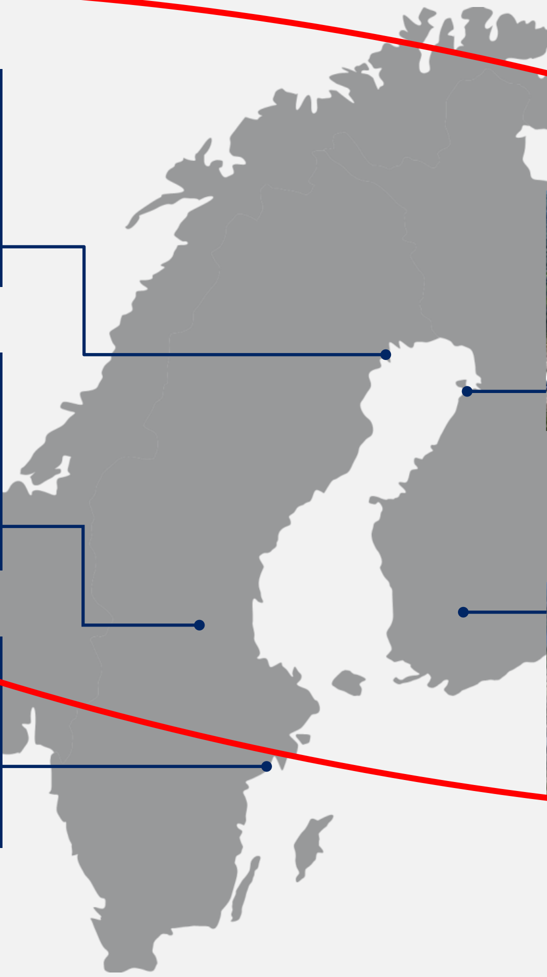
Annual steel production capacity:
8.8 **MILLION TONNES**

Steel making since
1878

14,000
professionals in over 50 countries

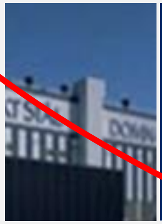
OUR BUSINESSES:
SSAB Special Steels,
SSAB Europe,
SSAB Americas, Tibnor,
Ruukki Construction

Steel production base in the Nordics



Luleå, Sweden

- Established: 1941
- Steel production
- SSAB Europe
- Employees: 1,200



Borlänge, Sweden

- Established: 1878
- Strip products
- SSAB Europe
- Employees: 1,700

Oxelösund, Sweden

- Established: 1913
- Steel production, heavy plates
- SSAB Special Steels
- Employees: 2,300

Raahe, Finland

- Established: 1960
- Steel production, heavy plates and strip products
- SSAB Europe
- Employees: 2,700

Hämeenlinna, Finland

- Established: 1972
- Strip products and tubes
- SSAB Europe
- Employees: 1,000

First in fossil-free steel

SSAB to become fossil-free

1

SSAB to introduce fossil-free steel in the market in 2026

- Launch of a premium product without fossil CO_2 footprint
- This means no fossil CO_2 emissions when producing this product, and a requirement to use fossil-free sponge iron

2

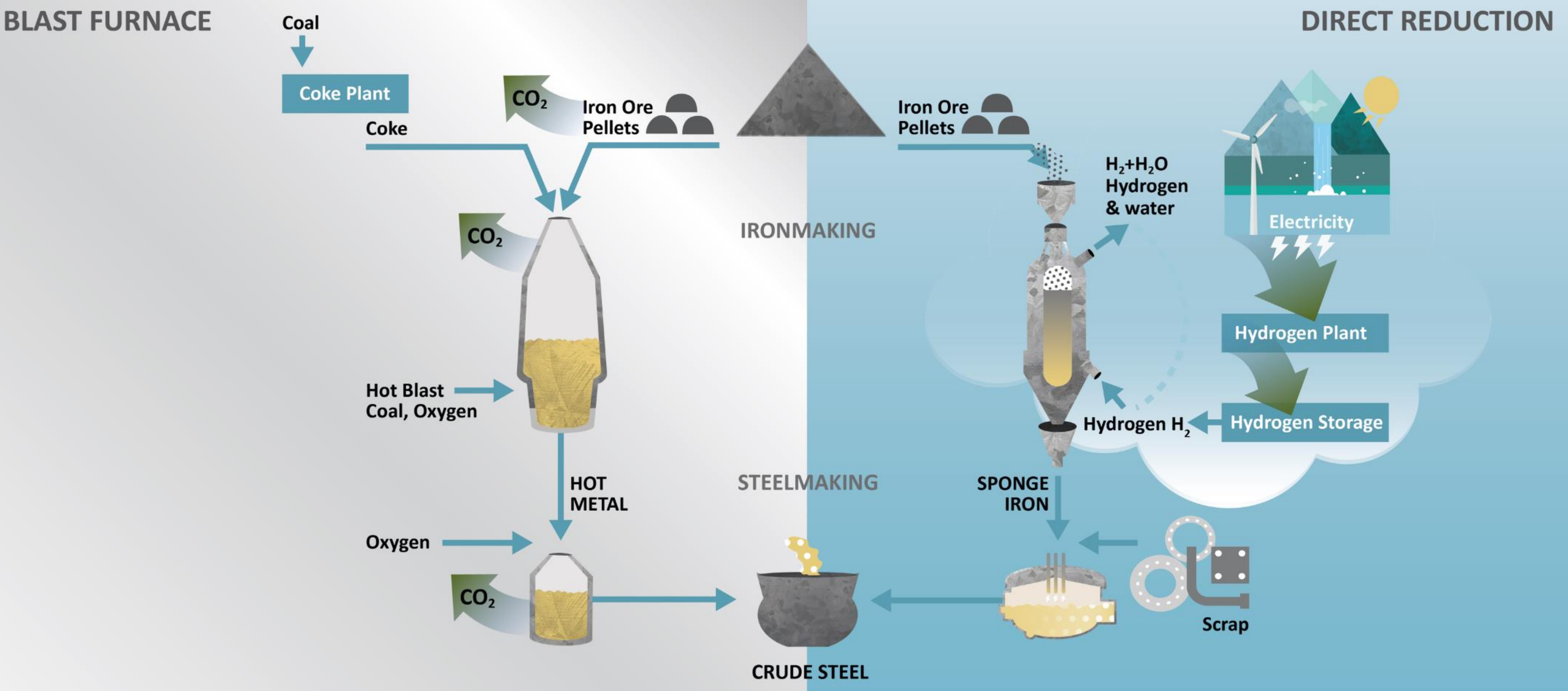
SSAB to have leading sustainability performance; largely fossil-free around 2030

- Largely eliminate carbon dioxide emissions from our own operations in around 2030
- This means almost no CO_2 emissions from our own operations and purchased energy

SSAB

The HYBRIT technology

HYBRIT – Fossil-free steelmaking



HYBRIT would eliminate ~90% of SSAB's total CO_2 emissions

2016-2017
Pre-feasibility Study

2018-2024
Feasibility Study & Pilot plant trials

2026 –
Demonstration Plant

SSAB

SSAB starts up the world's first pilot plant for fossil-free steel

On August 31st 2020, Swedish Prime Minister Stefan Löfven started up the plant together with Isabella Lövin, Minister for Environment and Climate and Deputy Prime Minister

SSAB

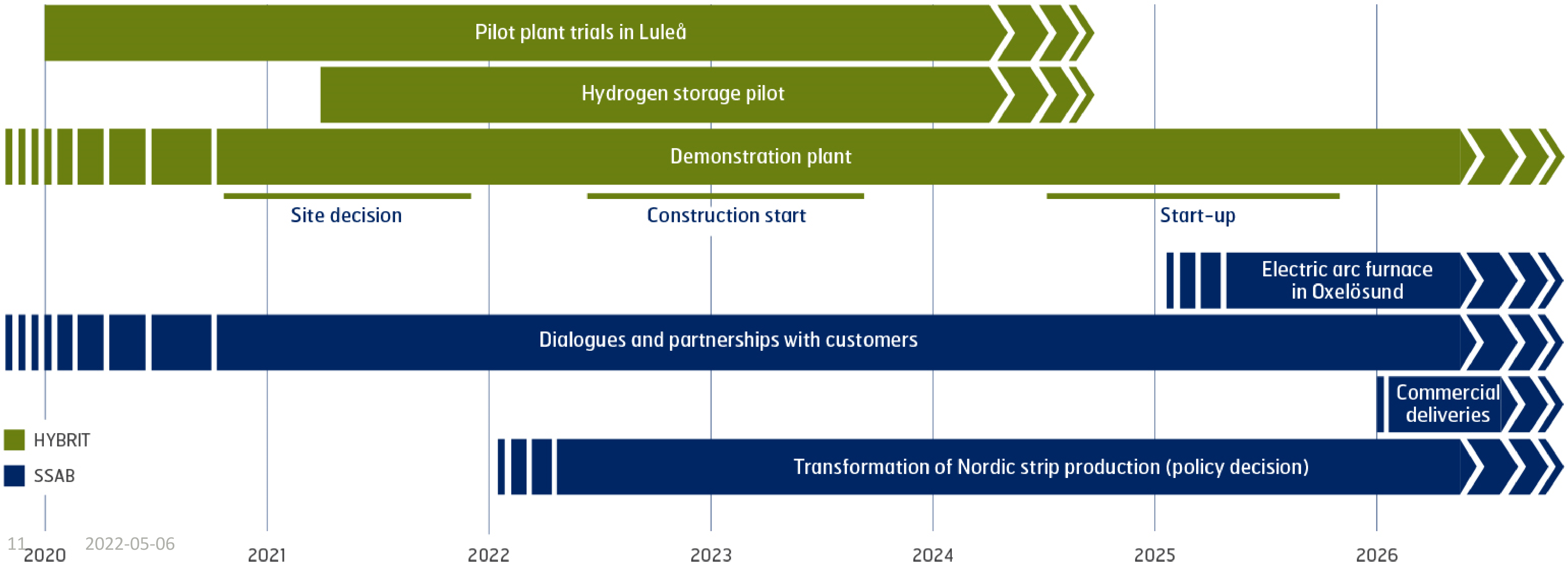
The world's first fossil-free steel delivered to a customer

In July 2021 SSAB produced the world's first fossil-free steel and delivered it to a customer.

SSAB

Timeline for fossil-free production

- First products are planned to reach the market in 2026



Planning for an accelerated transformation of the Nordic strip production system

A broader offering of fossil-free products

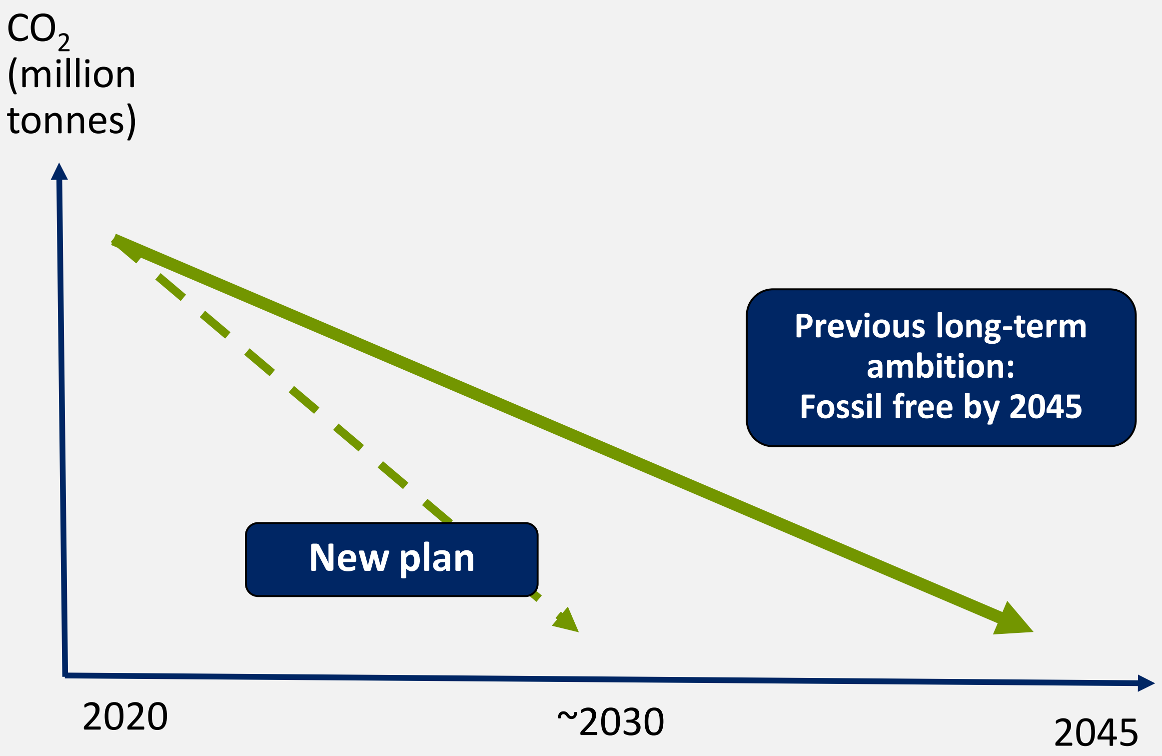
A step change in efficiency and flexibility

- Build **one mini-mill in Luleå and one in Raahe,** close existing blast furnaces
- **Scale of 2.5+ MT each,** in line with current capacity
- Complete **transformation during the next ~10 years,** before next scheduled blast furnace relinings
- **Expand product range** in terms of grades, dimensions and quality, within current specialty and premium strategy
- Capability to run a **flexible load of HBI and recycled scrap**
- **Leverage existing downstream assets** for the new mills (including Borlänge, Hämeenlinna, Tube mills, Tibnor and Ruukki Construction)
- Both mills to be built **fossil-free from start**, including power supply

SSAB

Eliminate CO_2 emissions 15 years earlier than planned

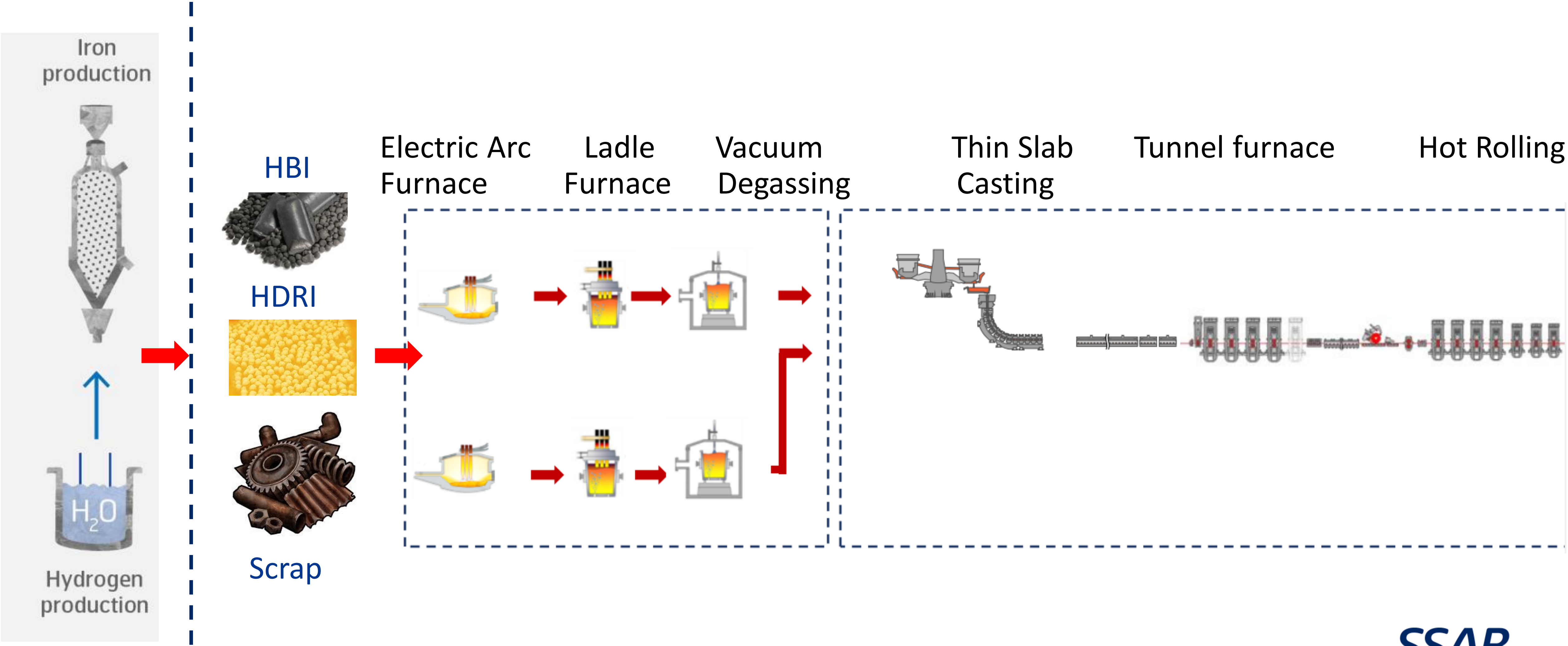
- **Mitigating climate change**
  - Major contribution to climate targets in Sweden and Finland – around 8 million tonnes reduced CO_2 emissions per year
- **Potential of CO_2 cost avoidance of ~SEK 7 bn/year in the beginning of next decade**
  - Assuming removal of free allocations and a price for emission allowances of EUR 90/t
- **Strengthens SSAB's ESG position**



*Graph for illustrative purposes

SSAB

New steel mill configuration



A leap from fossil carbon to green energy

SSAB Raahe	Today	Future
Fossil CO_2 emissions, Mt/a	4	0
% of CO_2 emissions in Finland	7	0
Electricity, TWh/a	0,8	2-12
Fossil coal, kt/a	1560	0
Biogas, TWh/a	0	0,2-0,5
Biocarbon, kt/a	0	50
Hydrogen, MNm^3/a	0	0 - 1500
Hydrogen, kt/a	0	0 - 150

Thank You!

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