

VATTENFALL





Fossil-free living within one generation

Vattenfall AB
Group presentation 2022

Agenda

Introduction

Who Am I?
This is Vattenfall

Sustainability Strategy

Milestone Overview

Offshore Wind

Outlook 2035

Green Steel

SteelZero



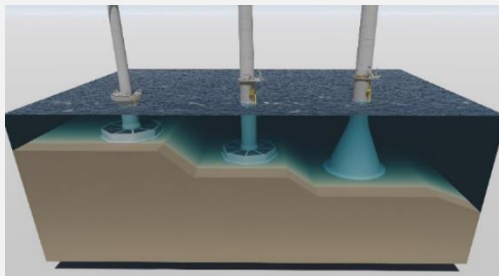
Introduction

Casper Lyngsø

Director, Product Line Foundations & Site Investigations

Since April 2021

- *Accountable for Product Development for Foundations*
- *Accountable for Contracting/Procurement of Foundation & Site Investigations*



1998 – 2002 B.Sc. Civil Engineer Aalborg University

2002 – 2004 Structural Engineer / Project Manager, Bahrain & Qatar

2004 – 2011 Project Manager, Suzlon Wind Power / Siemens Wind Power

2011 – 2021 Director, Vestas Technology, Tower & Foundations



Casper Lyngsø

Director, Product Line Foundations & Site Investigations



Vattenfall Offshore Wind
Jupitervej 6
DK-6000 Kolding

M +45 5081 5211
casper.lyngsøe@vattenfall.com
www.vattenfall.com

Introduction



100%

Owned by the Swedish State



7.1 million

Electricity customers



1.0 million

Electricity network customers



1.8 million

Heat customers



2.4 million

Gas customers



18,883

Employees

Introduction

Summary of key data 2021



SEK **180.1** bn
Net sales



SEK **31.2** bn
Underlying operating profit



111.4 TWh
Electricity production

Key data 2021 →

Introduction

Location of our operations and major plants

Click on energy source to show locations



Wind ●



Biomass ●



Hydro ●



Gas ●



Nuclear ●




Coal ●

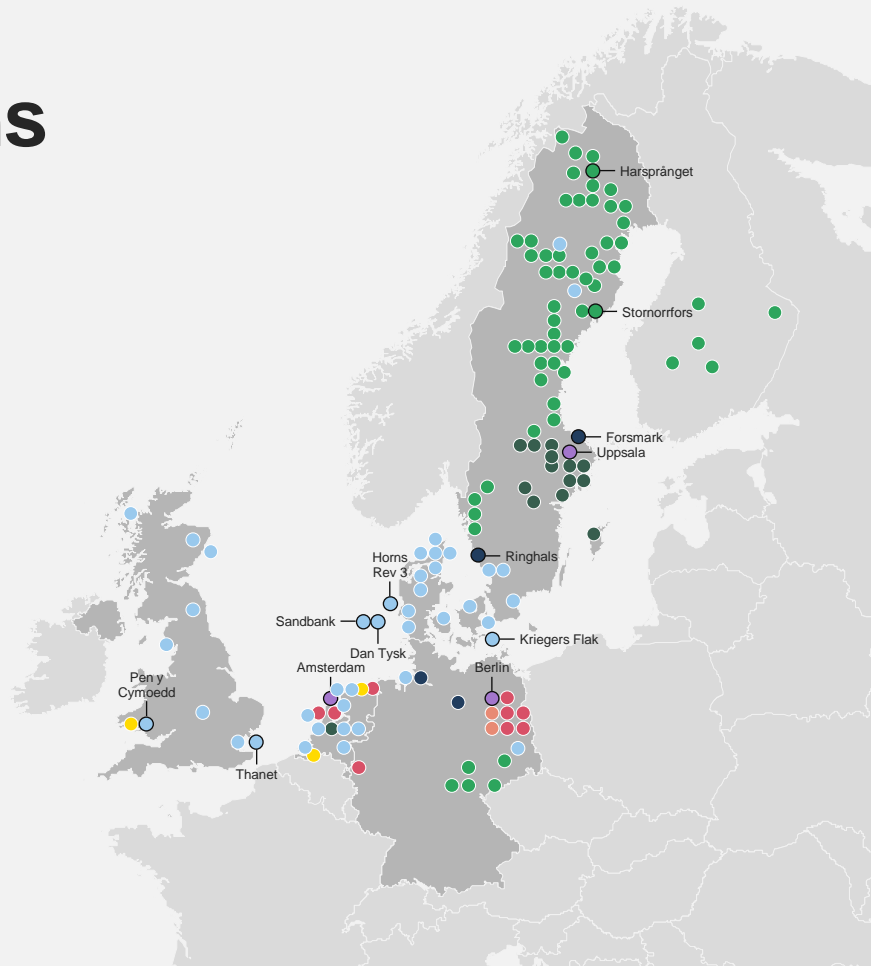


Solar ●

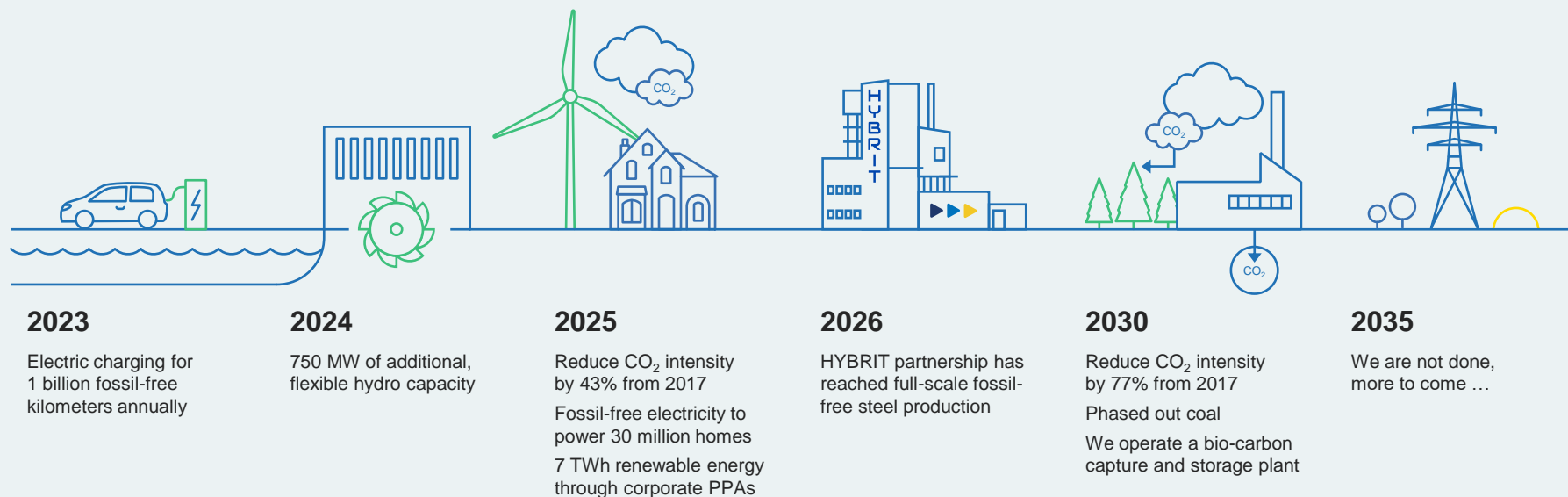


District heating ●

 Largest facilities marked with a circle

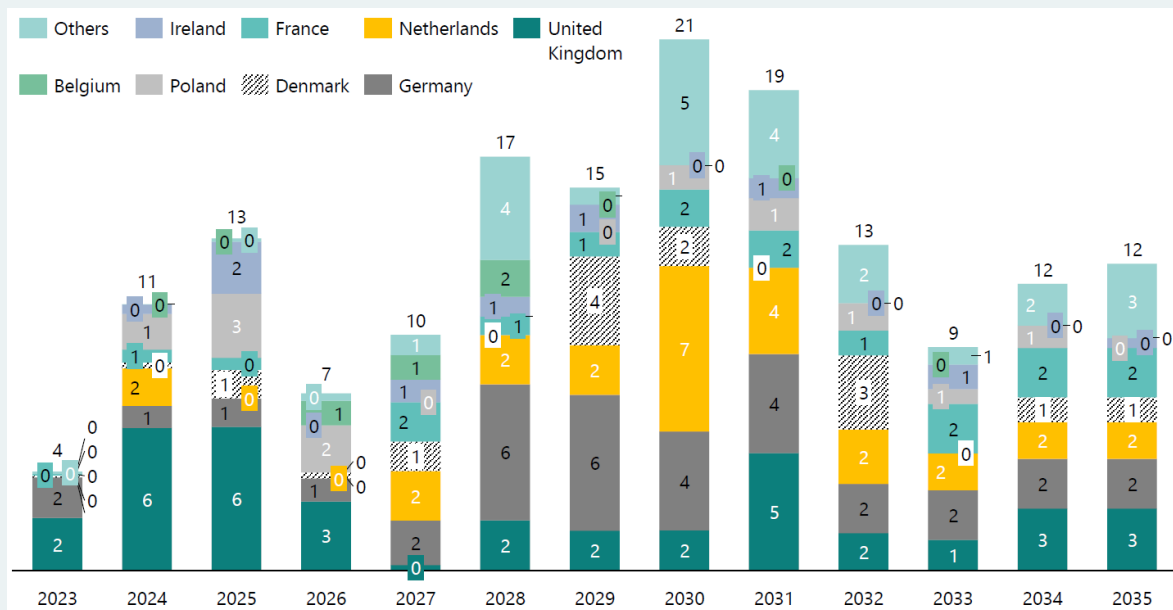


Our milestones towards fossil-free living within one generation



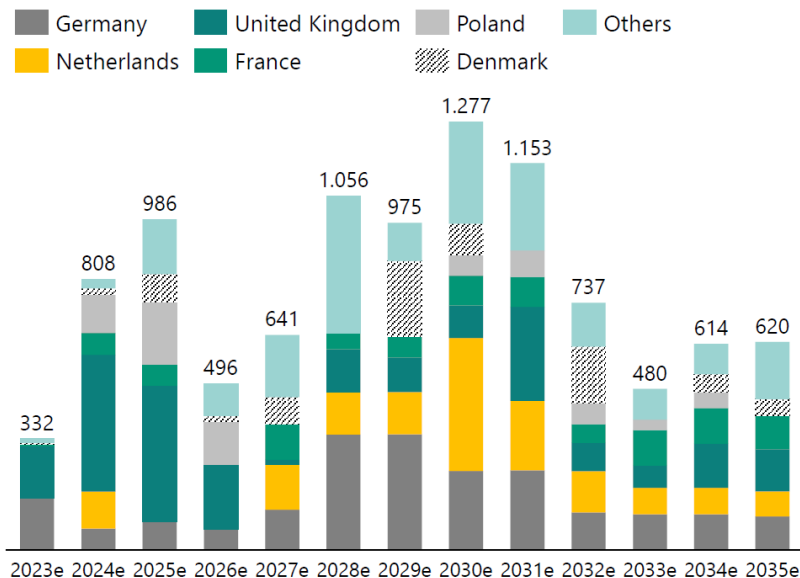
Annual installations entering construction 2022-2035 [GW]

- From 2024 annual installations are going to significantly increase from the current level of 4GW/year to 7-21GW.
- Several European markets have ambitious plans to develop significant offshore wind power capacity, however large scale build out in most European markets will primarily start to materialise from 2028 and onwards.
- From 2028 installations in especially Denmark, France and Poland will grow significantly.
- Peak in installations from 2028 to 2031 after which the annual installation level seems to stabilize at around ~10GW.
- Expect delay with projects moving from into the 2030s

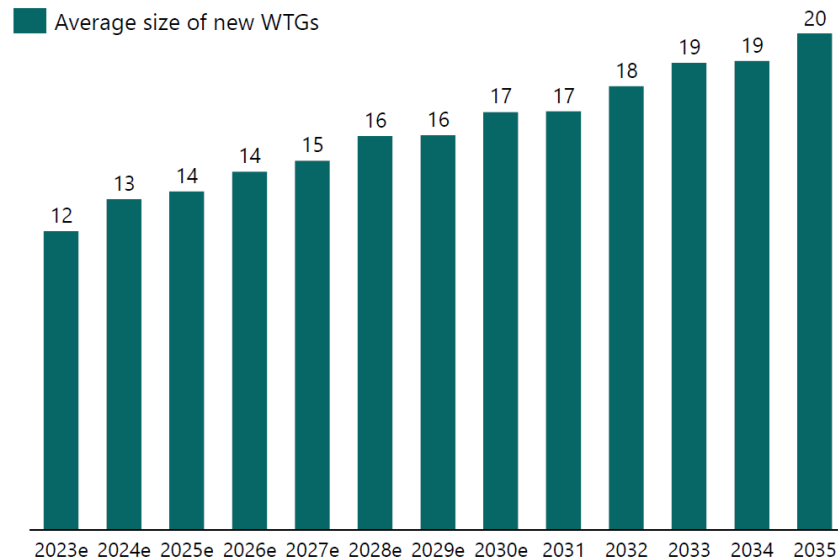


Europe need annual production of 800-1.200 fixed foundations

Expected annual foundations to be installed



Expected average size of turbines [MW]



Vattenfall has joined SteelZero initiative



The Commitment

North Star goal, supported by interim action

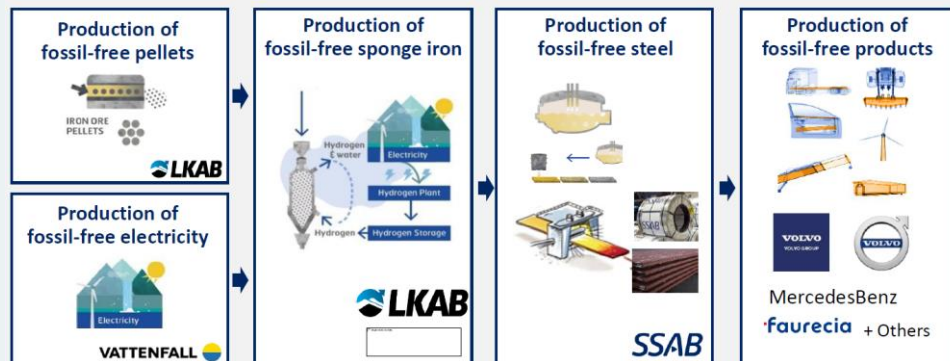


Companies who join SteelZero make a public commitment to transition to **100% net zero steel by 2050.**

Interim – commitment to procure or specify a minimum of **50% of steel by 2030, meeting a combination of the following:**

- a. Steel produced by a steelmaking site where the steelmaker has a science-based emissions target, SBTi or equivalent
- b. ResponsibleSteel™ Certified Steel, or equivalent
- c. 'Lower Embodied Carbon Steel'

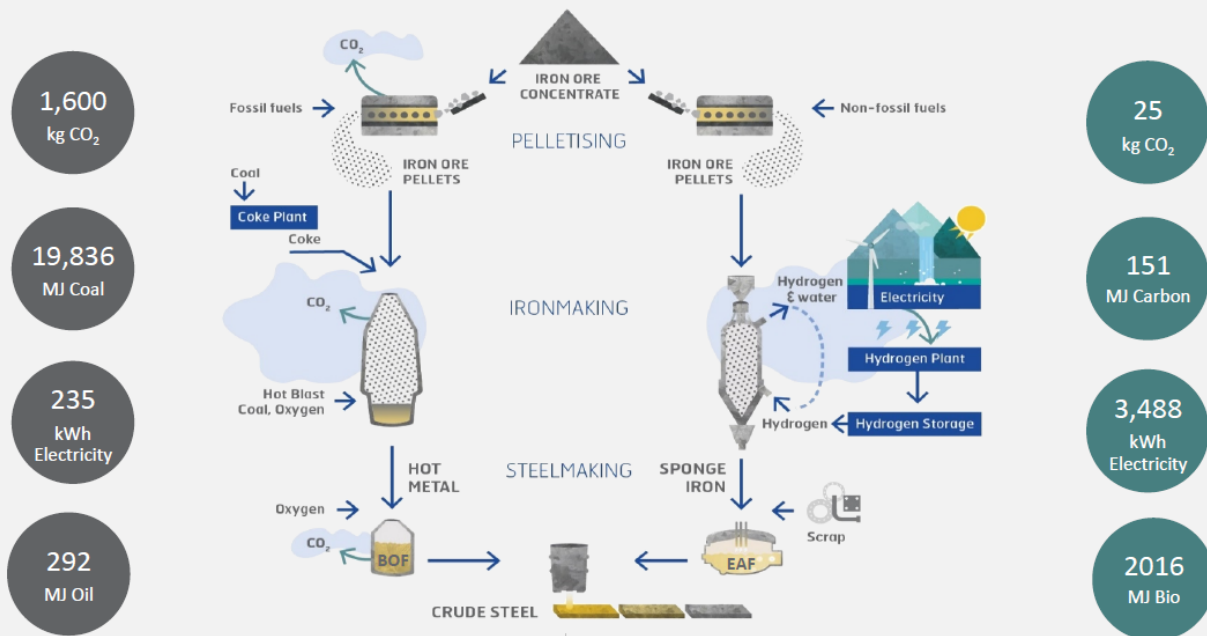
Strategic partnerships are required



Time is not our side

CURRENT PROCESS - BLAST FURNACE + BOF

NEW PROCESS – HYBRIT + EAF



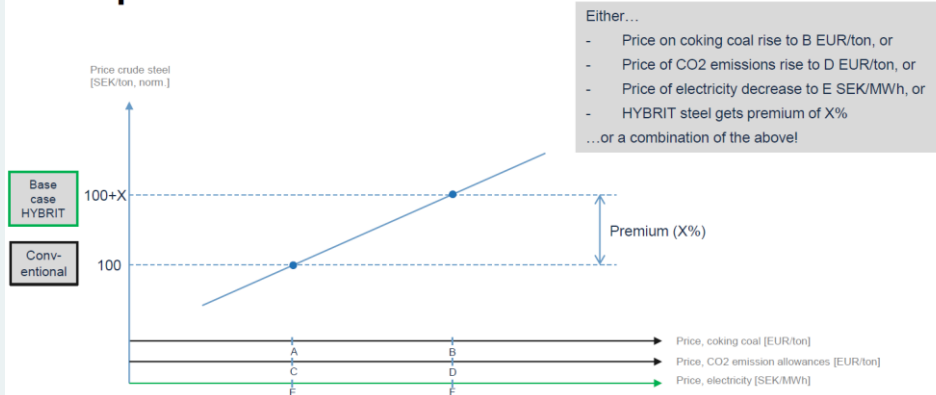
**Figures refer to per tonne of crude steel*

SSAB

Green Steel

...but will it be profitable?

Comparison HYBRIT vs conventional steel



Impact of decarbonization on product cost

US\$ / % price increase

Industry	Intermediate product		Consumer product	
Industry	Cement	+\$100 per tonne of cement (+\$30 per tonne of concrete)	+\$15,000 on a \$500,000 house	+100% (+30%)
	Steel	+\$120 per tonne of steel	+\$180 on the price of a car	+20%
	Plastics	+\$500 per tonne of ethylene	+\$0.01 on a bottle of soda	+50%*

