Electrification at Tata Steel IJmuiden

NAP Process Industry Network
March 24 2022

Together we make the difference

TSN is committing to a clean, green future with two programs

Roadmap Plus

Reduction of local emissions and improvement of local nuisance situation by taking environmental measures, incl. dedusting and deNOxing the pellet plant, and limiting emission at the cokes plant

Implementation timeline of **2019-2025**

35% PM10 (fine dust) reduction by 2023[1]

85% Odour reduction by 2023[1]

50% PAH-emissions reduction by 2022[1]

30% NOx emissions reduction by 2025[1]

Transition to clean, green steel

Transition to green hydrogen-based steel making by replacing current blast furnace-technology with DRI-plants and electric furnaces

Implementation timeline of **2022-2035**

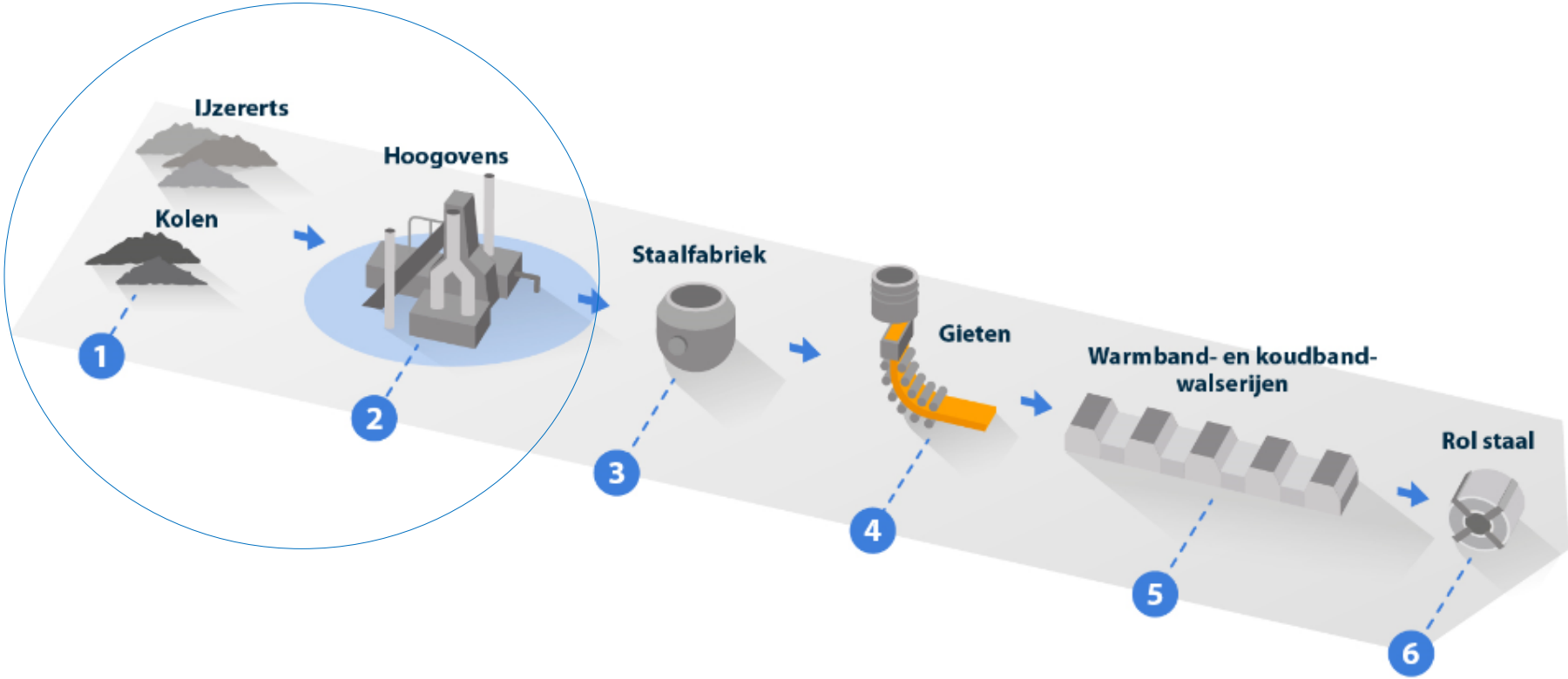
30 - 40% CO_2 emissions reduction after first BF-replacement by '30[2]

60 - 70% CO_2 emissions reduction after second BF-replacement by '35[2]

100% CO_2 emissions reduction by '50[1]

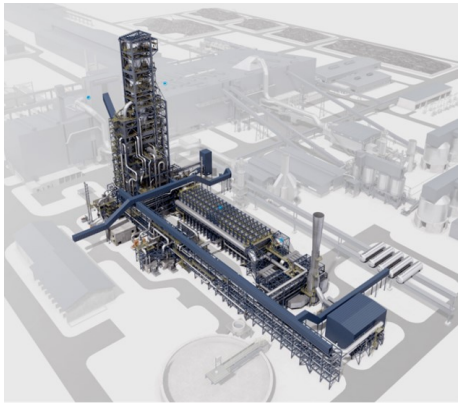
1. Reduction compared to 2019 emissions
2. Reduction compared to 2019 emissions and based on phasing out of BF6

Transition to Green Steel

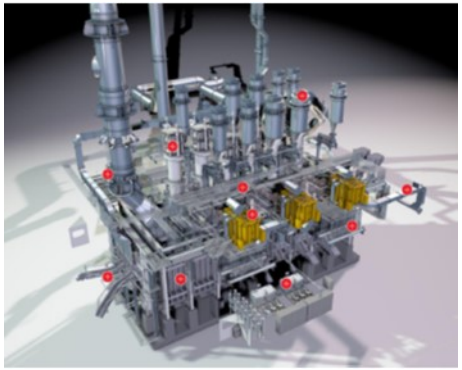


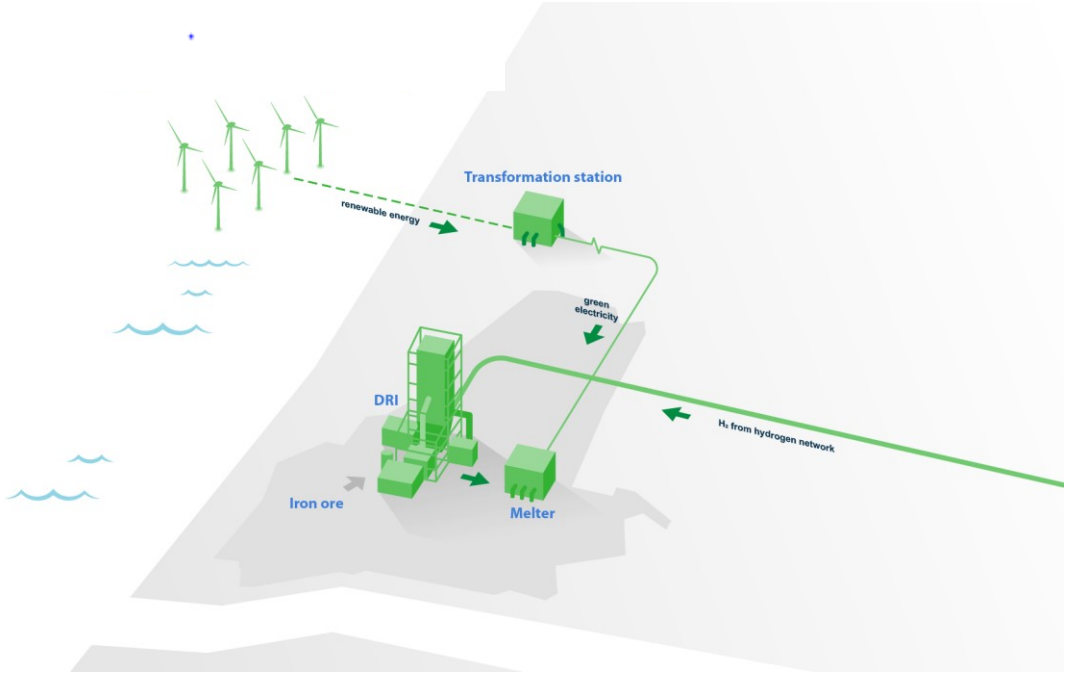
DRI technology based on green hydrogen

DRI installation



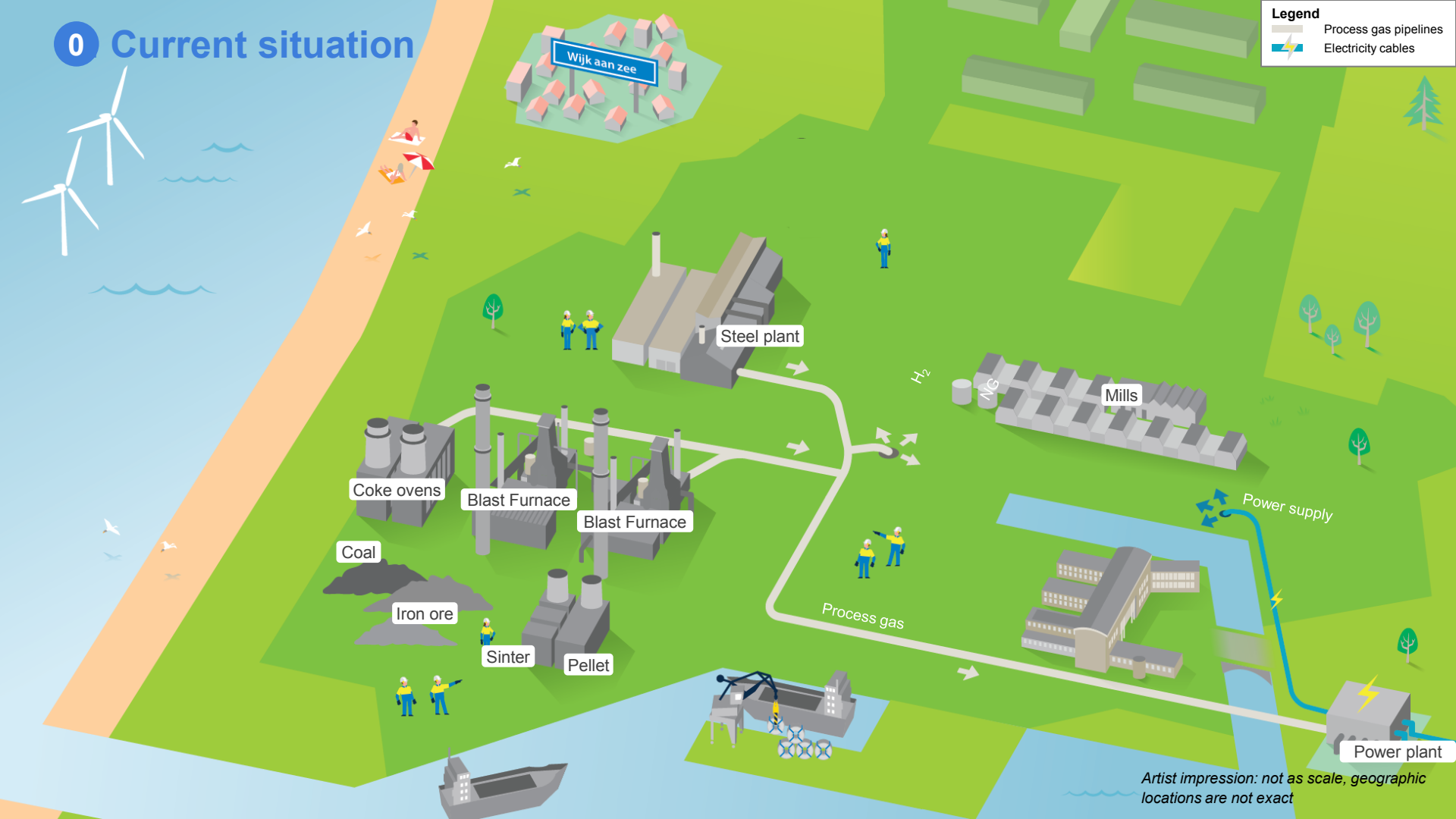
Melter

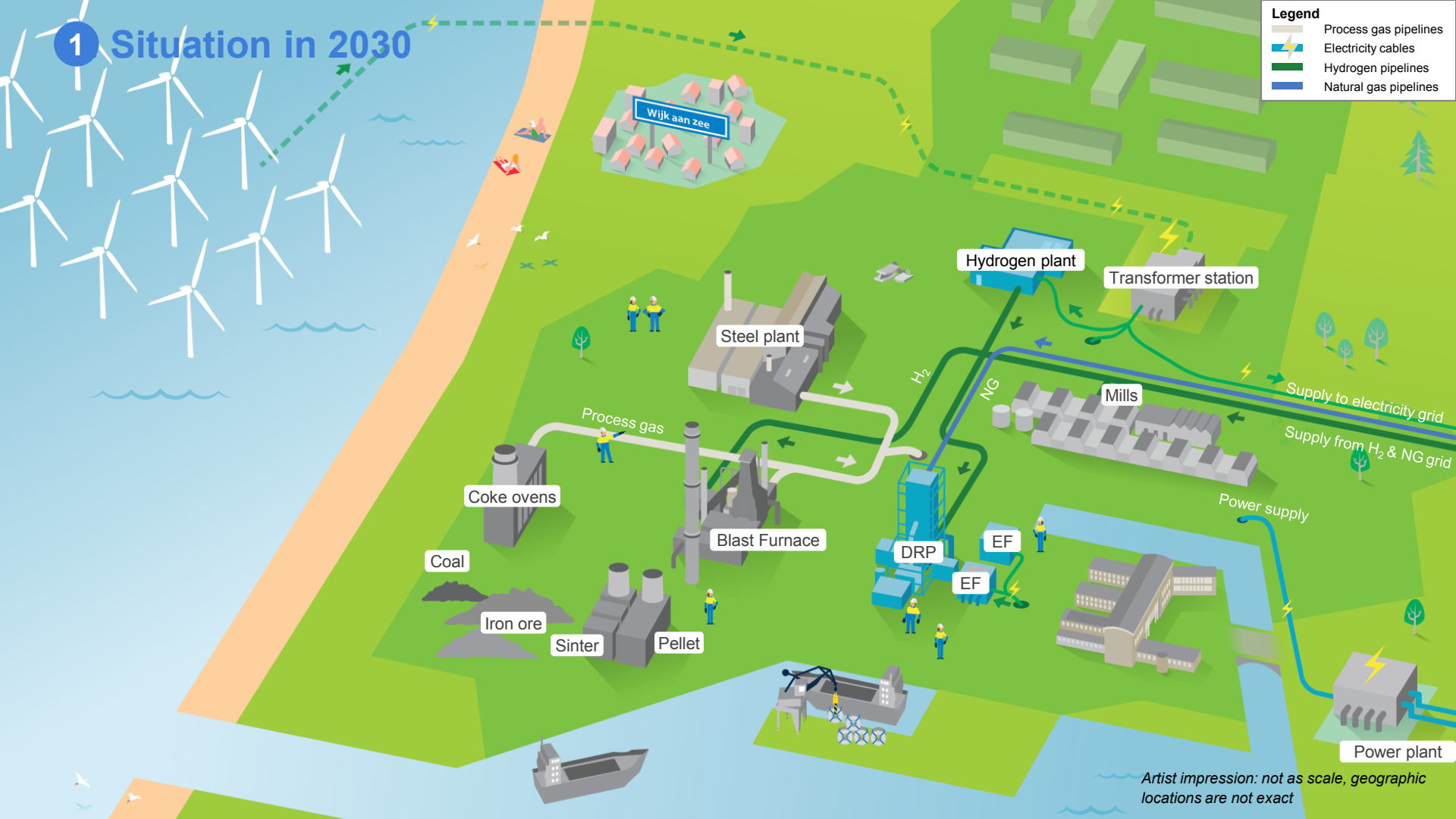




Inside an electrical melting furnace

Source: SMS/Hatch/Outotec

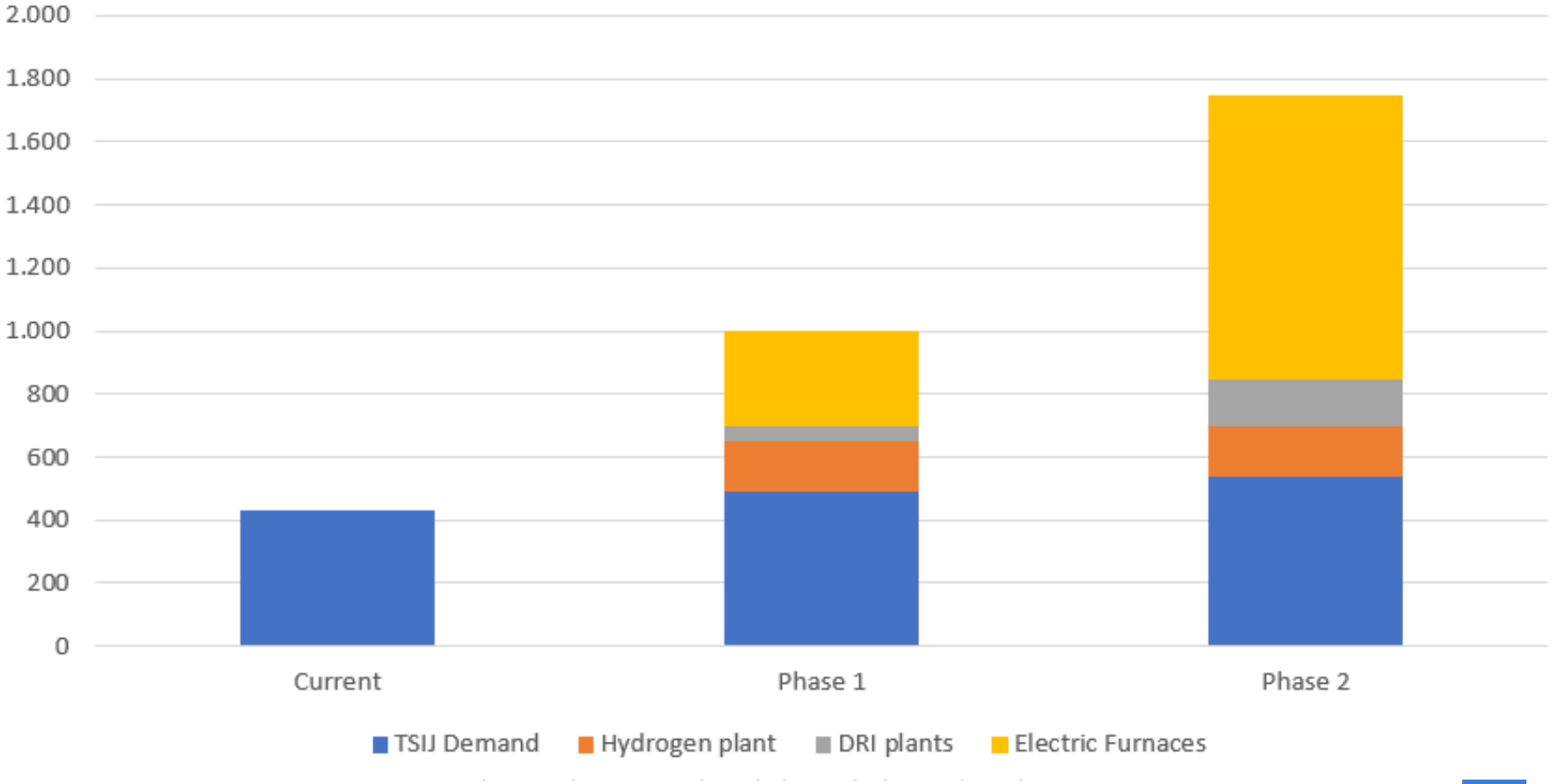

0 Current situation
Legend
Process gas pipelines
Electricity cables
Wijk aan zee
Steel plant
H_2
NG
Mills
Coke ovens
Blast Furnace
Blast Furnace
Coal
Iron ore
Sinter
Pellet
Process gas
Power supply
Power plant
Artist impression: not as scale, geographic locations are not exact


1 Situation in 2030
Legend
Process gas pipelines
Electricity cables
Hydrogen pipelines
Natural gas pipelines
Wijk aan zee
Hydrogen plant
Transformer station
Steel plant
H_2
NG
Mills
Supply to electricity grid
Supply from H_2 & NG grid
Process gas
Coke ovens
Blast Furnace
Power supply
DRP
EF
EF
Coal
Iron ore
Sinter
Pellet
Power plant
Artist impression: not as scale, geographic locations are not exact

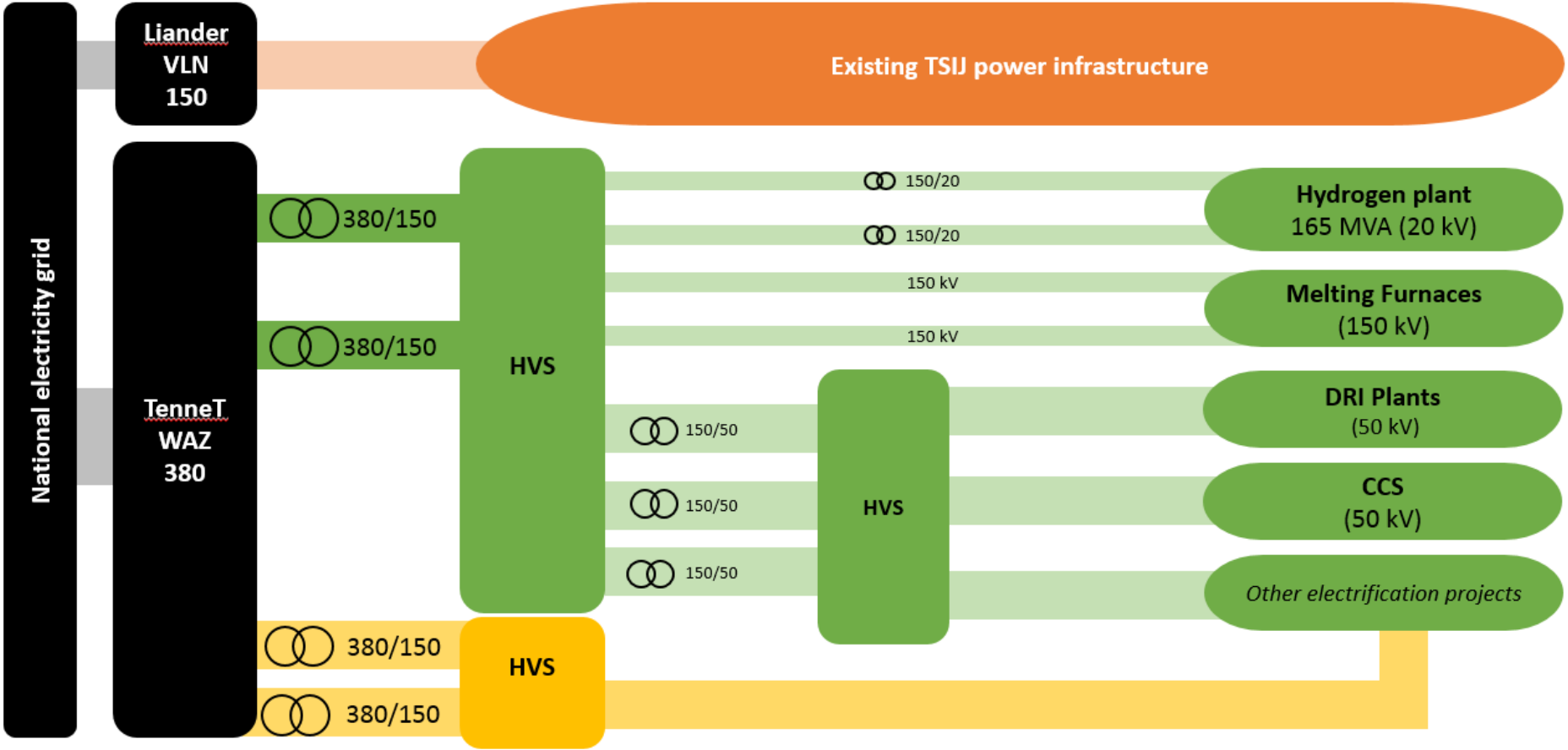

2 Situation after second step
Legend
Process gas pipelines
Electricity cables
Hydrogen pipelines
Natural gas pipelines
Wijk aan zee
Hydrogen plant
Transformer station
Steel plant
Mills
H_2
NG
Supply to electricity grid
Supply from H_2 & NG grid
Power supply
Power plant t.b.d.
Coal
Iron ore
Sinter
Pellet
DRP
EF
EF
Artist impression: not as scale, geographic locations are not exact

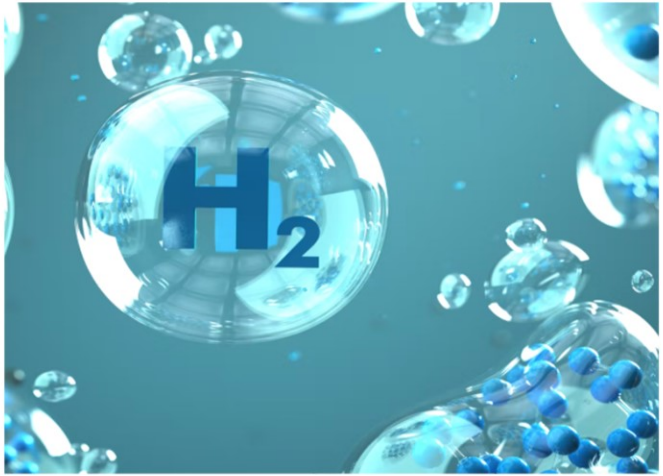
Landing station HKN - TenneT

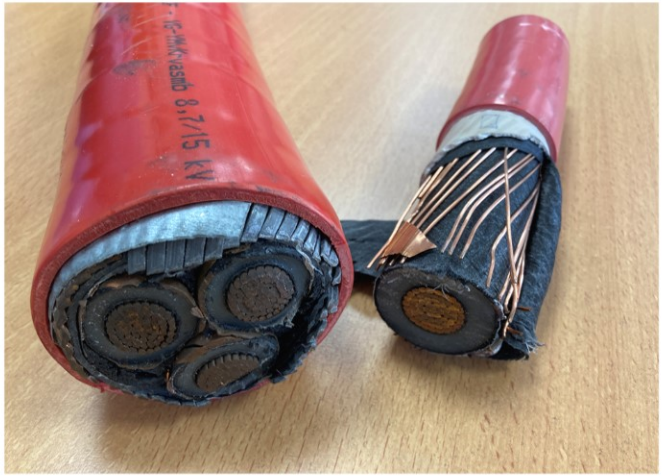
Electricity consumption (MVA)

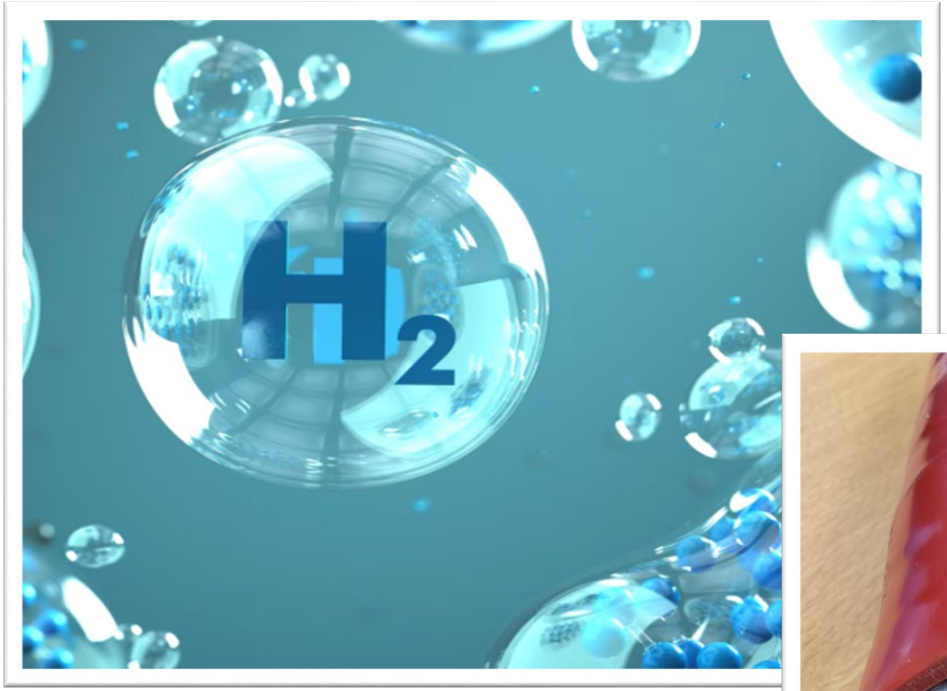


High Voltage Infrastructure to electrify the Steelmaking processes




H2




H2


8,7/15 kV


TATA STEEL
TATA
Tata Steel choses for:
Clean, Green and Circular Steel
Together we make the difference