2024

قمة الصلب العربي الـ 17
و المعرض الدولي للحديد و الصلب

17th Arab Steel Summit
and International Iron and Steel Exhibition

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AQS's Success Story and Technical Achievements

الجزائرية القطرية للصلب
ALGERIAN QATARI STEEL


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ALGERIAN QATARI STEEL
AQS's success story and technical achievements
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الجزائرية القطرية للصلب
ALGERIAN QATARI STEEL

The Algerian Qatari Steel Company (AQS) is the result of an investment partnership between the Algerian Republic and the State of Qatar.

Capital Cost

Capital cost of the project is estimated to be around USD$ 2,167,760.000.

Location

The complex is located in Bellara. Algeria 375 km east of Algiers, Algeria. The Site spreads over an area of 216 hectares. Sea port facilities 10 hectares.

Shareholders structure

* Sider Co. 46%
* National Investment Fund 05%
* Qatar Steel International 49%

Product

- Rebars (Big & Small diameter)
- Wire rods
- Billets
- DRI
- Industrials gases (O2, N2, Ar)
- Lime/Dolo lime

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PLANTS PRESENTATION

BRIEF HISTORY

Company creation

Creation the company in 2013

Project phase

Start project on Dec. 2015 partially and complete main constructions work in 2021

Partially production

Start partial production on 2017 to 2021

Full Production

Integrated production of all complex plants started by the end of year of 2021

PRODUCT

Rebar & Wire rod

REBAR:
Diameter : 8-10-12-14-16-20-25-32-40 mm
WIRE ROD:
Diameter: 5.5-6-6.5-7-8-9-10-11-12-14 mm

Billets

Section 150 x 150 x 12000 mm.
Added : 130 * 130 * 12000 mm
Steel grades – medium carbon and low carbon.

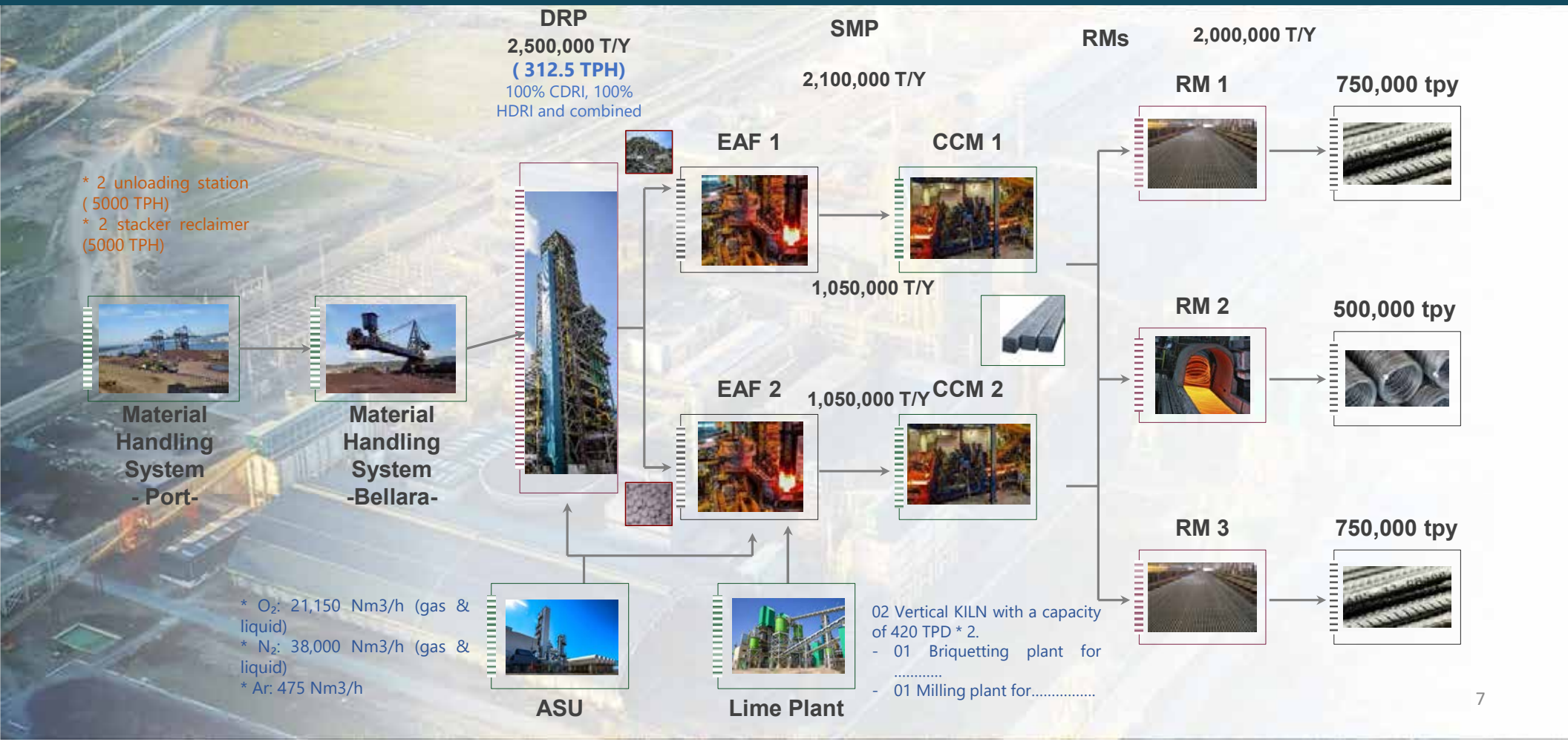
DRI

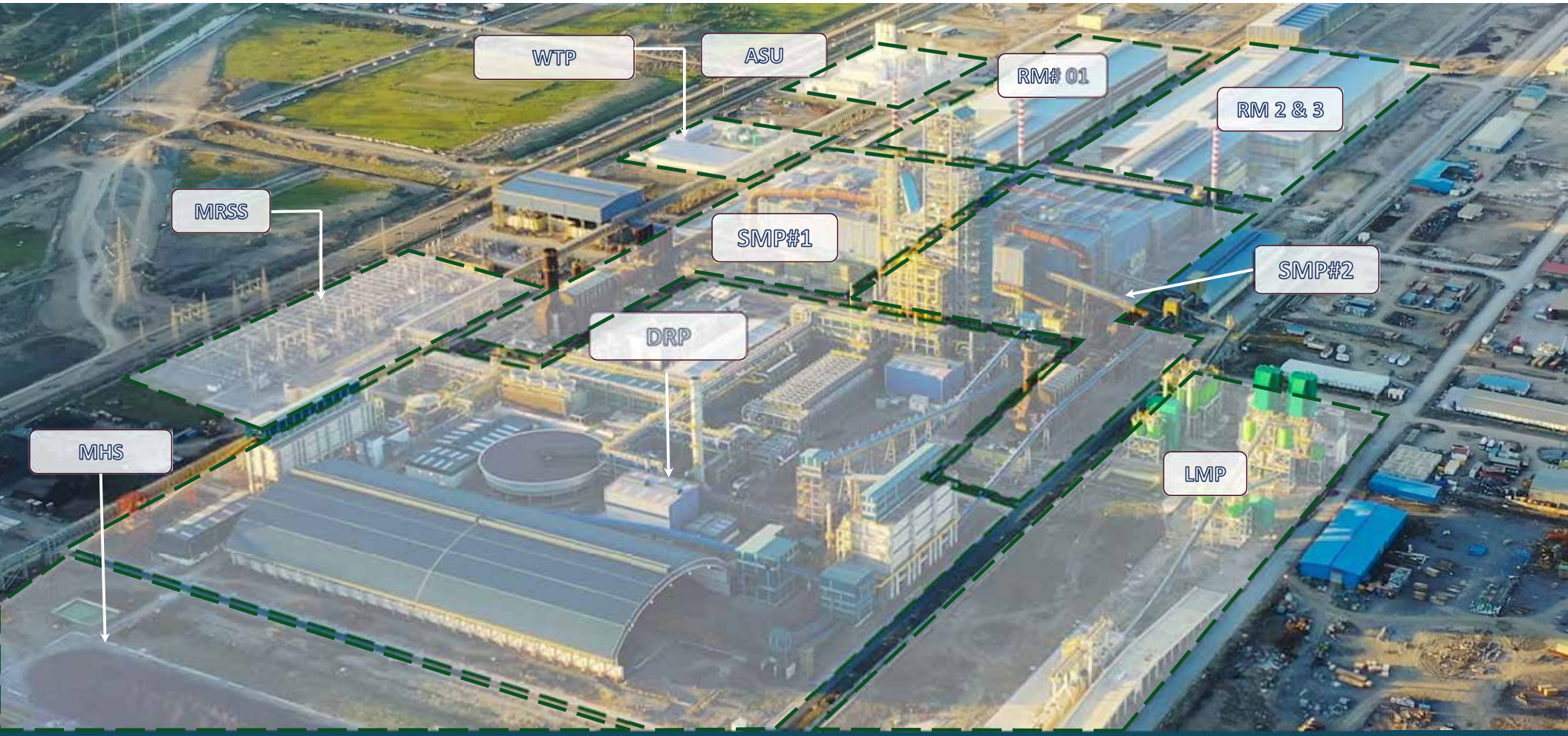
Density: 1.6-1.9
Quality:
D. Metallization: 93 - 94 %
Carbon: 2.5%.
Total .Fe: 90 %

Lime & Dolo lime

Lime: 0-3mm, 3-20mm, 20-60mm
Dolo: 0-5mm, 5-60 mm.
Pulverized: < 200 micron

PRODUCTION PLANTS





MHS
Material Handling System

DRP
Direct Reduction Plant

SMP
Steel Making Plant

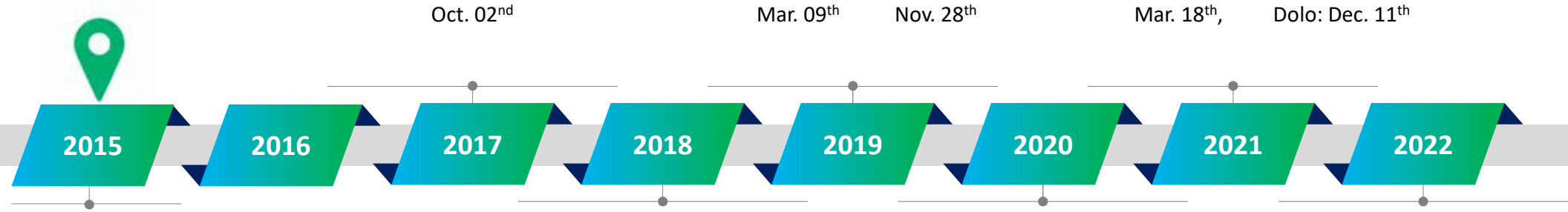
RMP
Rolling Mill Plant

LMP
Lime Plant

ASU, WTP, MRSS
Air Separation Unit
Water Treatment Plant
Main Sub-Station

PROJECT TIMELINE

PROJECT CONSTRUCTION TIMELINE



End 2015
Project started

RM#1
First product
Oct. 02nd

RM#3
First product
Jun. 09th 2017

RM#2
First product
Mar. 09th

SMP#1
First Heat
Nov. 28th

SMP#2
First Heat
Apr. 11th

DRP
First product
Mar. 18th,

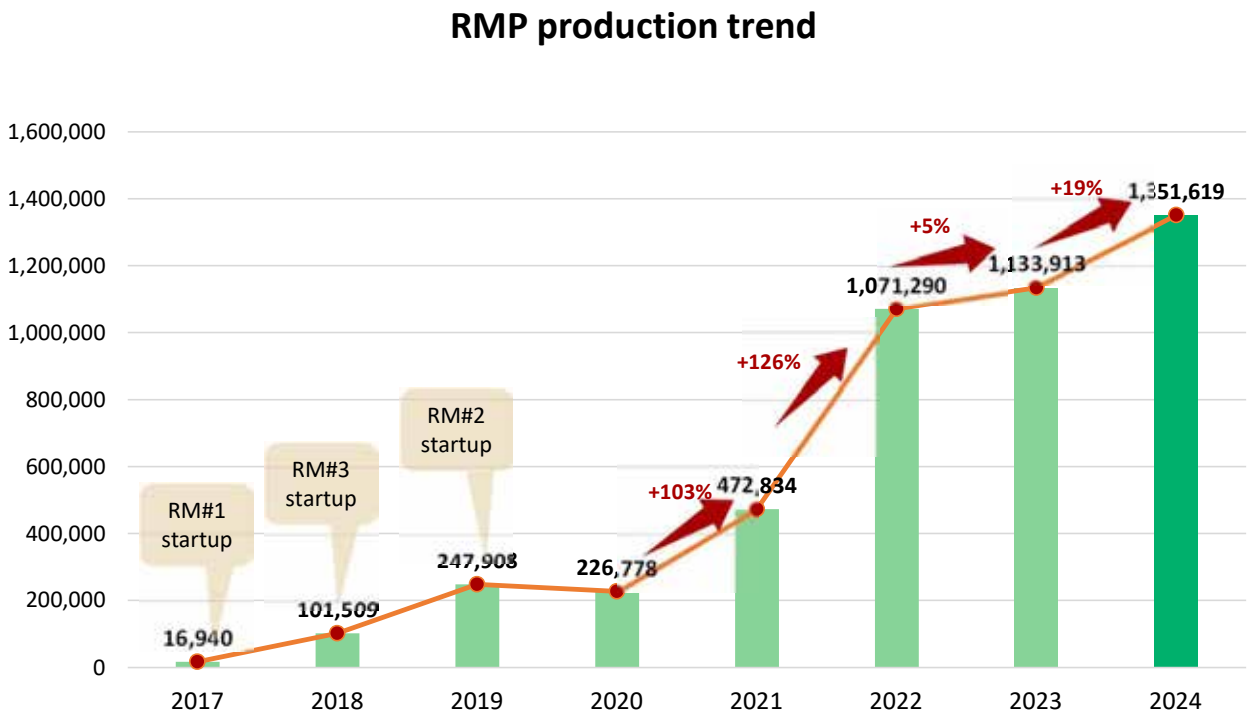
LMP
Lime: Nov. 27th,
Dolo: Dec. 11th

Project completion
All plants running

PRODUCTION RESULTS

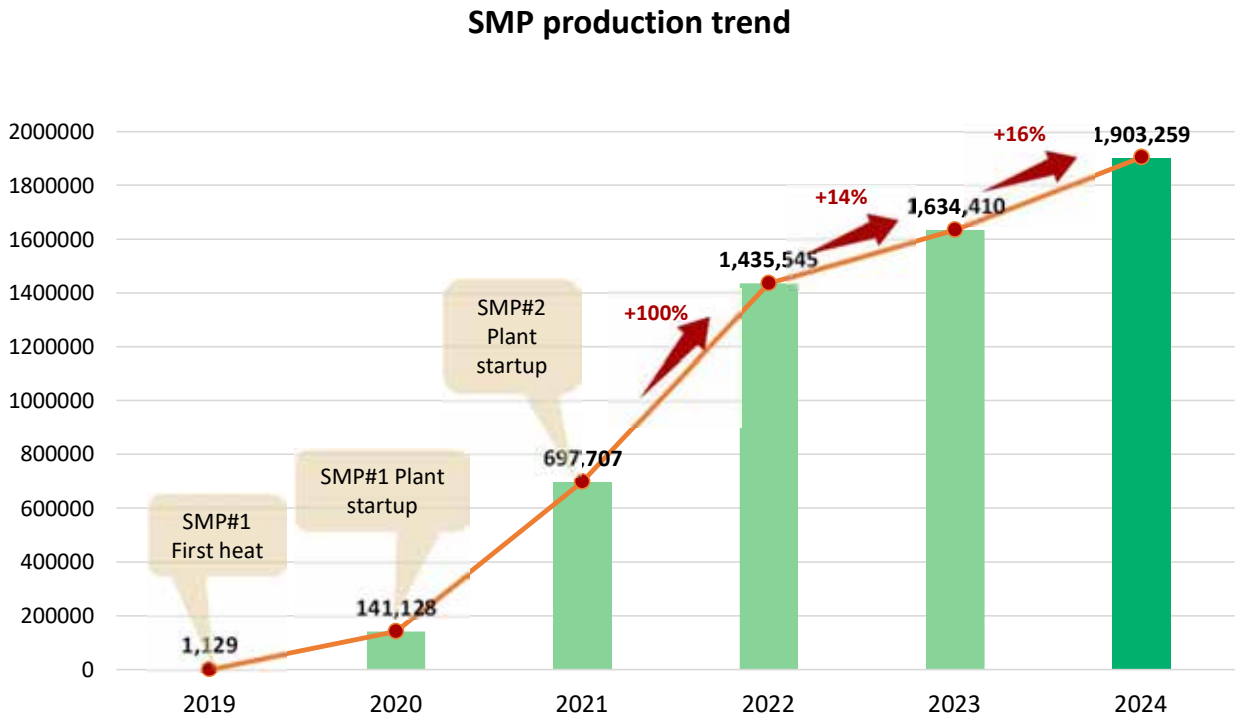
ROLLING MILLS PROGRESS SUMAMRY

- *Before 2020, the production of rolling mills observed is low and this is related to*
  - *the plants partially handed over by the Contractor DAN*
  - *The performing test by DAN & AQS.*
  - *The use of purchased billets.*
- *After the start of production at SMP, the production increased considerably as shown in .*



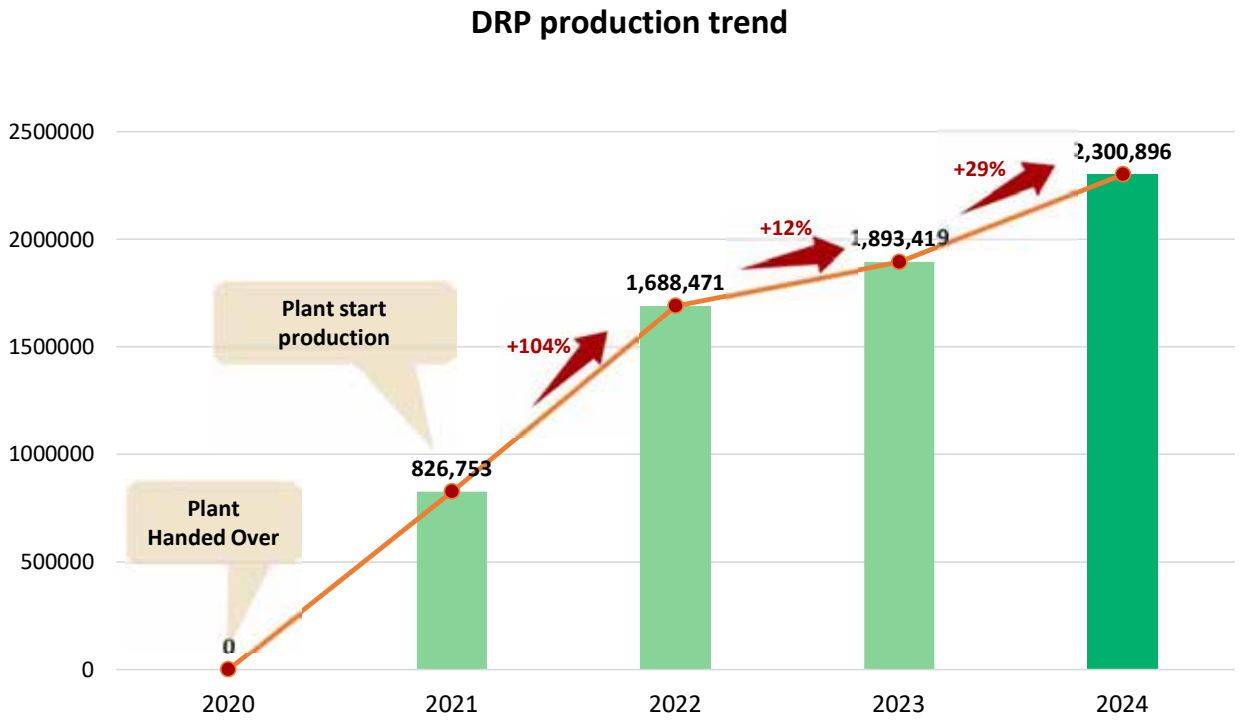
SMP PROGRESS SUMAMRY

- *Before 2021, the production observed is too low and this is related to the plant partially handed over by DAN and the non continuous running – plant performance test-*
- *The production increased considerably as shown in .*



DRP PROGRESS SUMAMRY

- *The production increased considerably as shown in .*



2025 OBJECTIVES

DRI

Achieving 2,35M tons of DRI, an increasing of 1 % compared to the 2024.

Billets

Achieving 1,95M tons of billets; an increasing of 2.6% compared to the 2024

Rebar

Achieving 1.088K tons of rebar, an increasing of 9.2% compared to the 2024.

Wire rod

Achieving 362K tons of Wire rod, an increasing of 2% compared to the 2024.

Lime/Dolo

Achieving 258K tons of Lime & Dolo, an increasing of 16 % compared to the 2024.

CHALLENGES/ ACHIEVEMENT

CHALLENGES

01

PROJECT COMPLETION and plans start-up

Complete the construction work of the various units of the complex within the specified time, especially during the COVID-19 pandemic and the difficulties encountered for the entry of expatriates.

02

Fulfilling market required product sizes

Expand the final product range (rebar and wire rod new sizes) to fulfil the market needs.

03

Plants upgrading

Planning to start an investment in RM and SMP for expand product range
* RM#1: ability to produce rebar from 12 mm to 40 mm
* SMP#1 possibility to produce billets 130x130x12000

04

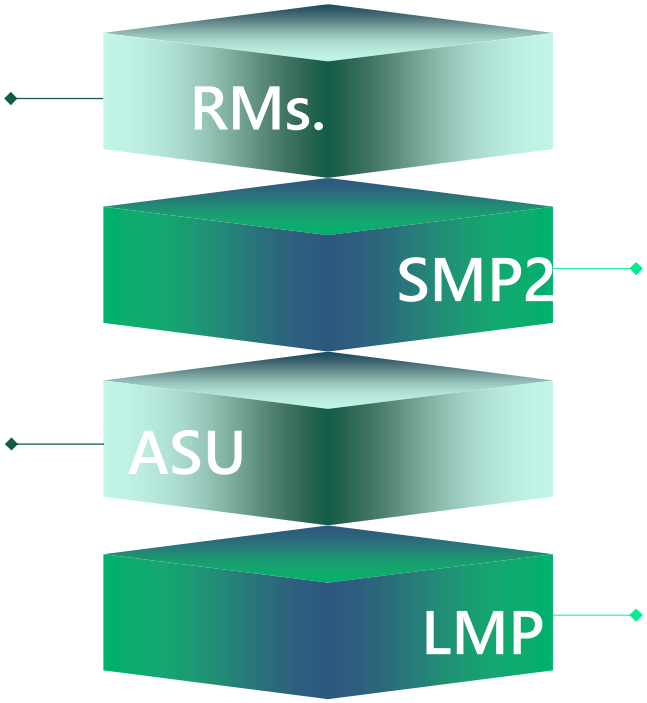
SKILLED MANPOWER

Lack of skilled manpower

ACHIEVEMENTS

❖ Partial operation of both power substation and WTP to be able to start up RM1 & RM3 before completion of all constructions .

❖ Fully Commissioning and Startup of ASU by AQS team after demobilization of OEM specialists because of COVID-19.



❖ Cold / Hot Commissioning and Startup of SMP2 in April,2020 by (4 persons of OEM team) AQS team after demobilization of OEM specialists because of COVID-19.

❖ Fully Commissioning and Startup of LMP by AQS team after demobilization of OEM specialists because of COVID-19.

ACHIEVEMENTS

Achievements

- Expand final product range by modifying production process to meet market requirements by AQS technical staff

- Upgrading the plants process in RM#1 and SMP#1 by producing product out of initial design (project awarded to DANIELI)

Expand the product range of the rolling mill 01 and adjust the production process to produce the diameter 1**4mm (excluding design).**

Expand the wire rod final product range by producing **6.5mm, 7mm, 9mm and 11** mm **(out of plant design**) diameters to meet local and export high demand.

Remedy all technical constraints and launching production at plants such as LMP and ASU plants by the AQS teams– contribution for facing the corona pandemic by ensuring oxygen delivery-

Planning to start plant upgrading by the year 2024 to expand product range in: -
* RM#1: ability to produce rebar from 12 mm to 40 mm
* SMP#1 possibility to produce billets 130x130x12000

AQS Role In community contribution

ASU contribution In COVID 19 Pandemic

During the health situation worsened as a result of the COVID-19 pandemic, and just with the start of commissioning of the ASU, a plan was prepared aimed at working to support the production of oxygen in its liquid form to ensure that the health sector is enough supplied with this vital substance.

+ 4 M.Nm3

Total oxygen transfered to health sector

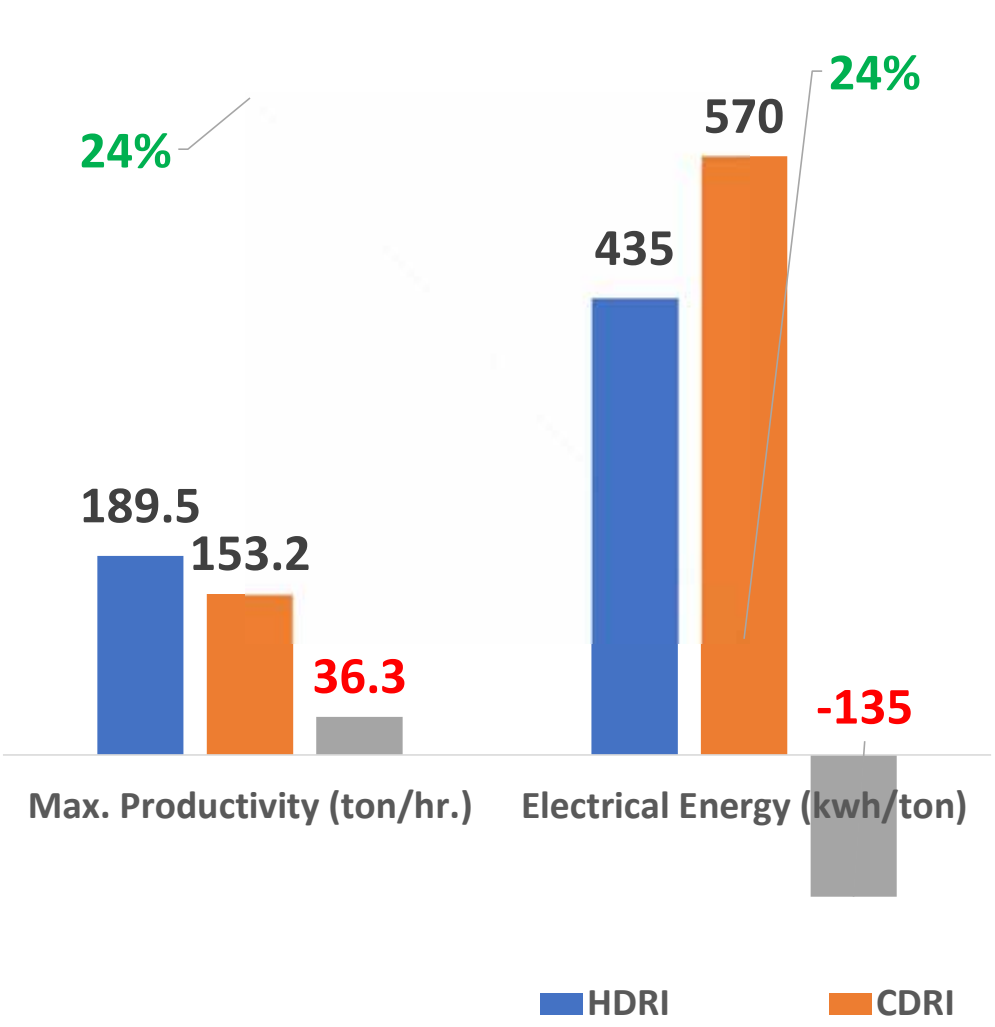
SMP PRODUCTION ACHIEVEMENTS

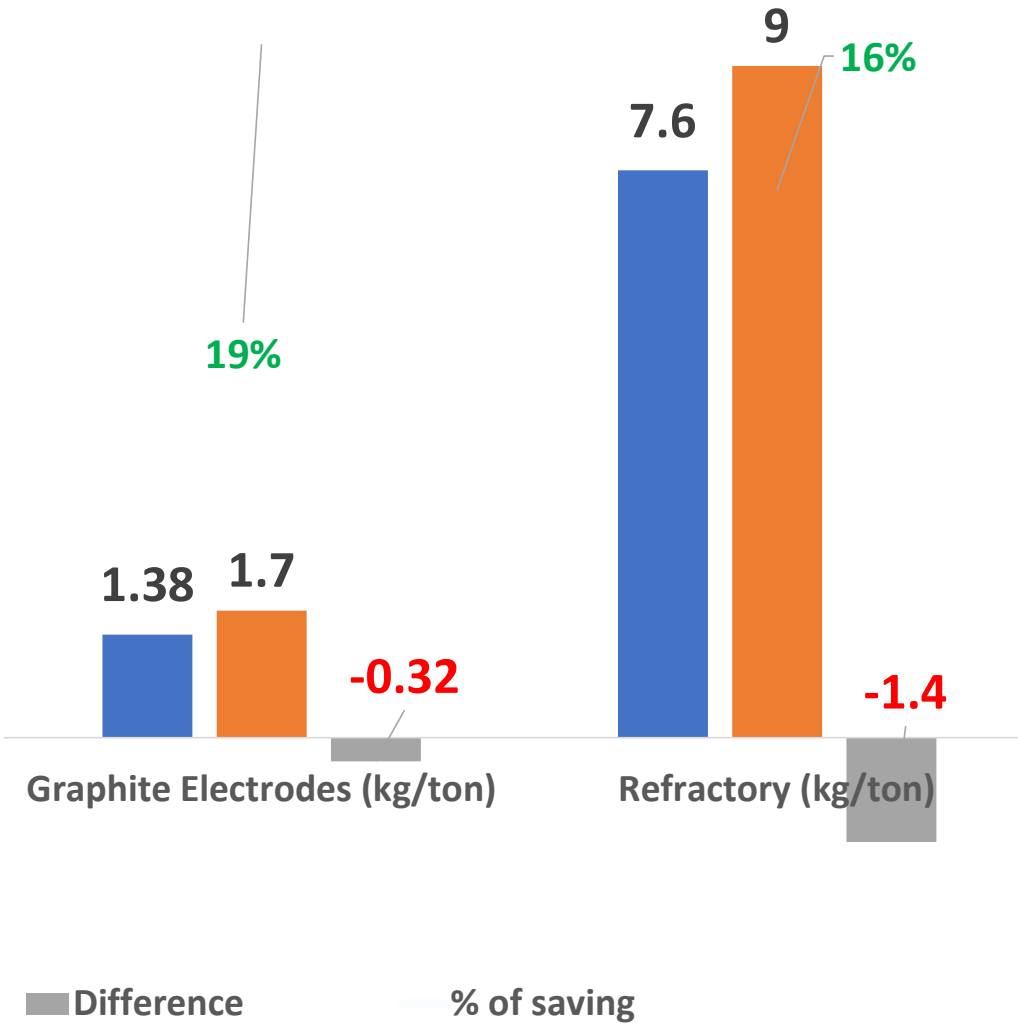
HDRI vs. CDRI

- Practical results show the differences between using 100% HDRI & 100% CDRI as a metallic charge for EAF, specially for the valuable four following factors.
- Considering that, the following figures can be better or worse based on DRI quality and temperature.
- DRI quality is related to both IOP grade and reduction process efficiency.

- Productivity.
- Electrical Energy specific consumption rates
- Graphite Electrodes specific consumption rates
- Refractory specific consumption rate

HDRI vs. CDRI





HDRI CDRI Difference % of saving

SMP ACHIEVEMENTS

Productivity

- Achieving a daily productivity of **63 heats** against design of 60 heats per day.

- Achieving a monthly production of **177,448 tons** which presents 101 % of design capacity

- Achieving a daily production of **7,304 tons** which presents 101.5 % of design capacity.

SMP ACHIEVEMENTS

Performance & cost reduction

- Specific consumption rates

- Electrical Energy specific consumption rates
- Graphite Electrodes specific consumption rates
- Mould copper tubes life and productivity
- Refractory specific consumption rate

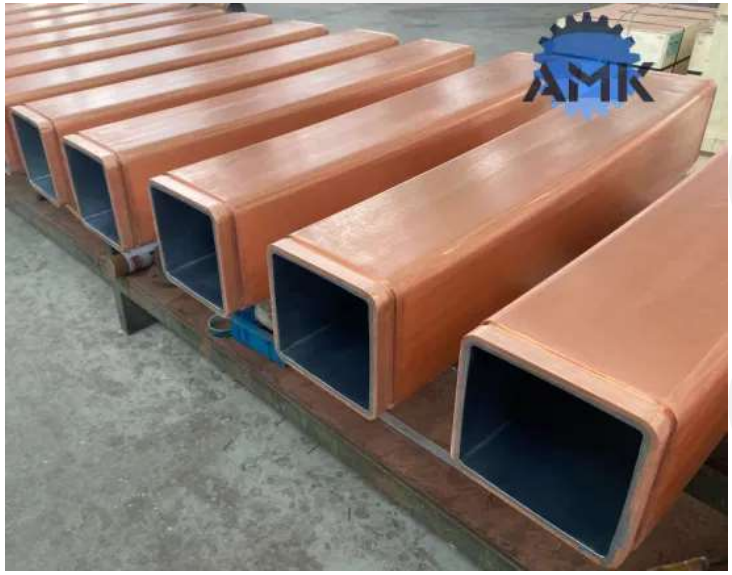
SMP ACHIEVEMENTS

- EAF Electrical Energy specific consumption rate of **435 kwh/ton**
- LRF Electrical Energy specific consumption rate of **21 kwh/ton**
- EAF Graphite Electrodes specific consumption rate of **1.38 kg/ton**
- LRF Graphite Electrodes specific consumption rate of **0.21 kg/ton**

SMP ACHIEVEMENTS

CCM mould Copper tube life history

- Parabolic mould
- Eco-Power mould



- Average for parabolic mould life of 1,400 heats & 33,600 tons
- Average for Eco-Power mould life of 2,800 heats & 67,200 tons
- **Record for parabolic mould life of 3,700 heats & 88,800 tons**
- **Record for EcoPower mould life of 6,500 heats & 115,000 tons**

SMP ACHIEVEMENTS

Refractory Performance

- Total refractory specific consumption rates
- Records of refractory life time

SMP ACHIEVEMENTS

Refractory Performance

- Total refractory specific consumption rates
- : 7.6 kg/ton

SMP ACHIEVEMENTS

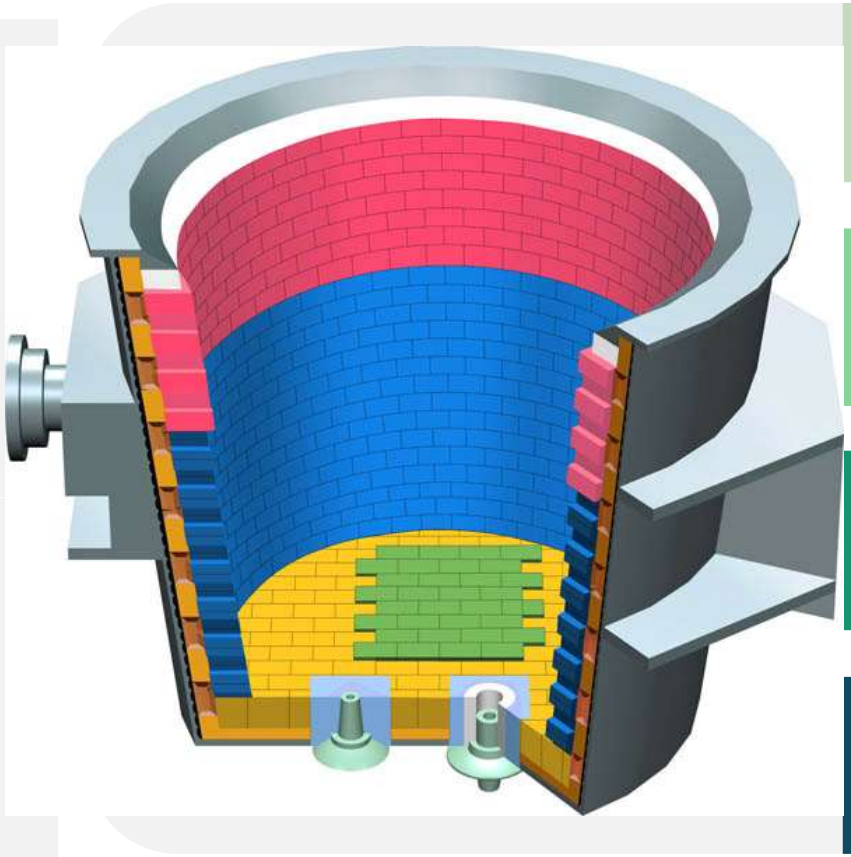
EAF life

- Record of 909 heats with One light partial repair.
- Record of 685 heats One shot.

SMP ACHIEVEMENTS

Ladle life record

❖**Record: 168 heats (One shot)**



SMP ACHIEVEMENTS

Tundish life record

- **Record for tundish life: 98 hr. / 123 heats**

QUALITY CERTIFICATION

QUALITY CERTIFICATION

Quality Policy

In the requirement of the quality policy of the company and in order to ensure a good product on the local & international market, recognized certificates has already been obtained and other certification projects are underway as shown

System Quality certificate

ISO 9001: 2015

The certificate was obtained in 2019.

The certificate was obtained in 2023,

Product certificate

Cares certificate for the UK market, Singapore, Hong Kong, and China.

ZETOM certificate (Poland)

Certificate (Finland, Sweden, Denmark & Norway))

ICECON certificate (Romania)

KIWA certificate (Lithuania, Germany (partial)), Netherland.

Germany.

Safety & Environmental certificate

ISO 14001: 2015

ISO 45001: 2015

The certificate was obtained In 2022,

Foreseen certificate

ISO 50001: energy management certificate

CARES Sustainability

Laboratory Accreditation

PROJECT PHASE II

Future Expansion

AQS Phase 2 Project

- *AQS plans to expand its site in Bellara by launching the second phase of the project. The Swiss company NPT and its partners, experts conducted the feasibility studies for steel plants, recently completed a comprehensive study for the next phase of AQS.*

- *This study aimed to address the challenges that the company faced during the first phase and seeks to diversify its steel product portfolio. The feasibility study included expanding production from raw materials to the final product.*

- *The second phase will duplicate the company productivity to be 4 Million TPY.*

Thanks for your attention