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AL TAMMAN INDSIL FERROCHROME (FZC) LLC.

## ADDING VALUE TO OMAN'S MINERAL RESOURCE USING SOLAR POWER

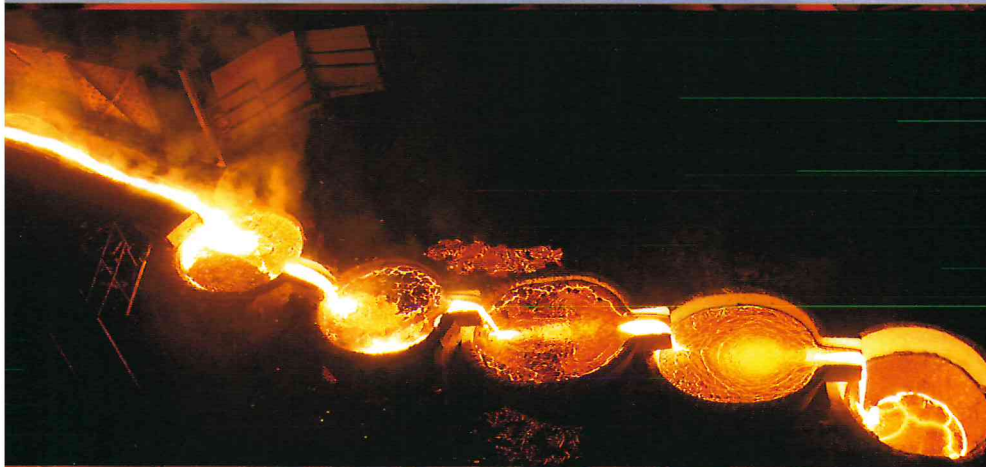


AL TAMMAN INDSIL FERROCHROME (FZC) LLC is Sultanate of Oman's first Ferrochrome Smelter. The production facilities are located at Free Zone Sohar in proximity to Sohar port. The Installed capacity of the smelting plant is 75,000 mtpa high carbon Ferrochrome.

The company was set up with the objective to tap the potential of chrome ore reserves in Oman by establishing an upstream facility to manufacture value added products.

Oman is a major exporter of Chromite Ore, accounting for 10% of the total world production of this mineral. Abundant mid-grade Chromite Ore deposits, coupled with consistent supply of electrical energy from Oman grid and proximity to Sohar port makes this venture ideally positioned to showcase the capability of Oman as a leading supplier of Ferrochrome.

The Ferrochrome facility substitutes 25% of its electrical energy requirement with Solar power. This has helped in the reduction of Greenhouse gases (GHG's). With this ATIFC has become a pioneer in the use of solar energy in the mineral processing and smelting industry in the Sultanate of Oman





# PIONEERING GREEN ENERGY

Al Tamman Indsil Ferrochrome's production facilities located at Sohar Free Zone is a fully export oriented manufacturing facility ideally positioned to showcase the capability of Oman as a leading supplier of Ferrochrome. The company is also a pioneer in using solar power in manufacturing in Oman



**A**l Tamman Indsil Ferrochrome (FZC) LLC (ATIFC) is the Sultanate of Oman's first ferrochrome smelter. The production facilities are located at Sohar Free Zone in proximity to Port Sohar. The company is a 50:50 joint venture between Muscat Overseas Group of Oman and Indsil Group of India and was set up with the objective to tap the potential of chrome ore reserves in Oman by establishing an upstream facility to manufacture value added products

Oman is a major exporter of Chromite Ore, accounting for 10 per cent of the total world production of this mineral. Abundant mid-grade chromite ore deposits, coupled with consistent supply of electrical energy from Oman grid, use of green energy (solar power) and proximity to Port of Sohar makes this venture ideally positioned to showcase the capability of Oman as a leading supplier of Ferrochrome. ATIFC is a 100 per cent export oriented Omani manufacturing company exporting to countries like China, Taiwan, Japan, India, Korea,

Europe, US, Brazil, Egypt, etc. earning foreign currencies for Oman from non-oil sector. The production facilities are spread over an area of 150,000 sqm taken initially and another 40,000 sqm in Sohar Free Zone was added and comprises the following infrastructure:

- Submerged Arc Furnaces of 24 MVA capacity each – 2 nos.
- Emission control plant of 240,000 cubic meter capacity each for treating flue gases- 2 nos.
- Material handling system of 50 tph capacity each for raw materials. 2 nos.
- Briquetting plant of 30 tph capacity for producing Chrome Ore briquettes
- Product handling system with capacity to handle 200 tpd of crushing, screening and packing of finished product.
- Crushing and Jigging facilities of 30 tph capacity for separation of metal from the slag.

Ferrochrome is produced using submerged arc furnaces. ATIFC's plant consists of two submerged arc furnaces, each of 24 MVA. The technology of the

furnaces is modular in design, most modern, resulting in longer up time of furnaces, hence optimising the furnace operation and efficiency. Chromite lump ore, Chrome ore Briquettes, coke, quartz are mixed in a pre-calculated proportion. The material mix is fed into the furnaces. The ferrochrome alloy is produced via reduction of Chromite ore to an alloy of chrome and iron. The casted alloy from the furnaces is crushed and screened to different sizes according to customer specification. This alloy is then transported to the nearest Sohar Port for export to stainless steel producers around the world. Ferrochrome is an alloy of chromium and iron containing 50-70 per cent chromium by weight and is produced through a carbothermic reduction process taking place at high temperatures (2,800 deg celsius) where chrome ore is reduced to form Ferrochrome alloy by smelting in electric arc furnaces using coke as reducing agent.

In 2019, Sohar Freezone signed an agreement with Al Tamman Indsil Ferrochrome (FZC) LLC (ATIFC) for the expansion of the project. In this project, ATIFC will construct additional ferrochrome furnaces that will increase production capacity. The Al Tamman Indsil expansion will see the creation of four submerged arc furnaces, which will have four furnaces of 24 MVA each for the production of ferrochrome, with an additional production capacity of approximately 37,500 tonnes per year. The total capacity of the plant, post expansion, is expected to be around 112,500 tonnes per year. During the year 2020, Al Tamman Indsil Ferrochrome LLC (FZC) commissioned a 25Mw solar power receiving facility. The new facility replaces 25 per cent of the electrical energy consumed from conventional to non-conventional source of electrical power (solar power). With the installation of this new facility, ATIFC has become a pioneer in utilisation of Solar power in the smelting industry in Sultanate of Oman.