

Private & Confidential

1.3 mill t/y Integrated Mini Mill



A Melewar Steel Group Development



(actual plant model)

EXECUTIVE SUMMARY

1 PURPOSE

This summary has been exclusively compiled for Messrs. Petronas. Data and parameters stated in here are indicative only and subject to change.

This short summary brief is to outline the basic development parameters, be it technical or commercial, for a 1.3 million ton integrated steel mini mill by the Melewar Group.

This outline will verify the technical process basis and the reasons why it was chosen by the developer, the planning basis in terms of logistics, raw material supplies, plant location and finished product distribution. Further it will outline basic commercial considerations from investment cost to conversion cost determination and market place bench marking for the end product in Malaysia and internationally.

The development of a 1.3 mill ton integrated steel mill by the Melewar Group is prudent, secure and profitable.

2 Development Basis

2.1 The Melewar Group

The Melewar Group is one of the largest diversified industrial and financial service Groups in Malaysia with assets of more than 8 billion RM and an annual turnover of more than 2 billion RM. The Groups interests range from insurance, banking, oil & gas, shipping, building materials, property to industrial.



The majority of the industrial interests of the Group are combined under Melewar Industrial Group Berhad, a first board listed public company with down-stream steel product manufacturing facilities in excess of 500,000 ton per year including, but not limited to pipe manufacturing, cold roll coil, profiles and re-bar. The down stream facilities are presently being upgraded and extended including sophisticated scrap smelting facilities. The complete Groups production output is being sold in Malaysia.

2.2 Material

The Melewar Steel Group has continuously experienced difficulties in procuring reliable quality HRC supply to its plants especially under the present buoyant steel market conditions. Proper growth of the Group can only be achieved by increasing the value chain up stream into raw material supplies.

This summary brief outlines that with the implementation of the integrated mini mill the Melewar Steel Group will successfully have completed the steel value chain in an optimal manner.

2.3 Malaysian Steel Market

Malaysia is a net importer annually of approx. 1.1 million ton of steel, has an apparent steel consumption of 8.5 million ton and a raw steel production capacity of 2.2 million ton. The steel consumption is increasing at an average of 10.5% per annum. At such rate the increased steel production from this pant will be taken up by the local Malaysian market during our construction period alone. 50% of the production of Maegma will be used internally and an additional 20% has been pre-sold through tangible off-take agreements.

2.4 Socio Economic Environment



Malaysia is a peaceful country with a stable democracy, sound financial services and stable industrial activity with first class electrical grid and power

supply, gas and water services.

Qualified labour is available at competitive rates and very flexible working hours.

Industrial plant construction costs are 40% of US and European rates, 50% of Australian rates and still 20% cheaper than any other South East Asian Country.

A disadvantage of about 15% compared to Chinese construction rates is compensated by the already high standard of quality and efficiency.



Malaysia arguably is one of the most competitive locations for such industrial development in the world.

3 The Project

The integrated steel mini mill is designed at optimum efficiency for one single line at maximum output of 1.3 mill ton per annum of Hot Rolled Coil (HRC) at premium quality.

The plant is separated into three main areas, iron making through direct reduction (DRI), steel making through a standard smelt shop and thirdly a continuous flat bed casting and hot rolling mill.



The integrated mini mill has a raw material requirement of 2.2 million ton of lump ore or DRI grade pellets which presently is the preferred material.



Main utilities and other resources required beside the raw iron ore are as follows:



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Electricity:	620kW
Oxygen:	94Nm ³
Refractory:	3.0kg
Carbon:	10kg
Argon:	0.13Nm ³
Service Water:	0.48m ³
Cooling Water:	0.8m ³
Natural Gas:	55 mscft/day

A wide range of other raw materials including, but not limited to cement, dolomite, process gasses and lubricants are required. All such materials are readily available commodities in Malaysia.

4 The Iron Making Process

The complete Plant consists only of proven technologies in accordance with the latest technology standards achieved today. Only world leading suppliers are being considered for supply of plant components.

DRI REACTOR



Maegma will be producing iron directly from lump iron ore, iron ore pellets or a combination of both. The iron ore will be reduced through natural gas





injection in accordance with the HYL HIGH TEMP® process, which is now possible without reforming the natural gas, this process is referred to as "Zero Reforming".



The chosen process is the most competitive, taking the availability of stable power and quality natural gas at the proposed site into consideration.



HYTEMP[®] I RON

Metallisation:	93-95%
Carbon:	1.2 – 2.5%
(with Oxygen injection):	3.5%
Feed Temperature:	>600°C
Bulk Density:	1.6 t/m ³
Nominal Size:	6-13mm

The product as shown above is a quality high concentrate DRI ball, which will be directly hot fed into the melt shop saving both power cost and material handling cost.



MELT SHOP

HYTEMP® Iron EAF LMF

The melt shop produces steel in accordance to the required specification by adding ferro boosters such as chrome, nickel, carbon, magnesium, molybdenum and others.

EAF HOT FEED

The hot metal will then be directly poured into a continuous flat bed caster "CSP" followed by a hot rolling mill. The equipment used will be State of the Art with minimum wear and tear and maximum yield supplied by the leading suppliers of the world.



The final product will be high quality Hot Rolled Coil "HRC" usable for all downstream applications



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including, but not limited to cold roll processing, white goods, galvanising, car industry, pipes and profiles.

$CSP \rightarrow HRC \rightarrow PRODUCT$

5 Plant Location

The plant will be located in an industrial zone near Lumut in the State of Perak, Malaysia. Lumut is about 220km north west of Kuala Lumpur. The area is industrially fully developed providing the following key advantages to the project:

- Full access of Cape Size Bulk Carriers into existing material handling terminal
- Abundant electrical power with stiff grid
- Natural Gas
- Construction and labour infrastructure
- Quality urban living
- Qualified operation and maintenance
 personnel
- Attractive living environment for expatriate personnel

The plant site must be considered a perfect location providing a key competitive advantage in the international market place for MAEGMA.

The land is referred to as Tanjung Hantu and shown in the following. The land owned by Maegma provides enough space for 3 more extensions up to a potential capacity of 10 mill ton per annum.

MAEGMA PLANT SITE









Melewar Integrated Engineering Sdn. Bhd.



6 Marketing

6.1 Raw Material Procurement

In view of the market pressures on raw iron ore supplies, the Melewar Group has proactively secured such raw material supplies by purchasing a major share in a Western Australian mining concern Gindalbie Metals Ltd. with estimated reserves of more than 200 mill tons of high quality magnetite.

The reserves are located at mount Karara about 220km east of Geraldton, 400km north of Perth.

Gindalbie Metals Ltd Magnetite Reserve WA



However for the first Phase MAEGMA has signed offtake agreements with VALE, the world larges produce of quality iron ore from Brazil.

The material will come from its new iron transhipment hub located near manjung power station, approx. 15km from the Maegma site.





Finished goods in the form of HRC will be sold 80% locally and 20% internationally. The product mix is chosen to mainly serve the high quality local market in which presently a shortfall of 1 million ton per annum exists. More than 50% of the local portion will be utilised within the Melewar Group. For the foreign portion pre-off-take agreements have been entered into. Further offers are available to Maegma and are under consideration.

As such not less than 70% of the finished product is pre-sold thus ensuring the fundamental bank-ability of the project.

6.3 Transport

Melewar Industrial Group is a major share holder into Malaysian Merchant Marine and thus has access to resources and know-how to ensure timely and competitive shipping of all its goods, be it the import of raw materials and additives or the export of HRC.

With the plant being strategically located in the Lumut basin, we have access to Lumut Port and Lumut Maritime Terminal, a world class bulk terminal with excess of more than 10 million ton material handling capacity per annum.

Lumut Maritime Terminal









7 Success Factors

7.1 Plant Design

The plant design integrates the latest but proven technologies so as to minimise capital investment whilst maximising end product quality and reliability.

But most importantly the plant is designed to minimise conversion cost. This is achieved by closely harmonising the iron production, the steel making and the direct inflow into the caster and hot rolling mill. This continuous hot feed substantially reduces the electrical power consumption of the process, the internal cost of material handling and the total overhead cost of plant operation.

The process is designed such that only readily available commodities are utilised, for example: instead of coking or low volatile coal, natural gas is used as energy source; instead of reformed hydrogen, natural gas is used directly, with the iron source a variety of pellets from magnetite fines instead of lump hematite is used, thus ensuring long term lower energy costs, raw material cost and reduced transport costs.

7.2 Location

The plant will be located in prime industrial land with full access to a deep water harbour, abundant and secure electrical power supply, gas supply and quality labour in a safe political environment.

Site geotechnical investigation indicates very good soil and subsoil conditions reducing civil and infrastructure expense.

Full accessibility through quality roads and an environment with full industrial infrastructure within the vicinity of the plant.

7.3 Logistics

Logistics costs determine up to 30% of the total operation cost and thus represent an essential parameter for the long term competitiveness and success of such a plant. By being located directly on the sea shore, no double or intermediate material handling is required, international waters are also directly accessible. Combined with the integration from raw material reduction to the hot rolling mill, low logistics costs are a major cost advantage for Maegma. Furthermore the project development risk is substantial decreased by the ready availability of the port infrastructure.

7.4 Value Chain Management

The Melewar Group is an integrated steel processing and production company with a proven track record of successful implementation and operation of its steel facilities. By having access to the complete value chain of steel production and processing we are in the position to maximise quality and business security.

8 Commercial Considerations

Total conversion cost excluding personnel at today's raw material cost and shipping cost are less than:

Total Conversion Cost 326.00 US\$/ton

All financial models are based on the international average selling price of 610 US\$/ton considering a five year cycle up from 2005 to 2010, thus ensuring project viability at all times and not only during today's buoyant steel market times.

Today's (Oct. 2010) HRC selling price is > 680 US\$/t

The investment presently includes any and all foreseeable cost for the turnkey, ready to operate design and supply of the plant including but not limited to: receiving jetty, material handling and storage facilities, enabling works, environment impact assessment and approvals, civil works, admin and housing facilities, roads drainage and landscaping, the direct reduction plant P1, the integrated melt shop plant P2 and the continuous casting and hot rolling mill plant P3.

Total investment cost Budget stands as of today at approx. 4.3 billion RM, including operating capital and start up expenses.

Total Investment > 4.3 billion RM (four point three billion Ringgit Malaysia)

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