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Submitted to

MINISTRY OF COMMERCE, INDUSTRY AND INVESTMENT PROMOTION
SULTANATE OF OMAN

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مدائن madayn

PUBLIC ESTABLISHMENT FOR INDUSTRIAL ESTATES
SULTANATE OF OMAN

AUGUST 2021

PRE-FEASIBILITY REPORT (DRAFT)

FOR

SETTING UP AN

STEEL PLANT IN OMAN

CONTENTS

1. INTRODUCTION

1.1. PROJECT BRIEF

This report relates to a study on the feasibility of setting up an Electric Arc Furnace based Steel Plant in Sultanate of Oman. The following is the Brief illustration of the project:

Name of Product		**Electric Arc furnace based steel project**
Domestic Market Potential (as of 2020)		2.158 million Tons
Export Potential (as of 2020)		1.3 million tons (select GCC market imports)
Capacity of the Project		600,000 Tons per year
Total Investment		RO 77.577 Million
Equity Investment		RO 31.031 Million
Key Appraisal Criteria:		
IRR on total investment		14.66%
IRR on Equity		18.4%
Payback period of Total Investment		6 years and 1 month
Payback period on equity		6 years
Break Even Point (as % of Capacity)		36
Cash Break Even Point (as % of Capacity)		22
Debt Equity Ratio		1.5:1
DSCR		2.078
Manpower	Total	207
	Nationals	72

1.2. PROJECT RATIONALE

Oman's bid to become a major steel producer in the region is gathering momentum with the strategic utilization of its energy resources and solid infrastructure. The competitive advantage of locating the plant in Oman is the availability of Steel scrap and Ferro alloys.

2. INDUSTRY ANALYSIS

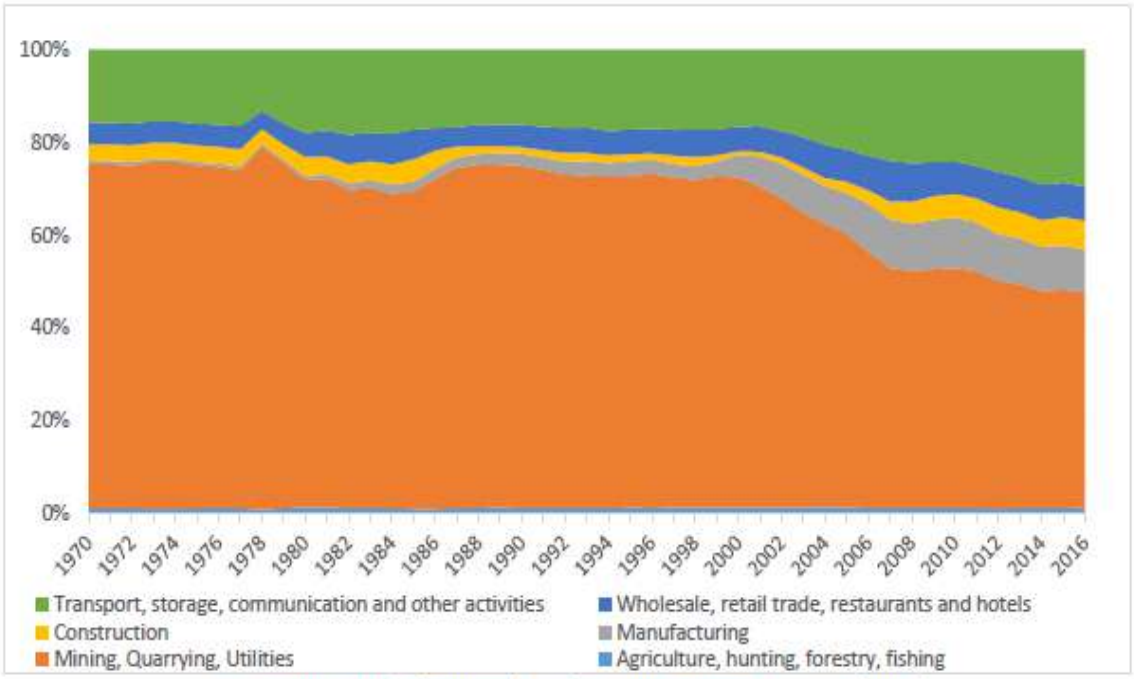
2.1. MACROECONOMIC CONDITIONS

The recently published statistical bulletin from National Centre for Statistics and Information (NCSI) indicates that the GDP at market prices reduced by 15% during Year 2020 when compared to the Year 2019. This is mainly due to the dual impact of slump in oil prices and the COVID – 19 pandemic. As per the World Bank outlook a revival is expected in 2021 and in 2022 on an average of around 4%. The estimated GDP of Oman considering the past trend, current situation and the expected recovery is illustrated below:

The average price of Oil for 2020 is USD 46/Barrel. We expect this to go up to USD 50/barrel in 2021 and USD 60/barrel in 2022.

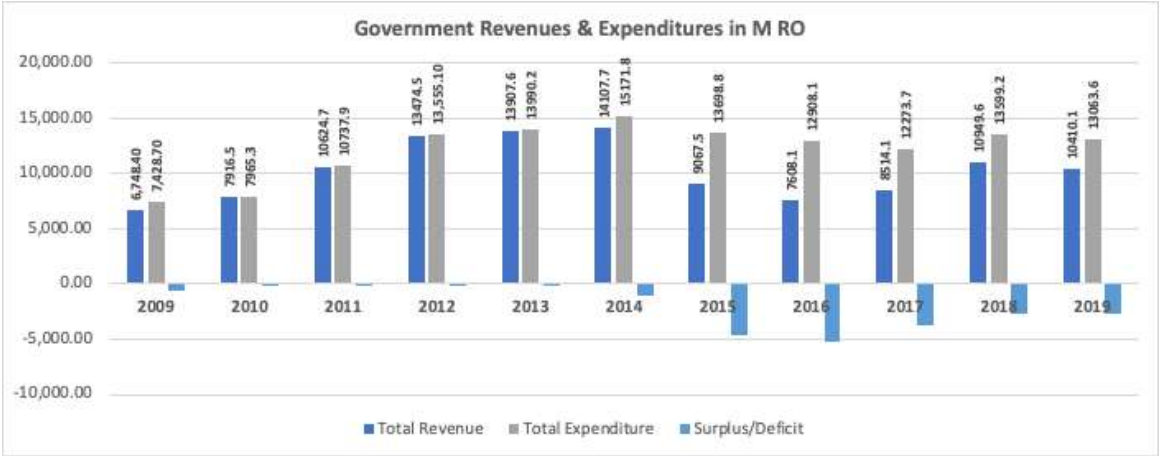
2.2. TREND IN ECONOMIC DIVERSIFICATION

Since the beginning of the millennium our economic activity has significantly moved away from oil as indicated below. The following graph gives data up to 2016. In 2019 Crude Petroleum contributed to 29.11% of GDP.



Source: UNIDO elaboration based on UN Statistics Division (2018)

However the Government income is still substantially dependent on Oil sector. The tightening of spending, introduction of VAT and increased revenues from Gas are expected to contain deficits to manageable levels by 2022.



2.3. OVERVIEW OF THE MANUFACTURED METAL SECTOR IN OMAN

The following table illustrates the overall performance of the Manufactured Metal Products in Oman.

Year	Total Units	Total Employees	Book Value of Fixed Assets (VFA)	Materials	Imported Materials	Output	Value Added (VA)	Exports	Labour Efficiency (RO/ Employee)	Capital Efficiency (VA /VFA)
	No.	No.	(RO million)						Rial Omani	
2012	34	8,231	1,432.58	596.44	399.43	1,077.04	377.08	709.92	45,813	0.26
2013	28	7,659	1,541.05	451.81	287.94	995.30	457.19	603.72	59,693	0.30
2014	27	6,791	1,494.91	423.05	288.46	946.79	382.04	587.21	56,257	0.26
2015	37	9,504	1,692.05	462.15	284.47	937.83	363.48	533.07	38,245	0.21
2016	36	8,492	1,318.16	500.17	352.91	996.85	376.60	526.43	44,347	0.29
2017	35	8,450	1,416.64	580.05	480.44	1,141.33	398.77	666.18	47,192	0.28

Source: MOCI Annual Industry Report 2018

Following are the key inferences with respect to the sector performance:

- The increase in the level of employment, value of fixed assets and output indicate a high growth in the sector performance.
- The labour efficiency and the capital efficiency have also increased, indicating change in technology improvements in the sector.

The graphs below illustrate the performance of the manufactured metal sector from 2012 to 2017.

Figure 27
Total Employment (in Nos.)

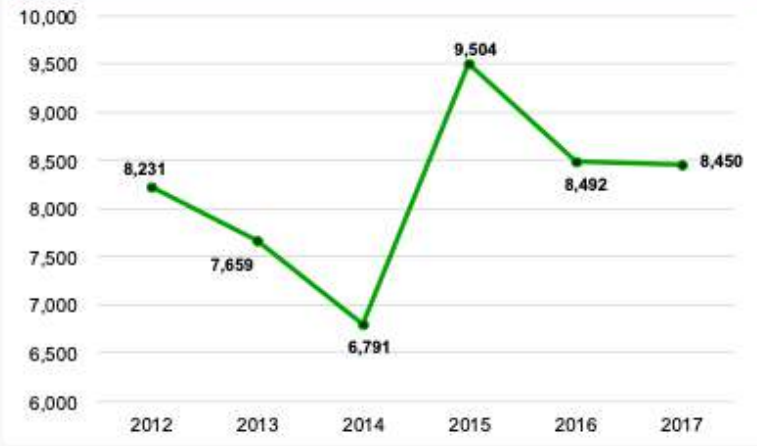
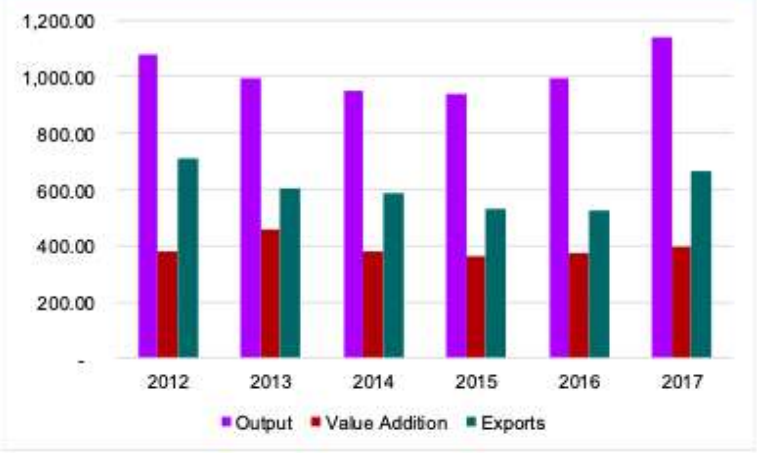


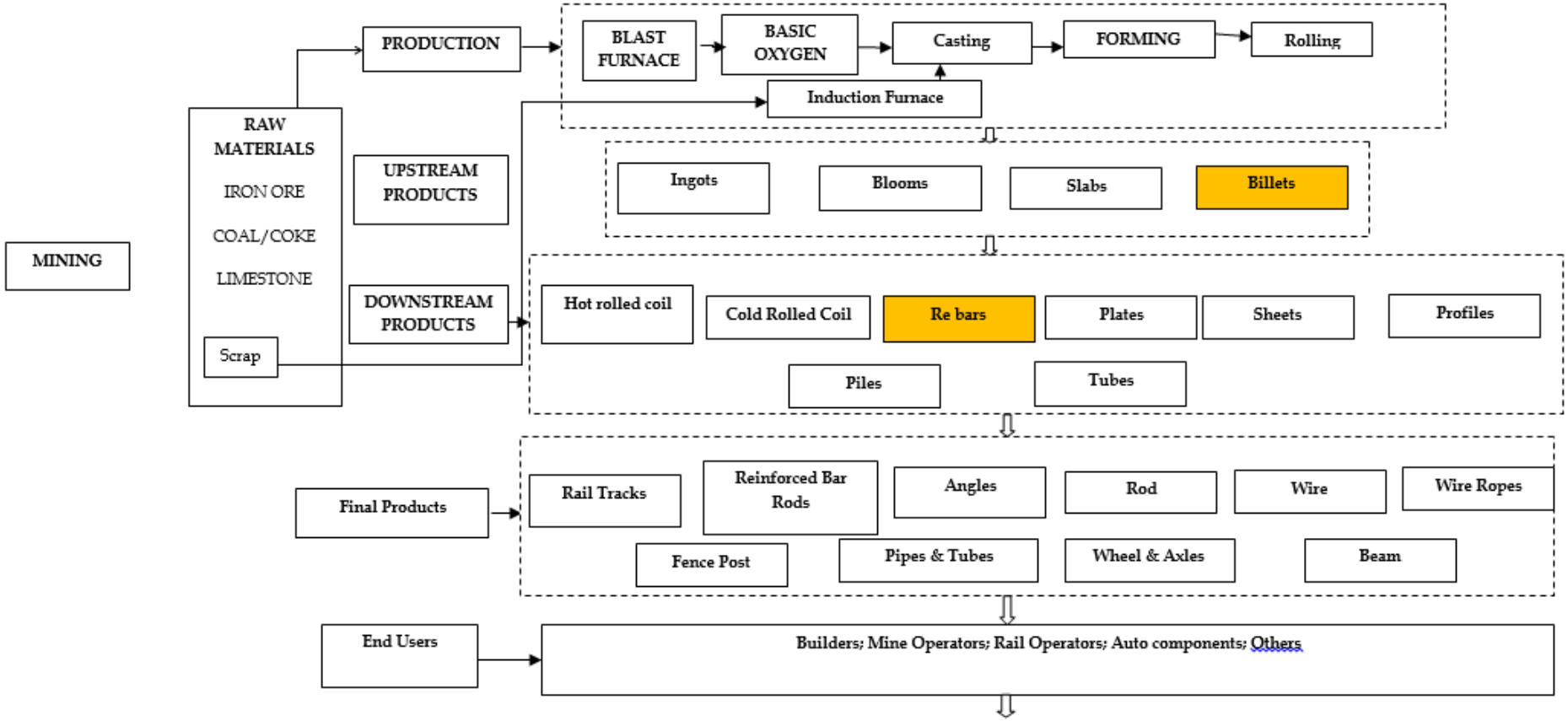
Figure 28
Output/Exports/Value Addition (in RO million)



Source: MOCI Annual Industry Report 2018

2.4. VALUE-CHAIN OF IRON AND STEEL INDUSTRY

The following chart illustrates the overall value chain of Steel Products:



2.5. REGIONAL (GCC) AND LOCAL VALUE-CHAIN

The steel industry is well established in the GCC Region. There is also a strong distribution network consisting of importers/wholesalers and retailers present in the GCC countries. Steel intermediary and downstream products are produced in large quantities in Saudi Arabia, UAE and Kuwait in addition to Oman.

2.6. VALUE CHAIN ANALYSIS – IRON STEEL PRODUCTS

The value chain activities in Oman have been detailed based on a detailed secondary research. The details have been validated during the primary survey

2.6.1. Upstream Value Chain activities

Oman has iron-ore reserves and is engaged in mining activities. Oman produces Primary Steel (HBI & Billets), as well as Midstream products such as Steel Rebar.

Following are some of the upstream Iron & steel players in the Sultanate:

- **Vale,** located in the Sohar Port Industrial Complex is one of the world's largest mining companies in iron ore, nickel and pellets production operating in around 30 countries across 5 continents. Vale invested around $ 2 billion in its pelletizing plant with a nominal capacity of 9 million ton of pellets per annum connected with a distribution center with 40 million ton of handling capacity.
- **Jindal Shadeed Iron & Steel LLC., (JSIS)** located in Sohar, has the following facilities:
    - Direct Reduction Plant supplied by Midrex Technologies USA, with a capacity to produce HBI (0.4 MTPA) and HDRI (1.1 MTPA).
    - State-of-the-Art Steel melt Shop that comprises of

- 200 Tons Electric Arc Furnace (EAF).
- 200 Tons Ladle Refining Furnace (LF).
- 200 Ton Vacuum Degassing Unit (VD).

  - Matching 8 strand Combi Continuous Casting Machine to produce Square and round Billets/Blooms. The caster is first of its kind in the world.

- Sohar Steel LLC is located in 250,000 square meter area in Sohar Industrial Port Companies (SIPC) area which is adjacent to the sea port of Sohar. The plant is capable of producing 600,000 MT of Steel Billets and 500,000MT of Re-bars annually.
- Moon Iron & Steel Company SAOC (MISCO) is a front runner in Oman's Iron & Steel landscape with an annual production capacity of 1.2 million tons of high-grade Reinforcement bars (Re-bars). Their plant is based out of Sohar. MISCO's chief products are billets and rebar, vital to the construction industry and in demand in the regional market. We are also among the sole manufacturers of flat products and hot rolled coils in the MENA region.

2.7. MISSING VALUE CHAIN ACTIVITIES IN OMAN

Huge reserves of iron ore are present in Oman. However, the quality of the same is not amenable for direct use in iron and steel making. Discussions indicate that the existing cost of mining / transportation and using the same in the primary iron and steel manufacturing process is not cost effective. With improvements in technology and further research, use of local iron ore in steel making could be distant reality.

The locally manufactured billets are mainly used by the structural steel fabricators.

Specialized semi-finished steel products including plates and pipes used in the manufacture of heat exchangers, pressure vessels etc., are

imported. Discussions indicate that availability of primary form of steel of respective quality / specification coupled by high capital cost and small size of the regional market are the key challenges that has restricted the development of manufacture of specialized steel products, in Oman or the region.

3. MARKET ANALYSIS

3.1. PRODUCT & ITS USES

Semi-finished casting products are intermediate castings produced in a steel mill that need further processing before being finished goods. There are four types:

- Ingots
- Blooms,
- Billets
- Slabs.

The project will manufacture Billets

3.1.1. Product Description

Billet is semi-finished piece of metal that is rectangular, circular, or square in shape. It is a semi-finished casting product that needs further processing before becoming finished goods. Billets are sold as cut lengths or coil, and usually have a cross sectional area that is less than 36 sq. inch. Billets are also known as bar stock.

3.1.2. Product Types

Billets can be in alloying and non-alloying qualities for applications like structural and general purpose, rebar for concrete reinforcement, wire drawing or any special applications (like Low Carbon, High Carbon, Spring Steel, High Mn Steel, Automotive Steel, Tool Steel, Case Hardening Steel, Cold Heading Quality Steel etc.

Billets are available as Square Billets and Round Billets.

3.1.3. Product specifications

The Following are the popular specifications and grades for Billets

No	Standard for Chemical Composition	Application
1	ASTM A 36/A 36M, ASTM A 615/615 M	Structural and general use
2	BS 4449	Structural and general use
3	EN10025	Structural and general use
4	SAE 1006, SAE 1008, SAE 1010, SAE 1012, SAE 1015 etc under ASTM A 510 M	Wire drawing carbon steel/low carbon steel
5	GOST 380-94 3SP/PS, 5SP/PS	Structural and general use
6	EN10083, EN 10084, EN 10087	Carbon steel/Alloy Steel for special application
7	ASTM 105, ASTMA 350, ASTAM A 29	Carbon Steel/Alloy Steel for special application

3.1.4. Characteristics

Compared to already-processed steel bars and products, Steel billets have specific and definite features. Billets have a distinct grain structure. This makes the metal able to be processed in an inextricable manner. Steel billets are also known for having high flexibility and elasticity, in particular when they are in the temperatures varying during molding and shaping.

3.2. USES/APPLICATIONS

Billets (sometimes referred to as ingots) are not of functional usage till they are formed into more practical shapes and sizes. Although they have been put in the steel furnaces, still, they need an operation series of molding and shaping such as cold and hot process, milling and cutting prior to being sold in the shops, or being used for various applications.

Continuously Cast Round Billets are used to produce seamless pipes used for industrial applications that require transportation of steam, water, gas and air under high pressure in the sectors like energy, petrochemical, automotive industries, steel, cement etc. or in machinery manufacturing.

Continuously Cast Square Billets can be in alloying and non-alloying qualities for applications like structural and general purpose, rebar for concrete reinforcement, wire drawing or any special applications (like Low Carbon, High Carbon, Spring Steel, High Mn Steel, Automotive Steel, Tool Steel, Case Hardening Steel, Cold Heading Quality Steel etc.

3.3. INDUSTRY OVERVIEW

3.3.1. Global Scenario - Steel Industry

The steel industry remains at the heart of global development. According to Deloitte, in 2019 and 2020 global steel demand was expected to continue to grow, but growth rates would moderate in tandem with a slowing global economy.

World steel recently concluded a global economic modeling exercise with Oxford Economics that found that in 2017 the steel industry sold US $2.5 trillion worth of products and created US$ 500 billion value added. For every $1 of value that is added by work within the steel industry itself, a further $ 2.50 of value added activity is supported across other sectors of the global economy because of purchases of raw materials, goods, energy and services. This generates over US$1.2 trillion of value added.

On the employment side the study confirmed that the steel industry employs more than 6 million people and that for every 2 jobs in the steel sector, 13 more jobs are supported throughout its supply chain, in total around 40 million jobs globally.

3.3.2. Global - Steel Billet Market

The global steel billets market is expected to grow at a CAGR of 3.5% during the forecast period, to reach USD 5.2 billion by 2028. The growth of the market can be attributed to the increasing demand for steel billets in construction and machinery applications, owing to their high strength and durability properties. The demand for steel billets in automobile applications is also expected to increase due to their low weight and high strength properties, which make them suitable for use in automobiles such as cars, trucks, buses, and trains. North America accounted for the largest share of the global steel billets market in 2017 with a share of 39%. This can be attributed to its large population base as well as its economic stability which has led it towards being one of the most developed regions globally. Asia Pacific is projected to witness significant growth during the forecast period due to its rapidly developing economies such as China and India that are leading towards an increased demand for steel products across various industries including construction and machinery application segments. Key Players in the Steel Billet Market are

- Baosteel
- HBIS Group
- Shabang Group
- Anshan Steel
- Shougang Group
- Shandong Iron & Steel Group

Some of the factors affecting the global steel billet industry are listed below:

- Increasing demand for steel billet from the construction industry.
- Increasing demand for steel billet from the automotive industry.
- Increasing demand for steel billet from the aerospace industry.
- Rising prices of raw materials used in production of steel billets.

- Rising wages in China.

3.3.3. Global Trade of Billet

The proposed project will be producing the rebar products. Hence the trade details of Rebar products are considered

The 4-digit Harmonized Tariff System codes for various Rebar Products are:

HS Code	Product
HS -7207	Semi-finished products of iron or non-alloy steel

Source: UN COM Trade Data

Details of ten major exporting/importing countries of the above products for the last 5 years are detailed in the following sections.

- **Import of Steel Billet products by value from 2016 to 2020**

Import of semi-finished products of steel under above HS codes from 2016 to 2020 by value and country is detailed in the following Table:

Importers	Imported value in 2016	Imported value in 2017	Imported value in 2018	Imported value in 2019	Imported value in 2020
	Value in USD'000				
World	20,093,839	24,903,848	31,927,846	26,887,840	25,379,246
China	38,625	69,753	212,821	1,196,002	6,886,348
Indonesia	1,534,132	1,810,894	1,953,972	2,094,464	1,589,614
Turkey	1,976,886	2,047,597	2,521,327	1,582,525	1,580,942
USA	1,693,563	2,735,087	3,162,404	2,482,033	1,509,161
Italy	1,202,482	1,693,035	2,063,887	2,183,659	1,371,343
Taipei, Chinese	973,241	1,456,520	1,896,083	1,507,499	1,303,609
Thailand	1,471,167	1,291,167	1,706,125	1,880,833	1,215,916
Philippines	319,870	972,381	1,836,331	1,228,786	1,066,304
Belgium	509,650	748,492	1,236,374	1,068,278	892,167

Korea,	900,837	928,199	1,042,080	1,024,969	511,475

Source: UN COM Trade Data

- **Export of Steel Billet products by value from 2016 to 2020**

  Export of Steel Bar products from 2016 to 2020 by country and value is detailed in the following Table:

Exporters	Exported value in 2016	Exported value in 2017	Exported value in 2018	Exported value in 2019	Exported value in 2020
	in USD'000				
World	15,918,003	23,011,308	28,389,476	23,805,784	23,043,629
Russia	4,471,352	6,031,006	7,955,941	6,090,983	4,854,776
Ukraine	2,211,097	2,541,542	3,002,948	2,860,004	2,750,308
Brazil	1,918,755	3,220,282	3,866,896	3,160,808	2,717,078
India	541,831	1,115,433	1,212,856	1,147,701	2,374,097
Viet Nam	18,403	240,308	398,312	466,638	1,711,913
Japan	1,191,033	1,609,133	1,765,897	1,366,551	1,416,430
Oman	273,371	347,988	567,946	1,010,816	1,020,590
Iran	738,133	1,300,980	1,521,847	424,792	663,615
Malaysia	34,931	23,229	108,446	879,736	630,586
Germany	639,848	796,259	918,553	716,391	578,082

Source: UN COM Trade Data

3.4. DEMAND ESTIMATES FOR STEEL BILLETS

3.4.1. Domestic Demand

The requirement of steel billet products in the country is met from local production/import.

3.4.2. Local Production

Billet production capacity in Oman in 2020 was around 3.07 million tons. The following section illustrates the details of manufacturers.

No.	Company	Category	Capacity (TPA)
1	Modern Steel Mills LLC	Billet	150,000
2	Sohar Steel LLC (backward integration of Sharq Sohar Steel)	Billet	250,000
3	Moon Steel Co SAOC	Billets	1,200,000

4	Jindal Shadeed	Billets	1,400,000
5	Hadid Majan	Billets	70,000
	Total		**3,070,000**

3.4.3. Foreign Trade

The 4-digit Harmonized Tariff System codes for various Steel Rebar Products are:

HS Code	Product
HS Code -72071100	Semi-finished Iron of CS width < twice thickness
HS Code -72071200	Semi-finished Iron of CS width > twice thickness
HS Code -72071900	Other Semi - finished of iron non-alloy steel
HS Code - 72072000	Other Semi-finished Iron Weight =>0.25% carbon

Source: ROP Statistics

3.4.3.1. Imports of HS Code 7207

HS Code	Product	Unit	2016	2017	2018	2019	2020
72071100	Semi-finished Iron of CS width < twice thickness	RO	25,531,347	55,344,018	194,979,254	70,034,457	56,895,890
		Ton	206,675	303,040	796,969	286,858	314,531
		RO/Ton	124	183	245	244	181
72071200	Semi-finished Iron of CS width > twice thickness	RO	2,850	38,962	17,641	59603	12,925
		Ton	4.5	195.288	68.353	9.935	14.366
		RO/Ton	633	200	258	5999	900
72071900	Other Semi - finished of iron non-alloy steel	RO	27,878,339	42,361,044	26,596,000	26,013,507	11,786,061
		Ton	206,568	272,332	140,166	114,098	73,982
		RO/Ton	135	156	190	228	159
72072000	Other Semi-finished Iron Weight =>0.25% carbon	RO	12,903	1,637	137,475	637,972	2870
		Ton	24	0	310	1253.835	7.315
		RO/Ton	533	4573	444	509	392
7207	**Total Value**	**RO**	**53,425,439**	**97,745,661**	**221,730,370**	**96,745,539**	**68,697,746**
	TOTAL Quantity	**Ton**	**413,271**	**575,568**	**937,512**	**402,220**	**388,535**
	Value per Ton	**RO /Ton**	**129**	**170**	**237**	**241**	**177**

Source: ROP Statistics 2020

3.4.3.2. Import Sources – Countries by Value and Quantity in 2019

HS Codes	Country	Value (RO)	Quantity (Tons)	Value/Ton (RO/Ton)
720171100	Qatar	25,199,185	142,079.360	177
	Iran	27,559,403	69,026.272	399
	Iraq	14,803,039	65,565.462	226
	UAE	1,473,060	10,181.098	145
	India	999,770	6.302	158,643
	Sub Total	**70,034,457**	**286,858.494**	244
720171200	China	59,424	9.810	6,057
	UAE	179	0.125	1,432
	Sub Total	**59,603**	**9.935**	**5,999**
72071900	Iran	16,819,963	58,572.787	287
	UAE	6,182,664	39,560.620	156
	Bahrain	13,339	24.250	550
	Iraq	1,761,998	8,957.810	197
	India	1,226,785	6,978.265	176
	China	3,321	3.934	844
	UK	3,814	0.250	15,256
	Egypt	1,575	0.159	9,906
	Qatar	48	0.100	480
	Sub Total	**26,013,507**	**114,098.175**	228
720172000	UAE	637,972	1,253.835	509
	Sub Total	**637,972**	**1,253.835**	**509**

Source: ROP Statistics 2020

The total imports of steel billets into Oman in 2020 was around 388,535 tons in 2020. The decline in the imports may be due to the impact of the COVID 19

Majority of the imports in the year 2019 has been from Qatar, Iran and Iraq.

3.4.3.3. Export of Steel Billets by Value and Quantity

HS Code	Product	Unit	2016	2017	2018	2019	2020
72071100	Semi-finished Iron of CS width < twice thickness	RO	65,697,543	71,229,744	46,063,910	40,443,536	83,731,581
		Ton	475,345	405,330	229,380	242,371	429,850
		RO/Ton	138	176	201	167	195
72071200	Semi-finished Iron of CS width > twice thickness	RO	5,743	206,120	68,100	2388	
		Ton	51.44	496.581	284	35.9	
		RO/Ton	112	415	240	67	#DIV/0!
72071900	Other Semi - finished of iron non-alloy steel	RO	24,658,149	62,355,633	171,574,426	90,821,448	108,146,854
		Ton	149,279	253,002	712,131	459,102	481,197
		RO/Ton	165	246	241	198	225
72072000	Other Semi-finished Iron Weight =>0.25% carbon	RO	14,678,253		668,725	11,560,790	5476826
		Ton	125,109		3,175	62103.007	29833.21
		RO/Ton	117		211	186	184
7207	**Total Value**	**RO**	**105,039,688**	**133,791,497**	**218,375,161**	**142,828,162**	**197,355,261**
	TOTAL Quantity	**Ton**	**749,785**	**658,829**	**944,970**	**763,611**	**940,879**
	Value per Ton	**RO /Ton**	**140**	**203**	**231**	**187**	**210**

Source: ROP Statistics 2020

3.4.3.4. Exported by – Countries by Value and Quantity in 2019

HS Codes	Country	Value (RO)	Quantity (Tons)	Value/Ton (RO/Ton)
720171100	UAE	13,576,149	78,076	174
	Thailand	9,270,323	61,013	152
	China	3,851,705	25,522	151
	Qatar	3,540,313	20,473	173
	Malaysia	2,950,209	20,326	145
	Italy	2,562,583	12,623	203
	Saudi	2,589,265	12,241	212
	Indonesia	1,810,574	10,497	172
	Djibouti	292,415	1,600	183
	Sub Total	**40,443,536**	**242,370.58**	**167**
72071200	UAE	2,388	35.900	67
	Sub Total	**2,388**	**36**	**67**
72071900	Saudi	50,196,759	221,813	226
	UAE	39,884,924	233,401	171
	Djibouti	583,275	3,000	194
	Italy	108,661	688	158
	Slovenia	47,829	200	239
	Sub Total	**90,821,448**	**459,102**	198
720172000	Italy	8,403,700	41,930	200
	Indonesia	1,588,696	10,089,200	0
	Thailand	1,568,394	10,083,540	0
	Sub Total	**8,403,700**	**41,930**	**200**

Source: ROP Statistics 2020

3.4.3.5. Demand Estimates for Steel billets

Following Table gives the summary of import/export & net imports from 2016 to 2020:

Details	2016	2017	2018	2019	2020
Local Production	1,870,000	1,870,000	1,870,000	1,870,000	3,070,000
Imports	413,271	575,568	937,512	402,220	388,535
Exports	749,785	658,829	944,970	763,611	940,879
Demand	**1,533,487**	**1,786,739**	**1,862,542**	**1,508,609**	**2,517,656**

Source: ROP Statistics 2020,

- The total demand for steel billets in Oman for the year 2020 was about 2.5 million tons.
- The production capacity of steel billet plants in Oman have increased with the opening of MISCO which started operations in 2020

3.4.4. DEMAND ESTIMATES FOR BILLETS IN GCC COUNTRIES

3.4.4.1.Imports by GCC Countries

The table below illustrates the Import of billet products of GCC countries for the year 2016 to 2020 based on the Import data

Importers	2016	2017	2018	2019	2020		
	Quantity in Tons				Quantity in Tons	Value in USD'000	Unit Value
UAE	1,249,303	1,413,956	1,430,896	999,751	517,868	184,538	356
Saudi Arabia	1,071,315	176,131	46,542	186,268	491,776	229,869	467
Qatar	-	44,468	1,485	21,278	296,110	142,270	480
Bahrain	189	21,911	24,386	5,178	196	236	1,204
Kuwait	66,144	869	76,236	6,597	8	83	10,375
Total Imports	**2,386,951**	**1,657,335**	**1,579,545**	**1,219,072**	**1,305,958**	**556,996**	

Source: UN Trade Data

- It may be seen that all the other GCC countries are importing steel billet products.
- Total Imports in 2020 was 1.3 million tons

3.4.4.2. Major GCC Producers

The details of the Long Product Rolling Capacities in the GCC region for year 2016 is detailed in the table below.

Company	Country	Capacity (mtpa)	External Billet Requirement
Hadeed	Saudi Arabia	3.9 mtpa	Zero
Emirates Steel Industries	UAE	3.2 mtpa	0.6 mtpa
Al Tuwairqi	Saudi Arabia	2.25 mtpa	0.5 mtpa
Qatar Steel	Qatar	2.24 mtpa	Zero
Al Rajhi Industries	Saudi Arabia	2.0 mtpa	Zero
United Steel Industries	Kuwait	1.0 mtpa	Zero
Metalloinvest	UAE	1.0 mtpa	1.0 mtpa
Emirate Steel Est.	UAE	0.86 mtpa	0.55 mtpa
SULB	Bahrain	0.7 mtpa	Zero
Conares Metal	UAE	0.7 mtpa	0.7 mtpa
Star Steel	UAE	0.59 mtpa	0.59 mtpa
Qatar Steel (Dubai mill)	UAE	0.54 mtpa	0.54 mtpa
Ras Al Khaimah Steel	UAE	0.5 mtpa	0.5 mtpa
Al Yamamah	Saudi Arabia	0.5 mtpa	0.5 mtpa
South Steel	Saudi Arabia	0.5 mtpa	Zero
Union Gulf Steel	Saudi Arabia	0.43 mtpa	0.43 mtpa
Union Gulf Steel	UAE	0.35 mtpa	0.35 mtpa
Kuwait Reinforced Steel	Kuwait	0.35 mtpa	0.35 mtpa
Sharq Sohar Steel	Oman	0.30 mtpa	Zero
Universal Rolling	Bahrain	0.17 mtpa	0.17 mtpa
Muscat Steel Industries	Oman	0.15 mtpa	0.15 mtpa
Jazeera Steel	Oman	0.15 mtpa	0.15 mtpa
Seashore Group	Qatar	0.12 mtpa	Zero
Eurogulf Steel Industries	UAE	0.15 mtpa	Zero
Hadid Majan	Oman	0.07 mtpa	0.07 mtpa
TOTAL		**22.7 mtpa**	**7.2 mtpa**

3.5. EXPORT POTENTIAL FOR THE PROPOSED PROJECT

3.5.1. Target Market

In addition to the local production, all the GCC countries are importing the products to meet their requirement. The import by them can be considered as the overall export potential for the project proposed in Oman. Import share of countries are illustrated:

Regions	Imports in Tons (2020)	% of Total
UAE	517,868	40%
Saudi	491,776	38%
Kuwait	8	0%
Qatar	296,110	23%
Bahrain	196	0%
Total	**1,305,958**	

Out of the total GCC import of 1.3 million tons, share of UAE is 40%, Saudi Arabia is 38% and Qatar is 23%.

3.6. DEMAND PROJECTION

Market for billets has always been driven by the demand for construction related activities, which in turn depend on economic growth. Both construction sector and Real estate sectors have been impacted by the current outbreak of COVID-19. Considering this a 10% reduction in demand is considered in 2021. The demand is expected to stabilise in 2021 and increase marginally from 2022 onwards.

Based on this the Local demand for rebar products are projected as below:

Year	2020	2021	2022	2023	2024	2025	2026
Demand (Tones '000)	2,518						
Projected Growth rate	%	-10%	0%	3%	3%	3%	3%
Projected Demand (Tons '000)		2,266	2,266	2,334	2,404	2,476	2,550

3.7. COMPETITION

3.7.1. Major Sources of Supply

There are about 5 local manufacturers in the Sultanate. In addition to the local manufacturers, there are importers who deal with the imported billet products. In addition to the major manufacturers the traders cater to the rest of the market.

3.8. MARKETING MIX STRATEGY OF COMPETITORS

3.8.1. Products

Local producers manufacture and supply billets as Square Billets and Round Billets of various cross sections and lengths based on customer requirements.

Billets of material specifications such as ASTM, BS, EN, etc. are manufactured. Billets can be of alloying and non-alloying type for applications like structural and general purpose, rebar for concrete reinforcement, wire drawing or any special applications like Low Carbon, Medium Carbon, High Carbon etc.

3.8.2. Target Market

The primary market of the billet products is the domestic market and the secondary markets are UAE and other GCC countries.

3.8.3. Pricing

It has to be noted that pricing will depend on the world market price for the steel products. Being a converting industry, the prices will primarily depend on the raw material price. The following table illustrates the prices proposed for billets as well as the prevailing cost of the raw materials.

Detail	Price Levels (USD/Ton)
Billets	**600**

As it can be seen, the market prices considered for financial projections are conservative against the prevailing market prices.

3.8.4. Promotion

The Companies concentrate on building healthy personal contacts with downstream manufacturing units. A sales team comprising of a sales manager and two executives are proposed for the project. The Sales personnel will build and retain long term relationships with customer segments.

3.8.5. Trade Credit

The industry practice is to offer a reasonable credit period depending on the credit worthiness of the client. Normally, maximum 90 days credit is considered.

3.8.6. Distribution

Normally the competitors concentrate on direct marketing to end users in their respective regional markets.

3.9. PROPOSED MARKETING MIX STRATEGY FOR THE COMPANY

3.9.1. Target Market

The target geographical market will be Oman and other GCC markets.

3.9.2. Product Mix

The Project will manufacture billets. Billets of various cross sections and lengths based on customer requirements.

3.9.3. Pricing

The company has proposed to maintain a competitive pricing policy.

Detail	Price Levels (USD/Ton)
Pricing Considered for Financial projections (USD / Ton)	554

3.9.4. Promotion

Competitive pricing, providing products as per agreed specifications and ensuring prompt deliveries are key to promoting the products.

3.9.5. Distribution

The company would concentrate on direct marketing to end users in Oman as well as other GCC markets and through agents in other markets.

3.10. PROJECTED MARKET SHARE

The unit with a production capacity of 600,000 Tons per annum can effectively leverage its capability to service the large size corporate customers.

DETAILS	2023	2024	2025	2026	2027
Total Local demand ('000 tons)	2,334	2,404	2,476	2,550	2,627
Market Share	11%	12%	14%	15%	15%
Estimated Domestic sales ('000 Tons)	253	295	337	379	400
Projected Production (000 tons)	361	421	481	541	571
Balance Quantity for Export Market	108	126	144	162	171

Considering the market potential in Oman and GCC Countries, and the conservative nature of the market projections, the proposed market shares are achievable, by following the marketing mix strategy proposed earlier in the report.

4. TECHNICAL ANALYSIS

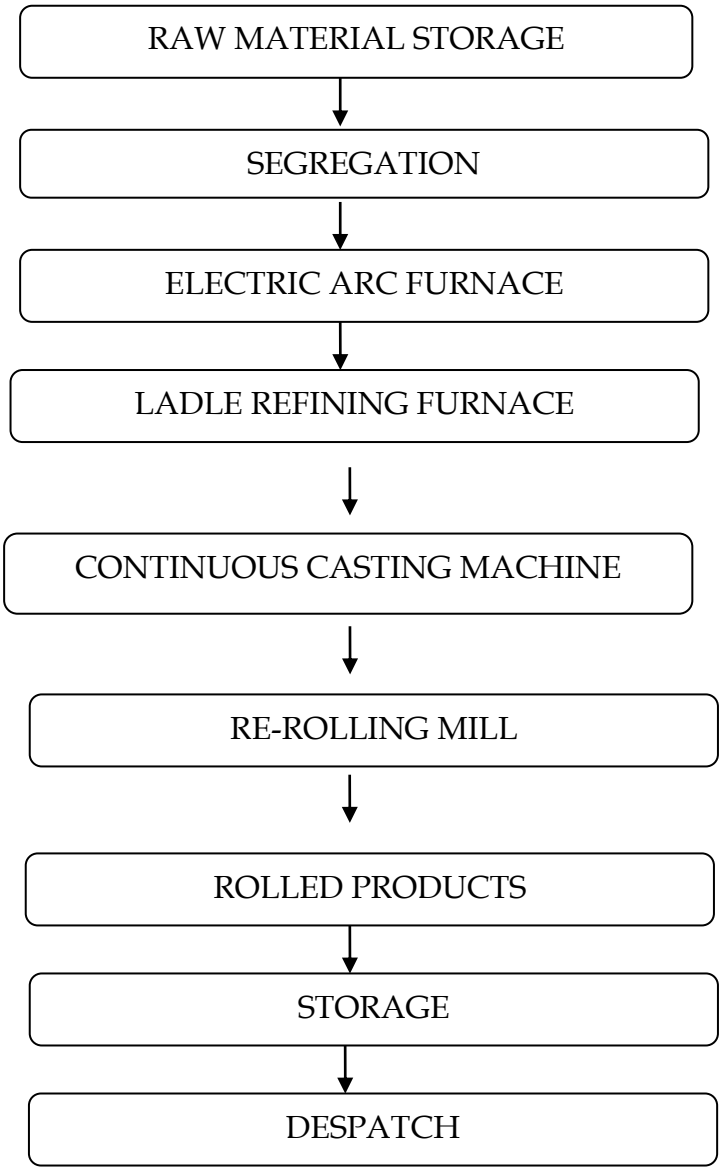
4.1. LOCATION

The proposed project will be located in the Raysut Industrial Estate. The present project requires 100,000 M^2 of land.

4.2. PROCESS AND TECHNOLOGY

4.2.1. Production Process– Illustration

The manufacturing process is depicted in the following process flow chart.



4.3. MANUFACTURING PROCESS

Raw materials for the process are scrap, fluxes and Ferro alloys. Sponge iron can substitute scrap up to 50%. The Steel Scrap received from various suppliers will be placed in the steel scrap storage yard based upon the Grade and Size at different locations.

The scrap from the storage yard is handled either manually or by a small dosing device to the Bundling Machine and will be stored in the steel Scrap Yard as per the Grade if any. The 16"x16" size Scrap bundles will be Lifted and Transported by overhead cranes and fed to theFurnace.

Scrap/ sponge iron, fluxes, Ferro alloys are melted in the furnace, wherein electric current is passed through it. In the Melting Furnace the scrap melts at temperature of about 1650^0 C. When the total charge is melted into hot liquid metal then the metallurgy of steel in terms of carbon, phosphorus content, alloy elements etc., is controlled at this stage. Based upon the Composition of the molten steel, additives will be added to get the requisite composition and grade of Steel .The molten material is poured into mould to produce ingots.

The ladle is placed over the Continuous Casting machine to cast the molten steel into required size of billets. The Cut Billets are transported by a Billet handling crane and stored in the Storage yard as per the Grade and Quality for dispatch.

4.4. MAJOR EQUIPMENTS & PROCESS

4.4.1. Electric arc furnace

The EAF will be used for the intended application. EAF will be provided and will be a modern standard Eccentric Bottom Tapping (EBT) design with a capacity to tap heats of 115 tonnes. This furnace will be of an AC design with conventional oxygen and carbon injection and gas fired burners located in various points of the EAF sidewall.

The sizing of the EAF is based on the following:

- Tapped Weight: 115 ton
- Liquid (Hot) Steel: 25 ton
- Total Liquid Steel: 140 ton

The raw material mix is fed into the EAF. Scrap is dropped into the EAF by use of bottom opening scrap buckets operated by an overhead crane. The mix proposed allows a one bucket scrap charge and the balance of the metallic is then fed continuously from the overhead gallery. This approach should allow a rapid and energy efficient melting practice to be developed.

The three electrodes in the EAF conduct large quantities of electricity to arc between the iron content of the feed mix and themselves to melt this material. Sidewall burners have a direct heating effect on the feed mix at the start of the melting practice and both supplement the electrical energy input and accelerate scrap melting at the 'cold spots' inherent in AC furnace design. Oxygen and carbon are injected by lance or jets and also add chemical heat energy into the EAF to reduce the process time and improve quality.

After approximately 45 minutes the steel is ready to be tapped through a slide gate valve in the bottom of the EAF into a ladle which is then transferred to the LRF station for secondary processing.

4.4.2. Ladle Refining Furnace

The ladle is transferred from the EAF and positioned under the LRF roof and the electrodes lowered towards the molten steel. Power conducted through the electrodes forms an arc which maintains the heat of the steel whilst alloys are added in wire and lump form to allow for accurate adjustment of the steel chemistry.

Nitrogen is also 'bubbled' through porous plugs located at the bottom of the ladle to stir the liquid steel during the refining process. Desulphurising is also carried out to lower the level of sulphur in the steel as may be required.

After approximately 30 minutes (the time being dependant on the required specification of the steel), this secondary process is complete and the ladle is prepared for transfer to the CCM.

4.4.3. Continuous Casting Machine

The ladle is transferred by overhead crane and positioned on one arm of a twin arm rotating turret assembly. This arrangement allows a continuous flow of molten steel into the mould in order to facilitate sequence casting.

This caster will be of modern curved mould design allowing high casting speeds. Each strand is capable of over 200,000 tons per year and as such only a 3 strand machine will be required for this phase of the project.

Once one ladle has been emptied, the turret rotates until the new (full) ladle is positioned over the tundish and the hydraulically actuated slide gate, located at the bottom of the ladle, is opened and the steel flows into the tundish.

The tundish is designed to distribute the molten steel into the moulds but also acts as the buffer that allows the changeover of ladles at the turret.

To provide the capacity required for this phase of the project, a four strand machine should be utilised. This will typically be designed to make 130mm to 150 mm square billets.

The liquid steel passes from the tundish into the three moulds through a ceramic shroud which is designed to prevent air ingress which would affect the quality of the steel being produced. These moulds are water cooled (with indirect water) which starts the process of solidification of the

steel. The moulds also oscillate vertically to promote the transfer of the material as it solidifies.

On leaving the mould assembly, the steel passes through a series of multi roll modules (curved to change the mode of transfer from vertical to horizontal) and is also subjected to cooling water sprays (with direct water) to further solidify the product. The steel is finally cut to a specified product length (to produce a billet) by use of a gas cutting unit , cooled on a turnover bed unit and stored in the storage area prior to transfer to the Bar Rolling Mill.

4.5. EFFLUENT TREATMENT

The following sections provide an overview of the proposed effluent treatment systems. A detailed EIA study has to be completed in due course.

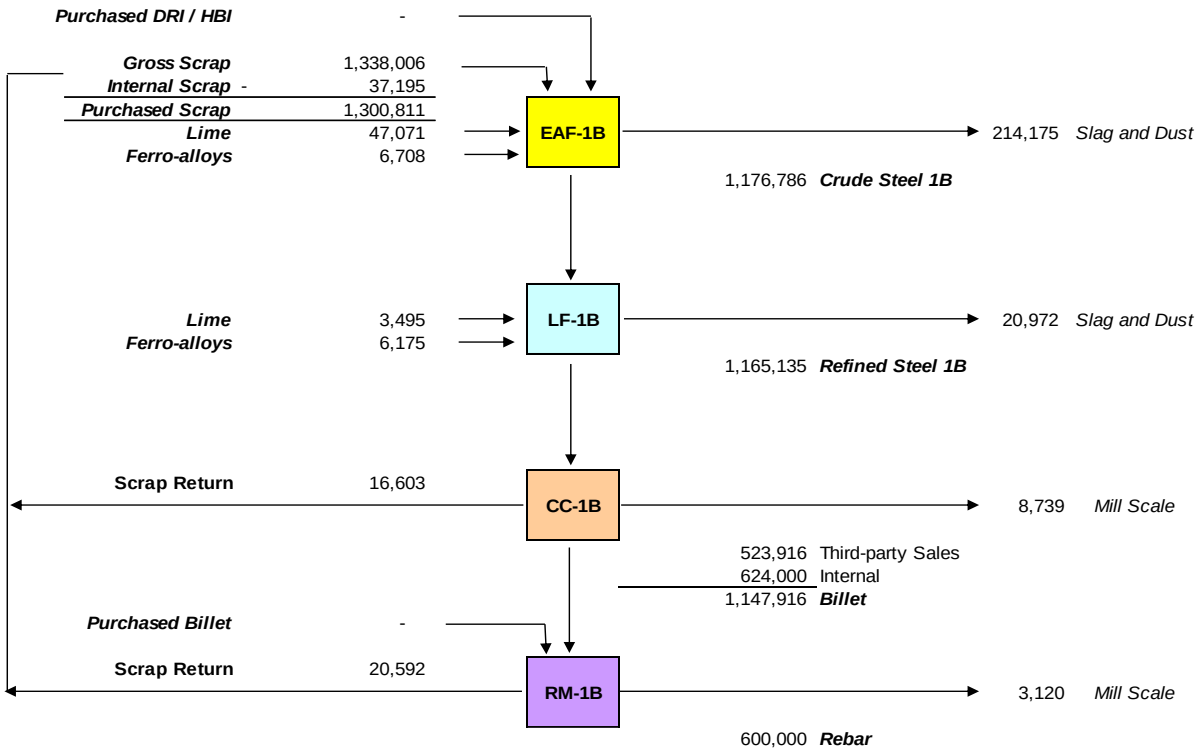
- **Process Water Treatment plant** necessary for the filtration, cooling, circulation and make-up of the plant process water systems will be established. This will include both on-site systems and the infrastructure and equipment necessary for the sea water supply and discharge as described above.
- **Effluent water** will pass through a suitable water treatment stage and the treated water will be discharged externally or preferentially used for plant landscaping and dust control applications.
- **Sewage and other waste** water from the amenities will be collected and discharged to the public sewage system.
- **Solid Waste material** mainly comprising of scale, scale sludge as well as oil and grease will be collected from the water treatment plant. All waste so removed will either be sold on for other industrial use (e.g. cement plants) or will be removed from the plant for proper disposal:

- **Scale** is removed from the casting machines and rolling mills scale pits into dewatering areas by use of the scale pit cranes. This is relatively clean and can easily be sold.
- **Oil and grease** are collected can be collected in drums. This may also be sold on to a cement plant or disposed of at an appropriate waste disposal area.
- **Sand filter backwash water** from process areas is also discharged to the scale pits.
- **The settled solids** are collected together with the scale for sale or disposal as required.
- **Fume Extraction System** – high levels of dust and fumes are generated within the steel making process which requires capture and control. This equipment includes canopy hoods, ducting, fans, cooler, bag house and a possibly a dust pelletiser. This equipment is essential to control levels of emissions to the atmosphere. With the exception of the main centrifugal fans, this equipment will all be of new supply.

4.6. MATERIAL BALANCES

4.6.1. Material Balance Chart

The raw material used for Billet production is a mix of HBI and steel scrap**. It may be noted that the proposed technology that would be employed in the plant would allow infinite combination of HBI and Steel scrap as the raw material charge.** The following chart illustrates the material balance for the proposed project which is entirely based on steel scrap.



As discussed above proposed technology would help us to work on any combination of steel scrap and the financial model has worked on both the extremities i.e., 100 % steel scrap as input material and 100 % HBI as input material.

4.6.2. Material Balance Capability

Process	INPUT			OUTPUT		Yield	Remarks
	Details	Weight (Tons)		Details	Weight (Tons)		
EAF	Internal Scrap	9,023		**Crude Steel**	**616,666**	87.95%	1 ton of crude steel for 1.137 ton of scrap
	Purchased Scrap	692,126		Slag and Dust	84,063		
	Scrap - Sub Total	***701,149***		Process waste	421	0.06%	
	Lime	0	@40 Kg / ton of final product				
	Ferro-alloys	0	@ 5.7 Kg / Ton of output				
	Total Input	**701,149**		**Total Output**	**701,149**		

Process	INPUT			OUTPUT		Yield	Remarks
	Details	**Weight (Tons)**		**Details**	**Weight (Tons)**		
LRF	Crude Steel	616,666		**Liquid Steel**	**610,561**	99.01%	1 ton of liquid steel for 1.01 ton of crude steel
	Lime	1,832	@3 Kg / ton of final product	Slag and Dust	10,987		
	Ferro-alloys	3,236	@5.3 Kg / ton of final product	Process waste	187	0.03%	
	Total Input	**621,734**		**Total Output**	**621,734**		
CC	Liquid Steel	610,561		**Production for Billet**	**601,537**	98.522%	1 ton of billet for 1.015 tons of liquid steel
				Internal Scrap	9,023	1.478%	
				Process waste	305	0.05%	
				Mill Scale	8,718	1.428%	
	Total Input	**610,561**		**Total Output**	**610,561**		

4.7. LAND

The area Considered for the factory is 100,000 sq. m. The total cost of site development and related work comes to RO 379,000. Site development includes, soil testing, fencing, parking lot, sewage, provisions for roads, quarry development etc. Details are in Annexure- 1.1

4.8. BUILDING & CIVIL WORKS

The main factory building consists of an area of 9810 sq. m. The building must have at least 6.5 m clear height up to EOT crane hook and there may have a total wall height of about 9m.

The total cost of Building and Civil works is estimated at RO 1.271 million as shown in Annexure- 1.2.

4.9. VEHICLES

Vehicles & transport equipment required project are detailed below:

Details		Number
1	Car Saloon	1
2	Car	11
3	Bus	2
4	**Sub Total**	**14**
B	**TRANSP. EQUIPMENT**	
1	Fork lift truck	3
3	Dumpers	2
4	Trucks	3
5	JCB	1

Estimated cost the vehicle is RO 1.082 million. Details are given Annexure 1.4.

4.10. FURNITURE

The total estimated cost of furniture, furnishing and equipment is RO 77,000. The details and the break-up of the estimates are given in Annexure - 1.5.

4.11. RAW MATERIALS AND CONSUMABLES

Steel scrap and HBI are the main raw materials required for this unit. Other materials such as lime, carbon and ferroalloys are also required. Details are in Annexure- 2.1. As illustrated earlier the proposed technology allows the unit to mix scrap and HBI at infinite proportions. However the financial model has been worked with 100 % scrap. Please refer Annexure - 2.1.

4.12. UTILITIES

The following sections detail on the consumption of various utilities.

4.12.1. Water

Water is required for cooling of machines and the billets. Water is also required for human consumption. It is estimated that the annual requirement of water is 1,172,998 cubic meters. The cost of water is taken at RO 0.770 per cubic meter.

4.12.2. Electricity

The total electricity consumption at full capacity is estimated at 276,707,247 KWH per annum. A specific consumption of 460 KWH per metric ton of liquid steel is considered for the calculation of power requirement for making billets. The cost of electrical power has been estimated based on a tariff of RO 0.030 per KWH.

4.12.3. Natural Gas

Natural gas is required for the process. It is estimated that 15 NM3 of natural gas is required per ton of billet making. The total requirement for the project is over 9 million NM3 per year at 100% utilisation. Details are shown in Annexure- 2.2.

4.13. MANPOWER

The total manpower required for the operation is 207. The annual wages and salaries work out to be R.O. 1.356 million. The requirement of manpower is given in Annexure- 2.3

Department	Omani	Expat	Total
Production	30	119	149
Administration	31	14	45
Marketing	11	2	13
Total	**72**	**135**	**207**

The expected level of Omanisation is 35percent.

4.14. PROJECT IMPLEMENTATION

The critical activities include civil construction, acquisition and the erection of the plant and machinery. Construction of building will take about 24 months. Placing of orders for machinery to be planned in such a way that the machinery arrives at the site as soon as the building is completed The Company can start production after 24 months from the start of preliminary activity.

5. FINANCIAL ANALYSIS

5.1. COST OF PROJECT

The total cost of the project is estimated at RO 77.577 million. Details are given in Annexure – I. The break-up is given below:

PROJECT COST	TOTAL COST (RO)
Land for Plant Site	379,000
Building & Civil Works	1,271,000
Plant & Machinery	55,844,000
Vehicles and Internal Transport	1,082,000
Furniture & Office Equipment	77,000
Pre- Operative Expenses	3,297,000
Contingency & Escalation	3,079,000
Sub Total	***65,029,000***
Working Capital	12,548,000
TOTAL	**77,577,000**

5.1.1. Land

The required land will be taken on lease. Cost of land development is estimated at RO 379,000. Details are in Annexure 1.1

5.1.2. Building & Civil Works

The total cost of building and civil works is estimated at RO 1.271 million. Details are given in Annexure- 1.2.

5.1.3. Plant & Machinery

The main Plant and Machinery is proposed to be imported. The total cost of plant and machinery is estimated at RO 55.844 million. Details are given in Annexure- 1.3.

5.1.4. Vehicles & Internal Transport

The total cost of vehicles and internal transport is estimated at RO 1.082 million. Details are given in Annexure- 1.4.

5.1.5. Furniture & Office Equipments

The total cost of furniture and office equipment is estimated at R.O 77,000. Details are given in annexure- 1.5.

5.1.6. Pre-Operative Expenses

The pre-operative expenses include expenses for feasibility study, interest during project implementation, salaries and wages of project staff, travel and communication, legal fees, audit fees and other miscellaneous expenses. The total pre-operative expenses are estimated at R.O. 3.297 Million. Details are given in Annexure- 1.6.

5.1.7. Contingency & Escalation

A provision of 5 % of the estimated cost of items including building, plant & machinery, vehicles, technical know-how fee etc., is provided in the Project cost towards price escalation and any unforeseen expenses. This works out to RO 3.079 Million. Details are given in Annexure- 1.6.

5.1.8. Working Capital

The following assumptions are made in the computation of working capital.

Particulars	*Period*
Accounts Receivable	1.5 Months
Raw Materials	1 Month
Consumables & packing	1 Month
Utilities	1 Month
Factory Wages	1 Month
Administration Expenses	1 Month
Sales Expenses	1 Month
Work in Progress	5 Days
Finished Goods	9 Days
Finance Cost	1 Month
Accounts Payable	1 Month

The working capital requirements for the first 4 years are given below. The working capital requirement in the first year comes to RO 12.548n Million. Details are given in Annexure 1.8.

Particulars	Year 1	Year 2	Year 3	Year 4
Working Capital Requirement (RO '000)	12,548	14,523	16,421	18,279

5.2. MEANS OF FINANCE

It is proposed to finance the Project as indicated in the following table.

Details	*Total Cost (RO)*
Equity Capital	31,031,000
Bank Term Loan	39,017,000
Commercial Loan for Working Capital	7,529,000
TOTAL	**77,577,000**

It is proposed that the project cost of RO 31.031 million will be financed by owner's fund [equity] to the tune of RO 39.017 million, Term Loan of RO 9.003 million and commercial borrowings for working capital at R.O. 7.529. Loan carries interest @ 6%. Details are in Annexure- 1

5.3. COST OF SALES

The estimated cost of sale for first ten years of operation is given in Annexure-2 and those of first five years are summarized as below:

Details	Year 1	2	3	4	5
	Figures in RO '000				
Raw Material	49,661	57,938	66,214	74,491	78,630
Consumables	8,577	10,007	11,437	12,866	13,581
Utilities	5,862	6,850	7,842	8,837	9,344
Factory Wages	837	862	888	914	942
PRIME COST	64,937	75,656	86,380	97,108	102,496
Factory Overheads	976	1,368	1,368	1,368	1,368
Misc. Factory Exp.	659	770	877	985	1,039
FACTORY COST	66,572	77,794	88,625	99,461	104,903
Rent on Land	100	100	100	100	100
Admin. Salaries	396	408	420	433	445
Admin. Expenses	25	25	25	30	30
Total Admin expenses	**521**	**533**	**545**	**563**	**575**
Sales Salaries	123	127	131	135	139
Sales Expenses	17	17	17	17	17
Advert.& Business Promotion	1,544	1,802	2,059	2,316	2,445
Sales Commission					
Total sales & dist: costs	**1,685**	**1,946**	**2,207**	**2,468**	**2,601**
OPERATING COST	**68,777**	**80,273**	**91,377**	**102,492**	**108,080**
Finance cost					
Interest on T Loan	2,341	2,341	2,283	2,044	1,790
Interest on working capital	452	452	452	452	452
Total finance cost	2,793	2,793	2,735	2,495	2,242
Non cash expenses					
Depreciation	6,231	6,231	6,231	6,231	6,231
Prelim Expenses written off	3,297	-	-	-	-
COST OF SALE	**81,098**	**89,297**	**100,343**	**111,218**	**116,552**

5.3.1. Raw Materials

The cost of steel scrap, Ferro-alloys and lime works out to RO 82.768 Million and other consumables and yield losses works out to RO 52.097 million at full capacity. Please refer Annexure 2.1 for details.

5.3.2. Utilities

The total cost of utilities at full capacity is RO 9.931 million. The basis of estimate and the break up are given in Annexure – 2.2.

5.3.3. Salaries & Wages

The cost of salaries and wages in the normal year of operation is RO 1.356 million. Details are given in Annexure 2.3.

5.3.4. Factory Overheads

The annual expenses include repairs and maintenance, civil repairs, cost of spares, spare parts, insurance and vehicle expense and the same is estimated at RO 967,000 for the first year, RO 1,368,000 for the second year onwards. Details are given in Annexure- 2.4.

5.3.5. Administrative Expenses

The basis of estimates of administrative expenses exclusive of salaries & wages is given in Annexure 2.5 and it works out to RO 25,000. Administrative expense include salaries and benefits, rents and rates, vehicle expenses, communication related expenses, stationery, postage, etc.

5.3.6. Sales Expenses

Total sales expenses exclusive of sales salaries are estimated at RO 17,000. Details given in Annexure- 2.6

5.3.7. Depreciation

Depreciation works out to RO 6.231 million each for first ten years. In addition, a preliminary expense amount of RO 3.297 Million is written off in the first year of operation. Depreciation calculation is given in annexure- 2.7. The following are the rates considered for the calculation of depreciation.

Assets	*Life (years)*	*% of depreciation*
Buildings	25	5
Plant & Machinery	10	10
Vehicles and Internal Transport	4	25
Furniture & Office Equipment	5	20
Contingency & Escalation		10

5.3.8. Loan & Interest Calculation

Interest rate for bank term loan and working capital loan is taken at 6%. Details of interest calculations are given in Annexure- 2.8

5.4. INCOME TAX

No income tax is provided as the new units are exempted from tax for the first five years. From sixth year onwards, 15% tax is considered.

5.5. SALES REALIZATION

The annual sales realization at installed capacity is given as annexure 3.1. The annual sales realization for the first five years of operation is provided below:

Details	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Sales – RO '000	77,216	90,085	102,955	115,824	122,259

5.6. COST RATIOS

The major cost indicators as a percentage of sales realization are given in Annexure- 3.

Years of Operation	1	2	3	4	5
Raw Material / Total Sales	64%	64%	64%	64%	64%
Consumables / Sales	11%	11%	11%	11%	11%
Utilities / Total Sales	8%	8%	8%	8%	8%
Factory wages / Total Sales	1%	1%	1%	1%	1%
Prime Cost / Total Sales	84%	84%	84%	84%	84%
Factory exp. / Total Sales	2%	2%	2%	2%	2%
Factory Cost / Total Sales	86%	86%	86%	86%	86%
Admin exp. / Total Sales	1%	1%	1%	0%	0%
Selling exp. / Total Sales	2%	2%	2%	2%	2%
Finance Cost / Total Sales	4%	3%	3%	2%	2%
Non-Cash exp. /Total Sales	12%	7%	6%	5%	5%
Total Cost / Sales	105%	99%	97%	96%	95%

5.7. NET PROFIT AND PROFITABILITY ANALYSIS

As per the financial projection in Annexure – 3, the venture is financially viable. The summary of the analysis is given under:

Details	Year 1	Year 2	Year 3	Year 4	Year 5
	Figures in RO '000				
Revenue	77,216	90,085	102,955	115,824	122,259
Operating Cost	68,777	80,273	91,377	102,492	108,080
PBDIT	**8,439**	**9,813**	**11,577**	**13,332**	**14,179**
Depreciation	6,231	6,231	6,231	6,231	6,231
Finance Cost	2,793	2,793	2,735	2,495	2,242
Operating Profit	**(585)**	**789**	**2,612**	**4,606**	**5,707**
Profit after tax	**(3,882)**	**789**	**2,612**	**4,606**	**5,707**
Net Cash Accruals	5,646	7,020	7,291	9,285	8,835

5.8. KEY APPRAISAL CRITERIA

The viability of the project based on major appraisal criteria is given below.

Detail	Value
IRR on total investment	14.66%
IRR on Equity	18.37%
Payback period of Total Investment	6 years 1 months
Payback period on equity	6 years
Break Even Point (as % of Production)	36
Cash Break Even Point (as % of Production)	22
DSCR	2.078
Total debt equity ratio	1.5 : 1

5.9. SENSITIVITY ANALYSIS

A sensitivity analysis has been carried out to determine the susceptibility of the project to changes in main variables as given below:

Effect on the IRR on equity investment, based on 10 years of operation due to change in various variables is as follows:

Particulars	Original	Volume Down by 10%	RM Cost up by 10%	Sales Realization Down by 10%
IRR on Investment	14.7%	13.22%	8.06%	5.79%
IRR on equity	18.4%	15.73%	6.43%	2.45%

As indicated in the above analysis, the project is highly susceptible for fluctuations to the fluctuations in the RM cost as well as the pricing. It has to be noted that in most cases, they move in tandem and any increase in RM cost is reflected, after a lag (inventory adjustments) is reflected in the pricing.

6. KEY SUCCESS AND PUSHBACK FACTORS

The following aspects are highlighted as the key success / pushback factors.

6.1. KEY SUCCESS FACTOR

- The availability of raw materials including steel scrap, HBI and DRI.
- Access to well-developed roads and sea ports will help the unit in reaching potential markets (Domestic and Export markets)
- The project shall be able to effectively leverage on the government incentives including low cost well developed industrial land, utilities etc.
- Ensuring quality and successful sale through emphasis on improved performance against competing products (EPS sheets) and overall reduction in the life cycle cost etc., are key to the success of the project.

6.2. KEY PUSHBACK FACTOR

The main pushback factor is the inconsistency with respect to raw material (steel scrap) supply.

This needs to be addressed effectively through a proper procurement strategy and also identify exporters for supply of raw materials, in case of shortage in the local market.

The steel market is subject to volatility of raw material pricing as well as end product pricing. With major players operating globally and with no restrictions on the trade, there are periods of windfall profits and major

financial losses. The project should be effectively able to handle such crisis through prudent financial and operational management.

7. CONCULSION

The IRR on Total Investment for the project is 14.7% and the IRR on Equity Investment is 18.4%. Based on the various analyses done on the project, the project is found to be technically feasible and financially viable.

Annexures – Financial Projections

ANNEXURE - 1				
STEEL PROJECT (BILLET MANUFACTURING)				
ESTIMATED PROJECT COST				
S.No	**Item**	**Refer**	**Amount (RO)**	**Remarks**
		Annexure		
A1	**PROJECT COST**			
1	Land development for Plant Site	1.1	379,000	
2	Building etc.	1.2	1,271,000	
3	Plant & Machinery	1.3	55,844,000	
4	Vehicles and Int. Transport	1.4	1,082,000	
5	Furniture & Office Equip.	1.5	77,000	
6	Pre- Operative Expenses	1.6	3,297,000	
7	Contingency & Escalation	1.7	3,079,000	
	Sub Total		***65,029,000***	**-**
A2	**WORKING CAPITAL**		12,548,000	
A3	**TOTAL CAPITAL**		**77,577,000**	
	Say		**77,577,000**	
B	**MODE OF FINANCE**			
1	Equity		31,031,000	**40%**
2	Bank Term Loan		39,017,000	
	Sub Total		**70,048,000**	
3	Commercial Borrwings for Working Capital		7,529,000	**60%**
	TOTAL CAPITAL		**77,577,000**	

ANNEXURE- 1.1						
STEEL PROJECT (BILLET MANUFACTURING)						
ESTIMATED COST OF LAND & SITE DEVELOPMENT						
S.No.	**Item**	**Unit**	**Q'ty**	**Rate**	**Amount**	**Remarks**
				RO	**RO**	
A	**LAND**					
1	Land for Plant	Sq. M	100,000	0	-	On lease
B	**SITE DEVELOPMENT**					
1	Soil Testing				3,500	Lumpsum
2	Levelling	Sq. M	40,000	1.500	60,000	
3	Fencing	M	6,250	30	187,500	
4	Laying Roads	Sq m	4,000	12	48,000	
5	Sewarage & Drainage		2000	25	50,000	
6	Prov for gas connection				20,000	
7	Prov for water from ring main				10,000	
C	**TOTAL**				379,000	
	Say				**379,000**	

ANNEXURE- 1.2						
STEEL PROJECT (BILLET MANUFACTURING)						
ESTIMATED COST OF BUILDING & CIVIL WORKS						
S.No	**Item**		**Area**	**Rate**	**Amount**	**Remarks**
			(SqM)	**RO**	**RO**	
A	**MAIN PLANT BUILDINGS**					
1	Industrial Building	Sq. M	6,000	120	720,000	
	Sub Total		6,000		**720,000**	
B	**UTILITIES & MAINTENANCE**					
1	Electric Cabin	Sq. M	300	120	36,000	
2	Laboratory	Sq. M	150	120	18,000	
3	Maintenance & Store	Sq. M	1,000	120	120,000	
4	Compressor Room	Sq. M	100	120	12,000	
	Sub Total		1,550		**186,000**	
C	**ADMINISTRATIVE BUILDINGS**					
1	Administrative Office	Sq. M	1,000	140	140,000	
2	Operating personal office	Sq. M	500	140	70,000	
3	Security Office	Sq. M	60	140	8,400	
	Sub Total		1,560		**218,400**	
D	**NON FACTORY BUILDINGS**					
1	Other Structures	Sq. M	700	140	98,000	
	Sub Total		700		**98,000**	
	TOTAL (A to D)				1,222,400	
E	**ENGINEERING FEES**					
1	Design				24,448	At 2% on built up area cost
2	Supervision				24,448	At 2% on built up area cost
	Sub Total				**48,896**	
F	**TOTAL**				1,271,296	
	Say				**1,271,000**	

ANNEXURE- 1.3				
STEEL PROJECT (BILLET MANUFACTURING)				
ESTIMATED COST OF PLANT & MACHINERY				
	PLANT AND MACHINERY FOR FIRST PHASE			
S.No	**Item**	**Amount**	**Total Amount**	Remarks
I	**Steel Plant**	**USD**	**RO**	
A	**Electric Arc Furnace - Equipments**			
1	Electric Arc Furnace			
2	Ladle Refining Furnace			
3	Continuous Casting Machine			
4	Section Rolling Mill			
5	Electrical Distribution			
6	Fume Extraction System			
7	Material Handling System			
II	**AUXILIARIES**			
a	**Others**			
1	All refractories			
2	MSDS-Electrical substation			Based on Industry Benchmark
3	Workshop	**130,000,000**	**50,387,597**	
4	Watersupply system			
5	Stores,work shop etc			
6	Balancing equipment			
7	Mobile Plants			
8	Dedusting System			
III	**MISCELLANEOUS**			
1	Mechanical Installation			
2	Piping			
3	Electrical installation			
	Sub Total			
IV	**AT SITE COST**			
1	Total Cost of Main Plant		50,387,597	
2	Spares - Import		-	
3	Spares - Local		-	
4	Packing, Insurance Forwarding & Freight - Import		1,511,628	
5	C I F Cost		51,899,225	
6	Import duty			
7	Clearing & Transport to Site		20,000	
8	At Site Cost		51,919,225	
V	**ERECTED COST**			
1	At Site Cost		51,919,225	
2	Cost of erection -	3,925,093	3,925,093	
3	Technical Supervision -Import		-	
VI	**TOTAL ERECTED COST**		**55,844,318**	
	TOTAL ERECTED COST (Rounded off)		**55,844,000**	

ANNEXURE- 1.5					
STEEL PROJECT (BILLET MANUFACTURING)					
ESTIMATED COST OF FURNITURE & OFFICE EQUIPMENT					
S.No.	**Item**	**Q'ty**	**Rate**	**Amount**	**Remarks**
			RO	**RO**	
A	**OFFICE**				
1	P.C	30	250	7,500	Lumpsum
2	Printers	15	200	3,000	
3	Photocopier	1	1,500	1,500	Lumpsum
4	Fax, Telephone	Set		2,000	Lumpsum
5	Other Office Equipment	Set		5,000	Lumpsum
6	Air Conditioners	10	250	2,500	Lumpsum
7	Office Furnitures	Set		15,000	Lumpsum
8	Board room			5,000	Lumpsum
	Sub Total			**41,500**	
B	**ACCOMODATION FURNITURE**				
1	Expatriate Workers			27,000	
	Sub Total			**27,000**	
C	**FACTORY**				
1	Furniture / Fittings	Set		5,000	Lumpsum
2	Canteen			3,000	
	Sub Total			**8,000**	
D	**TOTAL**			76,500	Sum A + B+C
	Say			**77,000**	

ANNEXURE- 1.4					
STEEL PROJECT (BILLET MANUFACTURING)					
ESTIMATED COST OF VEHICLES & INTERNAL TRANSPORT					
	VEHICLES FOR FIRST PHASE				
S.No.	**Item**	**Q'ty**	**Rate**	**Amount**	**Remarks**
		(Nos.)	**RO**	**RO**	
A	**VEHICLES**				
1	Car Saloon	1	13,000	13,000	For Gen. Manager
2	Car -	11	6,000	66,000	For Senior Managers
3	Bus	2	25,000	50,000	For all Staff
	Sub Total	**14**		**129,000**	
B	**TRANSP. EQUIPMENT**				
1	Fork lift truck	3	10,000	30,000	For shop floor
2	Dumpers	2	100,000	200,000	For Raw Material Transport
3	Trucks	3	80,000	240,000	For Finished Goods Transport
4	JCB	1	384,615	384,615	For scrap & slag handling
	Sub Total			**854,615**	
	Registration, Painting, Spares			98,362	10% of cost of vehicles
C	**TOTAL**			1,081,977	
	Say			**1,082,000**	

ANNEXURE- 1.7					
STEEL PROJECT (BILLET MANUFACTURING)					
ESTIMATED COST OF PRE-OPERATIVE EXPENSES					
S.No	**Item**			**Amount**	**Remarks**
			RO	**RO**	
1	Preliminary Expenses			10,000	
2	Project Management Expenses			1,551,540	2% of total project cost
3	Technical Consultancy				
4	Company Employees				
a	Salary & benefits - Sr. Manager (SMS)		18,000		12 Months
b	Salary & benefits - Production Staff		22,125		3 Months for 1/3 of production staff
c	Salary & benefits - Admin. Staff		23,560		1 Month
d	Salary & benefits - Sales Staff		7,350		1 Month
e	Visa, Passage etc.		114,790		For Expatriates: Senior Level - RO 2,500/- Middle Level- RO 1,300/- Junior Level - RO 900/-
	Sub Total			185,825	
5	Financing Cost				
a	Institutional Loan Interest		1,170,510		Interest for 6 months
b	Mortgage Expenses		97,543		At 0.25% on Institu: Loan
d	Other Bank Charges				Lumpsum
	Sub Total			1,268,053	
6	Communication			2,400	RO 200/month for 12 months
7	Travel			5,000	Lumpsum
8	Recruitment Charges			27,000	Lumpsum
9	Audit Fees, Legal Fees			1,500	
10	Insurance			228,460	At 0.4 % of Plant & Bldg.
11	Staff Training			5,000	
12	Start Up Expenses			5,000	Estimate
13	Product Launching, Advt. etc.			5,000	Provision
14	Miscellaneous			2,000	Provision
15	Total			3,296,778	
	Total (Rounded off)			**3,297,000**	

ANNEXURE- 1.6					
STEEL PROJECT (BILLET MANUFACTURING)					
ESTIMATES OF CONTINGENCY AND ESCALATION					
S.No.	**Item**	**Cost**	**Rate**	**Provision**	**Remarks**
		RO	**(%)**	**RO**	
A	**FIXED ASSETS**				
1	Land for Plant Site	379,000	0.0	-	
2	Building etc.	1,271,000	5.0	63,550	
3	Plant & Machinery	55,844,000	5.0	2,792,200	
4	Vehicles and Int. Transport	1,082,000	5.0	54,100	
5	Furniture & Office Equip.	77,000	5.0	3,850	
6	Pre-operative Exp	3,297,000	5.0	164,850	
	TOTAL			3,078,550	
	TOTAL (Rounded off)			**3,079,000**	

ESTIMATES OF WORKING CAPITAL REQUIREMENTS												
S.No	**Item**	**Req.**		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Remarks**
					In RO '000							
1	Acct. Receivable	2	Months	8,946	10,383	11,764	13,123	13,790	13,766	13,739	13,709	Cost of sales - Non C Ex.
2	Raw Materials	1	Month	4,138	4,828	5,518	6,208	6,552	6,552	6,552	6,552	
3	Consumables	1	Months	715	834	953	1,072	1,132	1,132	1,132	1,132	
4	Utilities	1	Month	488	571	653	736	779	780	782	783	
5	Factory Wages	1	Month	70	72	74	76	78	81	83	86	
6	Admn. Expenses	1	Month	35	36	37	39	40	41	42	43	
7	Sales Expenses	1	Month	140	162	184	206	217	217	217	218	
8	Work in Progress	5	Days	912	1,066	1,214	1,362	1,437	1,438	1,438	1,439	At Factory Cost
9	Finished Goods	9	Days	1,723	2,000	2,266	2,528	2,656	2,651	2,646	2,640	At total Cost-Non cash-Selling and Distrbn
10	Finance Cost	1	Month	233	233	228	208	187	164	141	115	At Finance Cost
	Sub-Total			17,401	20,185	22,891	25,558	26,868	26,823	26,772	26,717	
	Payables		Months									
11	Raw Materials	1	Months	4,138	4,828	5,518	6,208	6,552	6,552	6,552	6,552	
12	Consumables &Packing materials	1	Months	715	834	953	1,072	1,132	1,132	1,132	1,132	
	Subtotal			4,853	5,662	6,471	7,280	7,684	7,684	7,684	7,684	

Net working Capital requirement		**12,548**	**14,523**	**16,421**	**18,279**	**19,184**	**19,138**	**19,087**	**19,033**	

ANNEXURE- 2

STEEL PROJECT (BILLET MANUFACTURING)

COST OF SALE

	Year of Operation	1	2	3	4	5	6	7	8	9	10	
	Capacity Utilisation (Bill	60%	70%	80%	90%	95%	95%	95%	95%	95%	95%	
No	**Item**											**Remarks**
1	Raw Material	49,661	57,938	66,214	74,491	78,630	78,630	78,630	78,630	78,630	78,630	Ref. Annexure 2.1
2	Consumables	8,577	10,007	11,437	12,866	13,581	13,581	13,581	13,581	13,581	13,581	Ref. Annexure 2.1
3	Utilities	5,862	6,850	7,842	8,837	9,344	9,361	9,379	9,397	9,415	9,435	Ref. Annexure 2.2
4	Factory Wages	837	862	888	914	942	970	999	1,029	1,060	1,092	Ref Annexure 2.3
5	**PRIME COST**	64,937	75,656	86,380	97,108	102,496	102,542	102,588	102,636	102,686	102,737	Sub total of 1 to 4
6	Factory Overheads	976	1,368	1,368	1,368	1,368	1,368	1,368	1,368	1,368	1,368	Ref Annexure 2.4
7	Misc. Factory Exp.	659	770	877	985	1,039	1,039	1,040	1,040	1,041	1,041	At 1 % of (5)&(6)
8	**FACTORY COST**	66,572	77,794	88,625	99,461	104,903	104,949	104,996	105,044	105,094	105,146	Sub total of 5 to 7
9	Rent on Land	100	100	100	100	100	115	115	115	115	115	@ RO 1 per Sq m. per annum with 15% escalation every 5 years
10	Admin. Salaries	396	408	420	433	445	459	473	487	501	516	Ref Annexure2.3&2.5
11	Admin. Expenses	25	25	25	30	30	30	30	30	30	30	Ref Annexure 2.5
12	**Total Admin expenses**	**521**	**533**	**545**	**563**	**575**	**604**	**618**	**632**	**646**	**661**	
13	Sales Salaries	123	127	131	135	139	143	147	152	156	161	Ref Annexure2.3&2.6
14	Sales Expenses	17	17	17	17	17	17	17	17	17	17	Ref Annexure 2.6
15	Advert.& Business Prom	1,544	1,802	2,059	2,316	2,445	2,445	2,445	2,445	2,445	2,445	At 2% of Sales
16	Sales Commission											At 3 % of Sales
17	**Total sales & dist: costs**	**1,685**	**1,946**	**2,207**	**2,468**	**2,601**	**2,605**	**2,610**	**2,614**	**2,619**	**2,623**	
18	**OPERATING COST**	68,777	80,273	91,377	102,492	108,080	108,158	108,223	108,290	108,359	108,430	
	Finance cost											
19	Int on T Loan	2,341	2,341	2,283	2,044	1,790	1,520	1,235	932	610	269	Ref Annexure 2.8
20	Int on working capital	452	452	452	452	452	452	452	452	452	452	Ref Annexure 2.8
21	Total finance cost	2,793	2,793	2,735	2,495	2,242	1,972	1,686	1,383	1,062	721	
	Non cash expenses											
22	Depreciation	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	Ref Annexure 2.7
23	Prelim Expenses written	3,297	-	-	-	-	-	-	-	-	-	Ref Annexure 2.7
24	**COST OF SALE**	**81,098**	**89,297**	**100,343**	**111,218**	**116,552**	**116,361**	**116,140**	**115,904**	**115,652**	**115,382**	

ANNEXURE- 2.1					
STEEL PROJECT (BILLET MANUFACTURING)					
ESTIMATED COST OF RAW MATERIALS					
A	**RAW MATERIALS**		**Quantity**	**Rate**	**Amount**
			MT	**(RO)**	**(RO)**
1	Steel Scrap		666,998	120	80,039,760
2	Ferro Alloys		3,236	600	1,941,583
3	Lime		25,373	31	786,563
	Total		**705,333**		**82,767,906**
B	**CONSUMABLES**				
1	Refractory		5,414	538	2,915,143
2	Electrodes		1,023	2,500	2,556,534
	Total				**5,471,678**
C	**Yield Losses**				
1	Yield losses		@ 10 % of the above		**8,823,958**
	GRAND TOTAL				**97,063,541**

ANNEXURE- 2.2

STEEL PROJECT (BILLET MANUFACTURING)

ESTIMATED COST OF UTILITIES

S. No	Item	Quantity	Unit	1	2	3	4	5	6	7	8	9	10
	Capacity Utilisation			**60%**	**70%**	**80%**	**90%**	**95%**	**95%**	**95%**	**95%**	**95%**	**95%**
	Natural Gas Requirement at 100% utilisation (NM3)		9,023,062	**IN RO**									
		USD	RO										
	Gas price / NM3	0.15	0.0587	0.059	0.060	0.062	0.064	0.066	0.068	0.070	0.072	0.074	0.077
		USD	RO										
	Transportation chargesUSD per NM3	0.010	0.0039	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
	Natural gas price per NM3	IN RO		**0.063**	**0.064**	**0.066**	**0.068**	**0.070**	**0.072**	**0.074**	**0.076**	**0.078**	**0.081**
1	Cost of Natural Gas	Unit	Rate	**339,133**	**406,783**	**477,994**	**552,922**	**600,142**	**617,140**	**634,647**	**652,680**	**671,253**	**690,384**
2	Water		RO 0.770 per Cu. m.	541,925	632,246	722,567	812,888	858,048	858,048	858,048	858,048	858,048	858,048
3	Electricity (KWH)		RO 0.030 per kWhr	4,980,730	5,810,852	6,640,974	7,471,096	7,886,157	7,886,157	7,886,157	7,886,157	7,886,157	7,886,157
4	Oxygen												
TOTAL				**5,861,789**	**6,849,881**	**7,841,535**	**8,836,905**	**9,344,347**	**9,361,344**	**9,378,852**	**9,396,884**	**9,415,458**	**9,434,589**

ANNEXURE- 2.3							
STEEL PROJECT (BILLET MANUFACTURING)							
ESTIMATES OF ANNUAL SALARIES AND WAGES							
S.No.		**No of personnel**		**Monthly Salary (RO)**		**Amount**	**Remarks**
A	**PRODUCTION**	Omani	Expats	Omani	Expats		
A1	**RAW MATERIAL HANDLING SECTION**						
	Category						
1	Senior Manager	0	1		1,500	18,000	
2	Department Manag	0	1	1,200	1,000	12,000	
3	Foremen	1	2	600	500	19,200	
4	Skilled	2	3	500	350	24,600	
5	Semiskilled	2	4	400	250	21,600	
6	Unskilled	0	5	330	185	11,100	
	Sub Total	**5**	**16**			**106,500**	
	Other Benifits					42,600	'At 40 % of Salary
	Total Cost					**149,100**	
A2	**Melt Shop**						
a	**Basic Salary**						
1	Senior Manager	0	1	-	1,500	18,000	
2	Department Manag	0	1	1,200	1,000	12,000	
3	Foremen	1	3	600	500	25,200	
4	Skilled	2	4	500	350	28,800	
5	Semiskilled	8	15	400	250	83,400	
6	Unskilled	0	15	330	185	33,300	
	Sub Total	**11**	**39**			**200,700**	
	Other Benifits					80,280	'At 40 % of Salary
	Total Cost					**280,980**	
	Total Melt shop	**16**	**55**			**430,080**	
A3	**Billet making unit**						
a	Category						
1	Senior Manager	0	1	1500	1500	18,000	
2	Department Manag	1	0	1200	1000	14,400	
3	Foremen	1	4	600	500	31,200	
4	Skilled	2	4	500	350	28,800	
5	Semiskilled	10	30	400	250	138,000	
6	Unskilled	0	25	-	200	60,000	
	Sub Total	**14**	**64**			**290,400**	
	Other Benifits					116,160	'At 40 % of Salary
	Total Cost	30	119			**406,560**	

ANNEXURE- 2.3							
STEEL PROJECT (BILLET MANUFACTURING)							
ESTIMATES OF ANNUAL SALARIES AND WAGES							
S.No.		**No of personnel**		**Monthly Salary (RO)**		**Amount**	**Remarks**
B	**ADMINISTRATION & ACCOUNTS**						
a	**Category**						
1	General Manager	1	0	2,500	-	30,000	
2	Manager-HRD	1	0	1,200	1,000	14,400	
3	Manager (Admin)	0	1		1,000	12,000	
4	Personel Officers	1		700	600	8,400	
5	Assistants	2	1	450	350	15,000	
6	Secretary/clerk/cc	2	1	400	250	12,600	
8	Drivers	7	0	350	220	29,400	
9	Office Boy/ Messe	0	3	-	120	4,320	
10	Security Guards	6	0	350	-	25,200	
	Sub Total	**20**	**6**			**151,320**	
b	**Accounts & Purchase**						
1	Commercial Mana	0	1	-	1,500	18,000	
2	Finanace Manager	0	1		1,200	14,400	
3	Cost Accountant	0	1	1,000	1,000	12,000	
4	Accountants	1	1	700	700	16,800	
5	Purchase Officer	0	1	700	500	6,000	
6	Assistant Purchase	1	1	500	350	10,200	
7	Store Keepers	2	1	500	400	16,800	
8	Assitant Store Kee	5	1	400	300	27,600	
9	Secretary cum com	2	0	400	300	9,600	
	Sub Total	**11**	**8**			**131,400**	
c	**Total Manpower Cost (Admin & A/cs)**					282,720	
	Other Benifits			18000	35700	113,088	'At 40 % of Salary
	Total Cost	31	14			**395,808**	
C	**SALES**						
a	**Sales**						
1	Marketing Directo	1	0	1,500		18,000	
2	Assistant Marketin	2	0	800	700	19,200	
3	Sales Executives	4	0	600	400	28,800	
4	Secretary cum com	1	0	400	300	4,800	
5	Helpers	0	2	350	200	4,800	
6	Drivers	3	0	350	220	12,600	
	Sub Total	**11**	**2**			**88,200**	
	Other Benifits			25020	2400	35,280	'At 40 % of Salary
	Total Cost					**123,480**	
D	**GRAND TOTAL**	**72**	**135**	**0**		**1,355,928**	

ANNEXURE- 2.4					
STEEL PROJECT (BILLET MANUFACTURING)					
ESTIMATES OF ANNUAL FACTORY EXPENSES					
S.No.	**Item**	**Year**	**Year**	**Year**	**Remarks**
		1	**2**	**3**	
		(RO)	**(RO)**	**(RO)**	
1	Repairs & Maintenance	125,969	251,938	251,938	At 0.25 %/0.5% of erected cost of Plant and Machinery
2	Civil Repairs	6,355	12,710	12,710	At .5%/ 1 % of cost of Building and Civil Works
3	Spare Parts	259,596	519,192	519,192	At 0.5%, 1.0% and 2.0% of 'at-site' cost
					of Plant and Machinery
4	Insurance	571,150	571,150	571,150	At 1 % of cost Building, Plant and
					Machinery
5	Vehicle Expenses				
a	Forklift (3 nos)	1,800	1,800	1,800	At RO 50 pm
b	JCB (1)	3,600	3,600	3,600	At RO 300 pm
c	Dumpers (2)	7,200	7,200	7,200	At RO 300 pm
6	**TOTAL**	**976,000**	**1,368,000**	**1,368,000**	

ANNEXURE- 2.5				
STEEL PROJECT (BILLET MANUFACTURING)				
ESTIMATES OF ANNUAL ADMINISTRATIVE EXPENSES				
S.No.	**Item**		**Amount**	**Remarks**
		(RO)	**(RO)**	
	ADMINISTRATION			
1	Salaries & Benefits			
2	Technical Audit Fee			
3	Vehicle Expenses & Petrol			
a	Cars (11Nos)	8,640		RO 60/Month
	Bus (2)	2,400		
	Sub Total		11,040	
4	Telephone, Fax etc.		2,400	RO 200/month
5	Stationery, Postage etc.		2,400	RO 200/month
6	Travel & Recruitment		2,000	Lumpsum
7	Legal, Audit Fees		1,500	Lumpsum
8	Utilities outside Plant		1,200	At RO 150/Month
9	Insurance		3,000	Lumpsum
10	Miscellaneous		1,177	At 5 % of above
11	Total		**25,000**	

ANNEXURE- 2.6				
STEEL PROJECT (BILLET MANUFACTURING)				
ESTIMATES OF ANNUAL SALES EXPENSES				
S.No.	**Item**		**Amount**	**Remarks**
		(RO)	**(RO)**	
	SALES			
1	Salaries			See Annexure 2.3
2	Advertisement		-	Provided separately
3	Business Promotion		-	Provided separately
4	Export Travel		5,000	Lumpsum
5	Vehicle Expenses & Petrol			
a	Car (10 No)	-		
b	Trucks (5 Nos)	10,800		At RO 300/Month
c	Sub Total		10,800	
6	Miscellaneous Expenses		790	At 5 % of above
7	Total		**17,000**	

ANNEXURE- 2.7						
STEEL PROJECT (BILLET MANUFACTURING)						
DEPRECIATION CALCULATIONS						
	Item	**Cost**	**Rate**	**S.V.**	**Amount**	**Renewals**
			(%)	**(RO)**	**(RO)**	
A	**FIXED ASSETS**					
1	Land for Plant Site	379,000	0	0	-	Nil
2	Building etc.	1,334,550	5	667,275	66,728	Nil
3	Plant & Machinery	58,636,200	10	-	5,863,620	Year 11
4	Barge Dock		5	-	-	Nil
5	Vehicles and Int. Transp	1,136,100	25	568,050	284,025	Years 5, 9
6	Furniture & Office Equi	80,850	20	-	16,170	Years 6, 11
7	Contingency & Escalati	3,079,000		-	-	Nil
8	Sub Total	64,645,700		1,235,325	**6,231,000**	

ANNEXURE- 2.8									
STEEL PROJECT (BILLET MANUFACTURING)									
LOAN & INTEREST CALCULATIOS									
		TERM LOAN			Working Capital			Annual	
No	**Year**	**Prn**	**Int**	**Rep**	**Prn**	**Int**		**Int**	**Rep**
	7		6%			6%			
1		39,017	1,171	-	7,529	225.9			
2	1	39,017	1,171	-	7,529	225.9		**2792.8**	**0**
3		39,017	1,171	-	7,529	225.9			
4	2	39,017	1,171	-	7,529	225.9		**2792.8**	**0**
5		39,017	1,171	2,787	7,529	225.9			
6	3	36,230	1,087	2,787	7,529	225.9		**2709.2**	**5574**
7		33,443	1,003	2,787	7,529	225.9			
8	4	30,656	920	2,787	7,529	225.9		**2374.7**	**5574**
9		27,869	836	2,787	7,529	225.9			
10	5	25,082	752	2,787	7,529	225.9		**2040.3**	**5574**
11		22,295	669	2,787	7,529	225.9			
12	6	19,509	585	2,787	7,529	225.9		**1705.9**	**5574**
13		16,722	502	2,787	7,529	225.9			
14	7	13,935	418	2,787	7,529	225.9		**1371.4**	**5574**
15		11,148	334	2,787	7,529	225.9			
16	8	8,361	251	2,787	7,529	225.9		**1037.0**	**5574**
17		5,574	167	2,787	7,529	225.9			
18	9	2,787	84	2,787	7,529	225.9		**702.6**	**5574**
19		-	-	-	7,529	225.9			
20	10	-	-	-	7,529	225.9		**451.7**	**0**

ANNEXURE- 3

STEEL PROJECT (BILLET MANUFACTURING)

ESTIMATED WORKING RESULTS

	Year of Operation	**Installed**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
		Capacity											
	Capacity Utilisation (Billets)		60%	70%	80%	90%	95%	95%	95%	95%	95%	95%	
No	**Item**		**In RO '000**										**Remarks**
1	**Operating Cost**		68,777	80,273	91,377	102,492	108,080	108,158	108,223	108,290	108,359	108,430	Ref Annexure 2
2	**Expected Sales**												
	Billet		#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	Ref Annexure 3.1
	Rebar & Scrap		77,216	90,085	102,955	115,824	122,259	122,259	122,259	122,259	122,259	122,259	
	Scrap												
	Total		77,216	90,085	102,955	115,824	122,259	122,259	122,259	122,259	122,259	122,259	Sum of (2a+2b)
3	**Profit before Int & dep**		**8,439**	**9,813**	**11,577**	**13,332**	**14,179**	**14,101**	**14,036**	**13,969**	**13,900**	**13,829**	Sum of (2-1)
4	Depreciation		6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	Ref Annexure 2.7
5	Finance Cost		2,793	2,793	2,735	2,495	2,242	1,972	1,686	1,383	1,062	721	Ref Annexure 2.8
6	**Operating profit**		**(585)**	**789**	**2,612**	**4,606**	**5,707**	**5,898**	**6,118**	**6,354**	**6,607**	**6,877**	Sum of (3 - 4 - 5)
7	Other income if any												
8	Prelim Expenses written off		3,297	-	-	-	-	-	-	-	-	-	Ref Annexure 2.7
9	Profit/Loss before tax		(3,882)	789	2,612	4,606	5,707	5,898	6,118	6,354	6,607	6,877	Sum of (6 - 7 - 8)
10	Income Tax		-	-	-	-	-	885	918	953	991	1,032	
11	**Profit after tax**		**(3,882)**	**789**	**2,612**	**4,606**	**5,707**	**5,013**	**5,201**	**5,401**	**5,616**	**5,845**	
12	Statutory reserve		(388)	79	261	461	571	501	520	540	562	585	
13	Profit for appropriation		(3,494)	710	2,351	4,145	5,136	4,512	4,681	4,861	5,054	5,261	
14	Dividend			-	1,552	1,552	3,103	3,103	4,655	4,655	4,655	4,655	
15	General reserve		(3,494)	710	799	2,594	2,033	1,409	26	207	400	606	Difference(13) - (14)
16	**Net cash accruals**		**5,646**	**7,020**	**7,291**	**9,285**	**8,835**	**8,141**	**6,777**	**6,978**	**7,192**	**7,422**	

ANNEXURE- 3.1					
STEEL PROJECT (BILLET MANUFACTURING)					
ESTIMATES OF SALES REALISATION					
1	Billets	Tons	**601,537**	**213**	**128,234,737**
2	Slag & Dust	Tons	**95,049**	**4.62**	**438,689**
3	Mill Scale	Tons	**8,718**	**2.31**	**20,118**
	Total Revenue at 100% capacity utilisation				**128,693,544**

ANNEXURE- 4													
STEEL PROJECT (BILLET MANUFACTURING)													
PROJECTED CASH FLOW STATEMENT													
	Year of Operation		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
	Capacity Utilisation		60%	70%	80%	90%	95%	95%	95%	95%	95%	95%	
No	**Item**	**In RO '000**											**Remarks**
A	**CASH INFLOW**												
1	Equity	31,031			-	-	-	-	-	-	-	-	Ref Annexure 1
2	Profit bef tax & int		(1,089)	3,582	5,346	7,101	7,948	7,870	7,805	7,738	7,669	7,598	Ref Annexure 3
3	Depreciation	-	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	Ref Annexure 2.7
4	Prel exp written off		3,297	-	-	-	-	-	-	-	-	-	Ref Annexure 2.7
6	Increase in Term Loan	39,017	-	-	-	-	-	-	-	-	-	-	Ref Annexure 1
7	Increase in W C loan	7,529	0	-	-	-	-	-	-	-	-	-	Ref Annexure 1
8	Other income	-											Ref Annexure 3
9	Sub Total	77,577	8,439	9,813	11,577	13,332	14,179	14,101	14,036	13,969	13,900	13,829	Sum of A1 to A8
B	**CASH OUTFLOW**												
1	Capital Project expenditu	61,732	-	-	-	-	1,136	81	-	-	1,136	-	Ref Annexure 1& 2.7
2	Other normal cap exp	3,297	-	-									Ref Annexure 1& 2.7
3	Increse in Working Cap:	12,548	-	1,975	1,898	1,858	-	-	-	-	-	-	RefAnnexure 1.7
4	Decrease in Term Loan	-	-	-	3,929	4,169	4,423	4,692	4,978	5,281	5,602	5,944	Ref Annexure 2.8
6	Decrease in Subordinated Loan			-	-	-							
7	Interest on term loans		2,341	2,341	2,283	2,044	1,790	1,520	1,235	932	610	269	Ref Annexure 2.8
8	Interest on work cap loan		452	452	452	452	452	452	452	452	452	452	Ref Annexure 2.8
9	Income Tax	-	-	-	-	-	-	885	918	953	991	1,032	Ref Annexure 3.2
10	Dividend	-	-	-	1,552	1,552	3,103	3,103	4,655	4,655	4,655	4,655	Provision
11	Sub Total	77,577	2,793	4,768	10,114	10,074	10,903	10,733	12,237	12,272	13,446	12,350	Sum of B1 to B10
	OPENING BALANCE	-	-	5,646	10,691	12,155	15,413	18,689	22,057	23,857	25,554	26,007	
C	**SURPLUS**	**-**	**5,646**	**5,045**	**1,464**	**3,259**	**3,276**	**3,368**	**1,799**	**1,697**	**454**	**1,478**	Difference(A9)-(B11)

D	**CLOSING BALANCE**	**-**	**5,646**	**10,691**	**12,155**	**15,413**	**18,689**	**22,057**	**23,857**	**25,554**	**26,007**	**27,486**	

ANNEXURE- 5

STEEL PROJECT (BILLET MANUFACTURING)

PROJECTED BALANCE SHEET

	Year of Operation		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
	Capacity Utilisation		60%	70%	80%	90%	95%	95%	95%	95%	95%	95%	
No	**Item**	**In RO '000**											**Remarks**
A	**ASSETS EMPLOYED**												
1	Fixed Assets												
a	Gross Fixed Assets	61,732	61,732	61,732	61,732	61,732	62,868	62,949	62,949	62,949	64,085	64,085	Refer Annexure - 2.7
b	Preliminary expenses	3,297		-	-	-	-	-	-	-	-	-	Refer Annexure- 2.7
c	Acc. Depreciation	-	6,231	12,462	18,693	24,924	31,155	37,386	43,617	49,848	56,079	62,310	Refer Annexure- 2.7
d	Net Fixed Assets	65,029	55,501	49,270	43,039	36,808	31,713	25,563	19,332	13,101	8,006	1,775	
2	Current Assets												
a	Cash	-	5,646	10,691	12,155	15,413	18,689	22,057	23,857	25,554	26,007	27,486	Refer Annexure - 4
b	Other Cur. Assets	12,548	12,548	14,523	16,421	18,279	18,279	18,279	18,279	18,279	18,279	18,279	Refer Annexure - 1.7
c	Total Cur. Assets	12,548	18,194	25,214	28,576	33,692	36,968	40,336	42,136	43,833	44,286	45,765	
3	Less: Cur. Liabilities	-	-	-	-	-	-	-	-	-	-	-	
		77,577	**73,695**	**74,484**	**71,615**	**70,500**	**68,681**	**65,899**	**61,468**	**56,934**	**52,292**	**47,540**	
B	**FINANCED BY**												
1	Equity	31,031	31,031	31,031	31,031	31,031	31,031	31,031	31,031	31,031	31,031	31,031	Refer Annexure - 1
2	Statutory reserve	-	(388)	(309)	(48)	412	983	1,484	2,004	2,545	3,106	3,691	
3	General reserves	-	(3,494)	(2,784)	(1,985)	609	2,642	4,051	4,076	4,283	4,683	5,289	Cu.NP-Cu.Divident
4	Other term loan	-	-	-	-	-	-	-	-	-	-	-	Refer Annexure - 2.8
5	Institutional Finance	39,017	39,017	39,017	35,088	30,919	26,496	21,804	16,827	11,546	5,944	(0)	Refer Annexure - 2.8
6	Bank Borrowings for	7,529	7,529	7,529	7,529	7,529	7,529	7,529	7,529	7,529	7,529	7,529	Refer Annexure - 2.8
		77,577	**73,695**	**74,484**	**71,615**	**70,500**	**68,681**	**65,899**	**61,468**	**56,934**	**52,292**	**47,540**	

ANNEXURE- 6

STEEL PROJECT (BILLET MANUFACTURING)

INTERNAL RATE OF RETURN ON TOTAL CAPITAL

	Year of Operation		1	2	3	4	5	6	7	8	9	10	Remarks
	Capacity Utilisation		60%	70%	80%	90%	95%	95%	95%	95%	95%	95%	
No	**Item**												
A	**CASH INFLOW**												
1	Net Profit bef. Tax		(3,882)	789	2,612	4,606	5,707	5,898	6,118	6,354	6,607	6,877	Refer Annexure - 3
2	Depreciation		6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	Ref Annexure 2.7
3	Prelim Exp written off		3,297	-	-	-	-	-	-	-	-	-	Ref Annexure 2.7
4	Finance Cost		2,793	2,793	2,735	2,495	2,242	1,972	1,686	1,383	1,062	721	Ref Annexure 2.8
5	Salvage Value		-	-	-	-	-	-	-	-	-	40,011	Ref Annexure 2.7
6	Sub Total		8,439	9,813	11,577	13,332	14,179	14,101	14,036	13,969	13,900	53,839	Sum of A1 to A5
B	**CASH OUTFLOW**												
1	Capital Project expen	61,732	-	-	-	-	1,136	81	-	-	1,136	-	Refer Annexure - 1
2	Other normal cap exp	3297	-	-	-	-	-	-	-	-	-	-	Refer Annexure - 1
3	Working Capital		-	1,975	1,898	1,858	-	-	-	-	-	-	Refer Annexure - 1
4	Income Tax		-	-	-	-	-	885	918	953	991	1,032	Refer Annexure - 3.2
5	Sub Total	65,029	-	1,975	1,898	1,858	1,136	966	918	953	2,127	1,032	Sum of B1 to B4
C	**NET CASHFLOW (A**	**(65,029)**	**8,439**	**7,838**	**9,679**	**11,474**	**13,043**	**13,135**	**13,118**	**13,016**	**11,773**	**52,808**	
D	**NETCASH FLOW(PT)**		**8,439**	**7,838**	**9,679**	**11,474**	**13,043**	**14,020**	**14,036**	**13,969**	**12,764**	**53,839**	
E	**INTERNAL RATE OF RETURN ON TOTAL INVESTMENT**										**14.66%**		

ANNEXURE- 7

STEEL PROJECT (BILLET MANUFACTURING)

INTERNAL RATE OF RETURN ON EQUITY CAPITAL (AFTER TAX)

	Year of Operation	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	
	Production		60%	70%	80%	90%	95%	95%	95%	95%	95%	95%	
No	**Item**												**Remarks**
A	**CASH INFLOW**												
1	Net Profit before Tax		(3,882)	789	2,612	4,606	5,707	5,898	6,118	6,354	6,607	6,877	Refer Annexure- 3
2	Depreciation		6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	6,231	Refer Annexure - 2.7
3	Prelim Exp written off		3,297	-	-	-	-	-	-	-	-	-	Refer Annexure - 2.7
4	Salvage Value		-	-	-	-	-	-	-	-	-	40,011	Refer Annexure - 2.7
5	Sub Total		5,646	7,020	8,843	10,837	11,938	12,129	12,349	12,585	12,838	53,119	Sum of A1 to A4
B	**CASH OUTFLOW**												
1	Equity	31,031	-	-	-	-	-	-	-	-	-	-	Refer Annexure - 1
2	Fixed Assets		-	-	-	-	1,136	81	-	-	1,136	-	Refer Annexure - 1
3	Working Capital		-	1,975	1,898	1,858	-	-	-	-	-	-	Refer Annexure - 1
4	Loan Instalment		-	-	3,929	4,169	4,423	4,692	4,978	5,281	5,602	5,944	Refer Annexure - 2.8
5	Income Tax		-	-	-	-	-	885	918	953	991	1,032	Refer Annexure - 3.1
6	Sub Total	31,031	-	1,975	5,827	6,027	5,559	5,657	5,895	6,234	7,730	6,975	Sum of A1 to A5
C	**NET CASHFLOW**	**(31,031)**	**5,646**	**5,045**	**3,015**	**4,810**	**6,379**	**6,471**	**6,454**	**6,352**	**5,108**	**46,144**	
D	**INTERNAL RATE OF RETURN ON EQUITY INVESTMENT**								**18.37%**	%			

ANNEXURE- 8											
STEEL PROJECT (BILLET MANUFACTURING)											
RATIO ANALYSIS											
	Years of Operation	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A	**COST RATIOS**										
1	Raw Material / Total Sales	64%	64%	64%	64%	64%	64%	64%	64%	64%	64%
2	Consumables / Sales	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
3	Utilities / Total Sales	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
4	Factory wages / Total Sales	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
5	Prime Cost / Total Sales	84%	84%	84%	84%	84%	84%	84%	84%	84%	84%
6	Factory exp. / Total Sales	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
7	Factory Cost / Total Sales	86%	86%	86%	86%	86%	86%	86%	86%	86%	86%
8	Administrative exp. / Total	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%
9	Selling exp. / Total Sales	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
10	Finanace Cost / Total Sales	4%	3%	3%	2%	2%	2%	1%	1%	1%	1%
11	Non-Cash exp. /Total Sales	12%	7%	6%	5%	5%	5%	5%	5%	5%	5%
12	Total Cost / Sales	105%	99%	97%	96%	95%	95%	95%	95%	95%	94%
B	**PROFITABILITY RATIOS**										
1	PBDIT / Sales	11%	11%	11%	12%	12%	12%	11%	11%	11%	11%
2	Operating profit / Sales	-1%	1%	3%	4%	5%	5%	5%	5%	5%	6%
3	PAT / Sales	-5%	1%	3%	4%	5%	4%	4%	4%	5%	5%
4	PAT / Investment	-6%	1%	4%	7%	8%	7%	7%	8%	8%	8%
5	Payout Ratio	0%	0%	59%	34%	54%	62%	90%	86%	83%	80%
6	EPS	-0.125	0.025	0.084	0.148	0.184	0.162	0.168	0.174	0.181	0.188
	Profit After tax (RO '000)	(3,882)	789	2,612	4,606	5,707	5,013	5,201	5,401	5,616	5,845

ANNEXURE- 9						
STEEL PROJECT (BILLET MANUFACTURING)						
SENSITIVITY ANALYSIS (IRR FOR 10 YEARS)						
		Projection	Change in One			
S.No.	Item	No Chang	Variable at a Time			Combined
B	PESSIMISTIC					
	Change		-5%	5%	-5%	All three
1	I R R on Total Investme	14.7%	13.22%	8.06%	5.79%	-1.63%
2	I R R on Equity	18.4%	15.73%	6.43%	2.45%	-9.93%

ANNEXURE- 10						
STEEL PROJECT (BILLET MANUFACTURING)						
BREAK EVEN ANALYSIS						
S.No.	**Item**	**Year 1**		**Year 6**		**Remarks**
			In USD '000			
A	**FIXED COST**					
1	Production Wages	837		970		Refer Annexure - 2
2	Factory Overheads	976		1,368		Refer Annexure - 2
3	Misc. Factory Exp.	659		1,039		Refer Annexure - 2
4	Admin. Expenses	421		489		Refer Annexure - 2
5	Sales Expenses	1,685		2,605		Refer Annexure - 2
6	Depreciation	6,231		6,231		Refer Annexure - 2
7	Prelim. Expenses written	3,297		-		Refer Annexure - 2
8	Financing Cost	2,793		1,972		Refer Annexure - 2
9	Income Tax	-		885		Refer Annexure - 2
10	Sub Total	16,898		15,559		
B	**VARIABLE COST**					
1	Raw materials	49,661		78,630		Refer Annexure - 2
2	Utilities	5,862		9,361		Refer Annexure - 2
3	Misc. Expenses	-		-		
4	Sub Total	55,523		87,991		
C	**SALES**	77,216		122,259		Refer Annexure - 3
D	**CONTRIBUTION**	21,694		34,268		Difference C - B
E	**BREAK EVEN POINT**	78		45.40		As % of Production
		47		36		As % of Plant Capacity
F	**CASH BEP**	34		27		As % of Production
		20		22		As % of Plant Capacity

ANNEXURE- 11

STEEL PROJECT (BILLET MANUFACTURING)

DEBT SERVICE COVERAGE RATIO

	Years of Operation	0	1	2	3	4	5	6	7	8	9	10	
No	**Item**	**In RO '000**											
1	Profit after tax		-3882	789	2612	4606	5707	5013	5201	5401	5616	5845	
2	Depreciation		6231	6231	6231	6231	6231	6231	6231	6231	6231	6231	
3	Prelimnery exp. Written off		3297	0	0	0	0	0	0	0	0	0	
4	Interest		2793	2793	2735	2495	2242	1972	1686	1383	1062	721	
5	Total		8439	9813	11577	13332	14179	13216	13118	13016	12909	12797	
1	Annual repayment		0	0	3929	4169	4423	4692	4978	5281	5602	5944	
2	Interest		2793	2793	2735	2495	2242	1972	1686	1383	1062	721	
3	Total		2793	2793	6664	6664	6664	6664	6664	6664	6664	6664	
	D.S.C.R		3.02	3.51	1.74	2.00	2.13	1.98	1.97	1.95	1.94	1.92	
	WT. AVERAGE D.S.	2.078											