

10. Project Status:

- Feasibility study available? Yes No
- Required land provided? Yes No
- Legal permissions (establishment license, environment, etc) taken? Yes No
- Partnership agreement concluded with local/foreign investor? Yes No
- Financing agreement concluded? Yes No
- Agreement with local / foreign contractor(s) concluded? Yes No
- Infrastructural utilities (electricity, water supply, telecommunication, fuel, road, etc) procured? Yes No
- List of know-how, machinery, equipment, as well as seller / builder companies defined? Yes No
- Purchase agreement for machinery, equipment and technology concluded? Yes No

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Financial Structure

11. Finance

Description	Required Local Currency			Required Foreign Currency (Thousand Dollar)	Total in Thousand Dollar
	Million Rials	Rate	Equivalent in Thousand Dollar		
Fix Capital	124,835	87000 Rials for each Dollar	1,435	6,286	7,721
Working Capital	5,431		62	0	62
Total Investment	130,266		1,497	6,289	7,783

- Value of local equipment/machinery: **391** thousand dollars
- Value of foreign equipment/machinery: **5,987** thousand dollars
- Value of foreign technology: thousand dollars
- Value of local technology: Million dollars
- Net Present Value (NPV): **367,522** Million Rials for 10 Years, discount rate: 20%
- Internal Rate of Return (IRR): **30,43%**
- Payback Period (PP): **33,33%**

General Information

12. Project Type: Establishment Expansion and completion

13. Company Profile:

- Name (legal /natural persons):
- Current activity of company:
- Address:

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-Tel: Fax:
-E-mail: Web site:
-Legal structure of company: private sector public sector other

Please attach follow documents if available

- Pre-feasibility study
- Feasibility study
- Legal permissions (establishment license, foreign currency quota, environment, etc)

Plan name: Production of Magnesium Oxide (MgO)

Product introduction

The aim of carrying out this plan is establishment of production factory of Magnesium Oxide in Lorestan province. Magnesium Oxide is used more as refractory materials in furnaces of iron, steel, non-ferrous metals, glass and cement.

Product ISIC Code 2411512501 (and 8-digit code 24111521) from construction group of chemical substances and products (24) and subgroups of construction of basic chemical substances except for a variety of fertilizer and nitrogen compounds (2411), oxides (2411312499), non-nano oxides (2411412500).

Although , new tariff code of Magnesium Oxide is 28051900, all imported and exported information of Magnesium Oxide is with previous tariff i.e. 25199090.

Magnesium Oxide, under subchapters of tariff 2805, Iran's customs with title of other , is imported and exported with sub tariff 28051900. Its entry requirements are having permission of Ministry of commerce and Ministry of Industry, Mine and Trade, paying 5 percent of entrance fees (tariff) in 2018 (customs 4% and business profit 1%).

Introduction of product applications

This material is used to provide and make refractory materials (such as crucibles, lines inside the furnace, fire bricks), also is used in providing magnesium cement, inside cover compounds of boiler, powdered oils, additives to petrochemicals and petroleum materials, fertilizers. This material is used in Standard white color, light reflective devices, additives to food stuffs, semiconductor devices, inorganic accelerator tires. Also it is used in providing pulp and paper.

Proposed places for plan

According to benefits of establishment in industrial estates and areas, industrial estates of Lorestan province are suggested for conducting the project.

Raw ,auxiliary and packing materials

Dolomite as an origin of CaO and MgO is used in melting metals industries (ferrous and non-ferrous), agricultural (as fertilizer and regulator of soil, providing manganese from sea water, refractory industries (Shamuti brick, cementation and so on), glasswork, construction industry (tile making, concrete and ...), filler in tire, lacquering, ceramics and using dolomite in providing manganese from sea .

Raw materials price

No	Raw , auxiliary and packing materials	Unit	Consumption rate per year	Spoilage	Sum of raw and consuming materials	Unit price (Rial)	Annual cost (m/r)
1	dolomite	ton	130,000,	0	130,000	300,000	39,000
2	one- ton big bag	number	20,000	0	20,000	320,000	6,400
Total		-	150,000	0	150,000	620,000	45,400

Sales plan

Sales price just outside of the factory is as follows. Regarding local needs and little share of production of factory from total production of the country, it is supposed that manufactured goods are marketable in the country.

Sales plan

Description	First year	Second year	Third year	Forth year	Fifth year
Production percent	50%	60%	70%	80%	90%
Magnesium Oxide(capacity/ton)	10000	12000	14000	16000	18000
Magnesium Oxide (sales/m.r)	260000	312000	364000	416000	4680000

Annual nominal and practical capacities

Annual production capacity of this unit, based on 300 working days, is planned 20000 tons in a year. In regard to numbers of shifts, it should be explain that considering production process of Magnesium Oxide, 3 shifts are required in reactors and production lines furnaces direction and 2 shifts are required in other machinery direction.

Practical capacity of this plan, regarding the unpredicted factors of stop working and also repair and maintenance, is considered 18000 tons with 90% efficiency of nominal capacity.

Production method and desired technology

Working steps in this method are:

1. Partial thermal decomposition of dolomite: $\text{CaMg}(\text{CO}_3)_2 \rightarrow \text{CaO}, \text{MgO} + \text{CaCO}_3 + \text{CO}_2$
2. Hydration: $\text{CaO}, \text{MgO} + \text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2 + \text{Mg}(\text{OH})_2$
3. Carbonation: $\text{Ca}(\text{OH})_2 + \text{Mg}(\text{OH})_2 + \text{CO}_2 \rightarrow \text{CaCO}_3 \downarrow + \text{Mg}(\text{HCO}_3)_2$
4. Baking at high temperature: $\text{Mg}(\text{HCO}_3)_2 \rightarrow \text{MgO}$ with big crystals

The plan investment costs

The fixed plan investment costs is estimated to be 22,027,12 million Rials and the working capital is estimated to be 2.656,10 million Rials.

The plan investment costs

Description	Required				Total (million rials)	percent age
	currency (euro)	rial equivalent	rial (m.r)	required total(m.r)		
Land	0	0	8,400	8,400	8,400	1%
Landscaping	0	0	4,779	4,779	4,779	1%
Building	0	0	28,780	28,780	28,780	4%
Machinery and equipment	5,986,800	520,852	33,977	554,829	554,829	82%
Installations	0	0	23,954	23,954	23,954	4%
Laboratory equipment and supplies	0	0	7,825	7,825	7,825	1%
Vehicles	0	0	4,000	4,000	4,000	1%
Workshop equipment	0	0	91	91	91	0%
Service and administrative equipment	0	0	1,881	1,881	1,881	0%
Unexpected and miscellaneous	0	26,043	5,684	31,727	31,727	5%

Description	Required				Total (million rials)	percent age
	currency (euro)	rial equivalent	rial (m.r)	required total(m.r)		
Total fixed assets	5,986,800	546,894,18	119,371,72	666,265,90	666,265,90	98%
Pre-exploitation costs	0	0	5,463,74	5,463,74	5,463,74	1%
Total fixed investment costs	5,986,800	546,894,18	124,835,46	671,729,64	671,729,64	99%
Working capital	0	0	5,430,55	5,430,55	5,430,55	1%
Other assets	0	0	0	0	0	0%
Total plan investment costs	5,986,800	546,894,18	130,266	677,160,18	677,160,18	100%

The plan production costs

The annual production costs are estimated to be 640051,47 million Rials.

Production costs

No	Description	Cost (million rials)	cost in practical capacity (million rials)
1	Raw, auxiliary and packing materials	45400	40860
2	Production salary and wage	21221,60	20584,95
3	Water, electricity, fuel and communication	7138,98	6567,86
4	Insurance	1301,43	1301,43
5	Repair and maintenance	27039,47	24876,32
6	Marketing and ads	10400	9568
7	Production unpredicted and miscellaneous	5105,07	4696,67
8	Depreciation	59557,51	59557,51
Total		177164,07	168012,74

Economic indices

Economic indices

Description	Value-measurement scale
NPV (net present value)	367522million rials
IRR(internal rate of return)	30,43%
PBP (period of return of capital)	3years

**Ministry of Economic Affairs and Finance
Organization for Investment Economic and Technical Assistance of Iran
(OIETAI)**

Foreign Investment Center of Lorestan Province

Tel (Tehran): (021) 33967749-33967766-33967762-39902485-39902488-39902486

Tel (Khoramabad): (066) 33229577

Fax: 33967774

Website: www.investiniran.ir

eco_isc@yahoo.com