

Plan: paper production from lime

Introduction to product:

The main goal if this plan is to establish a limestone- produced paper factory in Lorestan Province. The ISIC code of the product is 2101412355 from the paper and paper products group (21) and paper paste, paper and cardboard subgroup (2101).

Paper is exported and imported under the chapters of tariff 4802 of Iran Custom regulations entitled paper and lining-free compressed cardboard of types used in print and other graphical intents and punch card or rolled paper without punch in form of roll or rectangular sheets (also square), in any size except sizes 4801 or 4803, paper and hand-made cardboard. The main conditions on their importing is to take the permission from the department of commerce and ministry of industries and mines, paying 4% of the importing fees in 2016 (custom fee is 4% and commercial profit is 1%).

Introducing the product's application:

Stone paper in different grams from 50-400 μm is produced for different applications. This product is used in producing adhesive labels with different grams and waterproof high adhesion coefficient. Although application of the stone papers is not limited to the print industry, publishing and packing and advertisement and this paper behaves like glossy papers in printer and binding devices and needs no different ink or Zink, the following applications are addressed based on their grams and their novelty:

1. Thin grams: (SP) suitable for applications such as food packages
2. Medium grams: (RB) suitable for all printing applications such as valuable books, maps with different applications, hand luggage, magazines, brochures, packets and so forth.
3. Thick grams: (RB) suitable for all applications in daily cases in preparing which the cardboard is use

Plan suggested sites

Considering the advantages of the industrial zones and parks, the Lorestan industrial parts are suggested for this plan.

Raw, auxiliary materials and consumables

Raw materials for producing this product are limestone, polypropylene, polyethylene, and chemical couplers which are frequently produced in lime mines and petrochemical plants. The raw material's price for paper production is as follow:

Table1. Raw material price

#	Raw, auxiliary materials and packing	Measurement Unit	Amount/year	Unit Price	Annual Cost mRial
1	Limestone	1000kg	3,400	910,000	3,094
2	Polypropylene	1000kg	280	43,500,00	12,180

				0	
3	PE	1000kg	280	41,000,000	11,480
4	Chemical additives	1000kg	40	85,000,000	3,400
	جمع				30,154

Sales plan and target market

Target market is local demands and reduction of the product import. Based on investigations and enquiries, sales price is the factory price as follow.

Table2. Sales price

#	Description	practical capacity(t)	nominal capacity(t)	unit price(rial)	Annual Sale(mRial)
1	Paper made of limestone	4,000	3,600	40,000,000	160,000
	Total	4,000	3,600		160,000

Annual nominal and practical capacity

Based on the investigations of diverse units as well as the plan economic studies, it is confirmed that the optimal production capacity is about 4000 t per year. Based on machineries, production line can produce 550 kg paper of limestone which is about 4000 t considering 3 working shifts each with 8 working hours daily per year. Considering 90% efficiency, practical capacity for this unit is 90% of the nominal one equivalent to 3600 t.

Manufacturing procedure and technology

The paper is produced from stone by combining the polymer and limestone materials (Calcium Carbonate) which is consisted of 1-9 layers based on its application. This paper is a good alternative for cellulose papers in packing and print industries due to its similarity to the later one and based on making use of the polymer in producing this product, its infiltration is approximately zero and is called waterproof paper which is a significant superiority to the cellulose papers. Different production procedures for this product are:

1. Blowing
2. Unidirectional stretch
3. Bilateral stretch

Investment costs

Fixed investment costs for this plan is 171 billion Rials and the working capital is 7.5 billion Rials estimated.

Description	Total Cost(m.Rial)	%
Land purchase	6,650	4%
Site preparation and development	1,704	1%
Civil works, structures and buildings	46,164	26%
Machinery and equipment	102,300	57%
Branches And Installation	4,326	2%
Vehicles	400	0%
Service equipment	87	0%
official equipment	387	0%
Other and unpredicted costs (5% of above costs)	8,101	5%
Total FIXED ASSETS	170,118.60	95%
pre-production expenditures	1,874.44	1%
TOTAL FIXED INVESTMENT COSTS	171,993.04	96%
Working capital in 100% of capacity	7,574.71	4%
Other assets	0	0%
TOTAL IMVESTMENT COSTS	179,567.76	100%

Plan production costs

The annual cost of this plan is 65 billion Rials estimated.

#	Description	Total Cost(m.Rial)
1	Raw and packing material	30,154
2	Personnel's salary	11,054
3	Energy	2,057
4	Building and livestock insurance	323
5	Repair, maintenance and spare parts	5,609
6	Unpredicted	2,460
7	Depreciation	13,509
Total operational and non-operational production costs		65,166

Economic indices

Description	Amount-measurement scale
<i>NPV</i>	<i>153158 m Rial</i>
<i>IRR</i>	<i>37.70%</i>
<i>PBP</i>	<i>2.19 years</i>

PROJECT PROFILE – SUMMARY SHEET

Project Introduction

1. Project title: **paper production from limestone**

2. Sector: paper and paper products

Sub sector: paper paste, paper and cardboard

3. Products/Services: **paper production from limestone**

4. Location: ... Free zone Economic special zone Industrial Estate Main Land

5. Project description:

The main goal if this plan is to establish a limestone- produced paper factory in Lorestan Province. Stone paper is also identified as RMP. Many people consider the stone and mineral paper a wonderful phenomenon in print and production industries and its production is the start point of a new age in environmental-friendly papers; because the raw materials used in this paper is only stone; therefore, it seems that there is no concern about the trees cutting and environmental destruction. The physical difference between stone paper (water-proof) and cellulous papers: if we look at cellulous papers, there are porosities seen which is due to short and long fibers. In stone paper, after the raw materials are mixed, there is a materials called compatibilizer for homogenizing the mixture added. This material homogenized the molecular structure of the mixture. For this reason, there would be no porosity seen. After there is a writing on the cellulous paper, if it is put in water and put hand on it, the ink is cleansed and even the paper texture is destroyed; but in stone paper, this is not true and there would not be any damage to the texture and ink; in other word, stone paper is water-proof.

6. Annual capacity: 4000 t/year

Project Status

7. Local / internal raw material access 100 %

8. Sale: 100% locally

- Anticipated export market 0 %

9. Construction Period 24 month

Beginning of activity

In-site beginning of activity:

End of project:

Commercial activity beginning:

10. Project Status:

- Feasibility study available? Yes No
- Required land provided? Yes No
- Legal permissions (establishment license, foreign currency quota, 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, equipments and know- how concluded? Yes No

1 Financial Structure**11. Financial Table**

Description	Local Currency Required			Foreign Currency Required Million Dollar	Total Million Dollar
	Million Rials	Rate	Equivalent in Million Dollar		
Fix Capital	78993.04	31000	2.55	3	5.55
Working Capital	7574.71	R for each Dollar	0.24	0	0.24
Total Investment	86567.76		2.79	3	5.79

- Value of foreign equipment/machinery 3 million dollar
- Value of local equipment/machinery 0.3 million dollar
- Value of foreign technical know- how million dollar
- Value of local technical knows- how million dollar
- Net Present Value (NPV): 153158 Million Rial for 10 Year, discount rate: 20%
- Internal Rate of Return (IRR) 37.7%
- Payback Period (PP) 45.66%

General Information

12. Project Type : Establishment Expansion and completion

13. Company Profile:

-Name (legal /natural persons):

-Company Name:

-Address:

-Tel: Fax:

-E-mail: Web site:

-Local entrepreneur : 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) □

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