

Plan: traffic control polyethylene equipment production

Introduction to product:

The main goal of this plan is to establish a traffic control signs and equipment production unit in Lorestan Province. These signs and equipment are the subjects of polyethylene reports and used for management of the roads and streets security and safety. Raw materials for manufacturing this equipment are PVC, polyurethane and polyethylene. ISIC codes of these products are as follow:

| 10-digit code | Item | No |
|----------------------|--|-----------|
| 2520312582 | Polyethylene traffic equipment | 1 |
| 2520312583 | Polyethylene new jersey | 2 |
| 2520312584 | Polyethylene road blocking equipment | 3 |
| 2520412585 | Types of polyethylene traffic tanks | 4 |
| 2520412586 | Polyethylene speed-reduction equipment | 5 |

The products are classified as rubber and polyethylene products subgroup (2520) of polyethylene traffic equipment group as their ISIC code in the system of ministry of industries, mines and commerce. They are after implementing the traffic control signs and equipment. Their measurement scale is tone. Different types of the polyethylene traffic control equipment are exported and imported under the chapter of the tariff 3926 of Iran Custom regulations and sub-tariff 39269099 entitled as other polyethylene artifacts except medical tablets in gelatin form. The main conditions on their importing is to take the permission from the department of commerce and ministry of industries and mines, paying 15% of the importing fees in 2016 (custom fee is 4% and commercial profit is 11%).

Introducing the product's application:

The products mentioned above are of polyethylene and are introduced in following sections:

1. Polyethylene New Jersey is used for blocking the roads and prevention from vehicle deviation in cities. The New Jersey parts with height, length and width or 120, 150 and 50 cm by connecting to each other are used for securing the streets and segregation in return places, margins of secondary roads and at the middle of main streets.
2. Speed reducers: they are the most conventional traffic control means made of the polyethylene used in secondary streets.
3. Security tank: in order to reduce the impact, these tanks or barrels are used with reflective colored signs filled with water or sand and shells in places with high possibility of car accidents or many marginal blocks such as highways exits or restricting the civil workhouses around the roads.
4. Street lane segregators: they are used for segregating the lanes and traffic security.

5. Security cylinder: this is used for road segregation, guiding drivers in returns and warning the drivers about the exits with dangerous road corners.
6. Security cone: this is one of the traffic control signs and equipment whose main applications are guiding the vehicles while lining, repairs and blocking streets temporarily.
7. Polyethylene anti-shock: anti-shock is a traffic block for blocking some point of the roads. Among other advantages of this product is anti-shocking and capacity to be mounted in hazardous streets.
8. Bullard: this is a reflective color sign for signaling the view of the road in highways exits used. Bullard is used with a basis in mobile form and can be used instead of the anti-shock barrels as a barrier for blocking and segregation.
9. Doornail: this is used on the surface of streets for bordering and driving restrict and as a type of speed control in crowded streets.

Plan suggested sites

Based on the advantages of the establishment in industrial parks and zones, the Lorestan province industrial parks, due to availability of the infrastructures are suggested for implementing the plan.

Raw, auxiliary materials and consumables

The main raw material for these products is polyethylene which is produced and supplies now in 9 petrochemical units (Imam Port, Arak, Marun, Amir Kabir, Laleh, Ariasasul, Jam, Tabriz and Mohr) with production capacity of 3300000 t annually. By exploiting 15 planned units, this capacity increases to 7640000 t annually. The annual consumption amount and costs are as follow.

| # | Raw, auxiliary materials and packing | Measurement Unit | Amount/year | Unit Price | Annual Cost mRial |
|--------------|--------------------------------------|------------------|-------------|-------------|-------------------|
| 1 | Polyethylene (Grid era) | 1000kg | 510 | 40,000,000 | 20,400 |
| 2 | Polyethylene (Grade IV) | 1000kg | 357 | 39,500,000 | 14,102 |
| 3 | PVC | 1000kg | 51 | 27,000,000 | 1,377 |
| 4 | Polyurethane | 1000kg | 102 | 195,000,000 | 19,890 |
| Total | | | | | 55,769 |

Sales plan and target market

The products price as the factory price for sale is as follow. Based on the lack of sufficient supply and demand level, the target market will be local industries.

| # | Description | practical capacity (t) | nominal capacity (t) | unit price(rial) | Annual Sale(mRial) |
|---|--|------------------------|----------------------|------------------|--------------------|
| 1 | Traffic control equipment polyethylene | 850 | 765 | 85,000,000 | 72,250 |
| 2 | Polyurethane traffic control equipment | 100 | 90 | 245,000,000 | 24,500 |
| 3 | PVC traffic-control equipment | 50 | 45 | 48,000,000 | 2,400 |
| | Total | 1,000 | 900 | | 99,150 |

Annual nominal and practical capacity

Product's annual manufacturing capacity in 3 working shifts, each with 8 working hours daily and 300 days per year is approximately 1000 tones. Considering unpredicted and unexpected factors of process stop as well as maintaining and repairing processes, the plan practical capacity for this unit is 90% of the nominal one equivalent to 900 tones.

Manufacturing procedure and technology

In traffic control equipment production process, injecting casting and rotational casting are used. Injecting casting is one of the common plastic parts methods. TV, Monitors, Cd players, eyeglasses, toothbrush, automotive parts exterior body and other parts are produced in this manner. Rotational casting process is one of the plastic forming processes which is used in high temperature and low pressure in form of open casts in order to produce hollow, uniform and free of residues' tension parts. In this process with the least costs, there are complex shapes are produced with lowest wastes. Rotational casting is done under the atmosphere pressure and materials are melted in the cast instead of being melted and poured into the casts. In this process, the powder casting material is used in order to conduct the suitable heat in casts.

Investment costs:

The fixed investment costs include 270 billion Rials and the working capital is 94 billion Rials.

| Description | Total Cost(m.Rial) | % |
|---------------------------------------|--------------------|-----|
| Land purchase | 2,380 | 5% |
| Site preparation and development | 635 | 1% |
| Civil works, structures and buildings | 20,260 | 43% |
| Machinery and equipment | 9,320 | 20% |
| Branches And Installation | 2,959 | 6% |
| laboratory equipment | 200 | 0% |
| Vehicles | 400 | 1% |
| Service equipment | 87.00 | 0% |
| official equipment | 405 | 1% |

| | | |
|-------------------------------------|------------------|-------------|
| Other and unpredicted costs | 1,832 | 4% |
| Total FIXED ASSETS | 38,478.83 | 82% |
| pre-production expenditures | 915.97 | 2% |
| TOTAL FIXED INVESTMENT COSTS | 39,394.80 | 84% |
| Working capital in 100% of capacity | 7,264.17 | 16% |
| Other assets | 0 | 0% |
| TOTAL INVESTMENT COSTS | 46,658.96 | 100% |

Production costs:

Annual costs of the manufacturing process include 73.49 billion Rials estimated.

| # | Description | Total Cost(m.Rial) |
|---|-------------------------------------|--------------------|
| 1 | Raw and packing material | 55,769 |
| 2 | Personnel's salary | 6,921 |
| 3 | Energy | 1,374 |
| 4 | Building and livestock insurance | 70 |
| 5 | Repair, maintenance and spare parts | 1,236 |
| 6 | Marketing and Advertising | 1,983 |
| 7 | Unpredicted | 3,368 |
| 8 | Depreciation | 2,775 |
| Total operational and non-operational production costs | | 73,495 |

Economic indices

| Description | Amount-measurement scale |
|-------------|--------------------------|
| NPV | 48896 m Rial |
| IRR | 44.33% |
| PBP | 1.94 years |

PROJECT PROFILE – SUMMARY SHEET

Project Introduction

1. Project title: **traffic control polyethylene equipment production**

2. Sector: rubber and polyethylene products

Sub sector: rubber and polyethylene products

3. Products/Services: polyethylene traffic equipment

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

5. Project description:

The main goal of this plan is to establish a traffic control signs and equipment production unit in Lorestan Province. These signs and equipment are the subjects of polyethylene reports and used for management of the roads and streets security and safety. Raw materials for manufacturing this equipment are PVC, polyurethane and polyethylene.

6. Annual capacity: 1000 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:

Project Status

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

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 | 32103.60 | 31000 | 1.04 | 0.235 | 1.27 |
| Working Capital | 7264.17 | R for each Dollar | 0.23 | 0 | 0.23 |
| Total Investment | 39367.76 | | 1.27 | 0.235 | 1.51 |

- Value of foreign equipment/machinery 0.235 million dollar
- Value of local equipment/machinery 0.065 million dollar
- Value of foreign technical know- how million dollar
- Value of local technical knows- how million dollar
- Net Present Value (NPV): 48896 Million Rial for 10 Year, discount rate: 20%
- Internal Rate of Return (IRR) 44.33%
- Payback Period (PP) 1.94%

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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