

**In the name of Allah**

## **Pre-feasibility studies**

**Project Name:**

**Development production Plan of motorcycle  
(petrol and electric motorcycles)**

**Project owner :**

**Khuzestan motorcycle company**

**Advisor of the project:**

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**Project address: Khuzestan, Dezfoul, Dezfoul Industrial  
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## Summary of pre-feasibility plan

General Specification	
Name of The Project	Production of petrol motorcycle with engine volume less than 250 cc and electric motorcycle 800 - 4000 W
Project Capacity	petrol motorcycle: 4000 units- Electric motorcycle: 5000 units
Personnel Number	27persons
Working Days	300 days
Product Usage	transportation Recreation and sports
Marketing	
Product Global Price	600-4500 \$US/unit
Domestic Demand	400,000 unit
Domestic Production	160,000 unit
Import	600 unit
Export	2160 unit
Technical Study	
Land Area	8000 m <sup>2</sup>
Building Area	4450 m <sup>2</sup>
Main Raw Materials	Full CKD
Supplying Place of Raw Materials	foreign
Power Requirement	220 KW
Water Requirement	2000 m <sup>3</sup>
Fuel Requirement	300,000 m <sup>3</sup> gas
Economical & Financial Study	
Fixed Investment Cost	476,350.0 million Rails $\cong$ 1.91 million Euro
Working Capital	761,164.8 million Rails (1.93 million EUR& 234,124.8 million Rails) $\cong$ 2.86 million Euro
Total Investment Cost	1,192,514.8 million Rails $\cong$ 4.77 million Euro
Annual Sale	2,942,000.0 million Rails $\cong$ 11.77 million Euro
Net Present Value(NPV)	1,579,556.48 million Rails $\cong$ 6.31 million Euro
Break Even Point(BEP)	13.79%
Internal Rate of Return(IRR)	62.46%
Investment Return Period	2.6 years
Investment Sources Ratio:	
Equity:44%	520,946.8 million Rails $\cong$ 2.08 million Euro
Finance: 56%	671,568.00 million Rails $\cong$ 2.69 million Euro

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## **Introduction:**

Khuzestan motorcycle company is one of the companies developed by the Niroo Moharekeh Iran (owned by the organization of industrial development and renovation) that was established in 1991 in Dezful (north of Khuzestan) with the purpose of manufacturing Vespa and Bravo motorcycles under the license of PIAGGIO in Italy and was privatized in 1996. This company started its manufacturing activity in the field of motorcycles in 1995 and in 2005 and 2006 a significant proportion of its production were exported to Iraq. Many years later this company made a contract with Iranian automobile companies and received the Operating certificate to produce automobile parts (clutch and gearbox layer) and other industrial parts and also production of different types of motorcycles such as 125 CC (China) and 100 CC (Yamaha) using national and foreign facilities.

Main facilities and infrastructures of this company are:

1- Production and service buildings

- plant area: 8000 square meters
- Production silo: 3000 square meters
- Office, service and laboratory buildings 3000 square meters
- 2 pounds per square inch (lbf/in<sup>2</sup>) gas connection
- 400 KW electricity connection

2- Employment of 100 people who are mainly engineer and experts and also academics in order to develop and engineer some of the projects of the plan and development.

3- Valid national and international contacts

- Quality management system ISO 2009 from Touf German company
- Quality system of ISO/TS2002 from DQS German company in production of parts and IMQ Italian company
- With the quality system from inspection and quality organization of the industry ministry in automobile parts manufacturing
- With grade B from company in SAPCO automobile parts manufacturing (Supplying Automotive Parts Company (SAPCO))

Given the economic sanctions in the automobile industry and given the management and technical abilities and the facilities of this factory, the board of directors has decided to expand its activities. So with the prices of fuel and air pollution increasing in metropolitan has requested to cooperate and to receive the necessary certifications from the Ministry of Industry, Mine and Trade in order to manufacture electric motorcycles. Given this

proceedings and given the regulations to receive support from electronic transportation systems, agreements were made to do this project with the cooperation of industry ministry and center for automobile, fuel and environment research (owner of the projects related to automobile and electronic vehicles), however this protect was not implemented due to financial problems and lack of liquidity. But this company has not diverged from the mentioned path and has made an attempt to start this production line by gathering information and correspondence with the manufacturing foreign companies and also by production and sale of some electronic motorcycles. We hope to provide the financial resource of the electric motorcycles by attracting the investors and also by more production of the highly demanded petrol motorcycles. It is worth mentioning, we welcome investments on idea or any recommendation regarding quality improvement of productions.

Some of the Incentives for this plan are listed below:

- Providing significant subsidiaries from the organization of fuel consumption optimization.
- legislative rule making regarding customs exemptions of these productions
- Reduction of import tariffs for parts and spares
- Providing facilitates to buy these productions for the customers
- Attracting the municipality to use these productions to reduce pollution.



## **1.Product introduction:**

Classification of motorcycles usually based on the application, power supply and application is classified based on the engine volume The purpose of this project is to produce electric and petrol motorcycles with the following specification:

### **Different types of road motorcycles:**

1. Internal combustion piston engine (other than scooters)-petrol motorcycle
  - 1-1 Gear motor class 249 CC and less
  - 1-1-1- Gear motorcycle class 200
2. Electronic motorcycle
  - 2-1- Electronic motorcycle (other than scooters) 500-5000 W

**Road Motorcycles** as it is obvious from its name, this group of motor-cycles are designed for clear road and asphalt roads. So are the most popular motor-cycles and have equipment such as front light, back lights, front and back brakes, front and back shock absorbers, muffler and other equipment needed to commute in the city and on the roads. The engine volume is usually 125 CC and more depending on the application and the maximum speed is 120 to 200 Km/h are more.

This type of motorcycles are divided in to four groups:

1- Cruisers can travel long distances, beautiful designs, enough space to install more equipment and convenience driving this motor-cycles have 250 CC engines and more with the approximate Wight between 136 Kg to 360 Kg.

2. Sport bikes: These motor-cycles have high speed, acceleration, stronger brake system and high maneuver system. These motorcycles, have engines with the volume of 125 CC to 1300 CC and they are approximately 135 to 235 Kg. Based on the size and engine volume, this type has some sub-categories.

- Small capacity Sport Bikes: 125- 400 cc
- Super Sport bikes : 500-800 cc
- Super bikes 800-1100 cc
- Sport touring : 1100 -1500 cc

3. Touring motor-cycles: It is possible to say that this is a combined motor-cycle made of sport bike and cruisers which means it has high seed, convenience and power. Engines used in this motor-cycle are between 750 CC to 1600 CC, off course sport bikes usually use smaller engines but the only touristic bikes have at least 1100 CC engines.

4. Naked Bike, City Bike, Standard Bike. This is the main model used in cities, it is convenient with better agronomy and higher efficacy and contrary to sport bikes it does not need aerodynamic and light body and the rider does not need to bend forward. This motor-cycle was frequently used in the 1970s and reached the highest popularity in 1980s. This is usually an economic motor-cycle in terms of price and public can effort it.

It is worth mentioning that based on the legal instructions and regulation, it is forbidden to use motor-cycles with engine volume of higher than 250 CC in public places and the bike will be confiscated if it is seen in these places. According to the national rules, these bikes will receive the certificates to be used as an ambulance and for search and rescue from the Ministry of Industry, Mine and Trade and will receive sport certificate from Ministry of Sport and Youth if not used in cities.

- **This project is focused on petrol motorcycles with less than 250 CC specially 200 CC (naked class, street sport and city trail).**

### **Electric motor-cycles**

Electric motor-cycle is a modern vehicle that is charged by urban electricity (with very low costs). Input electricity to the electric motor-cycle is stored chargeable board that pushed the electric engines of the system back and forward. Engines in this electric bikes are provided in this 500, 800, 1000, 1200, 1500, 3000, 4000 and 5000 w to provide a wide variety of choices for consumers. These products are provided with atomic and lithium batteries. Bikes with lithium batteries can travel far distances. Service life of atomic and lithium batteries are five and eight to ten years respectively. The highest speed of the 500, 1500, 1500, 2000, 3000 and 4000 w engines are 40, 50, 70, 80 and 120 Km/h respectively.

These days, most of the electric motor-cycles use lithium-ion battery, off course older models used nickel metal hydride batteries. Electric motor-cycles have less environmental and audio pollutions and given the speed limitation is more secure relative to other popular motorcycles in the cities among riders and pedestrians.

In addition to petrol and electric motorcycles, it is possible to manufacture any vehicles related to this category such as hybrid motorcycles, jet skis and electric wheelchairs with a capacity of approximately 100,000 units per year at the plant and for development. On the other hand, the variety of products makes the system flexible and agile and reduces the risk of investment.





### 1.1. Product name and ISIC code

ISIC is the most common classification and categorization of economic activities. ISIC classification is defined as: classification and categorization of the international standard industrial classification of all economic activities. This classification is allocated to one of the 2, 4, and ten digit codes based on the type of industry and product. ISIC code related to the petrol and electric motorcycles is showed in the following table.

<i>Product name</i>	<i>ISIC Code</i>	<i>Unit</i>
Internal combustion piston engine (other than scooters)- petrol motorcycle	3591412304	<i>Unit</i>
Gear motor class 249 CC and less	3591512376	<i>Unit</i>
Gear motorcycle class 200	3591512308	<i>Unit</i>
Electronic motorcycle	3591412302	<i>Unit</i>
Electronic motorcycle (other than scooters)	3591512370	<i>Unit</i>

Source: Industry, mine and trade organization

### 1.2. Customs tariff code

Based on the export and import regulation of Islamic republic of Iran the custom tariff for the petrol and electric motorcycles are as follows:

<b>Heading subheading No.</b>	<b>Description</b>
8711	<b>Motorcycles</b>
871120	<b>-with reciprocating internal combustion piston engine of a cylinder capacity exceeding 50cc but not exceeding 250 cc</b>
	--- of two-stroke type:
87112013	----injector type
87112019	----other
	--- others
87112093	----injector type
87112099	----other
871160	<b>-with electric motor for propulsion</b>
87116020	--- other electric engine with power less than 500w
87116090	---other

Source : export-import regulations (2020)

### 1.3. Import and export products conditions

Given the conditions for product import and export in Islamic republic of Iran, conditions and tariffs for import and export of the petrol and electric motorcycles are as follows:

Heading Subheading No.	Description	SUQ	Import duty
8711	<b>Motorcycles</b>		
871120	<b>-with reciprocating internal combustion piston engine of a cylinder capacity exceeding 50cc but not exceeding 250 cc</b>	U	5
	--- of two-stroke type:		
87112013	----injector type	U	40
87112019	----other	U	55
	--- others		
87112093	----injector type	U	40
87112099	----other	U	55
871160	<b>-with electric motor for propulsion</b>		
87116020	--- other electric engine with power less than 500w	U	15
87116090	---other	U	5

Source : export-import regulations (2020)

-The import duty applicable to parts and components of electrical motor and hybrid car is 5% of value, subject to confirmation by the Ministry of Industries, Mines and Trade.

#### 1.4. Review and presentation of standard (national or international)

NO.	Title	national Standard	national Standard
1	Type-approval of two or three-wheel motor vehicles	2002/24/EC	7558
2	Braking of two or three-wheel motor vehicles (Amendment No. 1)	93/14/EEC	A1-13263
3	Two- or three- wheel motor vehicles - Identification of their controls, tell-tales and indicators - Specifications and test methods	2009/80/EC ISO 9021	13138
4	Motorcycle - Stands for two - wheel motor vehicles	2009/78/EC	13262
5	Two or three - wheel motor vehicles - Instalation of lighting and light - signalling devices	2009/ 67/ EC	13806
6	Motorcycle- Audible warning devices for two- or three-wheel motor vehicles	93/30/EEC	13261
7	Lead - acid batteries for motorcycles	JIS D 5302 (1997)	6197
8	Two or three wheel motor vehicles - Maximum design speed	ECE: 95/1/EC 2002/41/EC	6701
9	Two or three-wheel motor vehicles - Maximum torque and maximum net engine power	ECE: 95/1/EC 2002/41/EC	6653
10	Pneumatic tyre of motorcycle – Specifications and test methods	ISO 10231:2003 JIS K 6366:1998	763
11	Two or three – Wheel motor vehicles – Masses and dimensions	93/93/EEC	8314
12	Two or three – Wheel motor vehicles – Speedometer	2000/7/EC	8315
13	Two or three – wheel motor vehicles – Anti theft devices	1999/23/EC	8316
14	Two or three–wheel motor vehicles – Statutory markings	2009/139/EC	8317
15	Two or three–wheel motor vehicles Registration plate	2009/62/EC	8318
16	Two-wheel motor vehicles –Passenger hand holds	2009/79/EC	8319
17	Lighting and light-signaling devices of two or three-wheel motor vehicles (Amendment No. 1)	97/24-2/EEC	10283
18	Motorcycle - Fuel tanks – Specifications and test methods	97/24/EC SAE J1241:1999	11410
19	Motorcycle – Anti-tampering measures for two-wheel mopeds and motorcycles	97/24/EEC	11411
20	Two or three-wheel motor vehicles – Measures to be taken against air pollution and determination of fuel consumption	ECE 97/24 2013/60/EU	6789
21	Moped and motorcycle – Sound level	97/24-9/EEC	10282
22	Two or three-wheel motor vehicles – Rear view mirrors – Specifications and test method	97/24/ ECE	17220
23	Two or three-wheel motor vehicles – Electromagnetic compatibility of motor vehicles and electrical or electronic separate technical units	97/24/ ECE	19101
24	Two or three–wheel motor vehicles- External projections	97/24/EC	20127
25	Motorcycles – Fuel consumption, criteria for CO2 emission and energy labeling instruction	168/2013/UN	6626-2
26	Rotating electrical machines – Part 1: Rating and performance	IEC 60034-1:2010	3772-1
27	Lead-acid traction batteriesPart1: General requirements and methods of test	IEC 60254-1:2005 IEC61982-2	4282-1
28	Secondary cells and batteries containing alkaline or other non-acid electrolytes – Secondary lithium cells and batteries for portable applications	IEC 61960: 2011	6618

Source: Institute of Standards and Industrial Research of Iran

### 1.5. Review and provide information about domestic production prices and global price of the product

The global price of 800W electric motorcycles is in the category of 600- 1200 Dollar, 1500W electric motorcycles is in the category of 750-1650 Dollar, and 3000W electric motorcycles is in the category of 800-3000 Dollar, 4000W is in the category of 950-4500 Dollar.

The prices of petrol motorcycles in the country are also different, depending on the brand and the power. In this plan, the sales price of the products, considering the quality of the components and the competitive ability with other manufacturers, is considered as follows:

Suzuki motorcycle: Gixxer SF :2018 150-200cc Front brake type: Disc Start Type: Electric Odometer Type: Digital Ring type: Sport Gear Count: Five		600.000.000 Rials ~ 2400 Euro
Bajaj: pulsar NS200 Engine Type: Single-cylinder, four-stroke Maximum power: 17.5 kW Gearbox: 6 gear Front Brake: single disc 280mm		680,000,000 Rials ~ 2720 Euro

-800 W electric motorcycles	<b>164 million Rials</b>	796 US\$
-1500 W electric motorcycles	<b>233 million Rials</b>	1131 US\$
-3000W electric motorcycles	<b>300 million Rials)</b>	1456 US\$
-4000 W electric motorcycles	<b>585 million Rials)</b>	2840 US\$
2. Petrol motorcycles 200cc	<b>340 million Rials</b>	1650 US\$

### 1.6. Explaining the usage and application of the product in the domestic and foreign markets

Low prices, requirements and repair costs and low fuels consumption are main advantages of these motor-cycles to automobile in the city and near destinations. Motorcycle is a highly demanded vehicle that is used to travel in cities, to work place and is used in some job to move packages and foods. In metropolitan and cities with heavier traffic, using motorcycles one to go to work or any other destination is one of the best ways to solve the traffic problems and reduce tiredness.

According to the statistics of the police vehicle licensing system there are 32 million and 900 thousand vehicles in the country and 11 million and 650 thousand (35 %) of which are motor-cycles. According to the statistics, 56% of the motor-cycles are in Tehran, Khorasan Razavi,

Esfahan, Fars and Khuzestan motorcycles are increasingly popular and in the recent years, their registration have increased 35%.

Using electric motorcycles in Iran started in 2009. In the recent years, due to the environmental problems in the metropolitans, the policies aim to ban the production of gasoline carburetor motor-cycles and replacing them with injector bikes and also to use electric motor-cycles. At the moment there are 9 million and 500 thousand worn out cars in Iran and 10 carburetor motor-cycles produce Particulate matter as much as 1 old diesel bus. So these worn out injector gasoline motor-cycles must be replaces by electric ones that reduce environmental pollution.

Electric motorcycles will soon find its place in the transportation system especially in the leading companies. Reducing transportation, repair and maintenance prices and helping to improve air quality besides the recent developments battery production and strong brushless motors has increased the popularity of the electric motorcycles. This popularity increased when it was possible to travel 40 to 100 Km with one time charging with suitable and adjustable speed and these bikes are designed to be professional and fashionable.

Advantages of using electric motorcycles

- 1- Does not need fuel
- 2- Easy movement, no need to change clutch and gear
- 3- Lower repair costs
- 4- No air and sound pollution
- 5- Lighter bikes that leads to better movement
- 6- More safety due to lower speeds relative to the petrol models

The weakness of these models is that they cannot store high amounts of energy like the models with gas tank. These motor-cycles travel 100 Km with each charge (1 to 8 hours), so they are suitable for daily travels in cities.

### **1.7. Evaluation of alternative products, competitors and analysis and its effects on consumption of the product**

Fossil fuel and electric cars are one of the most important alternatives to motorcycles, but the motorcycles are less expensive and can be purchased by more and more people in the community. In addition to the less expensive motorcycles, the ease of commuting, lower maintenance costs and its recreational aspect are other benefits. One of the most important challenges of a motorcycle is its speed and safety compared to cars.

The advantages of electric motorcycles are the aerodynamic body and lightweight, compact structure for riding on busy streets and avoiding pollution.

Other alternatives to motorcycles are bicycles, which are much slower than motorcycles and lack the engine to generate driving force, limiting their use to very short distances and more recreational and sporting distances.

## **1.8. The strategic importance of the product in Iran and foreign markets**

Given the government's attitude to the issue of clean air and specially the use of non-fossil fuels and the increasing prices of fossil fuels (gasoline), electric motorcycles are likely to gain more popularity. In Iran, more than 35 percent of vehicles are motorcycles, which is a significant figure.

It should be noted that in the country, at present, the demand for luxury and sport-recreational motorcycles has increased about 40%.

## **1.9. The major producing countries and product consumer**

China, India, Italy, Germany, Malaysia, South Korea, Taiwan are the largest motorcycle manufacturers.

The main source of electric motors is East Asia. China is the leader in the sale of electronic motorcycles worldwide, with 9.4 million out of the 12 million total worldwide sales last year. Asian countries such as India and Taiwan are also expanding the use of motorcycles and electric cars. Last year, the Indian government announced plans to donate to motorcycles and electric and hybrid cars. The aim of the country in the near future, is to produce seven million electric vehicles for the Indian streets.

Vietnam has the highest number of motorcycles in the world. The city of Hanoi is the capital of all motorcyclists around the world as it is estimated that 80% of all city trips in this area are done by motorcycle. Vietnam, of course, has taken advantage of the opportunity and culture of motorcycling and has become a tourist destination for motorcyclists.

Next in the list is one of the busiest countries using motorcycles. 67% of city trips in Indonesia are by motorcycle.

Taiwan ranks third. A 48 percent share of motorcycles for urban travel indicates that the country is one of the hotspots for motorcycling and has many enthusiasts. The pollution problems that these motorcycles have created for the city have led the government to think of a solution. The introduction of electric motorcycles to control pollutants as well as the continued use of the vehicle by people is one of the most important solutions being implemented in the country.

India, one of the world's busiest countries, ranks fourth in terms of motorcycle use. It has also surpassed China and Pakistan in the latest statistics.

## **2. Situation of supply and demand in Iran and foreign markets**

### **2.1. Study of utilization capacity and production process since the beginning of the Sixth Five Year Economic Development Plan, unit location, the number and level of technology of available units, nominal capacity, practical capacity, lack of full capacity utilization reasons, the name of country and manufacturer of machinery used in production**

Based on information obtained from the Industry, Mine and Trade organization, the country's motorcycle production units and their production are presented in the following table.

Currently there are 22 motorcycle manufacturing and assembly units in the country. There is a passive unit in Khuzestan province. According to government regulation approved in 2007, the registration of cheap polluting, noisy and high-risk carburetor motorcycles, was banned for the sake of maintaining community health and many motorcycles manufacturing units were not able to

produce injectors and electric motors, as result of this many manufacturing units were shut down. Production has also fallen sharply due to rising exchange rates and lack of liquidity to supply parts.

Due to imposed sanctions against Iran and the lack of knowledge-based companies in the design and manufacture of motorcycles in Iran, Iranian companies often assemble and design Chinese-made motorcycles in factories.

Motorcycle Manufacturing Units

No.	Province	<i>petrol motorcycle</i>		<i>Electric motorcycle</i>	
		<i>Number of units</i>	<i>Capacity (unit)</i>	<i>Number of units</i>	<i>Capacity (unit)</i>
1	Esfahan	5	104,120	2	6,000
2	Alborz	2	40,000	1	3,000
3	East Azerbaijan	2	18,500	1	1,050
4	West Azerbaijan	2	7,500	0	0
5	Tehran	4	80,714	1	2,000
6	Khorasan, South	1	5,000	0	0
7	Khorasan, Razavi	4	50,600	2	6,000
8	Khuzestan	1	8,000	0	0
9	Zanjan	3	103,500	3	20,000
10	Semnan	3	31,800	1	5,000
11	Fars	4	41,800	1	1,000
12	Qazvin	5	103,660	2	11,000
13	Qom	13	103,000	6	35,500
14	Golestan	1	5,000	0	0
15	Gilan	1	5,000	2	3,000
16	Mazandaran	1	5,000	0	0
17	Markazi	1	18,600	1	1,400
18	Yazd	1	20,000	0	0
<i>nominal Total capacity</i>		54	750,794	23	94,950
<i>Practical capacity</i>		22	128,000	9	32000

Source: Industry, Mine and Trade organization

## 2.2. Study of the status of new projects and under construction development projects (In terms of number, capacity, operation place, the physical progress rate and the level of their technology and investments by both foreign exchange and other required) and semi-finished projects

The following table shows the units under construction of petrol and electric motorcycles based on information obtained from the Industry, Mine and Trade Organization. In Khuzestan province, which is the fifth largest motorcycle consuming province and has significant environmental pollutants caused by microbes and large industries such as nickel, steel and petrochemicals, no unit is being developed for the production of injector and electric motorcycle

### Under Construction Units of petrol motorcycles with 20-99% of physical progress

physical progress: 60-99%					
No.	Province	Number of units	Capacity (unit)	Investment	
				Rail's (Million Rail)	million Euro
1	Esfahan	2	48,000	104,500	0.5
2	Lorestan	1	30,000	8,976	0
3	Yazd	1	52,000	21,973	0.2
Total Sum		4	130,000	135449	0.7
physical progress: 20-59%					
11	Esfahan	2	100000	100,000	0.5
12	West Azerbaijan	1	13500	1,750	0
13	Qazvin	1	30000	4,448	0
14	Mazandaran	1	20000	14,113	0
Total Sum		5	163500	120,311	0.5

Source: Industry, Mine and Trade organization

### Under Construction Units of electric motorcycles with 20-99% of physical progress

physical progress: 60-99%					
No.	Province	Number of units	Capacity (unit)	Investment	
				Rail's (Million Rail)	million Euro
1	Esfahan	1	45,000	172,000	0.8
2	Qom	1	120,000	72,338	0.5
3	Kerman	1	4,000	5,000	0.2
4	Yazd	1	2,000	20,775	0
Total Sum		4	171,000	270,113	1.5
physical progress: 20-59%					
1	Esfahan	1	1000	17200	0
Total Sum		1	1000	17200	0

Source: Industry, Mine and Trade organization

## 2.3. The trend of imports of the product in the last five years

Official statistics show that China, India, Malaysia, Indonesia and Japan are the largest exporters of motorcycles to Iran. Large companies such as India, Suzuki, Yamaha, TVS, Bajaj, Hyro are the most prestigious East Asian companies whose products are well known in the Iranian market.

In Iran, no fully assembled motorcycle is imported in bulk and most of the assembly process is done in domestic factories. Import statistics from 2004 to 2018 confirm this fact. Imports of fully assembled motorcycles have also fallen sharply since 2007, due to rising exchange rates.



Imports of 50cc to 250cc cylinder petrol motorcycles (excluding those used for racing, Carting motorcycles and scooters) over the last 5 years

year	Weight (kg)	Number of unit	Rails value	Dollar value
2018-19	12,426	124	3,366,223,124	79,461
2017-18	25,821	258	8,482,475,442	247,121
2016-17	96,373	963	16,415,099,934	537,195
2015-16	11,852	117	2,973,221,550	99,678
2014-15	8,381	84	2,407,471,803	90,061

Source :The Islamic Republic of Iran Customs Administration

\* With a weight of 100 kg per motorcycle

Imports of electric motorcycles other than scooters in the last 5 years

year	Weight (kg)	Number of unit	Rails value	Dollar value
2018-19	35,611	475	9,634,675,920	231,862
2017-18	86,272	1,150	21,305,041,661	611,404
2016-17	81,937	1092	14,231,923,116	448,943
2015-16	46,214	616	12,300,805,931	421,501
2014-15	20,214	270	9,191,116,490	340,024

Source :The Islamic Republic of Iran Customs Administration

\* With a weight of 75 kg per motorcycle

Imports of 50cc to 250cc cylinder petrol motorcycles (excluding those used for racing, Carting motorcycles and scooters) divided by country in 2018-2019

counterparty country	Weight (KG)	Rail's value	Dollar value	Weight ratio (Wt%)
Indonesia	2,474	809,905,900	18,930	19.9
Italy	220	128,184,930	3,052	1.8
South Korea	204	78,079,320	1,859	1.6
China	7,744	1,826,624,974	43,383	62.3
India	1,633	485,628,000	11,337	13.1
Vietnam	151	37,800,000	900	1.2
<b>total</b>	12,426	3,366,223,124	79,461	100.0

Source: Islamic Republic of Iran Customs Administration (2020)

Imports of electric motorcycles (other than scooters) divided by country in 2018-2019

counterparty country	Weight (KG)	Rail's value	Dollar value	Weight ratio (Wt%)
Taiwan	250	205,396,800	4,890	0.7
China	33,401	9,094,875,120	219,010	93.8
Special zoons	980	189,504,000	4,512	2.8
Chabahar Free Zone	980	144,900,000	3,450	2.8
<b>total</b>	<b>35,611</b>	<b>9,634,675,920</b>	<b>231,862</b>	<b>100</b>

Imports of 50cc to 250cc cylinder petrol motorcycles (excluding those used for racing,  
Carting motorcycles and scooters) divided by country in 2017-2018

counterparty country	Weight (KG)	Rail's value	Dollar value	Weight ratio (Wt%)
United Arab Emirates	497	99,399,589	3,017	1.9
Indonesia	706	311,921,300	9,618	2.7
Italy	1,602	824,114,290	23,673	6.2
Taiwan	4,275	1,273,453,292	36,794	16.6
China	13,487	3,621,586,112	105,505	52.2
Japan	576	672,546,857	18,263	2.2
India	4,543	1,542,020,789	46,439	17.6
Vietnam	135	137,433,213	3,812	0.5
<b>total</b>	<b>25,821</b>	<b>8,482,475,442</b>	<b>247,121</b>	<b>100</b>

Source: Islamic Republic of Iran Customs Administration (2020)

Imports of electric motorcycles (other than scooters) divided by country in 2017-2018

counterparty country	Weight (KG)	Rail's value	Dollar value	Weight ratio (Wt%)
United Arab Emirates	6,594	2,870,054,396	82,304	7.6
Italy	50	32,530,400	930	0.1
Germany	740	404,665,118	10,921	0.9
China	78,394	17,753,748,767	510,059	90.9
Vietnam	494	244,042,980	7,190	0.6
<b>total</b>	<b>86,272</b>	<b>21,305,041,661</b>	<b>611,404</b>	<b>100</b>

Source: Islamic Republic of Iran Customs Administration (2020)

## 2.4. The trend of consumption in the last five years

According to statistics released by the Association of Motorcycle Manufacturers of the country, the number of motorcycles produced was more than 850,000 vehicles per year in 2017, and in 2018 and 2019 140000 and 160000 motorcycles respectively. The reasons for the decline were stopping the production of carburetor motorcycles and increasing exchange rates for parts imports, as well as reduced purchasing power. Of that amount, about 15 percent of electric motorcycles were produced that up 20 percent increased this year.

### Estimating apparent consumption of motorcycles in the country over the past 5 years (2013-2019)

	2013-2014	2014-2015	2015-2016	2016-2017	2018-2019
Domestic production (tons)	420100	586900	850000	140000	160200
Imports (tones)	354	733	2055	1408	599
Export (tons)	9761	5600	1111	254	2160
The apparent consumption	410,693	582,033	850,944	141,154	158,639

## 2.5. The trend of export product in the last five years and the possibility of its development

Currently Iranian-made motorcycles are exported to countries such as Iraq and Afghanistan. The value of motorcycle exports in 2018 was 903,000\$, of which 885,000\$ was due to trade with Iraq. Iraq accounts for 98% of Iran's export of motorcycles. Exported motorcycles are petrol type and electric motorcycles have been exported very limited in 2016; one of the main reasons for this, is the fact that more than 90% of motorcycle parts and components are imported. Electricity supplies are imported and due to the increases in the exchange rate in Iran, imports of these components have fallen sharply, with production and exports falling.

Due to the common water and land borders with the Persian Gulf countries especially Iraq, proper communication infrastructure, access to open waters, existence of important commercial ports of Khorramshahr, Abadan and Imam Khomeini Port, Arvand Free Zone, Bazaar Borderlands, cultural sharing, as well as specialized and educated workforce, Khuzestan province, has a geopolitical position and the potential to export to the Gulf States, particularly to Iraq. If high-quality motorcycles are produced in this province with the ability to compete with China, India, and Japan, export expansion is possible and it is estimated that 15 to 20 percent of production is exported to neighboring countries, especially Iraq.

Exports of 50cc to 250cc cylinder petrol motorcycles (excluding those used for racing, Carting motorcycles and scooters) over the last 5 years

year	Weight (kg)	Number of unit	Rails value	Dollar value
2018-19	216,040	2160	50,593,075,456	903,474
2017-18	251,220	2512	34,642,501,770	1,013,317
2016-17	98,387	983	15,277,184,000	500,650
2015-16	560,075	5600	87,548,583,650	2,977,566
2014-15	963,005	9630	145,687,565,237	5,509,354

Source :The Islamic Republic of Iran Customs Administration

\* With a weight of 100 kg per motorcycle

Exports of electric motorcycles other than scooters in the last 5 years

year	Weight (kg)	Number of unit	Rails value	Dollar value
2018-19	0	0	0	0
2017-18	251	3	248,153,759	7,547
2016-17	9580	128	1392168000	45600
2015-16	0	0	0	0
2014-15	0	131	0	0

Source :The Islamic Republic of Iran Customs Administration

\* With a weight of 75 kg per motorcycle

Exports of 50cc to 250cc cylinder petrol motorcycles (excluding those used for racing, Carting motorcycles and scooters) divided by country in 2018-2019

counterparty country	Weight (kg)	Rail's value	Dollar value	Weight ratio (Wt%)
Armenia	450	121,048,170	2,877	0.21
Uzbekistan	240	43,880,000	1,000	0.11
Afghanistan	200	99,834,000	2,377	0.09
United Arab Emirates	100	93,715,000	1,000	0.05
Azerbaijan	2,350	523,075,400	11,100	1.09
Iraq	212,700	49,711,522,886	885,120	98.45
<b>total</b>	<b>216040</b>	<b>50,593,075,456</b>	<b>903,474</b>	<b>100</b>

Source: Islamic Republic of Iran Customs Administration (2020)

Exports of of 50cc to 250cc cylinder petrol motorcycles (excluding those used for racing, Carting motorcycles and scooters) divided by country in 2017-2018

counterparty country	Weight (kg)	Rail's value	Dollar value	Weight ratio (Wt%)
Austria	150	30,076,410	897	0.06
Armenia	770	278,818,200	8,100	0.31
Afghanistan	4,800	214,097,400	6,600	1.91
England	120	19,029,600	540	0.05
Iraq	245,380	34,100,480,160	997,180	97.68
<b>total</b>	<b>251220</b>	<b>34,642,501,770</b>	<b>1013317</b>	100.00

Source: Islamic Republic of Iran Customs Administration (2020)

## 2.6. Reviewing of products needs based on export priority

According to official reports released by the Ministry of Industry and Mines and Commerce, the Road Police (Traffic and Traffic of the Islamic Republic of Iran) and the Motorcycle Manufacturers Association, the country's real annual need is 400,000 units due to problems such as sanctions and high exchange rates and inflation have been reduced to less than 200,000 units and exports have fallen sharply in the past two years ago. Due to the boom in production in the 2008s, exports to neighboring countries such as Iraq were more than 300,000 unit.

Currently, there are 9 million and 5 thousand worn-out motorcycles (about 81%) out of the 11 million 650 thousand motorcycles in the country, which according to Article 2 of the Clean Air Bill should be abolished, because every 10carburetor motorcycles produces particulate matter per kilometer the size of an old diesel bus. However, by converting a carburetor to an injector, it possible to reduce the number of particles by up to 90%. On the other hand, the useful life of motorcycles is 4-8 years, which then results in high maintenance and fuel consumption and pollution.

Khuzestan Province, with a population of 4.7 million, with 536,000 motorcycles, is the fifth largest in the province, but with this large volume of consumption and young people interested in speed and motorcycles, as well as the need for clean electric vehicles, There is no active motorcycle producer in the province, and due to its specific geographical location and appropriate communications infrastructure, the export route to neighboring countries, especially Iraq, is a good target market for these products.

## 3- Overview of technology and production methods and product supply in the country and compare it with other countries

The factory is aiming to produce injector and electric motorcycles based on at environmental concerns and in accordance with standards to provide conditions to reduce air pollution and protect the environment.

Currently, electric motorcycle manufacturers import about 90 percent of the required parts into the CKD and assemble parts and supply only 10 percent of parts such as tires and other parts in country

and About 70% of petrol motorcycles come from inside of country and 30% were imported mainly from China.

According to the technical capabilities and experience of the company executives, 50% of the products will be manufactured on the basis of electric motorcycles designed by Tehran University experts and scholars. Requirements have been noted. Another 50% will be provided in the form of CKD from abroad. As a result, production costs are significantly reduced when all parts are supplied through imports.

Currently the production of this plant is done in full assembly of imported parts (full CKD). In future according to the technical capabilities and experience of the company executives, 50% of the products will be manufactured on the basis of electric motorcycles designed by Tehran University experts and scholars. Another 50% will be provided in the form of CKD from abroad. As a result, production costs are significantly reduced when all parts are supplied through imports.

#### **4. Determine the strengths and weaknesses of known technologies (in outline) in the production process**

One of the most important technologies of electric motorcycles is its intelligent design. In these cases, a color display is embedded on the device that can display information such as, battery charge, speed and driving modes. Built-in Wi-Fi and Bluetooth also allow the driver to connect to the system through his smartphone at different times and understand information such as battery charging, tire pressure and engine temperature.

Design Strengths of the Design Process:

1. Using state-of-the-art technology such as rechargeable lithium-ion batteries in electric motorcycles
2. Ability to assemble parts and components (CKD) of internal and external motorcycles
3. Given the currency price and currency constraints in Iran and also to reduce costs
4. Observance of 28 national and international standards
5. injector motorcycles with the right combination of fuel and air ratio will result in higher acceleration, ultra-low emission and lower fuel consumption

#### **5. Determine the minimum economic capacity includes the estimated volume of fixed investment estimated volume with the separation of Rials and foreign exchange (Using information of available and under construction units, UNIDO, internet, the global data banks, technology selling companies and equipment, etc.)**

Considering the market need especially Khuzestan province and neighboring provinces and with the aim of exporting to neighboring countries especially Iraq, as well as taking into account economic capacity, annual capacity of 6,000 electric motorcycles and 3,000 petrol motorcycles, it is estimated that if we provide the necessary cash to complete the buildings as well as purchase motorcycle parts,

this amount will be achieved in about 300 working days and one shift per day with about 27 employees. Construction will take 6 months to complete.

Plan production and sales over the next 3 years

Years of operation		first year 6 month	second year 12 month	third year 12 month
Percentage of capacity		100	100	100
electric motorcycles		3000	6000	6000
-800 W		500	1000	1000
-1500 W		500	1000	1000
-3000W		1000	2000	2000
-4000 W		1000	2000	2000
Petrol motorcycles200cc		1500	3000	3000
Total production		4500	9000	9000
The outcome of selling				
1.electric motorcycles		791,000.0	1,582,000.0	1,582,000.0
-800 W (164 million Rails)		82,000	164,000	164,000
-1500 W (233 million Rails)		116,500	233,000	233,000
-3000W (300 million Rails)		300,000	600,000	600,000
-4000 W (585 million Rails)		292,500	585,000	585,000
2. Petrol motorcycles200cc (340 million Rails)		680,000.0	1,360,000.0	1,360,000.0
Total sales	million Rails	1,471,000.0	2,942,000.0	2,942,000.0
	Million Euro	5.88	11.77	11.77

Exchange rate:  
 1 Euro ≅ 250,000.0 Rail’s            1 US\$ ≅ 206,000.0 Rail’s

**Table of Project Investment**

Description	done Costs (million Rails)	required Costs				Total	
		The Foreign currency		Local Currency	Total (Million Rails)	Million Rails	Equivalent in Million Euro
		Million Euro	Equivalent Rails (Million Rails)	Million Rails			
land	200,000.00	0.00	0.00	0.00	0.00	200,000.00	0.800
landscaping	10,510.00	0	0	0	0	10,510.00	0.042
Construction	82,500.00	0		43,000.00	43,000.00	125,500.00	0.502
utilities	11,340.00	0	0	0	0	11,340.00	0.045
Equipment& Machinery	5,000.00	0	0	95,000.00	95,000.00	100,000.00	0.400
laboratory equipment	5,000.00	0.0	0	13000.00	13,000.00	18,000.00	0.072
transportation	3,000	0	0	0	0	3,000.00	0.012
Office Equipment & Supplies	1000	0	0	2,000	2,000	3,000.00	0.012
<b>total</b>	318,350.00	0	0	153,000.00	153,000.00	471,350.00	1.885
<b>Pre-exploitation cost</b>	2000	0	0.00	3,000.00	3,000.00	5,000.00	0.02
Total of fixed Capital	320,350.00	0	0	156,000.00	156,000.00	476,350.00	1.91
Working capital	0	1.93	482,040.0	234,124.8	716,164.8	716,164.8	2.86
<b>Total Investment</b>	<b>320,350.00</b>	<b>1.93</b>	<b>482,040.0</b>	<b>390,124.8</b>	<b>872,164.8</b>	<b>1,192,514.8</b>	<b>4.77</b>

Exchange rate:

1 Euro  $\cong$  250,000.0 Rail's

1 US\$  $\cong$  206,000.0 Rail's



land specification of project as follows as:

Description	Area(m <sup>2</sup> )		Cost (million Rails)			Equivalent in Euro
	done	required	done	required	Total	
land	8000	0.0	200,000.0	0.0	200,000.0	800,000.0

landscaping price as follows as:

Description	Area(m <sup>2</sup> )		Cost (million Rails)			Equivalent in Euro
	done	required	done	required	Total	
Wall of bricks (2.5 meters high)	351 m	0.0	3,510.0	0.0	3,510.0	14,040.0
sidewalk building and asphalt	2000 m <sup>2</sup>	0.0	4,000.0	0.0	4,000.0	16,000.0
Green space and lighting	1000m <sup>2</sup>	0.0	3,000.0	0.0	3,000.0	12,000.0
<b>total sum</b>			<b>10,510.0</b>	<b>0.0</b>	<b>10,510.0</b>	<b>42,040.0</b>

Construction items Information:

Description	Building Type	Square meters area		Total cost (million Rails)			Equivalent in Euro
		Done	Required	Done	Required	Total	
production and storage salon	Industrial Shed Concrete floor	3000	0	75,000.0	0.0	75,000.0	207,612.5
storage salon	Industrial Shed	0	1000	0.0	35,000.0	35,000.0	17,301.0
Administrative buildings and services	made of bricks, painting interior space, parquet flooring and mosaic	250	250	6,250.0	8,000.0	14,250.0	57,000.0
electronic room	Made of bricks	25	0	625.0	0.0	625.0	2,500.0
Gate guard	Made of bricks, floors made of mosaic	25	0	325.0	0.0	325.0	1,124.6
<b>Total infrastructure and costs</b>		<b>3300</b>	<b>1250</b>	<b>82,500.0</b>	<b>43,000.0</b>	<b>125,500.0</b>	<b>502,000.0</b>

the view of the factory



### Utilities:

Description	Technical Specifications	Required costs (million Rails)			Equivalent in Euro
		Done	Required	Total	
Electrification	Electric supply and power 220 KW	3,000.0	0.0	3,000.0	12,000.0
Water	Split 0.75 "and water supply	1,400.0	0.0	1,400.0	5,600.0
Gas	gas supply 160m <sup>3</sup> /h and piping	900.0	0.0	900.0	3,600.0
Piping of compressed air		1,700.0	0.0	1,700.0	6,800.0
air compressors and tanks	1 and 2 m <sup>3</sup> /h	2,500.0	0.0	2,500.0	10,000.0
Fire Extinguishing System	24 fire extinguishers	140.0	0.0	140.0	560.0
Heating & Cooling	Air conditioning	600.0	0.0	600.0	2,400.0
CCTV	14 cameras and 6 night cameras	500.0	0.0	500.0	2,000.0
Cooling tower	Power: 3hp	600.0	0.0	600.0	2,076.1
<b>Total</b>		<b>11,340.0</b>	<b>0.0</b>	<b>11,340.0</b>	<b>45,360.0</b>

### Equipment& Machinery product line:

Description	Qty		Cost (million Rails)			Equivalent in Euro
	done	required	done	required	Total	
rotating furnace with heating equipment	1	0	5,000.0	90,000.0	95,000.0	380,000.0
Injection machines	0	6				
Other equipments	1	0				
Motorcycle assembly line	0	1	0.0	5,000.0	5,000.0	20,000.0
<b>total sum</b>			<b>5,000.0</b>	<b>95,000.0</b>	<b>100,000.0</b>	<b>400,000.0</b>

### laboratory equipment

Description	Qty		Cost (million Rails)			Equivalent in Euro
	done	required	done	required	Total	
Lab Tools	1	1	5,000.0	5,000.0	10,000.0	40,000.0
Electromotor Tester	0	1	0.0	8,000.0	8,000.0	32,000.0
<b>total sum</b>			<b>5,000.0</b>	<b>13,000.0</b>	<b>18,000.0</b>	<b>72,000.0</b>

## Transportation

No.	Equipment Name	Qty		The currency (EUR)	Equivalent Rails million ) (Rails	Cost (million Rails)	Total cost (million Rails)	Equivalent in Euro
		done	required					
1	Lift Trucks 2.5 tons	1	0	0.0	0.0	3,000.0	3,000.0	12,000.0
Total				0.0	0.0	3,000.0	3,000.0	12,000.0

## Office Equipment & Supplies and Services:

Description	Qty		Cost (million Rails)			Equivalent in Euro
	done	required	done	required	Total	
Office Equipment	1	1	1,000.0	2,000.0	3,000.0	12,000.0
total sum			1,000.0	2,000.0	3,000.0	12,000.0

## Working capital expenses:

Description	duration	The Foreign currency		Local Currency	Total (Million Rails)	Equivalent in Million Euro
		Million Dollars	Equivalent Rails (Million Rails)	Million Rails		
Supplementary (CKD)	3 Month	2.34	482,040.0	36,528.0	518,568.00	2.07
Cash in hand	1 Month	0	0.00	11,088.40	11,088.40	0.044
Account receivable	1 Month	0	0.00	186,508.40	186,508.4	0746
total		2.34	482,040.0	234,124.80	716,164.8	2.86

**Production costs:**

Description	Amount ( Million Rial)	Equivalent in Million Euro
Costs of materials	2,074,272.00	8.297
Cost of production personnel salary	11,808.00	0.047
Cost of utilities (fuel and electricity, water ...)	1,348.00	0.005
Cost of repair and maintenance	9,787.20	0.039
cost of unforeseen production(5%)	104,860.00	0.419
Depreciation expense	21,919.23	0.088
Administrative personnel salary	5,805.60	0.023
Costs of administrative and sales	29,420.00	0.118
Factory insurance	800.00	0.003
<b>Total sum</b>	<b>2,260,020.03</b>	<b>9.04</b>

**6-The annual major required raw materials and annual and to supply outside or inside the country, domestic and foreign exchange and checking the major developments in the supply of essential required items in the past and future**

Currently, electric motorcycle manufacturers import about 90 percent of the required parts into the CKD and assemble parts and supply only 10 percent of parts such as tires and other parts domestically; About 70% of petrol motorcycles come from inside and 30% from overseas ,mainly from China.

In the early years of operation, the required parts and supplies will be supplied as CKD from overseas, and in subsequent phases of production, 50% of the parts will be designed and manufactured at the plant.

## Required Raw materials:

NO.	Description	Consumption per product unit	Unit Consumption	The amount required for all capacity	Currency prices		Cost (million Rails)	Supplying Place	Total cost (million Rail's)	Equivalent in Million Euro
					The currency (million dollar)	Equivalent Rails million ) (Rails				
Electric motorcycles										
1	CKD 800 w	1	unit	1000	0.56	115,360.0	2,352.0	foreign	117,712.0	0.47
2	CKD1500 w	1	unit	1000	0.8	164,800.0	3,360.0	foreign	168,160.0	0.67
3	CKD3000 w	1	unit	2000	2	412,000.0	8,400.0	foreign	420,400.0	1.68
4	CKD4000 w	1	unit	1000	2	412,000.0	8,400.0	foreign	420,400.0	1.68
	total		unit	5000	5.36	1,104,160.0	22,512.0		1,126,672.0	4.51
petrol motorcycles										
6	CDK 200CC	1	unit	4000	4.0	824,000.0	123,600.0	foreign	947,600.0	3.79
total				9000	9.36	1,928,160.0	146,112.0		2,074,272.0	8.30

## 7. The risk analysis of the project

### Strengths:

- Using up-to-date technology
- The country needs to use non-fossil fuel vehicles in the future
- Possibility of mass production, product diversification and risk reduction
- Cheap energy to produce
- High internal rate of return
- Locating in Khuzestan province (with a population of about 4.7 million), which is one of the five most used motorcycle provinces.
- Appropriate communication infrastructures such as transit roads, railways and waterways are available to access domestic and foreign intensive markets, especially Iraq and the Gulf States.
- short Distance to major commercial ports such as Imam Khomeini Port and Khorramshahr for export
- The necessity of using electric motorcycles in Khuzestan, especially the metropolis of Ahwaz, which suffers from many environmental pollution due to the traffic of fossil fuel vehicles, oil and gas, petrochemical, steel and micro-industries.
- Lack of domestic producer in Khuzestan province and neighboring provinces

### weaknesses

- Lack of liquidity for working capital
- Weakness in advertising
- Dependence on foreign purchases due to currency sanctions and restrictions

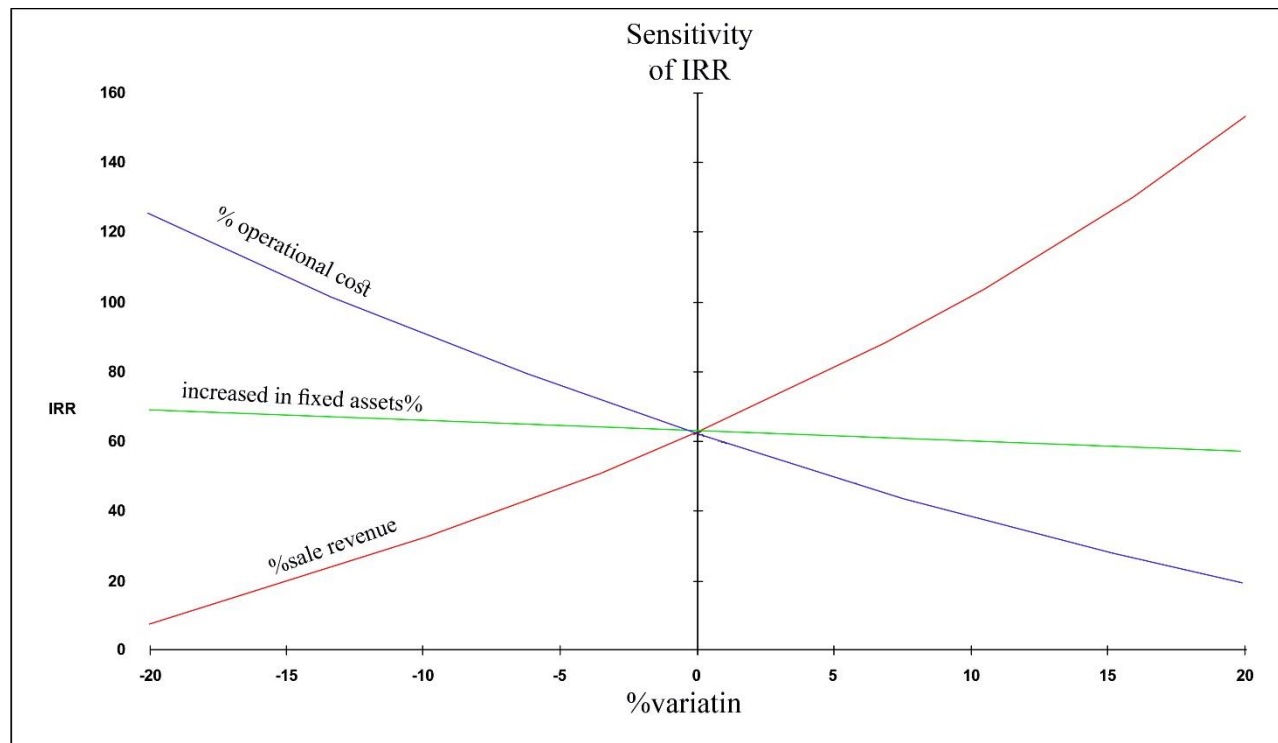
### Opportunities:

- Supports domestic production
- Considers government incentives for producers and consumers
- Supports the attraction of foreign investors
- Existence of a very large consumer market within the city, province and neighboring provinces
- Replacement of carburetor motorcycles with injectors
- Access to key axes and infrastructure such as freeway, south-north rail, access to open water for export

### Threats:

- Lack of cash and financial backing
- Political and regional changes in the Middle East
- Inflation and rising production prices
- rate and increasing prices

### **Sensitivity analysis of IRR based on the changes in sale revenue, fixed assets and operational cost**



## 8. Human resources and employment status

The employment plan is 27 people concluded 9 people in administrative office and 18 people will be working in the manufacturing sector. Given the large number of creditable universities and graduates in metallurgy, Electrical and Mechanical Engineering, it is possible to provide expert manpower.

Job Title	Sex		Required			Monthly salaries per person (million Rails)	Salaries (million Rails)	Annual salaries (million Rails)	Equivalent in Euro
	F	M	Qty	Shift	Sum				
CEO		✓	1	1	1	70	70	1,148.0	4,592.0
Finance director, sales, administrative	✓	✓	1	1	1	50	50	820.0	3,280.0
Financial personnel, sales office	✓	✓	2	1	2	Variation%			
						42	84	1,377.6	5,510.4
warehouse keeper		✓	2	1	2	40	80	1,312.0	5,248.0
Line Supervisor		✓	1	1	1	45	45	738.0	2,952.0
Skilled worker		✓	5	1	5	42	210	3,444.0	13,776.0
Semi- Skilled worker		✓	5	1	5	40	200	3,280.0	13,120.0
Worker		✓	5	1	5	37	185	3,034.0	12,136.0
Service worker		✓	1	1	1	30	30	492.0	1,968.0
Secretary	✓		1	1	1	30	30	492.0	1,968.0
Guard		✓	3	1	3	30	90	1,476.0	5,904.0
<b>Total</b>			<b>27</b>	<b>1</b>	<b>27</b>		<b>1074</b>	<b>17,613.6</b>	<b>70,454.4</b>



## 9. Determine the amount of water, electricity, gas, telecommunications and communication facilities (road - rail - Airport - Port ...) and how to provide them in the appropriate area to implementation

Dezful Industrial estate has basic infrastructure such as water, electricity, gas and telecommunication facilities. Dezful province has an airport and has 10 km distance to the first railway station. The distance from Dezful city to Ahvaz (the center of the province) is 155 km to and 250 km to the port of Imam Khomeini. The distance to the Chazabe Border terminal (Iraqi border) and Shalamchek border terminal is 100 km and 282 km respectively.

Description	unit	Annual consumption	Price per unit (Rials)	Total price (million Rials)	Equivalent in Euro
Electricity	KW	420,000	1,400.0	588.0	2,352.0
water	m <sup>3</sup>	2,000	20,000.0	40.0	160.0
gas	1 m <sup>3</sup>	300,000	1,400.0	420.0	1,680.0
Other(petrol)	-	-		300.0	1,200.0
<b>total</b>				1,348.0	5,392.0

## 10. Economic and trade support for plan

To stimulate the industrial section and related to the resistance to economy, several projects are implemented and the following are mentioned

- In order to study, exchange of views and coordination to resolve the problems and obstacles faced by manufacturing units, "the Working Group of facilitate and remove of production obstacles " is formed in all provinces and with membership of the governor (chairman), head of the provincial Ministry of Industry, Mine and Trade ( Secretary), management and planning organization chairman, President of the Chamber of commerce, Industries, mines and Agriculture of province and chairman of the house of industry, mine and trade. The main tasks of this working group can be mentioned as follows:
  - Helping to expedite the completion and commissioning of the production of semi-finished projects and develop
  - Support and contribute to the export development of provincial products.
  - Investigating slowdown causes or production units suspension and problem solving coordination.
- **Working Group on Economy of Resistance (boom):** Regarding to the economy resistive of Ministry of Industries and Business in Act 12868 dated 2016.21.4, the funding are considered in order to completing industrial plans with a physical progress more than 60% and also improving the competitiveness of small and medium production units to increase exports.
- **Investment Guarantee Fund of Small Industries:** The credit guarantees issuance is guaranteed to facilitate financing was through small business facilities and securitized principal and interest and credit facilities granted by banks and financial institutions to small

firms. This credit guaranties have been issued for applicants after expert review and validation, obtaining fees with the required securities and warranty credit.

One of the most important supports provided in this project, has been the provision of loans for citizens to buy electrical motorcycles in metropolis to reduce pollution and the adoption of clean air laws that supports the production of Injectors and electric motorcycles by stopping use of carburetor motorcycles.

### **10.1. Supporting of Customs tariff (products and machines) with global tariff**

In order to support domestic production and ease of technology supply, the machines' input rights to the project are relatively low at around 10%. The import duty of imported Components and Accessories is relatively low and is about 15% to 5%.

To support domestic manufacturers, the import duty for fully assembled injector motorcycles is very high and around 40% .

### **10.2. financial support (existing units and projects) banks - investment firms**

The most important sources of financial credit from banks, can be cited as follows.

1. **Foreign exchange reserves:** The surplus proceeds from the sale of crude oil facility will be provided support and finance of part of the foreign exchange needs of producers and exporters of private and cooperative sectors. In the framework of contracts and Islamic banking laws and regulations enacted by the opening credits are awarded based on the provisions of the import and export of goods and services.

2. **Economy of Resistance Committee (boom):** Now, funding is considered for the completion of a physical progress with 60% and industrial production units as well as enhance the competitiveness of small and medium enterprises to increase exports.

#### **3. Foreign Investment Promotion and support Act:**

Since 1955, the legal framework for foreign investment in Iran has been the Attraction and support of Foreign Investments law. In line with reforms in the economic structure of the country, the Iranian parliament has offered the foreign investment plan as a Foreign Investment Promotion and Support Act which legislated finally in 1381. This will lead to the development of the legal framework and operational environment for foreign investors in Iran. Some of the new developments in the field of foreign investments include:

- Islamic Republic of Iran is welcome of foreign investments by foreign persons, whether natural or legal persons in all areas of economic activity.
- Recognition of new investment methods in addition to foreign direct investment
- Short and quick process and approval application and foreign investment approval.
- Creating an unique organization called the Center for Foreign Investment Service Organization for Investment, Economic and Technical Assistance of Iran in order to focused and effective support of the activities of foreign investors in Iran

- Further liberalization of foreign exchange mechanisms for more use by foreign investors

In case of absorbing foreign investor, the government considers some bonus, such as:

1. Tax exemption for the products of foreign investing companies
2. Presenting insurance coverage for the investors
3. Presenting customs exemptions for importing equipments required by foreign investing companies
4. Granting subsidy for training local manpower
5. Preparing free zones for investment
6. Granting infrastructure facilities and less expensive public services such as water and power
7. Guaranteeing return on profit and the main capital and prevention from their confiscation and nationalization

### **11. Analyzes And providing summary and final offer**

A study of the motorcycle market revealed that the country needs about 400,000 vehicles annually. Given that about 35 percent of the urban transportation system is dedicated to motorcycles and 80 percent of these motorcycles are worn out and cause severe pollution, especially in metropolises, therefor it is necessary to replace goods with fewer or no pollutants. In this regard government policies have been implemented to achieve this goal and have provided incentives and facilities to the consumer.

Despite lower demands due to Sanctions and Problems with Currency Fluctuations and Inflation in the past two years, demand for luxury and sport motorcycles has seen a 40% increase due to increase advances in the motorcycle industry in terms of design, speed and variety of options.

Khuzestan province, with a population of 4.7 million, with 536,000 motorcycles and mostly worn out, is the fifth largest consumer in the country, but with this large volume of consumption and young people interested in speed and recreation and also the necessity to use clean vehicles, there is no active motorcycle producer in this province. This province due to its specific geographical location and appropriate communication infrastructure, it is a major export route to neighboring countries, especially Iraq.

Therefore, it is expected that Khuzestan Motorcycle Company will have successful production due to its technical capability and valuable experience in the production and sale of motorcycles, if finance to purchase the supplies and raw materials is provided.

It is expected that the Manufactured products will have favorable demand and profitability in both domestic and foreign markets. The target market will be Khuzestan and the neighboring provinces, and about 20% of exports will be to Iraq, Syria, Afghanistan and the neighboring countries.

High internal rate of return (62.46%) and low return on investment (2.6 years) are the major advantages of the project.

<b>Cost of products (unit):</b>	-800 W electric motorcycles	137.6 million Rails $\cong$ 550 Euro
	-1500 W electric motorcycles	194.6 million Rails $\cong$ 788.4
	-3000W electric motorcycles	243.6 million Rails $\cong$ 974 Euro
	-4000 W electric motorcycles	480.5 million Rails $\cong$ 1922 Euro
	Petrol motorcycles 200cc	274 million Rails $\cong$ 1096 Euro
<b>Sale price of products (unit) :</b>	-800 W electric motorcycles	164 million Rails $\cong$ 656 Euro
	-1500 W electric motorcycles	233 million Rails $\cong$ 932 Euro
	-3000W electric motorcycles	300 million Rails $\cong$ 1200 Euro
	-4000 W electric motorcycles	585 million Rails $\cong$ 2340 Euro
	Petrol motorcycles 200cc	340 million Rails $\cong$ 1360 Euro
<b>total Sales (in 100% capacity)</b>	2,942,000.0 million Rails $\cong$ 11.77 million Euro	
<b>Present sales in break-even point</b>	13.79%	
<b>Profit (in 100% capacity)</b>	327,350.39 million Rails $\cong$ 1.31 million Euro	
<b>Gross value added</b>	856,592.8 million Rails $\cong$ 3.43 million Euro	
<b>Net value added (million Rail's)</b>	834,673.6 million Rails $\cong$ 3.33 million Euro	
<b>The Gross value added to total Sales</b>	29.12%	
<b>The Net value added to total Sales</b>	28.37%	
<b>The Gross value added to Investment</b>	72%	
<b>Investment Return Period</b>	2.6 years	

Exchange rate:

1 Euro  $\cong$  250,000.0 Rail's

1 US\$  $\cong$  206,000.0 Rail's

## 12- Summary of pre-feasibility plan

General Specification	
Name of The Project	Production of petrol motorcycle with engine volume less than 250 cc and electric motorcycle 800 - 4000 W
Project Capacity	petrol motorcycle: 4000 units- Electric motorcycle: 5000 units
Personnel Number	27persons
Working Days	300 days
Product Usage	transportation Recreation and sports
Marketing	
Product Global Price	600-4500 \$US/unit
Domestic Demand	400,000 unit
Domestic Production	160,000 unit
Import	600 unit
Export	2160 unit
Technical Study	
Land Area	8000 m <sup>2</sup>
Building Area	4450 m <sup>2</sup>
Main Raw Materials	Full CKD
Supplying Place of Raw Materials	foreign
Power Requirement	220 KW
Water Requirement	2000 m <sup>3</sup>
Fuel Requirement	300,000 m <sup>3</sup> gas
Economical & Financial Study	
Fixed Investment Cost	476,350.0 million Rails $\cong$ 1.91 million Euro
Working Capital	761,164.8 million Rails (1.93 million EUR& 234,124.8 million Rails) $\cong$ 2.86 million Euro
Total Investment Cost	1,192,514.8 million Rails $\cong$ 4.77 million Euro
Annual Sale	2,942,000.0 million Rails $\cong$ 11.77 million Euro
Net Present Value(NPV)	1,579,556.48 million Rails $\cong$ 6.31 million Euro
Break Even Point(BEP)	13.79%
Internal Rate of Return(IRR)	62.46%
Investment Return Period	2.6 years
Investment Sources Ratio:	
Equity:44%	520,946.8 million Rails $\cong$ 2.08 million Euro
Finance: 56%	671,568.0 million Rails $\cong$ 2.69 million Euro