

Islamic Republic of Iran
Organization for investment economic and technical assistance of Iran

"Summary of technical-economical prefeasible study"

The name:

Production of seamless pipes(Mannesmann)

Sector: Production Subsector: Industry ISIC Code: 2710412439

The owner of:

Ministry of Economic Affairs and Finance : Organisation for Investment Economic and
Technical Assistance of Iran

Counselor plan:

Razi University

The ADDRESS:

Qasr Shirin border industrial town

Date of P.F.S:

October 2024

**Manager of Iran Investment Opportunities
SHAHRIG Engineering Company**

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1- Abstract:

PROJECT PROFILE - SUMMARY SHEET

Project Introduction	
1- Project title: Production of seamless pipes(Mannesmann)	
2- Sector: Production	Sub Sector: Industry
3- Products / Services: Considering the amount of consumption as well as the initial capital required to start the production line, in the present project, the production line of medium size seamless steel pipes (4 to 8 inches) is proposed for investment. In the proposed production line, seamless steel pipes are produced from 114 mm diameter with 6 mm thickness to 219 mm diameter with a maximum thickness of 12.7 mm and 12000 mm length.	
4- location (address): Free Zone <input checked="" type="checkbox"/> Economic Special Zone <input type="checkbox"/> Industrial Estate <input type="checkbox"/> Main Land <input type="checkbox"/>	
5- Project description: Considering the amount of consumption as well as the initial capital required to start the production line, in the present project, the production line of medium size seamless steel pipes (4 to 8 inches) is proposed for investment. In the proposed production line, seamless steel pipes are produced from 114 mm diameter with 6 mm thickness to 219 mm diameter with a maximum thickness of 12.7 mm and 12000 mm length.	

Project Status	
6- Local / internal raw material access : YES	
7- Sale : - Anticipated local market : 50% - Anticipated export market : 50%	
8 – Project total time (from start of activities to start of commercial operation in years) : 2 years	
Schedule	Start of activities : 2024 Start of works at site: 2024 End of Works : 2025 Start of commercial operation : 2026

9- Project status :

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

Financial Table**10- Financial structure :**

Descriptions	Local Currency Required			Foreign Currency Required Million Euro	Total Million Euro
	Million Rials	Rate	Equivalent in Million Euro		
Fix Capital	2521200	660000	3.82	13.63	17.45
Current Capital	4824600	660000	7.31	1.82	9.13
Total Investment	7345800	660000	11.13	15.45	26.58

- Value of foreign equipment / machinery 15.45 Million Euro
- Value of local equipment / machinery 0.43 Million Euro
- Value of foreign technical know-how. . . Million Euro
- Value of local technical know-how. . . Million Euro
- Net present value (NPV): 27.57 Million Euro
- Internal Rate of Return (IRR): 55.54%
- Capital Rate of Return: %
- Payback Period: 3 years and 10 months

General Information11 - Project type : Establishment ☒Expansion and completion ☐**12- Company Profile**

- Name (Legal / Natural persons): **Industry, Mine and Trade organization**
- Company's current activities: **Government services**
- Address: **Next to the Blood transfusion organization, Shahid Beheshti Blvd., Kermanshah**
- Tel: **08338239160** Fax: **08338239157**
- E-mail: Web Site: **www.ksh.mimt.gov.ir**
- Company's legal structure:
- Government ☒ Non-Governmental ☐ Public non-governmental ☐

2-2- the County:

Qasr Shirin city is bordered by Iraq from the north and west, Sar Pol Zahab and Gilan-Gharb cities from the east, Ilam city from the south and southeast, and Iraq from the southwest. Qasr Shirin, the center of Qasr Shirin city, is located at 35 degrees and 45 minutes of geographic longitude and 31 degrees and 34 minutes of geographic latitude, at an altitude of 400 meters above sea level and 167 kilometers from Kermanshah city, on the main road of Islamabad West - Khosravi. Qasr Shirin was officially introduced as a free zone on May 15, 2021. Qasr Shirin Free Zone with more than 27,000 people in the west of Kermanshah has a 186 km border with Iraq, along this border there are 2 official crossings of Parviz Khan and Khosravi, where economic, commercial exchanges and export of goods to the Kurdistan Region and the central government of Iraq are located. These 2 borders are done. Khosravi border, 20 km from Qasr Shirin, has the largest international land terminal in the Middle East. Therefore, despite the capacities of the free trade zone and the tropical plan, it seems that the establishment of a seamless pipe production line (Mannesmann) in this city with a special focus on the export market (Iraq and Syria) along with the domestic market and the possibility of attracting investors Iraqi has economic justification.

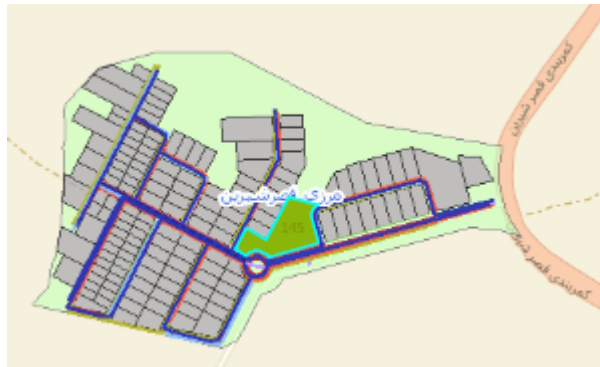


2-3- the project:

According to the capacities listed in the previous section for Qasr Shirin, Qasr Shirin border industrial town has been chosen as the location of the project. The locational information of the project as well as the selected block and piece is given in the Excel file format in the project appendices section.



Since the current plan requires a land with an area of at least 20,000 square meters and a length of at least 300 meters, Plot No. 145 is the only option that meets the conditions, even though it has a service and trade use. Among the parts that use metal, combining parts 51-52-53-54-59-60-61-62-63-64 can be considered as the next option.



Since Qasr Shirin border industrial town is located on the city belt, it has a good location in terms of access roads to the project. Being located on the Tehran-Baghdad international road known as Karbala Road is one of the project's locational advantages.

2-4-access to the infrastructures:

No.	Needed infrastructures	distance to the project	The supply infrastructures
1	water	-	7046 liters per second(per hectare)
2	electricity	-	290 kilowatt hours (per hectare)
3	gas	-	1223306 cubic meters per hour (per hectare)
4	Telecommunications	-	
5	High way	2 km	
6	Sub way	-	
7	airport	205 km	
8	Rail way	210 km	

3- Technical Specifications of plan:

3-1 –product:

Seamless pipes are pipes that are made by blanking a solid profile and no welding or cutting is used in its production process. The lack of seams in Mannesmann pipe gives it many advantages, including high strength and durability, resistance to pressure and impact, longer life, fluid flow without pressure drop, easy welding and beautiful appearance. For this reason, Mannesmann pipes are used in a wide range of industries, including oil and gas, power plants, construction, food industry, etc.



According to the production process, Mannesmann pipe or seamless pipe can be divided into two general types, which include hot and cold seamless steel pipe. For the production of Mannesmann tube, hot rolling method is needed at a temperature higher than the recrystallization temperature



To produce hot-rolled seamless steel pipe, different steps must be passed. First, the steel ingot should be prepared and inspected so that there are no problems in it. Then, in the next step, by applying heat to the initial ingot, it is heated to the point of becoming a paste so that the Mannesmann process can be performed with less force. Then, through several stages of milling and rolling, the desired diameter and thickness can be reached and the final pipes can be produced. Cold rolled pipes are also one of the types of Mannesmann pipes, which have high accuracy compared to the hot rolling method. The reason for this dimensional accuracy is that the process is performed at a lower temperature than the temperature of the hot rolling process. Also, these pipes are cut in precise dimensions. Various methods are used to make Mannesmann cold-rolled pipes, including cold drawing and cold bending. In this project, hot rolling method is used to produce seamless pipe. These pipes are produced in different types in terms of pipe diameter, length and thickness.

Mannesmann's pipe diameter can range from subtle to grandiose. These pipes start from 1.2 inches and go up to 20 inch pipes. By increasing the diameter, the capabilities of the Mannesmann tube are also improved. The larger the diameter of the pipe, the more volume of fluid it can move per unit of time. Mannesmann pipes have different categories. Mannesmann schedule 40 seamless pipe is the most widely used in various industries. Mannesmann light schedule 20 pipe as a light pipe and schedule 80 pipe for heavy work are among the other widely used Mannesmann pipes. Mannesmann pipes are produced in different sizes, among which 6 meter and 12 meters pipes are more common.

Considering the amount of consumption as well as the initial capital required to start the production line, in the present project, the production line of medium size pipes (4 to 8 inches) is proposed for investment. In the proposed production line, seamless steel pipes are produced from 114 mm diameter with 6 mm thickness to 219 mm diameter with maximum thickness of 12.7 mm and 12000 mm length.

سایز اسمی لوله	قطر نامی لوله	قطر خارجی (in) (mm)	Wall thickness				
			(in) (mm)				
			Sch. 20 (in) (mm)	Sch. /40 (in) (mm)	Sch. 80 (in) (mm)	Sch. 160 (in) (mm)	XXS (in) (mm)
3	80	3.5 (88.9)	0.12 (3.04)	0.21 (5.48)	0.3 (7.62)	0.43 (11.12)	0.6 (15.24)
4	100	4.5 (114.3)	0.12 (3.04)	0.23 (6.02)	0.33 (8.56)	0.53 (13.48)	0.67 (17.12)
5	125	5.56 (141.3)	0.13 (3.4)	0.25 (6.55)	0.37 (9.52)	0.62 (15.87)	0.75 (19.05)
6	150	6.62 (168.2)	0.13 (3.4)	0.28 (7.11)	0.43 (10.97)	0.71 (18.26)	0.86 (21.94)
8	200	8.62 (219)	0.14 (3.75)	0.32 (8.17)	0.5 (12.7)	0.9 (23.01)	0.87 (22.22)

3-2-project's requirements:

3-2-1-Space and infrastructure required:

According to the relevant experts, in order to build a production line for Mannesmann seamless steel pipes, sizes 4 to 8 inches (from 114 mm diameter with a thickness of 6 mm to 219 mm diameter with a maximum thickness of 12.7 mm and a length of 12,000 mm) with an annual production of 80,000 tons. , a land with an area of 20,000 square meters is needed. From this space, 9720 square meters with a width of 60 meters and a length of 162 meters (height of at least 10 meters) will be allocated for the construction of a production hall, laboratory and warehouse, and the rest will be allocated for the construction of office buildings and open space. Also, the energy requirements of the proposed plan are as follows:

- Electricity consumption: 9 megawatt hours
- Water consumption: 100 cubic meters per day
- Gas consumption: 520 cubic meters per day

Considering the energy infrastructure allocated by the industrial town to the land, the project's needs in the field of water, electricity and gas are fully provided.

3-2-2-Equipment and machinery:

Some of the equipment required for the seamless pipe production line are:

- Ingot cutting machine or scissors
- Preheat oven
- Electric induction furnace
- Rotating rollers
- Sanding machine
- Pipe bending roller
- Sembe exit jack
- Steel tube hot drawing machine

- Watering tunnel
- Pipe cutting machine

To produce Mannesmann seamless steel pipe size 4 to 8 inches with an annual production capacity of 80,000 tons, the list of required equipment and machinery, which is often imported from China, along with its dollar value, is given in the table below.

seamless steel pipe production line for size 4"-8"capacity: 80000 tons/year

No	Description	Q'TY (set)	Unit price(usd) FOB ,CHINA	Total Amount/USD
1	Cutting saw machine	6	42,000	\$252,000.00
2	Rotary furnace	1	2,700,000	\$2,700,000.00
3	Pierce mahine	1	1,750,000	\$1,750,000.00
4	Accurol/Aasse maschinel	1	1,900,000	\$1,900,000.00
5	size reduce mill(SRM)	1	1,800,000	\$1,800,000.00
6	Conveyor rollers between	1	650,000	\$650,000.00
7	Central lubrication and cooling	1	680,000	\$680,000.00
8	Cooling beds	2	280,000	\$560,000.00
9	calibrating machine for SRM	1	320,000	\$320,000.00
10	High pressure water pump for	1	145,000	\$145,000.00
11	pipe straightener	1	395,000	\$395,000.00
12	Eddy current and UT test machine	1	345,000	\$345,000.00
13	Hydro test machine	1	480,000	\$480,000.00
14	High speed cutting saw machine	2	120,000	\$240,000.00
15	Marking and bundling machine	1	145,000	\$145,000.00
16	consumable parts for 6 months(50% of production capacity) OPTIONAL		25	\$1,000,000.00
TOTAL				\$13,362,000.00

3-2-3- Raw materials and intermediate components:

The raw materials required for the production of seamless steel pipes are:

- Carbon steel: This type of steel is used to produce seamless carbon steel pipes. This steel contains iron and carbon and has mechanical properties suitable for use in various industries.
- Alloy steel: To produce alloy seamless steel pipes, steels containing alloy elements such as chromium, molybdenum, nickel and vanadium are used. These steels have higher mechanical properties and more resistance to pressure, heat and corrosion.
- Stainless steel: This type of steel contains iron, chrome and nickel and is used to produce stainless steel seamless steel pipes. This steel has high mechanical properties and high resistance to corrosion and heat.
- Aluminum: pure aluminum is used to produce aluminum seamless steel pipes. Aluminum has light weight, high corrosion resistance and high heat conductivity.
- Nickel steel: Nickel-containing steel is used to produce seamless nickel steel pipes. This steel has high mechanical properties and high resistance to corrosion and heat.

In the current project, carbon steel is used in the form of billets (round ingots) for the production of seamless steel pipes (among the suppliers of alloy steel in Yazd and Isfahan, they have the highest quality). Currently, the price per kilo is between 240,000 and 270,000 rials. Waste in production varies from 5 to 8 percent according to work experience, which is sold as scrap iron for almost half the price of raw materials (around 120,000 to 140,000 Rials). Consumable parts for each ton of production are about 15,000,000 Rials, which are often imported from China.

3-2-4-management and human resources:

No.	Skill level	number	Salaries(Annually) (million Rials)
1	expert	80	262400
2	skilled	25	108240
3	non-skilled	120	295200
4	Sum	225	665840

- Number of skilled personnel required:25
- number of non- skilled personnel required:120
- number of expert personnel required: 80

4- Ownership and legal permission:

4-1- ownership of land:

The suitable place for the implementation of the project is Plot No. 145 of Qasr Shirin Border Industrial Town, which has an area of 22,000 square meters. The right to use the land in the mentioned industrial town is equal to 15000000 Rials for each square meter and the related costs are considered in the plan. Land ownership is subject to legal terms and conditions and will be available to investors after exploitation. In order to acquire industrial land in this town, it is necessary for investors to obtain legal permits and purchase it.

4-2- Intellectual property and incentives:

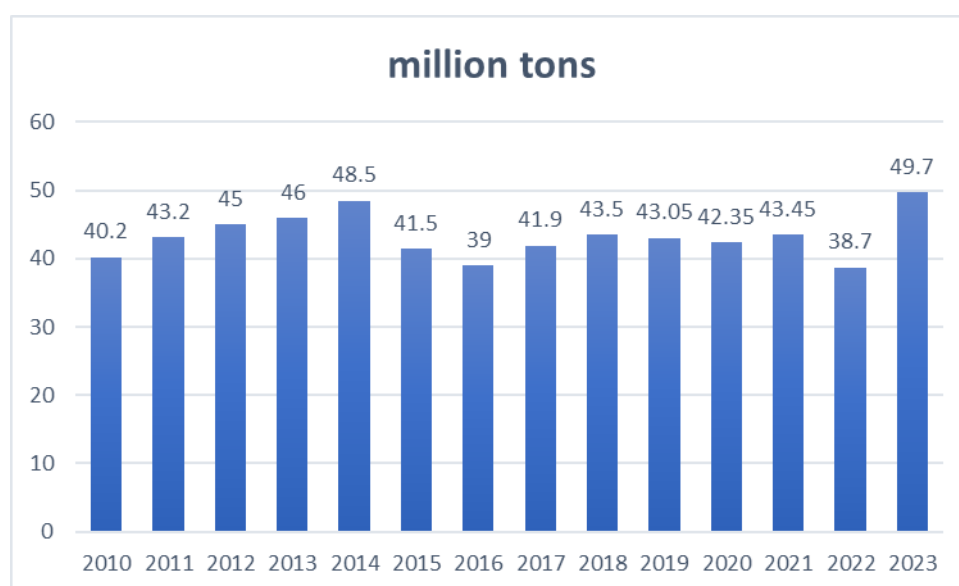
The production of seamless steel must be in accordance with domestic standards. It should be noted that DIN, ASTM, and API standards must be followed to produce seamless pipes for oil drilling and oil, gas, and water transportation. It is also suggested that the production is under the registered brand in the Trademarks, Inventions and Industrial Property Registration Office and that branding and advertising activities are considered.

4-3-legal permission:

In order to build a seamless pipe production factory, investors must obtain establishment permits, basic agreements and operating licenses from the Ministry of Industry, Mines and Trade and relevant organizations. To obtain a construction permit and establishment permit, as well as a production permit, one must refer to the Ministry of Industry, Mines and Trade. In these stages, it may be necessary to refer to the relevant organizations such as the Environmental Organization and...

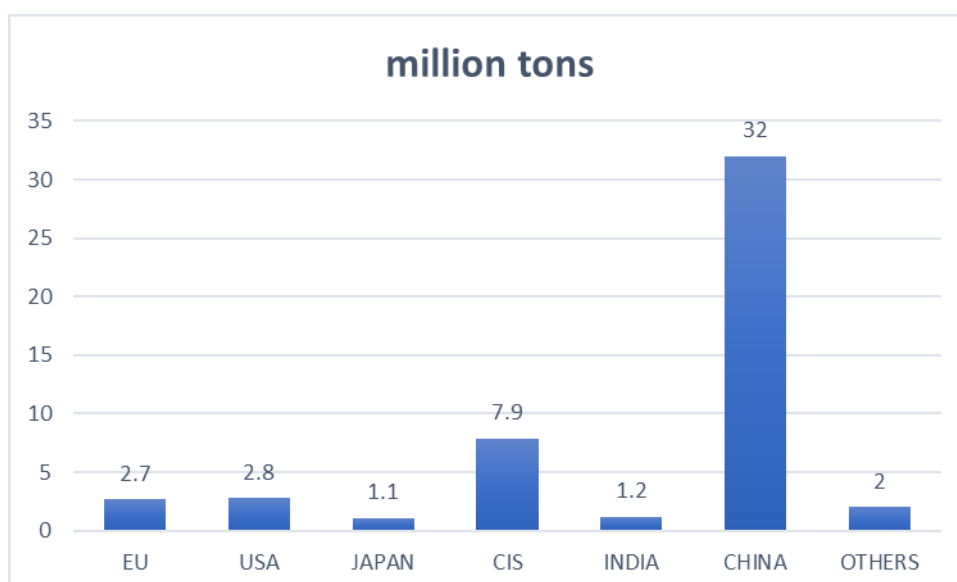
5- Market study and Competition:

One of the steel products with high added value is pipe. The amount of world steel pipe production in 2023 has been recorded as 167.1 million tons. The world production of seamless steel pipe was 49.7 million tons. The following graph shows the production of steel pipes in the world from 2010 to 2023.



As can be seen, the amount of seamless production has been fluctuating in different years under the influence of macro environmental variables and reached the highest level in 2023.

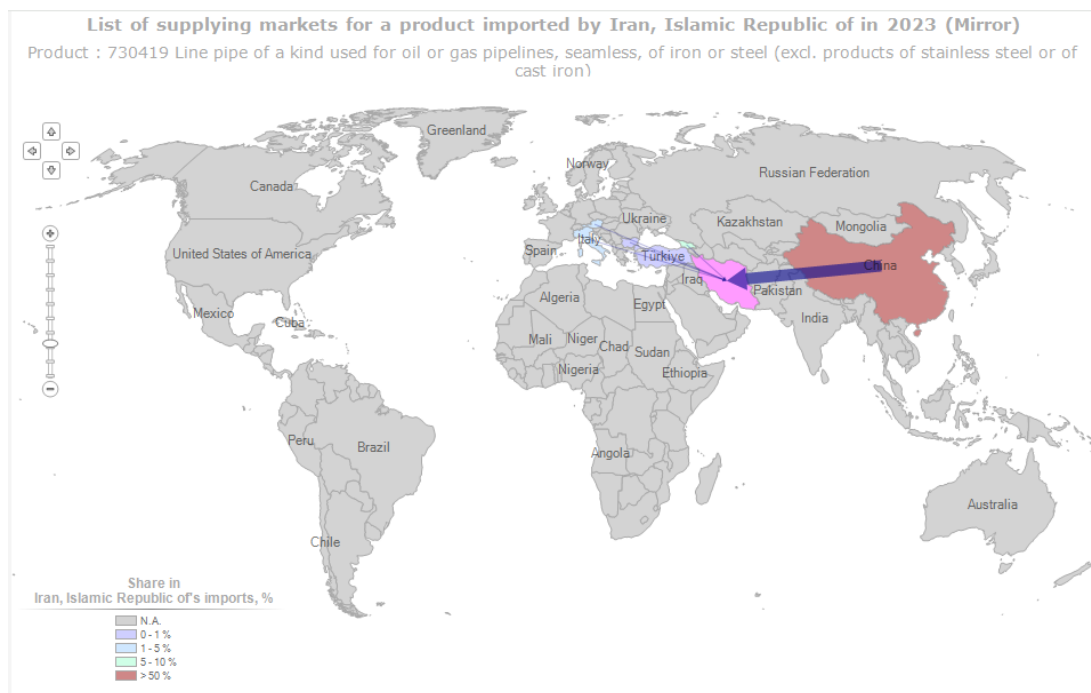
The graph below shows the share of different countries in the production of seamless pipes in the world in 2023.

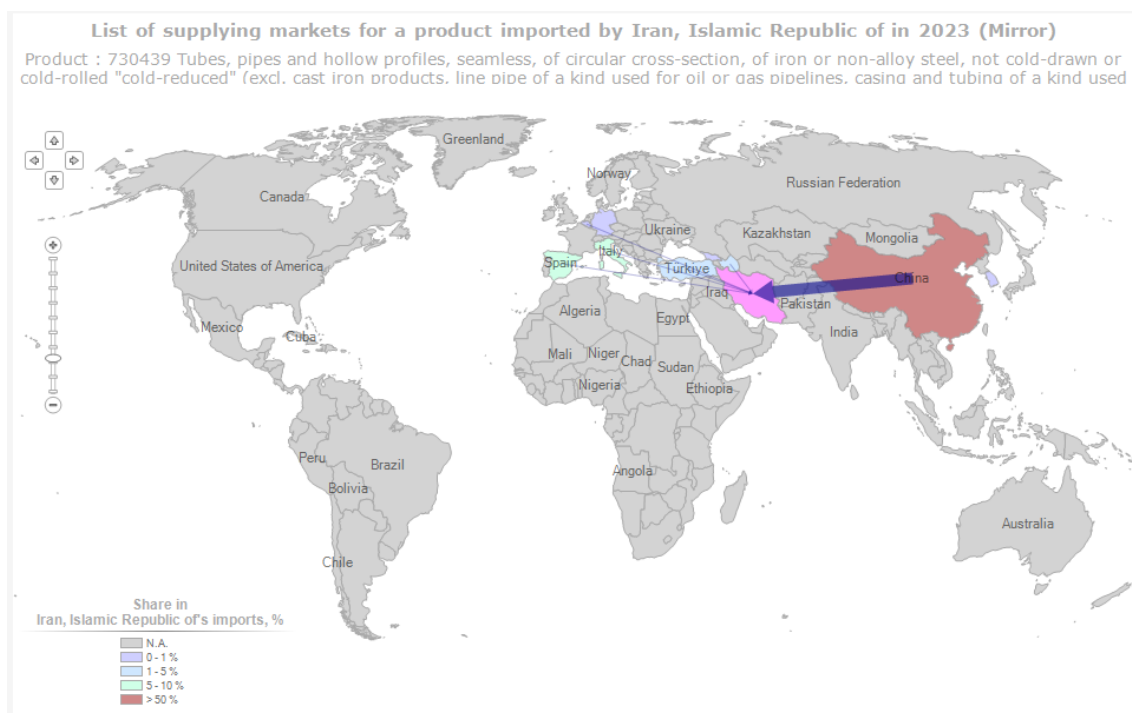


Due to the wide application of this steel product, its global trade also becomes very important. The global trade of seamless steel pipes and profiles has fluctuated between 2012 and 2021 and finally reached 10 million and 710 thousand tons in 2021. The global trade of this steel product in 2021 grew by about 4% compared to 2019. Also, the average global trade of seamless steel pipes and profiles was estimated at 13,860,000 tons during the period under review. In recent years, the business of seamless steel pipes and profiles has been mainly concentrated in Asia and Europe. The highest trade volume of seamless steel pipes and profiles was reached in 2012, which was equal to 17 million 410 thousand tons. The increase in demand for seamless steel pipes and profiles in the world is due to the growth and development of various industries. Industrialized countries are the main importers of seamless steel pipes and profiles. The global market size of seamless steel pipes and profiles in 2022 is more than USD 188 billion. It is also predicted that the market size of this steel product will reach more than 240 billion dollars in 2027, and this can lead to the growth of its business.

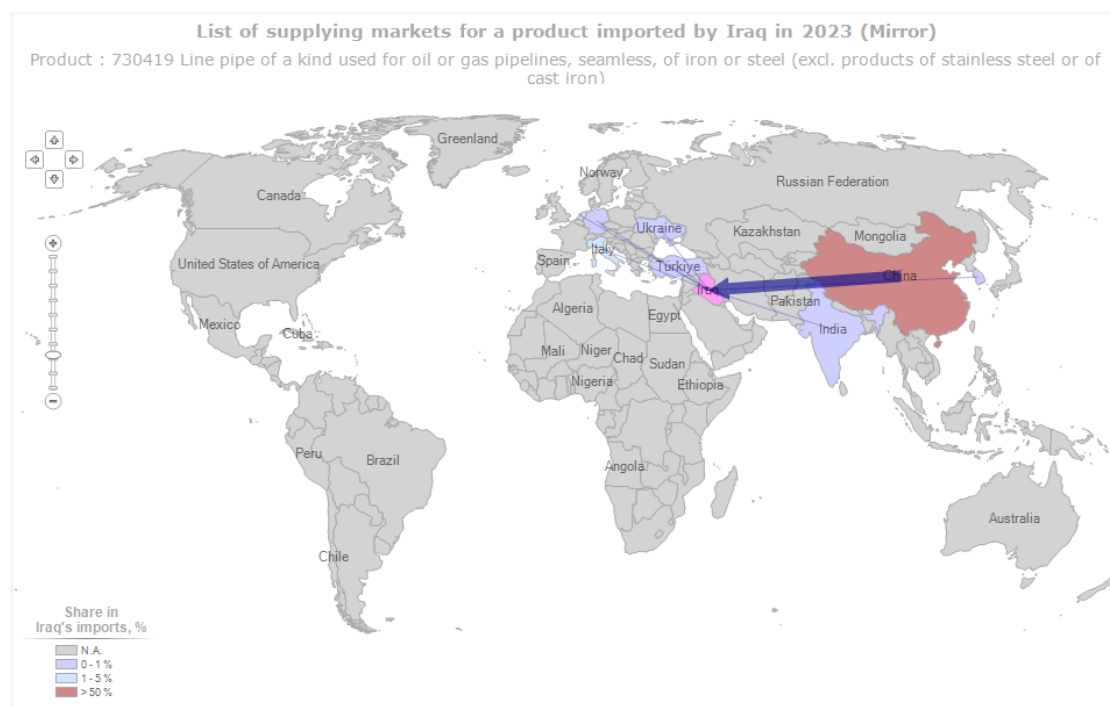
5-1- Introduce target market:

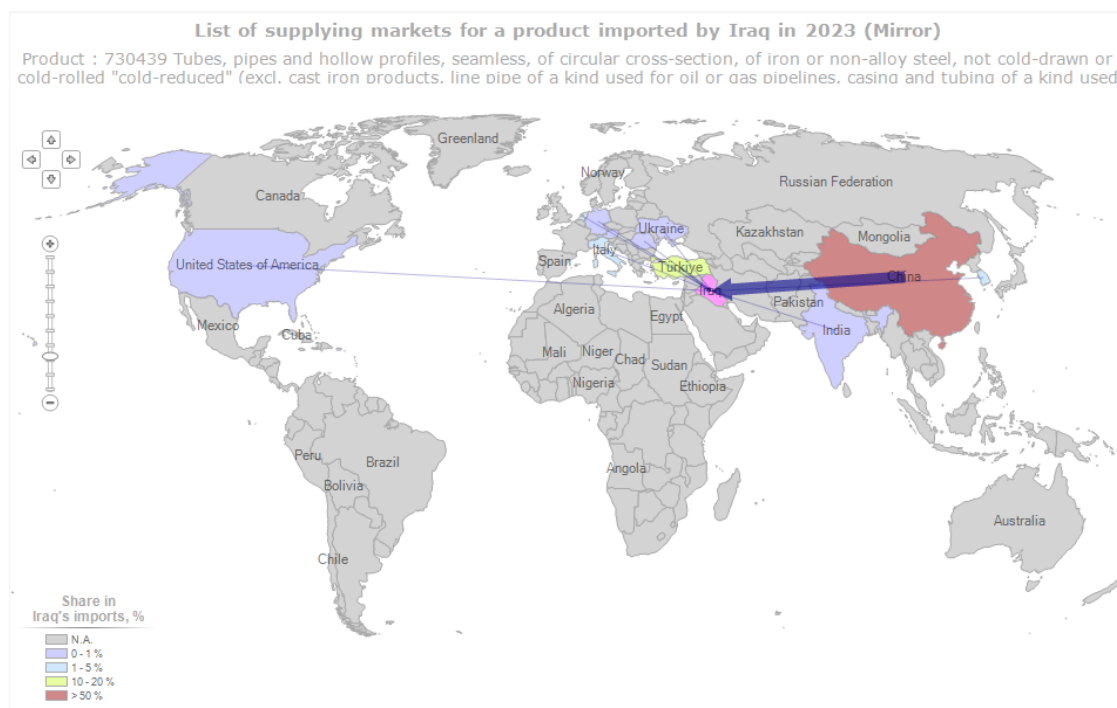
In 2016, in order to meet the needs of its oil and gas industry, Iran imported 188,414 tons of seamless pipes. About 184,000 tons of seamless pipes were imported from China. Seamless steel pipe has different types and categories based on its dimensions and components. According to the products of the proposed production line of the present plan, the export and import statistics of two customs tariff codes 73041990 (opinion of the Executive Customs) and 73043900 (opinion of the Iranian Customs Tariff Office) have been analyzed. In the images below, the geographical distribution of the countries exporting seamless steel pipes to Iran in 2023 is shown in tariff codes 730419 and 730439, respectively. As can be seen in the above pictures, China was by far the main supplier of seamless steel pipes to Iran in 2023(www.trademap.org).



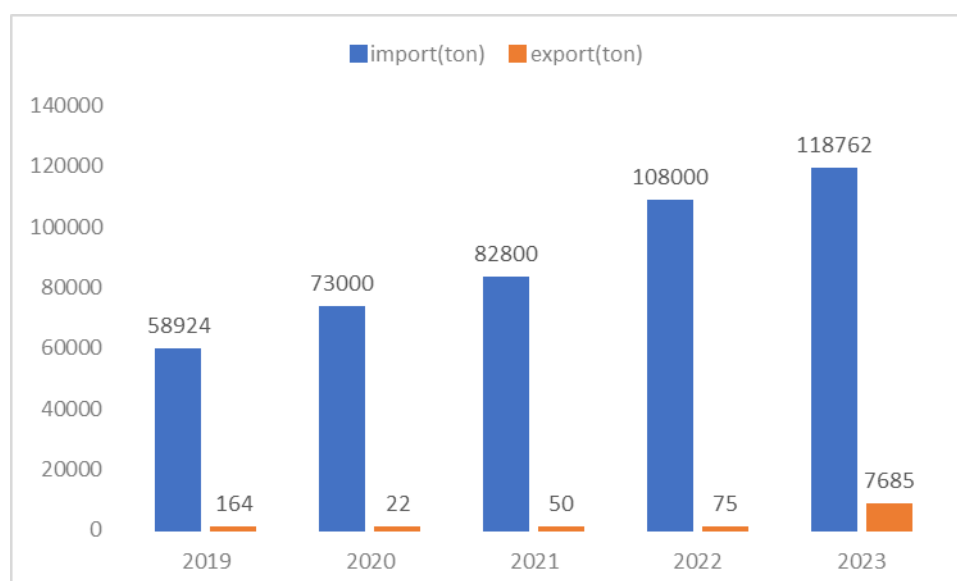


In the images below, the geographical distribution of the countries exporting seamless steel pipes to Iraq in 2023 is shown in tariff codes 730419 and 730439, respectively. As can be seen in the above images, China is still the main supplier of seamless steel pipes to Iraq in 2023. The total import of Iraq in 2023 in the mentioned tariff code is 224729 tons (www.trademap.org).





In the chart below, the five-year statistics of the export and import of seamless steel pipes, the total of tariff codes 73041990 and 73043900, are presented. As it can be seen, the import trend has increased from 58,924 tons in 2019 to 118,762 tons in 2023, and it shows a 100% growth in imports during this period. The amount of export in the mentioned tariff code is very small and has been accompanied by fluctuation and reached the highest level to 7685 tons in 2023(source: Iran Customs Statistics).



The above data indicates that Iran will import 118,762 tons and Iraq will import 224,729 tons of seamless steel pipes in 2023, which has reached 343,491 tons in total, and this is a sign of a large market for this product. Since the full capacity of the proposed production line of the present plan is 80,000 tons, targeting a 23% share of this market, the entire nominal capacity of the production line will be sold. Of course, the realization of this is the ability to compete with domestic and foreign competitors, especially China.

In Iran, several factories are known as Mannesmann pipe manufacturing companies, but among them only Ahvaz Iran National Group and Iranian Kave precision pipe collection have the technology to produce these sections. However, this amount of domestic production does not meet Iran's domestic demand for this product, and for this reason, these pipes are being imported from different countries.

6- Physical Progress of project: yes ☐ No ☒

This is a creative and proposed plan and it is defined in order to cover the domestic needs of the country as well as exports to Iraq, and the implementation stages of this project have not progressed so far.

7- Action plan and Implementation schedule:

The implementation of the project until its operation is planned for 24 months, and the operation of the project is expected from the beginning of 2026. The schedule of the project is presented in the table below.

The timetable

Activity/executive operations/year	2024				2025				2026			
season	1	2	3	4	1	2	3	4	1	2	3	4
Conducting pre-investment studies												
Attracting investors and starting												
Obtaining the necessary permits and financing												
Providing engineering services												
Land purchase and preparation												
Choosing the project manager (contractors)												
Factory equipment												
Construction and landscaping operations												
Ordering, buying and transporting machines												
Installation of machinery												
Facilities												
Recruitment and training of employees												
Unforeseen delays												
Trial production												
Commercial production												

8- Financial projection:

8-1- The cost estimate:

In this section, the evaluation and estimation of the investment required to carry out the project(based on the price of the base year) has been estimated and calculated.

The cost estimate

No.	Subject	costs (million Rials)
1	Fixed investments	11,517,130
2	Operating costs	6,029,849
3	Total costs	17,546,979

Fixed investment

No.	Subject	costs (million Rials)	
1	land purchase	330000	
2	Site preparation and development	247500	
3	Civil works, structures and buildings	703500	
4	Plant machinery and equipment	9110000	
5	Auxiliary and service plant equipment	40000	
6	Environmental protection	-	
7	Incorporated fixed assets (project overheads)	950955	
8	Pre-production expenditures (net of interest)	Studies	-
		Management and organization	-
		license	-
9	contingencies costs	35175	
10	transportation vehicle	100000	
Total Fix investment		11517130	

Operating cost

No.	Subject		costs (million Rials)
Variable cost			
1	Material		931892
2	Personnel		38840
3	Marketing (except personnel)		-
4	Other variable costs	Inventory of manufactured goods	1361015
		other	3698102
			-
			-
Fixed cost			
5	Material		
6	Personnel		
7	Marketing (except personnel)		
8	Depreciation		
9	Other fixed costs		
Total Operating cost			6029849

8-2- Estimated revenues:

In the following table, the income of the plan in the first 5 years after the operation of the plan is given, taking into account inflation and the percentage of capacity utilization.

Project revenues(million Rials)

No.	Subject	Year 1 (2026)	year 2 (2027)	year 3 (2028)	year 4 (2029)	year 5 (2030)
1	Inflation	30%	30%	30%	30%	30%
2	Capacity utilization percentage	70	90	100	100	100
3	Income adjusted for inflation	45760000	59488000	77334400	100534720	130695136
4	Revenue taking into account capacity utilization	32031999	53539200	77334400	100534720	130695136

8-3-Duration of project operation:

The construction period of the plan is 24 months and it is considered to start from April 1403. The duration of the project is considered to be 10 years.

8-4-Break- even analysis:

The break-even point analysis determines the point where the sales revenue is equal to the production costs, and thus it is used to analyze what effect the change in product volume will have on the profit; The percentage of sales at the break-even point is 59.46%, which means that in this project, to reach a point where we have neither profit nor loss, we must use 59.46% of the nominal capacity.

8-5- Cost-benefit analysis:

In the analysis of projects, one of the most common methods is the ratio of benefits to expenses. In this method, the ratio of the current value of possible benefits to the current value of expenses is obtained. If this ratio is greater than one, the plan has economic justification for implementation. In terms of this index, the plan has favorable conditions. The measure of the net present value of the project is one of the other evaluation methods, which for the present project amounts to 18,199,608,011,373 Rials, which is positive and shows the economic justification of the project. One of the other methods of investigating and evaluating investment plans is the method of internal return rate or internal rate of return. In fact, the internal rate of return is the interest rate or the discount rate in which the current value of all benefits of the plan is equal to the current value of its expenses. Based on the calculations, the internal rate of return of this plan is 55.54%, which is compared to the investor's expected rate of return (30%); This project is in a favorable condition; Therefore, in terms of this financial index, investment in this plan is suggested. In the table below, the efficiency indicators of the plan are given.

The table of project efficiency indicators

total fixed investment Present value (million Rials)	383399699
total net revenue Present value(million Rials)	485261891
Net present value (NPV) (million Rials)	18199608
benefit - Cost ratio B/C	1.09
Internal rate of return (IIR)	55.54%

8-6- Sensitivity analysis of IRR:

In the sensitivity analysis of plans, the percentage of changes in the internal rate of return of the plan is measured in relation to the change in some basic parameters and variables of the plan. In this plan, the analysis is based on major variables such as sales revenue, fixed costs of the plan, and operational costs of the plan. The following table shows the results of the sensitivity analysis regarding the variables of operating leverage DOL, financial leverage DFL and composite leverage DCL. As can be seen, the amount of operational leverage and compound leverage (the overall risk of the company) has been decreasing from the first year to the tenth year, which means that the risks are decreasing. The calculations show the fact that the compound leverage for the first, second and third years is 2.27, 1.47 and 1.31, respectively, which shows that for a 10% decrease in estimated sales; Net profit in the first year 22.68%; second year 14.72 percent; third year 13.06 percent; decreases, which can indicate the risk level of the project. The simultaneous analysis of this index with the safety margin index of the plan can provide more useful data.

Sensitivity of IRR

Leverage	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
DOL	2.27	1.47	1.31	1.26	1.18	1.13	1.10	1.08	1.06	1.05
DFL	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DCL	2.27	1.47	1.31	1.26	1.18	1.13	1.10	1.08	1.06	1.05

8-7- Summarize table:

Here is a summary of the business plan for the production of bone seam pipes(Mannesmann) in Qasr Shirin border industrial town. The implementation of the project is planned by acquiring a land with an area of 20,000 square meters and carrying out construction in the substructure of 10,420 square meters. For this project, 10,566,175 million Rials will be invested as fixed capital in various items, and 950,955 million Rials will be invested for obtaining permits, preparing maps, trial launch, etc. It will be spent, taking into account this figure, the total investment in this project will reach 11,517,130 million Rials. On the other hand, in the first year of operation of the project, 6,029,848

million Rials of working capital is needed, which is 8,818,903 million Rials and 9,799,421 million Rials for the second and third years, respectively. It should be noted that the utilization percentage of the nominal capacity in the first, second and third year is 70%, 90% and 100% respectively, also the estimates show that the total income of the project in 100% of the nominal capacity is 35,200,000 million Rials. In total, the project will create employment for 225 people who will work in different positions. The profit of the first year of this project is 1,665,129 million Rials, which in the 10th year, taking into account the salvage value and inflation considered in the defaults, will reach the amount of 47,194,221 million Rials. Based on the calculations, the internal rate of return (IRR) of this plan is 55.54%, compared to the investor's expected rate of return (30%); This project is in a favorable condition; Therefore, in terms of this financial index, investment in this plan is suggested. Also, the project will have a return on investment in 3 years and 10 months and will reach the break-even point with 59.46% of the nominal capacity. The table below provides a summary of the most important financial data.

"Summary of economic issues"

activity	International Standard Industrial Classification (ISIC Code)	product name	Nominal capacity (unit)
Manufacturing	2710412439	Seamless steel pipe	80000 tons
Activity duration	Fix investment (million Rials)	Variable investment (million Rials)	Human resources
24 months	11517130	6029848	225
Internal rate of return (IRR)	Net present value (million Rials)	Owners share (million Rials)	Benefit-cost ratio *B/C
55.54	18199608	17546979	1.09

Internal rate of return (IRR): The internal rate of return of 55.54% indicates the very high profitability of the project. This rate of return significantly exceeds the interest rate of banks and annual inflation, and indicates a quick return on capital and favorable profitability in the short and long term.

Net Present Value (NPV): The net present value of 18,199,608 million Rials clearly shows that this project will not only cover all the initial investment costs but will also bring a lot of profit to the investors. This number shows the profitability and attractiveness of investing in this project.

Benefit-Cost Ratio(B/C): A benefit-cost ratio of 1.09 indicates that for every unit of cost, 1.09 units of benefit are obtained. This economic index confirms that investing in this project is very reasonable and profitable and can bring good returns.

Payback Period: The payback period is 3 years and 10 months, which means that investors can achieve a return on their investment in a very short period of time, and after this period, only profit. This feature reduces investment risk and increases investors' confidence.

Annual working capital and human resources: The need for 6,029,848 million Rials in annual working capital and the employment of 225 human resources indicates a high potential for creating employment and a positive impact on the local economy. This issue can also lead to governmental and social support.

8-8-Estimation of exchange rate changes during the project implementation:

Since in this plan, production line equipment and consumable parts are imported from abroad, exchange rate fluctuations and its increase will affect the company. The exchange rate at the time of evaluation is described in the following table.

9- Capital needs, the supply and guarantees method:

9-1- Foreign currency needed:

In the table below, the amount of foreign currency required for the import of production line equipment(13.63 million euros) and consumable parts(1.82 million euros per year) is presented.

No.	Year	Exchange rate
1	First	15.45 million euros
2	Second	1.82 million euros
3	Third	1.82 million euros
4	Fourth	1.82 million euros
5	Fifth	1.82 million euros

9-2- The Way of participation and finance method:

Participation in the present project and its financing is foreseen in the form of establishing a company inside the country. The total financial resources required are predicted through the investor's contribution and have not been included in order to implement the facility plan of domestic banks. Since the location of the project is proposed in Qasr Shirin Free Trade Zone, it is possible to attract Iraqi investors.

9-3- Payback period:

The payback period is the period of time when the initial investment of the plan is compensated from the annual cash funds of the plan. The return period(simple) of the plan is estimated to be **3 years and 10 months** (equal to the year 2028) according to the calculations .

10- Incentives, features and advantages of project:

Qasr Shirin Commercial-Industrial Free Zone as the twelfth free zone of the country was officially started in 1403. Conducting economic affairs in free trade zones has special advantages that encourage every businessman and economic activist to invest in these zones. Taking advantage of free zone incentives is one of the advantages of the present plan. The most important facilities and legal benefits of Iran's free zones are as follows:

- 15-year tax exemption from the date of operation for all types of economic activities
- One hundred percent foreign ownership
- Guaranteeing legal rights and no investment restrictions for foreign investors
- Simple and easy registration of companies, industrial, cultural institutions and intellectual property
- Easy regulations for the legal entry of all goods according to the table of customs duties
- Exemption from customs duties for the import of raw materials and industrial machinery of production units
- The possibility of entering and exiting goods from the region to abroad without administrative formalities
- Complete freedom of entry and exit of capital
- Appropriate rates for energy consumption
- Issuing assignments abroad without paying customs and port duties
- Simple terms and conditions of work and access to skilled labor
- No restrictions on currency transfer to other free areas of Iran or other countries
- Simple formalities for re-export and transit of goods
- The possibility of foreign nationals entering without obtaining a visa

Sources:

Iran Customs website (<https://www.irica.ir>)

Locational information website of Iran's towns and industrial areas
(<https://gis.isipo.ir>)

Trade Map website (www.trademap.org)

Reliable domestic and foreign websites that produce content in the field of
seamless pipes (Mannesmann)