

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

"Summary of technical-economical prefeasible study"

The name:

**The greenhouse for off-season product cultivation in Harsin
(Azizabad and Garmianak villages)**

Sector: **Agriculture** subsector: **Gardening** ISIC code: **73089090**

The owner of:

**General Directorate of Economic and Financial Affairs of
Kermanshah Province**

Counselor plan:

Razi University of Kermanshah

The ADDRESS:

Harsin, Kermanshah Province

Date of P.F.S:

August 2024

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

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1- Abstract:

PROJECT PROFILE - SUMMARY SHEET

Project Introduction			
1- Project title: The greenhouse for off-season product cultivation in Harsin (Azizabad and Garmianak villages)			
2- Sector: Agriculture		Sub Sector: Gardening	
3- Products / Services: Various off-season greenhouse products, including tomatoes, strawberries, cucumbers, bell peppers, roses, and medicinal plants (such as mint, basil, thyme, and chamomile, etc.)			
4- location (address):			
Free Zone <input type="checkbox"/>	Economic Special Zone <input type="checkbox"/>	Industrial Estate <input type="checkbox"/>	Main Land <input checked="" type="checkbox"/>
<p>5- Project description: For this production unit with an annual capacity of 9,000 tons of various off-season greenhouse products, 30 hectares of land have been allocated in two sections of 13 hectares and 17 hectares. Considering the purchase price of 10 million Rials per square meter, the total cost of land acquisition amounts to 3,000 billion Rials. The site development plan includes leveling 300,000 square meters, constructing 15,000 square meters of fencing and walls, installing two metal entrance gates, and creating 45,000 square meters of green space and lighting, with an approximate cost of 4,127 billion Rials. The construction involves the following: greenhouse structures for 473 Spanish-style greenhouses each measuring 380 square meters (totaling 180,000 square meters), a 2,000 square meter preparation and packaging hall, a 1,000 square meter raw material warehouse, a 1,000 square meter cold storage warehouse, a 150 square meter laboratory and quality control unit, a 300 square meter administrative building, a 300 square meter cafeteria and dining hall, a 100 square meter security and caretaker building, a 100 square meter electrical and generator room, and a 200 square meter restroom area, totaling 185,150 square meters with a cost of 2,702.5 billion Rials. Additionally, the infrastructure facilities, including electricity (250 kW connection), water (1-inch connection), gas, diesel (5,000-liter tank), and gasoline (5,000-liter tank), have an estimated cost of 5.2 billion Rials.</p>			

Project Status	
6- Local / internal raw material access : 70 %	
7- Sale :	
- Anticipated local market : 40 % - Anticipated export market : 60 %	
8 – Project total time (from start of activities to start of commercial operation in years) : 11 months	
Schedule	Start of activities: Month 1 to 4 (4 months) Start of works at site : Month 5 to 7 (3 months) End of Works: Month 8 to 10 (3 months) Start of commercial operation: Month 11 (1 month)

9- Project status :

- Feasibility study available? Yes **No**
- Required land provided? Yes **No**
- Legal permissions (establishment license, foreign currency quota, environment, etc) taken? Yes **No**
- Partnership agreement concluding with local /foreign investor? Yes **No**
- Financing agreement concluding? Yes **No**
- Agreement with local /foreign contractor(s) concluding? Yes **No**
- Infrastructural utilities (electricity water supply, telecommunication, fuel, road, etc) procured? Yes **No**
- List of know- how, machinery, equipment, as well as seller /builder companies defined? Yes **No**
- Purchases agreement machinery, equipment and know-how concluded? Yes **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	12637999	500000 Rial	25.28	4.73	30.02
Current Capital	1364639	500000 Rial	2.73	-	2.73
Total Investment	14002638	500000 Rial	28.01	4.73	3275

- Value of foreign equipment / machinery **4.74** Million Euro
- Value of local equipment / machinery **0.46** Million Euro
- Value of foreign technical know-how **-** Million Euro
- Value of local technical know-how **-** Million Euro
- Net present value (NPV): **45.16** Million Euro
- Internal Rate of Return (IRR): **92.31** %
- Capital Rate of Return: **65.89** %
- Payback Period **2** year

General Information

11 - Project type : Establishment ☒ Expansion and completion ☐

12- Company Profile

- Name (Legal / Natural persons): **Agricultural Jihad Organization**
- Company's current activities: **Government services**
- Address: **Sepah Square, Keshavarz Boulevard, Agricultural Jihad Organization of Kermanshah Province, Postal Code 48331-67158**
- Tel: **08331520000** Fax: **08331521081**
- E-mail: Web Site: **<https://kermanshah.maj.ir/>**
- Company's legal structure:
 Government ☒ Non-Governmental ☐ Public non-governmental ☐

2- Project's location:

2-1- Province: **Kermanshah**



Kermanshah Province, located in a mountainous region in western Iran, spans an area of 25,900 square kilometers and shares a 370-kilometer border with Iraq. It is bordered by Kurdistan Province to the north, Lorestan and Ilam Provinces to the south, Hamadan Province to the east, and Iraq to the west. With Kermanshah as its capital, the province currently consists of 14 counties, 21 cities, 31 districts, 86 rural districts, and 2,793 inhabited villages, with a population of approximately 2 million. Kermanshah lies on the main transit

routes connecting the east to the west of the country and the northwest to the southern regions. It also serves as a key corridor for the transit of goods and services to Iraq and for pilgrims traveling to holy Shiite sites. Due to its geographical location within the Zagros mountain range, Kermanshah enjoys a diverse climate, leading it to be known as the “four-season province.”

Kermanshah Province benefits from a long shared border with Iraq, providing excellent access to road and air transportation networks. With 2,796 kilometers of communication routes, the province is strategically located along the Silk Road and key pilgrimage routes. As the healthcare and medical education hub of western Iran, it offers numerous advantages, including the Kermanshah Refinery, Bisotun Power Plant, and significant oil and gas reserves. The province is also home to Shahid Ashrafi Esfahani International Airport, the largest airport in western Iran. The province has strong potential for exporting technical and engineering services to Iraq, particularly in energy, dam construction, and infrastructure. With a skilled yet unemployed workforce and multiple public and private higher education centers, Kermanshah offers a secure socio-economic environment conducive to attracting domestic and foreign investments. Economic and commercial ties with Iraq and the Kurdistan Region are thriving, supported by Kermanshah's position on the northwest-south transit axis linking Iraq, Kurdistan, and southern Iranian ports. The province is also a critical hub for religious tourism, being located on pilgrimage routes to Karbala, welcoming millions of travelers annually. Kermanshah is equipped with 23 industrial parks and zones, offering infrastructure such as water, electricity, and gas for various projects. It hosts official customs offices like Khosravi and Parvizkhan in Qasr-e Shirin, as well as border markets in Shushmi, Nowsud, Sheikh Saleh (in Salas-e Babajani), and Sumar. The province boasts exceptional ecotourism potential due to its diverse climate, forests, and unique flora and fauna. It also features the Qasr-e Shirin Free Trade-Industrial Zone and the Eslamabad-e Gharb Special Economic Zone, facilitating economic growth. Additionally, the province's railway connects to Iraq and Syria, enhancing regional trade and transport. With eight operational dams holding a total capacity of 832 million cubic meters, Kermanshah stands out as a region rich in industrial, agricultural, and infrastructural opportunities.

The industrial and mineral capacities of Kermanshah Province make it a standout region in western Iran. The province hosts key industries, including major facilities like the Bisotun Petrochemical Complex, Kermanshah Petrochemical Plant, Navard Foolad, Jahan Foolad Gharb, Saman Cement, West Cement, and a polypropylene production project, as well as the Kermanshah Refinery.

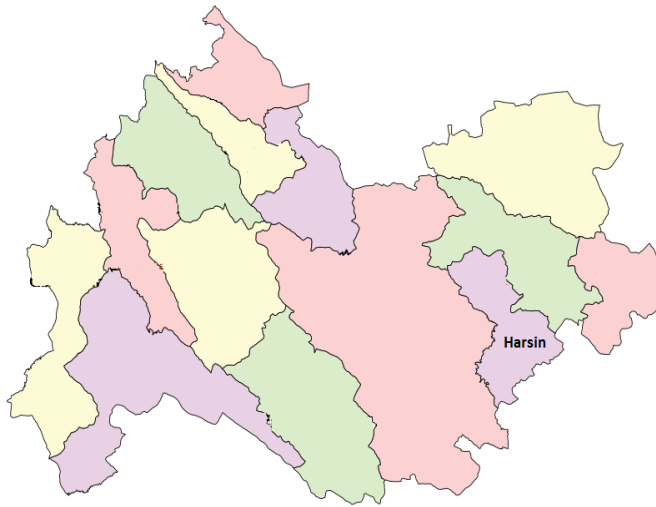
Rich reserves of natural oil and gas, along with abundant construction materials such as ornamental stones, gypsum, rubble stones, and lime, contribute to the province's industrial strength. Additionally, it has significant metallic and non-metallic mineral deposits, including iron ore, silica, and feldspar. The region is distinguished by its availability of skilled labor and experienced professionals, particularly in traditional crafts like handwoven carpets. Moreover, the province is notable for its reserves of natural bitumen (gilsonite and bitumen), which can be processed and exported. Kermanshah's non-metallic minerals and upstream industries further enhance its industrial capabilities, setting it apart from other provinces in western Iran.

Kermanshah Province boasts significant agricultural and livestock capacities, supported by its abundant water resources and favorable conditions. The province is home to 22 reservoir dams with a combined water storage capacity of 9 billion cubic meters, and 946,871 hectares of agricultural land, of which 227,500 hectares are irrigated. The region receives an average annual rainfall of 537 millimeters, adding to its natural advantages. Its diverse vegetation includes 208 species of medicinal plants, alongside vast rangelands spanning 9,258,711 hectares and 527,404 hectares of forests. These resources enable the province to produce substantial agricultural yields, including 20,281 tons of canola, 477,910 tons of wheat, 326,000 tons of barley, 208 tons of sunflower seeds (oil-producing), and 14,903 tons of sunflower seeds (for nuts). The livestock sector is equally robust, with 1,038 industrial and semi-industrial units in operation, housing 2,971,153 small livestock and 300,519 large livestock. Annually, the province produces 120,405 tons of red meat, 36,450 tons of white meat, and 83,955 tons of poultry and fish. Furthermore, there are 182 agricultural processing units, which enhance the province's value-added agricultural and livestock industries. These diverse capacities underscore Kermanshah Province's vital role in supporting Iran's agricultural and food production sectors.

Kermanshah Province has a rich and ancient historical heritage, ranking third in the country for its historical sites, after Shiraz and Shush. The province features notable landmarks such as Bistun and Tagh-e Bostan, located within the city of Kermanshah. The province is also home to 6 tourist regions and 14 tourism centers, with over 100 tourist attractions. Key tourist sites in Kermanshah include Tagh-e Bostan, the traditional bazaar, Jameh Mosque, Sarabe Niloofar, and historical sites like the Ganj Dareh Mound, Darius Inscription, Shah Abbasi Caravanserai, Anahita Temple, and scenic areas such as Sarabe Darband in Sahneh, Rijab River, Yazdgerd Castle, Abu Dajana's Tomb, Quri Qaleh Cave, Sarabe Rovansar, Rijab Waterfall, Hejij and Shamshir Villages, Kooh Bazi Daraz, and Dirah Tombs. Additionally, the province benefits from necessary infrastructure for tourism and commercial complexes at the Khosravi and Paveh international border crossings. Kermanshah also has significant investment potential in the health tourism and medical tourism sectors. Notable archaeological attractions like the UNESCO-listed Bistun complex, Tagh-e Bostan, Anahita Temple, and Tagh Gera, as well as protected natural areas, offer opportunities to develop wildlife tourism and eco-tourism. The province's architectural heritage includes remarkable sites such as Tekiyeh Moaven ol-Molk, Tekiyeh Beiglarbeygi, and its cultural diversity, which includes local customs, clothing, lifestyle, dialects, beliefs, music, and more. These unique features open avenues for cultural and ethnographic tours. Moreover, the province's natural potential supports a variety of sports tourism activities, such as paragliding, rock climbing, cave exploration, and mountain hiking, especially in Sarabe Kord, the Bistun-Tagh-e Bostan tourism corridor, and other targeted villages like Shamshir and Fesh. These assets make Kermanshah a prime destination for the growing tourism industry.

2-2- The County:

Harsin is one of the counties in Kermanshah Province, located in the eastern part of the province, with a population of nearly 80,000 people. The county borders Shahne to the

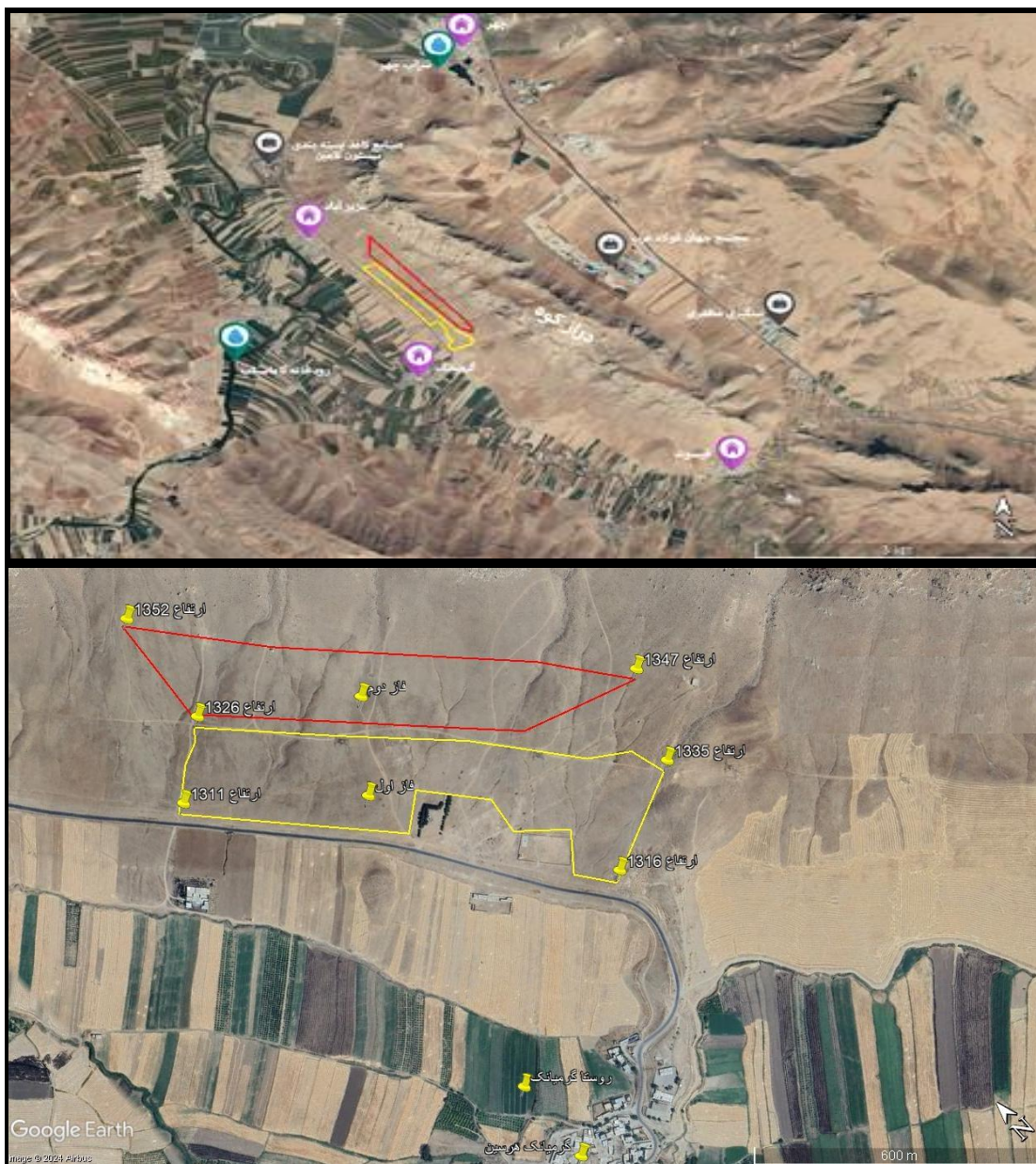


north, Lorestan Province to the east, Kermanshah to the west, and Kakavand District to the south. The residents of Harsin are predominantly Kurdish and Lur. The county is divided into two districts: Bistun and Central, with two cities: Harsin and Bistun, and four rural districts. Harsin has unique climatic conditions and is rich in historical sites, including the Ganj Dareh Mound (also known as Chiya Khazineh), the Isaghvand Tomb, the Shamsabad Tomb, the Bistun Inscription, the Hercules Statue, Harsin Castle, Duzd Bar Castle, Sarmaj Castle, the Stone

Basin (also known as the Clock Basin), the Stone Arch, the Stone Staircase, Takht-e Shirin, the Sassanid Wall, the Khosrow Bridge, and the Sassanid Structure as well as the Bistun Stele Capitals. In terms of industrial development, Harsin ranks second in the province, with an investment of 10,662 billion rials, earning it the second rank in industrial investment attraction within Kermanshah Province. This county, with its temperate climate and fertile soils, has significant potential in the agricultural sector. The region, with its vast lands and suitable water resources, provides an ideal foundation for growing a variety of crops such as wheat, barley, legumes, vegetables, and fruit crops. The villages of Azizabad and Germianak in particular have high agricultural production potential. In Azizabad, wheat, barley, and various vegetables are grown with high yields due to the quality of the soil and access to water resources. In Germianak, fruit crops such as walnuts, almonds, apricots, and cherries thrive, and the favorable climate also supports the cultivation of vegetables and cucumbers.

2-3- The project:

The proposed location for the greenhouse city project is situated on the southern to southwestern slopes of Daraaz Mountain, between the villages of Azizabad and Germianak, specifically on the 210th branch of the three main roads in the lands of Germianak village, within the Heshirz district of Bistoon. The aerial distance from the nearest points to the project site includes 516 meters to Azizabad village, 307 meters to Germianak village, 600 meters to the Gamasiyab River, 2,385 meters to Sarāb Chehr, and 1,364 meters to the West World Steel Factory. This site benefits from convenient access to infrastructure such as water, electricity, gas, and transportation networks, and complies with environmental and natural resource guidelines and recommendations.



2-4-access to the infrastructures:

No.	Needed infrastructures	distance to the project	The supply infrastructures
1	water	Less than 1 km	Ministry of Energy - Water Affairs
2	electricity	Less than 1 km	Ministry of Energy - Power Distribution Company
3	gas	Less than 1 km	Ministry of Oil - Gas Company
4	Telecommunications	Less than 1 km	Ministry of Communications - Kermanshah Telecommunication District
5	High way	Less than 1 km	Ministry of Roads and Urban Development - Kermanshah
6	Sub way	Less than 1 km	Ministry of Roads and Urban Development - Kermanshah
7	airport	60 km	Shahid Ashrafi Airport - Kermanshah
8	port	1415 km	Ports and Maritime Organization of Iran - Bandar Abbas
9	Rail way	60 km	Iranian Railways - Arak (Kermanshah)

3- Technical Specifications of plan:

3-1 –Product: Off-season greenhouse agricultural products

Given the climate and geographical conditions of the Harsin region, a variety of crops can be cultivated in greenhouses that not only suit the local climate but also have high economic value and strong market demand. In this section, some of these products will be introduced and justified:

❖ Tomato

Tomatoes are a staple food item that can be produced consistently and of high quality using modern greenhouse technologies. This product is an excellent choice for greenhouse cultivation in Harsin due to its adaptability to moderate and warm climates and its high demand in both domestic and foreign markets. Controlling environmental factors such as temperature and humidity in the greenhouse increases productivity and reduces plant diseases

❖ Bell Pepper

Bell peppers are high-value crops that are used in various dishes. Due to their diverse colors and flavors, which increase market appeal, bell peppers are an ideal choice for greenhouse production in Harsin. Additionally, bell peppers have low water requirements and show a relative resistance to diseases under controlled greenhouse conditions. These characteristics help enhance both the quality and quantity of the crop (Garcia et al., 2020).

❖ Strawberry

Strawberries are a popular crop due to their great taste and high nutritional value. Cultivating strawberries in Harsin greenhouses is recommended due to their high economic value and the strong market demand. Advanced greenhouse systems enable the production of high-quality strawberries year-round, which is especially important during colder seasons when outdoor production is difficult (Perez et al., 2021).

Cucumber

Cucumbers are another highly consumed crop, and greenhouse production ensures a steady market supply. Given their continuous demand in the domestic market and their fast growth with a short harvest period, cucumbers are a suitable crop for greenhouse cultivation in Harsin. Controlling environmental conditions in greenhouses enhances yield and reduces the need for chemical pesticides (Johnson & Lee, 2021).

❖ Rose

Roses are among the most popular and favored flowers, and their cultivation in greenhouses allows for precise control over growth conditions. This leads to improved quality and an increased number of flowers produced. Given the broad market and high demand, especially during special occasions, rose production in Harsin greenhouses has high economic justification (Anderson & Brown, 2019).

❖ Medicinal Plants

Medicinal plants such as mint, basil, thyme, and chamomile are in high demand due to their therapeutic properties and wide applications in the food, pharmaceutical, and cosmetics industries. Cultivating these plants in Harsin greenhouses is recommended due to their high value-added potential and low environmental requirements. These plants can be grown in limited greenhouse space, allowing for controlled growth conditions and improved product quality (Martinez et al., 2019).

The establishment of a greenhouse park for off-season crops in Harsin is economically and technically justified for various reasons. Due to the favorable climatic conditions, abundant water resources, fertile soil, diverse crops, local labor force, local and regional consumer markets, and adequate infrastructure, Harsin can enhance the productivity and profitability of this venture. Additionally, government support and development programs for less-developed areas in the Kermanshah province can help reduce initial investment costs and improve the economic returns of the project.

3-2-project's requirements:

3-2-1-Space and infrastructure required:

A- Land:

A dedicated land area of 30 hectares (13 hectares for the first section and 17 hectares for the second section) has been allocated for the project. Considering the purchase price of 10 million IRR per square meter at the project site, the total cost of acquiring the land is estimated at 3,000 billion IRR, equivalent to €6 million (based on an exchange rate of 500,000 IRR per euro).

Land Area (m ²)	Unit Price (Billion IRR)	Total Price (Billion IRR)	Total Price (Thousand Euros)
300,000	0.01	3,000	6,000

B- Landscaping:

The landscaping costs for the project include leveling, wall construction, fencing, entrance gate installation, green spaces, and other related activities. A detailed breakdown of these items and their associated costs is provided in the table below:

No.	Description	Area (m ²)	Unit Price (Billion IRR)	Total Cost (Billion IRR)	Total Cost (Thousand Euros)
1	Leveling, Excavation, and Filling	300,000	0.005	1,500	3,000
2	Wall Construction, Fencing, Landscaping	15,000	0.04	600	1,200
3	Roads, Walkways, Parking, and Asphalt (20% of land)	60,000	0.03	1,800	3,600
4	Green Spaces and Lighting (15% of land)	45,000	0.005	225	450
5	Metal Entrance Gate	-	2.00	2	4
Total				4,127	8,254

C- Construction Costs:

No.	Description	Built-up Area (m ²)	Unit Price (Billion IRR)	Total Cost (Billion IRR)	Total Cost (Thousand Euros)
1	Greenhouse Structure (60% of land) for 473 Spanish-style 380m ² greenhouses	180,000	0.01	1,800	3,600
2	Preparation and Packaging Hall	2,000	0.15	300	600
3	Cold Storage (Refrigeration)	1,000	0.25	250	500
4	Raw Material, Parts, and Equipment Storage	1,000	0.15	150	300
5	Laboratory and Quality Control	150	0.15	22.5	50
6	Administrative Building	300	0.20	60	120
7	Canteen and Self-Service	300	0.20	60	120
8	Guardhouse and Caretaker's Residence	100	0.15	15	30
9	Electrical Room and Generator	100	0.15	15	30
10	Restrooms	200	0.15	30	60
Total		185,150	-	2,702.5	5,405

D- Utilities and Infrastructure Costs:

No.	Utility Title	Technical Specifications	Daily/Hourly Consumption	Maximum Energy Consumption	Total Cost (Billion IRR)	Total Cost (Thousand Euros)
1	Electricity	250 kW Connection	250 kW	43,200 kWh	5	10
2	Water	1 Inch Connection	16.5	4,455 m ³	0.1	0.2
3	Gas	-	225	60,750 m ³	0.04	0.08
4	Diesel	5,000-liter Tank	60	16,200 liters	0.03	0.06
5	Gasoline	5,000-liter Tank	60	16,200 liters	0.03	0.06
Total					5.2	10.4

3-2-2-Equipment and machinery:

Required Equipment and Machinery for the Project:

The equipment and machinery needed for the 473 Spanish-style 380m² greenhouses, covering an area of 180,000 m², is estimated at 2,597 billion IRR, equivalent to €5,194 thousand, as follows:

No.	Equipment/ Machinery	English Title	Specifications	Quantity	Unit Price	Total Price	Total Price (Thousand Euros)
					(Billion IRR)		
1	Exhaust Fan	Exhaust Fan	140x140, damper, variable speed	948	0.18	171	342
2	Circulating Fan	Circulating Fan	50 cm, 6700 m³/h	1,420	0.078	111	222
3	Ceiling Lighting	Sodium Lamp	600W greenhouse sodium lamp	2,800	0.020	56	112
4	Irrigation and Nutrient Feeding System	Feeding System	Includes dosing pump and online EC, pH sensors	480	1.5	720	1,440
5	Electromotor for Roof Vent	Electromotor	Complete roof vent mechanism	475	0.35	166	332
6	Heater System	Heater System	350,000 kcal with burner	240	0.75	180	360
7	Pad and Fan System	Cooling System	Cellulose pad with stainless steel frame (meter)	2,700	0.027	73	146
8	Packaging System	Packaging System	Final product packaging	2	40	80	160
9	Control Systems	Control Systems	PLC, touch screen, sensors	1	200	200	400
10	Laboratory Equipment	Laboratory Equipment	Various (e.g., ovens, analyzers)	10	40	400	800
11	Forklifts	Forklifts	2-ton electric	2	50	100	200
12	Electrical and Electronic Equipment	Electrical Distribution	Switchgear, cables, etc.	-	-	80	160
13	Safety, Environment al Equipment	Safety & Environmental Equipment	Fire extinguishers, safety showers, etc.	-	-	50	100
14	Office Equipment	Office Equipment	Tables, chairs, etc.	-	-	20	40
15	Emergency Generator	Emergency Generator	1,100 kW/h	1	-	40	80
16	Heating and Cooling	Heating and Cooling	Cooler, Heater, etc.	-	-	40	80
17	Central Phone and Communicat ion	Central Phone and Communication	PBX system, IP phones, switches, routers, network cables, conference systems, customer relationship management software, etc.	-	-	80	160
18	Light Truck	Light Trucks	6-ton Force	1	20	20	40
19	Service Vehicle	Service Vehicles	Dena Plus	1	10	10	20
Total						2,597	5,194

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

following, each of which plays an important role in improving the production and efficiency of the crops:

❖ **Cultivation Substrate:**

- **Cocopeat:** A type of growing medium derived from coconut fibers, known for its high water retention and absorption properties, as well as providing good root ventilation.
- **Perlite:** A lightweight mineral material used as part of the growing medium to improve aeration and prevent soil compaction.
- **Peat Moss:** An organic material derived from peat bogs, used to improve soil structure and increase the water and nutrient retention capacity.

❖ **Seeds for Vegetables and Fruits:**

- **Tomatoes, Cucumbers, Bell Peppers, Roses, and Other Vegetables and Fruits:** High-quality, genetically improved seeds used to produce healthy, high-yield crops.

❖ **Fertilizers for Growth:**

- **Nitrogen, Phosphorus, and Potassium Fertilizers:** Essential nutrients required by plants for healthy growth and development.
- **Micronutrient Fertilizers:** These include elements like iron, manganese, boron, zinc, and others, which are needed in smaller quantities but are crucial for healthy plant growth.

❖ **Pesticides and Herbicides:**

- **Chemical and Biological Pesticides:** Used for controlling pests and diseases that may affect crops.
- **Fungicides and Insecticides:** Used to protect plants from harmful fungi and insects.

❖ **Reasons for Using These Raw Materials:**

- **Increased Productivity:** The use of appropriate growing substrates and high-quality fertilizers helps enhance crop production and efficiency.
- **Plant Health:** Improved seeds and nutrient-rich fertilizers lead to healthier, more resilient plants.
- **Pest and Disease Control:** Pesticides and herbicides help minimize damage caused by pests and diseases, leading to better-quality crops.

Raw Material Consumption Ratio or Quantity per Square Meter of Greenhouse:

Raw Material	Consumption Ratio or Quantity (per m ²)	Approximate Unit Price (Million IRR)
Cultivation Substrate (Cocopeat, Perlite, and Peat Moss)	15 liters	0.075
Seeds for Vegetables and Fruits	1 gram	0.12
Fertilizers for Growth	500 grams	0.001
Pesticides and Herbicides	0.05 liters	4.2

3-2-4-management and human resources:

estimated Personnel for the Greenhouse Project (473 Greenhouses, 380 m² Each, Total Area: 180,000 m²)

No.	Description	Activity Type	Skill Level	Number of People	Base Salary (Million IRR)	Annual Salary (Million IRR)
1	CEO	Non-Production	Expert	1	150	1800
2	Production Manager	Non-Production	Expert	1	150	1800
3	Process Engineer	Non-Production	Expert	1	150	1800
4	Quality Control Technician	Production	Skilled	1	130	1560
5	Greenhouse Worker	Production	Skilled	10	130	15600
6	General Greenhouse Worker	Production	Unskilled	15	120	21600
7	Maintenance Technician	Production	Skilled	1	130	1560
8	Laboratory and Quality Control Specialist	Non-Production	Skilled	1	130	1560
9	Health and Safety Officer	Non-Production	Skilled	1	130	1560
10	Procurement and Purchasing Officer	Non-Production	Skilled	1	130	1560
11	Accountant	Non-Production	Skilled	1	130	1560
12	Warehouse Manager	Non-Production	Skilled	1	130	1560
13	Warehouse Worker	Non-Production	Skilled	2	130	3120
14	Security Guard	Non-Production	Unskilled	3	120	4320
15	Administrative Officer	Non-Production	Skilled	1	130	1560
16	Administrative Staff	Non-Production	Unskilled	3	120	4320
17	Cleaning and Services	Non-Production	Unskilled	2	120	2880
18	Internal Transport Driver	Production	Skilled	4	130	6240
Total				50	-	75960
Employer's Benefits, Bonuses, and Insurance (Equivalent to 60% of Total Salary)						45576
Total					Million Rial	121536

No.	Skill Level	Number of Employees	Base Salary (Rial)
1	Expert	3	150,000,000
2	Skilled	24	130,000,000
3	Unskilled	23	120,000,000

- Number of skilled personnel required: **24 persons**
- number of non- skilled personnel required: **23 persons**
- number of expert personnel required: **3 persons**

4- Ownership and legal permission:

4-1- ownership of land:

The land ownership belongs to the Natural Resources of Kermanshah province. Securing land from natural resources for greenhouse projects can have numerous benefits, ranging from reducing costs and facilitating permit acquisition to government support and regional sustainable development. These factors can play a significant role in the success and productivity of agricultural projects. Below are some of the advantages of establishing greenhouses on lands owned by natural resources:

- **Reduction of Initial Costs**

Using natural resources land can help reduce the initial project costs. Purchasing private land can be very expensive, while government-owned land is often offered at lower prices, and there may be special facilities and discounts available for agricultural and developmental projects.

- **Access to Water Resources and Infrastructure**

Lands owned by natural resources are usually close to water sources and essential infrastructure such as roads, electricity, and gas. This proximity can significantly reduce the costs and time required to develop necessary infrastructure.

- **Government Support and Special Facilities**

Projects conducted on natural resources land often benefit from government support and special incentives. These supports may include low-interest loans, tax exemptions, and various subsidies for agricultural development.

- **Environmental Protection**

Using natural resources land can contribute to environmental protection. With proper planning and sustainable resource use, it is possible to prevent the degradation and unauthorized conversion of agricultural land, thus preserving the environment.

- **Easier Permit Acquisition**

Projects on natural resources land often face simpler permit acquisition processes. This can expedite project initiation and reduce administrative and time costs.

- **Sustainable Regional Development**

Agricultural projects on natural resources land can contribute to regional sustainable development. These projects can create jobs, strengthen the local economy, and improve the quality of life for the local population.

- **Access to Technologies and Training**

Since agricultural projects on natural resources land are often under government supervision and support, access to new technologies and specialized training for farmers and project staff will be easier. This can help improve productivity and product quality.

4-2- Intellectual property and incentives:

Intellectual property and its associated rights are exclusive rights granted to an individual or organization to protect their intangible assets such as inventions, industrial designs, utility models, trademarks, brand names, geographical indications, and copyright works. Registering intellectual property prevents the copying of ideas, products, and processes, and allows one to benefit from competitive advantages. Strong intellectual property not only helps increase brand value and product credibility but can also be attractive to investors. Moreover, income can be generated by licensing intellectual property to others. In the context of establishing a greenhouse facility for off-season products, this concept is very important and can significantly impact the success and growth of the business. Below are some of the most important aspects of intellectual property and rights in this area:

- **Inventions:** If a new or improved method for producing off-season greenhouse products, or a specific device or equipment for this process, has been developed, a patent application can be filed. A patent grants exclusive rights for the use, production, and sale of the invention.

- **Industrial Designs:** If the packaging has a unique and attractive design, an industrial design registration can be filed. This prevents the copying of the product design.
- **Utility Models:** If a tool or device used in the production of off-season greenhouse products has a new and useful shape, a utility model registration can be filed.
- **Trademarks:** Any brand name, logo, or other trademark used to identify products and services should be registered as a trademark. This helps protect the brand identity and prevents unauthorized use.
- **Copyright:** If materials, instructions, or any written work related to the production of off-season greenhouse products have been created, these works are protected by copyright law.
- **Know-How:** The technical knowledge and specialized information related to the production process of off-season greenhouse products is a valuable asset. This knowledge can be protected through confidentiality agreements and other legal instruments to prevent its disclosure.

4-3-legal permission:

To establish and operate a greenhouse production unit for off-season products in Harsin (specifically in the villages of Azizabad and Garmianak), obtaining various legal permits is essential. These permits are issued by various organizations and authorities to ensure compliance with environmental, safety, technical standards, and other regulatory requirements. The most important permits required are as follows:

- **Land Allocation Permit:**

The first step in establishing the greenhouse complex is obtaining a land allocation permit from the Agricultural Jihad Organization of Kermanshah Province. This permit includes a certification confirming that the land is suitable for greenhouse construction and that there are no legal or natural resource issues preventing its use. The Agricultural Jihad Organization, in cooperation with the Department of Natural Resources, identifies and allocates the appropriate land.

- **Establishment Permit:**

After the land allocation, an establishment permit for the greenhouse complex must be obtained from the Agricultural and Natural Resources Engineering Organization. This permit is issued based on the technical and economic evaluation of the proposed project. The organization will assess the plan and conduct a site visit to ensure the project is technically and economically feasible.

- **Environmental Permits:**

Environmental permits from the Department of Environment are necessary to ensure compliance with environmental standards and prevent harm to the surrounding environment. Environmental impact assessments and related reports are required to obtain these permits.

- **Construction Permits:**

Before beginning construction operations, permits related to building and construction must be obtained from local authorities and the Agricultural Jihad Organization. These permits include approvals for architectural plans, greenhouse structures, and associated infrastructure. Compliance with national building regulations and technical standards in design and construction is mandatory at this stage.

- **Operation Permit:**

After construction is completed and equipment is set up, an operation permit must be obtained from the Agricultural and Natural Resources Engineering Organization. This permit serves as the final confirmation that the project is ready to begin production and operation. The organization will conduct final inspections and assessments to ensure that the project is operationally ready.

- **Health and Quarantine Permits:**

For greenhouse production, health and quarantine permits from the Veterinary Organization and the Plant Quarantine Department are required. These permits ensure that the produced products are healthy, free from harmful contaminants, and can be safely marketed.

- **Water and Electricity Supply Permits:**

Securing water and electricity resources is a key requirement for any greenhouse project. Therefore, obtaining necessary permits for well drilling, access to water resources, and electricity supply from local water and power companies is essential. These permits ensure that the project has sustainable and adequate access to water and electricity.

- **Health and Medical Permits:**

A health and medical permit from the Ministry of Health and Medical Education is required. This permit ensures that the workplace meets health standards and that all hygienic principles are followed during production. The ministry will also conduct periodic health inspections.

- **Standard Permit:**

To ensure the quality and standards of the produced products, obtaining a standard permit from the National Standards Organization of Iran is essential. This permit ensures that all national and international standards are adhered to during the production and packaging processes.

- **Labor and Social Welfare Permit:**

A labor and social welfare permit from the Ministry of Cooperatives, Labor, and Social Welfare is necessary. This permit ensures that the working conditions and employee welfare meet labor laws and social security regulations. Periodic inspections are conducted to ensure workers' rights and suitable working conditions.

- **Fire Safety Permit**

A fire safety permit from the Fire Department and Safety Services is required. This permit ensures that all fire safety measures have been implemented at the project site, and necessary equipment to handle potential emergencies is available.

5- Market study and Competition:

Market Analysis and Competition in the Off-Season Greenhouse Products Industry involves evaluating several factors including market trends, competitors, consumer needs, challenges, and upcoming opportunities. This analysis aims to provide a comprehensive picture of the current status and future outlook of this industry.

❖ Market Trends

- **Growth in Demand for Fresh and Healthy Products :** Increasing consumer awareness about the importance of healthy eating and the benefits of consuming organic products has led to a rise in demand for fresh, off-season greenhouse products. Consumers are increasingly seeking products with lower levels of pesticides and chemical fertilizers. It is projected that the Compound Annual Growth Rate (CAGR) from 2024 to 2030 will be approximately 5% to 7%, with the volume reaching around 200 million tons and the market value expected to reach approximately 50 billion dollars by 2030. The table below illustrates the production trends and market growth for off-season greenhouse products from 2014 to 2024:

Growth Driver	Market Size (Billion USD)	CAGR (%)	Year
Increased Consumer Awareness	10	50	2014
Introduction of New Technologies	12	55	2015
Rising Demand for Organic Products	15	60	2016
Government Support and Financial Incentives	18	70	2017
Expansion of Export Markets	22	80	2018
Technological Innovations in Cultivation	25	90	2019
Need for Healthy Products During the Pandemic	30	100	2020
Population Growth and Urbanization	35	110	2021
Sustained Demand for Greenhouse Products	40	120	2022
Improved Quality and Reduced Costs	45	130	2023
Development of Sustainable Technologies	49	140	2024

- **Environmental Awareness Increase:** Traditional agriculture, due to the excessive use of water, pesticides, and chemical fertilizers, can cause significant harm to the environment. In contrast, greenhouse farming, with the use of advanced technologies, can optimize resource consumption.

- **Reduction in Resource Usage:** Greenhouse production can contribute to the reduction in the use of natural resources and increased productivity. Using drip irrigation systems and water recycling in greenhouses minimizes water consumption. This leads to reduced environmental impacts and conservation of water resources.
- **Advancement in New Technologies:** Technological advancements in environmental control systems, LED use for plant growth, hydroponic and aeroponic systems, and greenhouse automation have increased efficiency and reduced production costs.
- ❖ **Competitors**
 - **Domestic Producers Market Share:** Domestic producers, due to their access to local resources and familiarity with climatic conditions, can capture a significant share of the market. By employing modern technologies and optimizing processes, they improve quality and reduce costs. However, they face challenges such as limited access to capital, the need for training, and upgrading technical knowledge. Additionally, intense competition from foreign producers and the need for effective marketing remain significant obstacles.
 - **Key Global Players:** The leading countries in off-season greenhouse production have varied market shares. China, with a market share of around 35%, is the largest producer. The United States follows with 15%, while the Netherlands holds 10% due to its advanced technology use in the industry. Occupying the fourth spot, Palestine, with an 8% market share, is recognized for applying advanced farming techniques and optimizing water consumption in greenhouse production. Other key countries include Spain (7%), Italy (6%), Canada (4%), and Mexico (3%). Turkey and Germany, each holding a 2% share, are considered emerging players in the industry. These countries benefit from favorable climatic conditions, advanced technologies, and both public and private investments, allowing them to capture significant shares of the global greenhouse market.
 - **Quality and Price:** Foreign producers typically offer high-quality products at competitive prices, posing a serious threat to domestic producers. Importing products from other countries, especially during seasons when domestic production is lower, can impact the local market.
 - **Advantages and Challenges:** Foreign producers benefit from advanced technology and efficient supply chains, enabling them to produce and offer products at lower costs and higher quality. However, trade barriers and import tariffs can limit their competitiveness.
- ❖ **Consumer Needs**
 - **Key Consumer Countries:** Off-season greenhouse products have different market shares in the global market. The **United States**, with approximately 25% of the market, is the largest consumer. China, with 20%, ranks second, driven by its large population and demand for fresh food products. Germany (10%) and the Netherlands (9%) are also significant players, followed by France (8%) and the United Kingdom (7%). Japan (6%) and Canada (4%) are also key consumers, while Spain and Australia, with shares of 3% and 2%, respectively, are important consumers. These countries, due to increasing consumer awareness of healthy eating and changing consumption patterns, have captured substantial shares of the global market.
 - **High Quality and Freshness:** Consumers seek products that are fresh, of high quality, and have desirable taste, appearance, and nutritional value. Using modern technologies in **greenhouse** production can help improve quality and increase consumer satisfaction. Producers can use advanced cultivation methods, precise environmental control, and optimized harvesting and packaging processes to produce high-quality products.
 - **Year-Round Accessibility:** A key consumer need is the availability of fresh products year-round. Off-season greenhouse production makes this possible and can help increase demand and **profitability**. Producers must plan adequately for continuous production to

meet market demands throughout the year. Advanced technologies and control systems can support this goal.

- **Affordable Price:** Competitive pricing is a key factor in consumer product choice. The ability to produce at lower costs and offer products at competitive prices provides a significant advantage.

❖ **Challenges**

- **Raw Material Costs:** Fluctuations in the prices of raw materials can affect the production costs of off-season greenhouse products. Over the past five years (2019-2023), the average global price of off-season greenhouse products has fluctuated between €2,500 and €3,000 per ton. These fluctuations are driven by global supply-demand changes, raw material price volatility, and production cost changes. Insights from reputable sources help producers and consumers make better-informed decisions in the market.
- **High Initial Investment Costs:** The initial costs for setting up greenhouses, purchasing equipment, and installing control systems can be challenging for producers. These costs include land acquisition, construction, greenhouse infrastructure, irrigation systems, and environmental control systems.
- **Management Complexity:** Proper greenhouse management, including environmental control, irrigation, plant nutrition, and pest and disease management, requires high technical expertise and experience. Any mismanagement can lead to reduced product quality and increased production costs.
- **Currency Fluctuations:** Exchange rate changes can directly impact production costs and product pricing. This is especially critical for producers dependent on importing raw materials.
- **Import Restrictions:** Sanctions and import restrictions can reduce access to quality raw materials and advanced technologies, affecting the quality and competitiveness of domestic producers.
- **Environmental Regulations:** Changes in environmental regulations and the need to meet high standards may increase production costs and require investment in new technologies.
- **Intense Domestic and Foreign Competition:** Intense competition, both from domestic and foreign producers, puts pressure on prices and product quality. Producers must continuously improve product quality, reduce costs, and enhance after-sales services to maintain their market share.

❖ **Opportunities**

- **Growth in Local and International Markets:** With increasing consumer awareness and urban population growth, new markets for greenhouse products have emerged, creating significant business development opportunities. International markets also offer good export potential for domestic producers.
- **Technological Advancements:** The use of modern technologies can improve efficiency, reduce costs, and enhance product quality, offering a competitive advantage to producers. Technologies like environmental sensors, smart control systems, and advanced irrigation and plant nutrition technologies can significantly improve greenhouse performance.
- **Financial Incentives and Support:** Governments can help develop the greenhouse industry by offering financial incentives and support, creating favorable conditions for market entry and operations. These incentives may include low-interest loans, tax discounts, energy subsidies, and specialized training.
- **Export Growth:** With the high quality and competitive prices of Iranian products, there are good opportunities for exporting to regional and international markets. This can drive economic growth and increase the income of domestic producers.
- **Environmental Awareness Increase:** Growing concerns about environmental issues and the need for sustainable resource management have increased demand for off-season

greenhouse products as an effective solution for pollution control and resource optimization.

❖ **Conclusion**

- Overall, the off-season greenhouse product industry is growing and developing, with significant potential for investment and expansion. Despite the challenges, producers can succeed by effectively managing operations, utilizing modern technologies, and adopting strategies to improve product quality, reduce costs, and increase productivity. This will help them maintain a competitive edge in this expanding market.

5-1- Introduce target market:

The global target market for off-season greenhouse products includes various consumer sectors seeking access to fresh, high-quality products throughout the year. Due to the diverse nutritional, economic, and social needs, this market has significant growth potential. Below are the key market segments for these products:

▪ **End Consumers**

- **Households:** Households make up a significant portion of the consumers of greenhouse products. With increasing awareness about healthy eating and rising disposable income, the demand for fresh and organic products in this segment is on the rise.
- **Restaurants and Hotels:** The foodservice industry, especially high-end restaurants and hotels, is one of the largest consumers of off-season greenhouse products. These sectors demand high-quality, fresh ingredients to offer top-tier meals, driving strong demand for greenhouse-grown produce.

▪ **Retailers**

- **Supermarkets and Chain Stores:** These stores act as primary outlets for greenhouse products to end consumers. Large supermarkets and chain stores, especially in developed countries, sell greenhouse products in bulk due to their high quality and longer shelf life.
- **Local and Organic Markets:** Local markets and organic stores are also a significant segment of the target market, as they cater to consumers looking for fresh, healthy products. These retailers focus on offering farm-to-table produce, which includes greenhouse-grown items.

▪ **Food Processing Industries**

- **Food Manufacturers:** The food processing industry utilizes greenhouse products as raw materials for producing a variety of food items. These industries, requiring consistent and high-quality raw materials, represent an important target market for greenhouse products.

▪ **Export Sectors**

- **Importing Countries:** Due to geographical and climatic limitations, many countries are major importers of off-season greenhouse products. Northern and Central European countries, North America (USA and Canada), parts of Asia (Japan, South Korea, and China), as well as Australia and New Zealand, are key export markets for these products.

▪ **Government and Institutional Sectors**

- **Schools and Hospitals:** These institutions are crucial consumers of greenhouse products due to the need to provide healthy and high-quality nutrition to students and patients. School and hospital nutrition programs increasingly focus on using fresh and locally sourced products, making greenhouse-grown produce a key part of their offerings.

The table below presents the market share, total value, and compound annual growth rate (CAGR) of off-season greenhouse products in various consumer sectors from 2014 to 2024:

Consumer Sector	Market Share (Percentage)	Total Value (Billion USD)	Average Annual Growth Rate (CAGR)
Households	40%	24 billion USD	5%
Restaurants and Hotels	25%	15 billion USD	6%
Supermarkets and Chain Stores	20%	12 billion USD	5.5%
Food Processing Industries	10%	6 billion USD	4%
Local and Organic Markets	5%	3 billion USD	6.5%

Based on the above information, the most **reasonable and expert decision for the target market of this plan**, which envisions active participation in market development, is to focus on the **sub-sectors** and **countries** where the **greenhouse product industry holds a larger share of the overall market**. Additionally, **in the domestic market**, due to the importance of **daily consumption**, targeting households, restaurants, and hotels can economically justify the establishment of such a unit.

6- Physical Progress of project: **yes** ☐ **No** ☒

This project, as one of the priority investment plans of the province, has been proposed by the Investment and Economic and Technical Assistance Organization of Iran, the Kermanshah Governorate, the Ministry of Economic Affairs and Finance, and the Kermanshah Agricultural Jihad Department to the private and non-governmental sectors. It is currently in the phase of preparing a technical-economic feasibility study.

7- Action plan and Implementation schedule:

Stage	Description of Activities	Duration	Notes
Market Planning & Analysis	<ul style="list-style-type: none"> - Market analysis and industry needs assessment - Competitor analysis and opportunity identification - Preparation of the economic justification report 	1 month	Includes data collection, opportunity assessment, and preparation of the business plan draft.
Financing & Investment Attraction	<ul style="list-style-type: none"> - Preparation of financial plan - Attracting investors - Securing necessary loans and credit 	1 month	Requires financial documentation and negotiations with banks and investors.
Site Selection & Permits	<ul style="list-style-type: none"> - Selecting the appropriate site for the production unit - Securing necessary permits from legal authorities 	1 month	Includes land evaluation, construction and operating permits, and environmental impact assessment.
Design & Engineering	<ul style="list-style-type: none"> - Designing building plans and layouts - Selecting equipment and machinery - Engineering consultation 	1 month	Detailed design of the production unit, selection of equipment, and planning for installation and setup.
Construction & Commissioning	<ul style="list-style-type: none"> - Construction and preparation of the building - Installation of equipment and machinery - Conducting initial tests 	3 month	Includes physical construction stages, equipment installation, and initial tests to check equipment performance.
Hiring & Staff Training	<ul style="list-style-type: none"> - Hiring required staff - Providing necessary training - Preparing the operational team 	1 month	Process of recruiting personnel and training them for various duties in the unit.
Final Testing & Trials	<ul style="list-style-type: none"> - Performing final tests and evaluating production performance - Troubleshooting and process optimization 	1 month	Complete testing of equipment and processes to ensure proper functionality and optimization.
Start-Up & Production Launch	<ul style="list-style-type: none"> - Starting trial production - Reviewing and adjusting production processes - Commencing official production 	1 month	Beginning with trial production to ensure proper performance, then starting official production.
Marketing & Distribution	<ul style="list-style-type: none"> - Developing marketing strategies - Introducing products to the market - Creating distribution network 	1 month	Includes marketing, sales activities, and establishing distribution channels for the produced products.
Monitoring & Continuous Improvement	<ul style="list-style-type: none"> - Monitoring production performance - Collecting feedback and improving processes - Updating equipment and methods 	Ongoing	Continuous review of production performance, customer feedback collection, and ongoing improvements in processes and equipment.

Based on the above table, the **implementation of this project** will take **11 months**.

8- Financial projection:

8-1- The cost estimate:

Cost Estimate:

No.	Subject	Cost (Million Rial)
1	Fixed Investment	15,004,999
2	Operating Costs (Working Capital)	1,364,639
3	Financing Costs	-
Total (Million Rial)		16,369,638
Total (Billion Rial)		16.37 Billion Rial
Total (Thousand Euro)		32,739.28 Thousand Euro

Fixed investment

Fixed Investment			
No.	Subject		Costs (million Rials)
1	land purchase		3,000,000
2	Site preparation and development		4,127,000
3	Civil works, structures and buildings		2,702,500
4	Plant machinery and equipment		2,367,000
5	Auxiliary and service plant equipment		180,000
6	Environmental protection		50,000
7	Incorporated fixed assets (project overheads)		1,242,650
8	Pre-production expenditures (net of interest)	Studies	248,530
		Management and organization	248,530
		license	124,265
9	contingencies costs		714,524
Total (Million Rial)			
Total (Billion Rial)			
Total (Thousand Euro)			

Operating cost

No.	Subject		Distribution ratio	Costs (million Rials)
Variable cost				555872
1	Material		100%	360,000
2	Personnel		30%	36,461
3	Marketing (except personnel)		100%	112,500
4	Depreciation			
5	Other variable costs	Energy*	85%	4,240
		Maintenance*	20%	39,080
		Unforeseen (2.5% of items*)	20%	3,411
Fixed cost				808,767
5	Material			
6	Personnel		75%	85,075
7	Marketing (except personnel)			
8	Depreciation		100%	552,950
9	Other fixed costs	Energy*	15%	780
		Maintenance*	80%	156,320
		Unforeseen (2.5% of items*)	80%	13,642
Total operating cost				1,364,639
Total (Billion Rial)				1,364,639
Total (Thousand Euros)				2,729.278

8-2- Estimated revenues:

In each square meter of the greenhouse, the average yield includes 25 kilograms of premium bell peppers, 70 kilograms of greenhouse cucumbers, 60 kilograms of greenhouse tomatoes, and 20 kilograms of greenhouse strawberries, resulting in an average production of 50 kilograms per square meter. Moreover, as previously mentioned, the global market price for off-season greenhouse products typically ranges from €2,500 to €3,000 per ton. To minimize project risks, the lowest price, €2,250 per ton, has been considered for this plan.

Project revenues

No.	subject		Season 1	Season 2	Season 3	Season 4	Year 1	Year 2	Year 3	Year 4	Year 5
1	Off-season greenhouse products	Nominal capacity utilization (%)	15%	15%	15%	15%	60%	70%	80%	90%	100%
2		Actual capacity (tons)	1,350	1,350	1,350	1,350	5,400	6,300	7,200	8,100	9,000
3		Price per ton (€)	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
4		Revenue (thousand €)	3,375	3,375	3,375	3,375	13,500	15,750	18,000	20,250	22,500
5		Revenue (billion IRR)	1,688	1,688	1,688	1,688	6,750	7,875	9,000	10,125	11,250

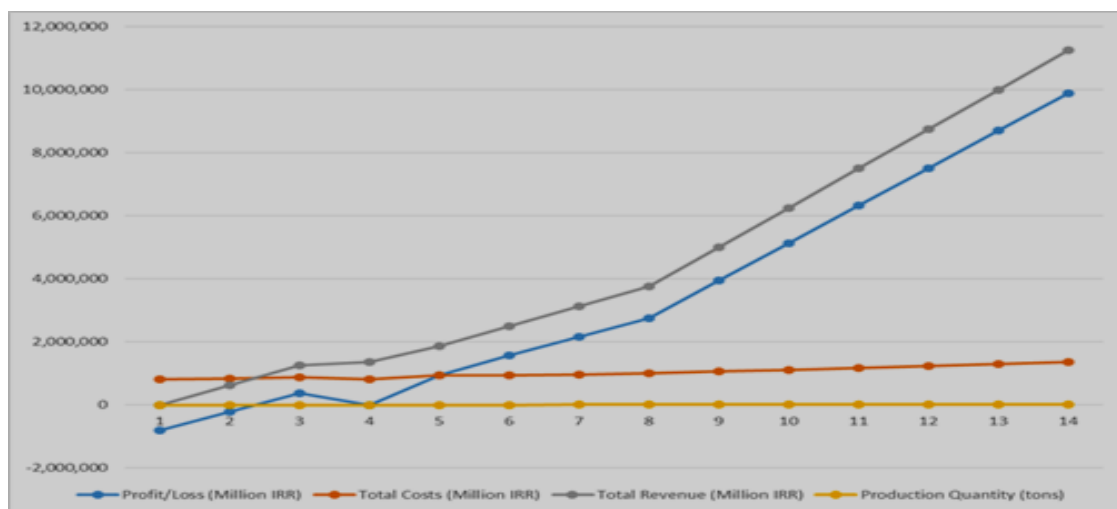
8-3-Duration of project operation:

Considering various factors influencing the economic lifespan of industrial projects, such as off-season greenhouse production, including raw material reserves, localized technology, market fluctuations, and government support policies, **the optimal operational period for this project is estimated to be 10 years with a discount rate of 18%**. This time frame has been determined by taking into account the desired return on investment for stakeholders, projected maintenance and repair costs, and sensitivity analysis to changes in key parameters.

8-4-Break- even analysis:

The breakeven analysis of the off-season greenhouse production project shows that with the production and sale of at least **1,092 tons** of off-season greenhouse products annually, which is equivalent to **12.13%** of the project's nominal capacity, the project will reach its breakeven point. This point has been calculated by considering fixed costs including initial investment, general expenses, and fixed production costs, as well as variable production costs per ton of off-season greenhouse products. Considering the production capacity and market forecasts, it is expected that the project will quickly reach the breakeven point and enter a phase of sustainable profitability. The breakeven analysis is shown in the table below:

Profit/Loss (Million IRR)	Total Costs (Million IRR)	Total Revenue (Million IRR)	Production Quantity (tons)
-808,767	808,767	0	0
-214,647	839,647	625,000	500
379,473	870,527	1,250,000	1,000
0	808,767	1,365,000	1,092
943,593	931,407	1,875,000	1,500
1,567,713	932,287	2,500,000	2,000
2,161,833	963,167	3,125,000	2,500
2,755,953	994,047	3,750,000	3,000
3,944,193	1,055,807	5,000,000	4,000
5,132,433	1,117,567	6,250,000	5,000
6,320,673	1,179,327	7,500,000	6,000
7,508,913	1,241,087	8,750,000	7,000
8,697,153	1,302,847	10,000,000	8,000
9,885,361	1,364,639	11,250,000	9,000



8-5- Cost-benefit analysis:

The table of project efficiency indicators

total fixed investment Present value	20,191,745 million IRR
total net revenue Present value	42,772,500 million IRR
Net present value (NPV)	22,580,755 million IRR
benefit - Cost ratio B/C	2.12
Internal rate of return (IRR)	92.31%
Payback Period	2 years
Annual Profit Percentage	65.89%

- **Present Value of Total Costs:** The amount of 20,191,745 million IRR represents the total investment and operational costs of the project, considering a discount rate of 18%. These costs include both fixed and variable production costs.
- **Present Value of Total Revenues:** The amount of 42,772,500 million IRR reflects the total forecasted revenue from the sale of off-season greenhouse products, with a discount rate of 18%.
- **Net Present Value (NPV):** The amount of 22,580,755 million IRR, representing the difference between the present value of total revenues and costs, indicates the project's net profit. A positive NPV signifies the economic justification and profitability of the project.
- **Benefit-Cost Ratio (B/C):** The ratio of 2.12 indicates that for every unit of cost, 2.12 units of revenue are generated. Since this ratio is above 1, it confirms the project's profitability.
- **Internal Rate of Return (IRR):** The rate of 92.31% represents the project's internal rate of return, which is well above the 18% discount rate, demonstrating the high attractiveness of investing in this project.
- **Payback Period:** The payback period of 1.52 years indicates the time required to recover the initial investment through the project's revenue. This short period reflects low risk and fast returns for the project.
- This analysis indicates that the off-season greenhouse production project in Kermanshah is highly profitable and an attractive investment opportunity.

8-6- Sensitivity analysis of IRR:

A. Based on **Annual Revenue**

The following table presents a sensitivity analysis for the off-season greenhouse production project, examining the impact of changes in annual revenue on the project's economic indicators, including **NPV (Net Present Value)**, **IRR (Internal Rate of Return)**, and **Payback Period**. The percentage changes in revenue range from -30% to +30%, as detailed in the table below:

Payback Period (Years)	IRR (%)	NPV (Million IRR)	New Revenue (Million IRR)	Percentage Change
3	48.00	14,253,130	7,875,000	-30%
2.6	59.41	19,308,970	9,000,000	-20%
2.2	77.92	24,364,820	10,125,000	-10%
2	92.31	29,420,670	11,250,000	0%
1.9	101.69	34,476,510	12,375,000	10%
1.7	127.66	39,532,360	13,500,000	20%
1.5	171.43	44,588,210	14,625,000	30%

❖ **Impact of Revenue Decrease on Economic Indicators:**

- **30% Reduction:** In the event of a 30% reduction in income, the NPV decreases to approximately 14,253 billion rials, and the Internal Rate of Return (IRR) reaches 48%. The payback period increases to 3 years, indicating a decline in the attractiveness of investment under this scenario.
- **20% Reduction:** With a 20% reduction in income, the NPV decreases to 19,308 billion rials, the IRR drops to 59.41%, and the payback period extends to 2.6 years. This results in reduced profitability for the project.
- **10% Reduction:** A 10% reduction in income leads to an NPV of 24,364 billion rials, an IRR of 77.92%, and a payback period of 2.2 years. The project's profitability is further diminished.

❖ **Impact of Revenue Increase on Economic Indicators:**

- **10% Increase:** With a 10% increase in income, the NPV rises to 34,476 billion rials, and the IRR improves to 101.69%. The payback period shortens to 1.9 years, and the project's profitability becomes significantly higher.
- **20% Increase:** A 20% increase in income boosts the NPV to 39,532 billion rials, and the IRR reaches 127.66%. This scenario highlights the high attractiveness of the project under conditions of increased income.
- **30% Increase:** With a 30% increase in income, the NPV reaches 44,588 billion rials, and the IRR increases to 171.43%. This scenario demonstrates the highest level of profitability and sustainability for the project.

❖ **Conclusion:**

- **Project Sustainability:** The project remains sustainable even with a revenue decrease of up to 30%, maintaining positive NPV and IRR. However, if revenue decreases by more than 20%, the investment attractiveness significantly diminishes. On the other hand, increasing revenue dramatically improves the economic indicators and increases profitability.
- **Risk Management:** Risk management is crucial for this project. A decrease in revenue could have a considerable negative impact on the project's return. To manage risks, focusing on increasing productivity, reducing costs, and using marketing strategies to maintain high revenue levels should be considered. Additionally, revenue reduction scenarios can help participants make more informed decisions regarding investment.

B. Sensitivity Analysis Based on Annual Production Costs

The following table presents the sensitivity analysis of the off-season greenhouse production project based on annual production costs. This analysis examines the impact of changes in annual production costs on the project's economic indicators, including NPV (Net Present Value), IRR (Internal Rate of Return), and Payback Period. The percentage changes range from -30% to +30%, as shown below:

Payback Period (Years)	IRR (%)	NPV (Million IRR)	New Cost (Million IRR)	Percentage Change
1.59	148.51	31,260,510	955,247	-30%
1.78	115.83	30,647,230	1,091,711	-20%
1.98	94.04	30,033,950	1,228,175	-10%
2	92.31	29,420,670	1,364,639	0%
2.07	86.71	28,807,390	1,501,103	10%
2.27	73.89	28,194,110	1,637,567	20%
2.46	64.79	27,580,820	1,774,031	30%

❖ **Impact of Decreasing Annual Production Costs on Economic Indicators:**

- **30% Reduction:** A 30% reduction in production costs increases the Net Present Value (NPV) to 31,260 billion Rials and improves the Internal Rate of Return (IRR) to 148.51%. The payback period will be 1.59 years, indicating an improvement in the financial performance of the project.
- **20% Reduction:** With a 20% reduction in production costs, the NPV rises to 30,647 billion Rials and the IRR reaches 115.83%. The cost reduction has a positive impact on economic indicators, with a payback period of 1.78 years.
- **10% Reduction:** A 10% reduction in production costs results in an NPV of 30,033 billion Rials and an increase in IRR to 94.04%. A positive impact on the project's profitability is observable.

❖ **Impact of Increasing Annual Production Costs on Economic Indicators:**

- **10% Increase:** With a 10% increase in production costs, the NPV decreases to 28,807 billion Rials and the IRR drops to 86.71%. This indicates a reduction in the project's profitability due to rising costs.
- **20% Increase:** A 20% increase in production costs reduces the NPV to 28,194 billion Rials and lowers the IRR to 73.89%. These conditions require improved cost management to mitigate the negative impact on profitability.
- **30% Increase:** With a 30% increase in costs, the NPV drops to 27,580 billion Rials and the IRR falls to 64.79%. This scenario highlights the severe negative impact of rising costs on the project's economic indicators.

❖ **Conclusion:**

- **Project Sustainability:** The project shows adequate sustainability even in the face of changes in annual production costs. Even with a 30% increase in costs, NPV and IRR remain positive, and the payback period stays at 2 years. This indicates that the project is resilient to rising production costs.
- **Risk Management:** Given the negative impact of cost increases on economic indicators, precise management of production costs is crucial. Reducing production costs improves economic indicators and profitability, while increasing costs has a negative impact on financial performance. It is recommended to explore cost-reduction strategies and increase production efficiency to control the risk of rising production costs.

C. Sensitivity Analysis Based on Initial Investment Costs

The table below presents the sensitivity analysis of the greenhouse complex project for off-season agricultural production based on changes in the initial investment costs. This analysis examines the impact of variations in initial investment costs on the project's economic indicators, including NPV (Net Present Value), IRR (Internal Rate of Return), and payback period. The changes range from -30% to +30%, as detailed below:

Payback Period (Years)	IRR (%)	NPV (Million IRR)	New Investment Cost (Million IRR)	Percentage Change
1.45	187.5	33,922,170	10,503,499	-30%
1.69	129.31	32,421,670	12,003,999	-20%
1.87	104.9	30,921,170	13,504,499	-10%
2	92.31	29,420,670	15,004,999	0%
2.12	83.1	27,920,170	16,505,498	10%
2.34	70.26	26,419,670	18,005,998	20%
2.56	60.85	24,919,170	19,506,498	30%

❖ **Comprehensive Analysis:**

▪ **Impact of Decrease in Initial Investment Costs on Economic Indicators:**

- **30% Reduction:** With a 30% reduction in the initial investment cost, the NPV increases to 33,922 billion Rials, and the Internal Rate of Return (IRR) reaches 187.5%. The reduction in initial costs makes the project more attractive and significantly increases its profitability.
- **20% Reduction:** With a 20% reduction in the initial investment cost, the NPV rises to 32,421 billion Rials, and the IRR reaches 129.31%. The project's profitability remains very high, and the reduction in costs notably enhances its profitability.
- **10% Reduction:** With a 10% reduction in the initial investment cost, the NPV increases to 30,921 billion Rials, and the IRR reaches 104.9%. This reduction still improves the economic indicators of the project.

▪ **Impact of Increase in Initial Investment Costs on Economic Indicators:**

- **10% Increase:** A 10% increase in the initial investment cost reduces the NPV to 27,920 billion Rials and decreases the IRR to 83.1%. The project remains profitable, but the rise in costs diminishes its profitability.
- **20% Increase:** With a 20% increase in investment costs, the NPV drops to 26,419 billion Rials, and the IRR falls to 70.26%. The project is still profitable, but the increase in costs has a more negative impact on its return.
- **30% Increase:** With a 30% increase in investment costs, the NPV decreases to 24,919 billion Rials, and the IRR drops to 60.85%. The increase in investment costs significantly reduces the economic attractiveness of the project, but the payback period remains within an acceptable timeframe.

❖ **Conclusion:**

- **Project Stability:** The project shows good resilience to changes in initial investment costs. Even with a 30% increase in investment costs, economic indicators remain positive. However, as the initial costs increase, the project's attractiveness decreases, and profitability diminishes. In contrast, reducing initial costs dramatically improves the economic indicators and makes the project much more attractive.
- **Risk Management:** Effectively managing initial investment costs can have a significant impact on the project's success. Lowering costs enhances profitability and accelerates payback, while increasing costs reduces returns. Therefore, it is recommended to develop strategies for optimizing investment costs and more effectively managing project budgets to mitigate the risk of rising costs.

8-7- Summarize table:

"Summary of economic issues"

activity	International Standard Industrial Classification (ISIC Code)	product name	Nominal capacity (unit)
Production	73089090	Off-season greenhouse products	9000 tons
Activity duration	Fix investment (million Rials)	Variable investment (million Rials)	Human resources
11 months	15,004,999	1,364,639	50 people
Internal rate of return (IIR)	Net present value (million Rials)	Owners share (million Rials)	Benefit-cost ratio *B/C
92.31%	22,580,755	3,273,928	2.12

❖ **Economic and Strategic Analysis of the Project:**

- **Internal Rate of Return (IRR):** The internal rate of return (IRR) for the off-season greenhouse product project is 92.31%. This rate indicates a very high return on investment for the project. Considering the discount rate of 18%, this project can be highly attractive to investors and offers a satisfactory level of profitability. An IRR higher than the discount rate indicates the project's economic viability and investment appeal.
- **Net Present Value (NPV):** The net present value (NPV) of the project is 22,580,755 million IRR. This positive and substantial amount indicates that the revenues generated by the project, considering the investment costs and discount rate, are significantly higher than the costs. A positive and large NPV indicates high value creation by the project and a strong economic justification.
- **Benefit-Cost Ratio (B/C):** The benefit-cost ratio (B/C) of the project is 2.12. This ratio shows that the benefits derived from the project will be more than twice the costs. A B/C ratio greater than 1 indicates profitability and economic efficiency of the project, suggesting that investing in this project is highly cost-effective.
- **Payback Period:** The payback period for the project is less than 2 years. This short period indicates a quick return on the initial investment and reduces the risks associated with the investment. The fast payback period increases the attractiveness for investors and enhances trust in the project.
- **Annual Working Capital and Human Resources:** The annual working capital required for the project is 1,364,639 million IRR, and the number of human resources required for project implementation is 50 people. This amount of working capital and human resources indicates efficient management and high productivity within the project. Securing sufficient working capital and hiring skilled labor are key factors in the success and efficiency of the project.

❖ **Market Opportunities:**

Increasing demand for off-season greenhouse products due to climate change, rising consumer awareness about health and product quality, and urban population growth provide significant opportunities for this project. The development of local and international markets, as well as increasing product exports, are other important opportunities for the growth and development of this project.

❖ **Competitive Analysis:**

In the off-season greenhouse products market, competition with other domestic and international producers presents challenges. Reviewing and analyzing competitors' strategies, identifying their strengths and weaknesses, and creating competitive advantages such as improving product quality, reducing production costs, and increasing productivity are essential actions for success in this competitive market.

❖ **Conclusion:**

The off-season greenhouse product project appears to be economically viable and profitable based on its economic return indicators, including a high IRR, positive NPV, and favorable benefit-cost ratio. The short payback period further reduces investment risks. Market opportunities and competitive analysis suggest that with efficient management and appropriate strategies, this project can quickly reach profitability and enter a phase of sustainable earnings. Therefore, investing in this project can offer good returns and should be regarded as a promising economic and strategic opportunity.

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

To assess the impact of exchange rate fluctuations (USD to IRR) on the off-season greenhouse products project, various scenarios can be considered. These scenarios address the crucial aspects of the project, including costs, financing, and foreign exchange risk management. Minimizing the negative effects of exchange rate fluctuations can help achieve the desired profitability. Below is a breakdown of key factors impacted by changes in the exchange rate:

❖ Cost Analysis with Exchange Rate Changes

- **Import Costs:** With the increase in the exchange rate from 30,000 IRR to 60,000 IRR (from 1399 to 1403), the cost of importing raw materials and equipment, especially due to the advanced technology not available locally, rises significantly. This could lead to a considerable increase in both fixed and variable costs of the project.
- **Operating Costs:** The increase in the exchange rate may also affect operating costs, such as wages, maintenance costs, and energy expenses. As the exchange rate increases, these costs are expected to rise as well.

❖ Financing and Loan Repayment Strategy

- **Foreign Currency Loans:** If financing is secured through foreign currency loans, an increase in the exchange rate could lead to higher loan repayment costs. This requires careful planning for loan repayments, considering different exchange rate forecasts.
- **Financial Programs:** Choosing the right financing source and using appropriate financial tools like currency hedging or forward exchange contracts can effectively reduce financial risks.

❖ Managing Foreign Exchange Risks

- **Financial Instruments Usage:** To reduce the adverse impacts of exchange rate fluctuations, financial instruments such as forward exchange contracts, options, and swaps can be utilized.
- **Financial Planning:** Financial planning based on different exchange rate scenarios and their impact on the project's costs and revenues is vital for managing foreign exchange risks and ensuring profitability.

❖ Proposed Scenarios

- **Conservative Scenario:** Assuming the exchange rate increases to 80,000 IRR between 1404 and 1406, this scenario anticipates a significant rise in import costs and loan repayment costs.
- **Optimistic Scenario:** Assuming the exchange rate remains at 60,000 IRR between 1404 and 1406, import costs and loan repayments will remain under control, leading to better project profitability.
- **Realistic Scenario:** Assuming the exchange rate increases to 70,000 IRR between 1404 and 1406, a balance must be struck between higher costs and the impact on loan repayment, with effective risk management strategies employed.

❖ Sensitivity Analysis of Exchange Rate Changes

The following sensitivity analysis can help assess the effect of exchange rate fluctuations on total costs and profitability of the project. By evaluating different scenarios and predicting their impacts, the most suitable strategy for financial management and foreign exchange risk mitigation can be chosen:

A. Import Costs

- **Conservative Scenario (Exchange Rate 80,000 IRR):**
 - **Increase in Import Costs:** Import costs increase by 1.33 times (compared to the current exchange rate of 60,000 IRR).
 - **Impact on Total Costs:** If 50% of the total project costs are attributed to imports, an exchange rate increase to 80,000 IRR will result in a 33% increase in import costs.

- **Optimistic Scenario (Exchange Rate 60,000 IRR):**
 - **Constant Import Costs:** Import costs remain stable at the current exchange rate.
- **Realistic Scenario (Exchange Rate 70,000 IRR):**
 - **Increase in Import Costs:** Import costs increase by 1.17 times.
 - **Impact on Total Costs:** This results in a 17% increase in import costs.
- B. B. Operating Costs**
 - **Conservative Scenario (Exchange Rate 80,000 IRR):**
 - **Increase in Operating Costs:** Operating costs can increase by 1.33 times if they are directly affected by the exchange rate.
 - **Optimistic Scenario (Exchange Rate 60,000 IRR):**
 - **Stable Operating Costs:** Operating costs remain unaffected by exchange rate changes.
 - **Realistic Scenario (Exchange Rate 70,000 IRR):**
 - **Increase in Operating Costs:** Operating costs will increase by 1.17 times.
- C. C. Loan Repayment**
 - **Conservative Scenario (Exchange Rate 80,000 IRR):**
 - **Increase in Loan Repayment Costs:** Higher exchange rates will lead to a 1.33 times increase in loan repayment costs, which could put significant financial pressure on the project.
 - **Optimistic Scenario (Exchange Rate 60,000 IRR):**
 - **Stable Loan Repayment Costs:** Loan repayment costs will remain unaffected by exchange rate fluctuations.
 - **Realistic Scenario (Exchange Rate 70,000 IRR):**
 - **Increase in Loan Repayment Costs:** Loan repayment costs will increase by 1.17 times.
- D. D. Financing and Financial Plans**
 - **Conservative Scenario (Exchange Rate 80,000 IRR):**
 - **Increased Financing Needs:** A higher exchange rate may lead to increased financing requirements, resulting in higher debt levels and pressure on financial plans.
 - **Optimistic Scenario (Exchange Rate 60,000 IRR):**
 - **Adequate Financing:** Financing costs remain manageable at a stable exchange rate.
 - **Realistic Scenario (Exchange Rate 70,000 IRR):**
 - **Moderate Financing Needs:** Financing needs may increase moderately due to exchange rate changes.
- E. E. Financial Instruments (Currency Hedging)**
 - **Conservative Scenario (Exchange Rate 80,000 IRR):**
 - **Use of Currency Hedging:** To mitigate the effects of high exchange rates, using hedging tools like forward contracts and swaps is highly recommended.
 - **Optimistic Scenario (Exchange Rate 60,000 IRR):**
 - **Minimal Hedging Required:** With a stable exchange rate, the need for hedging instruments is reduced.
 - **Realistic Scenario (Exchange Rate 70,000 IRR):**
 - **Balanced Hedging:** Moderate use of financial hedging tools will help manage exchange rate risks.
- F. F. Financial Planning**
 - **Conservative Scenario (Exchange Rate 80,000 IRR):**
 - **Precise Financial Planning:** Detailed financial planning is needed to manage the effects of high exchange rates and adjust financial and loan repayment strategies.
 - **Optimistic Scenario (Exchange Rate 60,000 IRR):**
 - **Standard Financial Planning:** Financial planning is straightforward with a stable exchange rate.

- **Realistic Scenario (Exchange Rate 70,000 IRR):**

- **Moderate Financial Planning:** Financial planning needs to account for moderate exchange rate fluctuations, with risk management strategies in place.

9- Capital needs, the supply and guarantees method:

9-1- Foreign currency needed:

Due to the fact that some raw materials and most of the equipment, due to advanced technology not available in the country, need to be imported, and also because the investor has the opportunity to secure financial resources for their procurement, especially for equipment and machinery, the required foreign exchange equivalent for the equipment and machinery, which is approximately 4,734 thousand euros (2,367 billion rials), is requested to be provided over the two years during which the project is expected to be implemented as follows:

No.	Year	Exchange rate
1	First	2367
2	Second	2367

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

Considering the inherent risks in every production project, especially in the field of off-season greenhouse product production, which requires significant initial investment, selecting the appropriate financing method is of high importance. This is because the choice of the best method depends on various factors such as the required capital volume, the project's development stage, investors' risk tolerance, and market conditions. Below are some of the best methods and key points for this project:

❖ **Financing through Banks and Financial Institutions:**

- **Bank Loans:** By presenting a strong feasibility plan and providing adequate guarantees, one can benefit from bank facilities with a fixed interest rate.
- **Credit Lines:** To finance working capital and purchase raw materials, credit lines from banks can be utilized.
- **Opening Letters of Credit (L/C) and Foreign Exchange Credit:** For importing equipment and raw materials, opening letters of credit can be helpful.

❖ **Attracting Investor Participation:**

- **Venture Capital:** These investors are interested in innovative and high-risk projects and can participate in the early stages of the project.
- **Angel Investors:** These investors are usually experienced and wealthy individuals who are willing to invest in small and medium-sized companies.
- **Institutional Investors:** Large companies and organizations such as social security holdings, Barakat Foundation, etc., may invest in off-season greenhouse product production projects due to strategic or social benefits.

❖ **Using Government Facilities:**

- **Subsidies and Grants:** The government can allocate subsidies to support small and medium-sized industries.
- **National Development Fund Facilities:** This fund provides financial support for large-scale production and infrastructure projects.
- **Guarantee Fund Facilities:** These funds offer guarantees that allow investors access to bank facilities.

The best method for financing the off-season greenhouse product production project is to use a combined approach, including private sector participation, attracting investors, using bank loans, credit lines, and opening letters of credit to secure foreign exchange for the project, as well as utilizing government facilities for less developed regions. This approach not only provides the necessary capital but also helps mitigate the financial risks associated with the project.

9-3- Payback period:

Based on the conducted studies and forecasts, the payback period for this project is estimated to be less than 2 years. This estimate takes into account various factors such as the initial investment, operational costs, projected revenues, discount rates, and inflation rates. Furthermore, sensitivity analysis regarding changes in key parameters shows that the project has a reasonable resilience to market fluctuations and changes in production costs.

10- Incentives, features and advantages of project:

The establishment of a greenhouse off-season product production unit in the cities of Kermanshah (Azizabad and Germianak villages) can create many opportunities for regional economic and industrial development, considering the available potentials in the area and the growing demand for this product. Below, the incentives, features, and benefits of this project are discussed:

❖ Incentives:

▪ Government Facilities:

- Provision of financial and credit facilities by the government and banks for investment in this project.
- Tax and customs exemptions for importing necessary equipment and raw materials.
- Support for the production and export of value-added products.
- Support for research and development in the production of high-quality off-season greenhouse products.
- Offering foreign currency facilities for less developed and deprived regions with a fixed 3% interest rate.
- The inclusion of foreign machinery in the banking system with a 90% coefficient and the provision of facilities for projects in underdeveloped regions.
- Provision of 70% of working capital needs through the banking network.
- Ten years of tax exemptions for underdeveloped and deprived regions.
- Acquisition of land at only 10% of its value and long-term installments in underdeveloped and deprived regions.

▪ Regional Potentials:

- The proximity to the Iraq border and other regional countries offers good export opportunities for accessing both domestic and international markets for the produced goods.
- Availability of necessary infrastructure such as water, electricity, gas, roads, and transportation facilities for setting up the units.
- Presence of skilled and affordable labor in the region.

▪ Market Demand:

- Growing demand for off-season greenhouse products in various sectors such as households, restaurants, hospitality, etc.
- Lack of high-capacity off-season greenhouse production units in the region.

❖ Project Features:

▪ Utilization of Modern Technologies:

- The use of advanced production methods for off-season greenhouse products to improve quality and reduce production costs.
- Optimization of energy consumption and reduction of environmental pollution.

▪ Production of Various Off-Season Greenhouse Products:

- Production of off-season greenhouse products with diverse features for various applications.
- Adapting products to meet the needs of domestic and international markets.

- **Job Creation:**
 - Creation of direct and indirect employment opportunities for a large number of people in the region.
- **Value Chain Development:**
 - The development of the value chain for off-season greenhouse products through the creation of sorting, processing of raw materials, and production of by-products.
- ❖ **Benefits of the Project:**
 - **Regional Economic Development:**
 - Increase in regional GDP.
 - High value addition from inexpensive and local raw materials.
 - Development of related industries and creation of sustainable employment.
 - Attraction of other investors to invest in the region and stimulate the economy.
 - **Reducing Dependency on Imports:**
 - Reduction in the import of off-season agricultural products and foreign exchange savings.
 - Increased self-sufficiency in the production of this product.
 - **Environmental Protection:**
 - Reduction in environmental pollution due to waste disposal and improvement in quality of life.
 - **Enhancement of Technical Knowledge:**
 - Transfer of technical knowledge and technology to the region.
 - Improvement of the scientific and technical level of the workforce.

Establishing this off-season greenhouse product production unit in the region can be considered a golden opportunity for economic and agricultural development. With the government incentives, regional potentials, market demand, and numerous benefits, investing in this sector can lead to high value addition, job creation, and sustainable regional development.