In the name of God

Pre-feasibility study form

Plan Name: Plasma autoclave for sterilization and disinfection, except for dentistry

Employer: Chaharmahal and Bakhtiari Industrial Estates Co.

Consulting Company: Kavosh Consultants Co.

Project Address: Shahrekord Industrial Estate

Date: ۲۰۲۳

Update ۲ (۲۰۲۴)

SUMMARY OF THE FEASIBILITY STUDY

General Specification
Project title: Feasibility studies of plasma autoclave production for sterilization and disinfection, except for dentistry
Project capacity: ۱۰۰ units per year
Employment rate: ۲۱ people
Working days: ۲۸۹ days
Uses of the product: In general, all non-infectious and infectious materials contaminated with biological agents, including the remains of inoculated culture medium samples, grown pathogens, human, animal and plant cells, materials contaminated with human or animal feces, human blood products and Animals and... can be autoclaved by this device.
Marketing
Global price of the product: starting from about ۴۰ thousand dollars
Domestic demand: around ۲,۵۰۰ in the next five years
Domestic production: about ۳۹۰ units
Import: about ۱۰۰۰ units
Export:-
Technical study
Land area: ۲۵۰۰
Building area: ۱۳۲۰
Main raw materials: sterilization chamber (chamber, autoclave door, safety valve, pressure gauge, outlet pipe from inside, sterilization chamber, temperature elements, steam outlet, digital board, etc.)
How to supply raw materials: internal-external
Required electricity: ۹۰۰/۰۰۰ kilowatt hours
Required water: ۷۰,۰۰۰ cubic meters
Required fuel: ۱,۰۰۰,۰۰۰ cubic meters
Financial and Economic studies
Fixed investment amount: ۳۸۲۲۷۸ million rials- ۶۹۶,۳۱۷ euro
Working capital: ۳۸۰۷۹۲ million rials- ۶۹۳,۶۱۰ euro
Total investment: ۷۶۳۰۷۰ million rials- ۱,۳۸۹,۹۲۷ euro
Annual sales: ۱,۰۰۰,۰۰۰ million rials-۱,۸۲۱,۴۹۴ euro
Net present value (NPV): ۶۳۵۸۹۲ million rials- ۱,۱۵۸,۲۷۳ euro
Break-even point (BEP): ۷۶۰۰۰۰ million rials- ۱,۳۸۴,۳۳۵ euro
Internal rate of return (IRR): ۳۱٪
Payback period: ۳,۵ years
Investment Sources Ratio Equity: ۳۰٪ Financing: ۷۰٪

CONTENTS	PAGE
INTRODUCTION	۵
۱- PRODUCT INTRODUCTION	۵
۱-۱-PRODUCT NAME AND CODE (ISIC ۳)	۸
۱-۲-CUSTOMS TARIFF NUMBER	۸
۱-۳-IMPORT AND EXPORT CONDITIONS	۸
۱-۴- REVIEW AND PRESENTATION OF STANDARDS (NATIONAL OR INTERNATIONAL)	۸
۱-۵- REVIEWING AND PROVIDING NECESSARY INFORMATION ON DOMESTIC AND GLOBAL PRODUCTION PRICES AS WELL AS GLOBAL PRODUCT PRICES	۸
۱-۶- EXPLAIN THE USES OF THE PRODUCT	۹
۱-۷-EXAMINE ALTERNATIVE PRODUCTS AND ANALYZE THEIR EFFECTS ON PRODUCT CONSUMPTION	۹
۱-۸-STRATEGIC IMPORTANCE OF GOODS IN IRAN AND COUNTRIES OF THE REGION	۹
۱-۹-MAJOR MANUFACTURING AND CONSUMER COUNTRIES	۱۱
۲- SUPPLY AND DEMAND SITUATION IN IRAN AND COUNTRIES IN THE REGION	۱۳
۲-۱-AN EXAMINATION OF EXPLOITATION CAPACITY AND PRODUCTION PROCESS FROM THE BEGINNING OF THE THIRD DEVELPOMENT PLAN TO NOW	۱۳
۲-۲-CHECK THE STATUS OF NEW PROJECTS AND ONGOING DEVELOPMENT PLANS	۱۴
۲-۳-REVIEWING THE PROCESS OF PRODUCT IMPORTATION	۱۴
۲-۴-MONTORING CONSUMPTION TRENDS	۱۵

۲-۵-INVESTIGATE THE EXPORT AND THE POSSIBILITY OF ITS DEVELOPMENT	۱۵
۲-۶- PRODUCT REQUIREMENT CHECK WITH EXPORT PRIORITY	۱۵
۳-OVERVIEW OF TECHNOLOGY AND METHODS OF PRODUCTION AND SUPPLY IN THE COUNTRY AND COMPARISON WITH OTHER COUNTRIES	۱۶
۴-DETERMINING THE STRENGTHS AND WEAKNESSES OF CONVENTIONAL TECHNOLOGIES IN THE PRODUCT MANUFACTURING PROCESS	۱۹
۵- INVESTIGATE AND DETERMINE THE MINIMUM ECONOMIC CAPACITY, INCLUDING ESTIMATING THE VOLUME OF FIXED INVESTMENT IN RIAL AND FOREIGN CURRENCY	۲۱
۶-THE AMOUNT OF RAW MATERIAL NEEDED ANNUALLY AND WHERE IT IS SUPPLIED	۲۵
۷-RISK ANALYSIS OF PROJECT IMPLEMENTATION	۲۶
۸- HUMAN RESOURCES AND NUMBER OF JOBS	۲۶
۹- CHECK AND DETERMINE THE AMOUNT OF WATER, ELECTRICITY, FUEL AND ...	۲۷
۱۰- CONDITIONS OF ECONOMIC AND COMMERCIAL SUPPORT	۲۷
۱۰-۱- CUSTOMS TARIFF SUPPORT (PRODUCTS AND MACHINES) WITH GLOBAL TARIFFS	۲۷
۱۰-۲- FINANCIAL SUPPORT (EXISTING UNITS AND PLANS) OF BANKS - INVESTOR COMPANIES	۲۸
۱۱-ANALYZING AND PRESENTING FINAL CONCLUSIONS AND PROPOSALS FOR THE CONSTRUCTION OF NEW UNITS	۲۹

Introduction

Feasibility studies are expert studies that are carried out before the implementation of economic investment plans. In these studies, the plan is analyzed from the market, technical, financial and economic point of view, and the results are used as a basis for investors to make decisions.

The present report is a technical and economic feasibility study for the production of autoclave plasma sterilization and disinfectant, except for dentistry. These studies have been prepared in the form of feasibility study methodology, and according to the above methodology, the economic capacities and the amount of investment required for the implementation of the project will be estimated and presented so that investors and interested parties can use it to get all the required information. To acquire and make economic investments with an open vision and a clear path. It is hoped that these studies, even if small, will help in the development of our country.

۱- Product Introduction



With the expansion of progress in recent technologies in the field of advanced and sensitive medical accessories on one hand and high microbial risks on the other hand, the need for cold and dry sterilization process has created in medical centers more than in the past.

With this issue, the introduction of plasma autoclave to medical and health centers created new changes in the field of medicine. Since ۱۹۶۰, this research has been started based on this method, and

we must pay attention to the fact that many parameters such as pressure, hydrogen peroxide gas concentration, etc., have an effect on sterile quality.

Undoubtedly, plasma autoclaves are one of the most advanced examples of autoclaves in this century. This device is used in medical and hospital fields for equipment sensitive to temperature and humidity and will not cause any damage or deformation in the appearance and quality of parts. This capability is in contrast to steam autoclaves that perform sterilization at high temperature and with steam pressure, and the performance output of plasma autoclave will definitely be more positive. Although the price of plasma autoclave is high compared to other sterile methods, it is very important for clinical and medical sectors due to its efficiency and need.



Advantages of plasma sterilizer

As mentioned, the plasma sterilizer is completely superior and safer than other methods.

Together, we will review the benefits of using plasma autoclave in medical centers:

- Short duration of the sterile process

- The safety of the sterile process for users

- Absence of any harmful output because its output is only water and oxygen.

- Sterilization at the lowest possible temperature (about ۴۵ degrees Celsius) without changing the appearance of the equipment

How the plasma autoclave works

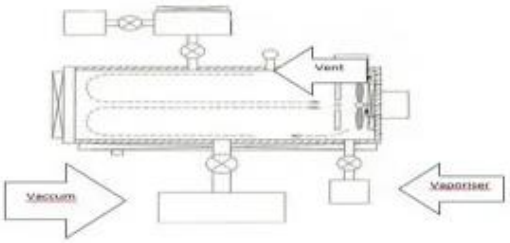
In all plasma autoclave systems, various methods are used, each of these methods can perform disinfection on its own, but with all these methods, a main method that uses hydrogen peroxide vapor to disinfect tools is Most of all, it is of interest to all manufacturers who use it as a sterilizing liquid.

The schematic structure of this chemical effect of hydrogen peroxide is as follows:



Plasma autoclave process

As you know, the plasma autoclave has the state of matter (solid, liquid, gas, plasma) and in general it can be said that its positive ions and free electrons are equal and the gas in it is highly ionized. In this way, it can be said that by applying any energy to any gas, it can be transformed into a plasma. Some people think that it is the plasma that causes disinfection and sterilization, but this is a misconception because it is the hydrogen peroxide that does the killing of microorganisms, and what the plasma does is remove the remnants of the steam. Removes hydrogen peroxide.



Plasma autoclave, fourth state of matter

Before we explain how hydrogen peroxide works in a low-temperature sterilizer, we need to first explain the concept of plasma. Plasma is the fourth state of matter (solid, liquid, gas, and plasma) and is created when a gas is heated enough or exposed to a strong electromagnetic field. What happens when a gas turns into a plasma? It becomes an unstable substance in which the number of electrons is increased or decreased, thus producing ions, which are positively or negatively charged electrons. In other words, plasma is an ionized gas that has a special property that cannot be seen in any other material.

How does plasma kill germs?

Plasma is sterilized by a process called oxidation. The plasma creates a chemical reaction in which all microorganisms are inactivated. High heat converts hydrogen peroxide molecules into free radicals, which are very unstable.

Liquid hydrogen peroxide enters the sterilizer. The liquid is heated in the steamer to turn it into a gas. After this is done, the hydrogen peroxide gas is heated to an even higher temperature and at this stage it turns into plasma.

۱-۱-Product Name and Code (ISIC ۳)

According to the information obtained from the Ministry of Industry, Mining and Trade, the ISIC code of the Plasma autoclave for sterilization and disinfection, except for dentistry is ۳۳۱۱۵۱۲۸۸۶.

۱-۲-Customs Tariff Number

According to the Export and Import Regulations Book of ۲۰۲۲ and the Chamber of Commerce, Industries, Mines and Agriculture website, the customs tariff code of Plasma autoclave for sterilization and disinfection, except for dentistry is ۹۰۱۸۹۰۹۰.

۱-۳- IMPORT AND EXPORT CONDITIONS

Basic rights include customs duties, taxes, the right to register goods, various duties and other funds received from imported goods. The sum of these receipts and commercial profit, which is determined by the Cabinet of Ministers according to the relevant laws, is referred to as input rights. The entry fee for the products of this plan is ۴٪.

۱-۴- REVIEW AND PRESENTATION OF STANDARDS (NATIONAL OR INTERNATIONAL)

Some of the standards related to this plan are as follows:

Standard name	Standard Number	Description
National standard	۲۵۹۴	Sterilizer (autoclave) for health purposes with downward movement of steam
National standard	۴۵۸۳	Laboratory autoclaves - design features, construction, safety and performance
National standard	۴۵۸۴	Laboratory autoclaves - maintenance guide
National standard	۴۵۸۵	Laboratory autoclaves - installation regulations
National standard	۴۵۸۶	Laboratory autoclaves - performance test methods

National standard	۴۸۶۶	Laboratory autoclaves - manual for safe operation and use
International standard	ISO ۱۷۶۶۵-۱:۲۰۰۶	Sterilization of health care products — Moist heat — Part ۱: Requirements for the development, validation and routine control of a sterilization process for medical devices

۱-۵- REVIEWING AND PROVIDING NECESSARY INFORMATION ON DOMESTIC AND GLOBAL PRODUCTION PRICES AS WELL AS GLOBAL PRODUCT PRICES

The global price for autoclave plasma sterilization and disinfection product, except for dentistry, starts from about ۲۵ thousand dollars. In the country, the domestic models start from approximately one billion tomans.

۱-۶- EXPLAIN THE USES OF THE PRODUCT

In general, all non-infectious and infectious materials contaminated with biological agents, including the remains of inoculated culture medium samples, grown pathogens, human, animal and plant cells, materials contaminated with human or animal feces, human and animal blood products, etc. They can be autoclaved by this device.

Substances such as carcinogenic drugs, radioisotopes, toxic chemicals, volatile chemicals or any other dangerous substances that may evaporate and release due to heat cannot be autoclaved. In general, flammable, corrosive, toxic, or radioactive materials should not be autoclaved.

This design is used for sterilization and disinfection except dentistry.

۱-۷-EXAMINE ALTERNATIVE PRODUCTS AND ANALYZE THEIR EFFECTS ON PRODUCT CONSUMPTION

One of the alternatives to using the plasma autoclave system is the steam autoclave, but in fact, steam autoclaves cannot sterilize hospital equipment alone in the sterilization parts. Because these sterilizers perform sterilization with high temperature and high humidity. For this reason, despite high thermal conditions and high humidity, it may damage many accessories such as endoscopes, electronics, laparoscopes, and even accessories such as silicone, plastic, etc.

۱-۸-STRATEGIC IMPORTANCE OF GOODS IN IRAN AND COUNTRIES OF THE REGION

The medical equipment industry, including the production of autoclaves, plasma sterilization and disinfectants, except for dentistry, is one of the industries that has continued to grow and develop along with the growth of human societies. Based on the studies done, the first type of medical equipment with today's acceptable standards can be seen in the remains of Baluchistan in ۷۰۰۰

BC. In addition to this, in ancient Rome, there were also various types of medical equipment that were used in the treatment of many diseases. But in the meantime, we should not forget the great influence of Islamic culture and scholars in the development of this industry.

In Islam, medical science is given a lot of importance and after jurisprudence, it is considered one of the noblest sciences. In a hadith attributed to Prophet Akram (PBUH) regarding the importance of medical science, it is said that knowledge is of two types; Religious knowledge and eternal knowledge, which in other words are the same as medical science and religious science. It is clear that the development of medical tools and equipment is one of the important areas of medical science that has always been the focus of Islamic scholars and scholars.

Dr. Gustavo Labon writes in the book "Islam and Arab Civilization": The most famous Muslim surgeon is Abul Qasim Qortabi who died in ۱۱۰۷ AD. He is the one who invented many surgical instruments and drew their shape in his book." Dr. Zigrid Hunke also writes about the discoveries and works of the best Muslim surgeon, namely Abul Qasim Andalsi: "A surgeon is Lasi named Abul Qasem, born in ۱۰۱۳ AD, with a description Blood diseases, which he observed repeatedly in different families, helped the progress of medicine. With new medical methods and tools, he helped to advance the treatment of women's diseases (which was really lagging behind among the Greeks). Check out some of them The book of the genius of the East has been mentioned.

But it can be said that the new era of medical equipment began in the early ۱۹th century. In the first half of this century, the first modern medical phones (stethoscopes) and laryngoscopes (laryngoscopes) entered the market. The year ۱۸۹۵ was the year when the German scientist, Wilhelm Rontgen, introduced X-rays to the medical world to make a big change in medical science and treatment. A few years later, two Dutch scientists introduced the electrocardiograph to the medical community to keep their name and memory alive in the hearts of mankind. Today, with the growth of science and technology and the expansion of international markets, this industry continues to grow and develop every day.

In the year that has been named as the production leap year by the major leadership position, the path for the growth and development of this industry should be paved more than before. In his annual speech, he considered the growth of production to be effective in solving the problem of unemployment, increasing the value of the national currency and reducing inflation. In this manner, it is possible to produce an autoclave plasma sterilization and disinfectant with the exception of dentistry with the value of its own value, and can be attributed. In this manner, small and muddy -mounted stuffing, In this context, they have In America, there are about ۶,۵۰۰ companies working in this industry, which is about ۱۲ times the amount in Iran. On the other hand, close to ۴۵ percent of active companies in this industry are small and medium-sized businesses, which is a good indicator of the growth of the medical equipment manufacturing industry in developed countries. In addition, one of the most important effects of the boom in production in this sector is the increase in employment. According to statistics, about ۵۵۰ thousand people in

Europe and ۶۰۱ thousand people in America are employed in this industry, which is a sign of the importance of this sector in its development. However, despite the lack of new and official reports and based on the report published by the Chamber of Commerce, Industries and Mines of Iran in ۱۹۹۵, assuming an optimistic annual growth of ۵/۵. The percentage of employment in this sector in Iran, currently, about ۵۱ thousand people are employed in this industry, which has a share of less than two tenths of a percent in the total employment of the country, while this share is close to six tenths of a percent in America and in Europe. close to It is ۵ tenths of percent.

Activists and employees of this industry believe that by strengthening the effective factors in the growth of this value-creating industry, the contribution of this sector in the employment and economic development of the country should be increased. Based on the report of the reliable international institutions, many factors can be considered effective in the growth and development of this industry. But the three factors of the elderly population, the growth of technology and the expenses incurred in the field of health and health can be considered the most effective factors in the growth of this industry. Currently, based on the latest statistics of the World Bank in ۲۰۱۶, the share of health sector expenditures in Iran's gross domestic product is ۸،۱ percent, which is higher than the average health sector expenditures in Middle Eastern countries and the country The members of the European Union It is more Therefore, at present, there is a good capacity for the development of this sector in the country. On the other hand, based on the statistics of this institution, currently ۹ percent of the world's population and ۵ percent of Iran's population are in old age - ۶۵ years and above - which is important, the need to develop the medical equipment industry and increase It shows exports .

In order to increase the development of this industry, it is necessary to pave the way of production for the activists of this industry. Most of the leadership positions also consider improving the business environment and reforming the existing laws and procedures as one of the requirements for the prosperity of production and the realization of this year's slogan. The laws and regulations governing this industry have a great impact on the growth or stagnation of this sector. According to the latest research of the emergo institute, ۶۸ percent of the active companies in this industry in the world have named the change of the laws and regulations related to this industry as the biggest challenge in the coming year. In our country, like many countries in the world, the laws of this sector are regulated by the Food and Drug Organization. In these conditions, the standards, procedures and operating instructions for this sector should be regulated in such a way that while respecting the standards of developed countries and relative stability, it is flexible with target markets such as Asian countries. No, it should be East Asia.

Currently, based on the available evidence, it can be said that the growth rate of the medical equipment market in Iran is ۹،۱ percent, which is higher than the average rate in the world. In addition, the ۲۸۰ -year -old manner in the Iranians, the Iranians, will notice that they are in the day

of the day, the day -to -day, the long -standing. To the extent, for the sake of today, it will be possible.

۱-۹-MAJOR MANUFACTURING AND CONSUMER COUNTRIES

The total global market of autoclaves, including plasma, steam, etc., is estimated to be worth ۲,۰۹ billion US dollars in ۲۰۲۲ and is expected to reach ۳,۱۷ billion US dollars by ۲۰۳۰. The global market value of plasma autoclaves in ۲۰۲۱ was equal to ۵۹۰ million US dollars. The global market is projected to grow at a CAGR of ۶,۴٪ from ۲۰۲۲ to ۲۰۳۱. The global market for plasma disinfectants is expected to reach more than US$ ۱۱۰۱ million. North America is the largest market for plasma autoclaves, but Asia has the highest annual growth.



The main plasma autoclave producing countries are Australia, Brazil, China, France, Germany, India, Indonesia, Japan, Russia, South Korea, United Kingdom, Canada and the United States of America.

Every year, avoidable healthcare infections threaten hundreds of millions of people worldwide. Infection prevention in healthcare relies heavily on sterilization and disinfection of medical instruments and devices. In many hospital settings, improper sterilization of surgical instruments and re-usable equipment continues to occur, leading to major health problems.

Sterilization and decontamination operations are complex, require complex infrastructure and equipment, and require multiple steps to be completed correctly, starting with collection, processing, storage, and distribution of the device throughout the facility. Following the current risks of widespread epidemics, increasing public awareness of antimicrobial resistance, and increasing chronic complications, the main factors are increasing the demand for safe and sterile procedures in hospitals and other medical environments. In addition, the increase in research activities in the biopharmaceutical industry also leads to an increase in the demand for autoclaves, due to the increase in the prevalence of diseases and the increasing need for treatment under professional supervision, the amount of hospitalization over the years has increased significantly. Rising According to the American Hospital Association, the total number of admissions observed in all US hospitals was ۳۳,۳۵۶,۸۵۳, of which ۳۱,۳۹۳,۳۱۸ admissions were observed in local hospitals for ۲۰۲۱.

The list of some manufacturing companies in the world is:

Antonio Matachana, S. A.

ASP Global Manufacturing GmbH (Fortive Corporation)
Cisa Production S.r.l. Unipersonale
Getinge AB
Johnson & Johnson Services, Inc. (Sterilmed Medical)
HUMAN MEDITEK CO., LTD.

Steelco S.p.A. (MIELE Group)
STERIS plc
Tuttnauer (Fortissimo Capital)
VitroSteril (RBChimica)

۲- SUPPLY AND DEMAND SITUATION IN IRAN AND COUNTRIES IN THE REGION

۲-۱-AN EXAMINATION OF EXPLOITATION CAPACITY AND PRODUCTION PROCESS FROM THE BEGINNING OF THE THIRD DEVELPOMENT PLAN TO NOW

The following figure and table show the specifications and capacity of units active in the field of Plasma autoclave for sterilization and disinfection, except for dentistry based on the statistics of the Ministry of Industry, Mines and Trade:

Unit Name	State	Capacity	License Date	Employment permit	Unit of Measurement
Shafa Sanat Salamat	Isfahan	۱۰	۰۹/۱۲/۱۳۹۶	۳	device

Shafa Sanat Salamat	Isfahan	۱۰	۲۰/۰۹/۱۴۰۰	۵	device
Motehr Darou Shahrekord	Chaharmahal and Bakhtiari	۳۰۰	۱۰/۰۱/۱۳۹۹	۲۶	device
Daria Danesh Barsava	Khorasan Razavi	۲۰	۱۸/۰۶/۱۴۰۰	۱۳	device
Pars Sinohe Pad	Tehran	۵۰	۱۴/۰۷/۱۳۹۹	۲۹	device

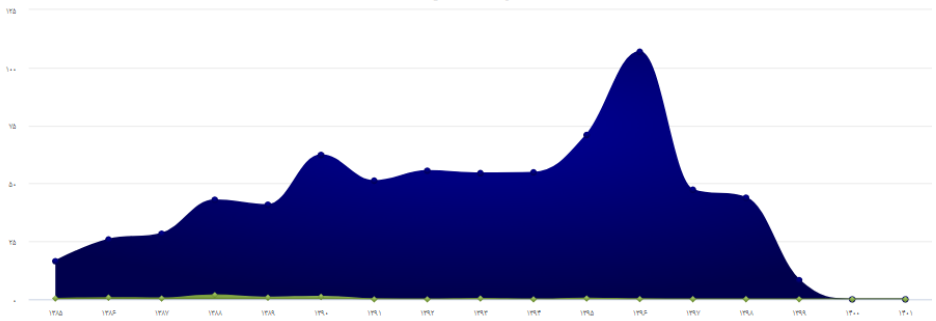
Source: Ministry of Industry, Mining and Commerce - Statistics and Information Center

۲-۲-CHECK THE STATUS OF NEW PROJECTS AND ONGOING DEVELOPMENT PLANS

By referring to the industrial database of the Ministry of Industry, Mines and Trade, the status and specifications of new projects creating Plasma autoclave for sterilization and disinfection, except for dentistry have been collected and entered in the following table:

Unit Name	State	Capacity	License Date	Improvement	Employment permit	Authorized capital million) (rials	Unit of Measurement
Aria Proshat Raika	Isfahan	۱۰۰۰	۱۴/۱۲/۱۴۰۰	۰	۶۵	۳۲۴۷۵۴	device
Pishgan Teb Aein	East Azarbaijan	۳۰۰۰	۰۳/۱۱/۱۴۰۰	۰	۱۵	۵۳۰۰۰	device
Energy Tarik Electeromeghnatis Pars	Khorasan Razavi	۱۰۰	۱۰/۰۳/۱۴۰۰	۰	۱۲	۳۲۱۷۵	device
Barsava	Khorasan Razavi	۲۰۰۰	۲۴/۰۳/۱۴۰۰	۰	۱۷	۱۳۳۰۰۰	device
Ideh Pardaz Behsan Asr Aria	Qazvin	۱۲۰۰۰۰	۲۳/۱۰/۱۳۹۹	۰	۲۲	۲۰۳۵۰۰	device

۲-۳-REVIEWING THE PROCESS OF PRODUCT IMPORTATION



According to the Chamber of Commerce, Industries, Mines and Agriculture, the import statistics for the last five years are as follows:

Year	Weight (kg)	Rial value	Dollar value
۲۰۱۸	۵۳۳.۴۱۱	۱.۹۷۸.۹۸۸.۳۲۴.۳۵۵	۴۷.۲۹۸.۵۶۰
۲۰۱۹	۴۱۸.۵۹۲	۵.۴۸۴.۸۹۶.۱۲۵.۰۰۰	۴۳.۸۶۵.۰۰۱
۲۰۲۰	۸۱.۸۴۰	۳۴۸.۱۶۲.۵۴۸.۸۰۷	۸.۲۹۰.۰۹۷
۲۰۲۱	۰	۰	۰
۲۰۲۲	۱۵	۲۵۲.۸۹۸.۰۰۰	۱.۰۰۰

Source: Tehran Chamber of Commerce, Industries, Mines and Agriculture http://www.tccim.ir

۲-۴-MONTORING CONSUMPTION TRENDS

According to the latest available statistics, the average import figure in recent years was ۵۰ million dollars (about ۱۰۰۰ units), but in ۱۴۰۰ and ۱۴۰۱, due to the country's sanctions, the amount of import was very small, and the amount of export was also very small, ۳۹۰ units. We have had production. The consumption of this product has been increasing in recent years due to the industrial development of the country and it is expected to reach ۲۵۰۰ units per year in the near future.

۲-۵-INVESTIGATE THE EXPORT PROCESS OF THE PRODUCT AND THE POSSIBILITY OF ITS DEVELOPMENT

According to the Chamber of Commerce, Industries, Mines and Agriculture, the export statistics for the last five years are as follows:

Year	Weight (kg)	Rial value	Dollar value
۲۰۱۸	۴.۱۶۴	۴.۰۷۹.۳۰۷.۱۶۷	۶۰.۴۳۱
۲۰۱۹	۹.۷۷۴	۵.۳۹۸.۰۷۲.۰۱۳	۴۳.۱۸۵
۲۰۲۰	۱.۰۰۰	۳.۱۴۳.۲۲۰.۰۰۰	۲۰.۰۰۰
۲۰۲۱	۰	۰	۰
۲۰۲۲	۵۰	۳۹.۶۲۲.۲۰۰	۱۵۰

Source: Tehran Chamber of Commerce, Industries, Mines and Agriculture http://www.tccim.ir

۲-۶- PRODUCT REQUIREMENT CHECK WITH EXPORT PRIORITY

Medical equipment can be mentioned as the main arms of the health industry, and due to the direct relationship between the products of this industry and the health of people and the increasing need of countries, the products of this industry are considered strategic and vital products in all

countries, so that any challenge in This field creates serious social and security problems for governments, which is why a lot of investment is always made on it. According to the long-term goals of the country, all industries should move towards self-sufficiency and reducing the need for imports, and achieving this goal depends on the increase of domestic production and the entry of these products into the world markets. Successfully entering the global markets and gaining competitive advantages requires a careful and forward-looking review.

The subject of medical equipment, including the production of plasma autoclave, sterilization and disinfectant, is a very important topic in the health system of a society, because without such a tool, practically a major part of the activities of health professionals will be stopped. For this reason, the field of medical supplies, devices and equipment is considered as a strategic field in the health and government system. According to the statistics of the managers of Iran's General Directorate of Medical Equipment in ۲۰۱۷, the volume of the domestic market in this area is estimated at about two and a half billion dollars, of which ۳۰٪ of this market is in the hands of nearly ۱۰۰۰ domestic producers and the remaining ۷۰٪ is the share of importing medical equipment into Iran. The country has been

Although in recent years, the number of medical devices and supplies produced in our country has reached more than ۲۸۰,۰۰۰ and we have exported to many countries of the world, and progress has been made in these fields, but there is still a lot of capacity to handle There is a domestic market as well as an international market. On the other hand, the challenge of sanctions has led to the fact that part of the needs that were previously met through imports must now be met with the efforts of domestic experts. According to all these evidences, it can be seen that there are many attractive opportunities to enter the field of medical equipment and start up start-up businesses in this field.

We hope that with the efforts of the actors in this field, large steps can be taken in the direction of the prosperity of this market in the country as well as the development of exports.

Today, in the world, the production of autoclave plasma sterilization and disinfection, except for dentistry, has attracted the attention of many governments and investors due to its strategic position and great added value. Iran's effective presence in this industry has brought many achievements to the country, among its strategic features, the following can be mentioned:

- Saving currency
- Insurance savings
- Employment
- Maintaining the majority of the elites of the medical equipment industry in the country
- Localization of the knowledge of plasma autoclave production, sterilization and disinfection, except for dentistry
- Reducing the price of similar foreign products
- Transfer of knowledge and technology to other countries

۳-OVERVIEW OF TECHNOLOGY AND METHODS OF PRODUCTION AND SUPPLY IN THE COUNTRY AND COMPARISON WITH OTHER COUNTRIES

Among the important components of the autoclave are the following parts:

sterilization chamber

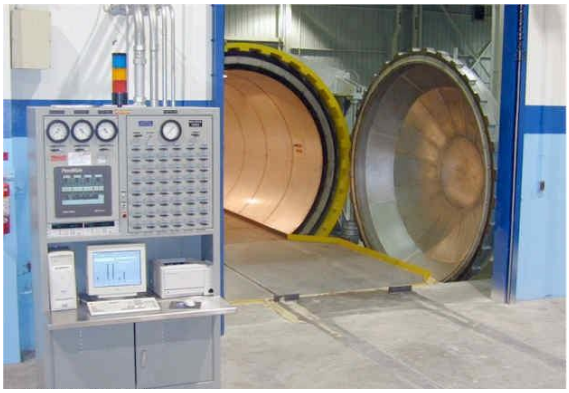
Autoclave door
safety valve
Barometer
The outlet pipe from inside the sterilization room
Temperature elements
Steam outlet
and a digital board used for programming time and temperature.
In the following, I will provide brief explanations regarding the above mentioned items:
۱. Safety valve: It is one of the most important parts of the autoclave that prevents the increase of steam pressure beyond the permissible limit.
۲. Pressure gauge: It is available in two mechanical and digital models, but according to the requirements of autoclave production inside the country, you must use the mechanical type.
۳. Sterilization room (chamber): the location of the samples for the sterilization process, which is one of the main components of an autoclave, which should be given the most attention in its production and design in order to reduce the error to the lowest possible level. One of the most important things in autoclave production is the chamber diameter.
۴. Temperature elements: water is heated by these elements and turns from liquid phase to gas, therefore, elements that have the highest use and longevity should be used, because in case of failure of the element of the autoclave device The activity cycle is removed, and also if the sterilization process is half-burned at a certain time and temperature, the final product is not accepted in terms of its sterility.
The production steps are as follows:
Designing
An autoclave requires a relatively significant investment and costs a lot to operate. In this section, the design considerations of the autoclave will be reviewed. Autoclaves are used in various industries. Medical devices and waste sterilization, automotive and architectural glass lamination, rubber and wood processing are just a few of the industries that use autoclaves.
Pressure tank
Industrial pressure vessels must be built according to ASME code. They should also be inspected according to various national standards. This information, as well as the operating pressure and temperature and the original manufacturer, must be listed on a plate permanently affixed to the autoclave. Corrosion, stress and fatigue can weaken it over time. Equipment in use should always be inspected for condition before being placed in use. Door hinges and locking mechanisms can become worn and misaligned.
Tank pressurization
Depending on the customer's needs, autoclaves can be pressurized with air or nitrogen. Nitrogen is commonly used to aid in heat transfer and reduce fire potential.

The heat transfer

Energy costs are increasing and with them the cost of heating and cooling the autoclave. This part is one of the important things in autoclave construction. For heating, the customer must choose between electricity and gas. The size of the fan and the design of the heat exchanger have a large effect on the cost of heating.

Control

Pressure control valves are much smoother in operation, even for simple autoclaves, and pressure system components last much longer. More complex parts with stronger quality require more complex controls. The autoclave itself must be run by a high quality PLC.



made

welding inspection

with the preparation of the autoclave construction plans, the logistics unit provides the necessary materials, equipment and parts for the construction workshop. because the autoclave is made of steel and after the shaping and cutting processes, the parts must be connected by welding. of course, the future control of parts before welding is also one of the topics of welding inspection. the following are required for welding efficiency:

according to asme, if ۱۰۰٪ of the weld is radiographed. the welding efficiency is s=۱.

if ۱۰٪ of boils are radiographed: s=۰,۸۵

if not radiographed: s = ۰,۶۵

in these tanks (autoclaves), we will radiograph ۱۰٪ of longitudinal and transverse welds and ۱۰۰٪ of t-joints. therefore, our welding efficiency will be equal to s=۰,۸۵ with a sufficient reliability factor.

after the weld inspection, the customer will receive the inspection certificate (weld test) from the manufacturer.

hydrostatic test

after the initial assembly, the next step in making an autoclave is to perform a hydrostatic test. hydrostatic testing is a method in which pressure vessels such as gas cylinders, boilers, etc. can be

tested for strength and leakage. this test involves filling a container or pipe system with a liquid, usually water. may be painted to aid visual leak detection and pressurize vessel to specified test pressure. the pressure resistance can be tested by closing the supply valve and observing the pressure drop. if the water contains a colored substance, the location of the leak can be easily identified. strength is usually tested by measuring the permanent deformation of the container. hydrostatic testing is the most common method used to test pipes and pressure vessels. after this stage of autoclave construction, which is done in the presence of the inspector, a hydrostatic test certificate is given to the customer.

installation

in the final stages of autoclave construction in the manufacturer's factory (parallel to the initial test), instructions for the installation location of the autoclave are sent to the buyer. in this instruction, the requirements needed to install the autoclave in the place desired by the customer are described. after the initial test is approved, the autoclave and its accessories (pressure supply systems, control panel, cooling system, etc.) are sent to the buyer's place. the final test is done after assembling and fully installing the equipment in the presence of the manufacturer's and buyer's representatives. with the approval of the parties, the equipment is delivered. at this stage, the manufacturer teaches the principles of using the equipment to the experts introduced by the buyer. it should be noted that the after-sales service sheet and autoclave maintenance instructions are submitted to the buyer after the training.

۴-DETERMINING THE STRENGTHS AND WEAKNESSES OF CONVENTIONAL TECHNOLOGIES IN THE PRODUCT MANUFACTURING PROCESS

Autoclave is one of the most essential equipment of any medical center. Autoclave maintenance is very important in two ways. First, if it fails, all the work of the office will be suspended, and second, because this device has a high price, and naturally, it is better to maintain it properly as much as we can.

Using an autoclave

The use of an autoclave is generally as follows:

• Turn on the autoclave.

• Open the autoclave door. In autoclaves with a large volume, this process is done electromechanically, and in medium and small autoclaves, it is usually done manually.

• Now we put the pre-prepared tools and equipment (according to the protocols, the tools must be cleaned and disinfected first) into the autoclave baskets and floors and close the autoclave door.

• We select the sterilization cycle according to the instrument that we put in the autoclave. Normally, we press the button corresponding to the required cycle, which automatically starts the programmed cycle. From this moment on, the sterilization process begins.

• After the end of the cycle, we open the autoclave door and remove the sterilized items from it and close the door to preserve the heat inside.
Note that autoclaves may differ in working details depending on the manufacturer, but their operation is generally the same. But it is better to read the catalog and manual of your device carefully before starting.
In general, this method of production is one of the most common methods due to its low cost, controllability, and the ability to measure the sterilization process.
Autoclave periodic checklist
The autoclave device is one of the devices that needs to be handled in different daily, weekly, monthly and yearly cycles.
Daily inspections of the autoclave
Make sure cold water, compressed air and steam valves are open before starting work each day.
Activate the switch that heats the outer guard of the autoclave. After activating this control, steam can enter the outer shield of the sterilization chamber. When steam enters the sterilization chamber, the heating process begins. To prevent heat loss in the autoclave, keep closed until loading for sterilization.
The pressure in the steam supply pipe of the device should be at least ۵،۲ bar. Make sure to do this according to the device's instructions.
Pressure gauges and thermometers of the device must be tested before starting work.
You must ensure that all autoclave systems are leak free.
Every day, clean the front part of the autoclave where the controls and knobs are located with a damp cloth.
Note: Some of these tasks, such as testing the autoclave's thermometer and pressure gauge, must be done not only daily but also before the start of each sterilization cycle.
Laboratory autoclave maintenance:
With a few very simple tasks, the useful life of autoclave devices can be significantly increased.
• Daily
• According to the autoclave model, remove the lower tray or the bottom of the autoclave and clean it.
• Be careful so that the elements of the device do not have deposits.
Be sure to check the water level of the device before starting the process.
• Make sure the correct operation of the temperature display or, if you have a printer, its operation.
• Weekly
• Clean the inlet and outlet of water and steam.
• Check the operation of the device's safety valve, which is sensitive to pressure higher than ۲،۵ bar.
• Check the washers of the device so that they are not damaged or corroded.
• Clean the inner and outer surfaces of the autoclave.
• monthly
• Open the washers of the device and clean it with a sieve so that its surface is smooth and then put it in its place.

• Check the seams and valves of the device and if you have any problems, be sure to contact the manufacturer.
• Clean the mass accumulated on the temperature elements of the device.
• yearly
• Do the general service of the device by experts in this field.

If the maintenance and repair process is done well, this method has various advantages such as high quality, low cost, high speed, etc.

۵- INVESTIGATE AND DETERMINE THE MINIMUM ECONOMIC CAPACITY, INCLUDING ESTIMATING THE VOLUME OF FIXED INVESTMENT IN RIAL AND FOREIGN CURRENCY

EXPLANATION: EURO EXCHANGE RATE BASED ON THE NATIONAL EXCHANGE - August ۲۰۲۴ - AMOUNT: ۵۴۹,۰۰۰ RIALS (± ۱٪)

Project Investment Schedule:

Description	Cost (Million Rials)	Cost (Euro)
Land	۱۸۷۵۰	۳۴,۱۵۳
Landscaping	۱۰۶۷۵	۱۹,۴۴۴
Construction	۱۱۹۲۰۰	۲۱۷,۱۲۲
Production line machinery and equipment	۱۵۰۰۰۰	۲۷۳,۲۲۴
laboratory equipment	۵۰۰۰	۹,۱۰۷
Utilities	۱۳۳۰۰	۲۴,۲۲۶
transportation	۲۶۶۰۰	۴۸,۴۵۲
Office equipment	۴۰۰۰	۷,۲۸۶
Miscellaneous and unforeseen	۳۴۷۵۳	۶۳,۳۰۲
Total	۳۸۲۲۷۸	۶۹۶,۳۱۷

The ground specification of the project implementation is as follows:

Description	Area (m ٢)	Unit Price (Rials)	Total (Million Rials)	Total (Euro)
Land	٢٥٠٠	٧/٥٠٠/٠٠٠	١٨٧٥٠	٣۴,١۵٣

The cost of landscaping is as follows:

Description	Area	Unit Price (Rials)	Total (Million Rials)	Total (Euro)
Digging and leveling	٢٥٠٠	٣٠٠٠٠٠٠	٧,٥٠٠	١٣,۶۶١
Fencing	٢٥٠	۴٥٠٠٠٠٠	١,١٢٥	٢,٠۴٩
Asphalt and pavement paving	٢٥٠	۴٠٠٠٠٠٠	١,٠٠٠	١,٨٢١
Green space and lighting	٣٠٠	٣٥٠٠٠٠٠	١,٠٥٠	١,٩١٣
Total			١٠,۶٧٥	١٩,۴۴۴

Building Information:

Description	Building type	Area	Unit Price (Rials)	Total (Million Rials)	Total (Euro)
Production	Niches	٧٠٠	٨٠٠٠٠٠٠٠	٥۶,٠٠٠	١٠٢,٠٠۴
Raw materials and supplies	Niches	٣٥٠	٨٠٠٠٠٠٠٠	٢٨,٠٠٠	٥١,٠٠٢
Office building and services	Official	١٧٠	١۴٠٠٠٠٠٠٠	٢٣,٨٠٠	۴٣,٣٥٢
Utilities	Niches	٧٠	١٢٠٠٠٠٠٠٠	٨,۴٠٠	١٥,٣٠١
Guard		٣٠	١٠٠٠٠٠٠٠٠	٣,٠٠٠	٥,۴۶۴
Total		١٣٢٠		١١٩,٢٠٠	٢١٧,١٢٢

Utilities:

Description	Cost (Million Rials)	Cost (Euro)
Power Supply	۴۵۰۰	۸,۱۹۷
Water and Wastewater	۸۰۰	۱,۴۵۷
Fuel	۱۲۰۰	۲,۱۸۶
Heating and cooling equipment	۴۵۰۰	۸,۱۹۷
Protective equipment and security system	۶۰۰	۱,۰۹۳
Compressed air supply	۱۷۰۰	۳,۰۹۷
Total	۱۳۳۰۰	۲۴,۲۲۶

Transportation:

Description	Technical Specifications	Cost (Million Rials)	Cost (Euro)
Forklifts	۳ ton	۱۵۰۰۰	۲۷,۳۲۲
Pickup	Nissan	۶۰۰۰	۱۰,۹۲۹
Riding	Samand	۵۶۰۰	۱۰,۲۰۰
Total		۲۶۶۰۰	۴۸,۴۵۲

Equipment and Machinery:

Production machinery is considered the most important part of industrial investments. The machines of each production complex determine the quality and variety of products, production technology, raw materials and many methods and production costs and even the final price of the product. The selection of machines is a serious and influential issue in the macroeconomic indicators of the project. The cost of production line machinery and equipment is estimated based on inquiries made from important manufacturing companies or reputable agencies. Also, the side costs of providing machines, including transportation costs, installation and commissioning, customs duties, etc. are also calculated. The prices of all companies are almost in the same range and finally with a difference of ۱۰٪. The price of machines for this process is shown in the following table:

Number	Name	Required amou	cost (million rials)	Rial sum (million rials)	Currency (Euro)	supply (domestic / foreign)
۱	Design process machines	۱	۳۰۰۰۰	۳۰۰۰۰	۵۴,۶۴۵	Local-Foreign
۲	Assembly process machinery	۱	۶۰۰۰۰	۶۰۰۰۰	۱۰۹,۲۹۰	

۳	Testing and inspection process machines	۱	۴۰۰۰۰	۴۰۰۰۰	۷۲,۸۶۰	
۴	other	۱	۲۰۰۰۰	۲۰۰۰۰	۳۶,۴۳۰	
Total (million rials)			۱۵۰۰۰۰		۲۷۳,۲۲۴	

laboratory equipment:

Number	Name	Currency (Euro)	Rial Cost (Million Rials)	Rial sum million) (rials
۱	laboratory equipment	۹,۱۰۷	۵۰۰۰	۵۰۰۰
۲				
Total		۵۰۰۰		

Office equipment:

Number	Name	The required amount	Rial cost per unit	Rial Cost (Million Rials	Currency (Euro)
۱	All kinds of tables and chairs	۱۵	۱۵۰	۲۲۵۰	۴,۰۹۸
۲	All kinds of computers, printers and scanners	۴	۱۵۰	۶۰۰	۱,۰۹۳
۳	Phone and fax	۵	۵۰	۲۵۰	۴۵۵
۴	Fingerprint attendance device	۱	۱۲۰	۱۲۰	۲۱۹
۵	Wireless network and internet equipment	۱	۷۰	۷۰	۱۲۸
۶	Office stationery	۳	۲۰	۶۰	۱۰۹
۷	Central control system	۱	۲۵۰	۲۵۰	۴۵۵
۸	other	-	۴۰۰	۴۰۰	۷۲۹
Total (Million Rials)		۴۰۰۰			۷,۲۸۶

Working Capital Costs:

Name	Description	Cost (Million Rials)	Cost (Euro)

Raw materials and packaging	۶۰ Days	۳۷۵۰۰۰	۶۸۳,۰۶۰
salary	۳۰ Days	۳۱۷۸	۵,۷۸۹
Energy costs	۳۰ Days	۶۸۳	۱,۲۴۴
revolving fund	۱۵ Days	۱۹۳۱	۳,۵۱۷
Total		۳۸۰۷۹۲	۶۹۳,۶۱۰

Production costs:

Description	Cost (Million Rials)	Cost (Euro)
Cost of raw materials and packaging	۱۵۰۰۰۰۰	۲,۷۳۲,۲۴۰
Salary Cost	۳۸۱۳۰	۶۹,۴۵۴
Energy costs	۸۱۹۹	۱۴,۹۳۴
Cost of maintenance	۲۵۲۱۹	۴۵,۹۳۶
Unforeseen cost of production	۳۸۶۳	۷,۰۳۶
Administrative and sales costs	۱۴۸۴	۲,۷۰۳
Costs of financial facilities	۱۴۹۹	۲,۷۳۰
Insurance costs	۳۸۲۳	۶,۹۶۴
Depreciation cost	۵۰۰	۹۱۱
Depreciation expense before operation	۲۵۲۲	۴,۵۹۴
Total	۱۵۸۵۲۳۹	۲,۸۸۷,۵۰۳

۶-THE AMOUNT OF RAW MATERIAL NEEDED ANNUALLY AND WHERE IT IS SUPPLIED

Number	Description	Consumption per unit product	Unit of consumption	Amount of Consumption Required for Total Capacity	Currency prices (Euro)	Million Rial equivalent (per unit)	Place of supply	Cost (Million Rials)

۱	sterilization chamber	۱	Unit	۱۰۰	۱۱,۸۴۰	۶۵۰۰	Internal External	۶۵۰۰۰۰
۲	Autoclave door	۱	Unit	۱۰۰	۱,۰۹۳	۶۰۰	Foreign	۶۰۰۰۰
۳	safety valve	۱	Unit	۱۰۰	۶۳۸	۳۵۰	Internal External	۳۵۰۰۰
۴	Barometer	۱	Unit	۱۰۰	۸۲۰	۴۵۰	Foreign	۴۵۰۰۰
۵	The outlet pipe from inside the sterilization room	۱	Unit	۱۰۰	۵۴۶	۳۰۰	Internal	۳۰۰۰۰
۶	Temperature elements	۱	Unit	۱۰۰	۷۲۹	۴۰۰	Internal External	۴۰۰۰۰
۷	Steam outlet	۱	Unit	۱۰۰	۷۲۹	۴۰۰	Internal	۴۰۰۰۰
۸	A digital board	۱	Unit	۱۰۰	۱,۸۲۱	۱۰۰۰	Foreign	۱۰۰۰۰۰
۹	other	۱	Unit	۱۰۰	۹,۱۰۷	۵۰۰۰	Internal External	۵۰۰۰۰۰
Total (Million Rials)								۱۵۰۰۰۰۰
Total (Euro)								۲,۷۳۲,۲۴۰

۷-RISK ANALYSIS OF PROJECT IMPLEMENTATION

Studies show that in the next year the market will be in short supply and there will be a greater need for imports. So it can be said that the implementation of new projects in this field is not very risky because in addition to the domestic market there is easily good potential to export this product to neighboring countries and if for any reason the applicant intends to undertake this plan, it is necessary to act with caution and superiority over other industrial units and by examining further the weaknesses and strengths as internal factors as well as opportunities and opportunities. Threats as external factors minimize project risk.

۸- HUMAN RESOURCES AND NUMBER OF JOBS

One important aspect of any industrial unit is its job creation, which is thoroughly examined in the market segment. Due to the nature of the industry and the need for ۲ shifts to work, it has been attempted to select the number of personnel in a manner that addresses the production needs of the two shifts. It has also been tried to use related specialties in different parts of production.
To calculate the amount of annual salaries and benefits, three shifts and other benefits have been added to the annual salary. For this purpose, the annual salary is set at ۱۶،۴ months per year
.

Description	Gender	Number	Monthly salary per person (Million Rials)	Monthly salary (Million Rials)	Annual salaries (Million rials)	Annual salaries (Euro)
Managing Director	Man	۱	۳۰۰	۳۰۰	۴۹۲۰	۸,۹۶۲
financial manager	Man	۱	۱۷۰	۱۷۰	۲۷۸۸	۵,۰۷۸
Marketing Manager	Man	۱	۱۷۰	۱۷۰	۲۷۸۸	۵,۰۷۸
Financial, sales and administrative personnel	Female	۱	۱۳۰	۱۳۰	۲۱۳۲	۳,۸۸۳
warehouse keeper	Man	۲	۱۲۰	۲۴۰	۳۹۳۶	۷,۱۶۹
Line Administrator	Man	۱	۱۲۰	۱۲۰	۱۹۶۸	۳,۵۸۵
skilled worker	Man	۲	۱۰۰	۲۰۰	۳۲۸۰	۵,۹۷۴
Semi-skilled worker	Man	۲	۹۰	۱۸۰	۲۹۵۲	۵,۳۷۷
worker	Man	۴	۸۰	۳۲۰	۵۲۴۸	۹,۵۵۹
Service	Female	۱	۸۰	۸۰	۱۳۱۲	۲,۳۹۰
Guard	Man	۲	۸۵	۱۷۰	۲۷۸۸	۵,۰۷۸
Driver	Man	۲	۸۵	۱۷۰	۲۷۸۸	۵,۰۷۸
Secretary	Female	۱	۷۵	۷۵	۱۲۳۰	۲,۲۴۰
Total		۲۱			۳۸۱۳۰	۶۹,۴۵۴

۹- CHECK AND DETERMINE THE AMOUNT OF WATER, ELECTRICITY, FUEL AND ...

Description	Unit	annual consumption	Cost per unit in Rials	Total Cost (Million Rials)	Total Cost (Euro)
Power Consumption	KWh	۹۰۰/۰۰۰	۹۳۹	۸۴۵	۱,۵۳۹
Water Consumption	Cubic meters	۷۰/۰۰۰	۳۳۶۲۲	۲۳۵۴	۴,۲۸۸
Gas	Cubic meters	۱/۰۰۰/۰۰۰	۵۰۰۰	۵۰۰۰	۹,۱۰۷

Total	۸۱۹۹	۱۴,۹۳۴

۱۰- CONDITIONS OF ECONOMIC AND COMMERCIAL SUPPORT

۱۰-۱- CUSTOMS TARIFF SUPPORT (PRODUCTS AND MACHINES) WITH GLOBAL TARIFFS

The customs tariff support includes two parts of the import tariff for machinery and materials required by the export customs rights plan for the products of the production unit, which should be selected and applied for the growth of the industry. The import duty of foreign machines required by the project is about ۱۰٪, like most industrial machines, which is a suitable tariff and does not impose a high cost on investors. On the other hand, in recent years, the government has provided incentives for products that have the ability to compete in international markets and can be exported abroad, and gives export awards to these units, this has caused the volume of non-oil exports to increase. The country has enjoyed good growth in recent years despite the problems and obstacles. Therefore, in case of production of autoclave plasma sterilization and disinfectant with quality and reasonable price, government incentives can be used.

۱۰-۲- FINANCIAL SUPPORT (EXISTING UNITS AND PLANS) OF BANKS - INVESTOR COMPANIES

Financial support for production units includes the granting of bank facilities and how to repay them, as well as tax exemptions, which, if appropriate, facilitate the implementation of the plan and provide conditions for the investment of entrepreneurial people. Some of these conditions are discussed below.

- One of the important banking facilities for production units is the payment of bank loans up to ۷۰٪ of fixed investment by the country's state banks. This amount can be increased for deprived areas.
- The interest rate of riyal facilities in the industrial sector is ۱۲٪, and for some cooperative companies and units built in deprived areas, a part of the facility interest is paid to banks by the government as a subsidy.

- The repayment period of long-term bank facilities is up to ۸ years depending on the nature of the production plan, the type of technology and the possibility of exporting the product, and it is also possible to use a one- to two-year breathing period for repayment of installments.
- Another important banking facility is short-term bank loans (۶ to ۱۲ months) to be used as working capital needed to carry out production processes, which the banking network provides up to ۷۰٪ of. Obtaining short-term facilities up to this amount depends on winning the trust of the operating banks and having a favorable record in repaying the previously received facilities.
- In addition to the bank facilities that exist for the construction of new production units, to encourage investors and guide them to build factories, tax exemptions have been considered as follows:
- Tax exemption for up to ۱۰ years for project implementation in deprived areas
- Tax exemptions for up to ۴ years for project implementation in industrial towns
- The tax for normal areas is defined as ۲۵٪ of gross profit.

۱۱-ANALYZING AND PRESENTING FINAL CONCLUSIONS AND PROPOSALS FOR THE CONSTRUCTION OF NEW UNITS

- According to the details of the studies, it can be concluded that the creation of new units for the production of this product is justified, the causes of which can be stated as follows:
- - The market situation in the future is evaluated as a lack of supply.
- - Every year, a part of the country's needs is met through imports.
- - In the past years, exports have enjoyed a good increasing trend, and therefore it is expected that due to the existence of a relative advantage in our country compared to some countries in the region, the amount of exports can continue to increase in the coming years.
- The plan is to start operating at ۶۰ percent capacity in the first year and increase below capacity in the following years, respectively.

Year	First Year	Second Year	third year	forth year	Fifth year
Capacity(%)	۶۰ %	۷۰ %	۸۰ %	۹۰ %	۱۰۰ %
Production capacity (ton)	۶۰	۷۰	۸۰	۹۰	۱۰۰

prime cost	۷۶۳۱ million rials/Per Unit –۱۳۹۰۰ Euro

Selling prices of products	۱۰۰۰۰ million rials/Per Unit – ۱۸۲۱۵ Euro
Total Sales (Million Rials)	۱,۰۰۰,۰۰۰ million rials-۱,۸۲۱,۴۹۴ euro
Percentage of sales at the point head to head	۷۶
Profit (Million Rials)	۲۳۶,۹۰۰ million rials - ۴۳۱,۵۱۲ euro
Gross Value Added (Million Rials)	۲۳۶,۹۳۰ million rials - ۴۳۱,۵۶۶ euro
Net Value Added (Million Rials)	۲۱۱,۷۱۱ million rials - ۳۸۵,۶۳۰ euro
Ratio of gross value added to total sales	۰/۲۴
Ratio of net added value to total sales	۰/۲۱
The ratio of gross value added to investment	۰/۳۱
Return of capital	۳,۵