

# FEASIBILITY STUDY DESIGN

**The feasibility study** is the study of the economic profitability, analysis and calculation of the economic indicators of the investment Project under development.

**The goal of the Project** can be either development of a technical object or construction or reconstruction of an existing building.

**The main task** at preparation of the feasibility study is to assess the cost of the investment Project and its results, analysis of the Project payback period.

## REQUIREMENTS TO FEASIBILITY STUDY

The following sequence of parts/chapters/Sections shall be followed when drafting a feasibility study:

1. General information and terms.
  - 1.2 Information about the Project operator.
  - 1.3 Other Project participants.
  - 1.4 Cost, structure and sources for Project financing.
2. Commercial Section.
  - 2.1 Products market research.
  - 2.2 Marketing Strategy.
  - 2.3 Marketing activities related to the sale of products (services).
  - 2.4 Products (services) sales program.
  - 2.5 Market research of stock, materials and components.
  - 2.6 Contractual elaboration of the Project.
3. Technical Section and Project procurement.
  - 3.1. Substantiation for the selection of the Project location.
    - 3.1.1. Location of the Project.
    - 3.1.2. Production site.
    - 3.1.3. Infrastructure development.
  - 3.2. Description of technology.
    - 3.2.1. Analysis of the existing technologies.
    - 3.2.2. Selected technologies.
  - 3.3. Description of the equipment.
    - 3.3.1. Selection of equipment.
    - 3.3.2. Selected equipment.
  - 3.4. Quality system applied at the enterprise and patent clearance of the Project
  - 3.5. Construction of production facilities.
    - 3.5.1. Available production and auxiliary facilities, engineering communications.
    - 3.5.2. Construction of new facilities.
  - 3.6. Technical staff of the enterprise.
  - 3.7. Project procurement list.
  - 3.8. Procurement methods.
  - 3.9. Selection of suppliers for the Project.
  - 3.10. Suppliers information.
  - 3.11. Concluded/prepared agreements.
  - 3.12. Content in Project procurement.
  - 3.13. Borrower's units engaged in procurement.
  - 3.14. Procurement schedule.
4. Ecological Section.
  - 4.1 The impact of the Project on the state of the environment and the action plan for harmful effects reduction.
  - 4.2 Compliance of the Project technology with the international standards and regulations on environmental impact.
5. Institutional Section.
  - 5.1 Architecture of the Project.
  - 5.2 Characteristics of the Project operator.
  - 5.3 Characteristics of foreign and local partners.
  - 5.4 Characteristics of the socio-cultural and demographic situation in the region.

- 5.5 The need in the workforce for the Project.
- 5.6 Professional development, training, etc.
- 6. Financial Section.
  - 6.1 Production, general and administrative expenses.
  - 6.2 Revenues.
  - 6.3 Financial liabilities.
  - 6.4 Cash Flows.
  - 6.5 Project Performance Indicators.
- 7. Socio-economic Section.
  - 7.1 Benefits from the Project.
  - 7.2 Comparison of economic costs and benefits.
- 8. Project risks.
  - 8.1 Commercial risks.
  - 8.2 Technical risks.
  - 8.3 Procurement Project risks.
  - 8.4 Financial risks.
  - 8.5 Institutional risks.
- 9. Risk reduction measures.
- Appendix: Requirements for the structure and content of the feasibility study

## **STANDARD FORM**

### 1. General information and conditions

- Project goal and industry sector;
- product/service nomenclature (in physical term);
- requested funding terms.

### 1.2 Information about the Project operator

- name of legal entity persons, address, registration;
- information about the founders and management of the enterprise;
- brief history of the enterprise.

### 1.3 Other Project participants

- a table shall include the information on the name, legal status, address, form of participation, a brief description of investors; equipment suppliers; contracting organizations; consultants; suppliers of basic raw materials, main buyers (consumers) of products/services; funding organizations.

### 1.4 Cost, structure and sources of Project financing

- Estimated investment costs for the Project (design and estimate documentation, construction and installation work, equipment, transportation, costs associated with customs clearance, certification and storage, working capital, etc.) in local and foreign currency;
- structure and sources of Project financing (borrowed/own funds).

## **2. Commercial Section**

### **2.1 Product market research**

- nomenclature and characteristics of the product/service;
- assessment of the existing demand for products (main consumers, consumption volumes, price/quality ratio);
- assessment of existing market supply (main producers, production volumes, quality, prices, market shares);
- expected changes in demand, supply and competition;
- expected changes in the level of prices for the manufactured products (services);
- existing and expected customs, tax and other internal barriers for the product (service) entering into the sales markets;

- market conditions and terms of delivery and payment for products.

## **2.2 Marketing strategy**

- strategic analysis of Project strengths and weaknesses, assessment of opportunities and potential threats for the Project;
- determination the strategic goals of the Project;
- determination of the geographical aspect of the Project strategy;
- selection of marketing strategy (cost leadership, differentiation and concentration of efforts on the market niche, diversification of the product line and development of new products, etc.);
- product positioning, including identification of target markets, product life cycle planning, development of competitive tactics.

## **2.3 Marketing activities related to the sale of products (services)**

- product management, including the definition of the product range, product quality requirements, product design and packaging requirements, related services requirements, and maintenance requirements;
- price management, including pricing of products, development of a discount system and terms of payment;
- promotion management, including the development of advertising and PR activities, sales promotion activities, brand policy, the definition of a budget for marketing activities for each year of the Project;
- sales management, including the development of a sales system (wholesale distribution networks, retail distribution networks, direct sales), determination of the density of the distribution network, the definition of trading stocks, transport planning.

## **2.4 Products (services) sales program**

- nominal and actual production capacity;
- description of the production cycle (stages and consumption of time from the moment of placing the order for the supply of raw materials, goods consignment to the buyer), in the form of a diagram;
- program of products (services) sales (planned sales volumes by year in physical terms, sales prices, the share of exports by countries).

## **2.5 Market research of stock, materials and components**

- nomenclature, characteristics of stock, materials and components;
- availability of stock, materials and components (availability of permits from the manufacturer/supplier, sufficiency of reserves, distance from the place of processing, existing customs, tax and other barriers);
- assessment of the existing market demand (main producers, production volumes, quality, prices, remoteness from the place of processing);
- assessment of the existing demand market (main consumers, consumption volumes);
- expected changes in supply and demand in the market of stock, materials and components;
- expected changes in the level of prices for stock, materials and components;
- conditions and terms of deliveries practiced in the market, payment for stock, materials and components;
- Project supply program (planned volumes in physical terms by year and purchase prices).

## **2.6 Contractual elaboration of the Project.**

- provision of the Project with contracts for the purchase of stock, materials and components (list of suppliers, amounts, prices, volumes, terms and conditions of delivery, payment, in a table form);
- provision of the Project with contracts for the sale of products (in a table form - a list of suppliers, amounts, prices, volumes, terms and conditions of delivery, payment);
- information on the actual/planned content of stock and materials per unit of finished product.

## **3. Technical Section and Project procurement**

### **3.1. Substantiation for the selection of the Project location**

#### 3.1.1. Project location

- substantiation of the selection for the Project location and description of the most important factors that played a decisive role in determining the Project location;
- presence/absence of necessary transport links, engineering networks (electricity, water, heat, sewage communication, etc.), resources (labor, materials, stock, etc.), free and accessible at the price terms land plots, production areas required for the Project.

#### 3.1.2. Production site

- address - the actual location of the Project;
- a plan-diagram of the production site location in relation to the nearest settlements with the application of off-site networks and communications, transport infrastructure and other objects used in the Project;
- a general plan with explication of the site area(s) where the Project is planned to be implemented, indicating the location of the existing and proposed for the construction blocks/modules of industrial and auxiliary buildings, structures and premises, storages and warehouses (with specification of their use),
- designation of places of existing and planned communication networks, their characteristics and other conditions;
- information on the owners (present and/or planned) of the land plot where the Project is planned to be implemented;
- permission issued by the local authorized bodies to use the land for the facility construction.

#### 3.1.3. Infrastructure

- a detailed description of infrastructure of the production site, including: power supply, heat supply, sewerage, gas supply, water supply, etc.
- confirmation of compliance of the selected production site with the Project needs;
- detailed description of the transport infrastructure at the selected Project location;
- method of delivery (receipt) of raw materials to the production site and to the place of their storage, description of the method of delivery of raw materials directly to the process equipment, as well as the method of transportation and storage of finished products.

### **3.2. Description of technology**

#### 3.2.1. Analysis of the existing technologies

- description of the practical use of options for the production technologies specified in the Project products (services);
- comparative analysis of the main advantages and disadvantages of the existing options for production of products (services), indicating the criteria that served as the basis for the selection of these technologies for the Project being implemented and the rejection of alternative options.

#### 3.2.2. Selected technologies

- technological process in a diagram form, indicating the equipment used, the resources consumed and the raw materials, the personnel involved, the duration of the stage and the resulting product for each of the stages;
- information about the author (developer) of the technological process (license, experience, responsibility for modernity, compatibility of links);
- phased general description of the selected technological process of production of products (services);

- the need for certificates, permits, approvals, expert opinions, etc., issued by the authorized bodies, state bodies and institutions, akimats (local administration bodies), international expert organizations, etc.) required when using the selected technology, as well as the planned costs.

### **3.3. Description of the equipment**

#### 3.3.1. Selection of equipment

- possible options for completing the equipment for industrial complexes/technological sites for the implementation of the selected production technology of products (services);
- comparative analysis of the main advantages and disadvantages of each variant of the equipment groups, indicating the criteria that served as the basis for choosing the equipment used in the Project and rejecting alternative options.

#### 3.3.2. Selected equipment

- the estimated need of the enterprise in the equipment and calculation of its value;
- a list and a brief description of the equipment used in the Project, tooling, working tools, spare parts, etc., with indication of the main technical characteristics;
- planned consumption of electricity and heat, water, needs for sewage facilities, sewage treatment plants, gas, and other resources consumed by the equipment as a whole and separately by separate parts of equipment;
- frequency and cost of maintenance, commissioning, maintenance for all equipment used in the Project;
- a list of equipment requiring additional tests for registration with the authorized bodies (Gosgortekhnadzor, Energonadzor, etc.).

In case of used equipment being applied in the Project, it is necessary to reflect the relevant information including:

- the origin of the equipment used in the Project and the history of its use;
- documentary evidence confirming that this equipment is capable of operating through the Project period (report, conclusion, inspection reports of an independent, competent expert enterprise).

### **3.4. Quality system of the enterprise and the patent clearness of the Project**

- intentions to ensure product quality and planned measures to improve it, including the need to specify the dependence of product quality on raw materials, on applied production technologies, etc. ;
- quality characteristics of the entire expected range of products;
- brief information on the selected technology and equipment, in particular, whether the selected technology and equipment of third-party copyrights does not affect, what measures are being taken to prevent occurrence of such a situation;
- patents, licenses, permits, etc., owned by the applicant or necessary for acquisition, with indication of agreements (contracts, memorandums, protocols, etc.) giving ownership rights, in the present and/or future, for the Project chosen technological process, as well as the planned costs.

### **3.5. Construction of production facilities**

- list of facilities being involved in the Project, including those to be built and/or reconstructed (buildings, structures, transport and engineering communications, technological facilities, etc.);
- number of required production and auxiliary areas;
- composition of the planned design and survey, construction, installation and commissioning works (for aggregated indicators, with indication of the planned costs);
- substantiation of the cost of construction, made on aggregate indicators, prepared by the competent organization.

### 3.5.1. Available production and auxiliary facilities, engineering communications

- description of the status of existing structures, buildings, premises, engineering communications, etc., with application of their inspection certificates (inspection reports, surveys, defective certificates, etc.);
- composition and description of works on existing facilities (renovations, repairs, etc.) that need to be carried out to enable the use of these facilities for the Project.

### 3.5.2. Construction of new facilities

- description of the construction site;
- existing requirements for the engineering preparation of the construction site, the technology of construction work, equipment, engineering, materials and structures used, equipment of the facility;
- information on the availability of architectural planning tasks;
- description of the stage of readiness of the Project documentation, in case of availability of the design and estimate documentation it is necessary to reflect the official expert opinion on the design and estimate documentation;
- information on the availability of permission for construction and installation work on the Project;
- information regarding the selection of the enterprise carrying out architectural and construction expertise of the Project in accordance with the requirements of the legislation of the Republic of Kazakhstan in architecture and construction.

## 3.6. Technical staff of the enterprise

- information on the required composition and qualification level of specialists required to be involved for Project implementation at the stage of organization and operation. Information on the existing composition and qualification level of the management and technical personnel involved in the Project implementation;
- information on the existing technical services and departments of the applicant, data on the number and qualifications of specialists for each technical service and department (engineering service, construction engineering service, power engineers, mechanics, technologists, etc.);
- in the absence of technical staff, it is necessary to provide a description of the activities through which it is planned to attract employees with the required level of qualification. Taking into account the peculiarities of production (high-tech, etc.), it is necessary to describe the existing developments on this issue;
- planned activities for the personnel preparation and training.

## 3.7. Project procurement list

A detailed list of purchases provided by main categories of expenses: goods, works, services.

## 3.8. Procurement methods

- description of the selection of a particular procurement method - open competitive bidding, closed competitive bidding, request for quotations, purchase from one source, purchase through trade exchanges, purchase through purchasing agents, etc. (a more detailed description is necessary when making purchases from one source);
- description of procurement procedures;
- if the applicant selects potential suppliers on a competitive basis, the following information shall be provided:
  - 1) the text of the announcement of the competition, the planned time and place of its publication;
  - 2) copies of information materials where the announcements of the procurement competition are published;
  - 3) availability of sufficient information about the purchased goods in the tender documentation;

- 4) requirements for potential suppliers;
- 5) deadlines for submission of tender documentation;
- 6) criteria for the selection of potential suppliers;
- 7) correspondence between potential suppliers and organizers of the competition, questions and answers;
- 8) openness of the tender procedures;
- 9) description of the received commercial and technical proposals;
- 10) description of not accepted and rejected proposals;
- 11) substantiation of the supplier selection;
- 12) the results of the competition;
- 13) notification of the results of the competition;
- 14) conclusion of the contract, terms, documentation, conditions;
- 15) general conclusions.

### **3.9. Selection of suppliers for the Project**

- description of the principles and criteria on the basis of which the selection of suppliers of equipment, goods, contractors for the production of works, the provision of services, etc. was made;
- data (informational materials) on a comparative analysis of the characteristics of potential suppliers for each type of procurement (commercial proposals, results of market research, comparative characteristics of potential suppliers, criteria for their selection, tender documentation, etc.).

### **3.10. Suppliers information**

- enterprise name, field of activity;
- intermediary, representative, direct manufacturer of the product;
- name of the contact person and position;
- address, telephone, fax, e-mail;
- date of establishment, country of registration;
- number of employees - permanent, temporary;
- supplied goods and services;
- standards used;
- main buyers;
- experience of the enterprise in the field of services provided to the applicant;
- recommendations, references, reviews, etc.;
- licenses, certificates, etc.

### **3.11. Concluded/prepared agreements**

- Copies of all concluded and/or prepared agreements for the total amount of procurement, in accordance with the above Procurement List (contracts, agreements, protocols, etc.) is to be provided.

### **3.12. Content in Project procurement**

- The use of goods as well as the services of suppliers produced and provided in the territory is to be considered. The use of foreign goods with their analogues of domestic production available is to be substantiated.

### **3.13. Borrower's units engaged in procurement**

- a brief description of the procedures used for procurement, the supplying organizations, selection of suppliers, contractors, etc. as well as a description of the units involved in procurement, qualifications and staffing levels;
- in case of a contract with a turnkey general contractor - a similar description of the general contractor's division, the availability of material and labor resources to organize the Project procurement process.



### **3.14. Procurement schedule**

- Pre-design work and permits obtaining;
- Design;
- Construction and installation works;
- Purchase and installation of equipment;
- Commissioning works;
- Start-up;

#### **Notes:**

1. The plan of the investment phase of the Project shall be completed on a monthly basis for the entire period of the investment phase of the Project.
2. The Plan of the investment phase of the Project shall include the dates for implementation of the work planned as part of the Project, as well as the planned amounts of borrowed funds for the operation. This information shall be indicated in the lines called "Name of work", in the cells of the respective months of the work.
3. The line "TOTAL" shall be completed with the monthly totals of the planned use of investment funds allocated for the Project implementation.

## **4. Ecological Section**

### **4.1 The impact of the Project on the state of the environment and the action plan for harmful effects reduction**

- identification and summary of all the anticipated effects of an adverse environmental impact;
- description of the technical aspects of each event, including the negative effect against which it is directed;
- schedule for implementation of environmental activities in the framework of the Project;
- conclusion of the state environmental impact assessment on the basis of EIA (preliminary environmental impact assessment), EIA (environmental impact assessment);
- inclusion into the total cost of the Project of approximate estimates and a list of sources of financing, both primary investments and current expenses associated with the implementation of measures to limit the negative impact.

### **4.2 Compliance of the Project technology with the international standards and regulations on environmental impact**

## **5. Institutional Section**

### **5.1 Architecture of the Project**

- scheme of interaction between the Project participants.

### **5.2 Characteristics of the Project operator**

- organization structure;
- staff;
- managerial experience;
- experience in Project implementation;
- recommendations.

### **5.3 Characteristics of foreign and local partners**



- managerial experience;
- experience in Project implementation;
- recommendations
- annual report on the enterprise activities

## **5.4 Characteristics of the socio-cultural and demographic situation in the region**

## **5.5 The need in the workforce for the Project**

## **5.6 Professional development, training, etc.**

## **6. Financial Section**

### **6.1 Production, general and administrative expenses**

- a detailed forecast of total expenses for all activities of the enterprise with the allocation of project costs by year, in physical and monetary terms;
- calculation of unit cost for products (services) in monetary terms, indicating the norms of consumption of stock, materials and components in physical terms;
- detailed calculation of the required volume of stocks of raw materials/materials, spare parts for components and other resources to ensure uninterrupted production activities in physical and monetary terms - the needs of the enterprise in working capital for the planned period.

### **6.2 Revenues**

- sales plan of the total activity of the enterprise with the release of sales from the project by year in physical and monetary terms (or the income of the enterprise outside the project as sales from non-core activities is to be reflected).

### **6.3 Financial liabilities**

- list of financial obligations of the enterprise, including returnable financial assistance, loans, bonds, guarantees of the regulated banks (name of the creditor, the number and date of the contract conclusion, date of development commencement, the loan amount, the balance of debt, the loan period, the annual interest rate, frequency of payments, delinquencies, if any);
- schedules for repayment of existing principal and interest and planned loans;
- consolidated debt repayment schedule.

### **6.4 Cash flows**

- forecast of cash inflows and outflows from the operating, investment and financial activities of the enterprise over the years, taking into account the expected payment delays, both from consumers and in favor of suppliers.
- in terms of cash flow from financial activities, it is necessary to reflect the planned short-term loans to finance working capital.

### **6.5 Project Performance Indicators**

- Cash Conversion Cycle
- calculation of net present value (NPV), internal rate of return (IRR), discounted payback period (DPBP);
- analysis of the sensitivity of the project to lower revenues, increased costs.

## **7. Socio-economic Section**

## 7.1 Benefits from the Project

- number of new jobs created, amount of annual tax deductions, planned annual export earnings, etc.

## 7.2 Comparison of economic costs and benefits

## 8. Project risks

Project risks are assessed according to the following gradation:

- low
- low to moderate
- moderate
- moderate to high,
- high.

For each type of risk the rationale for the degree of risk is to be provided as well as the measures for managing (minimizing and/or preventing) this type of risk.

### 8.1 Commercial risks

- Risk of lack of material;
- Risk of overproduction or inability to sell (availability of absence of demand) the products/services;
- Risk of increased competition;
- Risk associated with the marketing system of the enterprise;
- Risks of occurrence of force majeure circumstances of a natural nature, and in the course of economic activity (accidents, fires);
- Risk of increasing the cost of energy, auxiliary materials;
- Other.

### 8.2 Technical risks

- Risk of non-compliance of the selected location region and site for project implementation to its needs;
- Risk of non-compliance of the selected production technology with the project needs or Bank priorities;
- Risk of non-compliance of the selected set of production technology equipment with the project needs or Bank priorities;
- Risk of problems in the preparation and training of personnel;
- Risk of non-compliance of approaches to the production of design and estimate documentation with the needs of the project, the requirements of the Bank and regulatory documents;
- Risk of non-compliance of the existing production and auxiliary premises, engineering communications with the needs of the Project;
- Risk of additional expenses and time during construction and installation works;
- Risk of additional costs and problems associated with the environmental impact of the Project;
- Other.

### 8.3 Procurement Project risks

- Risk of non-compliance of the selected procurement methods to the needs of the Project;
- Risk of inconsistency between the selection of suppliers for the Project and the Project needs;
- Risk of non-compliance of the concluded or prepared to be concluded agreements with the needs of the Project;
- Risk of non-compliance of the procurement procedures and the applicant units involved in procurement with the requirements necessary for the Project implementation;
- Risk of non-compliance of the procurement schedule with the overall Project implementation scheme;

- Other.

#### 8.4 Financial risks

- Risk of project non-repayment/deterioration of Project indicators;
- Risk of default on repayment of the loan;
- Other.

#### • 8.5 Institutional risks

- Risk of inadequate qualifications of the enterprise management;
- Risk of insufficiency of the production staff;
- Risk of lack of experience or poor qualifications of the production personnel;
- Risk associated with the opacity of the organizational structure of the enterprise;
- Other.

#### 9. Risk reduction measures

- insurance of assets created within the Project;
- insurance of collateral property, etc.

**Note:** Feasibility studies may vary in form and content. The form and content of the feasibility study shall depend on the requirements of the customer, financial institutions, organizations engaged in the examination. Separate Feasibility studies may not have separate sections or information can be provided in a simplified form. In this regard, prior to the development of a feasibility study, it is necessary to study the requirements of the Customer or organizations that will conduct a feasibility study or for which a feasibility study is to be prepared.