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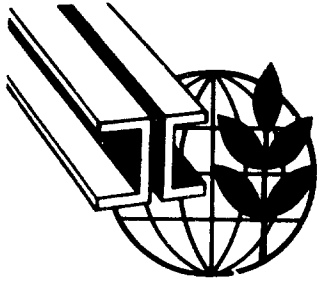
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D01309



Distribution
LIMITED

ID/WG.14/44
10 July 1968

United Nations Industrial Development Organization

ORIGINAL: ENGLISH

Second Interregional Symposium
on the Iron and Steel Industry

Moscow, USSR, 19 September – 9 October 1968

C-8

EXPORT-IMPORT BANK AND ITS RELATIONSHIP IN THE DEVELOPMENT
OF AN IRON AND STEEL INDUSTRY ^{1/}

by
A. Carl Cass

Export-Import Bank of the United States

^{1/} The views and opinions expressed in this paper are those of the author and do not necessarily reflect the views of the secretariat of UNIDO. The document is presented as submitted by the author, without re-editing.

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EXPORT-IMPORT BANK AND ITS RELATIONSHIP IN THE DEVELOPMENT
OF AN IRON AND STEEL INDUSTRY^{1/}

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A. Carl Cass,
United States

SUMMARY

The establishment of an iron and steel industry in a small developing country or region is much different from the development of such an industry in the United States, Europe, or any of the more developed countries where both adequate "know-how" and sources of raw materials are available and where a reasonable market for the products is assured. Establishing complex facilities of this type, in a developing area, must be based upon the results of an extensive field investigation and project analysis by a qualified and reputable steel mill organization to assure the technical feasibility and economic advisability of the undertaking. Some of the more important factors to be considered are the location and adequacy of iron ore, coking coal or other fuel, limestone, and other raw materials; the size, composition, and location of the market for the products; the estimated capital cost; availability of financing including adequate working capital for start-up and initial operation until the plant is able to generate its own funds; and estimates of cost for transporting and converting the raw materials into suitable mill products delivered to the principal

* This is a summary of a paper issued under the same title as ID/WG.14/44.

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consuming areas. Associated with these factors are additional elements that normally are not encountered in more developed countries, such as providing adequate schools, housing, medical, hospital, and other social facilities for employees and their families. In some cases, making provision for these has been an even greater task than the physical and financial effort to establish the steel mill proper.

Closely associated with the establishment of the plant is the training of national personnel abroad and in the area of the project. Working conditions for foreign technicians can be anticipated to be different and difficult, as are the legal systems, local customs and views, availability of trained labour, financial arrangements, and accounting practices. Establishment of a successful industrial development, therefore, requires exhaustive investigation and study leading to proper technical conception and execution.

The Export-Import Bank of the United States (Eximbank) has played an important role in the industry development in insisting on appropriate "know-how" in connection with its loans. First of all, this "know-how" is necessary in determining along what lines the plant development should take place, what type of facilities should be encouraged, and, of equal importance, the kinds that should be discouraged. Second, Eximbank has played an equally important role in fostering the utilization of commercially proven technical knowledge. Third is the actual management and operation of the plant.

As Chief Engineer for Eximbank, which has assisted in financing approximately a billion dollars of equipment and services for the Latin American iron and steel industry alone, I have a great interest in following current development. Eximbank is prepared to continue making loans for soundly conceived, economically justified projects. In line with this interest, I am outlining herewith the technical services Eximbank has found through 34 years of foreign loan activities to be of greatest help in assuring a sound project.

Eximbank policy with respect to engineering and construction services

A. Loan Applications

1. Requests for loans for projects should be supported by a survey and study which will provide the information necessary to determine technical feasibility and economic advisability.

2. A loan application will receive faster action if it is initially supported by a comprehensive technical and economic survey (project study) based upon competent and impartial engineering advice.

3. In cases where the applicant has not provided a complete study but has presented enough information above a project to permit Eximbank to undertake a review that would readily result in a sound analysis, Eximbank will make specific requests for such additional details as may be required.

B. Procedure after loan approval

1. The consulting engineer

a) Before proceeding with the implementation of a loan, Eximbank generally requires the employment, by the borrower, of an Engineer to furnish consulting and design services. Eximbank will require assurances that services are from competent sources and that prices are reasonable.

b) Except in unusual cases when requested by the borrower, Eximbank will not propose the employment of any specific Consulting Engineer, but, rather, the borrower will submit his choice of a firm.

c) The first step in the selection of the Engineer is often an understanding on the scope of the preliminary work. This in general will be prepared by the owner/borrower and submitted to Eximbank.

d) Once the Engineer has been agreed upon, the next step will be the preparation of final terms of reference for the Engineer. This is prepared by mutual agreement between the Eximbank and the borrower. The Engineer will ordinarily undertake, as the project requires and as Eximbank and the borrower may agree, any or all of the usual responsibilities.

e) When the terms of reference are agreed upon, an engineering contract will be drawn up between the Engineer and the borrower and approved by Eximbank.

f) Eximbank prefers to separate engineering and construction contracts, where feasible. However, where the work is of a highly specialized or proprietary nature, contracts may be placed with a single firm for both engineering and construction.

2. The constructor

a) As to construction contracts, Eximbank strongly advises the preparation of complete plans and specifications for the work to be done and the award of contracts based upon appropriate methods of competitive bidding wherever possible.

b) Eximbank places great stress upon ability to operate the project and to carry out high standards of maintenance. Loans for new and additional facilities may, where appropriate, include provision for maintenance and operational training or management.

c) The constructor may furnish construction equipment on a lump sum or unit price contract from whatever eligible US source he wishes. On other types of contracts, Eximbank will require equipment purchases on a competitive basis unless it agrees otherwise. Where practical, Eximbank prefers to see construction equipment turned over to the borrower upon completion of the project.

3. Technical operating assistance

Where appropriate, many loan agreements provide for specialized technical operating assistance to assure an efficient and profitable operation. Eximbank has found that assistance from an experienced and reputable steel company is one of the most important elements in safeguarding a sound operation, even in countries like France, Germany, Italy, Japan and Spain where the steel industry is highly developed.

Financing additional steel mill programmes

Generally, all developing areas have plans for establishing or expanding their production of iron and steel facilities. This will necessitate a tremendous amount of capital. Our experience indicates an average need for funds of about 60 per cent

for local construction costs plus operating capital and 40 per cent for foreign equipment and technical services. Eximbank to date has assisted in financing loans for steel mill projects in excess of three billion dollars with long-term direct capital loans, exporter credits, and financial guarantees. Some associated financing has come from Europe.

To co-operate in reaching these objectives, Eximbank has been and will continue furnishing capital assistance in the forms of loans in amounts and terms appropriate to the capabilities of the proposed metallurgical operation, in order to assure a sound project that will bring about at an early date a higher standard of living and a richer life.

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Introduction

The establishment of an iron and steel industry in a small, developing country or region is much different from the development of such an industry in the United States, Europe, or any of the more developed countries where both adequate "know-how" and sources of raw materials are available. Establishing complex facilities of this type, in a developing area, must be based upon the results of an extensive field investigation and project analysis by a qualified and reputable steel mill organization to assure the technical feasibility and economic advisability of the undertaking. Some of the more important factors to be considered are the location and adequacy of iron ore, coking coal or other fuel, limestone, and other raw materials; the size, composition, and location of the market for the products; the estimated capital cost; availability of financing; and estimates of cost for transporting and converting the raw materials into suitable mill products delivered to the principal consuming areas. Associated with these factors are additional elements that normally are not encountered in more developed

countries, such as providing adequate schools, housing, medical, hospital, and other social facilities for employees and their families. In some cases, making provision for these has been an even greater task than the physical and financial effort to establish the steel mill proper.

Closely associated with the establishment of the plant is the training of national personnel abroad and in the area of the project. Also, recreational facilities for foreign and national personnel have to be provided to the end that there will be close harmony, thereby avoiding any irritating factors that retard the proper development of a new facility. Working conditions for foreign technicians can be anticipated to be different and difficult, as are the legal systems, local customs and views, availability of trained labor, financial arrangements, and accounting practices. With these basic factors in mind and properly evaluated, those establishing a plant will experience a challenging opportunity and feeling of satisfaction in solving the problems arising from creating a successful venture. Such establishment of a successful industrial development therefore requires exhaustive investigation and study leading to proper technical conception and execution.

The Export-Import Bank of the United States (Eximbank) has played an important role in the industry development in insisting on

appropriate "know-how" in connection with its loans. Adequate technical assistance must be available in connection with the design, construction, and operation. First of all, this "know-how" is necessary in determining along what lines the plant development should take place, what type of facilities should be encouraged, and, of equal importance, the kinds that should be discouraged. This essentially involves questions relating to the location of projects as it affects their economic feasibility. Second, Eximbank has played an equally important role in fostering the utilization of commercially proven technical knowledge in the actual design and construction of the projects and in the choice of equipment to be used. The third level at which adequate "know-how" has been required is the actual management and operation of the plant. In addition, periodic field inspections are made by Eximbank officers and staff before and after a loan is authorized to assure a successful venture.

As Chief Engineer for Eximbank, which has assisted in financing approximately a billion dollars of equipment and services for the Latin American iron and steel industry alone, I have a great interest in following developments. Eximbank is prepared to continue making loans for soundly conceived, economically justified projects. In line with this interest, I am outlining herewith the technical

services Eximbank has found through 34 years of foreign loan activities to be of greatest help in assuring a sound project.

Eximbank Policy With Respect to Engineering and Construction Services

A. Loan Applications

1. Requests for loans for projects should be supported by a survey and study which will provide the information necessary to determine technical feasibility and economic advisability and an outline of how it is proposed to carry out the engineering, purchasing, construction and management of the project. This information needs to be of sufficient reliability to support a decision as to whether a loan request can be justified.

2. A loan application will receive faster action if it is initially supported by a comprehensive technical and economic survey (project study) based upon competent and impartial engineering advice. The study may be made by the applicant himself or by a consultant employed by the applicant.

3. In cases where the applicant has not provided a complete study but has presented enough information about a project to permit Eximbank to undertake a review that would readily result in a sound analysis, Eximbank will make specific requests for such additional details as may be required. Of course in this latter case an Eximbank decision will take more time because of the inadequacy of the initial data.

B. Procedure After Loan Approval

1. The Consulting Engineer

a. Before proceeding with the implementation of a loan, Eximbank generally requires the employment, by the borrower, of an Engineer to furnish consulting and design services. The Engineer may be an individual specialist or an engineering firm, depending on the type and complexity of the project. Approval by Eximbank of the choice of the Engineer will be required as well as approval of the engineering contract, plans and specifications for the project, the award of the construction contracts, the selection of key Engineer and Constructor project personnel, and the final inspection of the project. Eximbank does not require competitive bidding as this is a decision for the project owner. However, Eximbank will require assurances that services are from competent sources and that prices are reasonable. The Engineer who prepared the project feasibility study in support of an application is eligible, in so far as Eximbank is concerned, for consideration as the Engineer to design and supervise the project construction.

b. Except in unusual cases when requested by the borrower, Eximbank will not propose the employment of any specific Consulting Engineer, but, rather, the borrower will submit his choice of a firm.

Eximbank will investigate the firm selected and its proposal for furnishing the engineering services to determine whether the firm is competent to perform the work. If it believes the proposed firm is not competent, it will require the borrower to suggest another firm. Eximbank will render opinions, if asked by the borrower, as to the reputation and capability of any specific firm but will not volunteer such information until there is a desire to employ a specific firm.

c. The first step in the selection of the Engineer is often an understanding on the scope of the preliminary work to permit selection of the Engineer. This in general will be prepared by the borrower and submitted to Eximbank, but the reverse procedure may be employed if the borrower so requests.

d. Once the Engineer has been agreed upon, the next step will be the preparation of final terms of reference for the Engineer. This is prepared by mutual agreement between the Eximbank and the borrower. The engineering firm to be engaged will usually be included in the discussions. The Engineer will ordinarily undertake, as the project requires and as Eximbank and the borrower may agree, any or all of the following responsibilities:

- (1) Engineering survey reports and investigations.
- (2) Preparation of detailed list of items to be procured under contract.

- (3) Preparation of the necessary plans and specifications and designs for construction.
- (4) Purchasing of items not covered in construction contracts.
- (5) Preparation of Constructor bid invitations.
- (6) Analysis of bids and recommendations as to the award of construction contracts.
- (7) Assistance in the preparation of the construction contracts. (This will include end-use of construction equipment.)
- (8) Supervision of the construction work and final testing.
- (9) Keeping records of the payments to the contractor and other plant costs so they may be kept in line with project estimates.
- (10) Furnishing service for management training, limited periods of direct management of completed projects, or advice to borrower and Eximbank on these services.

Eximbank and the borrower will agree on which of these functions will be performed by the borrower, the Engineer or, where feasible, the Contractor.

e. When the terms of reference are agreed upon, an engineering contract will be drawn up between the Engineer and the borrower and approved by Eximbank. In justifiable cases, Eximbank will permit the Engineer to start the engineering under a Letter of Intent prior to the signing of the contract.

f. Eximbank prefers to separate engineering and construction contracts, where feasible. However, where the work is of a highly specialized or proprietary nature, contracts may be placed with a single firm for both engineering and construction, again with assurance that the work will be executed efficiently and at reasonable cost.

2. The Constructor

a. As to construction contracts, Eximbank strongly advises the preparation of complete plans and specifications for the work to be done and the award of contracts based upon appropriate methods of competitive bidding upon these completed plans and specifications. The use of cost-plus-fixed fee contracts or force account (use of own organization) procedures will be considered when they are demonstrated to be more effective.

b. Eximbank places great stress upon ability to operate the project and to carry out high standards of maintenance. Loans for new and additional facilities may, where appropriate, include provision for maintenance and operational training or management. Separate

contracts may be utilized as required in specific cases for either maintenance, training operation, or management, or they may be provided for in the Engineer or Constructor contracts.

c. The Constructor may furnish construction equipment on a lump sum or unit price contract from whatever eligible U. S. source he wishes without competitive bidding for this equipment. On other types of contracts, Eximbank will require equipment purchases on a competitive basis unless it agrees otherwise. Where practical, Eximbank prefers to see construction equipment turned over to the borrower upon completion of the project. If necessary, the loan can include training in such matters as maintenance of equipment, including the stocking of necessary spare parts, purchasing procedures, identification and warehousing of goods.

3. Technical Operating Assistance

As indicated previously, where appropriate, many loan agreements provide for specialized technical operating and commercial assistance to assure an efficient and profitable operation. Eximbank has found that assistance from an experienced and reputable steel company is one of the most important elements in safeguarding a sound operation, even in countries like France, Germany, Italy, Japan and Spain where the steel industry is so highly developed.

Contracts for technical assistance on Eximbank projects generally provide for assistance relative to organization and hiring of specialists, general plant layouts for additions, training of nationals, developing technical and commercial procedures, new processes, market development, cost analysis covering operations from raw materials to production and sale. All studies with recommendations are incorporated in periodic and special reports.

Financing Additional Steel Mill Programs

Generally, all developing areas have plans for establishing or expanding their production of iron and steel facilities. Of course, this will necessitate a tremendous amount of capital. Our experience indicates an average need for funds of about 60 percent for local construction costs plus operating capital and 40 percent for foreign equipment and technical services. While financing for the imported equipment has come from long-term foreign loans, the domestic financing should come from the sale of stock and local borrowings. Eximbank to date has assisted in financing loans for steel mill projects in excess of three billion dollars with long-term direct capital loans, exporter credits, and financial guarantees. Some financing has come from Europe. These loans, unfortunately, have been of relatively short terms and certainly not in line with the earning capabilities of the steel mills and have caused undue hardships to developing companies and countries.

To cooperate in reaching these objectives, Eximbank has been and will continue furnishing capital assistance in the forms of loans in amounts and terms appropriate to the capabilities of the proposed metallurgical operation, thereby encouraging private equity and "know-how" participation in order to assure that the peoples of all regions will at an early date experience a higher standard of living and a richer life.





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