

Chapter S1 INTRODUCTION

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1.1 Foreword

This chapter consists of materials to support Chapter 1 in the Main Volume of the Final Report of the Study on Environmental Criteria for Installation and Extension of Thermal Power Plants in Argentina (the Study).

The Japan International Corporation Agency (JICA) surveyed situations related with the Study in Argentina as the preliminary step and concluded the Scope of Work (Support S1-A1) and the Minutes of Meeting (Support S1-A2) in July 2000. Based on that survey, the plan of the Study was materialized by JICA. Based on its plan, JICA awarded the full scale Study project to the consortium of Suuri-Keikaku Co. (SUR) and Tokyo Electric Power Environmental Engineering Co. (TEE) in November 2000, after the technical and commercial bids. The consortium composed its Study Team (JICA Team). The Argentine Study Team was composed of members as in Table 1.4.1 below from Ente Nacional Regulador de la Electricidad (ENRE) and Comision Nacional de Energia Atomica (CNEA).

1.2 Objectives

The original objectives agreed between ENRE and JICA are in Support Appendix S1-A1. The Objectives given to the JICA Team from the JICA Headquarters in its job specification used different wordings, though the meanings were similar to the original.

1.3 Model Areas

Three model areas are listed in Table 1.3.1 including model (or target) power plants in the areas.

Table 1.3.1 Model Areas and Power Plants

	Model Area	Model Power Plant
A	City of Buenos Aires - Total area: around 200 km ²	a) Nuevo Puerto b) Puerto Nuevo c) Central Termica Costanera d) Central Buenos Aires
B	San Nicolas - 20 km from the Power Plants	a) Central Termica San Nicolas b) AES Parana
C	Lujan de Cuyo - 20 km from the Power Plant	a) Centrales Termicas Mendoza

1.4 Study Teams

The JICA and Argentine Teams were composed of people listed in Table 1.4.1. Indented names on the left in the Argentine Team indicate that their tasks have been duplicated.

1.5 Others

1.5.1 Work Schedule

The work schedule and the task flow are illustrated in Tables 1.5.1 and 1.5.2 respectively.

1.5.2 Environmental Criteria vs. Emission Standards

Support S1-A3 evidences that the word “environmental criteria” in the title or the objectives has meant “emission standards” in the Study from the beginning of the work.

1.5.3 JICA Equipment

Support S1-A4 shows the equipment with specifications for the analytical and office equipment

for the Study supplied by JICA.

1.5.4 Predicament

Argentina has been placed in a predicament economically, politically and socially after the last Field Work stage (December 2001). The JICA Team worries about that a part of the descriptions in the Main Report and Support Volume may not be applicable in the future. However, the major parts, such as the proposed methodology for establishing local emission standards and the recommendations for air quality preservation, are surely compatible with any circumstance after the nation is stabilized and when those are required for the future environmental precaution.

Table 1.4.1 Study Teams

	Task Title	JICA Team (S): SUR, (T): TEE	Argentine Team (E): ENRE, (C): CNEA
1	Supervisor	Masaaki Noguchi(S)	Cristina Massei(E)
2	Vice-supervisor	Takeo Akizawa(T)	Darío Gómez(C)
3	Institutional Aspects	Makoto Miyakawa(S)	Oswaldo Postiglioni(E) Cecilia Beuret(E)
4	Power Plants	Takeo Akizawa(T)	José María Chenlo(E) Cecilia Beuret(E)
5	Stationary Sources	Nobuo Kido(S)	Oswaldo Postiglioni(E) Hector Bajano(C)
6	Mobile Sources		José María Chenlo(E) Laura Dawidowski(C)
7	Air Quality Monitoring (Manual)	Ritsuo Kubota(T)	Carlos Romero(C) Alberto Iglesias(C) Also Vincente(C) Alfredo Lobo(C) Diego Alesandrello(C) Claudio Rodríguez(C) Damián Suarez(C) Juan Carlos López(C)
8	Air Quality Monitoring (Automatic)		Carlos Romero(C) Diego Alesandrello(C)
9	Air Quality Analysis	Masahiko Saito(T)	Darío Gómez(C) Laura Dawidowski(C)
10	Air Dispersion Model	Akeo Fukayama(S)	Laura Dawidowski(C) Darío Gómez(C) Cecilia Beuret(E)
11	Spanish Interpreter	Kiyokazu Yamakawa(S)	
12	Co-ordination	Atsuko Kato(S)	

Table 1.5.1 Work Schedule of the JICA Team Member

ROLE	NAME		2000		2001												2002		
			11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
			Supervisor	M. Noguchi	SUR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>		
Institutional Aspects	M. Miyakawa	SUR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Vice supervis. Power Plant Facilities	T. Akizawa	TEE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Emission Sources	N. Kido	SUR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Monitoring	R. Kubota	TEE	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Environmental Analysis	M. Saito	TEE	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Air Dispersion Model	A. Fukayama	SUR	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>			<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Interpreter	K. Yamakawa	SUR (TCP)		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
Coordinator	A. Kato	SUR		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>									
Reports			Ic/R	Pr/R			It/R			Df/R			F/R						
Tech. Transfer				Seminar 1			Work Shop			Seminar 2									

Note :



Field Work
Analytical Work

SUR : SUURI-KEIKAKU
TCP: Translation Center Pioneer
TEE : Tokyo Elec. Power Environ. Engineering

Table 1.5.2a

Task Flow - 1/2

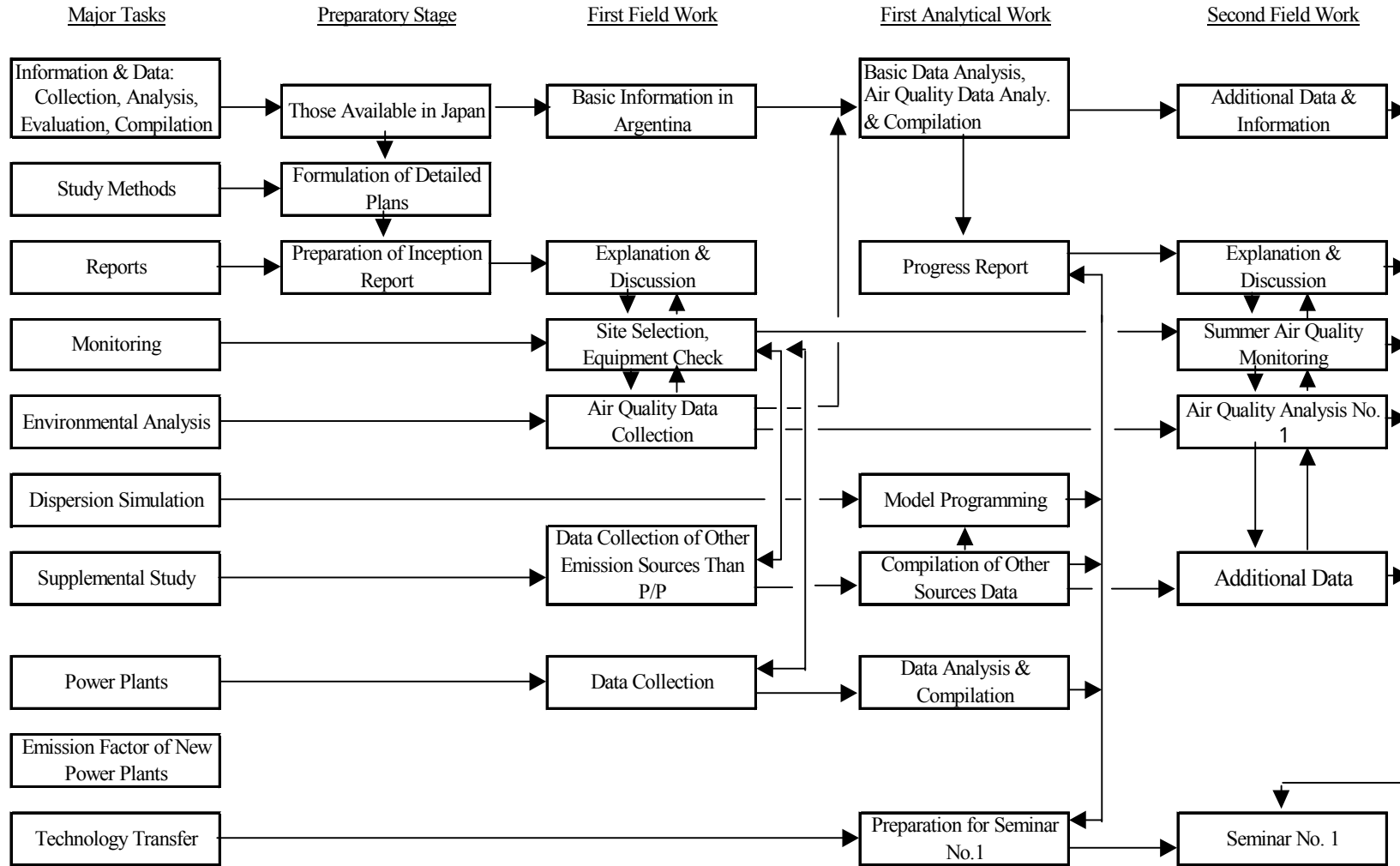
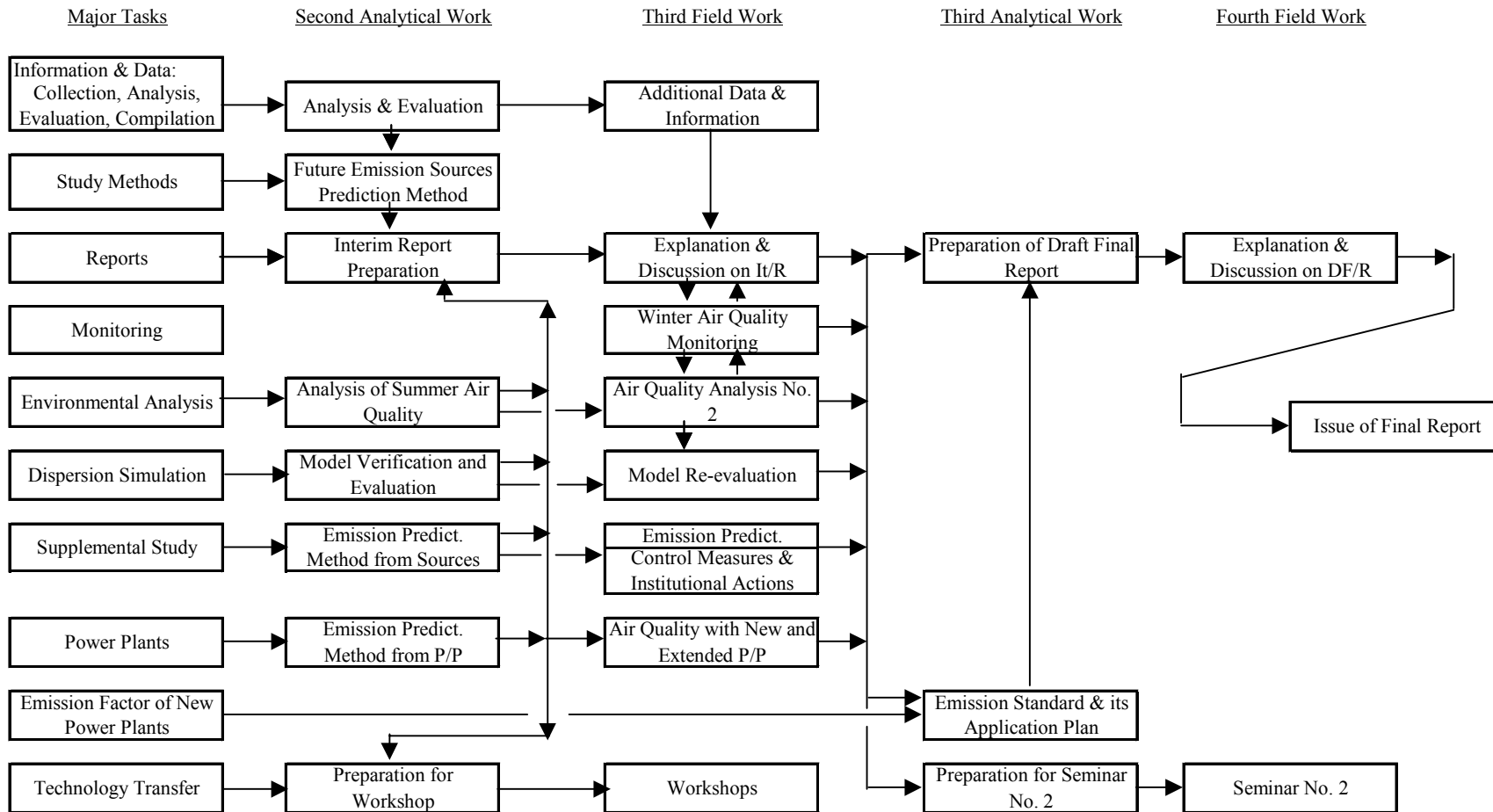


Table 1.5.2b

Task Flow - 2/2

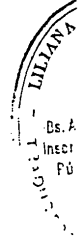


SCOPE OF WORK
FOR
THE STUDY
ON
ENVIRONMENTAL CRITERIA
FOR
INSTALLATION AND EXTENSION OF THERMAL POWER PLANTS
IN
ARGENTINA

AGREED UPON BETWEEN

ENTE NACIONAL REGULADOR DE LA ELECTRICIDAD
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

BUENOS AIRES, JULY 6, 2000



Mr. Juan A. Legisa
President
ENTE NACIONAL REGULADOR
DE LA ELECTRICIDAD

水口正美

Mr. Masami Mizuguchi
Leader
THE PREPARATORY STUDY TEAM,
JAPAN INTERNATIONAL
COOPERATION AGENCY

I. INTRODUCTION

In response to the request of the Government of the Argentine Republic (hereinafter referred to as "Argentina"), the Government of Japan decided to conduct the Study on Environmental Criteria for Installation and Extension of Thermal Power Plants (hereinafter referred to as "the Study"), in accordance with the relevant laws and regulations in force in Japan.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the authorities concerned of Argentina.

The present document sets forth the scope of work with regard to the Study.

II. OBJECTIVE OF THE STUDY

The main objective of the Study is to evaluate environmental criteria for installation and extension of thermal power plants in Argentina and to formulate necessary recommendations. The Study will be carried out in the model areas, where air quality is assumed to be seriously affected by pollutant emissions from existing power plants, industries and other pollutant sources. The Study will include review of existing data regarding pollutant emissions, measurement of present air conditions, development of a simulation model for air quality prediction, evaluation of measures to prevent air pollution, formulation of environmental criteria for installation and extension of thermal power plant.

Technology transfer to counterpart personnel of Ente Nacional Regulador de la Electricidad (hereinafter referred to as "ENRE") will also be conducted in the course of the study to formulate the criteria in areas apart from the model areas.

III. STUDY AREA

Three environmentally affected areas, Buenos Aires, San Nicolas and Lujan de Cuyo, will be investigated in the course of the study.

IV. SCOPE OF THE STUDY

The detailed scope of the Study is itemized as follows:

1. Review of National Policy, Development Plan and Present Situation of Energy Sector
 - 1-1 Macro-economic situation and economic development policy
 - 1-2 National policy, development plan and present situation of energy sector

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2. Study of Present Situation of Air Pollution Control in Argentina
 - 2-1 National policy on air pollution control
 - 2-2 Environmental quality standards and regulations for prevention of air pollution
 - 2-3 Ambient air monitoring systems
 - 2-4 Monitoring systems for pollutant emission from thermal power plants
 - 2-5 Future prospects of air pollution control

3. Study of Present Environmental Situation in the Study Areas

- 3-1 Collection of fundamental data
 - 1) General statistics
 - 2) Meteorological data
 - 3) Ambient air conditions
 - 4) Future projections, etc.
- 3-2 Measurement of ambient air conditions including meteorological data
- 3-3 Survey of existing thermal power plants
 - 1) Outline of the plants
 - 2) Operating conditions
 - 3) Equipped environmental protection measures
 - 4) Monitoring systems for pollutant emission from the plants
 - 5) Pollutant emission from the plants
- 3-4 Data collection of other stationary pollution sources
 - 1) Type and quantity of the sources
 - 2) Pollutant emission from the sources
- 3-5 Data collection of mobile pollution sources
 - 1) Type and quantity of the pollution sources
 - 2) Pollutant emission from the sources

4. Study of Environmental Criteria for Installation and Extension of Thermal Power Plants

- 4-1 Analysis of present state of air quality
 - 1) Pollutant concentration distribution
 - 2) Analysis of source contribution to air pollution
- 4-2 Future prospects of pollutant emission
- 4-3 Establishment of a simulation model for air quality prediction
 - 1) Development of the model
 - 2) Evaluation of the model
- 4-4 Prediction of air quality after installation or extension of thermal power plant
 - 1) Prediction of air quality

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- 2) Evaluation of various measures to reduce environmental impact
- 3) Study of environmental criteria for installation and extension of thermal power plants

5. Implementation of Environmental Criteria for Installation and Extension of Thermal Power Plants in line with the Present Laws and Regulations for Air Pollution Control

5-1 Air pollution control and management plan

- 1) Environmental criteria for installation and extension of thermal power plant
- 2) Measures to reduce environmental impact
- 3) Monitoring system for air pollution

5-2 Recommendation on institutional measures

- 1) Recommendation for air pollution control system
- 2) Reinforcement of the organizations concerned

5-3 Implementation plan

6. Technology Transfer to the ENRE personnel

The technology and know-how for the air pollution control will be transferred to the ENRE personnel in the course of the study

V. STUDY SCHEDULE

The Study will be conducted in accordance with Tentative Time Schedule as shown in Appendix I attached herewith.

VI. REPORTS

JICA shall prepare and submit the following quantity of reports respectively in English and Spanish to the Government of Argentina.

Inception Report (IC/R)	10 copies
Progress Reports (P/R)	10 copies
Interim Report (IT/R)	10 copies
Draft Final Report and Summary (DF/R)	10 copies

The Government of Argentina will provide JICA with the comments on the Draft Final Report within one month after its reception.

Final Report and Summary (F/R)	10 copies
CD-ROM	10 sets

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VII. DIVISION OF TECHNICAL UNDERTAKING

The division of technical undertakings of the Study by JICA and ENRE is detailed in Appendix. II attached herewith.

VIII. UNDERTAKING OF THE GOVERNMENT OF ARGENTINA

1. Based on the agreement of both sides of Japan and Argentina, the Government of Argentina shall accord privileges, exemptions and other benefits to the Japanese study team in accordance with the Agreement on Technical Cooperation between the Government of Japan and Government of Argentina.

2. To facilitate smooth conduct of the Study, Argentina shall take necessary measures:

- 1) to secure the safety of the Japanese study team,
- 2) to permit the members of the Japanese study team to enter, leave and sojourn in Argentina for the duration of their assignments therein, and exempt them from alien registration requirements and consular fees,
- 3) to exempt the members of the Japanese study team from taxes, duties and any other charges on equipment, machinery and other materials brought into, and out of, Argentina for the conduct of the Study,
- 4) to exempt the members of the Japanese study team from income tax and other charges of any kind imposed on or in connection with any emoluments or allowances paid to the members of the Japanese study team for their services in connection with the implementation of the Study,
- 5) to provide necessary facilities to the Japanese study team for remittance as well as utilization of the funds introduced into Argentina from Japan in connection with the implementation of the Study,
- 6) to secure permission for entry into all areas concerned for the implementation of the Study,
- 7) to secure permission for the Japanese study team to take all the data and documents including maps and photographs related to the Study out of Argentina to Japan,
- 8) to provide medical services as needed. Its expenses will be chargeable to the members of the Japanese study team.

3. Government of Argentina shall bear claims, if any arises, against the members of the Japanese study team resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part

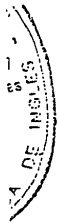
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of the members of the Japanese study team.

4. ENRE shall act as the counterpart agency to the Japanese study team and also as a coordinating body in relation to other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

5. ENRE shall, at its own expense, provide the Japanese study team with the following, in cooperation with other relevant organizations concerned:

- 1) available data and information necessary for the Study,
- 2) counterpart personnel,
- 3) suitable office space with necessary equipment and facilities in Argentina,
- 4) credentials or identification cards,
- 5) communication facilities such as telephone, facsimile and etc. if necessary, and
- 6) administrative and technical support staff and labor as needed.



IX. UNDERTAKING OF JICA

For the implementation of the Study, JICA shall take the following measures:

- 1) to dispatch, at its own expense, study teams to Argentina,
- 2) to pursue technology transfer to Argentine counterpart personnel in the course of the Study.

X. OTHERS

JICA and ENRE shall consult with each other in respect of any matter that may arise from or in connection with the Study.

The Scope of Work is prepared in both Spanish and English. In case any doubt arises in interpretation, the English text shall prevail.

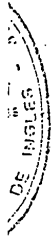
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Tentative Time Schedule

Works in Japan
 Works in Argentina

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2
		Months (Calendar month)															
1	Review of National Policy, etc. of Energy Sector																
1-1	Macro-economic situation and economic development policy																
1-2	National policy and present situation																
2	Study of Present Situation of Air Pollution Control																
2-1	National policy on air pollution control																
2-2	Environmental quality standards and regulations																
2-3	Ambient air monitoring systems																
2-4	Monitoring systems for pollutant emission																
2-5	Future prospects of air pollution control																
3	Study on Present Environmental Situation																
3-1	Collection of fundamental data																
3-2	Measurement of ambient air conditions																
3-3	Survey of existing thermal power plants																
3-4	Data collection of other stationary pollution sources																
3-5	Data collection of mobile pollution sources																
4	Study on Environmental Criteria																
4-1	Analysis of present state of air quality																
4-2	Future prospects of pollutant emission																
4-3	Establishment of a simulation model																
4-4	Prediction of air quality																
5	Implementation of Environmental Criteria																
5-1	Air pollution control and management plan																
5-2	Recommendation on institutional measures																
5-3	Implementation plan																
	Discussion of the Draft Final Report																
	Seminars/Workshop																
	Reports																
		IC/R			PR/R					IT/R				DF/R			F/R

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APPENDIX II

Technical Undertaking
by
JICA and ENRE

	Working Item	Undertaking by JICA	Undertaking by ENRE
1	Review of National Policy, etc. of Energy Sector		
1-1	Macro-economic situation and economic development policy	to carry out the study	to assist data and information gathering
1-2	National policy and present situation	to carry out the study	to assist data and information gathering
2	Study of Present Situation of Air Pollution Control		
2-1	National policy on air pollution control	to carry out the study	to provide data and information
2-2	Environmental quality standards and regulations	to carry out the study	to provide data and information
2-3	Ambient air monitoring systems	to carry out the study	to provide data and information
2-4	Monitoring systems for pollutant emission	to carry out the study	to provide data and information
2-5	Future prospects of air pollution control	to carry out the study	to provide data and information
3	Study on Present Environmental Situation		
3-1	Collection of fundamental data	to carry out the study	to assist data and information gathering
3-2	Measurement of ambient air conditions	to carry out the study	to assist the study team
3-3	Survey of existing thermal power plants	to carry out the study	to assist the study team
3-4	Data collection of other stationary pollution sources	to carry out the study	to assist the study team
3-5	Data collection of mobile pollution sources	to carry out the study	to assist the study team
4	Study on Environmental Criteria		
4-1	Analysis of present state of air quality	to carry out the study	to assist the study team
4-2	Future prospects of pollutant emission	to carry out the study	to assist data and information gathering
4-3	Establishment of a simulation model	to carry out the study	to assist the study team
4-4	Prediction of air quality	to carry out the study	to assist the study team
5	Implementation of Environmental Criteria		
5-1	Air pollution control and management plan	to carry out the study	to assist the study team
5-2	Recommendation on institutional measures	to carry out the study	to assist the study team
5-3	Implementation plan	to carry out the study	to assist the study team

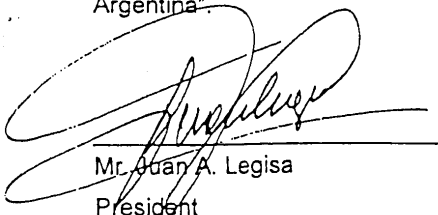
S1-A2 Minutes of Meeting, Preparatory Study, July 6, 2000

MINUTES OF MEETING
FOR
THE PREPARATORY STUDY
ON
THE STUDY ON ENVIRONMENTAL CRITERIA FOR INSTALLATION
AND EXTENSION OF THERMAL POWER PLANTS
IN
ARGENTINA

BETWEEN
ENTE NACIONAL REGULADOR DE LA ELECTRICIDAD
AND
THE JAPAN INTERNATIONAL COOPERATION AGENCY

BUENOS AIRES, JULY 6, 2000

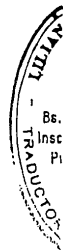
The Preparatory Study Team (hereinafter referred to as "the Team") sent by the Japan International Cooperation Agency (hereinafter referred to as "JICA"), headed by Mr. Masami Mizuguchi, the Leader of the Team, visited Argentina from June 27th to July 8th, 2000 for the purpose of discussing the Scope of Work regarding "The Study on Environmental Criteria for Installation and Extension of Thermal Power Plants in Argentina".



Mr. Juan A. Legisa
President
ENTE NACIONAL REGULADOR
DE LA ELECTRICIDAD

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Mr. Masami Mizuguchi
Leader
THE PREPARATORY STUDY TEAM
JAPAN INTERNATIONAL
COOPERATION AGENCY



The Scope of Work (S/W) was discussed for the final agreement with the supplementary explanations as mentioned below.

1. Counterpart Organization

(1) Ente Nacional Regulador de la Electricidad (ENRE)

ENRE is the beneficiary organization and counterpart authority for the study. JICA will consult with ENRE on any matter that may arise from or in connection with the Study. Further, ENRE is responsible for assisting JICA in implementing the Study by making necessary technical/administrative arrangements with other authorities and agencies and/or private entities.

(2) Provision of counterpart personnel

In order to enhance the transfer of technology and assist the JICA Study Team, ENRE will assign a counterpart team. ENRE will nominate the members of the counterpart team upon the inception of the study.

(3) Comision Nacional de Energia Atomica (CNEA)

For the measurement of present ambient air condition, CNEA will be involved as a part of implementing body under the agreement signed between ENRE and CNEA. Details of contribution of CNEA to the study will be discussed and finalized during the first visit of the JICA Study Team to Argentina.

2. Technology Transfer

The technology transfer in the Study will be designed in the following manner;

(1) On-the-job training (OJT) in the course of the study

The JICA Study Team will exert best effort to attain a maximum transfer of technology such as analysis of various environmental data and study of environmental criteria for installation and extension of thermal power plants. In relation to the OJT, ENRE requested that the JICA study team should stay in Argentina enough long period to achieve the technology transfer. The team appreciated the request and rearranged the tentative schedule attached in Appendix II of S/W. The schedule will be optimized by taking account of the request when the study is actually designed in Japan.



(2) Technology transfer seminars and workshops

In order to enhance understanding and exchange of opinions on the content of the Study, the Team agreed, at the request of ENRE, that seminars and workshops should be held in the course of the Study. The seminars will be held for the personnel in ENRE and other authorities concerned, and its content will be based on the content of the reports, which will be made in each stage of the study. On the other hand, the workshop will be prepared for personnel in power companies who have responsibilities for environmental assessment and simulation model for air quality prediction. Actual schedule, methods, participants and programs of the seminars and workshop will be discussed in detail during the study.

(3) Counterpart training in Japan

The study team members should participate in counterpart training in Japan to be arranged in connection with the Study.

3. Equipment and Materials

In order to investigate present environmental situation and develop the simulation models, ENRE requested that the following equipment dedicated to the Study should be provided by JICA;

- Necessary apparatus for measuring ambient air conditions
- Necessary personal computers (PCs) with printers
- Necessary application software

JICA will positively consider the request, however, amount of apparatus and number of PCs to be provided will be determined later.

4. Undertakings of ENRE

Referring to several sub-paragraphs of the paragraph VIII. 5 of UNDERTAKING OF THE GOVERNMENT OF ARGENTINA of the SW agreement, ENRE identified the following arrangements:

- ENRE will provide office space enough to accommodate 5 (five) Japanese study team

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members at one time.

In connection to this arrangement, the Team requested ENRE to provide the office space in ENRE to optimize the technology transfer through OJT. ENRE appreciated the request and stated to make best effort to realize the request.

- Due to financial constraints of ENRE, the cost of arranging vehicles with drivers, fuels and spare parts for the purpose of the Study should be borne by JICA.

JICA will consider the above arrangements.

5. Undertaking of the Government of Argentina

ENRE stated that the Undertaking of the Government of Argentina in the Scope of Work is materialized under the Notes Verbales to be exchanged between two governments.

The team appreciated the statement.

6. Answers to Questionnaire

ENRE will submit to JICA an additional data and information requested at the meeting through the JICA Argentina office within two (2) weeks from the date of signing of this Minutes of Meeting.

The Minutes of Meeting is prepared in both Spanish and English. In case any doubt arises in interpretation, the English text shall prevail.

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S1-A3 Minutes of Meeting, Inception Report, November 30 2000


THE STUDY ON ENVIRONMENTAL CRITERIA FOR
INSTALLATION AND EXTENSION OF THERMAL POWER PLANTS IN ARGENTINA

MINUTES OF MEETING
OF
DISCUSSION ON INCEPTION REPORT

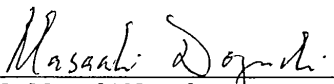
The full study team (the JICA Team) sent by the Japan International Cooperation Agency (JICA) visited its counterpart team (the Argentine Team), composed of members from Ente Nacional Regulador de la Electricidad (ENRE) and Comision Nacional de Energia Atomica (CNEA), at ENRE's Head Office, Av. Eduardo Madero Buenos Aires on November 27, 2000 in order to commence the captioned study.

The JICA Team presented each ten copies of English and Spanish versions of the Inception Report. Both Teams have discussed on until this day and have agreed in principle to the contents of the Report. The following pages are the main results of the discussion on the Report.

BUENOS AIRES, NOVEMBER 30, 2000

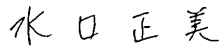


Dra. Cristina Massei
Supervisor, the Argentine Team
Jefa de Departamento Ambiental
ENRE



Mr. Masaaki Noguchi
Supervisor, the JICA Team

Witnessed by



Mr. Masami Mizuguchi
Senior Adviser, JICA Headquarters

1. p1-1: Third paragraph – Remove “(or emission standards)”. The Argentine Team understood that the phrase “emission standards” had the same meaning with its “environmental criteria” in the Study.
2. p1-2: Objectives – Replace all the sentences with the same sentences stated in the Scope of Work, which are as follows:

The main objective of the Study is to evaluate environmental criteria for installation and extension of thermal power plants in Argentina and to formulate necessary recommendations. The Study will be carried out in the model areas, where air quality is assumed to be seriously affected by pollutant emissions from existing power plants, industries and other pollutant sources. The Study will include review of existing data regarding pollutant emissions, measurement of present air conditions, development of a simulation model for air quality prediction, evaluation of measures to prevent air pollution, formulation of environmental criteria for installation and extension of thermal power plant.

Technology transfer to counterpart personnel of Ente Nacional Regulador de la Electricidad (hereafter referred to as “ENRE”) will also be conducted in the course of the Study to formulate the criteria in areas apart from the model areas.

3. p1-2 and 1-3: Table 1.1 - Change as follows:

Table 1.1 Targeted Areas and Power Plants

1. The Buenos Aires Area - Whole of Buenos Aires City

Power Plant	Generation Type	Capacity MW	Fuel
Nuevo Puerto	Steam turbine	4 x 60	Fuel oil & Natural gas
		110	
	250	Natural gas & Gas oil	
Combined cycle	784		
Puerto Nuevo	Steam turbine	145	Fuel oil & Natural gas
		194	
	250	Natural gas & Gas oil	
Central Termica Costanera	Steam turbine		4 x 120
		350	
310	Natural gas & Gas oil		
Combined cycle		851	

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2. San Nicolas Area - 20 km from the Power Plant

Power Plant	Generation Type	Capacity MW	Fuel
San Nicolas	Steam turbine	2 x 75	Coal & Fuel oil & Natural gas
		2 x 75	Fuel oil & Natural gas
		350	Coal (Fuel oil & Natural gas)
AES Parana	Combined cycle	830	Natural gas

3. Lujan de Cuyo Area - 20 km from the Power Plant including Mendoza City

Power Plant	Generation Type	Capacity MW	Fuel
Central Termica Mendoza	Steam turbine	2 x 60	Fuel oil
	Combined cycle	275	Natural gas
	Gas turbine	80	Natural gas
	Steam turbine	30	

4. p1-3: First paragraph – Delete “are to be targeted to formulate the new environmental criteria (emission standards) of stack gas emitted from the targeted power plants” and the remained phrase shall be changed to the sentence given below:

“Targeted pollutants are sulfur dioxide, nitrogen oxides and suspended particulate matters.”

5. p2-5: SO₂ – Change p-Rosaniline Absorptiometry (ASTM D-2914-95) to Ion Chromatography (OSHA ID-104), as the latter has better analytical resolution and its instrument is possessed by CNEA.
6. p2-5: NO_x analysis by Saltzman Absorptiometry should be ASTM D-3608-89 instead of D-1607-91 for NO₂.

After a lengthy discussion on NO_x and NO₂, two conclusions were reached: 1) NO_x should be monitored and simulated, instead of NO₂, and 2) the JICA Team should make a recommendation in the Final Report that NO₂ should be specified in the ambient air quality standard instead of NO_x. Currently, NO_x is used in the Argentine air quality standard.

7. p2-6: Monitoring Sites – Both Teams agreed to reduce 10 manual monitoring sites to 9, because of available air samplers would be 9 including 5 newly supplied ones by JICA.
8. p2-6: Frequency of Monitoring – The Argentine Team mentioned that one-hour sampling for SO₂ and NO_x monitoring at night in three targeted areas would be difficult from the security problem in Argentina. Therefore, both Teams agreed to sample from 7 am to 6 pm. Detailed monitoring schedule including movements of

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people in charge and chemical analyses will be decided later by experts of both Teams, in consideration of each site specific condition.

9. p3-2: The Argentine Team informed its organization to the JICA Team as follows:

Table 3.2 Argentine Team

	In charge	Staff members
1	Supervisor	Lic. Cristina Massei
2	Vice-supervisor	Ing. Darío Gómez
3	Institutional	Ing. Osvaldo Postiglioni Lic. Cecilia Beuret
4	Power Plants	Ing. José María Chenlo Lic. Cecilia Beuret
5	Stationary Sources	Ing. Osvaldo Postiglioni Ing. Hector Bajano
6	Mobile Sources	Ing. José María Chenlo Lic. Laura Dawidowski
7	Air Quality Monitoring: Manual	Ing. Carlos Romero Lic. Alberto Iglesias Sr. Aldo Vicente Sr. Claudio Rodríguez Sr. Damián Suarez Sr. Juan Carlos López
8	Air Quality Monitoring: Automatic	Ing. Carlos Romero Sr. Aldo Vicente
9	Air Quality Analysis	Ing. Darío Gómez Lic. Laura Dawidowski
10	Air Dispersion Model	Lic. Laura Dawidowski Ing. Darío Gómez Lic. Cecilia Beuret

10. p3-5: Personal computer - The JICA Team proposed to change the specification "Window (English)" gave in Table 3-5 to Window (Spanish). The JICA Team found that the personal computer having the changed specification was the only available one in Argentina and was applicable for the software written in English as originally the Argentine Team intended to have. The Argentine Team accepted the change.

11. p3-5: Office - The Argentine Team had kindly set up about 70 m² air-conditioned office for the JICA Team in the CNEA's office (Av. General Paz 1499), furnished with one meeting table, an office desk, and one telephone extension.

12. p3-5: JICA Supplied Equipment -

The Argentine Team will ask Horiba's agent in Argentina for its assistance of initial set-up of its continuous automated analyzers. The Argentine Team will purchase standard gases for calibration from AGA Co. (Swedish).

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Major parts of the monitoring equipments to be supplied by JICA are not yet in hand of CNEA. According to the JICA Argentine Office, all the equipment will be available within January next year.

Attendance

Argentine Side

ENRE

Cristina Massei	Jefa del Departamento Ambiental
Oswaldo J. Postiglioni	Ingeniero de Departamento Ambiental
Jose M. Chenlo	Ingeniero de Departamento Ambiental
Cecilia Judith Beuret	Junior Professional

CNEA

Dario R. Gomez	Ing., Monitoreo Ambiental, Unidad de Actividad Química
Héctor Bajano	Ing., Monitoreo Ambiental, Unidad de Actividad Química
Carlos A. Romero	Ing., Monitoreo Ambiental, Unidad de Actividad Química
Laura Dawidowski	Lic., Monitoreo Ambiental, Unidad de Actividad Química

Japan Side

Masami Mizuguchi	JICA Headquarters, Senior Advisor
Juan Carlos Yamamoto	Cooperación Técnica, JICA Argentine Office
Masaaki Noguchi	JICA Team
Takeo Akizawa	JICA Team
Nobuo Kido	JICA Team
Makoto Miyakawa	JICA Team
Ritsuo Kubota	JICA Team
Akeo Fukayama	JICA Team
Kiyokazu Yamakawa	JICA Team
Atsuko Kato	JICA Team
Alejandro Bontempi	Interpreter

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S1-A4 JICA Equipment

List of the JICA Equipment

No.	Description	Quantity
1	Air Sampling	
1-1	High Volume Samplers and Spare Filters (Sibata HV 1000F)	10
1-2	Air Auto samplers (Sibata AAS-1)	5
1-3	Mini Pumps (Sibata MPΣ300, AC Adapter)	7
1-4	Mini Pumps (Sibata MPΣ30, AC adapter)	10
1-5	Gas Sampling Glass Wares	10
1-6	Ultrasonic Cleaner (Sibata SU-6TH)	1
2	Ambient Air Continuous Automatic Monitoring	
2-1	Ozone Monitor (Horiba APOA360)	1
2-2	SO ₂ Monitor (Horiba APSA 360)	1
2-3	NO _x Monitor (Horiba APNA 360)	1
2-4	CO Monitor (Horiba APMA 360)	1
2-5	SPM Monitor (Horiba BAM 1020)	1
2-6	Portable Gas Analyzer (Horiba PG-250 A)	1
2-7	HC Monitor (Horiba APHA 360)	1
2-8	Printer for SPM Monitor (APDA-350 E)	1
3	Multi-tube Flow-meter System and Tubing (Cole-Palmer, P-03215-28, P-03217-21/13/05, P-03218-72/61/62, P-95702-13, ID6.4-OD9.6)	1
4	Critical Orifice Set (Clean Air Engineering)	1
5	Glassware (29 items)	1
6	Chemical Reagents	1
7	Electronic Balance with Printer (Shimadzu AW-220)	1
8	Spectrophotometer (Shimadzu UV-1603)	1
9	SPM Iso-kinetic Sampler with PM ₁₀ Cyclone Package (Clean Air Engineering CATECO,5)	1
10	8 Stages Impactor (Andersen Instruments Mark III)	1
11	PM _{2.5} Andersen Sampler (Andersen Instruments)	1
12	Pure Water Unit, Millipore (Model Mili-Q Plus Academic)	1
13	GPS (Garmin GPS III Plus GPS)	1
14	Mobile Lab (Ford 350 Turbo Diesel, 2500cc)	1
15	Data Logger (Agilent Tech 20 channels)	1
16	PC with software (Toshiba Satellite 1605CDS)	1
	PC with software* (Compaq Presario 1200-101 with Microsoft Office 2000)	2
17	Printer (Hewlett Packard 970 CXI)	1
	Printer* (Hewlett Packard, Laser jet 1100C)	1
	Printer* (Hewlett Packard Desk Jet 640)	1
18	Particle Phase Analysis Software (EDX, PVB 8062/40)	1
19	Copy Machine	1
20	FAX Machine* (Panasonic KXFT 68 CC)	1

Equipment with *: purchased by the JICA Team for its office use, and

Other Equipment: purchased by the JICA Argentine Office before the commencement of the Study and not intended to be used for this full scale Study.

All the Equipment was handed over to the Argentine Team after the completion of the Study. Major monitoring and analytical ones are in the custody of CNEA.