MASTER PLAN STUDY ON REHABILITATION AND RECONSTRUCTION OF ELECTRICITY SUPPLY IN BAKU IN AZERBAIJAN REPUBLIC

FINAL REPORT

DECEMBER 2000

JAPAN INTERNATIONAL COOPERATION AGENCY

NIPPON KOEI CO., LTD.
KRI INTERNATIONAL CORP.

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PREFACE

In response to a request from the Government of Azerbaijan Republic, the Government of Japan decided to conduct the master plan study on rehabilitation and reconstruction of electric supply in Baku and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent a study team headed by Mr. Yoshiaki Miyagawa of Nippon Koei Co., Ltd. organized by Nippon Koei Co., Ltd. and KRI International Corp. to Azerbaijan four times from August 1999 to October 2000.

The team held discussions with the officials concerned of the Government of Azerbaijan, and conducted related field surveys. After returning to Japan, the team conducted further studies and complied the final results in this report.

I hope this report will contribute to the improvement of the situation of electricity supply in Baku and the Azerbaijan's economic development, and to enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of Azerbaijan Republic for their close cooperation throughout the study.

December 2000

Kunihiko SAITO
President
Japan International Cooperation Agency

December 2000

Mr. Kunihiko SAITO
President
Japan International Cooperation Agency
Tokyo, Japan

Dear Mr. Saito,

Letter of Transmittal

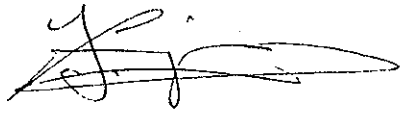
We are pleased to submit you the final report on the Master Plan Study on Rehabilitation and Reconstruction of Electricity Supply in Baku in Azerbaijan Republic.

This study was conducted by the joint venture of Nippon Koei Co., Ltd. and KRI International Corp., under a contract to JICA, during the period from August 20, 1999 to January 30, 2001. In conducting the study, we have formulated the Master Plan for rehabilitation and reconstruction of the distribution network in Baku with due consideration to the present situation of Azerbaijan and examined the feasibility and rationale of the formulated rehabilitation project for the period from 2001 to 2010.

We wish to take this opportunity to express our sincere gratitude to the officials concerned of JICA, the Ministry of Foreign Affair and the Ministry of International Trade and Industry. We would also like to express our gratitude to the officials concerned of the Baku City Executive Power, Baku Electric Network and Embassy of Japan in Azerbaijan for their cooperation and assistance throughout our field survey.

Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,



Yoshiaki MIYAGAWA
Team Leader

Master Plan Study on Rehabilitation and
Reconstruction of Electricity Supply in Baku

Nippon Koei Co., Ltd.

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ABBREVIATIONS

ACSR	:	Aluminum Conductor Steel Reinforced
APHNE	:	Absheron Power and Heat Network Enterprise (Azerenerji)
AIOC	:	Azerbaijan International Operations Companies
ANB	:	Azerbaijan National Bank
Azenerji	:	AZERENERJI Joint-Stock Company
BCEP	:	Baku City Executive Power
BEN	:	Baku Electric Network
BICEX	:	Baku Interbank Currency Exchange
BKD	:	Book Keeping Department (BEN)
CB	:	Circuit Breaker
CPHNE	:	Central Power and Heat Network Enterprise (Azerenerji)
CHP	:	Combined Heat and Power (plant)
CIS	:	Commonwealth of Independent States
CLDC		Central Load Dispatching Center (Azerenerji)
CPI	:	Consumer Price Index
CT	:	Current Transformer
DAC	:	Development Assistance Committee
DEC	:	Department of Engineering Communication
DS	:	Disconnecting Switch
EBRD	:	European Bank for Reconstruction and Development
EIRR	:	Economic Internal Rate of Return
EML	:	Energy Meter Laboratory
ESE	:	Energy Sales Enterprise
EU	:	European Union
FDI	:	Foreign Direct Investment
FIRR	:	Financial Internal Rate of Return
FOB	:	Free on Board
FSU	:	Former Soviet Union
GDP	:	Gross Domestic Product
HDI	:	Human Development Index
IEC	:	International Electro-technical Committee
IDP	:	Internally Dispatched Person
IMF	:	International Monetary Fund
IRR	:	Internal Rate of Return
JBIC	:	Japan Bank for International Cooperation
JICA	:	Japan International Cooperation Agency

JSCBEN	:	Joint Stock Company Baku Electric Network
LDC	:	Load Dispatching Center
LF	:	Load Factor
LNO	:	Local Network Office
LRAIC	:	Long Run Average Incremental Cost
LRMC	:	Long Run Marginal Cost
LV	:	Low Voltage (400/220 V in Azerbaijan)
MV	:	Medium Voltage (35 kV, 20 kV, 10 kV and 6 kV in Azerbaijan)
NAO	:	Network Area Office (BEN)
NAP	:	New Azerbaijan Party
NPV	:	Net Present Value
NTL	:	Non-Technical Loss
O/H	:	Overhead (line)
O & M	:	Operation and Maintenance
PIP	:	Public Investment Program
PT	:	Potential Transformer
SCS	:	State Committee Statistics
SOCAR	:	State Oil Company of the Azerbaijan Republic
SLV	:	Special Laboratory Vehicle
SRIEED	:	Scientific Research Institute of Energetic and Energy Design
STF	:	Systematic Transformation Facility
TACIS	:	Technical Assistance for CIS
TFDD	:	Technical Forecast and Development Department
TL	:	Technical Loss
TRS	:	Transformer Repair Shop
TSD	:	Technical Supplement Department
U/G	:	Underground (line)
UNDP	:	United Nations Development Program
UNHCR	:	United Nations High Commissioner for Refugees
USSR	:	Union of Soviet Socialist Republics
WB	:	World Bank

UNITS

LENGTH

mm	:	Millimeters
cm	:	Centimeters (10.0 mm)
m	:	Meters (100.0 cm)
km	:	Kilometers (1,000.0 m)

EXTENT

cm^2	:	Square-centimeters (1.0 cm x 1.0 cm)
m^2	:	Square-meters (1.0 m x 1.0 m)
km^2	:	Square-kilometers (1.0 km x 1.0 km)
ha	:	Hectares (10,000 m^2)

VOLUME

cm^3	:	Cubic-centimeters (1.0 cm x 1.0 cm x 1.0 cm)
m^3	:	Cubic-meters (1.0 m x 1.0 m x 1.0 m)

WEIGHT

g	:	grams
kg	:	kilograms (1,000 g)
ton	:	Metric ton (1,000 kg)

TIME

sec.	:	Seconds
min.	:	Minutes (60 sec.)
hr.	:	Hours (60 min.)

CURRENCY

AZM	:	Azerbaijan Manat
RR	:	Russian Rouble
US$	:	United State Dollars
J¥	:	Japanese Yen
ECU	:	Euro Currency Unit

ELECTRIC

V	:	Volts (Joule/coulomb)
kV	:	Kilo volts (1,000 V)
A	:	Amperes (Coulomb/second)
kA	:	Kilo amperes (1,000 A)
W	:	Watts (active power) (J/s: Joule/second)
kW	:	Kilo watts (10^3 W)
MW	:	Mega watts (10^6 W)
GW	:	Giga watts (10^9 W)
Wh	:	Watt-hours (watt x hour)
kWh	:	Kilo watt-hours (10^3 Wh)
MWh	:	Mega watt-hours (10^6 Wh)
GWh	:	Giga watt-hours (10^9 Wh)

VA	:	Volt-amperes (apparent power)
kVA	:	Kilo volt-amperes (10^3 VA)
MVA	:	Mega volt-amperes (10^6 Wh)
var	:	Volt-ampere reactive (reactive power)
kvar	:	Kilo volt-ampere reactive (10^3 var)
Mvar	:	Mega volt-ampere reactive (10^6 var)

VOLUME I

PRESENT SITUATION AND ISSUES

CHAPTER 1

INTRODUCTION

CHAPTER 1 INTRODUCTION

1.1 Background of the Study

Azerbaijan is in the process of economic reform towards a stabilization of macro-economy and market-oriented economy, while overcoming an unstable economic situation since its independence in 1991 and conflict against Armenia. In almost all sectors, however, the infrastructure and production activity base has not been properly maintained which prevents their efficient operation. Azerbaijan is currently promoting national development, placing the rehabilitation and improvement of its infrastructure and production activity base.

In Azerbaijan, the Azerenerji Joint Stock Company (Azenerji) is a monopolistic electric power company, including generation, transmission, and distribution of electric power, except distribution in Baku, Sumgait, and Ganja City. Power supply facilities in Azerbaijan are inefficient and unreliable, as they were mostly constructed in the former Soviet Union (FSU) period and extensively obsolete and outdated as a result. Moreover the shortage of spare parts and lack of maintenance has taken place due to the shortage of funds. For example, as of the end of 1998, while total rated power generating capacity amounts to around 5,000 MW (thermal: 4,200 MW and hydro: 850 MW), effective capacity amounts to only around 3,700 MW (74% of the rated). Thus, in 1998, there was insufficient reserve capacity under a normal operation against the peak load (3,452 MW). So a part of the peak loads in winter season has to be imported from a neighboring country. In Baku, which is the largest consumer of energy in Azerbaijan, the distribution facilities installed at the beginning of the 1900s are still served, and more obsolete and outdated than those of Azenerji.

The total amount of energy consumption in Azerbaijan was 14,262 GWh in 1998. The energy wholesales to the three cities amounted to 4,603 GWh or 32.3% of the total. Energy consumption has declined yearly due to an economic stagnation since the independence and a drop in industrial production, and reaching the lowest point of 12,969 GWh in 1997 for the last 10 years. Although energy consumption in 1998 rose by around 10%, it has not yet reached the level in 1993. Energy demand will be expected to increase along with the economic recovery following the oil shore development and progress in economic reform. Energy consumption in Baku, where residential demand accounts for 80% of the total (in 1998), has been on the rise (except for 1995) and the annual average rate of increase is high at 11.4%.

Azenerji's transmission and distribution loss (excluding station use by generation plants: 6.0% of total energy generation) in 1998 was 2,911 GWh (17.0%) and still a high value, although this value is largely reduced compared to 21.0% in 1997. The loss of entire transmission and distribution system in Azerbaijan including the distribution loss in the three cities (803 GWh: 17.4% of wholesale energy) was 21.6%. The loss against

wholesale energy in the distribution system of Baku has greatly been improved from 22.5% in 1997 to 16.8% in 1998, however it is still at a high level.

With the background mentioned above, the Azerbaijan Government prioritized the reconstruction and rehabilitation of distribution network in Baku, and requested the Japanese Government to provide technical cooperation for the Master Plan Study on Rehabilitation and Reconstruction of Electric Supply in Baku (the Study) in December 1997.

In reply to the request, the project formulation team was dispatched by the Japan International Cooperation Agency (JICA) in October 1998, and it confirmed the current situation of the distribution system in Baku and the contents of application for the technical corporation. The preliminary study team and counterpart organization, the Baku City Executive Power (BCEP), signed the Scope of Work (S/W) and the Minutes of Meeting (M/M) related to the Study on March 17, 1999.

1.2 Outline of the Study

As stated in Section 1.5 and 1.6, the Presidential Decree issued on June 14, 2000 has decided to separate the Baku Electric Network (BEN) from BCEP, and newly establish the Joint Stock Company Baku Electric Network (JSC BEN) as an independent governmental corporation. At the same time, all distribution facilities (35, 10, and 6 kV) in Baku City which had been possessed by Azenerji has been transferred to JSC BEN, so that JSC BEN will be responsible for energy supply to all customers in Baku City (Azenerji had supplied a third of the total energy demand in Baku City).

The S/W and M/M were, however, agreed upon between the preliminary study team dispatched by JICA and Azerbaijan Government on March 17, 1999. The distribution facilities identified as the study target at those agreements are those possessed by BEN before an issue of the Presidential Decree, and not including those newly transferred by Azenerji. Accordingly, the objectives and the scope of work in the Study explained below do not take into account newly transferred facilities by Azenerji.

1.2.1 Objective of the Study

The main objective of the Study is to formulate a Master Plan for the rehabilitation and reconstruction of electric power distribution system in Baku (the Master Plan), to select an urgent and important project (the priority project), and to conduct a basic design level study for the priority project.

1.2.2 Target Area and Facilities

Target area of the Study is the distribution network facilities owned and managed by Baku City and its related facilities both located in six administrative districts (the Study area) in the central part of Baku including Sabail,

Yasamal, Nasimi, Narimanov, Nizami and Khatai. Distribution network facilities include 10/6 kV medium voltage lines, 0.4 kV low voltage lines, transformer stations, monitoring and controlling facilities of BEN. Related facilities mainly include 110 kV and 35 kV substations and high voltage lines of Azenerji, which supplies energy to BEN.

1.2.3 Scope of the Study

The scope of the Study, which both BCEP and JICA agreed is as follows:

(1) Collection, analysis and examination of related material and information

(a) Current situation of the electric power sector

(b) Socio-economic situation of Azerbaijan

(c) Development plan of Azerbaijan

(2) Electric power demand forecast

(a) Actual power and energy demand trends (national, Baku City, by tariff category, by administrative district, load curve and so on)

(b) Power and energy demand forecast in the study area by administrative district and tariff category until 2010

(3) Formulation of the Master Plan for the study area

(a) Study on current situation of existing distribution network and identifying the problems

(b) Review of the existing rehabilitation and reconstruction plan

(c) Formulation of the Master Plan

- Replacement plan of the existing facilities
- Expansion plan corresponding to an increase in power and energy demand
- Improvement plan to enhance supply reliability

(d) Cost estimate for the Master Plan

(e) Economic and financial analysis for the Master Plan

(f) Recommendation for improving management and facility operation and maintenance

(g) Implementation plan for the Master Plan

(4) Basic design level study for the priority project

(a) Selection of the priority projects

(b) Selection of the highest priority project

(c) Basic design for the facilities identified for rehabilitation and reconstruction

(d) Cost estimate for the priority project

1.3 Flow of the Study

The Study has been carried out along with the following work flow:

(1) Preparatory Study in Japan

Based on the data collected by the project formulation and preliminary study teams, the Study Team examined and tried to understand the background of the Study, and general situation of the Study area and distribution network facilities of BEN. Then the items and approach for the study operation were examined, and the Implementation Plan and Inception Report for the Study were prepared.

(2) The First Site Study (from August 26, 1999 – November 6, 1999)

As soon as arriving at Baku, the Study Team discussed the approach and contents of the Study by explaining the Inception Report to the counterpart. The Study Team also discussed cooperative setup by the counterpart, current situation of distribution facilities and collection of related data. Accepting a development study team organized by a foreign consultant firm under the technical cooperation was the first time for BCEP and BEN, and as a result a cooperative setup was not properly established. Furthermore, since BEN has not adequately managed data collection activity on facilities, the data collection during the first site study has not been conducted as initially planned.

The following items and activities were examined and undertaken during the first site study:

- Present condition of the electric power sector (organization, supply facilities, energy balance)
- Present condition of the energy distribution facilities in Baku and problematic issues
- Present condition of the operation and maintenance (O&M) for the distribution facilities in Baku, problematic issues and improvement plan
- Data collection on 10 kV, 6 kV, and low voltage distribution system operation and electrical measurements
- Socio-economic situation of Azerbaijan and Baku City
- Environmental issues in the distribution system
- Present condition of the load dispatching system for the distribution network
- Preliminary selection of the high priority project/area for the basic design level study
- Explanation and discussion on the Progress Report (1)

Information and data not available during the first site study were those related to the present condition of distribution facilities as a basis for formulating the Master Plan. As the Study Team considered that it would take too long to satisfactorily collect those data due to poor data management by the counterpart, the counterpart was asked to prepare and compile them during the first study in Japan. However, the data collecting activity required to formulate the Master Plan had to be continuously followed by the Study Team during the second site

study period.

(3) The First Study in Japan

Based on the information and data obtained during the first site study, the following works were carried out. The results of those studies were explained to the counterpart for discussion.

- Compilation and analysis of the information and data obtained
- Energy and power demand forecast for the study area
- Examination of the basic database system for O&M of the distribution facilities
- Examination of the approach for formulating the Master Plan

In the initial schedule, analysis and examination of the highest priority project/area selection were to be conducted during the first study in Japan. However, this work was not satisfactorily forwarded due to the lack of information and data on the distribution facilities as explained above.

(4) The Second Site Study (February 15, 2000 – March 17, 2000)

The organizational setup of the Working Group for the study was reviewed and re-organized according to the advice by JICA and the discussion with the counterpart.

The main objective of the second site study was to explain the approach for formulating the Master Plan and the result of examination of the highest priority project/area selection, and to finally determine the project/area. However, since the data collection on the existing distribution facilities during the first site study had not been well performed, the collection activity had to be continuously followed to grasp the present situation as in the first site study.

The following items and activities were examined and undertaken during the second site study:

- Standards for design, construction and environmental consideration
- Institutional aspect and managerial issues of power utility service
- Explanation and discussion on the approach for formulating the Master Plan
- Supplemental study on the present condition of the distribution facilities and actual load trend
- Preparation, explanation and discussion for the Interim Report

During the second site study too, the examination of the highest priority project/area selection was not pursued due to poor performance of data collection. However, sufficient quantity and quality of data essential for the analysis and examination was available at the end of the second site study. After discussion with the counterpart, it was confirmed that the Study Team would select the highest priority project/area. The Study Team conducted the selection study for the highest priority project/area after returning to Japan. Although explained later, Sabail district was selected as the highest priority area because the said district was most

demand-concentrated, and left with the oldest distribution facilities since the operational start of Baku City's electric network. This district had also been the one, which the counterpart had regarded as most urgent and strongly recommended to select as the highest priority.

(5) The Third Site Study (May 16, 2000 – July 17, 2000)

By the end of the second site study, the investigation of the existing situation of distribution facilities had been mostly completed for enabling the formulation of the Master Plan and basic design level study. However, to attain the study output based on more accurate and reliable information and data, an investigation of the present situation of distribution facilities has been continuously followed. The counterpart was asked to collect the data requested, and the Study Team has also been renewing and amending the basic database as a basis for formulating the Master Plan. It is considered that the basic database prepared by the Study Team has incorporated all information and data available at this time.

The following work items were undertaken based on the information and data on the distribution facilities:

- Supplementary study for the highest priority project area
- Preliminary design for the Master Plan
- Economic and financial evaluation for the Master Plan
- Basic design for the facilities in the highest priority project
- Preparation, explanation and discussion for the Progress Report (2)

In addition to the fact that the peak demand in Azerbaijan is recorded in the winter (December or January), the peak demand is about twice that recorded in the summer. Therefore, the measurement except in winter is not enough to accurately grasp the problems in the distribution network. Owing to the study schedule, however, the counterpart was asked to measure the level of current, voltage, power (watt), and energy (watt-hour) in the transformer stations with the measuring instruments brought from Japan. As the Study Team accepted the measuring result, the analysis and examination for the result was undertaken.

(6) The Second Study in Japan

The following work items were carried out during the second study in Japan and the study output were incorporated in the Draft Final Report.

- Preparation of the implementation plan for the Master Plan
- Examination of the improvement plan for the energy utility management and O&M for the distribution facilities, and recommendation
- Evaluation of the facility design for the highest priority project
- Examination of the measurements for minimizing environmental impact by the project implementation
- Preparation for the Draft Final Report

(7) The Fourth Site Study (October 10, 2000 – October 24, 2000)

The contents of the Draft Final Report were explained and discussed, and details of the Master Plan were particularly discussed. The Final Report has been prepared by reflecting the result of the discussion and with the comments of the counterpart and JICA.

1.4 The Contents of the Report

The Presidential Decree issued on June 14, 2000 has decided that all distribution facilities (35 kV, 10 kV, and 6 kV) in Baku City, which had been in the possession of Azenerji, has to be transferred to JSC BEN, so that JSC BEN will be responsible for energy supply to all customers in Baku City. However, the target facilities identified in the Study are those distribution facilities owned and managed by BEN as of March 1999. Therefore, the study report has been prepared by targeting the distribution facilities, which BEN had been responsible for until the issue of the Presidential Decree.

The main objectives of the Study are to formulate the Master Plan for the distribution facilities in the Study area, and to select an urgent and important project/area for the basic design level study. The basic design level study is normally followed by the Master Plan formulation and producing more precise output than the Master Plan. Accordingly, the report largely consists of three volumes to distinguish each study output for investigation of present conditions, the Master Plan, and basic design level study.

Volume I: Present Situation and Issues

The basis for formulating the Master Plan and basic design level study is explained. In other words, the background of the study, socio-economic situation of the study area, current situation of national power sector, demand and supply balance in Baku City, and issues in BEN's power supply are discussed.

Volume II: Master Plan Study

The Master Plan for the rehabilitation of distribution facilities in the study area until 2010 is explained. The items explained include the existing rehabilitation/expansion plans, details of distribution facilities in the study area, identification of facilities for rehabilitation, details of the Master Plan over 10 years, preliminary design for distribution facilities, result of demand forecasting, implementation plan and cost estimate, and economic/financial evaluation for the project. Also the basic database system for distribution facilities as base data for BEN's own review of the Master Plan and major environmental issues to be considered in the project implementation process are explained.

Volume III: Basic Design Level Study

The highest priority project is explained. The selection process for identification, selection

result, detailed result of analysis for the study area, details of distribution facilities to be urgently rehabilitated, basic design for those facilities, the project implementation plan and cost estimate, and project evaluation are explained.

1.5 Transition of Organization Setup of Counterpart Executing Agency

In return for the financial supports by the international assistance organizations, the public sector in Azerbaijan is generally required to implement the structuring reform and adjustment to a market-oriented economic system. Electrical power sector as well is the target of this reform. When the preliminary and preparatory study team of JICA for this Study visited Baku, BEN under BCEP had been comprehensively responsible for distributing energy to relatively small-scale customers, which accept energy with less than 10-6 kV. At this time, BEN as one clear-cut organization had every necessary function to undertake power distribution. Hence, the organization had been appropriately set so as to formulate and implement the rehabilitation plan, and supposed to practically perform the counterpart organization (see Figure I.1.5-1 for the organizational structure when the preliminary study team visited).

It was found, however, at the beginning of the first site study that the re-organization of BEN and its supervising agency the Department of Engineering Communications (DEC) of BCEP was undertaken in May 1999. By this reform, some departments in BEN, which had been originally playing important functions in power distribution, were separated from BEN. Those who were separated includes the Division for Special Construction (DSC), the Enterprise for Power Supervision and Sale (EPSS), the Transformer Repair Shop (TRS), and so on (see Figure I.1.5-2 for the organizational structure after the re-organization in May 1999).

As a result, BEN's remaining role or function had been downsized to the operation and maintenance of 10 kV, 6 kV and low voltage distribution facilities, replacement of transformers, repair works of underground cables, and laying works of service wires for customers. DSC which had been responsible for any rehabilitation and construction works including construction of transformer stations, renovation of large facilities, laying and replacement of underground cables, was absorbed into the Manufacturing Repair-Construction Installing and Adjusting Enterprise (MRCIAE) under the direct control of DEC.

The Auto Transportation Department, which was responsible for the management of automobiles and heavy-machinery required for operation and maintenance of distribution facilities and TRS were also absorbed into DEC. As for DSC, which is in charge of selling, billing, and collection, was transformed and strengthened as the Enterprise for Electric Power Control and Sales of Energy, known as "the Energy Sales Enterprise" (ESE) under the direct control of the first deputy mayor of Baku City.

Compared with the "before re-organization", it was revealed that the supervising and controlling lines differ depending on the function, and the so called BEN's division of duties were extensively downsized. Although

some difficulties were initially anticipated in formulating the Master Plan, the study for the formulation of the Master Plan has been forwarded by maintaining BCEP as counterpart organization since those separated functions were under the umbrella of BCEP.

1.6 Privatization Process

During the third site study, the processes of energy sector's structural reform and adjustment to market-oriented economic system have been further accelerated. As mentioned above, the Azerbaijan Government has emphasized the restructuring of energy sector through privatization. Followed by Azenerji, the Azerbaijan Government has facilitated the restructuring of BEN by issuing the Presidential Decree on Preparation "Baku Electric Network" Production Unit for Privatization on 8 November 1998 in view of BEN's restructuring and sound energy supply operation.

On 14 June 2000, the Presidential Decree on the restructuring of energy distribution sector through establishing JSC BEN was issued again in view of sound energy supply operation for Baku citizens, and the private operation of energy distribution shall be forwarded hereafter. The Decree decides to re-incorporate the functions, which were once separated and to establish the organization setup that is close to the former BEN (i.e. before the re-organization explained above). Corporate registration at the Ministry of Justice has been said to be already finished. The Presidential Decree is attached in Appendix I.1.6-1 and briefly outlined as follows:

(1) To liquidate BEN, ESE managed by BCEP as well as the other enterprises and entities related to electricity supply operation in Baku City, and to establish JSC BEN whose shares for the preliminary stage belong to the government.

(2) To charge the Ministry of State Property of Azerbaijan Republic with:

- Implementing all the necessary measures in relation to establishment of JSC BEN,
- Appointing the chairman and members of the board of JSC BEN as well as approving the structure of the Observation Council from the representatives of the Ministry of Economy, the Ministry of State Property, the Ministry of Finance, BCEP and Azenerji,
- Providing the implementation of the Open Tender, on transferring, JSC BEN for the long-term management on reasonable conditions and concluding the appropriate contract to the winner of the tender.

(3) To charge Azenerji together with JSC BEN with establishing and approving, within 3 (three) month's period, the scheme and mechanism of operative management of the electricity supply system with a view to achieve safety and reliability of power supply to Baku City.

Then, the enterprises and entities that are included in the structure of JSC BEN are as follows:

(a) BEN (Baku Electric Network) Production Unit

(b) ESE (Energy Sales Enterprise) managed by BCEP (Baku City Executive Power)

(c) The Production Administration of Auto-transportation and Mechanization of DEC of the BCEP which serves the electric network in Baku City

(d) The Manufacturing Repair-Construction Installing and Adjusting Enterprise (MRCIAE) of DEC of BCEP which serves the electric network in Baku City

(e) The 35 kV and below voltage electricity transmission lines, substations and controller facilities for their management which provide Baku City with electricity and belong to Azenerji that is located on its administrative territory

(f) Management for the Intra-Building Energy-Supply

As of now, JSC BEN has been in the transition process and not yet arrived at the substantial and full-scale operation as envisaged in the Presidential Decree. The Ministry of State Property as the responsible organization during transition period has been preparing for the full-scale and substantial operation. Accordingly, JSC BEN has not indicated the internal organization structure and implementation setup for the rehabilitation project.

As known from the Decree, all the stocks of JSC BEN are to be held by the government at the initial stage. Consequently, the distribution facilities, which had been held by BCEP, are to be transferred to the government. JSC BEN has been therefore established as the governmental corporation. The Presidential Decree also orders that long-term management and operation of energy distribution in Baku City shall be out-contracted to private proponent to be selected by the open-tender. It is envisaged that JSC BEN will consign the management and operation activities (including power distribution and sales, O&M for the distribution facilities, billing and collection and so on) by specifying the rules and activities which private operator observes, and be in the position to instruct, control or monitor the operation of private proponent.

It is also known that the distribution facilities in Baku City with below 35 kV, which has been possessed by Azenerji, shall be transferred to JSC BEN, and that all customers below 35 kV in the entire Baku City will be within the scope of JSC BEN. The sales scale in terms of energy amount is forecasted to expand to one and half time.

This information was obtained by interviewing the concerned personnel based on what is known from the Presidential Decree. Particularly the forms and contents of management/operation consignment are of the matters of examination and discussion, and for future negotiation with the private proponent. It is before or after the tender that the details for management/operation are clearly known.

1.7 The Concerned Personnel for the Study

For the executing agency of the study on Azerbaijan side, its surrounding circumstance has been largely varied as explained in Section 1.5. The actual site work, however, has been carried out at the office of BEN's headquarters building, which has been continuously responsible for operating and maintaining the distribution facilities of Baku City. The site investigation work was closely collaborated with BEN's counterpart personnel. Appendix I.1.7-1 lists the officials in the concerned institutions, whom the Study Team has contacted.

For the study implementation, the Joint Venture Study Team is composed of Nippon Koei Co., Ltd. and KRI International Corp., who were appointed by JICA. The team leader is Yoshiaki Miyagawa from Nippon Koei Co., Ltd. The members of the Study Team are listed in Appendix I.1.7-2.

1.8 Equipment for the Study

The following equipment was provided by JICA for the study operation:

Table I.1.8-1 Measuring Devices and Equipment

Devices and Equipment	Specifications	Quantity
Personal Computer (Laptop Type)	IBM ThinkPad 390E with P-II 333 MHz and 64 MB RAM, Windows 98 and Microsoft Office 2000	1 set
Laser Printer	HP Laser Jet 4050, A4 size	1 set
Load Analyzer	HIOKI 3166 Clamp On Power Hi Tester with Options	3 sets
Clip-on Ammeter	HIOKI 3266 Clamp On P.F. Hi Tester	5 sets
Cable Locator	Radio detection RD 400 SL	1 set
Copier	CANON NP6216, A3 size	1 set
Facsimile	Panasonic UF-560	1 set

The measuring devices and equipment provided by JICA have been handed over to JSC BEN in response to strong request by Azerbaijan at the end of the study.

1.9 Transfer of Technology

The rehabilitation and reconstruction plan on distribution network in Baku is mainly dealing with the existing facilities. However, it is also necessary for BEN to forecast power demand, confirm the rehabilitation and extension plan of upstream facilities managed by Azenerji, and continuously revise the rehabilitation, development and expansion plan for the distribution facilities. This is especially true because the demand in the Study area is continuously varying due to new urban or building development, and that Azenerji's upstream network facilities including transmission lines and substations are also subject to their revising. Through these activities, BEN has to satisfy the needs of customers, and carry out efficient investments.

Generally speaking, it is appropriate to formulate the development plan for some 10 years and yearly review or

revise according to the change in the conditions. The reviewing or revising work needs to be undertaken by BEN with cooperation of the concerned institutions. In this regard, the engineer in charge needs to learn the adequate technology for the planning.

Although the Study Team initially planned to transfer technology to the counterpart through "On the Job Training" method, the technological transfer system and cooperation system was not satisfactorily functioned. This is because the counterpart group for the Study has been made up of management staff, and most of the communications with counterpart group has been taken up by the questions and answers for the information/data requested and the study reports. Therefore, cooperative approach for formulating the Master Plan with the personnel in charge and technological transfer as a result has not been satisfactorily facilitated.

In providing for above situation, JICA requested the Study Team to hold seminars. Therefore, the Study Team made a maximum effort to facilitate technology transfer through the seminars on the following theme:

(1) The First Seminar (during the first site study)

Through introducing the methods on distribution network system operation and formulation of facility development and expansion plan in Japan, and in order to deepen the understanding of the counterpart on the study approach, items and contents, the first seminar was held on following matter:

- The method of demand forecast
- Example of facility standards
- Example of facility operation standards
- The method of facility planning
- The method of economic and financial analysis for project

(2) The Second Seminar (during the second site study)

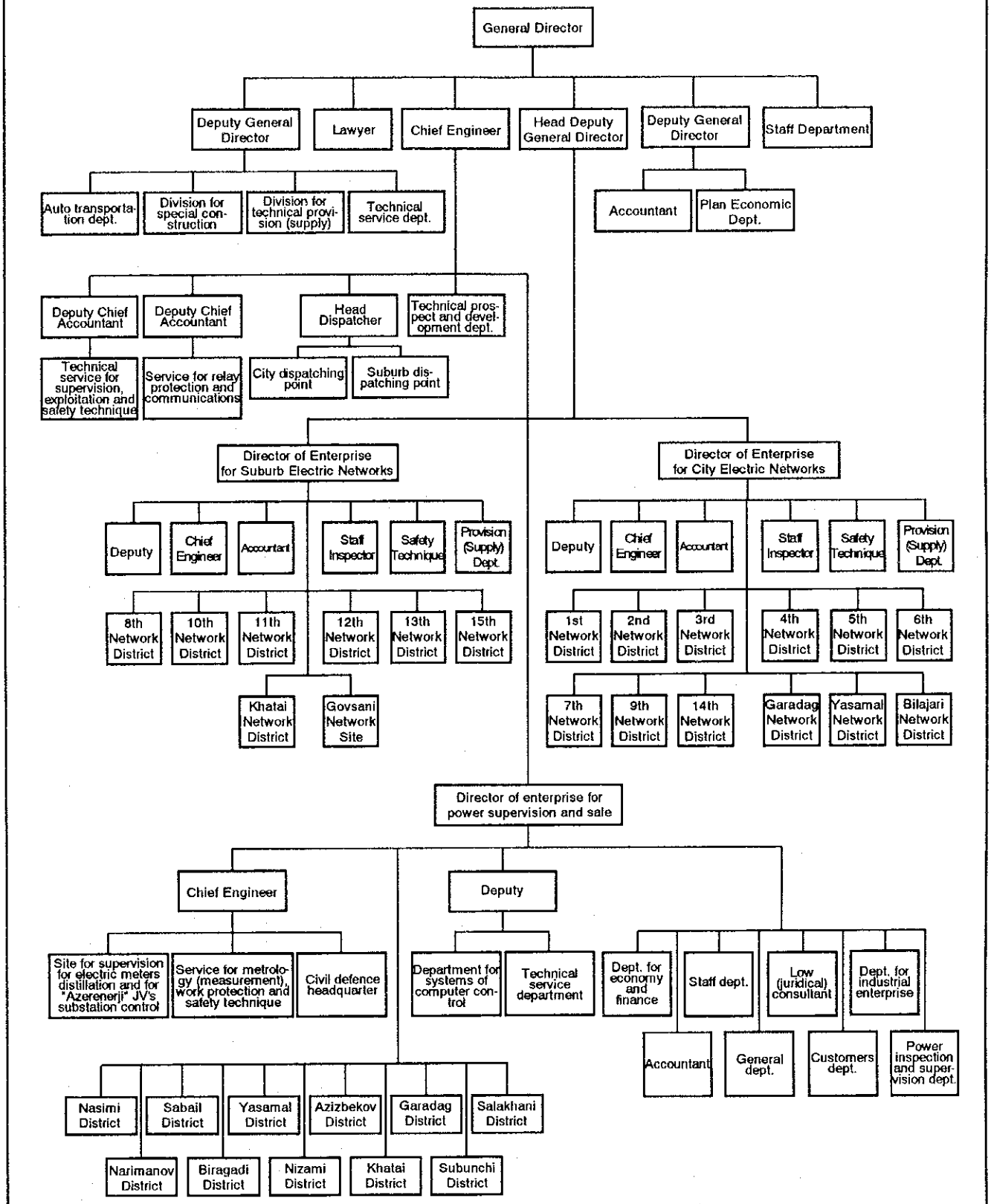
Based on the conditions, issues and improvement approach clarified during the first site study and study in Japan, the second seminar was held to deepen the understanding of the counterpart on the method of the Master Plan formulation and basic design level study on the following topics:

- Current conditions, issues and improvement plan of the existing distribution facilities
- Basic approach towards the Master Plan formulation
- Power demand forecast in the study area
- Method of selecting the highest priority project/area
- Basic database system

(3) The Third Seminar (the forth site study)

To deepen the understanding on the rehabilitation and reconstruction plan and the highest priority project/area and facilitate their implementation, the third seminar was held with the following topics:

- Results of the study and examination on the formulation of rehabilitation and reconstruction plan
- Contents of rehabilitation and reconstruction plan
- Evaluation method of rehabilitation and reconstruction plan
- Implementation schedule of rehabilitation and reconstruction plan
- Improvement plan for operation and management of electric power supply
- Improvement plan for facility operation and maintenance system



Master Plan Study on Rehabilitation and Reconstruction of Electric Supply in Baku
Изучение Генерального Плана Восстановления И Реконструкции Электроснабжения Города Баку

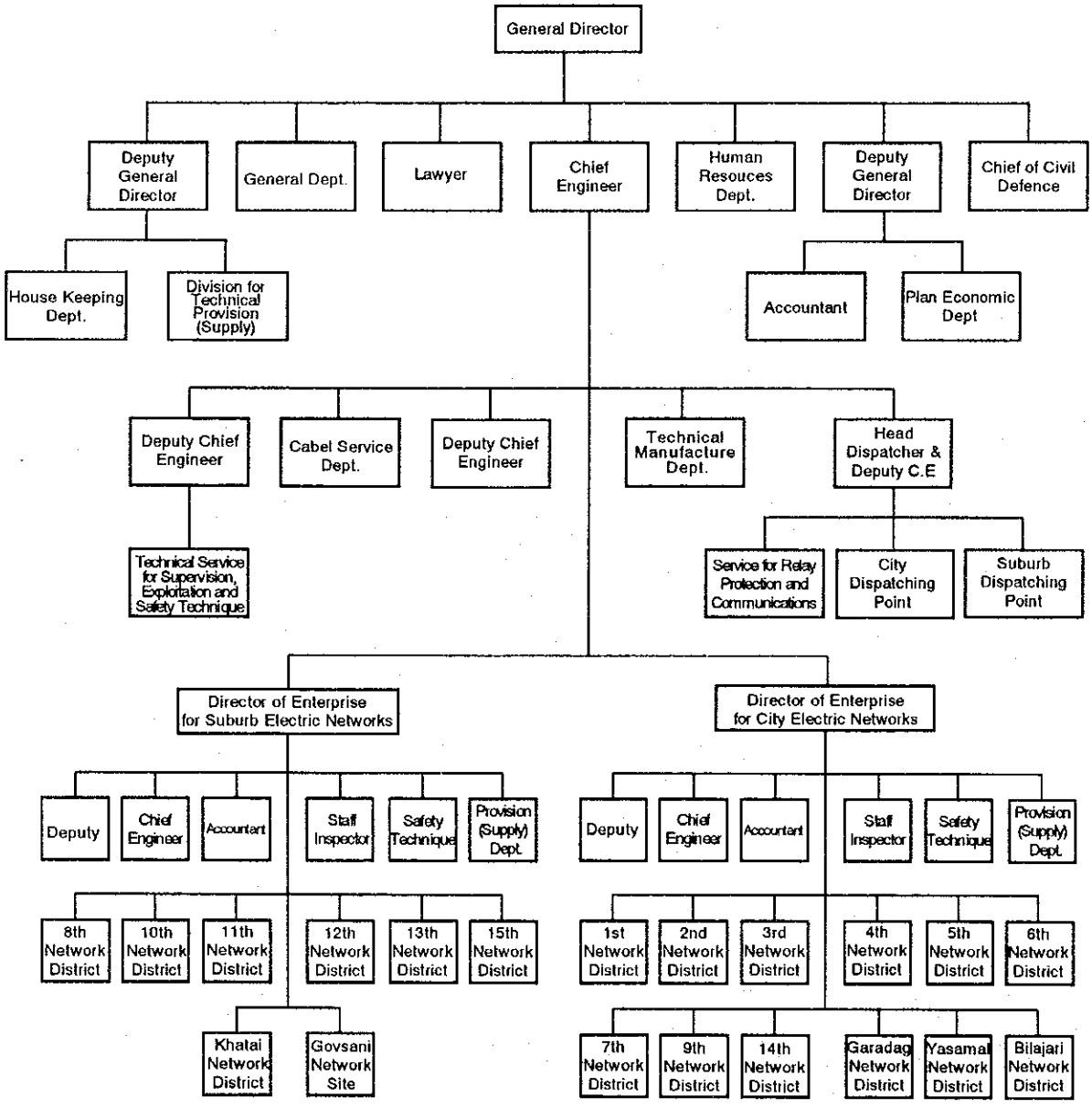
Baku Electric Network
ПО "БАКЭЛЕКТРОСЕТЬ"

Japan International Cooperation Agency
Японское Агентство Международного Сотрудничества

Joint Venture Nippon Koei Co., Ltd. & KRI International Corp.
Совместное предприятие НИППОН КОЕЙ и KRI Интернешнл Корп.

Figure / Схема I.1.5-1
Title / Название Рисунка

Organization of Baku Electric Network
(before May 1999)



Master Plan Study on Rehabilitation and Reconstruction of Electric Supply in Baku Изучение Генерального Плана Восстановления И Реконструкции Электроснабжения Города Баку	Figure / Схема I.1.5-2 Title / Название Рисунка Organization of Baku Electric Network (from May 1999 to June 2000)
Baku Electric Network ПО "БАКЭЛЕКТРОСЕТЬ" / Japan International Cooperation Agency Японское Агентство Международного Сотрудничества	
Joint Venture Nippon Koei Co., Ltd. & KRI International Corp. Совместное предприятие НИППОН КОЕЙ и KRI Интернешнл Корп.	

DECREE
OF THE PRESIDENT OF AZERBAIJAN REPUBLIC

On Establishment "Bakielectrikshebeke" ("Bakuelectricnetwork") Joint Stock Company and Its Transferring for Management

With a view to bring the Baku city electric network into a health state as well as to improve the supply of the city with electric power, I take decision as follows:

1. To liquidate "Bakielectrikshebeke" ("Bakuelectricnetwork") Production Unit, the Enterprise for Electric Power Control and Sales of Energy managed by the Administration of Head of the Baku Executive Power and on their base as well as on the basis of the other enterprises and entities stated in the Appendix to the present Decree, to establish "Bakielectrikshebeke" ("Bakuelectricnetwork") Open Type Joint Stock Company whose shares for the preliminary stage belong to the Government.

2. To charge the Ministry of State Property of Azerbaijan Republic with:
   - implementing all the necessary measures in connection with establishment of "Bakielectrikshebeke" ("Bakuelectricnetwork") Joint Stock Company in accordance with the legislation of Azerbaijan Republic;
   - appointing the chairman and members of the board of "Bakielectrikshebeke" ("Bakuelectricnetwork") Joint Stock Company as well as approving the structure of the Observation Council from the representatives of the Ministry of Economy of Azerbaijan Republic, the Ministry of State Property of Azerbaijan Republic, the Ministry of Finance of Azerbaijan Republic, the Executive Power of Baku City and "Azerenergy" Joint Stock Company, in the order to provide Baku City with the reliable supply of power energy;
   - providing the implementation of the Open Tender, in accordance with the legislation, on transferring "Bakielectrikshebeke" ("Bakuelectricnetwork") Joint Stock Company for the long-term management on reasonable conditions and concluding the appropriate contract with the winner of the tender.

3. To charge "Azerenergy" Open Type Joint Stock Company together with "Bakielectrikshebeke" ("Bakuelectricnetwork") Joint Stock Company with establishing and approving, within 3 (three) month period, the scheme and mechanism of operative management of the electro-energetic system with a view to achieve safety and reliability of transferring and distribution of power energy all over Baku City.

4. The Cabinet of Ministers of Azerbaijan Republic shall solve all the questions connected with the securing implementation of the present Decree.

5. To consider Decree No. 253 of November 8, 1999 of the President of Azerbaijan Republic "On Preparation of "Bakielectrikshebeke" ("Bakuelectricnetwork") Production Unit towards Privatization" to have lost its force.

6. The present Decree comes into force from the day of its publication.

Heydar Aliyev,
President of the Azerbaijan Republic.

The City of Baku
June 14, 2000

Appendix to the Decree of the President of Azerbaijan Republic (dated June 14, 2000)

LIST
OF ENTERPRISES AND ENTITIES INCLUDED INTO "BAKIELECTRIKSHEBEKE" ("BAKUELECTRICNETWORK")

1. "Bakielectrikshebeke" ("Bakuelectricnetwork") Production Unit.

2. The enterprise for electric power control and sales of energy managed by the Administration of Head of the Baku Executive Power.

3. The Structure of Head Production Administration of Auto-transportation and Mechanization of Engineering Communications Department of the Baku City Executive Power which serves the Baku electric network.

4. The Structure of manufacturing Repair-Construction Installing and Adjusting Enterprise of Engineering Communications Department of the Baku City Executive Power which serves the Baku electrical network.

5. The 35 kV and below voltage electricity transmission lines, substations and controller facilities for their management which provide the supply of the City of Baku with electricity and belong to "Azerenergy" Open Type Joint Stock Company that located on its administrative territory.

6. The Management for Intra-Building Energy-Supply.

Appendix I.1.7-1 Officials contacted by the Study Team

Name	Position
Ministry of Foreign Affairs	
Khalaf Khalafov	Deputy Minister, Foreign Relations
Israfil Ahmedov	First Secretary, International Economic Relations Dept.
Kanan Murtuzov	Internal Bilateral Economic Relations Division
Ministry of Finance	
Mardan Mardanov	Head of Foreign Economic Relations Dept.
Ministry of Economy	
Oktay A. Hagverdiyev	Vice Minister
Hussein G. Gubadov	Head of Fuel & Energy Industry Dept.
Cabinet Ministers	
Anvar Manafov	Deputy Chief, City Economic Dept.
Rovshan Sh. Suleymanov	Advisor, National Agency on Foreign Investment & Technical Assistance
AZERENERJI Joint-Stock Company	
Muslim Imanov	Chairman of the Board (President)
Imran Ali Hasanov	Vice President for Economy
Iman R. Kuliyev	Chief of Foreign Economic Relations Dept.
Gazanfar Rzayev	Director, Central Power and Heat Network Enterprise
Nazim Askerov	Chief Engineer of above
Elman Valiyev	Director, Absheron Power and Heat Network Enterprise
Ilyas Adigozalov	Chief Engineer of above
Akif Askerov	Deputy Director, Energy Sales Dept. of above
Kerim N. Ramazanov	Prof., Director, Azerbaijan Scientific-Research Institute of Energetic and Energy Design
Baku Executive Power	
Mahammad A.R. Abbasov	First Deputy Mayor
Adalet J. Azizov	Deputy Mayor
Vagif Eyvazov	Chairman of Dept. of the Engineering Communications
Vaqif H. Shahmamedov	First Deputy Chairman of above
Idris J. Rzayev	Deputy Chairman of above
Aydin A.Allahverdiyev	Deputy Chairman of above
Samad Jafarou	Chief Engineer of Construction, Repairing and Installation Enterprise
Baku Electric Network	
Zakir Rasulov	Chief Engineer
Hajiyev Huseyn	Chief of Technical Section
Mejid Suleymanov	Deputy Chief Engineer
Kamil Guliyev	Deputy Chief Engineer
Fazil Seidov	Deputy Chief Engineer
Dr. Mironov Gennedy	Chief of Group
Abdullayev Ilham	Director of Procurement Supply Dept.
Nariman Makhmudov	Director, Central Network
Zakhir Guliyev	Chief Engineer, Central Network
Energy Sales Enterprise	
Valentina Sadykhova	Chief Engineer
Central Heating Department	
Seyfi Gozolv	Chief Engineer
Baku Gas Supply Department	
Alish Ismeyilov	Director
Balakhan Abbasov	Deputy Chief Engineer, Technical Division
TACIS	
Jahangir Efendiev	Deputy Director, TACIS Coordinating Unit
Peter Graham	Team Leader for Restructuring of Electricity Sector
UNHCR	
Stane Salobir	Program Officer

Appendix I.1.7-2 JICA study team

	Main Duty	Name
1.	Team Leader and System Plan	Yoshiaki MIYAGAWA
2.	Social Environment and Power Demand Forecast	Haruo YAMANE
3.	Operation and Management Analysis	Shigeru KATAOKA
4.	Substation and Distribution Plan	Toshiyuki ARITA
5.	Substation and Distribution Design	Jun-ichi FUKUNAGA
6.	Control and Communication Plan	Takamichi HASEGAWA
7.	Economic and Financial Analysis	Taro TSUBOGO
8.	Team Coordinator	Eiji MATSUDA

CHAPTER 2

SOCIO-ECONOMIC SITUATION

Chapter 2 SOCIO-ECONOMIC SITUATION

2.1 Profile of Azerbaijan Republic

2.1.1 Geography and Population

Azerbaijan, located in the southeastern part of the Caucasus region, covers an area of 86,600 km^2, a quarter of the size of Japan. The capital city is Baku located in the Absheron Peninsula. Azerbaijan is bounded by Dagestan of the Russian Federation to the north (border line: 390 km), Georgia to the north-west (480 km), Armenia to the south-west (1,007 km), Iran to the south (756 km), Turkey also to the south (13 km), and the Caspian Sea to the east. In the border area with the Russian Federation is the Greater Caucasus Mountains. On the other hand, the Small Caucasus ranges in the Armenian border area. The Nakhchivan Republic is an autonomous state of Azerbaijan. Nagorno-Karabakh near the Armenian border is a part of the Azerbaijan territory with 20% of the total land, however, it has been currently occupied by Armenia as a result of separatist movement.

Azerbaijan is well endowed with various natural resources including oil, natural gas, minerals, and fertile agricultural land. It is one of the oldest oil-producing regions in the world. In the Small Caucasus Mountains and Krabakh Highlands in the southeast, livestock activities are widespread. The middle area, where the Kura River and the Araz River streams become dry, is suitable for cotton and fruit production. Azerbaijan is characterized by a rich variety in geography with the highest point at 4,500 m in the Greater Caucasus Mountains and the lowest point at 28 m below the sea level in the lower coastal area of the Kura River. The average altitude of the land is 384 m. Eighteen percent of the total land is below the sea level, while 3.5% is more than 2,500 m above the sea level.

Regarding the river system, the Kura River is the longest river with a total length of 1,515 km (900 km in Azerbaijan). Its river basin covers 188,000 km^2. There are many rapid rivers flowing into the Kura River in the northern part. The second longest river is the Araz river originating in Turkey. In Azerbaijan, there are 8,350 rivers in total with a total length of 33,665 km.

Azerbaijan's population in 2000 is estimated to be about 8.0 million. From 1995 to 1999, the average annual growth rate was 0.95% per year. The population in urban area is 4.1 million in January 1999, comprising 51.7% of the total. Table I.2.1-1 shows a recent trend of demographic change. The population in Azerbaijan has been steadily growing, but with fluctuating growth rates from year to year. The regional conflict with Armenia and the resultant exodus of youth have been affecting the change in population. The ratio of urban population has been little by little declining due to emigration of the youth.

Table I.2.1-1 Recent demographic change

At 1st. January	1995	1996	1997	1998	1999	2000
Total population (1,000)	7,644	7,726	7,799	7.877	7,949	8,016
Growth rate (%)	1.25	1.07	0.70	1.25	0.91	0.84
Urban population ratio (%)	52.4	52.3	52.1	51.9	51.7	n.a

(Source: State Committee of Statistics, Azerbaijan, 1999/2000)

Another important point is that a large number of refugees from the conflicted area has been internally displaced in and flown into Azerbaijan. The United Nations Development Program (UNDP) estimated the number of refugees and IDPs (internally displaced persons) at about 1 million. The State Committee of Statistics (SCS) made a different estimate at 0.79 million. These are equivalent to 10 to 13% of the total population. The number of refugees and IDPs estimated by SCS at 0.79 million is composed of IDPs at 72.1% (568.4 thousand), and the refugees from other CIS countries at 27.9% (220.0 thousand). The latter includes those from Armenia at 192.1 thousand, from Uzbekistan at 25.3 thousand, from Kazakhstan at 1.6 thousand, and from Russia at 1.0 thousand.

The majority of the population in Azerbaijan is Muslim. According to the 1990's demographic survey made by the Former Soviet Union (FSU), the majority of population in Azerbaijan was Azerbaijanis (82.7%), followed by Armenians (6%), Russians (6%), and Lezgians (2.4%). The situation at present, however, would be significantly different as a result of the collapse of the USSR and the conflict with Armenia.

2.1.2 Climate

The climate varies from region to region. The northern part is in sub-frigid climate zone, and the southern part in subtropical zone. Generally speaking, the continental climate characterized with varying temperature levels prevails in most of the parts. The lower basin of the Kura River and Araz River and the Caspian coastal area show the highest average temperature in a year (14～15°C). From the lower basin and coastal areas toward the mountainous area, temperature becomes gradually lower. The hottest time in a year in the lower land is from July to August with an average temperature of 25°C or higher.

Rainfall also varies according to the region. In the lower land, annual rainfall ranges from 200 to 400 mm. In the southern part near the Small Caucasus area, it increases up to the range from 700 to 800 mm. A range of 1,200 to 1,300 mm is observed in the Greater Caucasus area. The area with the heaviest rainfall is found in the Talish Mountains and Lenkoran in the south with an annual rainfall of around 1,700 mm. The rainy season appears in the autumn or winter in the eastern part with almost no rain in the summer. The rainy season in the western area appears in spring and early summer.

Average temperature, average relative humidity, and average rainfall in Baku are shown in Table I.2.1-2. It is known that Baku is characteristic of the continental climate and dry with little rainfall. The lowest and highest temperature in the past were respectively recorded at -13°C and 41°C.

Table I.2.1-2 The climate of Baku

City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ave.
Ave. Temp. (°C)													
Baku	3.8	4.0	6.2	11.0	17.1	22.6	25.7	25.6	21.6	16.6	10.9	6.5	**14.4**
Tokyo	4.9	5.3	8.2	13.6	17.9	21.0	24.6	26.2	22.6	17.0	12.2	7.5	**15.1**
Ave. Humidity (%)													
Baku	78	78	77	69	64	57	58	63	68	74	77	76	**70**
Tokyo	53	55	58	65	68	75	77	75	75	70	64	57	**66**
Ave. Rainfall (mm)													*1
Baku	30	22	25	23	12	9	6	8	15	33	38	26	**247**
Tokyo	54	63	102	128	148	181	125	137	193	181	93	56	**1,460**

(Source: JICA preliminary study team, May 1999)

(Note*1: The figure is the total.)

2.1.3 Political and Administrative Structure

With the surge of ethnic awareness, especially resulting from the conflict over Nagorno-Krabakh, Azerbaijan declared independence from the USSR and adopted a new constitution in 1991. After a few years' conflicts with Armenia, the present President Hedar Aliyev succeeded presidency with an approval of the parliament in 1993. He was later officially elected in 1993, followed by his re-election in 1998. The Azerbaijan's new Constitution was enacted by national vote in 1995. The form of governance became a constitutional/presidential republic. The new Constitution provides that the head of state is the President appointed for a 5-year term. The executive power lies in the President. The President appoints the Prime Minister who appoints individual ministers and organizes a cabinet. The Azerbaijan government comprises 16 ministries and a President Office (see Figure I.2.1-1, the structure of government). President also appoints the governor of local government. President is able to exercise veto against the resolution of national assembly.

The national assembly with the legislative function is unicameral, comprising 125 members. Assembly members are elected every 5 years in November. They are granted the right to impeach the president and to resolve non-confidence of the cabinet. The parliament, however, has minimum power to influence the resolutions and policies supported by the President and the cabinet. It is not granted the right to request the government to report either. Administrative units in Azerbaijan are as follows:

Table I.2.1-3 Administrative units

Type of unit	Number of units
Autonomous Republic	1
Districts	65
Towns	69
Districts of Cities	13
Worker's town	131
Rural settlement	4,243

(Source: State Committee of Statistics, Azerbaijan, 1999)

Azerbaijan is divided into 9 large regions: 1)Absheron, 2)Mugan-Salyan, 3)Karabakh-Mil, 4)Ganja-Gazakh, 5)Nakhchevan, 6)Lankaran-Astara, 7)Shirvan, 8)Sheki-Zagatala, and 9)Nagorno-Karabakh. These regions are not administrative units. Relatively large cities including Baku, Sumgait, Ganja, Mingechevir, Ali-Bayramli, Naftalan, and Khankendi have a few or several districts depending on the size of the city.

Regarding the political party in Azerbaijan, there exist more than 50 parties. Only a few of them are influential in the political arena. The largest party is the New Azerbaijan Party (NAP), led by the current President Mr. Aliyev. This party was established in 1992 and is supported by a number of small parties.

2.2 Socio-economic Situation in Azerbaijan

2.2.1 Overall Economy

After the breakup of the FSU, the main objective of Azerbaijan since 1991 has been to restructure the past administrative, political, and economic management system, and to create a new perspective toward a market-oriented economy. During the transition period, a number of economic problems emerged such as significant decline in industrial production and gross domestic product (GDP), hyper-inflation, erosion in real wage and living standard, and a lack of funds have been recognized. As a result, government's fiscal performance has severely deteriorated. Moreover, social and political instability including the conflicts over Nagorno-Karabakh and Chechnya and the resulting refugee inflow have made the economic situation even worse.

The government has taken a number of important steps to liberalize the economy and promote transition to a market economy. The national currency, Azerbaijan Manat (AZM), was introduced in August 1993. The cease-fire arrangement agreed with Armenia in May 1994 was a sign of improvement in international relations. By early 1995, most prices had been liberalized and some financial sector reforms initiated. Private sector began to emerge rapidly especially in retail trading activities.

In mid-1995, the government's stabilization and structural adjustment programs began with international support from the World Bank (WB) and the International Monetary Fund (IMF). The main objective of this program was to stabilize macro-economic performance including inflation, exchange rates, and budget deficit through Systematic Transformation Facility (STF) arrangement under IMF and Rehabilitation Credit support under WB.

Additional supports under IMF followed to facilitate privatization with legal and regulatory framework preparation, liberalization of external trades, and de-regularization and to implement the Medium Term Economic Program (from October 1996 to September 1999). In September 1994, the contract to expand and distribute oil production was signed between the State Oil Company of Azerbaijan Republic (SOCAR)

and Azerbaijan International Operations Companies (AIOC). Investments under the contract started in late 1995.

According to economic reports prepared by WB and IMF, a series of economic reforms undertaken by the government have contributed to stabilization of macro-economy. Stabilized economy presented a basis to accelerate foreign direct investment (FDI). Effects of FDI began permeating into related service and construction sectors. Thus, the severely stagnating Azerbaijan economy gradually started to improve. The first positive growth in real GDP since independence was recorded in 1996. Improvement in economic and financial situation was observed also as an end of hyperinflation, a stabilized exchange rate, and a reduced budget deficit.

2.2.2 Overall Economic Indicators

(1) Gross Domestic Products (GDP)

In 1999, nominal GDP of Azerbaijan amounted to AZM 16,414 billion or US$ 4.0 billion. GDP per capita was AZM 2,056 thousand or US$ 496. The economic recovery since 1996 has been continuing until 1999. An average annual growth rate in constant price during this period was 6.1% per year. Real GDP in 1999 (at 1995 price level), however, had just recovered to around 86% of that in 1993. It is recognized that the economic drop after the independence was immense.

Economic growth in 1999 has been slightly lower than that in 1998. This deceleration can be explained in the context of global declining activity due to the Russian economic turmoil, which has especially affected the CIS countries. In addition, excess capacity of oil sector at a world level has been one of the sensitive issues for the Azerbaijan's economy.

Table I.2.2-1 GDP and GDP per capita (real terms are adjusted at the 1995 price)

	1993	1994	1995	1996	1997	1998	1999
GDP nominal (billion AZM)	157	1,873	10,669	13,663	15,352	15,930	16,414
GDP real (billion AZM)	15,733	12,099	10,669	10,803	11,430	12,568	13,498
Real growth rate of GDP (%)	-23.1	-19.7	-11.8	1.3	5.8	10.0	7.4
GDP nominal (million US$)*1	1,766	2,761	2,417	3,179	3,852	4,117	3,955
GDP real (million US$)*2	3,564	2,741	2,417	2,448	2,590	2,847	3,058
GDP per capita nominal (1,000 AZM)	21	247	1,388	1,760	1,959	2,013	2,056
GDP per capita real (1,000 AZM)	2,099	1,593	1,388	1,392	1,458	1,588	1,690
GDP per capita nominal (US$)*1	236	364	314	409	491	520	496
GDP per capita real (US$)*2	475	361	314	315	330	360	383

(Source: Ministry of Economy, Economic Trends Azerbaijan, 1999 and State Committee of Statistics, 1999/2000)

Note *1: For the exchange rates used, refer to the Table I.2.2-7.

Note *2: Average exchange rate in 1995 is used.

(2) Employment

The number of employed persons in Azerbaijan peaked in 1991, continued decreasing until 1995, and recovered to the early 1990s' level by 1998. However, the number of unemployed has been increasing, its unemployment rate has also risen year by year. Including self-employed persons additionally, the share in 1998 had reached to 25.6% of the total labor force, almost doubled in comparison with 1990. A more detailed examination of employment by sector shows a share of employees in the public sector (state enterprises and administration) decreased from 71% in 1990 to 43% in 1998. This is due to active privatization policy adopted by the government. A share of employment in private sector conversely increased from 6% in 1990 to 23% in 1998.

As in Table I.2.2-3 presenting the share of employment by sub-sector, important structural changes can be observed at the sub-sectorial level during the 1990s. Employment in the industrial and construction sectors declined sharply, while the service sector expanded playing an increasing role for the shelter.

Table I.2.2-2 Labor force trend (thousand) and distribution of employment by sector (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Real labor force	3,787	3,819	3,836	3,844	3,802	3,860	3,977	4,017	4,032
Employed persons	3,703	3,732	3,722	3,715	3,631	3,613	3,687	3,694	3,702
Unemployed persons	84	87	114	129	171	247	290	323	330
-Registered unemployment	(0)	(4)	(6)	(20)	(24)	(28)	(32)	(38)	(42)
Of real labor force, in % of total;									
Public sector	70.7	65.4	61.8	62.0	60.3	56.1	51.0	46.5	42.9
Cooperatives sector	10.7	13.4	13.5	11.8	10.7	9.4	10.4	6.6	8,4
Private sector	6.0	9.2	9.6	10.5	11.6	14.6	16.5	20.9	23.1
Self-employed	10.4	9.7	12.1	12.3	12.9	13.5	14.8	18.0	17.4
Unemployment	2.2	2.3	3.0	3.4	4.5	6.4	7.3	8.0	8.2

(Source: State Committee of Statistics, 1999 and Ministry of Economy, Economic Trends Azerbaijan 1999)

Table I.2.2-3 Share of employment by sub-sector (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Industry	12.7	12.3	11.5	10.5	10.3	9.7	7.7	6.6	6.5
Agriculture	30.9	31.8	34.7	32.4	31.5	30.8	31.8	29.0	29.3
Construction	6.8	6.6	6.1	5.7	5.3	5.1	4.4	4.1	4.1
Others	49.6	49.3	47.7	51.3	52.9	54.3	56.1	60.3	60.1

(Source: State Committee of Statistics, 1999)

(3) Prices and wages

As a result of tight monetary policy, there has been a reduction in the rate of inflation. After the hyperinflation until mid 1990s, price stability has taken place. During recent years, Consumer Price Index (CPI) has been in declining trend.

Table I.2.2-4 Index of inflation (CPI = Consumer Price Index)

	1994	1995	1996	1997	1998	1999
Change in CPI to the previous year (in percent)	1,763.5	511.8	119.9	103.7	99.2	91.5
Price CPI (1995=100)	19	100	120	124	123	115
Price food	19	100	118	117	115	104
Price non-food	24	100	117	124	122	120
Price services	16	100	159	250	266	268
Comparison with GDP deflator and Wholesale Price Index						
GDP deflator	n.a	100	126	134	127	124
WPI	5	100	198	221	194	200

(Source: State Committee of Statistics, 1999/2000 and JICA study team calculation.)

During the last three years, an increase in real wages per capita has occurred, mainly due to price stabilization. In addition to official wage rates, many workers have been provided with various in-kind payments including bonus, housing allowances, and social welfare allowances.

Table I.2.2-5 Average monthly wages per employment

	1995	1996	1997	1998	1999
Nominal wages (AZM)	62,467	89,370	141,643	168,419	184,368
Real wages (AZM) Index 1995=100	100	119	182	218	261
% change in real terms on previous year	--	18.9	52.9	19.9	19.6

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999, State Committee of Statistics, 2000)

(4) Interest rates and exchange rates

The Azerbaijan National Bank (ANB) has continued to maintain its very high refinancing rate of 14% from mid 1998, and revised to 10% from October 1999. The high refinancing rate in combination with negative inflation rate led to a sharp increase in real refinancing rate.

Table I.2.2-6 Interest rates (not compounded)

	1997		1998		1999	
	Jan.	Jul.	Jan.	Jul.	Jan.	Jul.
ANB refinancing rate (%)						
Nominal	20.0	12.0	12.0	14.0	14.0	14.0
Real	13.2	5.6	11.6	14.2	21.6	23.6
Refinancing rate of commercial banks (%)						
Short-term credits (AZM)	29.2	25.1	25.3	16.4	20.3	20.1
Short-term credits (US$)	20.0	17.5	17.0	18.7	18.4	16.9
Long-term credits (AZM)	25.0	18.6	20.0	17.5	19.8	19.6
Long-term credits (US$)	15.0	16.7	15.0	17.4	10.4	14.8

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999)

In May 1995, a free foreign exchange system was adopted. After the establishment of the Baku Interbank Currency Exchange (BICEX), exchange rate has been determined on a market basis. Since 1995,

appreciation of AZM over US dollar had taken place, however, it has under gone a depreciation in recent years. Its rate to the US dollar is relatively more stable compared to the CIS countries.

Table I.2.2-7 Exchange rate of Manat to US dollar

	1992	1993	1994	1995	1996	1997	1998	1999	2000 Mar
Exchange rates (nominal) averaged during the year	16.1	88.9	678.35	4,413.9	4,298.4	3,985.6	3,869.1	4,150.0	4,413.0

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999, International Monetary Fund Statistics)

2.2.3 National Budget

(1) Public account

The fiscal balance in Azerbaijan turned into red in 1993 with a deficit equivalent to 7.1% of GDP. This resulted from government subsidy for the state enterprises in deficit and an increase in the expenditure for military and refugee relief. Owing to a series of retrenchment policies suggested by the economic reform programs since 1994, however, deficit has decreased to 2.0% of GDP in 1998. Large part of the deficit has been financed by foreign fund and particularly oil bonus (oil bonus is not considered as revenue, but classified as financing item).

Government largely relies on indirect tax as revenue source including import duty and value added tax (20% of the amount). Tax arrears of large state enterprise accounts for 65% of the total arrears. Tax revenue from these large state enterprises can not be expected to grow much. The amount of expenditure for economy and infrastructure has not been sufficient to catch up with the need. Loss in revenue during the economic turmoil period had severely retarded renewal and modernization of infrastructures, resulting in deterioration in their quality.

Table I.2.2-8 Public account (in billion AZM)

Items	1995	1996	1997		1998		1999	
			in	% share GDP	in	% share GDP	in	% share GDP
Revenue and Grants;	2,078.0	2,492.4	3,038.9	19.2	2,318.4	14.6	2,748.0	16.8
Direct tax	576.8	811.1	749.2		735.2		n.a	
Indirect tax	1,314.4	1,455.8	1,918.6		1,302.5		n.a	
Non-tax revenues	84.9	34.2	262.6		218.0		n.a	
Others	101.9	191.3	108.5		62.7		n.a	
Expenditure and Net Lending;	2,141.9	2,409.3	3,442.5	21.8	2,642.2	16.6	3,208.0	19.5
Expenditure underway	1,340.9	1,775.8	2,674.1		2,292.1		n.a	
Economy and infrastructure	183.7	296.6	326.6		201.3		n.a	
Others	617.3	336.9	441.8		148.8		n.a	
Fiscal Balance	-63.9	83.1	-403.6	-2.6	-323.8	-2.0	-460.0	-2.8

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999, State Committee of Statistics, 1999/2000)

The following is the taxation regime on export from and import into Azerbaijan as of April 1998;

Export duties: All goods, irrespective of their types, are exempted from custom duties when exported from Azerbaijan. However, certain restrictions and licensing requirements exist.

Import duties: 15%, 5%, and exempted depending on the type of imported goods. Exempted goods includes 1) assets imported by a foreign investor as a contribution to the charter fund of a joint venture, or the establishment of a 100% foreign-owned enterprise, 2) goods in transit, 3) property for personal needs, and 4) others

Value added tax (VAT) is being paid at a rate of 20%. When selling commodities (works and services) at controlled prices (tariff) including VAT, the rate applied is 16.67%.

(2) Official foreign financing and foreign debt

Until the first quarter of 1999, Azerbaijan received US$ 804.55 million official foreign financing, of which US$ 3.85 million were repaid in 1999. The outstanding loan amounts to roughly 18.9% of the expected GDP in 1999.

Table I.2.2-9 Loans from international financial institutions and foreign countries (million US$)

Types of loans	Received amount			Repaid in 1999	To be repaid	
	Before 1999	1999 First Q.	Total		Million US$	In % share of total
Loans provided to support economic reforms	435.30	89.50	524.80	1.17	523.63	65.4
Concessionary loans for investment projects	51.37	12.00	63.37	0.0	63.37	7.9
Commercial loans for investment projects	153.2	37.95	191.15	2.68	188.47	23.5
Loans received from CIS	25.23	0.0	25.23	0.0	25.23	3.2
Total	665.10	139.45	804.55	3.85	800.70	100.0

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999)

2.2.4 Balance of Payments

The current account balances in 1995 and 1998 were in deficit by US$ 400.7 million and 1,364.5 million, respectively. In the current account, trade balance in 1998 was in deficit by US$ 1,046.2 million. Both services and incomes balances have been in deficit for the last four fiscal years. An improvement in current account balance should wait until the export of oil products is expected to start accelerating in 2001.

As for capital and financial account balance, range of the black has been expanding following a large amount of influx of foreign direct investment and development assistance loans. Among foreign direct investments, those related to oil sector accounted for 70% of the total in 1997. Therefore, capital and financial balance is easily affected by the price trends of oil products.

Table I.2.2-10 Balance of payments (in million US$)

	1995		1996		1997		1998	
A. Current Account (*2)	-400.7	(n.a)	-931.2	(-392.7)	-915.8	(-585.0)	-1,364.5	(-536.0)
Trade balance (FOB) (*2)	-373.1	(n.a)	-693.9	(-212.6)	-566.9	(-256.2)	-1,046.2	(-223.2)
Services balance (*2)	-132.3	(n.a)	-291.6	(-166.3)	-384.2	(-309.8)	-369.1	(-286.2)
Incomes balance (*2)	-6.0	(n.a)	-12.1	(-13.8)	-9.5	(-19.0)	-13.3	(-26.6)
Current transfers	110.8		66.5		44.8		64.0	
B. Capital and Financial Account (*2)	339.1	(175.3)	901.7	(452.9)	950.2	(844.3)	1,384.5	(831.7)
Capital transfers (*1)	173.8		36.6		54.0		74.1	
Financial account	165.3		865.0		896.2		1,310.4	
Direct investment (*2)	154.7	(139.8)	590.7	(416.2)	1,050.6	(780.1)	948.2	(756.9)
Other investments	172.2		267.2		89.8		343.5	
Reserve assets	-161.6		7.2		-244.2		18.7	
C. Net Errors and Omissions	61.6		29.5		-34.4		-20.0	

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999 and State Committee of Statistics, 1999)

Note *1: Capital transfers mainly include oil bonus and migrant transfers.

Note *2: of which, oil consortiums

The trend in foreign currency (international) reserves is represented as below:

Table I.2.2-11 International reserves (in million US$)

	1998 at the beginning	During 1998	1999 at the beginning	During 1999 First Q.
Gross International Reserves	467.5	-18.7	448.7	76.1
Foreign Statements (Liabilities)	267.1	56.0	323.1	71.9
Net International Reserves	200.4	-74.7	125.6	4.2

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999)

2.2.5 Trade

The Azerbaijan's economy has traditionally been dependent on international trade to a significant extent. In recent years, trading partners have been shifting from the CIS countries to non-CIS countries both in exports and imports. In 1991, exports to CIS accounted for 94% of the total, and imports from CIS 80%. In 1997 these declined to 38.3% and 37.6%, respectively (in the past four years, however, the dependency on CIS has been on the rise). As exports rapidly decrease, trade balance has been in deficit since 1994. This is due to a collapse of traditional trading routes and appreciation of the Manat. As a result, output declined in the manufacturing sector and trade deficit has occurred. Current trade deficit is also explained by increasing domestic demand.

The main export items included oil products (64.8%), unprocessed cotton (8.1%), and food products and animal (7.7%) in 1998. The main import items in 1998 were machinery equipment (32.3%), food products and animals (16.3%), and metals and articles of metal (12.0%). The largest trading partner was Turkey both in exports and imports in 1998.

Table I.2.2-12 Index of trades by main products (in thousand US$)

	1995	1996	1997	1998	Share 1998
Total Exports (FOB)	637,199	631,246	781,310	606,151	100.0
Food products and animals	38,532	28,558	55,343	46,734	7.7
Mineral products (mainly oil products)	373,115	421,526	482,152	418,732	69.1
Chemical products and plastics	33,257	47,408	40,812	23,278	3.9
Textiles (mainly unprocessed cotton)	124,549	67,774	132,473	56,037	9.2
Metals and metal articles	17,543	6,129	15,305	13,371	2.2
Machinery equipment and mechanisms	39,422	43,710	37,408	33,438	5.5
Others	10,782	16,141	17,817	14,560	2.4
Total Imports (CIF)	667,657	960,636	794,343	1,077,169	100.0
Food products and animals	277,145	381,678	180,730	175,329	16.3
Mineral products	100,832	65,610	97,382	85,599	7.9
Chemical products, plastics, pulp	88,086	125,332	106,054	119,471	11.1
Stone, plaster, cement	7,961	18,836	21,543	31,546	2.9
Metals and metal articles	42,024	86,829	109,415	129,696	12.0
Machinery equipment and mechanisms	82,884	183,992	169,324	348,276	32.3
Transport, aircraft, water facilities	36,615	41,918	49,870	87,068	8.1
Others	32,110	56,441	60,024	100,185	9.3

Main partners in 1998 (%)	
Exports	
1	Turkey (22.4)
2	Russia (17.5)
3	Georgia (12.7)
4	Italy (7.4)
5	Iran (7.3)
6	UK (6.7)
Imports	
1	Turkey (20.4)
2	Russia (18.0)
3	Ukraine (8.6)
4	UK (6.4)
5	Germany (4.3)
6	UAE (4.2)

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999 and State Committee of Statistics, 1999)

2.2.6 Industrial Structure and Trend

The source of national economic growth since 1996 has been expanding foreign direct investments into oil sector. This has also stimulated demands in such sectors as construction, services (especially commerce), and transport. Traditionally important agricultural production has remained steady except the output loss in 1997 due to unseasonable weather. The government expects that effects of production increase in oil related activities will gradually extend into a wide range of other production activities.

Table I.2.2-13 A structure GDP of GDP by sector in nominal prices (in billion AZM)

	1995 (%)		1996 (%)		1997 (%)		1998 (%)	
Electricity	560	5.3	634	4.6	537	3.5	583	3.7
Fuel	1,346	12.6	1,849	13.5	1,996	13.0	2,210	13.9
Manufacturing	1,009	9.5	1,047	7.7	1,336	8.7	757	4.7
Agriculture	2,680	25.1	3,376	24.7	3,074	20.0	3,230	20.3
Construction	397	3.7	1,272	9.3	1,796	11.7	2,608	16.4
Transport	1,748	16.4	1,225	9.0	1,274	8.3	1,649	10.4
Communication	104	1.0	174	1.3	338	2.2	400	2.5
Trading	508	4.8	713	5.2	890	5.8	905	5.7
Others *1	1,489	14.0	1,999	14.6	2,994	19.5	2,507	15.7
Indirect Taxes	826	7.7	1,375	10.1	1,136	7.4	1,081	6.8
Total GDP (billion AZM)	10.669	100	13.663	100	15,352	100	15,930	100

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999)

Note *1: Others include service sectors comprised of commerce, housing, health, education, culture, science, administration, banking, etc.

(1) Oil sector

After a long period of stagnation, oil extraction increased to 11.4 million tons in 1998, recovering to almost the same level as in 1992 (11.9 million tons) and corresponding to an annual rate of growth of 26.6%. This increase has been due to the new offshore wells of AIOC represented by Chirag mining lot. As shown in Table I.2.2-14, onshore wells had been mostly drained, and more than 80% of oil has been extracted offshore in the Caspian Sea. As of the end of 1996, recognized oil reserves was 7.0 billion barrels, and 28~38 billion barrels (JICA Preliminary Survey). As for oil refining, its output has been stagnated due to a fall in international oil prices and superannuated refinery plants.

The oil sector is currently the leading stimulator of the Azerbaijan economy in terms of its effect extending into other related sectors and acquisition of foreign currency. Oil product export accounted for 64.8% of the total exports. To attain maximum benefits of further oil production from year 2002, construction and rehabilitation of pipelines and refining facilities are urgently needed.

Table I.2.2-14 Oil and natural gas production and projection

	1992	1993	1994	1995	1996	1997	1998
Crude oil –onshore (million ton)	2.0	2.0	1.8	1.8	1.4	1.6	--
Crude oil -offshore (million ton)	9.2	8.3	7.8	7.4	7.7	7.5	--
Total	11.2	10.3	9.6	9.2	9.1	9.1	11.4
Natural Gas (million m^3)				6,644.0	6,305.0	5,963.9	5,589.6

	2000	2002	2004	2006	2008	2010
Crude oil production (million ton)	1.3	2.1	2.9	4.1	4.5	4.7

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999 and JICA preliminary study team, May 1999)

(2) Agricultural sector

The main agricultural products are grain, fruits, vegetables, tobacco, and cotton. A serious problem is that most of the fertile land is situated near the area where Armenia currently occupies. This has affected the yield of vegetables and vine production. Regarding cotton production, the yield has declined especially due to a shortage or price escalation in chemical fertilizer and harvest machinery. Azerbaijan's self sufficiency rate has remained in an order of 50%. The improvement in self-sufficiency rate is an important issue for Azerbaijan.

(3) Industrial sector

From the FSU era, Azerbaijan had been playing an important role in industrial production including oil related machinery and equipment, petro-chemistry, electric appliances, and aluminum. Industrial output fell dramatically during the early 1990s (by 70% between 1991 and 1995). The industrial sector began to recover with a production value of AZM 12.5 trillion in 1997, an increase of 0.3% over 1996 level. The main issue is that the industrial plants are mostly in low operation due to declining demand and inadequate

maintenance. The industrial plants need to be rehabilitated to be able to produce internationally salable commodities. The government has high expectation toward foreign investors to play a vital role in modernizing obsolete plants.

(4) Privatization process

Privatization of state enterprises has been promoted as an important component of the economic reform programs since Privatization of National Assets Program 1995-98 was approved by the national assembly in 1995. This program comprises two stages. The first stage targeted small-scale enterprises including commerce, service, food-processing, transport, and construction. As of August 1998, privatized enterprises amounted to 21,780 in total. The second stage targeted middle and large-scale enterprises. The second stage privatization started in mid 1997 and 1998, respectively. About 950 middle and large-sized enterprises are to be privatized altogether.

2.2.7 Foreign Investment and Assistance

(1) Foreign Direct Investment (FDI)

FDI accounted for two-thirds of all the investments in Azerbaijan in 1998. Among FDI, oil-related investments played a dominant role, accounting for about 80% of all the FDI in 1998. As a measure to encourage foreign investment, Foreign Investment Protection Law was enacted in 1992, which ensures assurance of assets and legal framework, freedom in money transfer and profit transaction, participation in privatization process, foreign capital allowance, and tax preference for foreign investors.

Table I.2.2-15 Trend in FDI

	1995	1996	1997	1998
Total Investment (in million US$)	154.7	590.7	1,050.6	948.2
Share of oil-related investment (%)	90.4	70.5	74.3	79.8

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999)

(2) Foreign Assistance

As mentioned in Section 2.2.1, Azerbaijan's economic recovery followed a series of economic reform program supported under IMF and WB group. In 1997, WB reviewed its assistance strategy toward Azerbaijan, covering education, agricultural development, preservation of cultural heritage, irrigation, and highway. The following Table I.2.2-16 presents a list of assistance programs provided to Azerbaijan.

Table I.2.2-16 Assistance from IMF and the World Bank group

IMF	In million SDR		
Systematic Transformation Facility (STF)	58.5		
Standby Agreement (SBA)	58.5		
Extended Financing Facility (EFF)	58.5		
Extended Structural Adjustment Facility (ESFA)	93.7		
World Bank group	**In million US$**	**Entire costs**	**Co-financing Org.**
Technical Assistance to Oil Sector	20.8	20.8	--
Rehabilitation of Water Supply for Greater Baku	61.0	90.4	EBRD
Technical Assistance to Institutional Building	18.0	18.0	--
Loans for Reconstruction	65.0	65.0	--
Rehabilitation of Gas System Network	20.2	23.6	Azerigaz
Privatization in Agriculture Sector	14.7	28.8	IFAD
Structural Adjustment Loan	70.0	70.0	--
Urgent Ecological Project	20.0	24.5	--
Territories Rehabilitation Pilot Project	20.0	54.2	UNDP, UNHCR

(Source: Ministry of Economy, Economic Trends Azerbaijan 1999)

UNDP started its activities soon after the independence of Azerbaijan. Its target had been shifted from urgent humanity assistance to the Nagorno-Karabakh region in the initial stage to long-term socio-economic development in recent years. The main areas UNDP emphasizes includes adequate governance, poverty eradication, and living improvement in Sumgait including establishment of a Free Trade Zone (Special Economic Zone).

The European Bank for Reconstruction and Development (EBRD) has provided loans amounting to US$ 143 million for public sector projects, and US$ 282 million for private sector projects as of May 1998.

The Technical Assistance for CIS (TACIS) which is an aid operation agency under the European Union (EU) established the Indicative Program and Action Program for Azerbaijan along with "Partnership and Cooperation Agreement". The Action Program (currently 1998-1999) lists concrete and wide-ranged projects, particularly those requiring intellectual assistance. As for the study on Restructuring Electricity Sector mentioned below, Azenerji and BEN functioned as the counterpart organizations.

Table I.2.2-17 TACIS's action program (1998-1999) in million European currency unit

1. Energy	
Rehabilitation of Oil Polluted Land	
Assistance for Department of Energy and Fuel	3.6
Restructuring Electricity Sector	
Assistance for Renewal of Gas Transporting Network	
2. Transportation and Communication	2.4
3. Restructuring and Developing Enterprises	3.5
4. Food Production, Processing, Marketing	1.0
5. Human Resource Development	2.3
6. Small-scaled Project Program (Advice on Policy and Statistics)	2.8
7. Contingency	0.5

(Source: TACIS)

Since Azerbaijan was included in the "developing countries lists" of the Development Assistance Committee (DAC) of OECD (the Organization for Economic Cooperation and Development) in 1994, bi-lateral economic development assistance by DAC countries has been increasing.

2.2.8 Infrastructure

Azerbaijan's infrastructure suffers from insufficient renewal and maintenance. Details of the situation in the electricity sector are discussed in Chapter 3 and the following chapters. A brief description on the condition of other infrastructure sectors follows.

(1) Land transportation

The Azerbaijan's transportation network has been relatively developed. Maintenance of facility and equipment has been in a poor condition. The blockade of its routes to Russian and Armenia significantly affected economic activities in early 1990s. An expansion and strengthening of the transportation system is urgently needed, especially to deepen economic ties with neighboring countries along with oil development.

The road network comprises national roads (6,405 km), local roads (17,930 km), and roads under the City of Baku (2,003 km). Paved roads account for 51% of the total. To repair and maintain road network, US$ 59.4 million is estimated to be needed annually, while the budget actually allocated in 1997 was only US$ 8 million. The total length of the railroad network, the major mode for freight transportation, is 2,300 km. The railroads are connected to Dagestan, Iran, Georgia, and Nakhichevan. About 700 km in total, needs to be rehabilitated.

(2) Air and sea transportation

There are three international airports including Baku, Ganja, and Nakhichevan. Baku international airport has been continuously rehabilitated. Sea transport is also an important means for both passenger and freight traffic. Ferry operation between Baku and Turkmenistan has been drawing high attention so as to establish an important route in the Euro-Asian corridor.

(3) Communication

Telecommunication needs in Azerbaijan have rapidly expanded. The existing telecommunication system was mostly built between the 1950s and 1960s. Penetration rate of telephone reaches 56% in the urban and 17% in the rural area. The number of general telephone circuits was 670 thousand lines in 1996. The Ministry of Communication has a plan to increase the number of circuits to 1.5 million lines, which requires an investment of US$ 450 million.

(4) Irrigation

Among the total arable land area of 4,300 thousand ha, irrigated land area constitutes 1,450 thousand ha. Irrigation facilities are concentrated in the Kura and Araz river basins. Irrigation systems along the Kura basin are the largest in Azerbaijan with a reservoir able to store 16 x $10^9 m^3$ of water.

2.2.9 National Development Plan (Public Investment Program)

In 1996, Azerbaijan prepared and started implementing its first comprehensive Public Investment Program (PIP), which is to cover the next three years with annual reviews. The present PIP for 1998-2000 period emphasizes infrastructure investments with a view to attract further foreign investment. The amount of expenditure by sector in PIP is presented in Table I.2.2-18 below.

Out of the total project costs at US$ 2,526.3 million, local fund occupies only 10.2% of the total. The rest is to be financed by foreign fund. Out of 34 projects in PIP (1998-2000), the financing sources have been confirmed for 23 projects. Even though the project is listed in PIP, the implementation of the project will not formally be decided as long as the financing source is unconfirmed, resulting in its exclusion from PIP.

The reason that the amount of disbursement had been extensively small before 1998 is that the financing sources have only recently been confirmed for some projects. Therefore, the amount of disbursement in PIP (1998-2000) just reached 58.4% of the entire cost, and the implementation of the projects is expected to further activate after 2000. The ratio of the disbursement amount against the GDP is on average 9.2% between 1998 and 2000.

Table I.2.2-18 PIP 1998-2000 by sector (in million US$)

Sector	Total Project Cost	Yearly amount				Note
		Before 1998	1998	1999	2000	After 2000	
Agriculture	103.8	1.5	37.8	32.5	29.5	2.5	Farm privatization
Oil and Gas	316.6	0.4	30.1	104.9	121.2	60.0	All gas related
Water resources and Irrigation	382.3	0.0	11.0	14.0	55.0	302.3	Samur/Absheron irrigation system
Energy	595.8	39.2	33.0	37.8	75.5	410.3	Plant Rehabilitation
Transport	348.4	1.3	121.7	99.5	56.5	70.7	Baku air/sea port
(road transport)	(139.4)	(0.0)	(12.0)	(34.9)	(46.5)	(46.0)	Road rehabilitation
Restructuring industry	251.8	0.0	20.0	26.8	97.0	108.0	For petro-chemistry
Public service	155.9	18.7	31.4	36.0	37.4	32.4	
Environment	105.4	0.0	17.3	44.1	34.0	10.0	For industrial waste
Health, Culture, and Others	266.3	0.0	39.0	118.0	57.3	52.0	
Total	2,526.3	61.1	341.3	513.6	563.4	1,046.9	
Percentage of total (%)	100.0	2.5	13.5	22.6	22.3	39.1	
PIP / GDP (%)	-	-	7.8	10.8	8.8	-	

(Source: The Government of Azerbaijan, Public Investment Program 1998-2000)

Judging by the disbursement amount, the concern has been especially given to energy, water resources and irrigation, and transport sectors. In all those sectors, the rehabilitation and reconstruction of related existing facilities are mainly focused. Currently the number of projects listed in energy sector is five. In addition, "Reconstruction of Baku Power Distribution System" is listed in the public utility sector. These projects are briefly outlined as follows:

Table I.2.2-19 Projects of energy sector and power related in PIP (1998-2000)

Title	Implementing body	Total cost (million US$)	Financing source (million US$)		Duration	Notes
Mingechevir Energy Project	Azenerji	41.45	EBRD WB Azenerji	: 21.7 : 12.5 : 7.3	1998-2001	/ Rehabilitation of HPS / Rehabilitation of Azerbaijan HPS-Imishli-Absheron system / Rehabilitation of Agdjabedi SS and construction of TL
Yenikend Energy Project	Azenerji	72.2	EBRD Azenerji	: 53.2 : 19.0	1996-1999	Construction of hydro power station
Reconstruction of the Baku Cogeneration Power Plant No.1	Azenerji	55.0	Germany	: 55.0	1999-2001	Installment of two 50 MW gas turbines to replace the outdated equipment
Reconstruction of the Severnaya TPP	Azenerji	223.0	JBIC	:223.0	1998-2002	Installment of one 400 MW combined-cycle facility to replace the outdated equipment
Rehabilitation of Sumgayit TPP-1	Azenerji	150.0	Not yet Azenerji	:130.0 : 20.0	1999-2003	Installment of combined-cycle facility to restore heat supply capacity
Reconstruction of Baku Power Distribution System	Baku City	56.0	Not yet Azenerji	: 50.0 : 6.0	1998-2000	Reconstruction and modernization of power distribution infrastructure in Baku

(Source: The Government of Azerbaijan, Public Investment Program 1998-2000)

2.2.10 Human Development

Condition of human development in Azerbaijan is represented by Human Development Index (HDI), which enables to measure the human development condition in a consistent manner. During the 1990s, it has been observed that social security system to meet basic human needs has deteriorated severely as a result of social and economic hardships associated with the transition period and the military conflict. In 1998, life expectancy at birth was 71.6 years, and adult literacy rate was 97.3%.

Table I.2.2-20 Human Development Index

	1992	1994	1996	1997
Total Human Development Index (HDI)	0.696	0.636	0.613	0.624
HDI annual growth rate for previous year	--	-4.4	+0.2	+1.8
Life expectancy index	0.760	0.770	0.738	0.753
Education index	0.870	0.880	0.868	0.871
Purchasing power (GDP) index	0.460	0.260	0.234	0.247

(Source: UNDP, 1998)

2.3 Development Policies of the Energy Sector

The TACIS reports analyze the characteristics of the Azerbaijan's energy sector as follows.

- Oil and gas account for about 97% of primary energy supply.
- No coal resource is available and hydropower is limited, but has potential.
- Large oil reserves have been discovered or potential. (not yet developed)
- Significant gas reserves are existent (mostly associated to oil), but underused. (flared or vented when compression facilities are not sufficient)
- Oil and gas production has been constantly declining. (oil fields under depletion and poor technical conditions of production)
- High number of international oil companies is present in the upstream activities.
- Large amounts of investments are planned in the near future.
- Azerbaijan is a landlocked country, having a problem in transporting products but an advantage as a route for transit products.
- Azerbaijan is a new oil exporting country since November 1997.
- There is a large refining capacity underused and needing refurbishment.
- An extensive gas transportation network is developed with a high level of gas distribution equipment. The network theoretically covers 80% of the population, but suffers from poor conditions.
- Large underground gas storage exists.
- The industry is energy intensive.
- Energy prices, those of gas and electricity, are low for households at below cost, entailing financial burdens on energy suppliers.
- The domestic market is small enough to satisfy demand, but too small to support large investments for rehabilitation.
- Wood is increasingly used for cooking and heating. (40% of the population according to WB)
- Electricity generating plants are worn out with high fuel demand and low reliability.
- Electricity supply is temporarily cut off.
- Electricity losses are high in the distribution network.
- Fuel and energy consumers are in high debt.
- District heating systems are obsolete.

The following problems are pointed out for the electricity sector.

- Most of the existing power generation equipment is beyond its useful life. The thermal power plants are technically inefficient with fuel consumption double the state-of-the art equipment.
- Load factor is low at a range of 40 to 50%.

- All the power plants, especially the co-generation plants, use significantly high amount of water.
- High loss is observed in the transmission and distribution systems.
- Azenerji is basically bankrupt. It has not been paying the primary energy bills in the past three years.
- Azenerji is able to conclude agreements with investors freely like private companies. In reality, however, no investors show interest, since the present tariff level is the base for financing investment.
- Azenerji lacks the positive attitude to shift to more commercially oriented operations without making prioritization of investment projects and cost savings.
- On the government side, a number of authorities divide the responsibilities without sufficient coordination.

Appendix I.2.3-1 shows the challenges for the energy sector summarized by TACIS. The following are the policies for the electricity sector.

(1) Tariff

(a) Investment cost will increasingly have to be financed by tariff revenue. For this the present tariff scheme needs to be reformed incorporating the cost recovery principle. The tariff level adjustment, however, should be carried out carefully considering the impact on consumers' budget and supporting industrial development. A good balance should be sought between these two objectives.

(b) Higher participation of private firms would promote competition, leading to more efficient operation of electricity organizations so that they are able to sell electricity at lower prices.

(2) Finance

(a) Presently the electricity company is not generating fiscal revenue, rather it is living on state subsidies. Financial independence needs to be sought through measures such as follows.

- promotion of competition and weaning the companies of subsidies by restructuring
- tighter budget controls at all levels
- cost saving by introducing external auditing
- introduction of GAAP (generally accepted accounting principles) enabling a comparison of financial performance with foreign organizations

(3) Investment

(a) Decision on the level of private investment allowed in the electricity sector

(b) Creation of a legal framework that would enhance private investment

(c) Sovereign guarantee of private and foreign investment

(d) Prioritization of investment projects for rehabilitation of the existing facilities

(4) Competition

(a) Reform of electricity companies and promotion of competition in the sector for achieving higher economic efficiency

(5) Trade and transit

(a) Liberalization of the electricity market

(b) Promotion of export through reducing the electricity generation cost

(6) Energy efficiency

(a) Improvement of energy efficiency through public awareness promotion, reduction of fuel consumption at the power plants and reduction of network losses.

2.4 Baku City

Baku City, the capital city of Azerbaijan, functions as the center of administrative, economic, commercial, and cultural activities of Azerbaijan. Most international transactions in Azerbaijan take place through Baku. The city embraces the most part of the Absheron peninsula, sticking out toward east on the western side of the Caspian Sea. Baku is located between 49°30'N and 50°30'N in latitude and between 40°00' E and 40°40'E in longitude.

(1) Population

Appendix I.2.4-1 and Table I.2.4-1 below show population and population density in Baku in 1998 by district.

Table I.2.4-1 Population and population density of Baku in 1989 and 1998

District	Area (km^2)	Population			Population Density (person/km^2)
		1989 (thousand)	1998 (thousand)	Growth rate (%)	
Total for study area	129.9	1,090.5	1,014.1	-7.0	7,807
1 Sabail	28.1	88.2	74.3	-15.8	2,644
2 Yasamal	16.4	218.7	221.5	1.3	13,506
3 Nasimi	9.8	216.8	195.8	-9.7	19,980
4 Narimanov	24.4	171.7	147.9	-13.9	6,061
5 Nizami	19.6	170.2	159.1	-6.5	8,117
6 Khatai	31.6	224.9	215.5	-4.2	6,820
Total for outside area	2,007.2	615.4	774.5	25.9	386
Total for Baku City	2,137.1	1,705.9	1,788.6	4.8	837

(Source: Baku City Statistical Department (1999))

The total population of Baku in 1998 is reported to be about 1.8 million. It is widely recognized among Azeri people and experts, however, that the actual population in Baku is somewhere between 2.5 and 3.0

million, including about 1 million refugees and IDPs (internally displaced person). There is no way to check this big discrepancy. According to a Baku City's Statistical Division personnel, the number of people living in Baku is counted every 10 year by house visit surveys. Surveyors dispatched to houses count the number of people staying there. By this method, those who are not at home are not counted. The report figure of 1.8 million, therefore, should be regarded as an underestimate according to the Baku City Statistical Division. An accurate estimate of the actual population in Baku should be awaited until a full-scale census survey is conducted in the future.

Assuming the same level of discrepancies in 1989 and 1998, the total population of Baku increased from 1,706 thousand in 1989 to 1,789 thousand in 1998, equivalent to an increase of 4.8% or 0.5 % per year on average. The four districts outside the Study area, except Sabunchi, rapidly attracted the increasing population. The Study area, on the contrary, experienced a decrease of population from 1,091 thousand down to 1,014 thousand, equivalent to a 7% decrease or a 0.8% per year decline. These tendencies could be explained by rising prices of apartments in the central part of Baku and resultant move of younger generations to suburban areas and higher fertility of the population in the outlying districts. Refugees and IDPs living in the outer districts contribute to this second factor.

Assuming a proportionate distribution of the actual population among districts, a comparison of districts can made based on the population data shown above. The Study area, comprising six districts, accounts for 57% of the total population, whereas in area its share is only 6%. As a result the population density in the study area at 7,800 persons per square kilometer is 20 times that of outside the Study area (386 persons per square kilometer). Within the Study area, Nasimi and Yasamal are most densely inhabited.

(2) Refugees and IDP

Appendix I.2.4-2 and Table I.2.4-2 below shows the number of refugees and IDPs in the first half of 1999.

Table I.2.4-2 Number of refugees and IDPs in Baku as of July 1999

District	Refugee	IDP
Total for study area	55,101 (61.4 %)	18,847 (46.1 %)
Sabail	5.2 %	5.1 %
Yasamal	1.4 %	10.9 %
Nasimi	16.1 %	8.6 %
Narimanov	19.1 %	0.8 %
Nizami	8.2 %	9.6 %
Khatai	11.4 %	11.1 %
Total for outside study area	34,261 (38.6 %)	71,670 (53.9 %)
Total for Baku City	89,722	133,030

(Source: Baku City Statistical Department (1999))

There are 90 thousand refugees and 133 thousand IDP living in Baku with a total of 223 thousand people

under these categories. This is equivalent to 12% of the total population of Baku. Refugees living in the Study area accounts for 61% of all the refugees, while IDP in the study area are 61% of the total, while IDP in the Study area are 46% of the total. There was information indicating that the number of IDPs and refugees living in Baku reaches one million. The UNHCR (the United Nations High Commissioner for Refugees) Baku office confirmed that this number at one million is that of Azerbaijan instead of that of Baku.

(3) Industrial Production

Appendix I.2.4-3 and Table I.2.4-3 below shows industrial production value in Baku in the first half of 1999. The Study area produces 63% of the industrial production in Baku. The three districts of Sabail, Nizami and Khatai are the major industrial districts in the Study area.

Table I.2.4-3 Industrial production value in Baku in the first half of 1999

District	Composition (%)
Total for study area	62.9
1 Sabail	20.3
2 Yasamal	2.2
3 Nasimi	1.9
4 Narimanov	3.2
5 Nizami	15.9
6 Khatai	19.4
Total for outside study area	37.1
Total for Baku City	100.0

(Source: Baku City Statistical Department (1999))

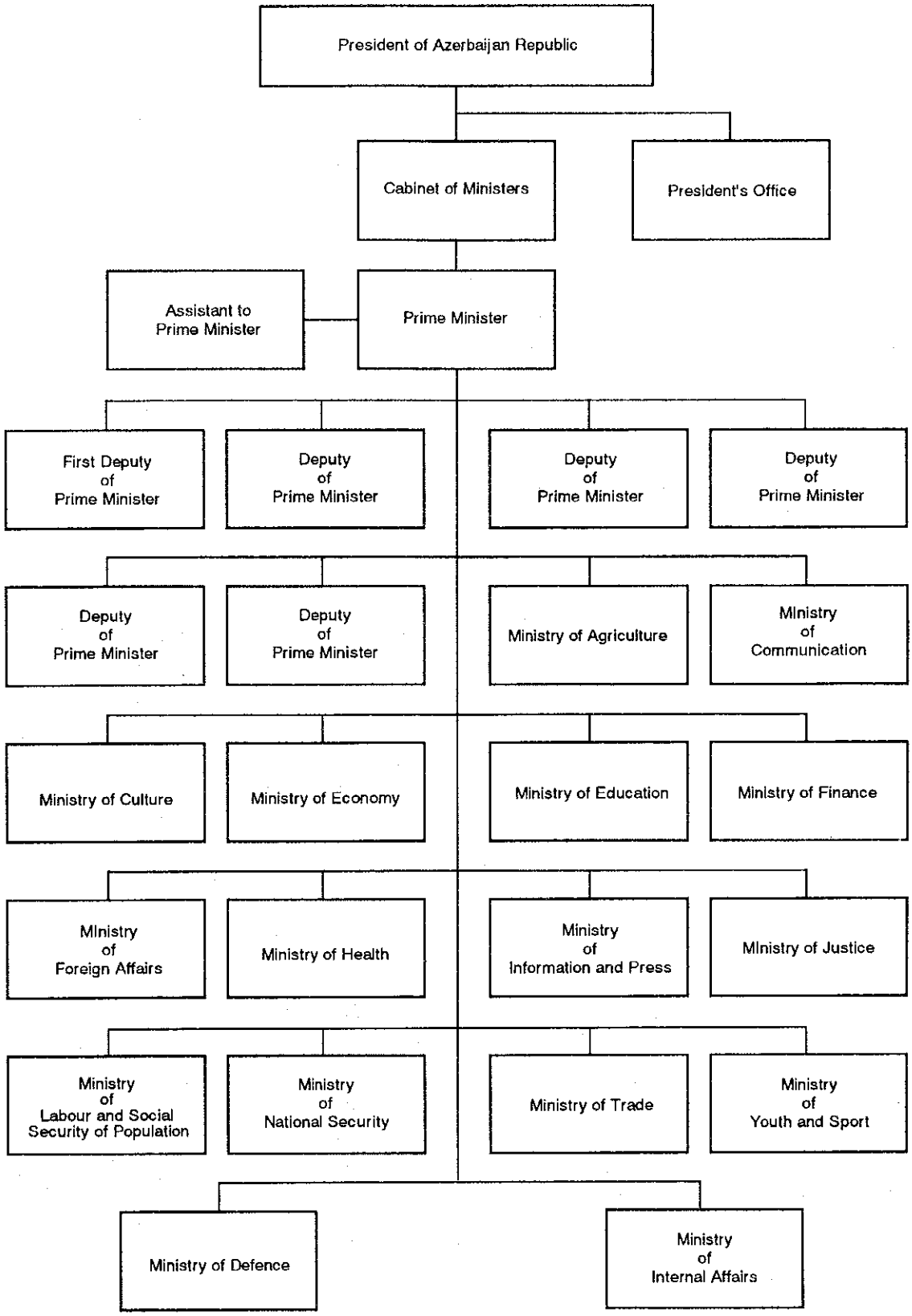
(4) Investment

Appendix I.2.4-4 and the following Table I.2.4-4 show investment value and composition by district in the first half of 1999 in Baku. It is found that most investment took place within the Study area, especially in Sabail district accounting for 72 % of all types of investment and 78 % of construction investment. This is due to that the oil-related activities are heavily concentrated in this district.

Table I.2.4-4 Investment value in Baku in the first half of 1999 (Unit: %)

District	All investment	Construction related
Total for study area	84.6	90.8
1 Sabail	72.1	78.0
2 Yasamal	6.7	5.7
3 Nasimi	0.6	1.2
4 Narimanov	0.3	0.5
5 Nizami	3.0	2.3
6 Khatai	1.9	3.1
Total for outside study area	15.4	9.2
Total for Baku City	100.0	100.0

(Source: Baku City Statistical Department (1999))



Master Plan Study on Rehabilitation and Reconstruction of Electric Supply in Baku Изучение Генерального Плана Восстановления И Реконструкции Электроснабжения Города Баку	Figure / Схема I.2.1-1 Title / Название Рисунка Structure of the Azerbaijan Government
Baku Electric Network ПО "БАКЭЛЕКТРОСЕТЬ" / Japan International Cooperation Agency Японское Агентство Международного Сотрудничества	
Joint Venture Nippon Koei Co., Ltd. & KRI International Corp. Совместное предприятие НИППОН КОЕИ и КРИ Интернешнл Корп.	

Appendix I.2.3 -1 Objectives and Issues of Energy Sector Prepared by TACIS

Issues	Objectives	Area of focus/questions
Investment	- foster a climate to secure foreign investment in the oil and gas sector - develop energy infrastructure to meet the increased needs of the industry when it revives - avoid misallocation of scarce capital	- non-payment of energy bills - pricing policy - generation of profit to finance new investment - own decision making for investment plans - pointing the sectors where foreign investment is needed
Tariff	- finance a portion of investment - remunerate assets (incentive to investment)	- tariff regime based on economic costs - social impact of increasing energy tariff - validity of cross-subsidy
Taxes	- to generate income for the state	- are energy enterprises generating fiscal revenues ?
Competition	- prices must include actual costs to give consumers the right signals to choose the optimum economic option	- detail assessments of cost to transport energy to remote places
Trade and transit	- promote use of gas and maximize oil available for export - take advantage of geographical position to help energy trade (or transit)	- export of electricity - export of petroleum products - export of gas - oil and gas transportation systems
Energy efficiency	- encourage more efficient use of fuel and energy (training center)	- reduce losses in transmission and distribution - waste of fuel and energy
Environmental aspects	- improve public awareness - ensure sustainable development and environmentally sound operation - reinforce the supervisory power of the governmental authority	- implementation of environmentally sound technologies - what is the environmental impact on the use of the additional potential of hydropower and wind energy - active forest protection and prevention of burning of wood for heating purposes
Regulatory framework	- Adapt the legislative framework to the present needs of the country	- How can the regulatory framework be put in execution

Appendix I.2.4-1 Area, Population and Population Density of Baku in 1989 and 1998

District	Area (km^2)	Population of Baku 1989 (thousand)	Population of Baku 1998 (thousand)	Growth rate (%)	Population density in 1998 (person/km^2)	Number of families in 1998 (thousand)
(Study Area)						
1. Sabail	28.1	88.2	74.3	(15.8)	2,644	18.6
2. Yasamal	16.4	218.7	221.5	1.3	13,506	55.4
3. Nasimi	9.8	216.8	195.8	(9.7)	19,980	49.0
4. Narimanov	24.4	171.7	147.9	(13.9)	6,061	37.0
5. Nizami	19.6	170.2	159.1	(6.5)	8,117	39.8
6. Khatai	31.6	224.9	215.5	(4.2)	6,820	53.9
Subtotal	129.9	1,090.5	1,014.1	(7.0)	7,807	253.5
	6%	64%	57%			
(Outside Study Area)						
7. Garadagh	1,083.7	84.5	94.3	11.6	87	23.6
8. Binagadi	161.5	99.8	209.3	109.7	1,296	52.3
9. Sabunchi	244.3	191.9	188.6	(1.7)	772	47.2
10. Azizbayov	395.7	112.0	116.5	4.0	294	29.1
11. Surakhany	122.0	127.2	165.8	30.3	1,359	41.5
Subtotal	2,007.2	615.4	774.5	25.9	386	193.6
	94%	36%	43%			
TOTAL	**2,137.10**	**1,705.90**	**1,788.6**	**4.8**	**837**	**447.2**

Source : Baku City Statistical Division

Note : The number of families is calculated assuming 4 person per family.

Appendix I.2.4-2 Number of Refugees and Itinerary Displaced People in Baku by District as of July 1999

District	Refugees				Internally Displaced People (IDP)			
	Number of families	Number of persons	Composition (%)	Number of persons per family	Number of families	Number of persons	Composition (%)	Number of persons per family
(Study Area)								
1. Sabail	850	4,631	5.2	5.4	1,742	6,736	5.1	3.9
2. Yasamal	319	1,238	1.4	3.9	3,632	14,538	10.9	4.0
3. Nasimi	3,726	14,476	16.1	3.9	2,802	11,449	8.6	4.1
4. Narimanov	2,420	17,160	19.1	7.1	3,252	1,114	0.8	0.3
5. Nizami	1,540	7,364	8.2	4.8	3,520	12,777	9.6	3.6
6. Khatai	2,245	10,232	11.4	4.6	3,899	14,746	11.1	3.8
Subtotal	11,100	55,101	61.4	5.0	18,847	61,360	46.1	3.3
(Outside Study Area)								
7. Garadagh	459	2,400	2.7	5.2	2,463	8,858	6.7	3.6
8. Binagadi	2,768	15,577	17.4	5.6	5,565	22,078	16.6	4.0
9. Sabunchi	1,636	8,320	9.3	5.1	4,028	16,025	12.0	4.0
10. Azizbayov	343	1,736	1.9	5.1	2,960	11,974	9.0	4.0
11. Surakhany	1,136	6,588	7.3	5.8	3,093	12,735	9.6	4.1
Subtotal	6,342	34,621	38.6	5.5	18,109	71,670	53.9	4.0
TOTAL	**17,442**	**89,722**	**100.0**	5.1	**36,956**	**133,030**	**100.0**	3.6

Source : " Social- Economic Situation in Baku 1999" by Baku City Statistical Department

Appendix I.2.4-3 Industrial Production in Baku by District in the First Half of 1999

District	Industrial Production Value (million manats)	Composition in %
(Study Area)		
1. Sabail	639,500	20.3
2. Yasamal	69,903	2.2
3. Nasimi	59,284	1.9
4. Narimanov	100,279	3.2
5. Nizami	502,298	15.9
6. Khatai	612,402	19.4
Subtotal	1,983,666	62.9
(Outside Study Area)		
7. Garadagh	282,069	8.9
8. Binagadi	65,843	2.1
9. Sabunchi	78,039	2.5
10. Azizbayov	582,955	18.5
11. Surakhany	160,974	5.1
Subtotal	1,169,880	37.1
TOTAL	**3,153,546**	**100.0**

Source : " Social- Economic Siuation in Baku 1999" by Baku City Statistical Department

Observation :

In the Study Area, the outlying three districts, Sabail, Nizami and Khatai, are the largest industrial areas. Outside the Study Area, Azizbayov is the largest industrial districts.

Appendix I.2.4-4 Investment Value in Baku by District in the First Half of 1999

District	All Investment				Construction and Installation only			
	Investment Value (million manats)			Composition	Investment Value (million manats)			Composition
	Public Investment	Private Investment	Total	(%)	Public Investment	Private Investment	Total	(%)
(Study Area)								
1. Sabail	256	943,456	943,712	72.1	0	532,879	532,879	78.0
2. Yasamal	0	87,511	87,511	6.7	0	38,916	38,916	5.7
3. Nasimi	0	8,402	8,402	0.6	0	8,162	8,162	1.2
4. Narimanov	0	4,000	4,000	0.3	0	3,500	3,500	0.5
5. Nizami	0	39,093	39,093	3.0	0	15,913	15,913	2.3
6. Khatai	0	25,007	25,007	1.9	0	21,393	21,393	3.1
Subtotal	256	1,107,469	1,107,725	84.6	0	620,763	620,763	90.8
(Outside Study Area)								
7. Garadagh	0	33,645	33,645	2.6	0	14,017	14,017	2.1
8. Binagadi	0	2,970	2,970	0.2	0	1,452	1,452	0.2
9. Sabunchi	0	4,972	4,972	0.4	0	2,195	2,195	0.3
10. Azizbayov	0	127,482	127,482	9.7	0	34,874	34,874	5.1
11. Surakhany	0	32,416	32,416	2.5	0	10,305	10,305	1.5
Subtotal	0	201,485	201,485	15.4	0	62,843	62,843	9.2
TOTAL	**256**	**1,308,954**	**1,309,210**	**100.0**	**0**	**683,606**	**683,606**	**100.0**

Source :

" Social- Economic Siuation in Baku 1999" by Baku City Statistical Department

Observation :

Sabail is the dominant district where investment took place. Azizbayov follows Sabail, but by a far margin.