windows of foreign relations office and economic relation office. That system is not clear for investors.

It is recommended that the investment windows should be a one stop service system for any kind of FDI activities, including in- and outside of EPZ's. And this window should prepare a pamphlet that should be clear and easy to understand for investors.

9.5.4 Introduction of Technology with J/V

Nowadays the quality and capability of production machinery are very high level, so that every country can produce high quality products. Moreover, those techniques are easy to get from technical cooperation and/or J/V. However, sometimes they do not understand that there are many techniques behind the machinery. There are a lot of operation technology, production technology and machine knowledge.

It is therefore pointed out that technology transfer is the most important in a J/V.

9.6 IMPROVEMENT OF FDI TO THE CENTRAL REGION

The basic requirements of investors are (1) understanding of the market economy, (2) huge domestic market and/or export market, (3) industrial infrastructure, and (4) desire to the clear regal frame work. However, those conditions are very difficult in the developing countries. On the other hand, even if there is lack of infrastructure, large scale industries and natural resources oriented industries invest abroad without any infrastructure. Considering this following items should be encouraged.

9.6.1 Infrastructure Development

Infrastructure was the basic requirement for FDI and industrial development in the Asian region. The NIEs and ASEAN have also developed infrastructure in advance and after that investment increased. Development costs for infrastructure are considerable. However, the Vietnamese Government should finance industrial infrastructure in the Central Region.

Under the circumstance of the small economy in the Central Region, there is a chance to establish a huge project as a first step. That is the heavy industry Dung Quat project. This project becomes the core and leading project. However, there are some difficulties in implementation of this project. Project implementation requires the following steps:

- Establishment of an industrial master plan including development map
- Construction of infrastructure on a temporary basis (road, water supply, power supply, observation platform, port and so on.)
- Coordinating of an excellent seminar for explanation of the project
- Gathering the entrepreneurs to take part in the open seminar
- Raise the necessary investors among those, and
- Project implementation.

9.6.2 Encouragement of EPZ

The local market in the Central Region is small, so that it is better to aim at the export market in the first stage. Hence, the Da Nang EPZ should be developed first. For that purpose, the related bottlenecks should be removed in the short term. The lacks of infrastructure are as follows:

- Upgrading of Han river crossing (this crossing is also useful for the tourism development in Hoi An)
- Improvement of Tien Sa Port
- Promotion activities of FDI to the Da Nang EPZ as an export oriented base, and
- Development of living and tourism related infrastructure.

The Da Nang EPZ is the international industrial infrastructure, so that it should be finalized within 3 to 4 years. When the EPZ will be sold out, it is better to start another IEs as a hinterland to the Da Nang EPZ.

9.6.3 Windows of Application for FDI

In the Central Region, there are some windows for FDI. However the existing system is very complicated. Moreover, explanation of basic information is sometimes only verbal. So that the understanding of investors is very low. And investors from abroad request clear investment regulations compare with neighboring countries. Basic information should therefore be printed out and handed over. Even if those materials are expensive, they are necessary for inviting investors and promote future regional development.

There are too many changes in investment policy and related regulations in Viet Nam. That creates problem for investors. Those national laws and regulations should be revised and compiled quickly. The written material should be kept in a one stop service window. Every potential investor should have easy access to collect certain information.

9.6.4 Information Service for Local Industries

The existing industries suffer problems in the financial, production and management field. If it is a J/V and technical cooperation, they could get those technologies from the foreign partners easily. However, that technology is very difficult to introduce for existing industries.

Those industries should have same encouragement from technical cooperation. For this purpose, an information system is required for local entrepreneur to introduce to their partner. And those adequate information should be kept as an easy access point. If this information service is a one stop service center, every manufacturing industry would be able to access it.

9.6.5 Vocational and Training Center

The local enterprises, if there is a certain level of technical know-how, could have partners in the Central Region easily. However, only some enterprise have some technical knowledge. For the other enterprises, they could be advised by specialists at the vocational center or round guidance.

Such vocational and training centers facilitate related items. In this vocational center, it is necessary to add other functions, such as inspection system for production techniques and products development.

9.6.6 Introduction of Industrial Scheme

ASEAN Industrial Cooperation Scheme (AICO Scheme) was sign and seal among the ASEAN seven countries in April 1996. This scheme provide some incentives to the manufacturing enterprises whose capital is over 30% in ASEAN area. The main incentives are:

- Preferential duties are ranged 0% to 5%
- Acknowledgment of country origin at the importer side of country, and
- Incentives for non custom duties and domestic regulation in each country are applied.

This scheme is under negotiation and adjustment among the ASEAN countries, however the condition of trade balance and/or an interest between countries may obstruct this scheme.

On the other hand, there is a experience of the Brand to Brand Complementation (BBC) scheme for car manufacturing industries in ASEAN countries. If Viet Nam Government is considering those schemes very well and applied FDI, Viet Nam could introduce more FDI.

List of Attachments to Chapter 9

Attachment-1: Foreign Investment by Countries (as of September 14, 1996)

Attachment-2: Foreign Invested Projects by Provinces (as of September 14, 1996)

Attachment-3: Facts on Viet Nam Taxes

Attachment-4: Incentives for Foreign Investment

Attachment-1

Foreign Investment by Countries (as of September 14, 1996)

No.	Countries	Number of Projects (Nos.)	Total Capital (million US$)	Average Capital (million US$)
1	Taiwan	260	4,000.00	15.38
2	Japan	156	2,400.00	15.38
3	Singapore	140	2,400.00	17.14
4	Hong Kong	187	2,300.00	12.30
5	South Korea	166	2,000.00	12.05
6	United States	62	1,300.00	20.97
7	Malaysia	49	930.00	18.98
8	British Virgin Islands	38	696.00	18.32
9	Thailand	63	666.00	10.57
10	France	78	664.00	8.51
11	Switzerland	17	633.00	37.24
12	Australia	49	621.00	12.67
13	Britain	19	485.00	25.53
14	Netherlands	27	447.00	16.56
15	Sweden	8	375.00	46.88
16	Bahamas	1	264.00	264.00
17	Indonesia	13	240.00	18.46
18	Germany	14	229.00	16.36
19	Philippines	13	206.00	15.85
20	Russia	31	110.00	3.55
21	Denmark	2	104.00	52.00
22	China	39	70.00	1.79
23	Canada	14	60.00	4.29
24	Liberia	1	47.00	47.00
25	Ukraine	4	41.00	10.25
26	Austria	2	41.00	20.50
27	Belarus	1	38.00	38.00
28	Panama	7	37.00	5.29
29	New Zealand	6	34.00	5.67
30	Italy	5	33.00	6.60
31	Belgium	8	27.00	3.38
32	Norway	4	23.00	5.75
33	Czech Republic	2	23.00	11.50
34	Ireland	6	21.00	3.50
35	Bermuda	1	20.00	20.00
36	Liechtenstein	2	19.00	9.50
37	Luxembourg	4	19.00	4.75
38	Cayman Islands	1	15.00	15.00
39	Hungary	3	13.00	4.33
40	India	2	12.00	6.00
41	Laos	3	11.00	3.67
42	Brunei	1	10.00	10.00
43	Poland	4	10.00	2.50
44	Guernsey	1	9.00	9.00
45	Cuba	1	6.60	6.60
46	North Korea	1	5.30	5.30
47	Macau	2	3.80	1.90
48	Western Samoa	1	3.30	3.30
49	Vanuatu	1	2.00	2.00
50	Latvia	3	2.00	0.67
51	Cambodia	1	1.60	1.60
52	Yugoslavia	1	1.60	1.60
53	Sri Lanka	1	1.50	1.50
54	Channel Islands	1	1.40	1.40
55	Argentina	1	0.12	0.12
Total		1,528	21,732.22	14.22

Note: Not including value of overseas investment projects.
Source: Ministry of Planning and Investment

Attachment-2

Foreign Invested Projects by Provinces (as of September 14, 1996)

No.	Province	No. of Projects	Total Capital (million US$)	Prescribed Capital (million US$)	Average Capital for one project (million US$)
1	An Giang	6	10.00	5.00	1.67
2	Bac Thai	7	50.00	24.00	7.14
3	Ba Ria-Vung Tau	55	1,000.00	600.00	18.18
4	Ben Tre	4	9.00	4.00	2.25
5	Binh Dinh	7	30.50	11.40	4.36
6	Binh Thuan	10	40.00	16.00	4.00
7	Can Tho	12	42.00	18.00	3.50
8	Dac Lac	2	15.00	4.00	7.50
9	Dongg Nai	163	3,000.00	1,000.00	18.40
10	Dong Thap	6	44.00	6.00	7.33
11	Gia Lai	1	2.30	2.30	2.30
12	Ha Bac	6	144.00	59.00	24.00
13	Ha Noi	251	4,100.00	2,200.00	16.33
14	Ha Tay	19	428.00	167.00	22.53
15	Ha Tinh	6	30.00	12.00	5.00
16	Hai Hung	20	479.00	204.00	23.95
17	Hai Phong	51	882.00	363.00	17.29
18	Hoa Binh	3	5.00	3.00	1.67
19	Ho Chi Minh City	543	6,700.00	3,000.00	12.34
20	Khanh Hoa	18	118.00	71.00	6.56
21	Kien Giang	4	337.00	137.00	84.25
22	Lam Dong	28	144.00	110.00	5.14
23	Lang Son	5	3.00	3.00	0.60
24	Lao Cai	1	5.00	1.50	5.00
25	Long An	22	159.00	109.00	7.23
26	Minh Hai	7	24.00	20.00	3.43
27	Nam Ha	5	20.00	10.00	4.00
28	Nghe An	5	85.00	36.00	17.00
29	Ninh Binh	4	75.00	35.00	18.75
30	Ninh Thuan	3	6.30	6.00	2.10
31	Phu Yen	6	11.00	6.00	1.83
32	Quang Binh	2	2.30	2.30	1.15
33	Quang Nam-Da Nang	46	557.00	238.00	12.11
34	Quang Ngai	2	5.00	4.60	2.50
35	Quang Ninh	22	429.00	175.00	19.50
36	Quang Tri	1	3.20	3.20	3.20
37	Soc Trang	1	0.78	0.65	0.78
38	Son La	2	20.50	7.00	10.25
39	Song Be	90	699.00	336.00	7.77
40	Tay Ninh	14	179.00	74.00	12.79
41	Thai Binh	5	5.00	3.00	1.00
42	Thanh Hoa	6	420.00	137.00	70.00
43	Thua Thien-Hue	6	97.00	63.00	16.17
44	Tien Giang	5	61.00	27.00	12.20
45	Tra Vinh	3	7.30	4.60	2.43
46	Tuyen Quang	1	1.00	0.50	1.00
47	Vinh Long	4	8.00	4.00	2.00
48	Vinh Phu	14	305.00	125.00	21.79
49	Yen Bai	1	2.60	2.60	2.60
Total		1,505	20,800.78	9,450.65	13.82

Note: Excludes oil & gas projects and overseas investment projects.
Source: Ministry of Planning and Investment

Facts on Viet Nam Taxes

1. License Taxes

License taxes are applied to all businesses operating in Viet Nam. They are collected every year at different rates. Independent and dependent economic units have to pay VND 650,000 and VND 420,000 each year. The six license tax rates for individuals range from VND 20,000 to VND 650,000 in accordance with monthly income levels.

2. Income Tax

Income tax is evaluated at 11 rates ranging from Zero to 30 per cent. The Zero per cent rate is applied to businesses which pay agricultural tax, special consumption tax, export tax, or have credit activities at commercial banks and financial companies.

3. Special Consumption Tax

Special consumption taxes range from 15 per cent to 100 per cent and are applied to businesses involved in tobacco, wine, beer, four wheeled vehicles (except domestically made vehicles), petroleum and fireworks. The tax calculation is based on the turn-over tax paid by the producers or the importers.

4. Export and Import Taxes

Export and import taxes are collected at border checkpoints. There are 11 rates, ranging from Zero to 45 per cent, calculated on the free on board (FOB) rate export tax. The import tax has 34 rates, from Zero to 80 per cent, calculated on cost insurance and freight (CIF).

5. Profit Tax

Profit tax is applied to all profitable businesses subject to Viet Nam's foreign investment Law. Profit tax is applied at a rate of 25 per cent for heavy industry, 35 per cent for light industry, and 45 per cent for trade services.

6. Agricultural Tax

Agricultural tax payers are organizations and individuals using the land for agricultural production aims, i.e., farming, aqua products, forestry and so on. Tax exemptions are given to agricultural business activities subject to the foreign investment law, because their business units pay for their land lease. The tax rate is defined by the location, terrain, climate, water irrigation system and fertility of the land lease.

7. Land Transfer Tax

Land transfer tax must be paid in all transferred land use right cases. It is calculated on the value of the transferred land and collected at the time when the transfer takes place. Agricultural land attracts a rate of 10 per cent, while 20 per cent is paid for before the allocation, the rate of tax is five per cent. Tax exemption cases cover government confiscated land, the transfer of land use rights to inheritors, divorces, family divisions, private estate business and private land used for leasing.

8. Estate Tax

Estate tax is applied to all individuals and private organizations with the right to use houses, residential land and construction land. All businesses subjects to the foreign investment law are

exempted from this tax. The estate tax is based on the land classification and is determined in part by the grade of the agricultural land.

9. Natural Resource Tax

The natural resource tax is calculated in accordance with eight natural resources. Each resource is taxed from one to ten per cent or from 20 to 40 per cent. The rate of tax charged is based on the value of the exploited resource.

10. Personal Income Tax

Personal income tax for Vietnamese people has seven rates ranging from Zero to 60 per cent. The lowest tax rate starts for salaries at VND 1.2 million. For foreigners, who reside in Viet Nam from 183 days to 12 months, or for Vietnamese working abroad the lowest tax rate starts at VND 5 million per month. For irregular income, there are six rates with the lowest rate starting on salaries worth VND 2 million.

Tax policies for foreign investors are covered by the foreign investment law and include profit taxes, profit transfers abroad, import taxes and land lease taxes. Foreign investors are also subject to the general tax revenue system. Slaughter taxes and various registration taxes also exist.

Incentives for Foreign Investment

The law on Foreign Investment provides a favorable treatment concerning tax payment for the foreign investment. According to the Decree 18-CP, standard tax rate of profit tax to foreign investment is 25%. The more favorable tax rate may be permitted to the investment into the areas, for which the State encourages investment. The criteria of these tax incentives is as follows:

1. Tax rate 20%;

- More than 500 employees are used (job creation),
- Advanced technologies are used (transfer of technology),
- At least 80% of the total products are exported (export promotion), and
- The prescribed capital or contribution for the implementation of the business contract shall be at least USD 10 million (capital contribution).

2. Tax rate 15%;

- For construction of infrastructure works,
- For exploitation of natural resources (except for petroleum and gas production and precious natural resources),
- Concerning heavy industries such as metallurgy, principal chemical substances, mechanical engineering,
- For planting perennial industrial crops,
- Investing in the mountainous areas, and
- Transfer without any compensation to Viet Nam after the termination of its duration.

3. Tax rate 10%;

- To construct infrastructure projects in mountainous area,
- To afforest, and
- To the projects of special importance.

The incentive measures of tax reduction and exemption are also applied in the foreign investment in accordance with the order of above priority.

4. Transfer of technology (TOT)

The capital contribution value of the technology is limited from 3% to 8% of the total investment capital (excluding the capital contribution value in the land use right or compensation and land site clearance). The maximum royalty rate is 5% of the net sales price. The requirements of the maximum rate are to satisfy the following criteria:

- The contents of technology transfer have great significance to the economic development,
- The products (or service) have high quality and bring large profit, and
- The export percentage of the product is high.

(Ministry of Science, Technology and Environment, Circular No.28-TT/QLKH, 22 Jan. 1994)

CHAPTER 10 POWER SECTOR

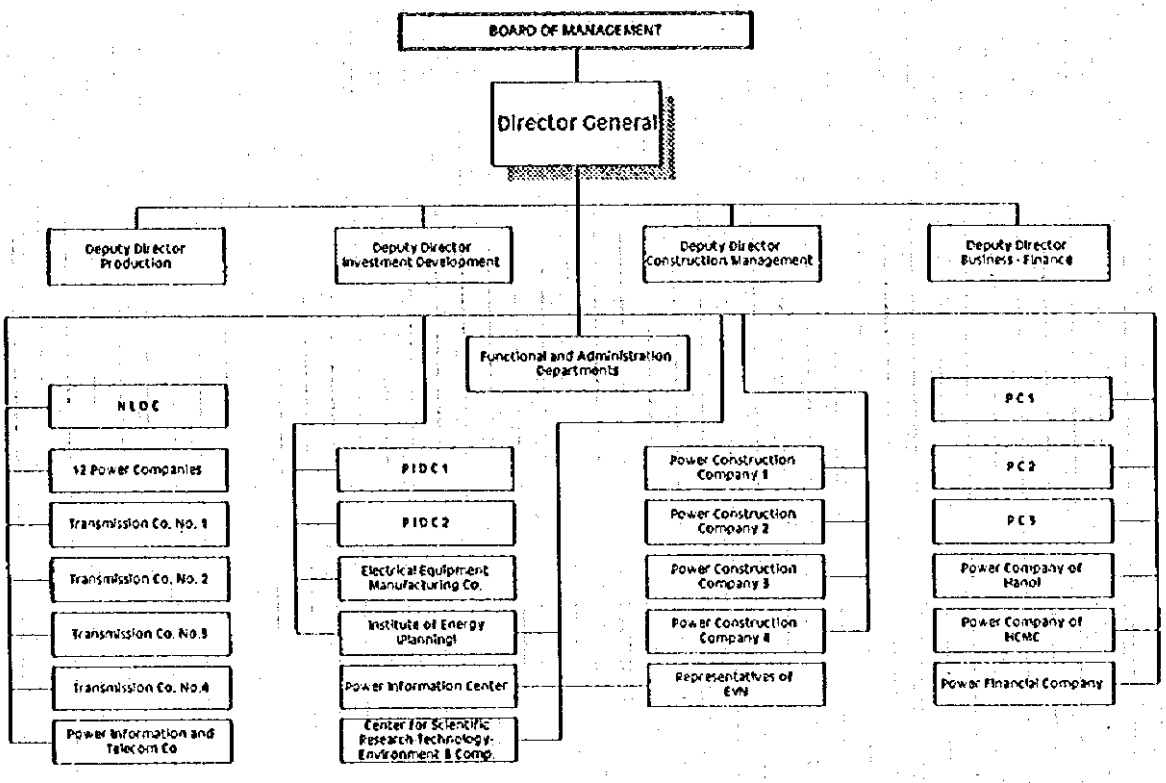
10.1 INSTITUTIONAL FRAMEWORK

In 1995, the Government through the authority of the Ministry of Industry (MOI) re-organized the power sector, creating the General Company of Electricity of Vietnam (EVN) to manage the entire power sector. The reorganization of EVN has divided the core activity into several independent entities respectively in charge of generation, transmission and distribution of, electricity. Other entities cover the following: power investigation and design, power facilities construction, and other general services relating to the power sector.

The reform of EVN is in progress and some changes will likely occur during the ongoing program which extends from 1996 to 1997.

The organization chart is shown hereafter.

Figure 10.1 Organization Chart of EVN



Note: NLDC = National Load DispatchCenter, PIDC = PowerInvestment Design Co.

The distribution of electricity is divided into five independent companies, each of them having their specific territorial responsibility:

- Power Company N° 1 (PC1) for the Northern Region,
- Power Company N° 2 (PC2) for the Southern Region,
- Power Company N° 3 (PC3) for the Central Region,
- Power Company of Hanoi, and
- Power Company of HCMC.

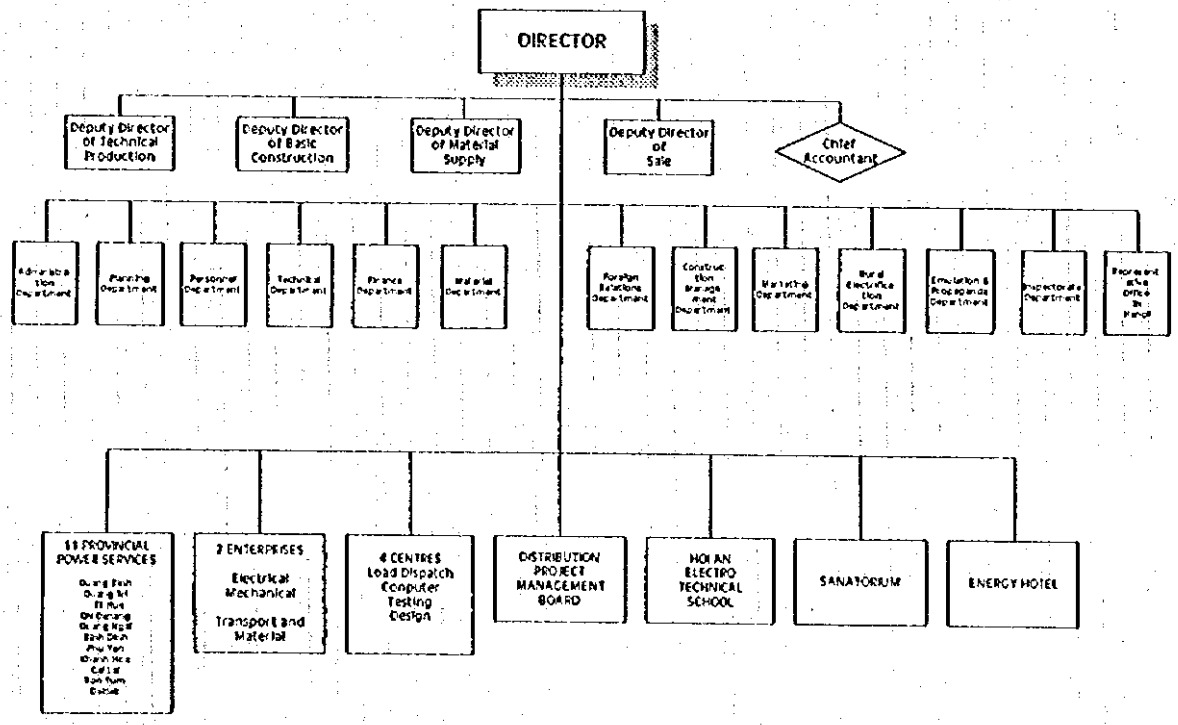
The key area covered by the present study is included in the territory of the Power Company N°3.

10.2 ORGANIZATION OF POWER COMPANY 3

The Power Company N° 3 is established in Da Nang. It includes the general management, common functional divisions, and operating divisions. PC3's organization chart is shown hereafter.

The four Provinces considered in the study have their respective Provincial Power Service.

Figure 10.2 Organization Chart of PC3



During the investigation it was not possible to obtain a clear definition of competencies and responsibilities neither between EVN and PC3 nor between PC3 and Provincial Power Services. This is due to the Reform and Restructuring Program still in progress. It seems that PC3 owns, manages and controls the whole and operates and maintains the 110 kV, whereas

the Provincial Power Services are in charge of management, operation and maintenance of the 35 kV and below systems, including the existing small hydropower plants and other diesel generating facilities. Provincial Power Services are also in charge of metering and billing the energy consumed by the customers.

According to the EVN charter, the reform will make the PCs independent accounting enterprises (profit and cash-generating centers).

10.3 GOVERNMENT POWER SECTOR POLICY AND ORIENTATION

The Government's power sector policy aims to achieve the following objectives:

- Provide electricity access to the entire population of Vietnam
- Separate state management functions from business management functions
- Redefine and clarify ownership responsibilities to allow for asset preservation, asset development and commercial management
- Enable Vietnam to raise financing in the order of US$ 1 billion annually for power sector expansion to meet economic growth targets
- Increase the operating/technical efficiency of the electricity sector to optimize the use of scarce investment resources, and
- Resolve the mismatch between market-based production costs and state administered prices.

In order to achieve the above objectives, the following general orientations have been taken:

- Increase the availability of electricity in rural areas
- Development of the power sector to cope with the increasing demand resulting from industry development
- Setting-up of tariffs for consumers reflecting the actual costs, with transparent subsidies from the government budget, directed to particular groups of consumers identified as needing support
- Use of domestic resources as primary energy for electricity generation
- Development of energy conservation and end-use efficiency policies
- Integration of environmental protection policy, and
- Creation of regulatory conditions, which encourage domestic and foreign investments in the power sector.

10.4 POWER MARKET

10.4.1 General

Over the last decade, Viet Nam has seen a very rapid growth in the demand for electricity averaging 9.9 % p.a. during the period 1981-1993, this could be compared with the GDP growth of around 7 % over the same period. Meanwhile, sales were growing at 12.6 % p.a. in PC3.

In 1993 the statistics indicate :

for Vietnam	sales 8,000 Gwh losses 25.6% (technical plus non-technical) peak demand 2,082 MW
for PC3	sales 638 Gwh losses 25 % (technical plus non-technical) Peak demand 190 MW.

(source World Bank report N°13586-VN)

In 1995 the same indicators could be assumed as :

for Vietnam	sales 11,450 Gwh losses 25.6% (technical plus non-technical) peak demand 3,675 MW
for PC3	sales 970 Gwh losses 25 % (technical plus non-technical) Peak demand 325 MW.

(JICA Study Team figures based on a study from the Institute of Energy)

10.4.2 Forecast of Electricity Demand

Growth in demand for electricity in Viet Nam will be strongly driven by economic development, mainly industry development, resulting in growth in GDP. The electricity demand elasticity with respect to GDP being likely between 1.5 for a high scenario and 1.25 for a low scenario. The development of rural electrification is also a factor to increase the demand. These pro-factors have to be combined with the adverse factors like development of energy conservation policy and cost-reflective prices policy encouraged by the Government.

An energy demand forecast (established in 1991) provided by PC3 shows the following figures. These figures refer to the demand of PC3, the energy sales could be obtained after deduction of 15% corresponding to the losses in the distribution system controlled by PC3:

Table 10.1 Energy Demand Forecast Provided by PC3

	1995				1998				2000			
	High		Low		High		Low		High		Low	
	P (MW)	E (GWh)	P (MW)	E (GWh)	P (MW)	E (GWh)	P (MW)	E (GWh)	P (MW)	E (GWh)	P (MW)	E (GWh)
Total PC3	402	1624	290	1,116	586	2,344	339.5	1,364	746	3,000	143	1,750
from which												
Quang Tri	15	50	10	32	25	80	14	47	31	102	16	60
Thua-Tien Hue	55	220	30	115	66	265	35	140	86	345	45	185
Quang Nam Da Nang	100	420	80	315	134	565	88	370	185	780	120	515
Quang Ngai	25	90	17	58	46	165	18.5	68	60	216	25	90
Total Study Area	195	780	138	520	273	1,075	155.5	625	362	1443	206	850

Source: PC3 Da Nang

This forecast had been established from 1995 up to 2000 with an electricity demand average growth rate of 13.1% for the high scenario and 9.4% for the low scenario.

It is worth to notice that for the four Provinces forming the study area, the 1995 actual figures are close to the forecasted figures corresponding to the low case for 1995 by the considered demand forecast. As a first estimate, the following adjustment could be considered as more realistic for the short term assuming 8% as average GDP growth during the period and demand growth rate 10% for low scenario and 12% for high scenario.

The same assumption extended to the Central Region will lead to the following.

Table 10.2 Energy Demand Forecast of the Central Region

	1995 (actual)		1998				2000			
			High		Low		High		Low	
	P (MW)	E (GWh)	P (MW)	E (GWh)	P (MW)	E (GWh)	P (MW)	E (GWh)	P (MW)	E (GWh)
Total PC3	290	1116	407	1568	386	1485	511	1967	467	1797
from which										
Quang Tri	12	38	17	53	16	51	21	67	19	61
Thua-Tien Hue	30	115	42	162	40	153	53	203	48	185
Quang Nam Da Nang	72	305	101	428	96	406	127	537	116	491
Quang Ngai	24	76	34	107	32	101	42	134	39	122
Total Study Area	138	534	194	750	184	711	243	941	222	859

Source: JICA Study Team

1) Non Industry Consumers

A demand forecast included in the "Energy Sector Investment and Policy Review", reports the following breakdown of electricity demand in the Central Region:

Table 10.3 Breakdown of Electricity Demand in the Central Region

	1995 %	2000 %	2005 %	2010 %
Industry	41.9	43.5	45.6	47.1
Households	37.6	36.6	35.2	33.8
Other services	20.5	19.9	19.2	19.1
Total non industry	58.1	56.5	54.4	52.9

Note: Other services include agriculture

Source: World Bank report 10842 VN June 1993

The ratio of electrification in the study area is relatively high compared with the economic development. In the study area the number of households using electricity in 1994 is shown on the Tables 10.4 to 10.7 hereafter.

For urban sector 100 % of households are reported as having electricity, for rural communes the percentage vary depending on the district the tables here after give a clear picture for each district.

In addition, regarding the number of communes having electricity, it was mentioned during the visit of the study area:

Quang Tri Province, 93 communes from a total of 136,	68 %
Thua Tien - Hue Province, 81 communes from a total of 150	54 %
Quang Nam Da Nang Province, 14 districts from a total of 16 (2 operate as isolated systems)	

Quang Ngai Province, 100 communes from a total of 157 63 %.

Table 10.4 Number of Households Using Electricity in Quang Tri Province (1994)

Quang Tri Province	Electricity	
	Number of households	Rate (%)
	1	2
Total	**44 275**	**41.50**
Dong Ha Town	12 662	96.50
Inside Town	*10 867*	*100.00*
Outside Town	*1 795*	*79.80*
Quang Tri Town	2 992	100.00
Vinh Linh District	8 194	43.80
Gialinh District	1 122	8.50
Cam Lo District	1 842	22.80
Trieu Phong District	7 333	35.30
Hai Lang District	8 062	42.60
Huong Hoa District	2 068	19.10

(Source: 1994 Socio-Economic Statistics)

Table 10.5 Number of Households Using Electricity in Thua Tien Hue Province (1994)

Thua Thien-Hue Province	Electricity	
	Number of households	Rate (%)
	1	2
Total	**77 783**	**41.10**
Hue City	41 262	100.00
Phong Dien District	2 086	11.70
Quang Dien District	6 815	40.30
Huong Tra District	7 238	39.00
Phu Vang District	6 911	24.50
Huong Thuy District	7 859	49.40
Phu Loc District	5 201	20.40
Nam Dong District	50	1.50
A Luoi District	361	7.10

(Source: 1994 Socio-Economic Statistics)

Table 10.6 Number of Households Using Electricity in Quang Nam Da Nang Province (1994)

Quang Nam Danang Province	Electricity	
	Number of households	Rate (%)
	1	2
Total	**298 300**	**68.70**
Da Nang City	94 041	100.00
Hoi An Town	14 295	91.50
Tam ky Town	23 418	63.60
Hoa Vang District	32 443	74.90
Hien District	985	21.60
Dai Loc District	20 670	59.60
Dien Ban District	39 583	91.80
Duy Xuyen District	26 316	97.00
Giang District	1 437	47.30
Que Son District	9 644	34.40
Thang Binh District	10 283	28.50
Hiep Duc District	1 868	24.30
Phuoc Son District	1 602	51.90
Tien Phuoc District	3 255	22.10
Nui Thanh District	15 815	54.50
Tra My District	2 645	29.50

(Source: 1994 Socio-Economic Statistics)

Table 10.7 Number of Households Using Electricity in Quang Ngai Province (1994)

Quang Ngai Province	Electricity	
	Number of households	Rate (%)
	1	2
Total	**131 973**	**51.60**
Quang Ngai Town	20 868	95.60
Inside Town	*13 901*	*100.00*
Outside Town	*6 967*	*88.00*
Ly son District	1 050	31.20
Binh SonDistrict	14 273	37.20
Tra Bong District	2 146	28.20
Son Thin District	17 729	45.60
Son Ha District	750	5.90
Son Tay District	146	6.00
Tu Nghia District	29 122	82.10
Nghia Hanh District	15 885	79.30
Minh Long District	344	14.00
Mo Duc District	20 226	68.10
Duc Pho District	8 414	28.30
Ba To District	1 020	12.40

(Source: 1994 Socio-Economic Statistics)

It means there is a large room for extension of rural electrification. Moreover, it could be worthy to consider that in rural area a lot of households are connected through communal system by provisional connections.

Table 10.8 Demand Analysis in the Study Area

DEMAND ANALYSIS IN THE STUDY AREA Consumption resulting of actual figures 1995							
Sales breakdown					0.38	0.42	0.20
Province	Total Sales	Households				Industry	Other Serv.
	GWh	total nb.	with electricity	Total GWh	kWh/ house.	GWh	GWh
Quang Tri	32.30	44275	18374	12.274	668	13.566	6.460
Thua Tien Hue	97.75	77783	31969	37.145	1162	41.055	19.550
Q N Da Nang	259.25	298300	204932	98.515	481	108.885	51.850
Quang Ngai	64.60	131973	68098	24.548	360	27.132	12.920
Study area	453.90		323373	172.482	AVERAGE 533.38		

The average consumption per households in the study area is 534 kWh/year.

2) Industry

Industry demand in the above analysis and existing forecasts are based on the present consumption pattern, which include development of the demand originating from industry. The part of the industry demand growing progressively up to 47% of the total. The percentage would be in excess of this figure in the study area, where a large industrial zone will be developed. It will be particularly influenced, by the development of energy intensive industries.

This will lead to higher global energy consumption and consequently higher investments but also to a higher load factor with in turn better economic advantage.

10.5. GENERATION TRANSMISSION AND DISTRIBUTION FACILITIES

10.5.1 Generation

The Central Region is poor regarding generation facilities, particularly the study area (see table 8.10). It means that PC3 has to import all the energy it consumes. This situation will last till the completion of hydro projects like Ya Li, Song Hinh and Pley Krong. An estimate of the power balance in PC3 region in 1995 was:

Table 10.9 Estimate of the Power Balance in PC3 Region in 1995

	1995	1997	2000
Available capacity (MW)	62	400	689
Peak demand (MW)	277	359	526
Margin (MW)	-215	41	163
Margin as % of Peak demand		11%	31%

(Source: World Bank report 13586-VN)

In 1995, the supply of the demand needs imported from PC1, which represent around 80% of the total, since the diesel generating units are mainly used as emergency or peak load units.

Table 10.10 Power Generation in Central Region

Date: January, 1996

Name and Type	Installed capacity (MW)	No of units	Available capacity (MW)	Year of commissioning	Type of fuel	Remarks
Phu Ninh	2.0		1.6			
An Diem	5.4		5.4			
Drayhling	12.5		12.5			
Vin Sohn	66	2	66	1994		300 GWh/y
Song Hinh	70	2		1998 99		370 GWh/y
Ya Li	720	4		1999(1) 2000(2-3) 2001(4)		3500 GWh/y
Gas Turbines						
Lien Tri	14.2		0.0		DO	
Diesel Power Stations						
Quang Binh	7.8		7.0		DO	
Quang Tri	3.2		2.0		DO	as standby capacity
Hue	6.3		6.3		DO	as standby capacity
Da Nang	49.7		31.9		DO	as standby capacity
Quang Ngai	15.3		10.4		DO	as standby capacity
Binh Dinh	45.2		29.4		DO	
Phu Yen	13.0		11.5		DO	
Khanh Hoa	15.6		11.5		DO	
Kon Tum	4.2		3.4		DO	
Gia Lai	15.1		12.9		DO	
Dac Lac	4.3		3.6		DO	
Note:		non applicable				
		outside the study zone				

10.5.2 Transmission

For the time being, the PC3 system is connected to the 500 kV link by the Da Nang 500/220 kV substation. The 220 kV transmission system is not yet developed in the study area. The 110 kV system is connected to the 220 kV system in Da Nang and Donghoi (northwards) and to Quinhon (southwards). Projects exist to install 220 kV lines to link Hué / Donghoi, Da Nang/ Quang Ngai and Da Nang/Hue. Presently the main transmission system in the study area is 110 kV, it is established north/south supplying 110/35/6 kV substations or 110/20 kV substations. Except around Da Nang and the link Da Nang/Hue the system is simple circuit with AC 185 sqmm or ACSR 196 sqmm conductors. See simplified diagram in Annex 1

A project for the installation of a regional load control center in Da Nang is in progress.

Table 10.11 HV/HV and HV/MV Substations in Central Region

Date: January, 1996

		Existing	Ongoing or Planned Projects	
Name	Voltage (kV)	Capacity (MVA)	Capacity (MVA)	Year of commission-ing
Da Nang	500/220	450		
Pleiku	500/220		450	
Dong Hoi	220/110	2 x 63		
Hue	220/110		125	
Da Nang	220/110	125	125	1997
Quang Ngai	220/110		125	2000
Dong Ha	110/35/6	16		
Hue 2	110/6	16		
Hue 1	110/35/6	2 x 25		
Soi Hue	110/6	16		
Hoakhanh	110/20		2 x 25	
Xuan ha	110/35/6	2 x25		
Cau Do	110/35/6	25		
KCX Nuoc Man	110/		25	
Lientri	110/20	25	25	
Quan 3	110/20	25	25	
KCX An Don	110/20	25	25	
Tam Ky	110/35/6	16		
Quang Ngai	110/35/6	16		
Duc Pho	110/20	16		
Note:		outside the study zone		

Table 10. 12 Transmission Lines in Central Region

Date: January, 1996

List	Voltage (kV)	Length of line (km)	Type/Size Conductors (mm2)	Nb of circuits 1 or 2	Remarks
Existing					
Vinh - Dong Hoi	220	203	AC 300	1	
Dong Hoi - Dong Ha	110	106	ACSR 196	1	
Dong Ha - Hue 2	110	68	ACSR 196	1	
Hue 1 - Hue 2	110	7	ACSR 196	1	
Hue 1 - Soi Hue	110			1	
Da Nang - Hue 1	110		AC 240	2	Connection to Cau Do km 3, to Xuan Ha km 7 from Da Nang
Da Nang - Quan 3	110	12	AC 240	2	
Da Nang - Quan 3/Lientri	110	4.5	AC 185	2	Derivation to Lientri, km 3 from Da Nang
Quan 3 - Ha Don	110	4.5	AC 185	2	
Da Nang - Tam Ky	110	70	AC 185	1	
Tam Ky - Quang Ngai	110	60	AC 185	1	
Quang Ngai - Ducpho-Hoainhon	110	90	AC 185	1	Derivation to Ducpho,
Ongoing or Planned Project					
Dong Hoi - Hue	220	180	AC 300	1	
Da Nang - Hue	220		AC 300	1	
Da Nang - Quang Ngai	220	130	AC 300	1	
Pleiku - Quang Ngai	220			1	
Da Nang - Hué/ Hoakhanh	110			2	Derivation to Hoa Khanh
Quan 3 - KCX An Don	110			1	
Quan 3 - KCX Nuoc Man	110			1	
Note:		outside the study zone			

10.5.3 Distribution

Distribution systems includes MV lines, MV/LV substations and LV distribution. Medium voltages used are: 35 kV lines, which could be considered more as a sub-transmission system, 20 kV lines, 10 kV or 6 kV lines. Most of these lines are overhead lines with bare conductors. The MV substations are 35/6 kV 20/0.4 kV 10 or 6/0.4 kV with old technology. Most of the LV lines are overhead lines with bare conductors and concrete poles. Most of the 6 kV lines and LV lines seem old and in bad conditions, whereas the 35 kV lines present a better condition. A decision has been made to progressively replace outdated MV 6, and 10 kV systems by 20 kV.

As a general remark it could be mentioned that the distribution systems and their equipment are very old and often in state of disrepair. The networks are under sized and over extended incurring excessive losses and voltage drops. In urban areas the circuits are cluttered posing safety hazards. Projects in view of upgrading the existing are already in progress. Any development of demand will need extension of the existing system and improvement as well. The extent of the existing MV systems is given hereafter.

1) Quang Tri Province

35 kV lines:	162 km main feeder plus derivations
10 kV lines:	250 km
35/10 kV substations	9 x 1000 kVA, with 2 x 1600 kVA (Dong Ha Diesel Power Plant),
10/0.4 kV transformers	264 ranging from 50 to 200 kVA.

2) Thua Thien- Hue Province

35 kV lines:	139 km main feeder plus derivations (extension program 100 km)
MV lines:	15 kV, 10 kV and 6 kV lines have to be changed for 20 kV lines
LV lines:	405 km, and
Substations 35/6 kV	30.

3) Quang Nam Da Nang Province

35 kV lines: 179 km, (64 km in project for 1996-1997)

37000 consumers are connected to the grid.

4) Quang Ngai Province

No quantitative data. The province is as well equipped with 35 kV lines, 35/6 kV substations (20 kV lines are installed in the Duc Pho zone), MV/LV transformers and LV lines.

10.6 ELECTRICITY TARIFFS

Tariffs have been increased several times since 1992. A comparison with the tariffs prevailing in other Asian countries is attached as Annex 2. The objective is to reach progressively cost reflective tariffs (the LRMC cost of energy is reported as being in the range of 7 USc/kWh or around 700 VND).

The tariffs are currently uniform across Vietnam with some exception in the HCMC area.

Base tariffs prevailing in 1994 were:

Households	450 VND/kWh
Trade and services	1000 VND/kWh
Industry	450 VND/kWh
Agriculture (communes)	360 VND/kWh, and

(individual farmers) 500 VND/kWh.

In 1995 the Government set up tariffs effective since June 1995. These tariffs are given in the attached Annex 5.

The Government policy aims at:

- Progressively raise average retail tariff to 7 USc/kWh by 1999, and
- Determine and adopt an appropriate bulk transfer price between the distribution companies and the EVN generation-transmission core.

In the framework of the reform of the power sector initiated by the Government, a tariff study, on line with the Government's orientation is in progress with the support of ADB.

10.7. DEVELOPMENT PROGRAM

10.7.1 Introduction

When analyzing power system development it is necessary to have a nation-wide approach. This is due to the fact that such a system is by nature an inter-linked one and furthermore in the case of Vietnam where water resources, inherently dependent of geography, are largely used for power generation. The existing structure of Vietnam power system is typical in this respect. The presence of large energy resources (hydrology and coal) mainly concentrated in the north has led to establish the existing interconnected system. The recent development of natural gas field in the south has changed this unbalanced situation, but the need to be able to exchange electric energy between the regions still exists. This is particularly true for the central region, up to now completely dependent of the rest of the country for power supply. From economic point of view, the interconnected system allows an economic competition between the various alternative generation projects and a reduction of the total reserve capacity. The backbone of the national grid is the extra high voltage (EHV) 500 kV, line installed in 1994, to link north, central, and south regions.

Thus the development of power sector in central region has to be analyzed in the context of the whole country. The development of generation and transmission facilities depends of planning decision prepared at national level (EVN), even they have to take into account the demand resulting of regional development. Only distribution systems development are the responsibility of regional planner (PC3). Besides, this division is reflected by the organization of the power sector.

10.7.2 EVN Generation Master Plan

EVN is preparing a Development Master Plan for the Power Sector in Vietnam covering the period 1995 - 2010. Though this plan is not yet officially adopted, it indicates the most likely options.

This study is a "Least Cost Plan" for development of generation. It is based on demand forecasts corresponding to three scenarios: Low, Medium and High. These scenarios integrate different assumptions regarding socio-economic development GDP, population and so on. in total and per economic region The table 10.13 indicates the electricity demand forecasts for the three scenarios per region.

Table 10.13 Electricity Demand Forecast for the Three Scenarios per Region

ELECTRICITY DEMAND FORECAST (GWh)										
	1995	2000			2005			2010		
		Low	Med.	High	Low	Med.	High	Low	Med.	High
NORTH										
Energy Sales	5102	8655	9802	10767	14624	17133	19010	23676	28707	31387
Losses-auxil. consum.	1470	1938	2198	2413	2648	3097	3430	31226	3793	4143
Energy demand	6562	10590	12000	13180	17270	20230	22440	26800	32500	35530
CENTER										
Energy Sales	974.3	1860	1970	2181	3357	3632	3996	5902	6400	6650
Losses-auxil. consum.	280	450	477	499	630	691	761	798	865	890
Energy demand	1255	2310	2447	3680	3987	4323	4757	6700	7265	7540
SOUTH										
Energy Sales	5383	11583	12765	14033	21759	24648	28753	37177	42380	49509
Losses-auxil. consum.	1359	2357	2795	3037	3881	4402	5337	4633	5670	6631
Energy demand	6742	14120	15560	17070	25640	29050	34090	41810	48050	56140
VIETNAM										
Energy Sales	11452	22098	24536	26982	39738	45413	51750	66454	77488	87547
Losses-auxil. consum.	3109	4924	5474	5948	7152	8187	9530	8856	10332	11663
Energy demand	14568	27020	30010	32930	46890	53600	61290	75310	87820	99210

Source: EVN, Development Master Plan

In order to cope with this demand, a least cost development plan is proposed in the EVN study, taking into account the available primary energy resources and their respective cost. The project is already in progress and the other candidate projects are already identified affected by their respective investment and operation costs. The study has been performed using the WASP III model (Wienna Automatic System Planning Package) taking into account various constraints. The result of this exercise leads to a plan for the development of the generation facilities during the period considered by the study (1995-2010) after comparison of different possible solutions and analysis of their sensitivity versus the main variable factors.

The plan emerging after this study is shown in the table 10.14.

A tentative energy balance by region has been made combining the energy demand from the table 10.13 with the installed capacity of the table 10.14 and introducing the annual generation capacity, the result is shown on the table 10.15. The annual energy generating capacity has been determined using the energy production capacity of each type of project. Hydropower plants are taken for their respective generation capacity as reported in the Development Master Plan.

For thermal power plant, plant factors have been affected to each type of plant:

- 80 % for new coal fired power plants installed before 2005, and 75 % after 10 years of operation
- 85 % for combined cycle power plants burning gas, and
- 25 % for open cycle gas turbines burning gas or oil.

The decommissioning of old thermal units has also been taken into account.

It is not possible to draw out any final conclusion of this simple exercise which has no pretension to replace the comprehensive planning studies in progress at EVN. Nevertheless it allows to makes some comments which could be of interest for the development of the central region and particularly for the four Provinces covered by the present study.

1. Up to 2000, the Central Region will remain dependent on energy imported from the northern region. This situation will end with the commissioning of Song Hinh and Yali ongoing projects.

2. After 2000 whatever the scenario, the Central Region will be self-sufficient in energy on normal operation, but this situation could be fragile with either the medium scenario or the high scenario. And in any case, the balance depends on the capacity of the national load control center to manage the inter-regional exchanges and to control them in case of major failure in the system. This requires sophisticated control equipment and skilled monitoring and certainly an upgrading of the EVH link after 2005 to be able to take advantage of the generation capacity brought by Son La hydro-project.
3. The generation capacity in the Central Region is 100 % hydropower, and thus depends on hydrology. It could cause problems in case of a dry year. Only A Vuong hydro-project (145 MW, 591 GWH) is located in the study area.
4. Another restriction regarding this program comes from the hydro-projects planned after 2000. With the exception of Son La and Dai Ninh, they are still at the stage of prefeasibility study or even simple identification survey, so the program as presented is subject to revision.

10.7.3 EVN Transmission Development Plan

In parallel with the development of generation, EVN intend to develop the transmission systems the general objectives being: development of transmission capacity; improvement of the reliability and losses reduction.

The needs for new transmission facilities, during the period 1995 - 2005, to be considered for the whole country are in round figures:

750 km of 500 kV lines
5000 km of 220 kV lines, and
5000 km of 110 kV lines.

1200 MVA substations 500 kV
13500 MVA substations 200 kV, and
18200 MVA substations 110 kV.

PC3 has mentioned the following for the facilities concerning directly the study area (see simplified diagram in Annex 1.2):

500/220 kV substation	450 MVA in Pleiku.
220 kV lines	Dong Hoi - Hue Da Nang - Hue Da Nang - Quang Ngai, and Pleiku - Quang Ngai.
220/110 kV substations	+125 MVA in Da Nang 125 MVA in Hue, and 125 MVA in Quang Ngai.

10.7.4 PC3 Distribution Development

110 kV lines	Da Nang/Hue - Hoa Khanh Quan 3 - An Don, and Quan 3 - Nuoc Man.
110/MV substations	2 x 25 MVA in Hoa Khanh 25 MVA in Nuoc Man 25 MVA in Lien Tri 25 MVA in Quan 3, and 25 MVA in An Don.

In addition, each Provincial Electricity Service are implementing or have planned development of 35 kV, 20 kV, 10 kV and 6 kV systems and the related MV/LV substations and LV lines.

Table 10.14 Development Program for Power Generation

DEVELOPMENT PROGRAM FOR POWER GENERATION						
Year			Installed Capacity			
	Name	Type	North	Centrer	South	Total
	Existing in 1995		**2000**	**213**	**1200**	**3413**
1996	Barla	GT			35	35
	Phumy 2 u.1	GT			200	200
1997	Barla	CC			56	56
	Phumy 2 u.2	GT			200	200
	Phumy 3 u.1	GT			200	200
1998	Barla	CC			56	56
	Phumy 2 u.3	CC			200	200
	Phumy 1 u.1	GT			200	200
	Phumy 3 u.2	GT			200	200
	Song Hinh u.1	Hydro		35		35
1999	Phalai 2 u.1	Th. coal	300			300
	Quang Ninh u.1	Th. coal	300			300
	Phumy 1 u.2-3	GT + CC			400	400
	Phumy 3 u.3	CC			200	200
	Song Hinh u.2	Hydro		35		35
	Yali u.1	Hydro		180		180
2000	Phalai 2 u.2	Th. coal	300			300
	Yali u.2-3	Hydro		360		360
	Ham Tuan-Dami	Hydro			472	472
	Decommissioning		-200		-217	-417
	Total at 2000		**2700**	**823**	**3402**	**6925**
2001	Yali g.4	Hydro		180		180
	Phumy 4 u.1	GT			300	300
	Decommissioning			-129		-129
2002	Phumy 4 u. 2	GT			300	300
	Nhon Trach u.1	GT			300	300
	Seasan 3	Hydro		220		220
	Buon Kuop	Hydro		85		85
2003	Dalninh	Hydro			300	300
	Banmai	Hydro	350			350
	High Kontum	Hydro		260		260
	Decommissioning				-90	-90
2004	Plei Krong	Hydro		120		120
	Dai Thi	Hydro	250			250
	Dongnai 8	Hydro			140	140
	Nhon Trach u.2, 3	GT + CC			600	600
2005	Quang Ninh u.2-3	Th. coal	600			600
	Hai Phong/Pha Lai	Th	600			600
	Total at 2005		**4500**	**1559**	**5252**	**11311**
2006	Nhon Trach	CC			300	300
	Quang Ninh u.4	Th. coal	300			300
	Mekong Delta u.1-2	Th. coal			600	600
2007	Son La u.1-2	Hydro	600			600
	A Vuong	Hydro		145		145
	Mekong Delta u.3	Th. coal			300	300
	Mekong Delta 1-2-3	GT (DO)*			600	600
	Decommissioning		-67			-67
2008	Son La u.3-4	Hydro	600			600
	An Khe	Hydro		116		116
	Mekong Delta u. 4	Th. coal			300	300
	Mekong Delta 4-5-6	GT (DO)*			600	600
2009	Son La u. 5 - 6	Hydro	600			600
	Sesan 4	Hydro		366		366
2010	Son La u. 7 - 8	Hydro	600			600
	Mekong Delta u.5	Th. coal			300	300
	Mekong Delta 7-8	GT (DO)*			400	400
	Dong Nai 4	Hydro			200	200
	Decommissioning		-110		-132	-242
	Total at 2010		**7023**	**2186**	**8720**	**17929**
After 2010	Son La u. 9-10-11-12	Hydro	1200			1200
	Candon	Hydro			650	650
	Huoi Quang	Th. coal	600			600

GT = gas trubine, CC = steam part of combined cycle, Th = steam power plant, * = peak load operation

Table 10.15 Energy Balance

ENERGY BALANCE																
	CENTER				NORTH				SOUTH				VIETNAM			
	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010
Installed capacity (MW)	213	823	1559	2186	2000	2700	4500	7023	1200	3402	5252	8720	3413	6925	11311	17929
Hydro (%)	70%	70%	100%	100%	82%	61%	50%	66%	47%	30%	28%	19%	69%	47%	47%	47%
Thermal (%)	30%	30%	0%	0%	18%	39%	50%	34%	53%	70%	72%	81%	31%	53%	53%	53%
Generation Capacity (GWh/y)	575	3755	7523	10194	8186	13617	23220	34610	6124	20852	30889	47613	14885	38224	61632	92417
Hydro (%)	55%	93%	100%	100%	81%	49%	36%	54%	25%	21%	21%	15%	57%	38%	36%	39%
Thermal (%)	45%	7%	0%	0%	18%	51%	64%	46%	75%	79%	79%	85%	43%	62%	64%	61%
Low Scenario																
Energy demand (GWh/y)	1255	2310	3987	6700	6562	10590	17270	26800	6742	14120	25640	41810	14559	27020	46897	75310
Energy balance (GWh/y)	-680	1445	3536	3494	1624	3027	5950	7810	-618	6732	5249	5803	326	11204	14735	17107
Load factor	0.44	0.46	0.50	0.60	0.48	0.50	0.55	0.60	0.43	0.50	0.55	0.60	0.45	0.50	0.55	0.60
Peak load (MW)	326	573	910	1275	1561	2418	3584	5099	1790	3224	5322	7955	3676	6215	9816	14328
Reserve capacity	-53%	30%	42%	42%	22%	10%	20%	27%	-49%	5%	-1%	9%	-8%	10%	13%	20%
Medium Scenario																
Energy demand (GWh/y)	1255	2447	4323	7265	6562	12000	20230	26800	6742	15560	29050	48050	14559	30007	53603	82115
Energy balance (GWh/y)	-680	1308	3200	2929	1624	1617	2990	7810	-618	5292	1839	-437	326	8217	8029	10302
Load factor	0.44	0.46	0.50	0.60	0.48	0.50	0.55	0.60	0.43	0.50	0.55	0.60	0.45	0.50	0.55	0.60
Peak load (MW)	326	607	987	1382	1561	2740	4199	5099	1790	3553	6029	9142	3676	6899	11215	15623
Reserve capacity	-53%	26%	37%	37%	22%	-1%	7%	27%	-49%	-4%	-15%	-5%	-8%	0%	1%	13%
High Scenario																
Energy demand (GWh/y)	1255	2680	4757	7540	6562	13180	22440	35530	6742	17070	34090	56140	14559	32930	61287	99210
Energy balance (GWh/y)	-680	1075	2766	2654	1624	437	780	-920	-618	3782	-3201	-8527	326	5294	345	-6793
Load factor	0.44	0.48	0.55	0.65	0.48	0.55	0.60	0.65	0.43	0.55	0.60	0.65	0.45	0.54	0.60	0.65
Peak load (MW)	326	637	987	1324	1561	2736	4269	6240	1790	3543	6486	9860	3676	6916	11743	17424
Reserve capacity	-53%	23%	37%	39%	22%	-1%	5%	11%	-49%	-4%	-23%	-13%	-8%	0%	-4%	3%

Consultant figures

10.8 STUDY AREA DEVELOPMENT - NEEDS AND OPPORTUNITIES

10.8.1 General

As for other infra-structures the power systems will play a major role in the socio-economic development of the study area. Obviously this development requires distribution of electricity to the inhabitants in urban and rural areas, supply of reliable power to industry, trade and services, each of these sub-sectors having its specific needs and requiring proper solutions. Though the power systems are necessary for socio-economic development, they could not by themselves create the development which mainly depends of the conjunction of other factors. Precise measures would be only designed at a later stage as a synthesis of the selected options. Nevertheless it is already possible to analyze the needs and the main opportunities, and to propose recommendable orientations.

10.8.2 Needs and Opportunities

1) Urban Development

Socio-economic development in the study area implies development of the demand due to growth of domestic consumers income, development of trade, workshops and public services in existing urban centers and even creation of new urban center. It appears that, in most part of existing urban centers, electricity is largely distributed but it is also obvious that the existing systems are saturated. They offer few expansion capabilities.

Most of the existing systems have to be upgraded in terms of capacity, reliability and environmental impact.

The systems are often overloaded resulting of abnormal losses and voltage drops. Equipment is of old design, poorly maintained and difficult to repair. Control and monitoring of equipment is non-existent or obsolete, implying difficulty and delay to restore electricity supply in case of failure. Most of the systems are made of cluttered overhead lines with bare conductors posing safety hazards incompatible with the urban environment.

A project, financed by the World Bank, is in progress for the rehabilitation and the extension of the distribution system in Hue City.

In the same way rehabilitation projects have to be undertaken in the coming years in the other urban centers using modern technology. This is the only way to cope with the increasing demand, to reach an acceptable level of reliability and to reduce the level of losses. These objectives are essential with regard to the quality of services offered to the consumers and will contribute to financial recovery of the power distribution company. The cost of non distributed energy justifying the over investment cost in high density area.

2) Rural Development

During the coming years rural electrification has to be developed to connect all the communes and 100% of permanent households to the grid. In the same time the development of agriculture, irrigation and agro-product processing will require more power. This leads to extend the existing 35 kV sub-transmission system and the MV and LV distribution systems to supply the rural communes. Several projects are already in progress in each of the four Provinces. Progressively the standard design of existing rural distribution systems has to be improved.

For mountainous zone with communities scattered in remote areas, independent electric systems supplied by micro-hydro-generating units should be developed, when water resources exist.

3) Industry

Development of industrial zones, furthermore when it includes energy intensive industry, requires a specific approach, due to the nature of the customers often connected to the medium voltage system or high voltage system for the larger ones. All industry customers need a reliable supply to avoid shut-down due to power failure. This implies double-way connection and MV/LV substations with guaranteed supply. For small industry consumers connected to the LV system, the design is like for other urban consumers. For medium size enterprise the MV/LV substation is generally property of the industry and thus financed by the consumer. Metering is then made at MV connection. The large and energy intensive industries, are directly connected to 100 kV system through a substation owned by the industry and the metering is preferably made at HV connection. In any case, metering and protections of private substations shall be designed according to the standards agreed by the power company.

When heat demand exist, possibilities for cogeneration have to be studied , particularly if there is energetic by-product available.

4) Transmission

A project is in progress to install in Da Nang a modern regional load dispatch center. This equipment will replace the inadequate existing facilities.

In the Quang Nam Da Nang Province improvement of the 110 kV systems are in progress, but it was impossible to have any information supported by a comprehensive feasibility study addressing technical and economical issues on the development of the transmission system in the study area and furthermore in the Central Region. It seems that PC3 has not yet addressed this issue. This situation is likely due to the reform in progress in the power sector.

The simplified diagrams attached in annex 1, established from a diagram provided by PC3 (Da Nang) show the structure of the existing system and the planned development. The main development orientation consists in the installation of 220/110 kV substations to be located somewhere respectively in the Hue and Quang Ngai areas (the optimum location has to be chosen with regard to the development of main consuming centers). This option has to be confirmed and supported by further studies after agreement of the Master Plan for Regional Development. The general objective is to develop a system able to supply the peak demand, even in case of failure of either one line or one transformer with a quality of supply superior or equal to the guaranteed minimum. It is foreseeable that such a study will demonstrate the need of extension and with possible increase of rated performance of the existing equipment.

5) Generation

The Master Plan prepared by the Energy Institute, only consider hydro-power plants in the Central Region. Those planned after 2000 are still at the stage of pre-feasibility study and thus up to completion of the related hydrology studies, a risk of lack of hydro resources in dry year could justify the installation of a thermal power plant in Central region. So it could be recommended to study the feasibility of such a project in the context of the regional industry development. The fuel could be oil distillate produced by the oil refinery, or gas in case this fuel will be introduced in the region for instance with petrochemical industry. Development of energy intensive industries in a specialized industrial park could also create heat demand in addition of power demand, offering opportunities for development of cogeneration facilities. This type of project, supplying heat and power to industry and even power to the grid, is in general economically justified. Furthermore the technologies are well proven with oil fired steam cycle or with combined cycle, if gas is available.

From a more general point of view, the opportunity to installed thermal power generation plant in the Central Region (particularly in the study area) has to be taken in consideration by the EVN generation development plan. This could limit the inter-regional exchanges and augment the reliability of the system with acceptable generation cost.

Thermal projects could be successfully developed in form of B.O.O. or B.O.T by foreign

investors. Furthermore, implementation is shorter and phasing of investment is easier than for hydro projects. The sizing of such a thermal power plant will be influenced by industry demand, but around of 100/150 MW could be already contemplated with an appropriate phasing.

In the study area, there are likely opportunities to generate power through multi-purpose hydro-projects, which have to be studied in the framework of regional water resource control program. Such projects, mainly justified by irrigation, flood control, and soil protection could contribute to power supply. Projects of this type have been mentioned by Thua-Tien Hue and Quan Tri provincial authorities respectively for Huong river tributaries (reported as 50 MW) and Rao Quan river (reported as 80 MW, 267 Gwh) but pre-feasibility studies have still to be performed.

10.8.3 Power Sector Development

1) Demand Forecast

On the basis of the assumed socio-economic development a tentative power demand forecast has been established in Annex 4, The main results are summarized hereafter.

Table 10.16 A Tentative Power Demand Forecast

Study Area	1995	2000	2005	2010
Energy demand (GWh)	534	813	1421	2606
Peak demand (MW)	138	182	274	460

2) Estimate of Investment Cost

The development of the power system corresponding to the increase of demand and based on the needs described in paragraph 8.2 will require the investment summarized in the table 8.17. Cost are established in 1995 prices, it includes 20% contingencies due to lack of detailed technical studies.

Table10.17 Required Investment Cost for the Development of the Power System

in 1000 US$

	Before 2000			After 2000		
	Foreign	Local	Total	Foreign	Local	Total
Transmission						
Substation 220 kV				12900	4300	17200
Lines 220 kV				30855	5445	36300
Substation 110 kV	9000	3000	12000	6840	2280	9120
Lines 110 kV	1875	625	2500	15750	5250	21000
Sub-total	10875	3625	14500	66345	17275	83620
Distribution	9600	9600	19200	13000	14300	27300
Grand Total	**20475**	**13225**	**33700**	**79345**	**31575**	**110920**

The investment cost for extension of the power system is estimated in rounded figures at 145 millions US$. Provisions shall also be made for rehabilitation of the existing urban distribution systems. In the absence of precise assessment of the existing system, it is only

possible to make reference to the projects already in progress. For instance the cost for rehabilitation of the Hue city distribution system was estimated in the World Bank appraisal report at a cost of 7.4 million US$. Applying the same cost ratio to the other cities it comes around to 22 million US$ for urban systems rehabilitation.

10.9 RECOMMENDATIONS

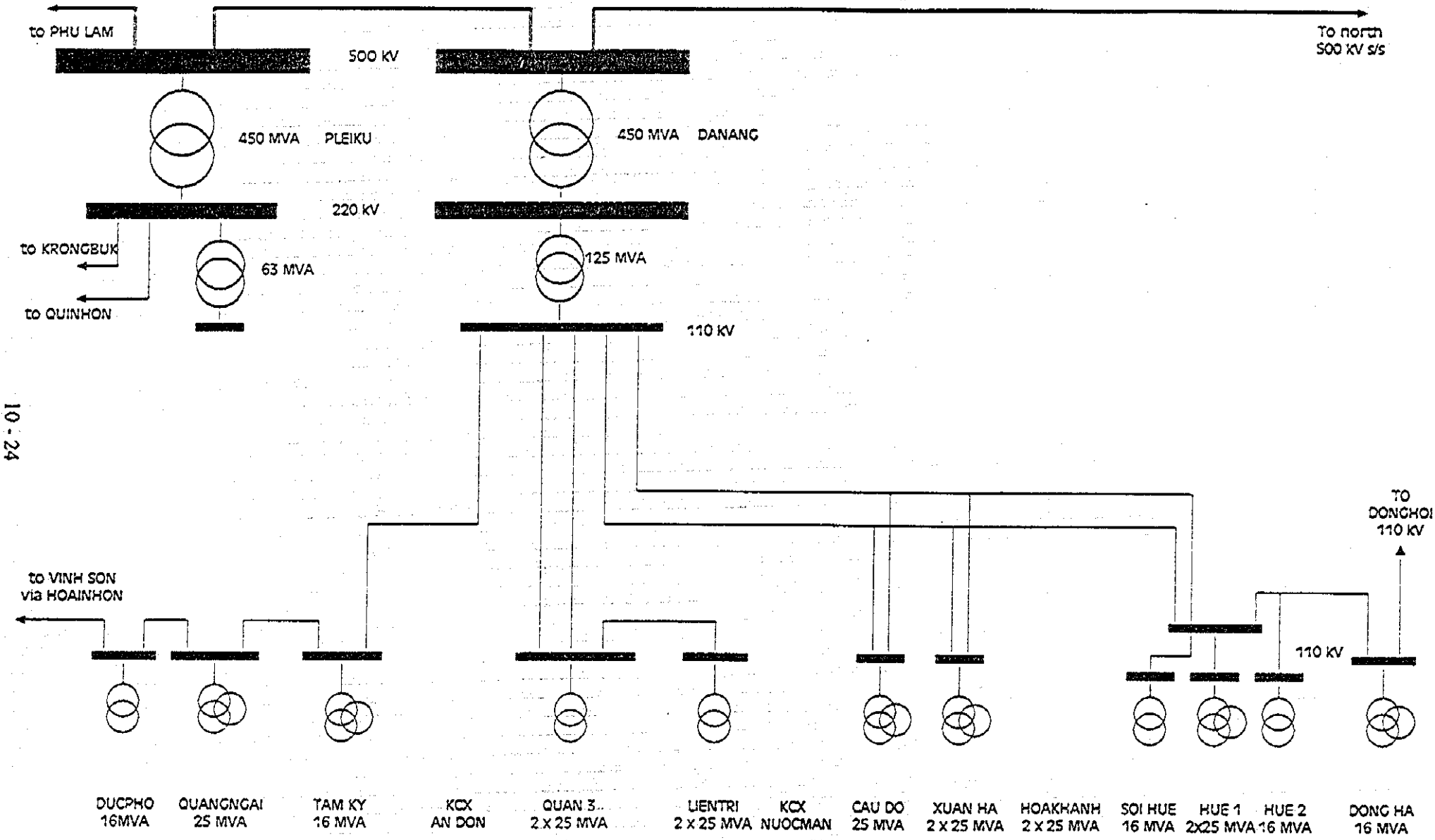
The development of Transmission and Distribution systems in the study area is one of the prerequisite conditions to achieve the integrated socio-economic development. So it is highly recommended to undertake, as soon as the general strategy will be adopted, a comprehensive study with the aim of drawing up the Regional Power Sector Development Plan. Draft terms of reference for this study are attached as Annex 6 to the present document.

Another important issue is to prepare the conditions for the successful implementation of this development plan. That means, achieve the reform in progress to give sufficient capacity to PC3 company in terms of financial and human resources.

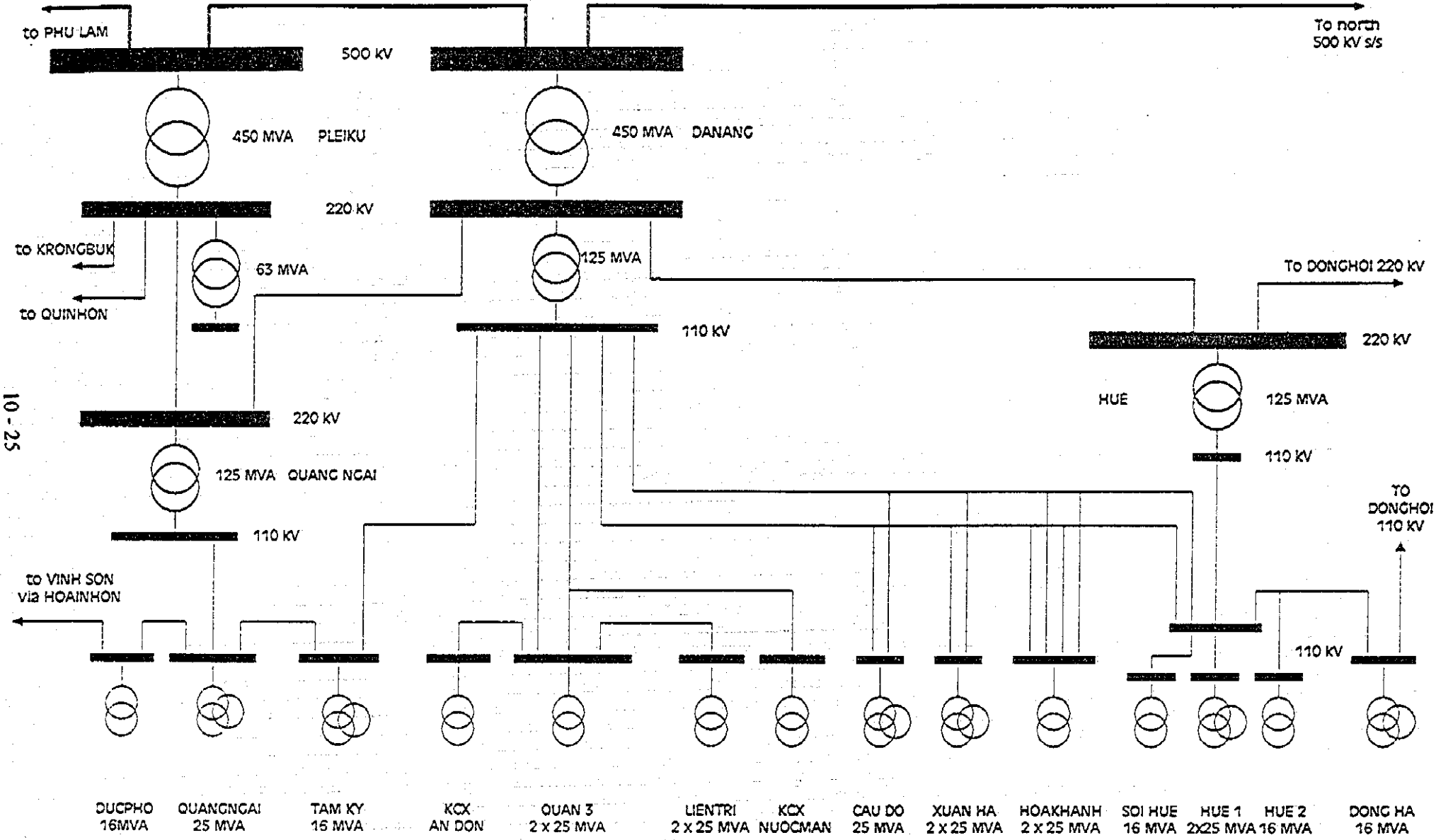
The financial capacity has to be developed as well. The volume of needed investments will require external financing on which could be obtained only with a sound financial position. This depends to a large part of the achievement of structural reform undertaken and effective setting up of the cost reflective tariff policy.

The managerial and planning capability improvement is dictated by the new responsibilities assigned to the power companies by the institutional reform. With this aim, a room has been made in the TOR to develop the planning capability of PC3 by installing computer aided planning tools and providing staff training.

LIST OF ANNEXES



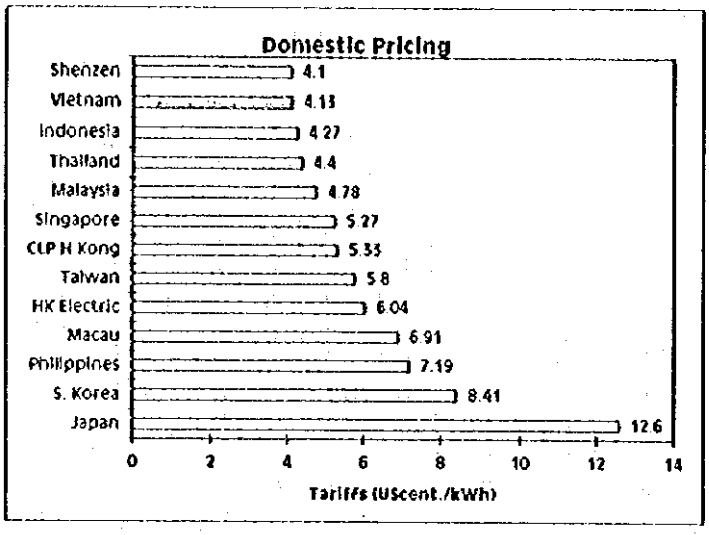
ANNEX 1.1 Power Supply System in Study Area - Existing

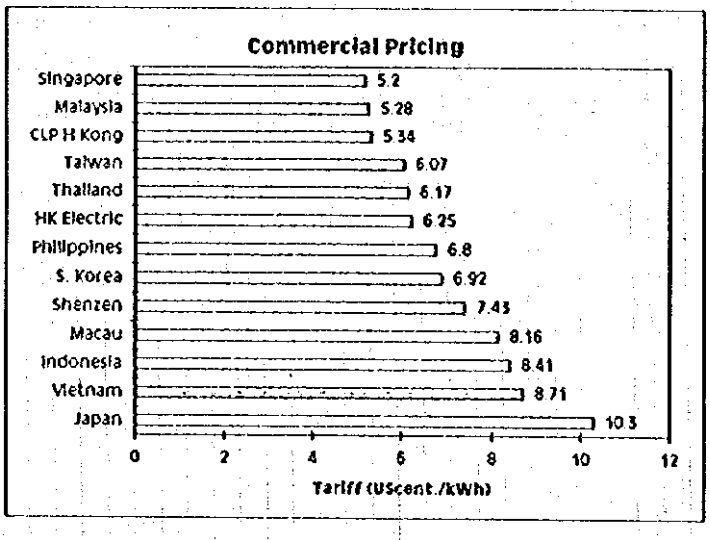


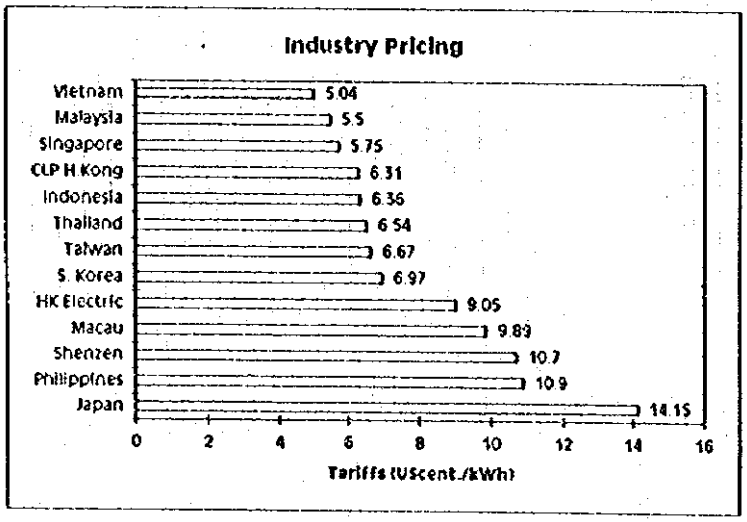
ANNEX 2.2 Power Supply System in Study Area - As Planned

ANNEX 2

Comparison of 1994 Power Tariffs







according to China Light & Power - Hong Kong and EVN, mid 1994

ANNEX 3
Unit Cost Tables

Generation

Designation	Unit Cost US$/kW	Comments
Small Hydro Power Plant (0.2 to 1MW)	1200 - 1700	River diversion plant without reservoir
Hydro Power Plant (1 to 10 MW)	800 - 1300	River diversion project without reservoir
Small Diesel Power Plant semi rapid engine using diesel oil	600	-
Diesel Power Plant slow engine using heavy oil	1200	-
Fuel oil fired steam Power Plant up to 1000 MW in several units	1350	Without flue gas desulphurization
Coal fired steam Power Plant up to 1000 MW in several units	1500	Without flue gas desulphurization price could be influenced by coal quality
Combined Cycle Power Plant (gas) up to 1000 MW in several units	800	-
Fuel oil fired steam Power Plant over 1000 MW in several units	900	Without flue gas desulphurization
Coal fired steam Power Plant over 1000 MW in several units	1000	Without flue gas desulphurization price could be influenced by coal quality
Combined Cycle Power Plant (gas) over 1000 MW in several units	600	-

To compare alternatives it is more important to compare the cost / kWh generated. This takes into account: investment cost, fixed operating cost, fuel cost and plant factor (equivalent full load operation time per year) the economic life, the discount rate. Generally for the present prevailing conditions, amongst the thermal generation alternatives, combined cycle is the least cost alternative particularly when gas exists.

Transmission

Designation	Unit Cost 1000 US$	Foreign Part	Local Part +taxes
220 kV lines	110 / km	40%	60%
220/110/20 kV substation 125 MVA	4750	73%	27%
220/110/20 kV substation 63 MVA	3850	73%	27%
110 kV lines	70 / km	40%	60%
110/20 kV substation 2 x 25 MVA	1810	60%	40%
110/20 kV substation 25 MVA	1520	60%	40%

Rural Distribution

Designation	Unit Cost	Comments
35 kV OH lines AAC 117 sq. mm	18000 US$/km	F.P. 60% L.P.+t 40%
35 / 6.3 kV substation 2 x 2.5 MVA	230000 US$	F.P. 75% L.P.+t 25%
MV OH lines main feeder	12000 US$/km	According to PC3 prices
MV OH lines	9000 US$/km	According to PC3 prices
MV line switch	2000 US$/unit	According to PC3 prices
Distribution transformer MV/LV (100 kVA to 250 kVA)	8000 US$/ unit average price	According to PC3 prices
LV line AC 70 sq.mm	6000 US$/km	-
Domestic connection with meter(1 phase)	100 US$/unit	-
Connection with meter (3 phases)	350 US$/unit	-

Urban and Semi-Urban Distribution (improved design)

Designation	Unit Cost US$	Foreign Part	Local Part +taxes
Urban			
UG Cable 20kV Al 3x150 sq. mm(km)	36100	95%	5%
OH Line 20kV AAC 117sq. mm (km)	23228	56%	44%
Substation 20/0.4 kV (open loop)			
400 kVA (unit)	30184	90%	10%
630 kVA (unit)	34554	90%	10%
LV twisted line 3x50+54.6+16(km)	12613	80%	20%
Consumer connection	202	65%	35%
Public lighting (unit)	804	95%	5%
Semi-urban			
OH Line 35 kV AAC 117 sq mm (km) (1)	20792	60%	40%
OH Line 20 kV AAC 117 sq mm (km) (1)	19356	56%	43%
Pole mounted MV/LV transform. S/S (1)			
20 kV 50 kVA (unit) (1)	5289	90%	10%
20 kV 100 kVA (unit) (1)	7359	94%	6%
35 kV 100 kVA (unit) (1)	8509	95%	5%

Note (1) This type of MV distribution could be used in zones with low density urbanization.

ANNEX 4

Electricity Demand Forecast

Explanatory Note

Due to the lack of officially confirmed data this tentative forecast has been prepared with the following methodology.

Electricity demand is considered in four categories:

- Rural residential (rural means all residential consumers outside town)
- Urban residential
- Industry, and
- Non industry(agriculture/forestry, trade, construction, services)

1. RURAL RESIDENTIAL DEMAND

It is related to the rural population growth rate and to the increase in the electrification ratio. The rural electrification growth rate being determined to obtain 100% of electrification at the 2010 horizon. The rural residential demand growth rate is not affected by an elasticity factor because the method already introduce such a factor by the fact that it considers the new consumers as having the same consumption than the others. Experience shows that the actual consumption of new consumers during the first year is half that of the consumption of the others. For example applying the selected method with a demand growth rate of 13.3%, the formula is:

(1) $C_n = C_{n-1}*(1+0.133)$

when taking into account separately new consumers it becomes

(2) $C_n = 0.867*C_{n-1}*(1+0.133\ x) + 0.133*C_{n-1} / 2$

with x = elasticity factor applied to the consumer existing in the year n-1
C_n = consumption year n
C_{n-1} = consumption year n-1

combining the equations (1) and (2) it becomes

$x = 1.73$.

2. URBAN RESIDENTIAL DEMAND

In the urban zone where already 100% of households have electricity, the increase of the demand is directly related to urban population growth. Considering the fact that the average consumption of new consumers during the first year is half of the average consumption of the other for the previous year, with population growth rate of 2.5 % this is equivalent to apply an elasticity factor of around 1.5 to the consumer of the previous year as explained for rural demand.

3. INDUSTRY

Industry demand is related to growth in industry output with an elasticity factor 1.3.

The Industry output growth rate has to be determined in function of the industry development opportunities in the considered Province. This will be influenced by the industrial project opportunities identified in the preparation of the Master Plan.

4. NON-INDUSTRY

Non-industry demand is related to growth rate of non-industry GDP with an elasticity factor of 1.3.

The non-industry output growth rate has to be determined as the weighted average of the respective growth rates for agriculture-forestry, trade, construction and services in the considered Province taken in consideration in the Master Plan.

5. ASSUMPTIONS

The attached forecast has been prepared with the following assumptions:

Rural population growth rate	1.8% /y during the period 1995-2000 1.2% /y during the period 2001-2010
urban population growth rate	2.5% /y during the period 1995-2000 2.1% /y during the period 2001-2010
Industry output growth rate	10% /y during the period 1995-2000 12% /y during the period 2001-2010
Non-industry output growth rate	9% /y during the period 1995-2000 10% /y during the period 2001-2010.

Different scenarios could be prepared varying these assumptions.

ANNEX 4.1

Electricity Demand Forecast

	1995	1996	1997	1998	1999	2000	2005	2010
QUANG TRI								
Rural population growth rate		1.8%	1.8%	1.8%	1.8%	1.8%	1.2%	1.2%
Rural Population (* 1000)	445.8	453.8	462.0	470.3	478.8	487.4	517.3	549.1
Rural electrification ratio	0.41					0.70	0.85	1.00
Rural electrification growth rate		11.29%	11.29%	11.29%	11.29%	11.29%	3.96%	3.50%
Rural resid. demand growth rat.		13.3%	13.3%	13.3%	13.3%	13.3%	5.2%	4.5%
Rural residential demand (GWh)	3.0	3.4	3.9	4.4	4.9	5.6	7.2	9.0
Urban population growth rate		2.5%	2.5%	2.5%	2.5%	2.5%	2.1%	2.1%
Urban residential (GWh)	9.4	9.6	9.9	10.1	10.4	10.6	11.8	13.1
Total residential (GWh)	12.4	13.0	13.7	14.5	15.3	16.2	19.0	22.1
	Elasticity							
Industry GDP growth rate	1.3	10.0%	10.0%	10.0%	10.0%	10.0%	12.0%	12.0%
Non Industry GDP growth rate	1.3	9.0%	9.0%	9.0%	9.0%	9.0%	10.0%	10.0%
Industry (GWh)	13.8	15.6	17.7	20.0	22.5	25.5	52.6	108.6
Non Industry (GWh)	6.8	7.6	8.4	9.4	10.5	11.8	21.7	39.9
Total sales (GWh)	33.0	36.2	39.8	43.9	48.4	53.5	93.3	170.6
Losses	15%	15%	14%	13%	12%	10%	10%	10%
Energy demand (GWh)	38.0	41.6	45.4	49.6	54.2	58.8	102.6	187.7
Load factor	0.36	0.36	0.37	0.38	0.40	0.42	0.52	0.64
Power demand(MW)	12.0	13.2	14.0	14.9	15.5	16.0	22.5	33.5
THUA-THIEN HUE								
Rural population growth rate		1.8%	1.8%	1.8%	1.8%	1.8%	1.2%	1.2%
Rural Population (* 1000)	738.8	752.1	765.6	779.4	793.4	807.7	857.4	910.1
Rural electrification ratio	0.36					0.70	0.85	1.00
Rural electrification growth rate		14.22%	14.22%	14.22%	14.22%	14.22%	3.96%	3.50%
Rural resid. demand growth rat.		16.3%	16.3%	16.3%	16.3%	16.3%	5.2%	4.5%
Rural residential demand (GWh)	7.9	9.2	10.6	12.4	14.4	16.7	21.6	26.9
Urban population growth rate		2.5%	2.5%	2.5%	2.5%	2.5%	2.1%	2.1%
Urban residential (GWh)	29.7	30.5	31.2	32.0	32.8	33.6	37.3	41.4
Total residential (GWh)	37.6	39.6	41.9	44.4	47.2	50.4	58.9	68.3
	Elasticity							
Industry GDP growth rate	1.3	10.0%	10.0%	10.0%	10.0%	10.0%	12.0%	12.0%
Non Industry GDP growth rate	1.3	9.0%	9.0%	9.0%	9.0%	9.0%	10.0%	10.0%
Industry (GWh)	41.9	47.3	53.5	60.5	68.3	77.2	159.4	329.0
Non Industry (GWh)	20.5	22.9	25.6	28.6	31.9	35.6	65.7	121.0
Total sales (GWh)	100.0	109.9	121.0	133.4	147.4	163.2	283.9	518.3
Losses	15%	15%	14%	13%	12%	10%	10%	10%
Energy demand (GWh)	115.0	126.4	137.9	150.8	165.1	179.5	312.3	570.2
Load factor	0.44	0.44	0.45	0.46	0.48	0.50	0.60	0.64
Power demand(MW)	30.0	32.8	35.0	37.4	39.3	41.0	59.4	101.7
QUANG NAM DANANG								
Rural population growth rate		1.8%	1.8%	1.8%	1.8%	1.8%	1.2%	1.2%
Rural Population (* 1000)	1349.3	1373.6	1398.3	1423.5	1449.1	1475.2	1565.8	1662.1
Rural electrification ratio	0.72					0.85	0.95	1.00
Rural electrification growth rate		3.38%	3.38%	3.38%	3.38%	3.38%	2.25%	1.03%
Rural resid. demand growth rat.		5.2%	5.2%	5.2%	5.2%	5.2%	3.5%	2.2%
Rural residential demand (GWh)	24.1	25.4	26.7	28.1	29.6	31.1	36.9	41.3
Urban population growth rate		2.5%	2.5%	2.5%	2.5%	2.5%	2.1%	2.1%
Urban residential (GWh)	75.6	77.5	79.4	81.4	83.4	85.5	94.9	105.3
Total residential (GWh)	99.7	102.9	106.1	109.5	113.0	116.6	131.8	146.5
	Elasticity							
Industry GDP growth rate	1.3	10.0%	10.0%	10.0%	10.0%	10.0%	12.0%	12.0%
Non Industry GDP growth rate	1.3	9.0%	9.0%	9.0%	9.0%	9.0%	10.0%	10.0%
Industry (GWh)	111.1	125.5	141.9	160.3	181.1	204.7	422.6	872.3
Non Industry (GWh)	54.4	60.8	67.9	75.8	84.7	94.6	174.3	321.1
Total sales (GWh)	265.2	289.2	315.9	345.6	378.8	415.9	728.7	1340.0
Losses	15%	15%	14%	13%	12%	10%	10%	10%
Energy demand (GWh)	305.0	332.5	360.1	390.6	424.3	457.5	801.5	1474.0
Load factor	0.48	0.48	0.50	0.52	0.54	0.56	0.62	0.65
Power demand(MW)	72.0	79.1	82.2	85.7	89.7	93.5	147.6	258.9
QUANG NGAI								
Rural population growth rate		1.8%	1.8%	1.8%	1.8%	1.8%	1.2%	1.2%
Rural Population (* 1000)	1076.8	1096.2	1115.9	1136.0	1156.4	1177.3	1249.6	1326.4
Rural electrification ratio	0.62					0.80	0.90	1.00
Rural electrification growth rate		5.23%	5.23%	5.23%	5.23%	5.23%	2.38%	2.13%
Rural resid. demand growth rat.		7.1%	7.1%	7.1%	7.1%	7.1%	3.6%	3.4%
Rural residential demand (GWh)	13.1	14.1	15.1	16.2	17.3	18.5	22.1	26.1
Urban population growth rate		2.5%	2.5%	2.5%	2.5%	2.5%	2.1%	2.1%
Urban residential (GWh)	11.7	11.9	12.2	12.6	12.9	13.2	14.6	16.2
Total residential (GWh)	24.8	26.0	27.3	28.7	30.2	31.7	36.8	42.3
	Elasticity							
Industry GDP growth rate	1.3	10.0%	10.0%	10.0%	10.0%	10.0%	12.0%	12.0%
Non Industry GDP growth rate	1.3	9.0%	9.0%	9.0%	9.0%	9.0%	10.0%	10.0%
Industry (GWh)	27.7	31.3	35.4	40.0	45.2	51.0	105.4	217.5
Non Industry (GWh)	13.6	15.2	17.0	19.0	21.2	23.6	43.6	80.3
Total sales (GWh)	66.1	72.5	79.7	87.6	96.5	106.4	185.7	340.1
Losses	15%	15%	14%	13%	12%	10%	10%	10%
Energy demand (GWh)	76.0	83.4	90.8	99.0	108.1	117.1	204.5	374.1
Load factor	0.36	0.36	0.37	0.38	0.40	0.42	0.53	0.65
Power demand(MW)	24.0	26.4	28.0	29.7	30.8	31.8	44.0	65.7
TOTAL STUDY AREA								
Electricity sales (GWh)	464.3	507.8	556.3	610.5	671.2	739.0	1291.6	2369.0
Losses	15%	15%	14%	13%	12%	10%	10%	10%
Energy demand (GWh)	534.0	583.9	638.2	689.9	751.7	812.9	1420.7	2605.9
Power demand (MW)	138	152	159	168	175	182	274	460

ANNEX 5

Electricity Tariffs

Tariffs are in accordance with Government Decree 28/VGCP -TXSX and the Inter-Ministry Notification 03/IT - LB 29/5/95. These tariffs are effective since 1 June 1995.

1. INDUSTRY

	VN Dong per kWh		
	Regular hours	Peak hours	Off-Peak hours
20 kV and higher	520	750	350
6 to 20 kV	580	850	350
6 kV and lower	640	950	350

2. AGRICULTURE

	VN Dong per kWh		
	Regular hours	Peak hours	Off-Peak hours
> 6 kV	500	500	200
< 6 kV	530	530	210

3. ADMINISTRATIVE UNITS

> 6 kV 500 VND per kWh

< 6 kV 550 VND per kWh.

4. PUBLIC LIGHTING

450 VND per kWh.

5. DOMESTIC

Consumption from 0 to 100 kWh	450 VND per kWh
Consumption from 101 to 150 kWh	550 VND per kWh
Consumption from 151 to 250 kWh	650 VND per kWh
Consumption from to 251 kWh and above	850 VND per kWh.

6. RURAL CONSUMERS

6.1 MAIN METER INSTALLED AT VILLAGE TRANSFORMER, COOPERATIVE

Domestic use	360 VND per kWh
Non domestic use	530 VND per kWh.

6.2 WHOLESALE

Domestic use	main meter installed at wholesaler transformer	440 VND per kWh
	main meter at EVN sub-station	460 VND per kWh
Non domestic use		530 VND per kWh.

7. COMMERCIAL

1000 VND per kWh.

8. CUSTOMERS PAYING IN US CURRENCY

8.1 INDUSTRY

20 kV and higher	0.07 US$ per kWh
6 to 20 kV	0.075 US$ per kWh
6 kV and lower	0.08 US$ per kWh.

8.2 TRADE AND SERVICES

20 kV and higher	0.09 US$ per kWh
6 to 20 kV	0.10 US$ per kWh
6 kV and lower	0.11 US$ per kWh.

8.3 DOMESTIC

20 kV and higher	0.08 US$ per kWh
6 to 20 kV	0.085 US$ per kWh
6 kV and lower	0.09 US$ per kWh.

ANNEX 6

Power Sector Development Plan for the Key Area of the Central Region of the Socialist Republic of Vietnam

Draft Terms of Reference for Development Plan

As a follow up action to the Integrated Regional Socio-Economic Development Master Plan for the Key Area of the Central Region, it is recommended to establish a development plan for the power sector in the study area. The present paper proposes draft terms of references for this study.

1. INTRODUCTION

As a result of the Integrated Regional Socio-Economic Master Plan, strategic orientations have been formulated and strategic projects have been selected. In order to achieve the objectives included in the Integrated Master Plan it is necessary to prepare a plan for the development of the power systems in the concerned area.

2. BACKGROUND

The study area covers Qan Tri, Thuan-Thien Hue, Quang Nam Da Nang and Quang Ngai Provinces. All these provinces are located in the territory served by PC3 power company and thus the power system relating to this study forms part of the interconnected power system controlled by PC3. So the present development plan shall be prepared in connection with the PC3 development strategy. It will be a decisive input for the preparation of the regional power sector planning. The main energy sources are supposed to be the 500 kV system through the 500/220 kV substations installed in the central region. Other particular candidate generation projects identified in central region will also be considered.

3. SCOPE OF WORKS

The study will cover the period 1996-2010 and shall mainly include the following:

3.1 TASK 1

Electricity demand forecast based on the selected strategic socio-economic development scenario for each Province. This forecast will not only consider the past evolution trends but also take into account the planned development in each sub-sectors which will affect the prevailing current demand pattern and load curve. Load forecasting shall take into account, the effect on the demand of tariff policy, future load management measures and DSM programs. The expected outputs are energy forecast and power forecast for each distribution zone.

3.2 TASK 2

(i) Analysis and assessment of the existing transmission and distribution systems in the study area in terms of characteristics, performance (losses, voltage drop) and reliability (non distributed energy).

(ii) Study and recommendation of transmission and distribution equipment standards in accordance with the normalization developed at the regional and national level.

The expected outputs are selection of most adapted technologies and standards for equipment, assessment and ranking of equipment in view of future rehabilitation.

3.3 TASK 3

Screening of potential energy generation projects in the study area and analysis of their competitiveness in comparison with the energy supplied by the national grid. This analysis will be made on the basis of available feasibility or pre-feasibility studies, the main criteria being generation costs and environmental impact. Proximity of existing demand will be also considered. The expected output is the selection of new energy sources which could be integrated into the system.

3.4 TASK 4

On the basis of tasks 1, 2 and 3, elaboration of development program alternatives with the support of appropriate planning software. Technical and economic comparative analysis of the most promising options. The technical analysis will include operating studies (load flow, voltage variation, short circuit).

The selection criteria being: quality of service, reliability criteria on the basis of a non distributed energy price, actualized cost with appropriate discount rate.

The expected output is the selection of the most advantageous solution.

3.5 TASK 5

Formulation of the investment plan for short term (5 year horizon) and medium term (10 year horizon). This will include, financial requirement, implementation schedule and investment financing strategy.

3.6 TASK 6

Training activity shall be developed during the study. It will be directed to the planning specialists of PC3 company to make them able to put in practice planning activities and investment decision making in the field of regional transmission and distribution. This activity will include installation in PC3 of appropriate transmission and distribution planning software. Practical training to their use will be delivered during the study.

4. REPORTING

Interim reports shall be submitted at the end of the task 3 and 5. These reports shall contain the findings of the related activities and the matters requiring the approval of the beneficiary.

A draft final report summarizing the study and proposing the recommended development plan shall be submitted at the end of the task 5. This report will be discussed with the beneficiary for comments. The final report will be submitted one month after receipt of the comments

Regular progress reports will be submitted to the contracting authority.

5. MAN-MONTH ESTIMATE

Around 24 man-months of international consulting services are anticipated. This figure could be slightly increased depending of data availability with regard to rehabilitation part.

CHAPTER 11 TOURISM

INTRODUCTION

The idiom *KANKOU* in Chinese character or *kanji*, which is applicable to 'tourism', originally in ancient Chinese archives meant that some definite community displayed its own distinguished matters and affairs to other community's people. Even nowadays the Chinese character and the meaning are living on in Japanese and Chinese tourism. On the other hand the idiom *TOURISM* coming from European language originally means watching objects carefully and intentionally, which carries less profound meaning than Oriental one. As Viet Nam is a member of the Orient and from the point of its Oriental tourist attractions, it is natural to develop Viet Nam tourism on the concept of the former meaning.

Judging from the diversified historical aspects, it can be safely said that in the ancient days there was a big triangle connecting Viet Nam, Japan and China which was netted by the ocean currents. The bilateral concern between Viet Nam and China, and Japan and China is very commonly accepted, but the concern between Viet Nam and Japan is not so popular up to now. The thick relationship between Viet Nam and Japan, by way of rough illustration, is enumerated as follows:

- The similar pattern of bronze ware in both Vietnamese Dong Son culture Age and Japanese Bronze Age,
- Various words with almost the same pronunciation and meaning in both languages, and most of all,
- Extremely similar looks and physical construction of mankind in both countries.

The facts and affairs above mentioned can give us lots of important hints to promote tourist development. There is a very popular Japanese fairy tale — *Urashima Taro* or "A fisherman's dreamy experience at the submarine Dragon Queen's Royal Palace"

The outline of the fairy tale — *Urashima Taro* is as follows:
In olden times, there lived a young warmhearted fisherman named *Urashima Taro* in a small village in the southern central district of Japan. One day he found some naughty kids playing a trick on a turtle on the seashore, so he let the turtle go free from the kids' mischief to the sea. A few days later, in return for his aid the turtle invited him to come to its residence, that is, the submarine Dragon Queen's Royal Palace where it carried him riding on its back. He was so welcomed by its very beautiful mistress with her kind hospitality day after day that he forgot to return home. After his dreamy short-term stay at the Palace he went back home riding on the turtle's back with the small royal box gifted by the Queen who told him that he had never to open the lid of the box. But when returning to his native village, he found there were no acquaintances at all around there. He felt so lonesome that he could not help opening the lid of the box — the forbidden act. In the white smoke from the box, all at once he turned to an old man with long white hair and beard from a young man. Long time had passed actually , though he believed in short-term accidents.

Some scholars in Japan seriously have set up his doctrine that the hero of the tale *Taro* went to Viet Nam and was welcomed and entertained by the beautiful Queen wearing 'ao dai'-like clothes with delicious sea food and folk music or dancing played by various kinds of attractive fishes (ladies of the court) at some Royal Palace in the central region of Viet Nam, such as at Hue or Hoi An.

"Tourism industry" usually pursues the actualization of a dream or plan on the base of the common tourist "image" or "catch phrase", which is effective in attracting foreign tourists as well as in Vietnamese national unification. The latter means that it not only enhances all Central Region Residents' efforts to realize the goal, but also impacts the Vietnamese domestic tourism, such as school excursion, because the study area has many historical and intelligent tourist resources. In the study area, the catch phrase is considered to be suitable for

"Welcome to Fairy Tale Land in the Orient, Vietnam" as an instance. Therefore, the tourism development projects/programmes are required to be planed and implemented in accordance with its image or catch phrase.

11.1 REVIEW OF THE PRESENT CONDITION OF THE STUDY AREA'S TOURISM

11.1.1 General Trends as Compared with Other East Asian Countries

In general, Viet Nam tourism is considerably promising, because it has been well unknown to the worldwide tourists and has lots of potential tourist resources, as long as it will never get derailed from today's tourist trends, such as the following that they prefer:

- Comfortable facilities with characteristically local features,
- The close contact with local residents to some degree to the seemingly friendly treatment,
- More interesting experiences than expected in pursuit of only sight-seeing or pleasure, and
- Reasonable tourist cost to inalterably high expenditure.

But, from the point of view of statistical trends, the fate of Viet Nam tourism gives no grounds for optimism, comparing with other East Asian countries as worldwide tourist destinations, as shown on the table 11.1.

Table 11.1 East Asian Tourism Trends by Country

(Arrivals: '000, Market Share: %, Receipts:US$mil.)

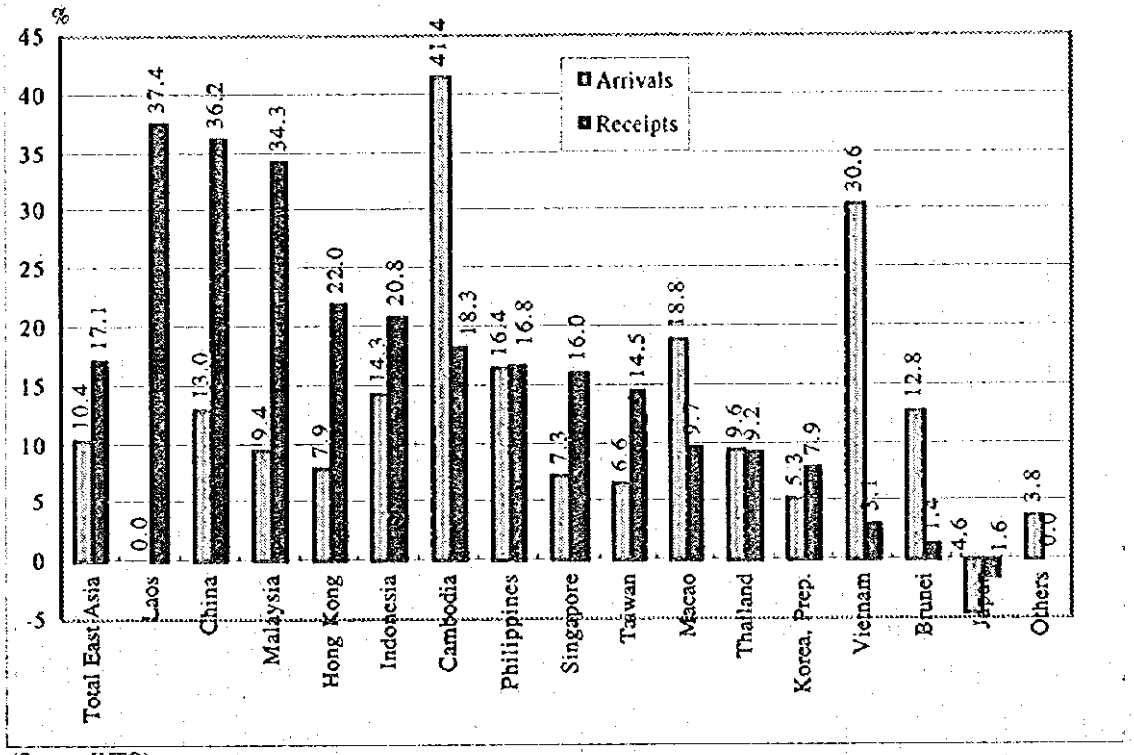
Country	1992				1993				1994			
	Arrivals	Market Share	Receits	Market Share	Arrivals	Market Share	Receits	Market Share	Arrivals	Market Share	Receits	Market Share
Total East Asia	56,925	100.00	38,509	100.00	63,267	100.00	43,751	100.00	69,427	100.00	52,801	100.00
Vietnam	440	0.77	80	0.21	670	1.06	85	0.19	750	1.08	85	0.16
China	16,512	29.01	3,947	10.25	18,982	30.00	4,683	10.70	21,070	30.35	7,323	13.87
Hong Kong	8,011	14.07	6,037	15.68	8,938	14.13	7,562	17.28	9,331	13.44	8,987	17.02
Japan	2,103	3.69	3,588	9.32	1,925	3.04	3,557	8.13	1,915	2.76	3,477	6.59
Korea, Prep.	3,231	5.68	3,272	8.50	3,331	5.26	3,510	8.02	3,580	5.16	3,806	7.21
Macau	3,180	5.59	2,234	5.80	3,850	6.09	2,500	5.71	4,489	6.47	2,688	5.09
Taiwan	1,873	3.29	2,449	6.36	1,850	2.92	2,943	6.73	2,127	3.06	3,210	6.08
Brunei	500	0.88	35	0.09	590	0.93	36	0.08	636	0.92	36	0.07
Cambodia	88	0.15	50	0.13	118	0.19	48	0.11	176	0.25	70	0.13
Indonesia	3,064	5.38	3,278	8.51	3,403	5.38	3,988	9.12	4,006	5.77	4,785	9.06
Lao P.Dem. Rep.	25	0.04	18	0.05	25	0.04	34	0.08	25	0.04	34	0.06
Malaysia	6,016	10.57	1,768	4.59	6,504	10.28	1,876	4.29	7,197	10.37	3,189	6.04
Philippines	1,043	1.83	1,674	4.35	1,246	1.97	2,122	4.85	1,414	2.04	2,282	4.32
Singapore	5,446	9.57	5,250	13.63	5,804	9.17	5,793	13.24	6,268	9.03	7,067	13.38
Thailand	5,136	9.02	4,829	12.54	5,761	9.11	5,014	11.46	6,166	8.88	5,762	10.91
Others	257	0.45	0	0.00	270	0.43	0	0.00	277	0.40	0	0.00

(Source: WTO)

First of all, the well-known degree of Viet Nam tourism is at very low level in East Asian tourist destinations. As of 1994, its market share as destination in East Asia occupies only 1.08 %. That means there comes only one page on the one-hundred pages' travel-guide brochure for East Asian travelers published by a tourist company, though Malaysia, Singapore and Thailand occupy nine or ten pages.

Secondly, Vietnamese tourism receipts are very low comparing with the number of arrivals. Though the average tourism receipts per one arrival in East Asia in 1994 was US$761, Vietnamese ones don't reach US$113, which is the lowest figure except for Brunei in East Asia. The cause is obscure, but it may come from how tourism statistics are obtained. Additionally mentioning, even so, the above conditions should never lead to form the conclusion that Viet Nam tourism may raise its tourist price higher. If it was set so high, many tourists from abroad would not visit Viet Nam much more than expectation, because, according to many overseas travel agents' remarks, even now the room rate at some international standard hotels in Viet Nam is so expensive that some tour wholesalers abroad tend to restrict planing Viet Nam tours.

Figure 11.1 Average Annual Growth Rate of Arrivals & Receipts ('92~'94)



(Source: WTO)

More strange to say, though the average annual growth rate of foreign arrivals to Viet Nam (30.6%) has risen up most rapidly next to Cambodia in East Asia as shown on Figure 11.1, the Vietnamese average annual growth rate of receipts from foreign visitors was extremely low (3.1%) during the time from 1992 to 1994. The same tendency comes out in Brunei, Macao and Cambodia in East Asia, but the gap of the growth rate between arrivals and receipts is not so large as in Viet Nam. These unreasonable trends on Viet Nam tourism may be, in one word, caused by its undeveloped or immature tourist trades, especially in the field of trade management such as accounting system, sales management system and so on.

11.1.2 General Trends of the Whole Country

It is the basic principle for making a tourism project and strategy to know the feature of nowadays visitors to Viet Nam, such as the purposes and nationalities of them.

1) The Purposes of Foreign Visitors

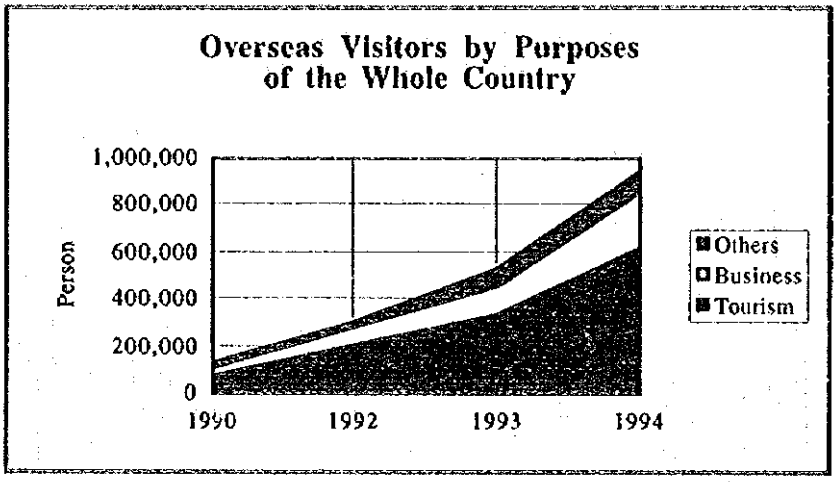
According to the statistics by The Immigration Department of Vietnam, visitors aiming at tourism occupy 65.3% of all persons, who entered Vietnam in1994, and this percentage tends to increase as shown on the Table 11.2 and the Figure 11.2. Though overseas travel agents believe that most of the visitors come to Viet Nam for the sake of their business or study, the fact is that many visitors for tourism, such as backpackers, come to Viet Nam without being caught in the travel agents' trade nets.

Table 11.2 The Number of Persons Entering Viet Nam by Purposes

	1990		1992		1993		1994	
	Persons	%	Persons	%	Persons	%	Persons	%
Tourism	75,773	55.8	202,685	65.8	337,907	64.0	614,724	65.3
Business	32,081	23.6	78,369	25.4	117,544	22.2	243,407	25.9
Others	28,012	20.6	27,019	8.8	72,924	13.8	82,576	8.8
Total	135,866	100.0	308,073	100.0	528,375	100.0	940,707	100.0

(Source: The Immigration Department)

Figure 11.2 The Number of Persons Entering Viet Nam by Purposes



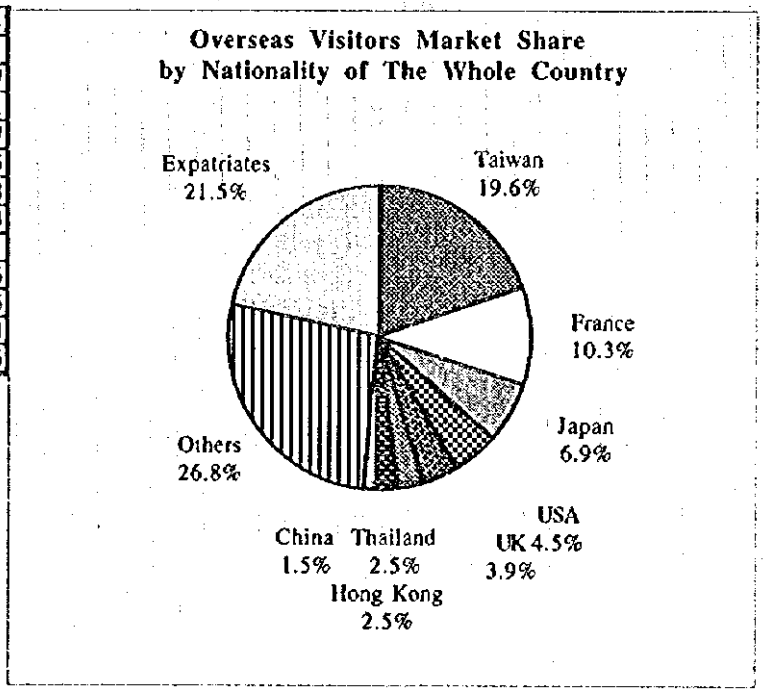
2) Foreign Visitors Market by Nationality

Table 11.3 and Figure 11.3 Overseas Visitors by Nationality

Ranking	The whole country ('94)	
	Market	Arrivals
	Total	940,707
1	Taiwan	184,241
2	France	96,697
3	Japan	65,055
4	USA	42,438
5	UK	36,863
6	Thailand	23,581
7	Hong Kong	23,186
8	China	14,326
	Others	252,274
	Expatriates	202,046

(Source: VNAT)

Note: In this table, arrivals of 41,231 persons by land and 36,124 persons by seaway are omitted, as their nationality is unavailable.



It is essential for forming tourism promotion projects to pay attention to the market share of visitors by nationality, which are not always the same share throughout the country. These

shares are considerably different from the study area as mentioned later.

It can be seen from this figure that one third (33.0%) of all overseas visitors to Viet Nam come from Asia. It is recently said that people in Asia are now wealthier than before and that more Asians prefer holidays closer to home. Viet Nam tourism must not miss the fact that "Cheapness, Closeness and Shortness" is one of the biggest trends in recent Orient tourist trades.

3) Local Vietnamese Visitors Market

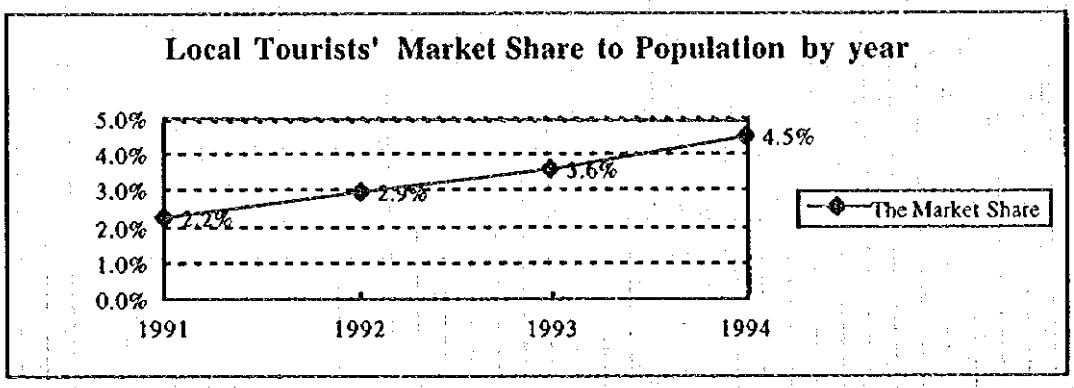
According to our legwork to several tour operators in Hanoi and our brief questionnaire survey, ordinary Vietnamese people tend to increase their domestic trips for the purpose of their relaxation and extension of their knowledge, as their living standards rises. As shown in Table 11.4 and Figure 11.4, the local visitors market is progressing steadily step by step.

Table 11.4 and Figure 11.4 Local Visitors Market by Comparison with Population

(mil. Persons)

Item	1991	1992	1993	1994
Total Populataion in Vietnam	66.7	68.4	70.0	71.5
The Number of Domestic Tourist	1.5	2.0	2.5	3.2
The Market Share	2.2%	2.9%	3.6%	4.5%

(Source: "Statistical Yearbook 1994", Statistical Publishing House, and VNAT)



In addition, according to the Vietnam Economic Times, October 1996, "more than 5.5 million Vietnamese toured within the country in 1995 and another 10,000 traveled overseas. Almost all companies in Vietnam give their staff a summer holiday. At hotels in Hanoi and Ho Chi Minh City, local Vietnamese make up between 60% and 80% of the food and beverage market. Some worker in a Hanoian stake house says that foreign people order glasses of wine and spirits though, newly well-off Vietnamese order bottles."

But, it seems like an actual fact from JICA study team's survey that an ordinary Vietnamese household makes its 1 or 2 days trip once in a year on average. Therefore they cannot take a long-distance journey so far.

11.1.3 Trends in the Study Area

1) Economic Condition

In the Vietnamese economy the tourism branch contributes 3.1 % to total GDP (1994), but in the study area's economy the contributory rate is unknown as the data are not available. Barely mentioning, in Quang Tri Province it is only 0.41 % (1993), and in Thua Then Hue Province, rich in tourist resources, it is said to be less than 10 %.

Table 11.5 Economic Condition on Tourism (1994)

Province	The number of foreign visitors		Average annual growth rate of foreigners	Estimated Earnings from foreigners		Estimated Earnings per foreigner	JICA Study GDP (US$1.00= VND11,000)	Tourism contribution ratio to GDP
	(person)	(structure)	(1991-1994)	(mil. US$)	(structure)	(US$)	(mil. US$)	(%)
The whole country	1,018,062	100.0%	49.4%	477.0	100.0%	469	15,478.0	3.1
Quang Tri	8,033	0.8%	406.0%	1.2	0.3%	149	55.4	2.2
Thua Thien Hue	128,035	12.6%	105.2%	20.0	4.2%	156	138.1	14.5
Quang Nam Da Nang	69,800	6.9%	111.7%	6.4	1.3%	91	296.3	2.1
Quang Ngai	5,000	0.5%	0.0%	0.5	0.1%	91	115.7	0.4
Target area Total	210,868	20.7%	97.8%	28.0	5.9%	133	605.5	4.6

Note: Earnings from foreigners in each province are estimated as they are unavailable.
(Source: JICA Study Team)

From Table 11.5 and statistics by the World Tourism Organization (WTO), the features of the study area's tourism branch are:

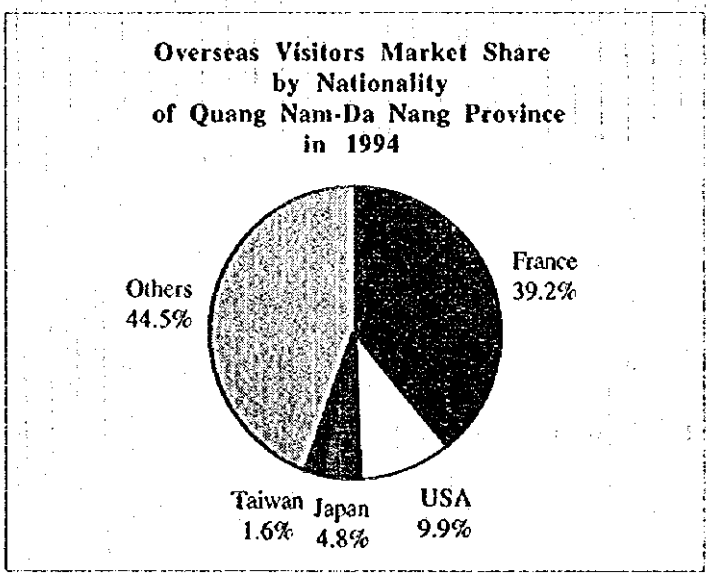
- The average annual growth rate of international visitors is very high compared with that of East Asia and the Pacific area countries (8.9 %, 1990-1994, by WTO).
- Approximate one fifth (20.7 %) of all international visitors to Viet Nam enter the study area. It is, therefore, roughly described that the economic activity of the tourism industry in the study area is about one fifth that of the whole country's one in terms of existing conditions.
- Earnings from international visitors are considerably low compared with other Asian countries (Average earning per one foreign visitor is US$ 691 in 1993 according to WTO), and
- The tourism branch is persevering more than expected. Especially the activity of Thua Thien Hue Province is preeminent.

2) Foreign Visitors Market by Nationality

Table 11.6 and Figure 11.5 Foreign Visitors Market by Nationality in Quang Nam-Da Nang Province

Ranking	QN-Da Nang Prov.('94)	
	Market	Arrivals
	Total	69,800
1	France	27,357
2	USA	6,900
3	Japan	3,334
4	Taiwan	1,143
	Others	31,066

(Source: Quang Nam-Da Nang Tourism Department)



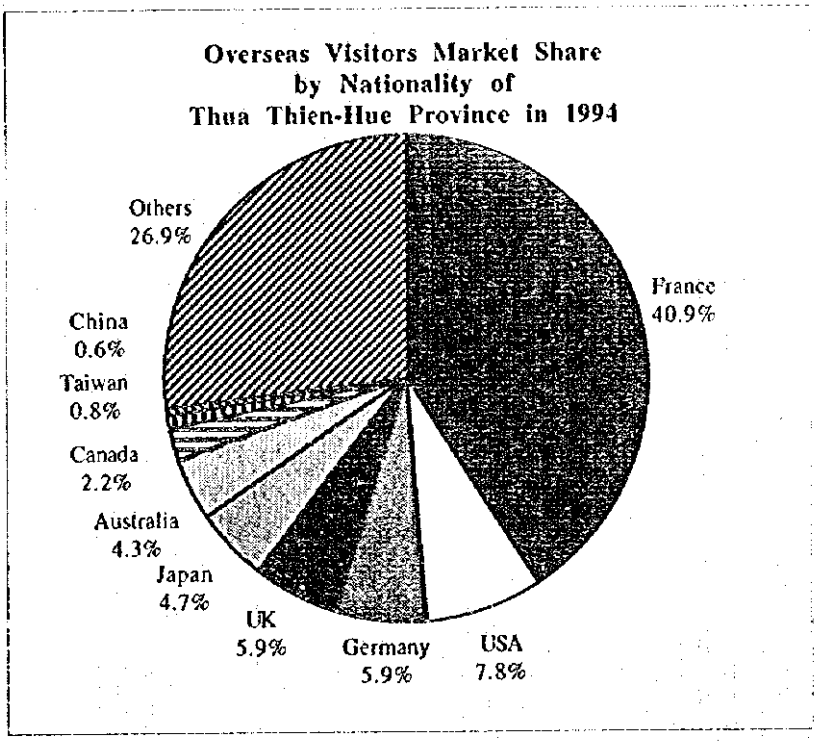
Compared to Table 11.3 and Figure 11.3, it is clear that overseas visitors market share by nationality is extremely different from each other.

The same trends come out in Thua Thien Hue Province as shown on Table 11.7 and Figure 11.6.

Table 11.7 and Figure 11.6 Foreign Visitors Market by Nationality In Thua Thien Hue Province

Ranking	TT-Hue Prov. ('94)	
	Market	Arrivals
	Total	128,000
1	France	52,292
2	USA	10,046
3	Germany	7,558
4	UK	7,489
5	Japan	6,003
6	Australia	5,563
7	Canada	2,771
8	Taiwan	1,065
9	China	730
	Others	34,483

(Source: Thua Thien Hue Province Tourism Department)



From Table 11.3, 11.6, 11.7 and Figure 11.3, 11.5, 11.6, the actual business activities concerned with investment and talks with local travel agents, the following are supposed:

- Taiwanese seem to visit Viet Nam mainly on business staying in commercial cities, such as HCMC and Hanoi, but a small number of them enter into the study area.
- French people seem to visit all over Viet Nam, because they had sovereignty in old times.
- Japanese seem to put priority on HCMC and Ha Noi on both tourism and business, but relatively many tourists visit the study area.
- Americans also seem to visit all over Viet Nam on business and tourism, comparatively many visitors enter into the study area aiming at business and their identity of old war relics.
- The British, Germans and other white people seem to prefer to visit the study area including their businesses.
- Thais, Hongkong-men and Chinese also mainly seem to take the same action as Taiwanese.

As a whole, the study area's tourism has big four target markets in the world, that is, in Western Europe especially in France, in North America especially in U.S.A., and Japan. And furthermore, there is the most important market in Viet Nam itself.

3) Local Vietnamese Visitors Market by Provinces

The actual number of local visitors is not so easily available in the study area though, the following incomplete Table 11.8 and Figure 11.7 shows some trends of Vietnamese tourists.

Table 11.8 The Number of Local Visitors by Province

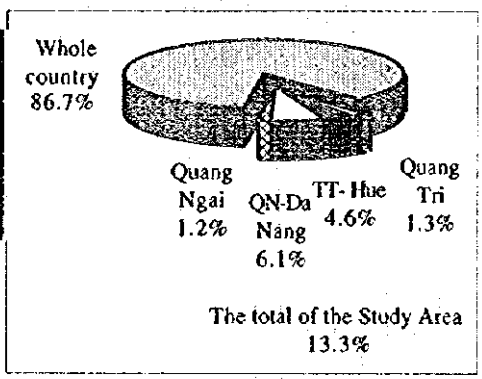
(Unit: Person)

Province	1991	1992	1993	1994
Whole country	1,502,000	2,012,000	2,500,000	3,200,000
Quang Tri	156	9,570	10,166	48,132
TT-Hue	*104,000	*139,000	*145,000	*170,000
QN-Da Nang	-	-	-	226,504
Quang Ngai	-	-	-	*45,000
Study Area Total	-	-	-	*48,9636

(Source: Partially VNAT, and each provinee's Tourism or Tourism-Related department)

(Note: Numbers signed with* are estimated.)

Figure 11.7 Local Visitors' Destination Rate by Province (in 1994)



As shown in Figure 11.7, 13.3 percent of Vietnamese people of all local travelers visit the study area, compared to 20.7 percent entry of all international visitors to the area. According to the latest statistics by VNAT, the tourist popular ranking by province is as indicated in Table 11.9.

Table 11.9 The Tourist Popular Ranking by Province

Ranking	Province	Ranking	Province	Ranking	Province
1	HCMC	4	TT-Hue	7	Lam Dong (Dalat)
2	Hanoi	5	Vung Tau	8	Haiphong
3	Quang Ninh (Halong Bay)	6	QN-Da Nang		

(Source: VNAT)

In connection with the tourist popular ranking by province, tourism-related persons and parties in the study area must not neglect the fact that some local Vietnamese tour operators have the opinion that Hue and Da Nang are not necessarily the most favorite tourist zones, but they are nothing more than common tourist zones. Such thinking seems to be common in the Vietnamese populace judging from the JICA study team's survey. Therefore, this is a reason, why many kinds of tourism promotion activities should be implemented to raise the tourist popular ranking of the study area.

4) Accumulation of Tourist Resources

In the study area there are about 145 tourist resources as shown on Table 11.10.

Table 11.10 Tourist Resources by Categories in the Study Area

Province	HS	R	RS	HM	CA	NP	SI	MM	LF	SC	Total
Quang Tri	13	3		1							17
Thua Thien-Hue	33	3	11	6	4	1	5			1	64
Quang Nam-Da Nang	23	7	15	2	1		4	2	1		55
Quang Ngai	2	2	1				2	2			9
Study Area Total	71	15	27	9	5	1	11	4	1	1	145

(Source: JICA Study Team)

Note: Categorization of Tourism Resources Components as follows:

Component	Sub-Component	Abbreviation
Natural Resources	Beach	B
	Scenic Coastal line	SC
	National Park	NP
	Special Interest on Nature	SI
Historical Resources	Historical Site/Building(After War)	HS
	Religious Site/Building	RS
	Historical Museum	HM
Cultural and Art	Art, Craft & Pesival/Culture Museum	CA
Life Style	Activities on Life Style	LF
Man Made	Monuments and so on.	MM

They are concentrated in Thua Thien-Hue and Quang Nam-Da Nang Province as shown in Figure 11.8 and Table 11.11.

Figure 11.8 Tourist Resources in the Study Area

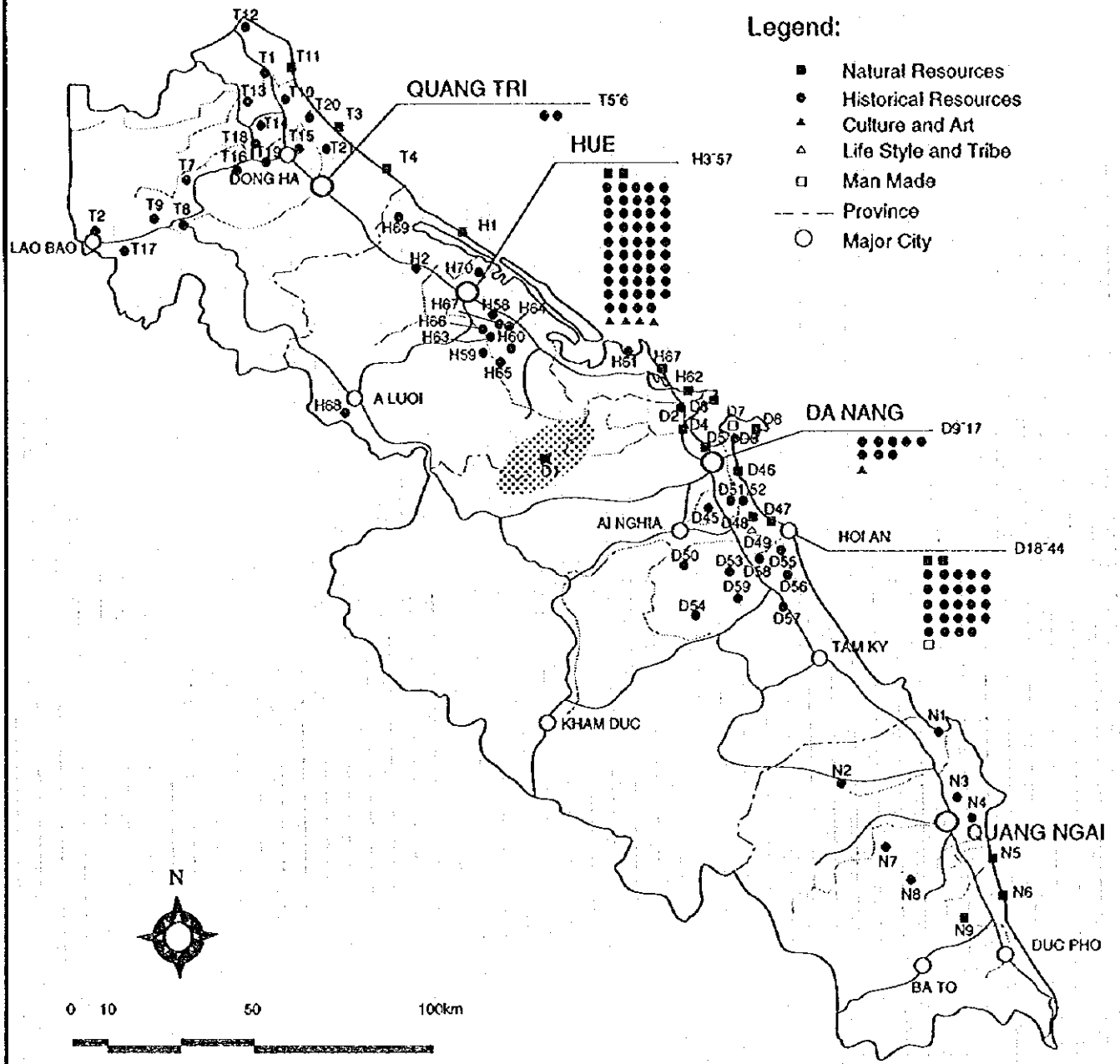


Table 11.11 Tourist Resources in the Study Area (1)

Province	Ref.No.	Name of Tourism Resources	Type of Resources
Quang Tri	T1	Ben Hai River & Bridge (17°North Former Demarcation Line)	HS
	T2	Ho Chi Minh Path	HS
	T3	Cua Viet Beach	B
	T4	Gia Dang Beach	B
	T5	Moats,Ramparts and Gates of the Citadel (South V.Army)	HS
	T6	The Skeleton of a church (Vietnam War)	HS
	T7	The Rockpile Mountain	HS
	T8	Dakrong Bridge	HS
	T9	Khe Sanh Combat Base	HS
	T10	Doc Mien Base	HS
	T11	Cua Tung Beach	B
	T12	Vinh Moc Tunnels	HS
	T13	Truong Son National Cemetery	HS
	T14	Con Thien Fire Base	HS
	T15	French Blockhouse	HM
	T16	Camp Carroll	HS
	T17	Long Vay Special Forces Camp	HS
Thua Thien Hue	H1	Thuan An Beach	B
	H2	Thien Mu Pagoda(octagonal tower in 19C)	RS
	H3	Folk-Festivals (Hon Chen Temple)	CA
	H4	Tang Quang Pagoda	RS
	H5	Chaozhou Pagoda	RS
	H6	Chua Ba Temple(19c)	RS
	H7	Hall of the Cantonese Chinese Congregation(19c)	HS
	H8	Chieu Ung Pagoda	RS
	H9	Former Indian Mosque(Vietnam War)	RS
	H10	Dieu De National Pagoda(four law towers)	RS
	H11	Dong Ba Gate(City Gate)	HS
	H12	Thuong Tu Gate(City Gate)	HS
	H13	Military Museum	HM
	H14	Natural History Museum	HM
	H15	Imperial Museum	HM
	H16	Hoa Binh Gate(City Gate)	HS
	H17	Royal Library	CA
	H18	Hien Nhon Gate(City Gate)	HS
	H19	Four of the Nine Holy Cannons(Citadel)	HS
	H20	Ngan Gate(City Gate)	HS
	H21	Flag Tower(Citadel)	HS
	H22	Ngo Mon Gate(Citadel)	HS
	H23	Trung Dao Bridge	HS
	H24	Thai Hoa Palace(Citadel)	HS
	H25	Halls of the Mandarins(for court ceremonies)	HS
	H26	Chuong Duc Gate(City Gate)	HS
	H27	Nine Dynastic Urns(Gia Long King's)	HS
	H28	Quang Duc Gate(City Gate)	HS
	H29	Five of the Nine Holy Cannons(Citadel)	HS
	H30	Nha Do Gate(City Gate)	HS
	H31	Chanh Tay Gate(City Gate)	HS
	H32	Bao Quoc Pagoda(founded in 1670)	RS
	H33	Tu Dam Pagoda(famous pagoda in Vietnam),20c)	RS
	H34	Linh Qyang Pagoda & Phan Boi Chau's Tomb	RS
	H35	Phu Cam Cathedral	RS
	H36	Tomb of Duc Duc	HS
	H37	Bao tang Ho Chi Minh	HM
	H38	Notre Dame Cathedral(impressive building of french style)	HS
	H39	An Dinh Palace	HS
	H40	Bao tang My thuat Cung Dinh Hue	AM
	H41	Bao tang Tong hop Thua Thien Hue	CA
	H42	Tombs of Nguyen Kings Museum	CA
	H43	Forbidden Purple City(the personal district of the emperor)	HS
	H44	Tinh Tam Lake(the emperor used)	HS
	H45	Tang Tau Lake(occupied by a small Hinayana pagoda)	HS
	H46	Phu Cam Cathedral(20c)	HS
	H47	Phu Cat&Phu Hiep Subdistricts(various Chinese bld of island)	HS
	H48	Chua Ong(19c)	HS
	H49	Nam Giao(Vietnam War)	HS
	H50	Tomb of Tu Duc(1867)	HS
	H51	Tomb of Dong Khanh(1889)	HS
	H52	Tomb of Thieu Tri(1848)	HS
	H53	Tomb of Khai Dinh(1931)	HS
	H54	Tomb of Minh Mang(1843)	HS
	H55	Tomb of Gia Long(1814)	HS

(Source: JICA Study Team)

Table 11.11 Tourist Resources in the Study Area (2)

Province	Ref.No.	Name of Tourism Resources	Type of Resources
Thua Thien Hue	H56	Tam Thai Hill	SI
	H57	Ngu Binh Hill	SI
	H58	Thien Thai Hill	SI
	H59	Dong Tranh Hill	SI
	H60	Vung Hill	SI
	H61	Battle Fields(Hamburger Hill)	HS
	H62	Canh Duong Beach	B
	H63	Lang Co Beach	B
	H64	Lang Co	SI
	H65	Bach Ma National Park	NP
Quang Nam Da Nang	D1	Temple (Deo Hai Van Town)	RS
	D2	Nui Hai Van Pass	SI
	D3	Nam O Beach	B
	D4	Monkey Moutain	SI
	D5	Tanh Binh Beach	B
	D6	The Museum of Champa Sculpture	HM
	D7	Former US Consulate (Vietnam War)	HS
	D8	Danang Cathedral (Staind Glass)	CA
	D9	Caodai Temple	RS
	D10	Phap Lam Pagoda	RS
	D11	Tam Bao Pagoda	RS
	D12	Pho Da Pagoda	RS
	D13	Ho Chi Minh Museum	HM
	D14	Tombs of Spanish and French soldiers	HS
	D15	My Khe Beach	B
	D16	Bac My An Beach	B
	D17	China Beach (Non Nuoc Beach)	B
	D18	Marble Moutain	SI
	D19	Non Nuoc Hamlet (handmade craft in village)	LE
	D20	Hoi An Church (modern building)	RS
	D21	French Achitecture (Colonnade)	HS
	D22	Assembly Hall of the Hainai Chinese Congregation(1883)	HS
	D23	Quan Cong Temple (gilt statue)	RS
	D24	Quan Am Pagoda	RS
	D25	Assembly Hall of the Fujian Chinese Congregation(1975)	HS
	D26	Chinese All-Community Assembly Hall(1773)	HS
	D27	House at 77 Tran Phu Street(beautiful sculpture,19c)	HS
	D28	Tran Family Chapel(origins to china in Danang)	RS
	D29	Trong Family Chapel(some of the memorial plaques)	RS
	D30	Gate of Ba Mu Pagoda(built for South Vietnamese Gov.in1960s)	RS
	D31	Old House at 103 Tran Phu Street	HS
	D32	Diep Dong Nguyen House (antique,19c)	HS
	D33	Tan Ky House(beautiful sculpture)	HS
	D34	An Hoi Footbridge	HS
	D35	Assembly Hall of the Cantonese Chinese Congregation(1786)	HS
	D36	Japanese Covered Bridge(provided with a roof)	HS
	D37	Phung Hung Old House	HS
	D38	Church	RS
	D39	Chaozhou Assembly Hall(1776)	HS
	D40	Ba Le Wel(Cham's Well)	MM
	D41	Cotton Weaving(traditonal machine)	MM
	D42	Caodai Pagoda	RS
	D43	Chuc Thanh Pagoda(the oldest pagoda in Hoi An)	RS
	D44	Phuoc Lam Pagoda(founded in 17c)	RS
	D45	Japanese Tombs(Japanese marchant Yajirobei)	HS
	D46	Cua Dai Beach	B
	D47	Bang An Tower (Dienban district, Champa)	HS
	D48	Tra Kieu (Champa)	HS
	D49	My Son (Champa)	HS
	D50	Chien Dan (Champa)	HS
	D51	Dong Duong (Champa)	HS
	D52	Khuong My (Champa)	HS
	D53	Chu Lai (For US Base)	HS
	D54	Ky Ha Beach	B
	D55	Phu Ninh Lake	SI
Quang Ngai	N1	My Khe Beach (Bien Khe Ky Beach)	B
	N2	Son My (My Lai) Memorial (Vietnam War)	HS
	N3	An Pagoda (An Mountain)	HS
	N4	Dung Quat indulrial complex	MM
	N5	Dam Toai religions site	RS
	N6	Binh Chan, Van Tuong monument	MM
	N7	Thach Nham highland	SI
	N8	Cao Mien forest	SI
	N9	Sa Huynh Beach	B

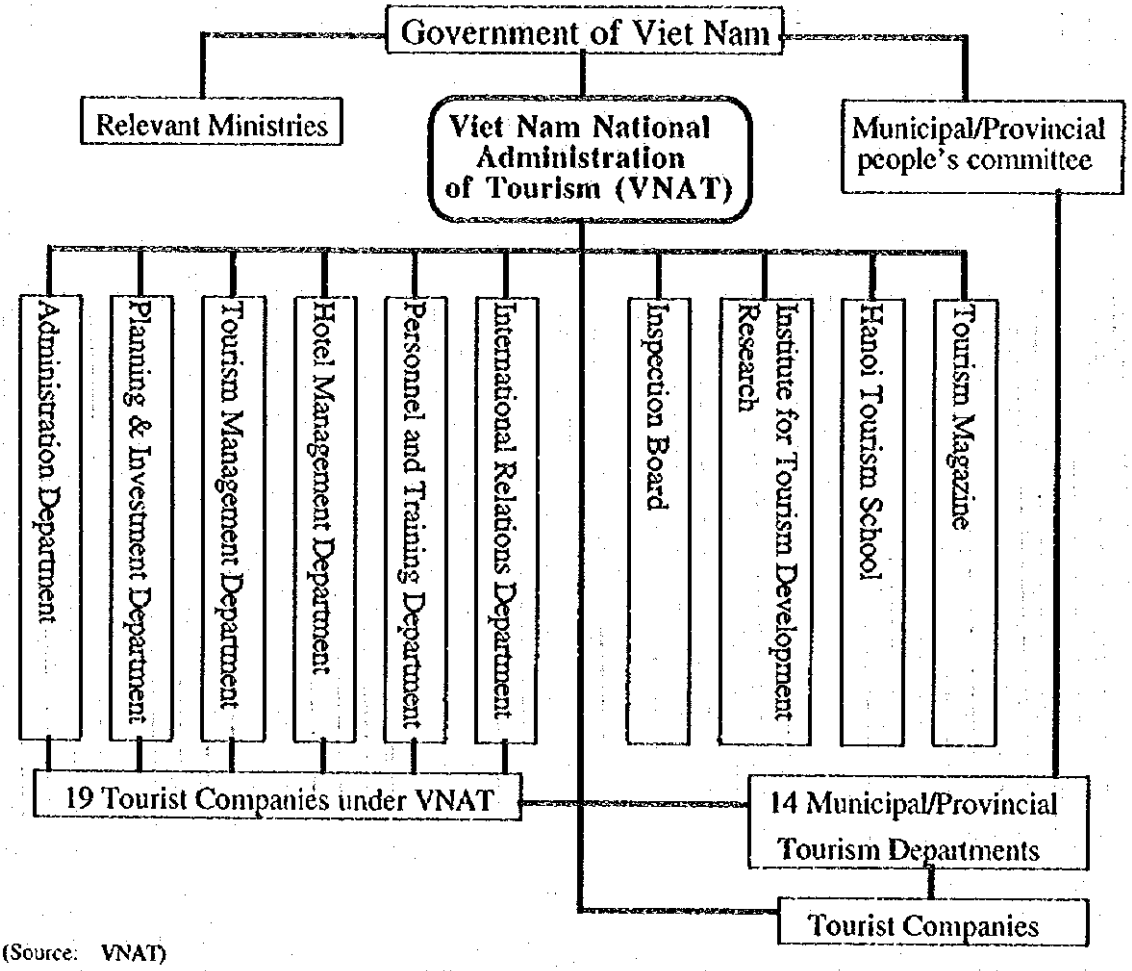
(Source: JICA Study Team)

11.1.4 Outlines of Other Tourism-related Circumstances

1) Vet Nam's Tourism Administration

In Viet Nam "tourism" has been identified as a key sector for the national socio-economic development strategy, and its governmental agency is the Viet Nam National Administration of Tourism (VNAT). Its organizational chart is as follows:

Figure 11.9 Organizational Chart of VIET NAM NATIONAL ADMINISTRATION of TOURISM



(Source: VNAT)

Note: 14 Municipal/Provincial Tourism Department: Hanoi, Ha Tay, Haiphong, Quang Ninh, Ninh Binh, Thanh Hoa, Nghe An, **Thua Thien-Hue, Quang Nam-Da Nang**, Khanh Hoa, Ba Ria-Vung Tau, Lam Dong, Can Tho, and Ho Chi Minh City.

19 Tourist Companies under VNAT: Hanoi Tourism Company, Hanoi Vietnam Tourism Company, VINATOUR, Vietnam Tourism Company in Ho Chi Minh City, Tourism Advertisements Company, Tourism Transport Company, Tourism Construction Company, Tourism Materials & Equipment Company, Hai Phong Tourism Company, Quang Ninh Tourism Company, Tam Dao Tourism Company, Nghe An Tourism Company, Vung Tau - Vietnam Oil Service Tourism Company - OSC, **Quang Nam Da Nang tourism Company, Vietnam Tourism Company in Danang**, Tourism Material & Equipment Company No. II, Golden Lotus Tourism Company, Ocean Tourism Company, and Tourist Transport Company.

In the study area, Thua Thien Hue and Quang Nam-Da Nang Provinces have branches of VNAT by the name of "Tourism Department of Thua Thien Hue/Quang Nam-Da Nang Province", which are directly controlled by the Central Government. At the same time they

have their own provincial department of tourism.

In Quang Tri and Quang Ngai Provinces, to the contrary, there is the local governmental tourism sector by the name of "Quang Tri Trade and Tourist Department" and "Department of Commerce and Tourism Quang Ngai", respectively. They are not directly controlled by the Central Government.

The organizational structure of Viet Nam's tourism administration is so far insufficiently adjusted. For instance, miscellaneous state-owned hotels are managed by various ministries or administrations, and some tourism-related schools are under the umbrella of different ministries or administrations from VNAT. If Viet Nam pursues the consistency in tourism development policy, the unification of tourism administration is recommended.

2) Tourism Laws and Regulations

In Viet Nam there is no law relating to tourism at all as of September, 1996. Instead, some regulations concerned with tourism have been issued by VNAT as follows:

- Regulations on Travel Business Management
- Regulations for Tourist Guides, and
- Regulations on Hotel Business Management.

The main features of those regulations are as follows:

(1) Regulations on Travel Business Management (Notified on April 29, 1995, and Circulated on September 11, 1995 by VNAT)

a) General Principles

- The travel business in Viet Nam means equally tour operator business, which can carry out activities, such as tourist market research, setting up package and optional tours, tourist advertising, and wholesale and retail of these tourist programmes. [Article 1]
- Travel business agency in Viet Nam consists of two kinds. One is International Travel Business Agency, which can deal in inbound, outbound and domestic tours with the Vietnamese people and foreigners including living in Viet Nam. The other is Domestic Travel Business Agency, which can deal in domestic tours including with foreign tourists who have been in Viet Nam by international travel business agencies. [Article 2 and 11] (Note: There are now 76 international travel companies legally registered in Viet Nam, but according to the Viet Nam News it is said that nearly 100 international travel companies nation-wide exist including illegal ones.)
- It is prohibited to use the term of "Vietnam Tourism" as the name of travel business agencies or other business organizations. [Article 3] (Note: There already exists state-run "Vietnamtourism" company which is the biggest one in the Vietnamese travel business.)

b) As for Domestic Travel Business:

- A license is needed in order to run a travel business. The director or manager shall have the certificate of Secondary school (note: it is equal to senior high school in USA). After January 1997, the director shall have graduated from some university with certificate of some training or refresher course in the subject of travel business and issued by a training unit with legal status. [Article 4]
- It is prohibited to issue the travel business license for ex-travel business-related applicants, who have quitted their job within two years. [Article 5]
- Tourist guides shall have Guide Card licensed by VNAT to guide international tourists. Only licensed vehicles can be used for rental and to transport tourists. [Article 6]
- Travel business agencies have the responsibility and authority to inform their customers about all regulations on political security protection, social rules and order, environmental reservation, natural resources and cultural relics. [Article 6]
- The agencies also have the responsibility and authority to request their customers to take

out life and property insurance against accidents. [Article 6]

- The agencies can handle foreign tourists in Viet Nam through the Power of Attorney signed by International Travel Business Agencies. [Article 6]
- The agencies have to regularly or accidentally report their managerial conditions to the administrative offices in charge of tourism in the area, such as Tourism Department of Province every quarter, six months or per year (the period differs by area). And they have to make financial contributions to the Tourism Development Fund. [Article 6]
- When a domestic travel business agency is newly established, 300,000 VND is required as the appraisal fee with some necessary appreciation documents from a local authority concerned with tourism. [Article 7]
- Licenses for domestic travel business agencies are issued by the Director of Tourism Department or Trade Department under the People's Committee of the Province, or central city authorized by VNAT, where the head office of the agency is located. The licenses are unified by VNAT. [Article 8]
- Every quarter, the Tourism Department or Trade Department has to report to VNAT about the situation of the licenses issue and the operating result of those business agencies in the area. [Article 8]
- Within 30 days the result of application for the newly-established agencies shall become clear by the authority. The effectiveness of the license starts at the same time when the appraisal is permitted. The license is valid five years with renewal of every three years. [Article 9]

c) As for International Travel Business:

- The domestic travel business agencies with at least one year well-performed experience can expand into the international travel business agencies. [Article 10]
- The international travel business agencies can directly deal with overseas international market, but have to ensure to organize tours with at least 500 international travelers per year, and with the percentage of package tour that is more than 20 % of all their customers. [Article 10](Note: International travelers means foreigners and Vietnamese expatriates within a year.)
- The international travel business agencies have to own appropriate number of tourist guides with Guide Card licensed by VNAT. [Article 10]
- So far the conditions for being directors and managers are the same as domestic travel business agencies are run, but after January 1997 the following shall be required such as University Certificate, Fluency in at least one foreign language, and Certificate or Decree of some training course in travel business issued by a training unit with legal status. [Article 10]
- The international travel business agencies have all the same responsibility and authority as the domestic travel business agencies. [Article 11]
- The international travel business agencies can have the domestic travel business agencies handle the former's inbound tours under Contract. [Article 11]
- The international travel business agencies can open the representative office abroad to make advertisement aiming at attracting foreign tourists to Viet Nam. [Article 11]
- The international travel business agencies can handle the application for the exit and entrance visa for international travelers in Exit & Entrance Management Office. The branches of the agencies in provinces can do the same with the approval by VNAT. [Article 11]
- The international travel business agencies have the same obligation to report their managerial conditions as the domestic travel business agencies do. [Article 11]
- When a national travel business agency is newly established, 1,000,000 VND is required as the appraisal fee with some necessary appreciation documents to VNAT. [Article 12]
- Within 60 days the result of application for the newly-established agencies shall become clear by the VNAT. The license is valid three years with the renewal of every two

years. [Article 13]

d) As for Control and Penalization:

- VNAT and other local authorities concerned with tourism have right to control, supervise and penalize any transgression of travel business activities according to this Regulations. Travel business agencies must follow the authorities or control officers and offer them every convenience to complete their responsibility. (Article 14)
- The travel business agencies may be warned, fined or in serious case their License is withdrawn. It depends upon how serious of transgression to this regulations. (Article 15)
- The case of withdrawing License is as follows: (a) Within six months after License issued, but there is no operating, (b) Unable to exploit the market after one year officially operating, unable to organize 500 travelers, or the rate of package tour is too low (in case of international travel business), and (c) Transgression seriously to national security, social rules or Vietnamese Tourism. (Article 15)
- If organizations and individuals abuse their position to issue License for travel business, they shall be penalized or prosecuted, depending on how serious they are. (Article 15)

(2) Regulations for Tourist Guides (Notified on October 4, 1994 by VNAT)

- Tourist guides are understood as professional officials, working for travel agencies including other country's tourism business. (Article 1)
- Tourist guides for international tourists have to get certificate or decree of some training or refreshment course for tourist guide and Guide Card issued by VNAT. (Article 2)
- The learners who desire to enter any Tourist Guide training centers must be pre-examined under the following conditions: (Article 4)
  - From 18 years old,
  - Good looking, no defective, no mental handicapped and no infectious decease,
  - Fluently at least one foreign language, and
  - The learner who has Foreign Language University Certificate can directly enter
- Everyone who have graduated from the Tourism Training College and desire to be tourist guide can get License Card. (Article 7)
- The license issue Committee composed by representatives of VNAT and local tourism-related Department issue the license every six months. The license Card is united through nationwide and in valid in six years. (Article 8)
- A tour guide is obliged to carry his/her license card with him/her while engaging in his/her work and present it when necessary. (Article 10)
- There are officials who control tourist guide's license card with "control card" or "decision of VNAT or local tourism-related department". In case of tourist guide's transgression, they can draw up the license card and apply penalty procedures. (Article 11)

(3) Regulations on Hotel Business Management

Those are omitted from this report, because those are not available as of October 17, 1996.

Apart from the regulations, recently the hotels' star status system started officially. Nineteen hotels were granted star status by VNAT on Vietnamese Tourism Day, July 9th 1996, as follows:

- Four star hotels; The Rex (HCM) and The Metropole (Ha Noi),
- Three star hotels; The Kim Do, The Continental and The Metropole in HCM,
  The Ha Noi, The Thang Loi in Ha Noi,
  The Royal in Da Nang
  The Century Riverside and **The Huong Giang in Hue**,
  The Rex in Vung Tau,

• Two star hotels; The Holiday Mansion in Hai Phong,
The Ha Long [1,2,3] in Quang Ninh
The Bach Dang and **The Phuong Dong in Da Nang,**
The Hai Yen and The Vien Dong in Khanh Hoa, and
The Golf and The Ngoc Lan in Lam Dong.

In addition but importantly, there are many local regulations with respect to accommodations, transport, customs procedures, accident prevention regulations and so on. And there are also many "resolutions concerning tourism" promulgated by each provincial or municipal People's Committee or Peoples' Council.

11.2 POTENTIAL AND CONSTRAINTS

11.2.1 Potential and Constrains

Table 11.12 is a collection of potential and constrains on the study area's tourism as a whole.

Table 11.12 Potential and Constraints on the Study Area's Tourism

Item	Potential	Constraints
General in Target Area	• Security and stability being kept rather well • Local people's mild and friendly mind to foreigners • Lots of diverse tourist subjects for special interest visitors	• Inconvenient access to aimed destinations • Lack of tourist information and statistics. Even tourist professionals abroad do not know well the details of the target area. • Lack of sophistication on tourism affairs
Natural Attractions	• Scenic beauty on some coastal beaches • Long and widespread coast lines suitable for diversified marine sports	• Some climate seasonality influences on sea resorts
Cultural Attractions	• Many historical and cultural sites, in which the heritages of Nguyen Dynasty and Chams have especially high potential • Lots of ethnic minorities' characteristic culture such as festivals, dancing, foods, handicrafts and so on	• Lack of tourist information • Lack of visitor centers or cultural centers where tourists are welcomed • Generally long access to the cultural sites • Lack of appropriate guide-interpreters, especially Japanese-speaking personnel
Accommodation Facilities	• Huong Giang and Century Riverside Hotel meeting the international standard	• Lack of international standard hotel except in Hue City • Lack of skilled staff • Ill-fitting doors, windows, furniture and so on • Shortly failing hot-water supply in bathrooms
Food and Drink Service	• Vietnamese cuisine easy to get used to by foreign travelers	• Taking too long to prepare dishes, and too short to put away dishes without words
Tourist Sites or Spots Facilities	• Calm and peaceful atmosphere	• Lack of international standard visitor-centers and restaurants nearby • Lack of public facilities such as picnic tables and benches, public toilets and so on • No interpretive visitor-guide boards in foreign languages
Amusing Entertainment	• Ancient imperial music and dancing show in Hue	• Lack of refinement for international standard • Lack of other amusing entertainment except in Hue
Shopping	• Lots of handicrafts such as fine art articles, bamboo and wicker articles, embroidery, casting, lacquer ware, sculpture and so on	• Lack of big, comprehensive and trustworthy souvenir shop

(Source: JICA Study Team and tour operators' opinions in Viet Nam and Japan)

11.2.2 Presentation of Details by Tour Operators

The following opinions are from typical and trustworthy tour operators that have been specially handling many tours to/in Vietnam for a long time. Those deserve to be paid much attention to by Vietnamese tourism-related people.

1) Opinions expressed by Tour Operator A dealing in Viet Nam, Indonesia and Japan

(1) Selling points

The Royal Palace in Hue and Champa Ruins are just like Kyoto in Japan.

(2) Hotels

They are inferior to hotels in HCMC and Ha Noi. Their improvement is required.

(3) Meals

Taste is nice to general Japanese tourists. No complaints about meals.

(4) Japanese visitors' trends in Viet Nam

Half of Japanese visitors are members of business mission, but the number of visitors to the study area is small, because there are not so many factories there.

About 80% are elderly male visitors among them on account of business mission.

Most of them enjoy playing golf on two links near HCMC during their tours.

(5) Tour costs

Generally they are high as for accommodations, tour coaches, tour guides and so on, compared with other Southeastern countries.

There are some kinds of prejudices such that on the one hand Japanese tourist market is always up in the concepts of Vietnamese tourism-related staff, and that on the other hand Vietnamese tourism-related personnel cannot discount their products under the socialist structure in the concepts of Japanese tourist companies' staff. Hence, no negotiation between both countries' tourist trade, higher Vietnamese tour prices than in other Southeastern countries, and small number of travelers to Viet Nam.

(6) Tourism in the study area

a) International Standard Hotels

They are Century Riverside Inn and Huong Giang Hotel in Hue; Royal (Marco Polo) Hotel, Bach Dang Hotel, Faifo Hotel, Hai Au (Seagull) Hotel and Orient (Phuong Dong) Hotel in Da Nang.

But, most of them refuse to negotiate their room rates with Japanese tourist agents.

b) As for Tourist Resources

There are no big attractions except Champa ruins and the Palace. So, the construction of additional artificial attractions is suggested.

Many tourists expect so much of boating in the Huong River that some ideas are proposed to make their impressions stronger than their expectations as follows: Introducing new, elegant dragon boats with large accommodations and tourist facilities, such as air conditioning, comfortable benches, bathrooms, snack bars and so on. Construction of safe and secure piers for senior tourists. And the boating fare has to be expressed clearly in a way that it is easily

available to tourists.

c) The Cham Culture Relics in the Study Area

They have a tough competitor at Angkor Wat in Cambodia. The fact should be kept in mind that the access time to Angkor Wat from Ho Chi Minh City is 30 or 40 minutes by air which is shorter than to the study area in Vietnam. It takes about one hour to the area and not so frequent flights. So most foreign tourists tend to choose visiting Angkor Wat instead of the study area of Vietnam.

d) Comprehensive Constraints

They are inconvenient access and bad roads to destinations, no tourist brochure, specifically Japanese brochures concerned, bad maintenance of relics, bothersome beggars, specifically unsolicited children guide in the Marble Mountains, disorderly traffic and so on.

e) Others

Three hours' transference between Hue and Da Nang by motor-coach give some boring time to tourists though they go through Hai Van Pass. On the way between both cities some superb tourist sites or spots such as rest stations are desirable to be constructed. But Lang Co Beach should be absolutely in the *status quo* . If there is a hotel construction plan on the beach, the implementation should be transferred to the hilltop. A beautiful landscape is desired to be preserved carefully.

(7) Guide-interpreter

Some Japanese customers request that guide-interpreters in the study area, specifically at the Cham relics, could have some knowledge of Japanese technical terms relative to the historical relics. So far, we always arrange a well-trained Japanese-speaking guide for those VIP tours from Hanoi, but the tour-fee consequently becomes more costly.

In general, guide-interpreters would be required to grade up not only their skills but also their manners and mental attitudes to the international standard.

(8) Souvenirs

Articles and souvenir shops are not prominent in the study area.

(9) Hoi An

The town is small. Tourists cannot move by car. No visitor center where tourists can have a rest. In hot season tourists often appeal to come back to their hotel as soon as possible before finishing their tour in Hoi An. At this stage it is uncertain whether or not a long distance ride from Da Nang City actually deserves customers' visiting the town. And the feasibility of the restoration of the townscape is also doubtful.

(10) Conclusion

The vital point of the study area is to upgrade the quality of guide-interpreters and accommodation facilities.

From the point of view of Viet Nam's tourism promotion, medical treatment system for tourists and compulsory tourist accident insurance system should be developed. There is no hygienic atmosphere in hospitals at this stage. So far the fact is that operations for tourists have been performed in Singapore after their transference.

As for entry formalities, invitation letters should be abolished, and procedures for acquiring visas should be simplified and in near future be abolished.

As for Viet Nam's tourism sales promotion, immediate opening of the governmental tourism

office in the main marketplaces abroad such as France, Japan, USA and so on., and preparation for official tourism promotion tools such as posters, brochures and so on.

There will be no foreign tourist repeater in Viet Nam so long as Vietnamese tourism-related things and affairs are left as they are. Growth rate of the number of foreign tourists has actually fallen since April 1996, and Japan Air Lines also quitted its hotel construction project in HCMC, judging that there would be hotel-rooms oversupply on the present Vietnamese tourism condition.

2) Opinions expressed by Tour Operator B dealing in Viet Nam, China and Japan

(1) Selling points

Calm and leisurely Lang Co, which makes us feel real leisure. Fishermen's working scene on the lagoon is just like a monochrome painting. It is a very pleasant site, but some infrastructure is required. This site will become a strong selling point for Viet Nam tourist trade, if only coconut palm-lined boulevard were set, and some *THUNG* (bowl-shaped, bamboo-made small boats) were prepared for tourist attraction. The problem is how to present and publicize the superb site to world-wide tourists.

(2) Constraints

In general, Viet Nam is weak at the presentation of its tourism, and poor at its tourism sales promotion. The government has left all the role of advertisement activity to private tourism sectors owing to no budget, and has a misunderstanding about the meaning of its publicity and the very tourism. It shows its very evidence that there is no official governmental tourism office abroad. But, Vietnam Airlines has made calendars and tourism promotion videos, and offered its air-tickets as prize at contests held in travel trade fairs abroad as it has its own advertising budget..

Vietnamese are very well at business, so in the case of the lack of the official tourism sales promotion budget, it would be a good idea to create the advertising cost by having official sales on Vietnamese ceramics in the travel trade fairs abroad.

Most of Vietnamese have no knowledge of Cham culture. Mostly guide-interpreters on the site and attendants in the travel trade fairs cannot explain Cham culture exactly. So, we do not recommend My Son to our common customers, except to tourists with special interest in the culture.

(3) Hoi An

International standard hotels are required. Tourists are eager to take dishes on the *Thu Bon* riverside. A large-scale historical museum is necessary. Japanese tourists would like Hoi An transformed to a more familiar tourist site like Kanazawa and Kurashiki — Japan's very popular, typical ancient tourist-town.

We would like to recommend that the local people should follow a Cambodian example. Hoian's people do not know 'tourism'. They are too obsequious to understand to earn foreign exchange by tourism.

(4) Souvenir

Lacquerware, mother-of-pearl inlay, *ao dai* and coffee would be souvenirs.

(5) Tourism in the study area

Angkor Wat in Cambodia is better than tourist sites in Viet Nam's study area, because tourists can enjoy very splendid close view of relics from the hotel's window at Angkor Wat. But, it

is sure that if direct flights to Da Nang from abroad were actualized, all things would become better in the study area.

This area has no punchy and characteristic attraction as a whole. So far there is no amusing tourist site such as a marine resort.

Thai Hoa Dien (palace) in the Hue Citadel has no less marvelous attractiveness than palaces in Beijing and Kyoto, but Vietnamese do not know how to demonstrate the precious heritage.

Thien Mu Pagoda is popular among our customers.

A traditional Hue folk music concert is held in the Royal Palace customarily on *Tet* , but why not open the concert always all through the year for the big tourist attraction played by musicians wearing traditional Nguyen Dynastic costume.

(6) Customers' bracket

80% males and 20% females, aged from 40 to 60, who have a desire to go and look around the newly developed destinations after all their trips to everywhere in the world.

(7) Accommodation in the study area

Capacity is small in each hotel. At Hue city, Huong Giang Hotel gives good service to its guests, but Century Riverside Hotel has a rather cool reception. At Da Nang City, international standard hotels are short in number. Bach Dang, Royal and Non Nuoc Hotel are popular with our customers.

(8) Guide-interpreters in the study area

Nobody can speak Japanese at all. This is a big problem. We always bring Japanese-speaking guide-interpreters to this area from HCMC. On account of the rule that group tours from abroad have to make provincial guide-interpreters attend their tours in each province by province, two guide-interpreters always attend the tours. Consequently the tour-fees rise, and our customers feel ridiculous about the system of adding another attendant who never speaks to the tourists. (JICA Study Team's note: At present the issue of two guides are cleared, because the new guide-interpreters regulation became effect on April in 1994, in which it is provided that one guide-interpreter with the international guide-card can attend a tour throughout the country.)

(9) Manners of tourism-related personnel

Those of Vietnamese are better than of Chinese. Viet Nam's tourism capital is human resources, and especially their amiable character. The sight of their friendly behaviors makes good photographs. And they are swift to switch their thinking.

Actions of immigration and customs service officers have become speedier.

3) Opinions expressed by Tour Operator C dealing in Viet Nam, Thailand, Hongkong, Cambodia, Korea, Singapore, Taiwan and Japan

(1) Selling Points in the study area

Lang Co would be capable as an eye-catcher of Viet Nam tourism.

(2) Constraints of all Viet Nam

Airfares are expensive.

Tourist repeaters will not be able to grow up because the attractiveness of visiting Viet Nam is, so far, in such degree that tourists are satisfied to the fullest with their only one visit to Viet

Nam. In contrast, India has more than 50% tourist repeaters.

War relics as tourism resources are too much, and everything related to wars is too forward with tourists. Foreign tourists would not be delighted so long as Vietnamese themselves did not endeavor to get rid of the atmosphere of wars.

It is mortal with Vietnamese tourism that Viet Nam has no governmental official tourism office in market places abroad. Though the Embassy can play the roll instead, the staff of the Cambodia's Embassy abroad are much softer than Viet Nam's staff. And there are several gaps between both countries' tourism concepts --- one is developed and the other is undeveloped.

If it takes much time to pass through the entry procedures, why not expand its gates width.

So long as there is no national examination for tour guide-interpreters and it is not severe to get tour guide licenses, ill-qualified guides will grow up.

Today's Viet Nam's tourism policy that has made an all-out effort to pull off as much money as possible from foreign companies related to tourism and foreign tourists staying in Viet Nam will undoubtedly reveal it as failure in its tourist trade in near future.

Nowadays Viet Nam has fallen in the illusion that many foreign visitors would come to the own country without any active effort to make an appeal to the world-wide people. Viet Nam has continued to ignore the fundamental principle of give-and-take. In this context, "Give" does not mean commodity gifts, but transference of Vietnamese tourism information.

(3) Constraints of study area

Access is hard, and numbers of air-flights are not so many.

As for tourist facilities, the constraints are lack of electricity, insufficient hot water supply and the worst toilets.

As for accommodations, such international standard hotels as Huong Giang and Century Riverside are more required.

As for Da Nang City, more beautification of the townscape is required as the city is rather dirty.

(4) My Son

Access is bad. Visitors can go there by a Russian-made stilted coach, but cannot go by a Japanese-made sight-seeing bus with a low floorboard owing to bumpy roads.

The scale of relics is so small that no more than one hour is sufficient for common tourists' sightseeing. Restaurants are needed near the site.

(5) River boats on the Huong River in Hue

Boats would be required to be cleaner. Cleanliness is one of the keys of tourist attractions.

(6) Guide-interpreters

Japanese tourists almost cannot put up with the broken Japanese language spoken by guide-interpreters in the study area.

(7) Souvenirs

That's all by buying only a conical palm hat. There is no recommendable souvenir in the study area as a whole.

(8) Trends of tourists' itineraries

Tourists from Japan almost spend 4-day-3-overnight or 5-day-4-overnight in Viet Nam. In

the latter, they tend to spend two overnights in the study area, one in Hue and the other in Da Nang, or vice versa. Approximately one third of our customers enter the study area.

(9) As for the study area's tourism

It would be natural that a meaningful tourism development plan was implemented in the area including Nha Trang.

In the case of DMZ tours, it may be proposed that each tourist has to pay five dollars as tourism tax, which is utilized for construction of tourist facilities such as toilets and so on..

Further to tourism tax, it is also recommendable as the system of promoting "village tourism" to sell a tourist a US$ 20 ticket inclusive of tax which is appropriated for the funds of activating and re-creating isolated villages.

Further, a system may be considered as one of "eco-tourism" formation such that voluntary tourists can engrave their own names on the surface of roof tiles or cornerstones of renovating constructions, in return for donating charities for restoration of the Royal Palace and other relics.

As for each tourist site or spot, the admission fee-paying system is changeable from the nowadays method in which visitors have to pay at each gate of tourist sites or spots, to the new method, in which they can buy one comprehensive but alternative ticket just like a ticket already available in Hoi An ancient town now. Especially in Hue, it is troublesome and time-wasting to have to buy a ticket each tomb by tomb.

It is desirable in urban districts to set up some tourist information booths, where diversified practical tourist information is available without charge from multilingual attendants for foreign visitors.

Under the Vietnamese administrative constructions where order systems range vertically, it is unreasonable that almost each Ministry and Administration has managed or concerned its own accommodation facilities or tourism companies. It is natural that all tourism-related trade belongs to the tourism administrative organ.

4) Opinions expressed by Tour Operator D dealing in Viet Nam, Myanmar, China, Taiwan, Hongkong, Korea, Philippines and Japan

(1) Trends of Vietnam tourism

In 1995 there was a steep growth in the number of Japanese visitors to Viet Nam approximately by 100,000 persons, but in 1996 it will not reach the previous year's number, because there is a poor turnout so far.

Concerned to our customers, visitors on business outnumber those on tourism by a ratio of 7:3. They almost stay in HCMC, and only 10 or 20 % of them visit the study area.

(2) Constraints

(a) The dual-pricing system between local tourists and foreign tourists will undoubtedly draw ill effect on the foreign tourist market promotion in the near future. Tourist prices such as hotel's room rate, admission fee and so on for local visitors go down to one fifth of those for foreign visitors.

(b) The fact that there is no direct flight from abroad to Da Nang Airport is a big obstacle.

(c) The number of restaurants is short. In this field, it is well-trained serving method and manners that delight foreign tourists, as well as theirs nice looking appearances. But Royal Palace cuisine is and will be a popular seller.

(d) Guide-interpreters are in short supply in terms of overall number. There are no Japanese-speaking guide-interpreters in the study area. The manners of them as attendants is immature. Schools for guide-interpreters have not yet been started.

(e) As for souvenirs, there is nothing except *ao dai* in the study area.

(f) As for tourist sites or spots, parking lots are desired to be equipped well.

(g) So far, Hoian ancient town is not so attractive as tourists expect. Its scale is small and its townscape has not yet improved.

(h) As for immigration clearance, the way of dealing with foreign visitors varies with each officer.

(i) Most of all Vietnamese concerned with the tourist trade have been only thinking of making money from a small number of foreign tourists, or squeezing foreign currency from the limited small pie.

(j) It is very difficult for overseas travel agents to sell "Tours of Viet Nam" to their customers. The reasons are as follows:

- As there is no tariff with Vietnamese tourist facilities in overseas travel agents, it is impossible for the travel agents to estimate the price of the tour-of-Viet Nam precisely. Therefore, written estimates of "Tours of Viet Nam" presented to customers are always very rough, compared to other destination tours.
- Even if the arrangement and handling of the tours are handed to Vietnamese local tour operators, there is no difference in price between high and low season, and no room for alternative or competition with the tour-related diversified conditions such as hotel's room rates, tourist bus fares, tourist guide fees and so on.
- It is very risky for overseas travel agents to carry out "tours of Viet Nam", because cost prices are not clear and commitment of prices is not always fulfilled in Viet Nam.

(k) Is there any good idea on how to deal with the crowds of beggars around tourist sites and spots? Specifically those in Hai Van Pass are importunate.

(l) Vietnamese are too dependent on foreign investments. They are industrious in individual cases, but poor in practical activities.

(m) There are some villains among Vietnamese tourist guides, who overcharge foreign tourists. The education and training system for tourist guides is desired to be set up.

(n) Compared to Cambodian tourism, in general, Vietnamese tourism is more behind in invisible fields such as systems, mechanism, organizations, laws and regulations, sales promotion activities and so on. than in visible fields such as diversified natural and historical resources, constructions for tourist facilities and so on..

11.3 DEVELOPMENT PLAN

11.3.1 The Forecast for the Number of Foreign Visitors

The number of foreign visitors to the study area in 2010 will be a little less than two million persons as shown in Table 11..13. It is equivalent to 22.5% of the total foreign visitors to all Viet Nam, and 1.8% higher than the present (1994) distribution ratio, 20.7% (see Table 11.5). Especially in Quang Nam Da Nang Province the forecast figures are rather high, but it depends

on its potential economic vitality. In Parenthesis, getting the past accurate tourism statistics has been considerably troublesome, owing or not to the fact that tourist trade is a new industry in Viet Nam, but in this hard situation the number of foreign visitors is forecast like the Table 11.13 below, subject to regular direct flights from abroad to the Da Nang International Airport.

Table 11.13 The Forecast for the Number of Foreign Visitors

Province	Item	'92~'94	2000	2005	2010
The whole country	Visitors(1994)	1,018,062	3,800,000	6,200,000	8,700,000
	Growth rate	32%	25%	12%	7%
	Average length of stay	(3.5days)	5.5days	6.0days	7.0dys
Quang Tri	Visitors(1994)	8,033	35,000	87,000	216,500
	Growth rate	91%	28%	20%	20%
	Average length of stay	1.07days	1.1days	1.1days	1.3days
Thua Tien Hue	Visitors(1994)	128,035	560,000	750,000	1,000,000
	Growth rate	63%	28%	5%	5%
	Average length of stay	(1.95days)	2.4days	2.8days	3.2days
Quang Nam Da Nang	Visitors(1994)	69,800	380,000	620,000	870,000
	Growth rate	68%	30%	12%	7%
	Average length of stay	1.4days	1.5days	1.5days	1.7days
Quang Ngai	Visitors(1994)	5,000	20,000	61,000	273,500
	Growth rate	32%	25%	25%	35%
	Average length of stay	1.0days	1.1days	1.1days	1.3days
Total number of visitors in the study area		210,868	995,000	1,518,000	2,360,000

Note: The figures of the whole country and Thua Thien Hue Province are partially quoted from the master plan to 2010 of each respectively. ( ): estimated. Other parts are almost forecasted with reference to clear relevant matters.

(Source: JICA Study Team)

11.3.2 Forecast for Foreign Currency Earnings and the Employment Opportunities in the Study Area in 2010

Founded on Table 11.13, the forecast for the number of foreign visitors, the figures of the primary foreign currency earnings and the employment opportunities could be calculated as shown on the Table 11.14.

Table 11.14 The Forecast for Earnings and Employment Opportunities in 2010

Province	Primary Foreign Currency Earnings (US$ mil)	Primary employment opportunities (person)
Quang Tri	50	2,400
Thua Thien-Hue	570	19,700
Quang Nam-Da Nang	419	12,900
Quang Ngai	63	3,000
Total of Study Area	1,102	38,000

Note: The assumption for calculation from the past tourism analyses:

1) Average hotel charge: US$40 per person per day. Average overnight ratio of visitors: 85%. One room will be used by 1.4 visitors on average. Room occupancy: 85%. The number of employees per hotel-room is supposed to be 1.6 for high class hotels, 1.0 for mid class ones, and 0.6 for low class ones.
2) Component ratio of tourist expenditure: hotel 35%, transportation 15%, shopping 25%, food & drink 15%, admission fee 5%, others 5%
3) Employment comparison ratio: hotel 100%, transportation 50%, souvenir shops 35%, restaurants 45%, admission facilities 15%, others 10%

(Source: JICA Study Team)

11.3.3 Forecast of the Required Number of International Standard Hotel Rooms

Founded on Table 11.13 the figures for the required international standard hotel rooms could be calculated as shown in Table 11.15.

So long as a little faster increase speed is planed in the study area's tourism than the average of the whole country as described in the paragraph 11.3.1, the required number of the international standard hotel rooms up to 2010 is, as a matter of course, highest than the whole country's.

Table 11.15 The Number of International Standard Hotel Rooms

Province	Existing number of international standard hotel rooms	Planned number of international standard hotel rooms	
		Totally required number	Requied extention number
	1995	Up to 2010	
The whole country (1993)	16,733	98,256	81,523
Quang Tri	54	920	866
Thua Thien Hue	998	7,679	6,681
Quang Nam Da Nang	955	5,046	4,091
Quang Ngai	0	1,160	1,160
Total of the target area	2,007	14,805	12,798

Source: VNAT - JICA Study Team

Note: Existing number of international standard hotel rooms of each Province is partially estimated..

11.3.4 Market Promotion

1) Effective Appeal to Target Segment

First priority in target segment should be in the origin nationality of foreign visitors. As stated in the paragraph 11.1.3 2), the three big target markets by nationality of the Central Region are focused on France, U.S.A. and Japan. With those markets, the following strategies or tactics are recommended:

(1) Activation of international exchange between local tourism-related bodies and travel agencies abroad

In the market abroad, practical activities for the marketing of Viet Nam tourism are mainly made by travel agencies in the origin country. Therefore, support to travel agencies in the market place are very important. In general, mutual understanding between origin and arrival countries facilitates good tourist business. If staff of travel agencies abroad feel very familiar and comfortable to negotiate with the Vietnamese tourism-related bodies such as tour operators, hotels and transportation, they will select Viet Nam as their customers' tour destination among other many competing destinations. The measures to promote mutual understanding are as follows:

- Producing clear-cut brochures and tourist tariffs, such as hotel room rate, cost of chartered transportation and so on, by each tourism-related body
- Timely deliveries of promotion materials, such as brochures, tariffs, maps, posters, videos and so on to travel agencies abroad.
- Adoption of seasonal rates system and reduced fares system for group tours, and bulletining them to travel agencies abroad
- Holding presentation parties periodically for travel agencies abroad, and
- Implementation of travel trade familiarization tours designed to acquaint travel agencies with major Central Region's tourist attractions and provide them with updated travel information on the study area.

(2) Establishment of a promotional body for travel to Viet Nam based on governmental policies

A promotional body for travel to Viet Nam based on governmental policies means a branch office of VNAT abroad in the major market country such as France, U.S.A. and Japan. The role of the body is to promote inbound travel to Viet Nam through various activities for tourist promotion, including a travel information service, media assistance, showing of travelogue films, participation in fairs and exhibitions, and advertising in leading newspapers, magazines and travel trade publications within the major travel markets.

2) Implementation of tourism sales promotion activities

It nfay be strictly said that modernized tourism promotion activities are at the dawn in Viet Nam. Even brochures of the accommodations and tourist sites, those are the very basic tools for promoting tourism, are nearly unavailable, except for a few facilities in the Central Region of Viet Nam. No other specific tourism promotion activities have been found here, except for participation in some world tourist trade shows.

Promotion activities are particularly essential for the tourism industry, because tourism products cannot be carried out to the market differently from visible products, such as agricultural and industrial products. In most cases, only pictures or illustrations can be shown to the market. Results of inbound travel business depend on whether it is skillful or not. Promotion for tourism are usually divided into five activities, such as preparation of promoting tools, advertising, publicity, public relations, and incentives.

(1) Preparation for modernized tourism promoting tools

Modernized promoting tools include brochure, pamphlet, tariff, arrangement map of accommodation/tourist-site facilities, videotape, film, small incentive tool (ball-point pen, cigarette lighter and so on.) and so on. Brochures are useful not only for a promotion tool on advertising caravan, but also for a memento by which tourists make unsolicited sales to their relatives and friends.

(2) Sharing of the role of promoting activities between the governmental and private sectors

Because advertising requires preceding large expenditures, it is reasonable that the private tourism sector would inevitably take charge of it. But, in publicity activities (unpaid), the government sector would have to participate actively , as it can be carried out without expense. Instead, it would have to make patiently efforts to deliver on the fresh and glamorous press releases on the Central Region of Viet Nam tourism to foreign media abroad for the aim of spreading out the selling points of this region. In this case, it is necessary to keep in mind that the contents of press releases should be demand-oriented and non-commercialized, and the offer of the press releases almost cannot make conditions on carrying the news on the media.

Public relations are a bit different from publicity, in the meaning of advertising activities that some definite enterprise or government carries out to enhance the reliance and understanding on the body's performance by general public including just the body's employee. Because these activities are fundamentally payable, these would go to the role of private sector.

(3) Implementation of tourism incentives

Tourism incentives are the most popular activities for promoting the tourist trade in developed countries. Especially, it has been proved that incentives for the travel planner of big travel agencies and competent travel magazine writers are very effective in those countries' selling promotion. Again, as tourism products cannot be carried out to the market abroad, instead it means to invite them with complimentary treatment to tourism products as representatives of the market. After their looking around and surveying the tourism products of the region, the travel planners will make up many package tours to the study area, and the travel writers will write and write about the study area' tourism products in the market country.

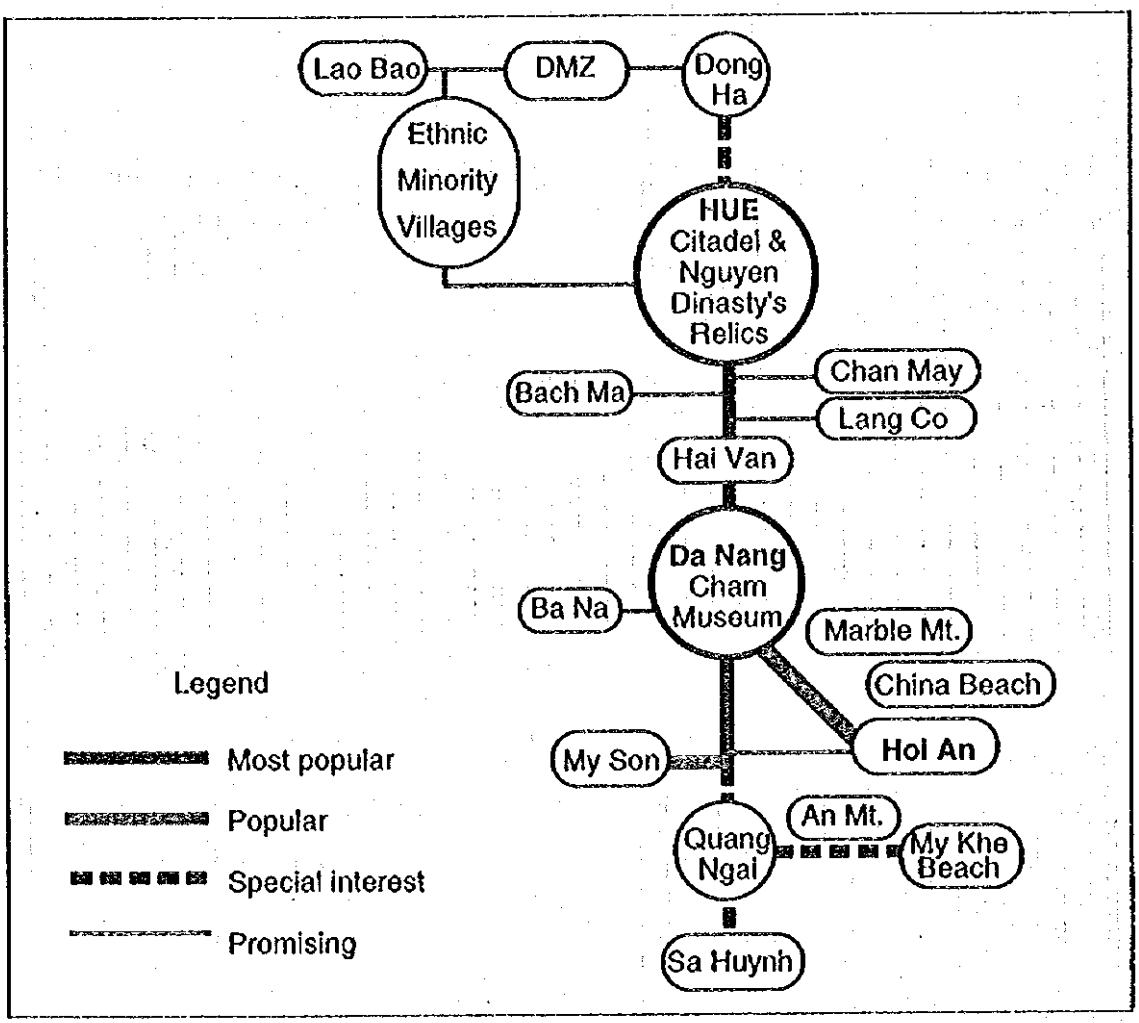
3) Tourism Product Segments

In business, it is essential to segment what products and to which customers one should sell with confidence. With reference to the existing characteristics of the study area's tourist attractions and marketing circumstances, it would be practically suitable for the tourism products in the study area to divide the study area into some tourist zones according to the tour circuits or routes and tourist bases as follows:

- Da Nang - Hoi An - My Son tour circuit
- Quang Ngai - An Mountain - My Khe, or Quang Ngai - Sa Huynh tour route
- Hue Citadel and its vicinities' Nguyen Dynasty's relics tour circuits
- Quang Tri - DMZ - ethnic minority people's villages tour circuits, and
- Lang Co - Bach Ma National Park recreation zone.

Those products' location is shown in Figure 11.10.

Figure 11.10 Conceptual Map of the Study Area's Tour Circuits and Tourist bases



(Source: JICA Study Team)

(1) Da Nang - Hoi An - My Son tour circuit

This circuit is identified as one of cultural tourism. Therefore, the target markets are the culturally motivated tourists of all over the world. Especially, Western Europeans, North Americans and Japanese are promising market, but it is important to appeal the cultural