

Challenges for PPP Promotion in the Power Sector

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India – Japan Energy Forum

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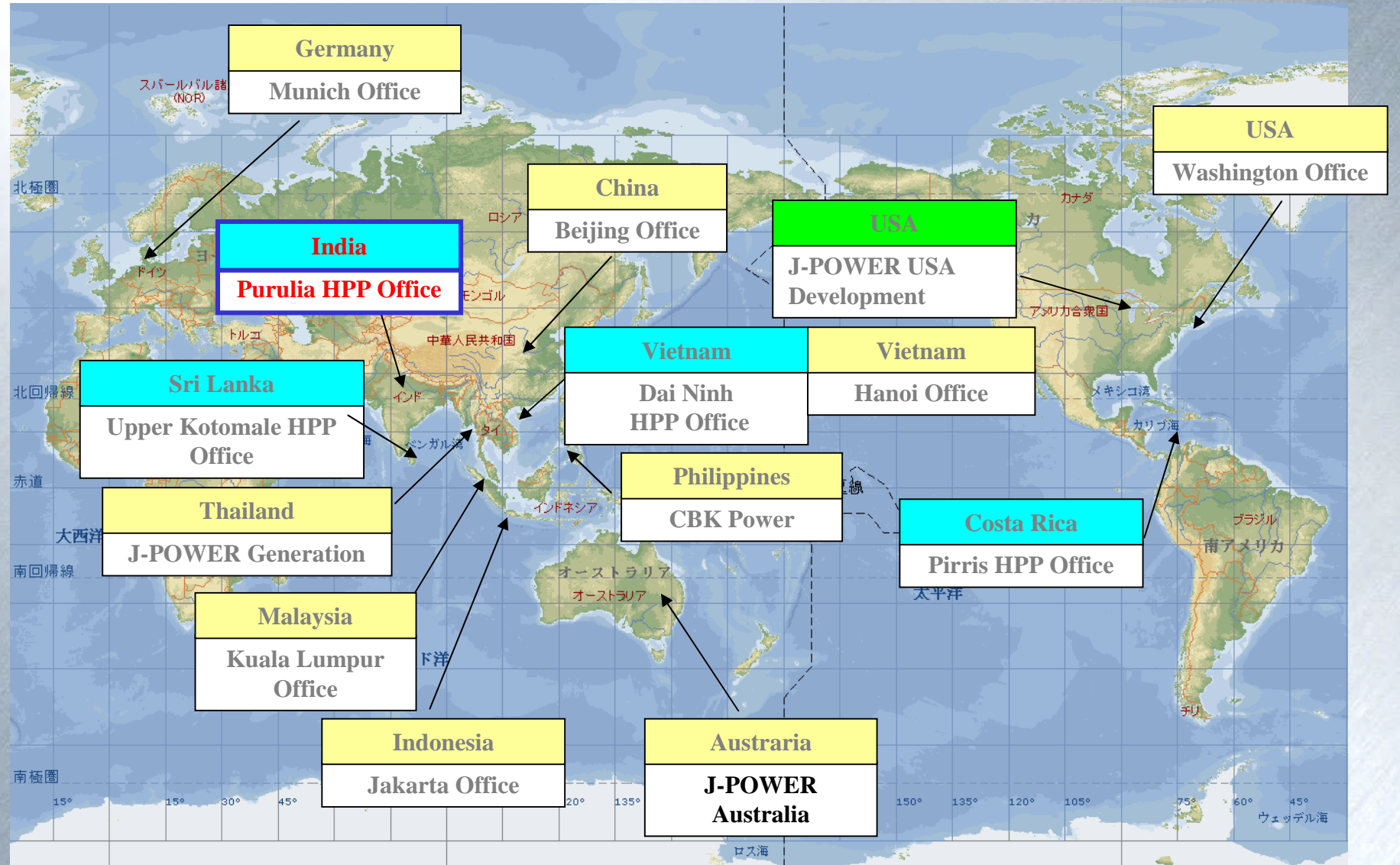
International Power Business Dept.

J-POWER

- ◆ **The only large-scale wholesale power company in Japan with its installed generation capacity of some 16GW**
- ◆ **A leading company in coal-fired and hydroelectric power generation**
- ◆ **A Global player which has been expanding the overseas IPP investment projects as well as consultancy business**
- ◆ **A private firm which chairs Asian PPP Promotion Conference (APPC) as well as its Electric Power Study Group**



J-POWER: Overseas Power Generation Business



J - POWER: Overseas IPP Projects



Country/ Region	Project Name	Generating from	Output (1'000 kW)	J-POWER's Share (%)
USA	Tenaska	Gas CCGT	830	62
	Elwood	Gas simple cycle	1,350	49.9
Philippines	Layte	Geothermal Heat	49	10
	CBK	Hydroelectric	728	50
China	Tianshi	Coal waste	50	24
Thailand	Roi-Et	Chaff	9	26
	Rayong	Gas CCGT	106	20
	Thaioil Power	Gas CCGT	114	19
	Independent Power	Gas CCGT	700	19
	Gulf Cogeneration (kaeng kloi)	Gas CCGT	108	49
	Kaeng kloi #2	Gas CCGT	1,468	49
	Samutprakarn	Gas CCGT	115	49
	Nong Khae	Gas CCGT	112	49
	Yala	Rubber Wood Waste	20	49
Taiwan	Chiahui	Gas CCGT	670	40
Spain	Spain Wind Power	Wind Power	64	50
Total		16 projects	6,493	

C o n t e n t s

I . APPC Activities:

- 1. Overview**
- 2. Electric Power Study Group : Focuses in 2006**

II . Japanese Power Companies: Overseas IPP Business

- 1. Business Diversification**
- 2. Recent Track Records**
- 3. Approach**

III . India's Power Sector:

- From a Japanese power company's point of view**
- 1. What is attractive?**
 - 2. Challenges faced with Private Investments**
 - 3. Approach to promote PPP**

I . APPC Activities:

1. Overview

2. Electric Power Study Group

I . Asian PPP Promotion Conference (APPC)

- ◆ **Established on Jan. 30, 2006 as a platform** among Japanese private firms to promote Asian PPP with main activities of :
 - sharing knowledge
 - holding dialogue with governments and companies

- ◆ **Comprised of four sector study groups**
 - 1) Urban Transportation
 - 2) Water and Sewage
 - 3) IT / Administration
 - 4) Electric Power

- ◆ **Members of Electric Power Study Group: 27 Private firms**
 - 10 Electric Power Companies
 - 7 Trading Houses
 - 2 Plant Manufactures
 - 4 General Contractors
 - 2 Plant Engineering companies
 - 2 Bankers

✓ METI and relevant organizations (JBIC, NEXI, JETRO etc.), as observers, are to be joining meetings.

I . APPC Electric Power Study Group: Focuses in 2006

◆ Vietnam :

- ✓ To try to promote IPP projects under the Asian PPP concept, based on a review of experience regarding Phu My project - a preceding PPP case in the country

◆ Philippines:

- ✓ To review challenges existing IPP projects have faced so far

◆ India

- ✓ Interested in investments, operation and maintenance business as well as EPC in the power sector
- ✓ Concerned about the financial status of off-takers, subsidies of state governments and contents of PPA prevailing
- ✓ Eager to comprehend central and state governments' energy policies and the current status surrounding fuel supply, as well as to appraise the Indian approach to PPP Projects like Ultra Mega Projects

Ⅱ . Japanese Power Companies

— Overseas IPP Business

- 1. Business Diversification**
- 2. Track Records on Overseas IPP**
- 3. Approach**

II. Japanese Power Companies: Business Diversification

- ◆ Over the last decade the Japan's power companies have been promoting business diversification.

1) Deregulation:

The 1990 revision of the Electricity Utilities law abolished the regulations that prohibited the utilities from entering new business.

2) Growth Strategy

Slow growth in power demand is anticipated reflecting matured economy. IPP overseas is one of the most important growth opportunities.

3) Advantages of management resources:

The Japan's power companies have made investments with;

- a) massive experience and expertise in power projects
 - Plant design, financing, construction and O&M management
 - Their own developments and ODA projects
- b) network with key players - financial institutes (including JBIC and JICA), trading houses and plant manufactures.

II . Japanese Power Companyies' Overseas IPP: Track Records (by Region)

	B Y R E G I O N											
	South East Asia		China & Taiwan		Middle East		Asia Pacific & Europe		North America		Total	
		MW		MW		MW		MW		MW		MW
Tokyo Electric Power Company	2	1,945	2	1,470	1	2,400	2	2,650			7	8,465
Kansai Electric Power Company	2	510	1	16.7							3	526.7
Chubu Electric Power Company	2	1,420			1	1,025			1	525	4	2,970
Kyushu Electric Power Company	2	1,916.8							2	990	4	2,906.8
Tohoku Electric Power Company	1	2					1	840			2	842
J - P O W E R	11	3,529	2	720			1	64	2	2,180	16	6,493
TOTAL	20	9,322.8	5	2,206.7	2	3,425	4	3,554	5	3,695	36	22,203.5

Remarks: 1) Information Source: The Heavy & Chemical Industry News (Oct31, 2006)

2) Capacity (MW) : Installed project capacity basis

II . Japanese Power Companies' Overseas IPP: Track Records (by Source)

	B Y S O U R C E									
	Coal-Fired		Gas-Fired		Hydro Power		Other Renewable etc.		Total	
		MW		MW		MW		MW		MW
Tokyo Electric Power Company	3	3,880	4	4,585					7	8,465
Kansai Electric Power Company			1	165	2	361.7			3	526.7
Chubu Electric Power Company			3	2,950			1	20	4	2,970
Kyushu Electric Power Company			4	2,906.8					4	2,906.8
Tohoku Electric Power Company	1	840			1	2			2	842
J - P O W E R	1	50	10	5,573	1	728	4	142	16	6,493
TOTAL	5	4,770	22	16,179.8	4	1,091.7	5	162	36	22,203.5

Remarks: 1) Information Source: The Heavy & Chemical Industry News (Oct31, 2006)

2) Capacity (MW) : Installed project capacity basis

II Japan's Power Companies: Approach to Overseas IPP

◆ **The Primary goal is**

- 1) to establish overseas power supply operations that will allow Japan's power companies to profit and**
- 2) to make a contribution to development of energy by increasing capacity in the power sector.**

◆ **Typically, the Japanese power companies assess and mitigate risks surrounding projects, taking into account the following factors;**

- A) Stable cash flow / longer term PPA**
- B) Reliable local partners**
- C) Project financing provided by financial Institutes (JBIC, NEXI etc.)**
- D) Profitability: Hurdle rates set for country by country**
- E) Involvement in technological aspects and management**
- E) Alliance with Japanese related companies**
- F) Synergy effect between the IPP project and other business**

III. India's Power Sector

- From a Japanese power company's point of view

1. What is attractive?

2. Challenges faced with the India Power Sector

3. Approach to promote PPP

III. Power Market in India: What is attractive?

1. Huge Potential Growth

- Current level of power consumption is relatively low.
- Mid to long term expansion of its economy is anticipated.

Source: EIA2005 IEA2003	Installed Capacity (GW)	Generation (GWh)	Per Capita Consumption (kWh/capita)
WORLD	3,626	16,741,884	2,429
ASIA	1,018	3,340,344	871
CHINA	391	1,942,893	1,379
INDIA	126	633,275	606

- India, along with china, is anticipated to account for more than a half of increased global power generation capacity over the next decade.

2. Frameworks of Private Investment have been existed

3. Firm Bilateral Relationship

- India is ranked as the top in Japan's Yen loan recipient.
- FTA negotiation will be initiated.

Installed capacity(as of end 2005)

Central and State Government	111 GW
Private Sector	13 GW
Total	124 GW
Captive Power Plant	22-32 GW

III. Challenges faced with the India's Power Sector

◆ **Some 100 GW additional generation capacity is needed.**

One of Major challenges faced with the India's power sector is that a capacity addition of some **100 GW** is required by 2012 to bridge the supply deficit.

It is estimated that

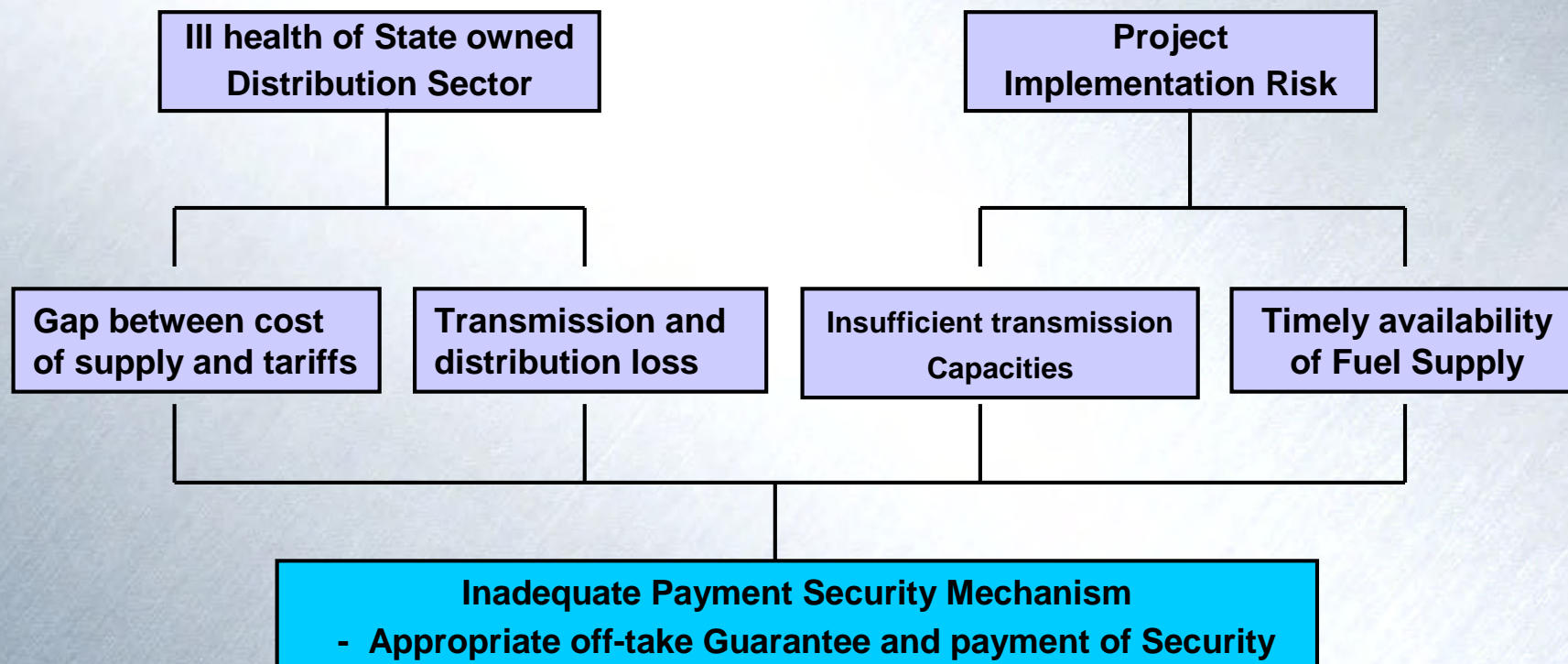
- 1) The anticipated capacity addition during the Xth five year plan (2002-2007) is **some 30GW**.

- 2) A capacity addition of some 70 GW is targeted during the XI five year plan (2007-2012) .
 - **Ultra Mega Power Projects** : **some 30 GW**

III. UMP: A Japanese Power Company's Perception

- ◆ **Creation of Ultra Mega Power Projects (UMP) is the significant step.**
- ◆ **The concept of “ Shell companies” under UMP is a kind of evolution to facilitate private investments.**
- ◆ **On the other hand, bottlenecks to encourage private investments in the India's power sector, like UMP, have been already identified.**
 - 1) **Ill health of State owned Distribution Sector**
 - 2) **High technical and commercial loss**
 - **Gap between cost of supply and tariffs**
 - **Transmission and distribution loss**
 - 3) **Insufficient Transmission Network Capacity**
 - 4) **Timely Availability of Fuel Supply**
 - 5) **Weak Payment Security Mechanism**

Inter-relationship between bottlenecks



III. UMP: Major Concerns From a Japanese Power Company's point of view

- ◆ **Japanese power companies share concerns identified in India.**
- ✓ **Japanese power companies' concerns about UMP are in line with the bottlenecks identified by the industrial media in India.**

- ◆ **The Proposed payment security mechanism seems so weak.**
- ✓ **It seems that the proposed payment security mechanism is inadequate in light of the recovery of long-term investments.**
 - **Revolving Letter of Credit by distribution licensees**
 - **Escrow account establishing irrevocable claims on receivables of utilities**
 - **In case of default, direct supply to HT consumers**
- ✓ **A "Buyout clause" shall be executed with the national generation company.**

- ◆ **An another concern is about strong market powers of the existing players in the India's power sector.**

III. Approach to Promote PPP: Captive Power Option

◆ **The Growth in captive capacity is an eye opener.**

It is said that the total captive capacity is currently at 32GW and is growing at a rate of 6 per cent per annum over the last five years.

◆ **It is reasonable and practical to focus on captive power.**

Captive capacity could be used not only as a back-up but also for base load power.

◆ **Revised legal frameworks could encourage captive power to boost.**

1) to lower the percentage of

- the ownership regarding the group captive power plant (less than 26 %)
- the aggregate electricity consumed for the captive use (less than 51%)

2) to evacuate electricity outside captive power plant with ease, open access charge shall be eliminated

3) To get back-up power from the grid, the level of back-up charge shall be reduced to the industrial consumer's tariff level

III. Approach to Promote PPP: Bilateral Dialogue

- ◆ **In PPP, the cost and the risks are shared.**
- ✓ **A private investment have a greater chance of succeeding due to the government's contribution and commitment.**
- ✓ **It seems that the concept of PPP is still in process of evolution.**

- ◆ **Bankable payment security mechanism is the most critical.**
- ✓ **The payment security mechanism is a core issue that has been discussed in India as well as the South East Asian region.**
- ✓ **The frameworks should be established reflecting local factors.**

- ◆ **A key is bilateral dialogue.**