



# **Jaiprakash Power Ventures Limited**

## **Investor Presentation**

JANUARY 2011

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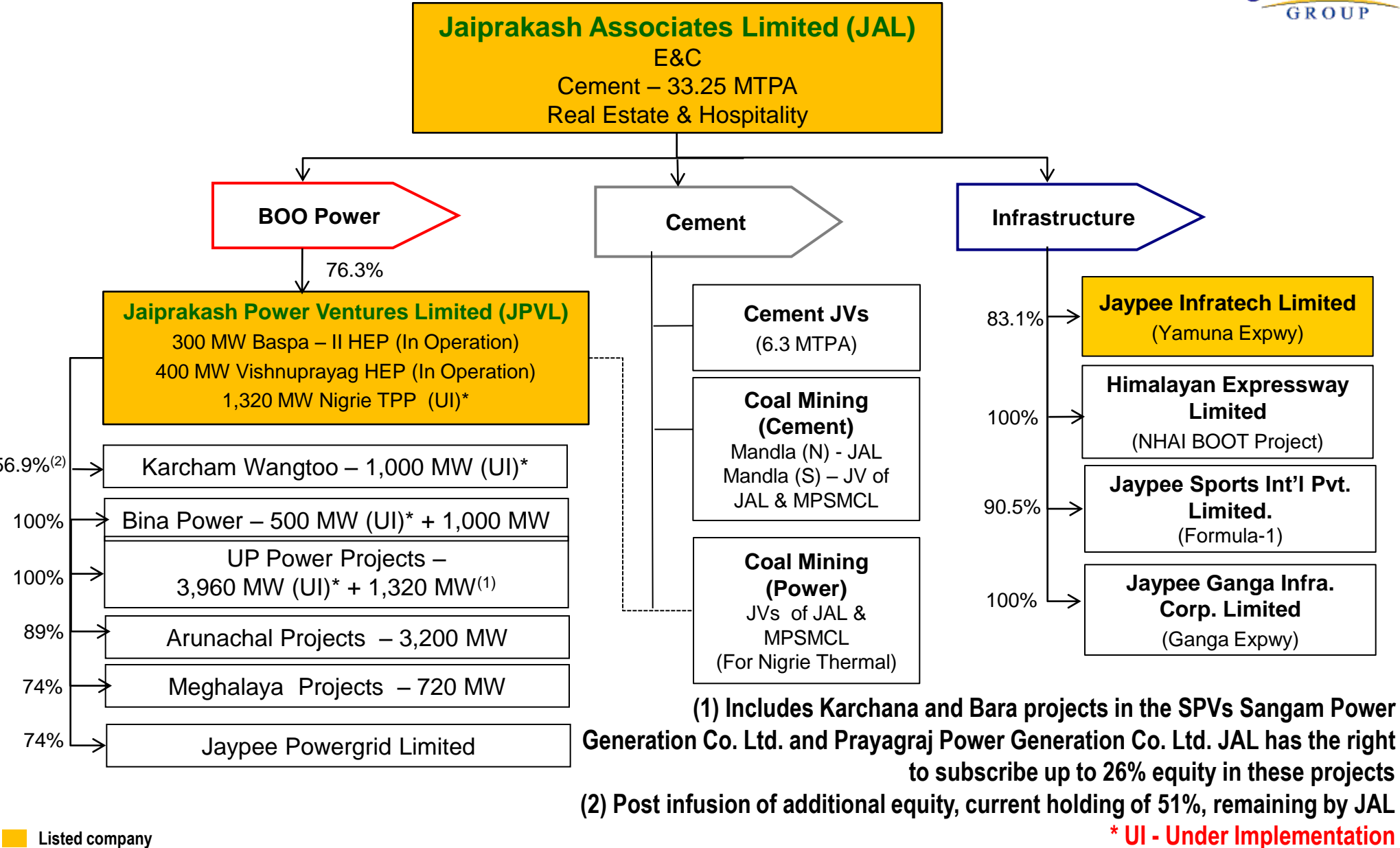
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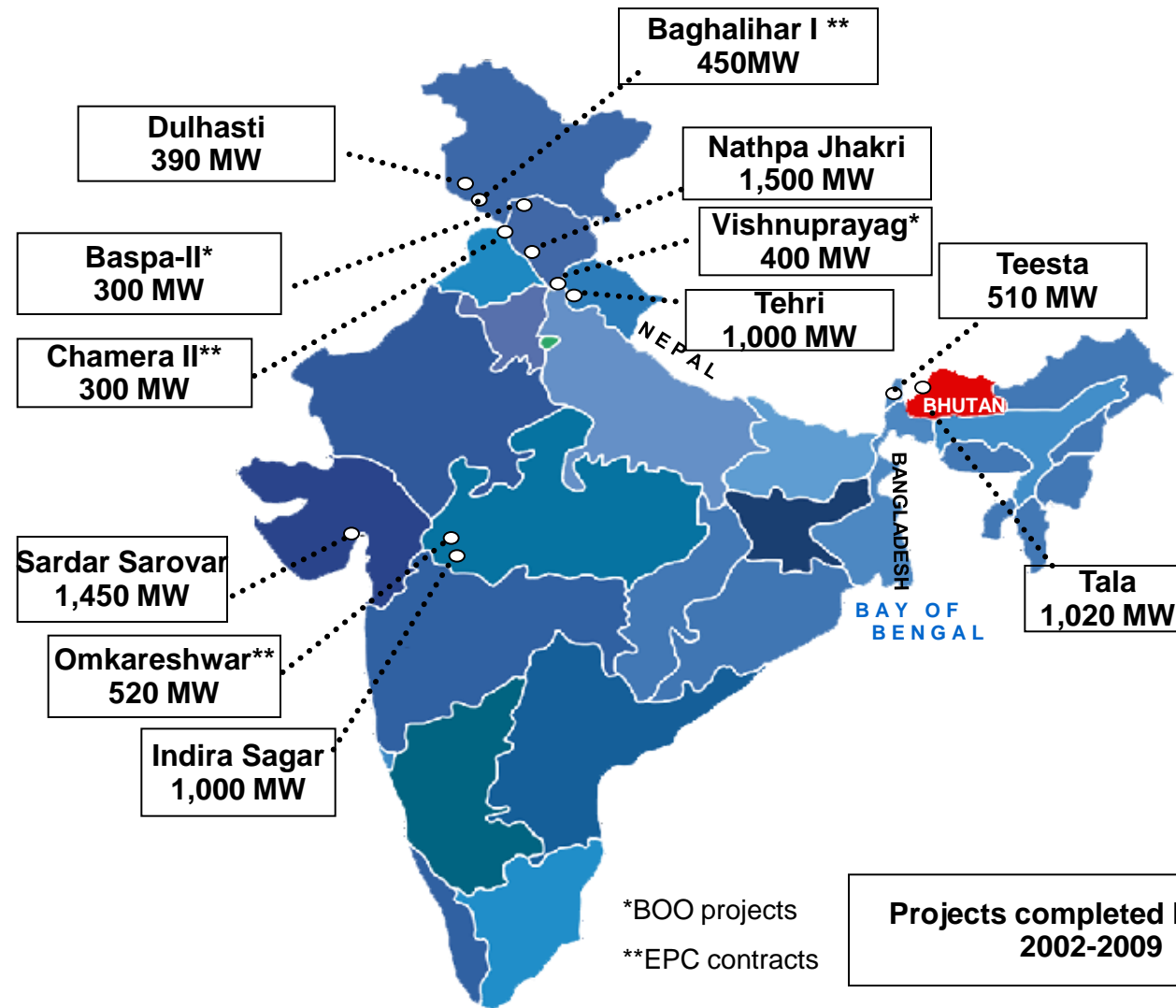
# Overview of Jaypee Group

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# Demonstrated Execution Capability of JAL – Completed HEPs Generating 8840 MW between 2002-2009

**JAL is the leader in the construction of multi-purpose river valley and hydropower projects and has been involved in construction of major engineering projects over the last 4 decades**



## ► **PROUD TO PARTICIPATE IN:**



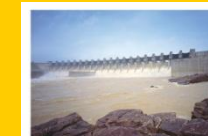
**Largest Concrete Dam in India – Sardar Sarovar**



**Largest Rockfill Dam in India – Tehri**



**Largest Underground Powerhouse in India – Natpha-Jhakri**



**Second Largest Surface Powerhouse in India – Indira-Sagar**

**Projects completed between 2002-2009**

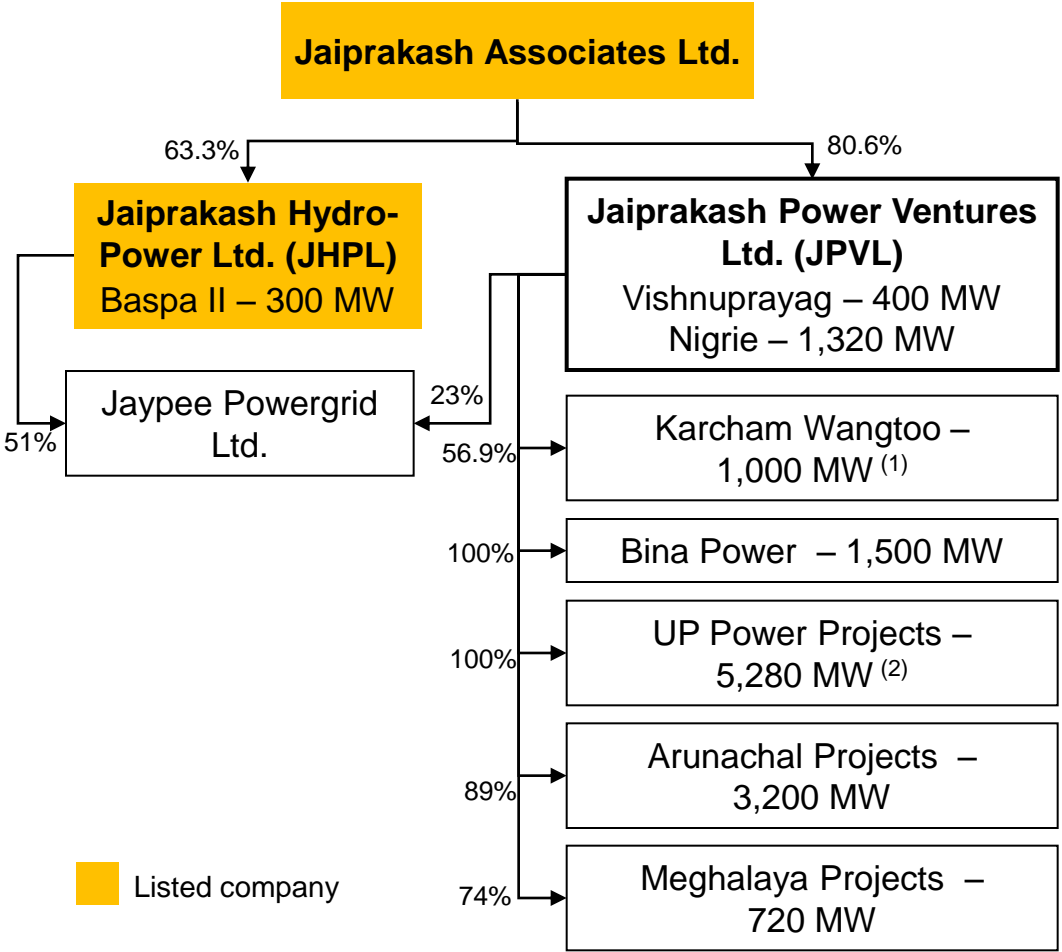


# **JPVL's Business Overview**

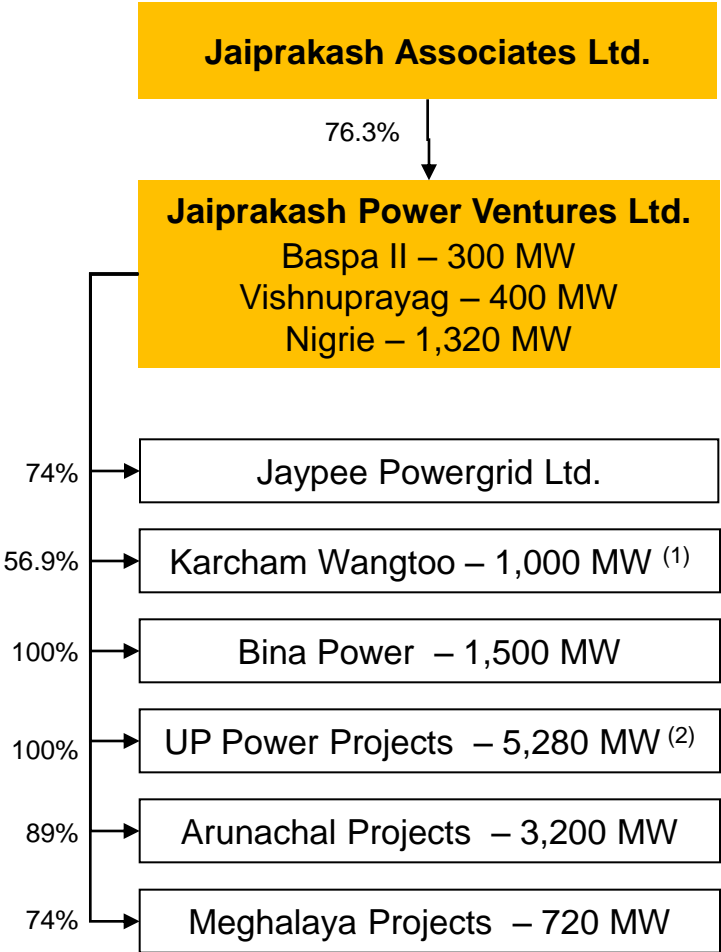
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# JHPL & erstwhile JPVL Merger

## Pre-Amalgamation



## Post-Amalgamation



(1) Post infusion of additional equity, JPVL current holding of 51%, remaining by JAL  
(2) Includes Karchana and Bara projects in the SPVs Sangam Power Generation Co. Ltd. and Prayagraj Power Generation Co. Ltd.  
Jaiprakash Associates Ltd. has the right to subscribe up to 26% equity in each of these projects

# Power Business at a Glance

S.N.	Project	Fuel	Capacity (MW)	Regulated Tariff (MW)	Merchant Power (MW)	VERs/ CERs	COD
1.	Baspa-II	Hydro	300	300	-	1.00 Mn VERs	2003
2.	Vishnuprayag	Hydro	400	400	-	1.32 Mn.VERs	2006
3.	Karcham Wangtoo	Hydro	1,000	800	200	3.35 Mn. CERs*	2011*
4.	Bina Power	Thermal	1,500	850*	650*	-	2011**
5.	Jaypee Nigrie	Thermal	1,320	660*	660*	0.8 Mn. CERs*	2013*
6.	Karchana	Thermal	1,980	1,320*	660*	1.5 Mn. CERs*	2014*^
7.	Bara	Thermal	3,300	2,045*	1,255*	2.5 Mn. CERs*	2014*^
8.	Lower Siang	Hydro	2,700	1,350*	1,350*	TBD	2016*#
9.	Hirong	Hydro	500	250*	250*	TBD	2018*
10.	Kynshi Stage -II	Hydro	450	225*	225*	TBD	2019*
11.	Umngot Stage -I	Hydro	270	135*	135*	TBD	2019*
	<b>TOTAL</b>		<b>13,720</b>	<b>8,335</b>	<b>5,385</b>		

\* Management Estimates

\*\* 500 MW Phase I by 2011, ^1320 MW of Karchana & 1980 MW of Bara Phase I, # 1500 MW Phase I by 2016

# Power Capacity in Operation/ Under Advanced Stages of Implementation

S.N.	Project	Location	Capacity (MW)	Fuel	Financial Closure
<b>Current Capacity</b>					
1.	Baspa-II	H.P.	300	Hydro	✓ (Operational)
2.	Vishnuprayag	U.K.	400	Hydro	✓ (Operational)
	<b>Cumulative Total</b>		<b>700</b>		
<b>By October 2011</b>					
3.	Karcham Wangtoo	H.P.	1,000	Hydro	✓
4.	Bina Phase-I	M.P.	500	Thermal	✓
	<b>Cumulative Total</b>		<b>2,200</b>		
<b>By December 2013</b>					
5.	Nigrie	M.P.	1,320	Thermal	✓
6.	Bara Phase – I (Unit 1)	U.P.	660	Thermal	✓
	<b>Cumulative Total</b>		<b>4,180</b>		
<b>By December 2014</b>					
8.	Bara Phase – I (Units 2 & 3)	U.P.	1,320	Thermal	✓
9.	Karchana (Units 1 & 2)	U.P.	1,320	Thermal	✓
10.	Bina Phase – II	M.P.	1,000	Thermal	TBD
	<b>Cumulative Total</b>		<b>7,820</b>		

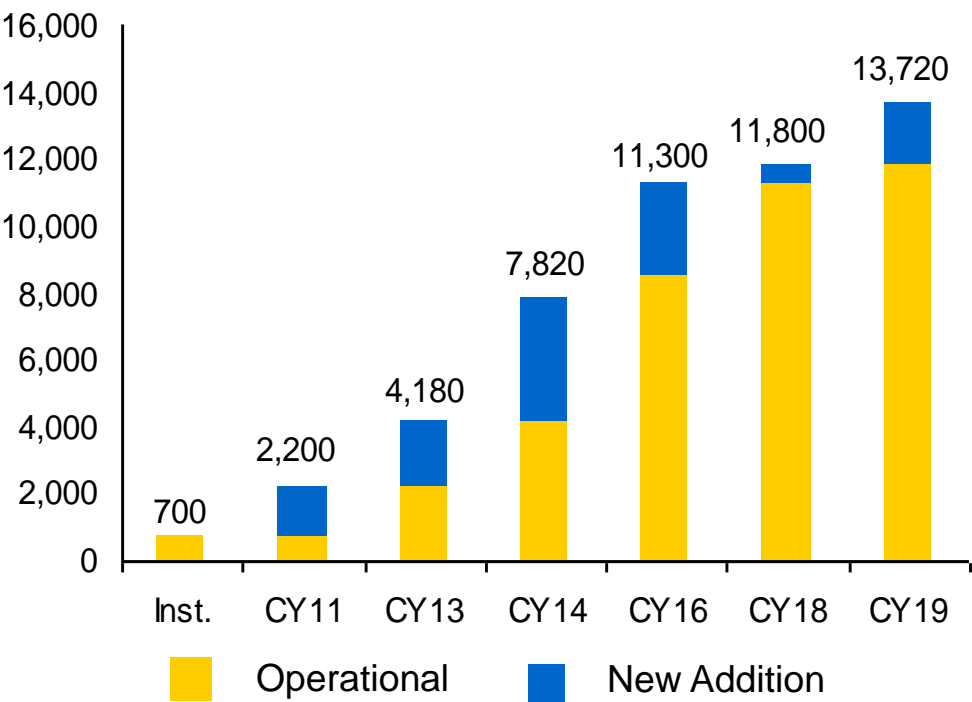
3<sup>rd</sup> Unit of Karchana to go into operation in 2015, taking the total generation capacity by 2015 to 8,480 MW

# Stages of Power Assets

STAGE 9	O & M	<i>Baspa, Vishnuprayag</i>
STAGE 8	Commissioning	
STAGE 7	Erection, Testing	<i>Karcham Wangtoo</i>
STAGE 6	Construction	<i>Bina , Nigrie, Bara, Karchana</i>
STAGE 5	Project Funding	<i>Lower Siang</i>
STAGE 4	Design & Engineering	
STAGE 3	Environment Clearance	<i>Lower Siang, Hirong</i>
STAGE 2	Detailed Project Report	
STAGE 1	Feasibility Study	<i>Meghalaya Projects</i>

# Optimal Hydro – Thermal Mix

Power capacity addition (MW)



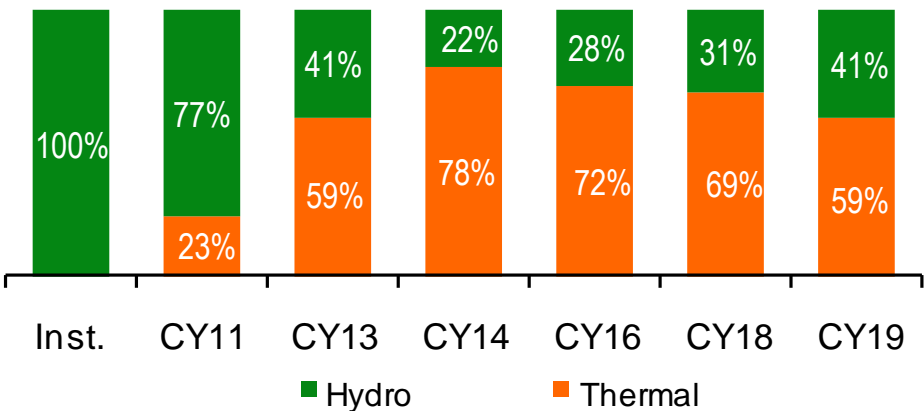
*Diversifying its fuel mix for power plants in line with the Gol objective of 60:40 Thermal : Hydro mix, by 2019*

*Largest Private Sector Hydro Power generator in the country*

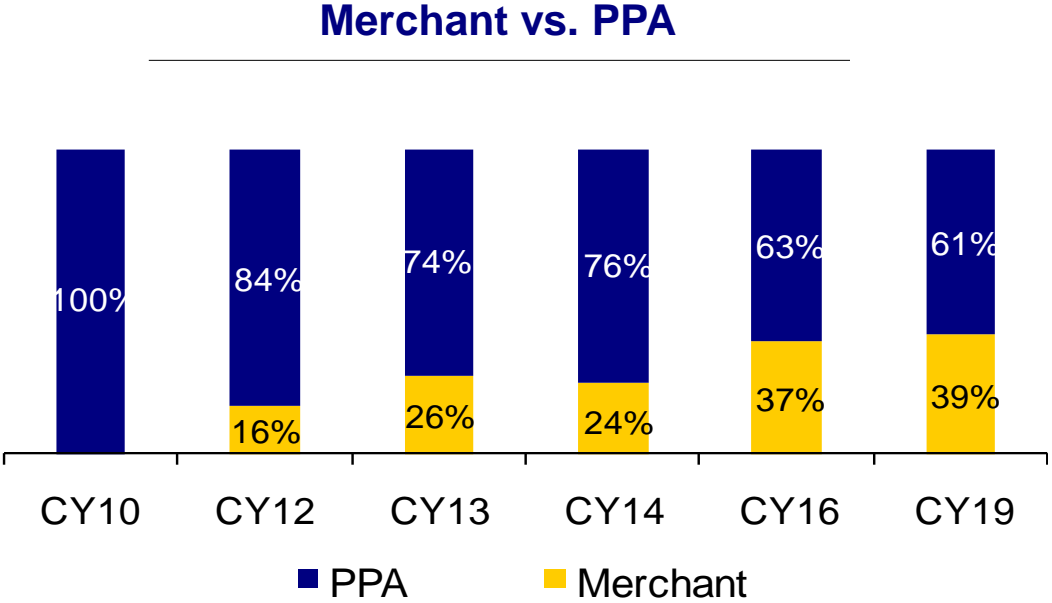
*Hydro projects are glacier fed and not necessarily dependent on monsoons – generating substantial secondary energy*

*Strong growth path and expected to grow from the current 700 MW to 2200 MW by 2011, 7820 MW by 2014 and 13720 MW by 2019*

Thermal : Hydro Mix of Power Capacity



# Optimal Off-take Arrangements



Merchant Power Units (MU)*	
CY 2012	1,841
CY 2013	4,036
CY 2014	7,847
CY 2015	15,873

*Optimal off-take arrangements to ensure balance between steady locked-in cash flows (PPA) and upside from merchant tariffs.*

*Substantial cash flow expected from carbon credit sales. Current operating assets are already generating cash flow by selling VERs. On aggregate basis VERs stand at 2.32 million currently*

\* Management Estimates

# Quality Equipment from Reputed Manufacturers

S.No	Name of Item	Country of Origin/Company
<b>Baspa-II Hydro</b>		
1.	Turbine and Generating System	VA Tech (Austria), Voith (Germany)
2.	GIS	Alstom (France)
<b>Vishnuprayag Hydro</b>		
1.	Turbine and Generating System	Alstom (France)
2.	GIS	Alstom (France)
<b>Karcham Wangtoo Hydro</b>		
1.	Turbine and Generating System	VA Tech (Austria), Voith (Germany)
2.	GIS	Areva (France)
<b>Nigrie Thermal</b>		
1.	Boiler	L&T-MHI (India/Japan)
2.	Turbine Generator	L&T-MHI (India/Japan)
<b>Bina Thermal</b>		
1.	Boiler	BHEL (India)
2.	Turbine Generator	BHEL (India)
<b>Bara Thermal</b>		
1.	Boiler	BHEL (India), Alstom (France)
2.	Turbine Generator	BHEL (India), Siemens (Germany)
<b>Karchana Thermal</b>		
1.	Boiler	L&T-MHI (India/Japan)
2.	Turbine Generator	L&T-MHI (India/Japan)

# Power Business – Summary of Project Status: Hydro

Project	Land	Water	Environment Clearance	DPR/EPC Order	Fuel	PPA	Equity Investments till date (Rs mn)
Baspa II – 300 MW	PROJECT IN OPERATION						4,910
Vishnuprayag – 400MW	PROJECT IN OPERATION						5,090
Karcham Wangtoo –							18,900
1000 MW	✓	✓	✓	✓	✓	20% Merchant	
Lower Siang –			Approval for pre-construction activities	TEC granted by CEA		50% Merchant	1,895
2700 MW	-	✓			✓		
Hirong –				DPR submitted to CEA		50% Merchant	
500 MW	-	✓	Same as above		✓		

# Power Business – Summary of Project Status: Thermal

Project	Land	Water	Environment Clearance	DPR/EPC Order	Fuel	PPA	Equity Investments till Date (Rs mn)
<b>Bina Power –</b>						<b>GoMP-70%<sup>(1)</sup></b>	<b>5,991</b>
<b>1500 MW</b>	✓	✓	✓	✓	✓	<b>30 % Merchant<sup>(1)</sup></b>	
<b>Nigrie Thermal – 1320 MW</b>	✓	✓	✓	✓	✓	<b>GoMP – 37.5% 50% Merchant</b>	<b>7,950</b>
<b>Karchana Thermal – 1980 MW</b>	✓	✓	✓	✓	✓	<b>33% Merchant<sup>(2)</sup></b>	<b>5,521</b>
<b>Bara Thermal – 3300 MW</b>	✓	✓	✓	✓	✓	<b>38% Merchant<sup>(2)</sup></b>	<b>3,230</b>

***Total equity investments made across the projects as on 31 Dec 2010 –  
~ INR 53.5 Bn (US\$ 1.14 Bn)***

Note:

- (1) For Phase I of 500 MW
- (2) 10% Merchant in Phase I

The background of the slide features a large, semi-transparent gear mechanism in the upper half, with a small globe icon orbiting around it. The lower half of the slide shows a blurred city skyline. The word "Summary" is centered in the middle of the slide, underlined.

## Summary

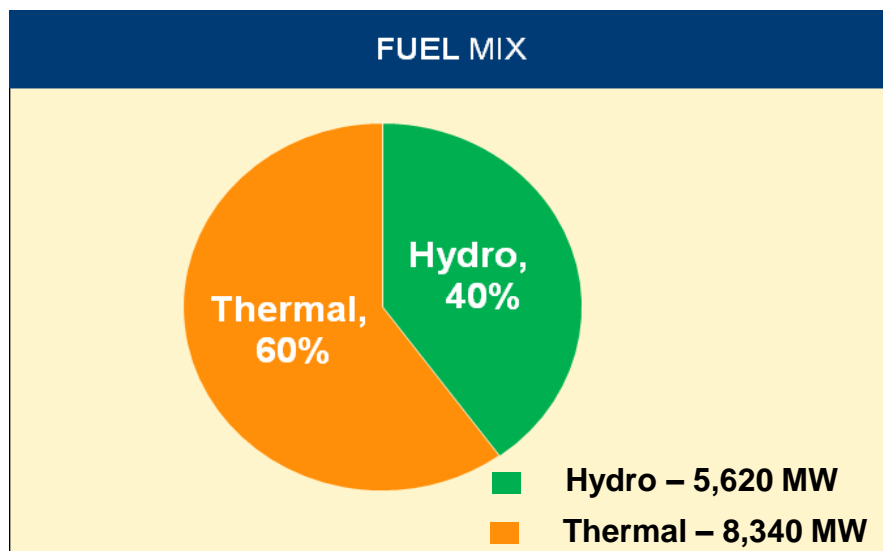
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# JPVL – Financial Performance

Rs mn (US\$ mn)

Particulars	JHPL 300 MW Baspa – II	Erstwhile JPVL 400 MW Vishnuprayag	JPVL (post merger) 700 MW		
	FY 2009	FY 2009	FY 2010		
Revenue	3,179 (68)	4,187 (89)	7,178 (153)		9M FY 2010 5,333 (113) 9M FY2011 6,717 (143)
EBIDTA	2,945 (63)	3,790 (81)	6,349 (135)		4,832 (103) 5,795 (123)
PAT	1,429 (30)	1,865 (40)	2,516 (54)		1,910 (41) 1,482 (32)
Dividend Declared	15%	20%	-		- -

Fx: 1 US\$ = INR 47



## Income Tax Benefit under section 80 (I) – A

- ✓ Baspa – II and Vishnuprayag Projects are eligible for income tax benefits under this act for a period of 10 years.
- ✓ Both projects are claiming these benefits, Baspa-II since 2003 and Vishnuprayag from 2006, the year of their respective CODs.

## Carbon Credits - Verified Emission Reductions (VERs)

- ✓ Baspa – II and Vishnuprayag Projects are eligible for CDM benefits.
- ✓ Baspa-II HEP earned INR 77.9 Mn and INR 78.6 Mn in the FY 2008-09 & 2009-10 respectively while Vishnuprayag HEP earned INR 566.9 Mn and INR 332.8 Mn from sale of VERs in the FY 2008-09 & 2009-10 respectively.

# Selected financial information

## Balance Sheet

Rs mn (US\$ mn)

Particulars	JHPL	Erstwhile JPVL	JPVL (post merger)	
	FY 2009	FY 2009	FY 2010	9M FY 2011
Networth	10,752 (229)	10,883 (232)	24,150 (514)	25,632 (545)
Secured & Unsecured Debt	9,113 (194)	11,449 (244)	53,746 (1,144)	65,535 (1,394)
Net Fixed Assets (including WIP)	18,360 (391)	16,601 (353)	45,982 (978)	46,096 (981)
Current Assets	4,320 (92)	2,696 (57)	28,636 (609)	28,088 (598)
Current Liabilities	1,560 (33)	524 (11)	1,387 (30)	2,292 (49)

Fx: 1 US\$ = INR 47

# Integrated Solution Provider to Control Key Aspects of Project Execution

**JAL has the unique ability to undertake the most challenging projects successfully given its abilities as the only Integrated Solution Provider for Hydropower Projects in the country**

<b>JAL's Lineage</b>	<ul style="list-style-type: none"> <li>▪ <b>Expected to derive substantial synergies from the parent JAL</b> <ul style="list-style-type: none"> <li>▪ 40 years of experience in the E&amp;C business. Since 2002 till date, JAL has been involved in projects with 8,840 MW of hydroelectric generation capacity</li> <li>▪ The company has built plants for several quasi government entities</li> </ul> </li> <li>▪ <b>Vast experience and strong project management skills enable JAL a closer control over all aspects of projects</b></li> <li>▪ <b>JAL is expected to be the EPC contractors for all of JPVL's hydro projects and execute civil works for thermal projects</b></li> <li>▪ <b>Equipment from most reliable suppliers having proven track record</b></li> </ul>
<b>In – House Expertise</b>	<ul style="list-style-type: none"> <li>▪ <b>Internationally competent design team provides captive support for efficient implementation</b></li> <li>▪ <b>In-house heavy machinery engineering workshop , fabricating hydro-mechanical equipment and BOP for thermal power plants, to significantly reduce the capital expenditure requirements</b></li> <li>▪ <b>In-house Workshop to provide specialized coating for runners and under water parts of turbines</b></li> </ul>
<b>Deep Involvement of Senior Management</b>	<ul style="list-style-type: none"> <li>▪ <b>Typical to JAL's culture, senior director's presence on-site in the projects would strengthen the quality of execution</b></li> <li>▪ <b>Recent induction of highly experienced personnel from across the globe and having vast experience in Super Critical technologies</b></li> </ul>



# **Project Details**

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# Baspa-II HEP - 3x100 MW

Project Detail	Description
Location & size	300 MW Hydro Power Project in Himachal Pradesh
Concession Period	40 + 20 Years
Total project cost	Rs. 1,667 Crores
Means of finance	Debt – Rs. 1,089 Crores Equity – Rs. 491 Crores Internal Accruals – Rs. 87 Crores
Current status	In operation since <b>June 2003</b>
Offtake arrangement	Free Power – 12% (through out the concession period) PPA – 100% of the saleable power to HPSEB

- ▶ **Commissioned in June 2003**
- ▶ **FY-09 generation: 1131 Mn saleable Units at 99.65% plant availability**
- ▶ **Dividend declared by JHPL to Shareholders**
  - I) Maiden dividend of 7.5% in its first year of operation**
  - II) 15% dividend for FY-08**
  - III) 15% dividend for FY-09**
- ▶ **Accredited for Carbon Credits – 1.00 Mn. Annual VERs**



# Vishnuprayag HEP - 4x100 MW

Project Detail	Description
Location & size	400 MW Hydro Power Project in Uttarakhand
Concession Period	30 + 20 Years
Total project cost	Rs. 1,694 Crores
Means of finance	Debt – Rs. 1,185 Crores Equity – Rs. 509 Crores
Current status	In operation since <b>Oct 2006</b>
Offtake arrangement	Free Power – 12% (all through the concession period) PPA – 100% of the saleable power to UPPCL

- ▶ Commissioned **six months** ahead of schedule -Savings of **Rs 150 Crs**
- ▶ FY-09 generation: 1767 Mn Saleable Units at 98.63% plant availability
- ▶ **Dividend declared by erstwhile JPVL to shareholders**
  - I) Maiden dividend of 7.0% in its first year of operation
  - II) 20% dividend for FY-08
  - II) 20% dividend for FY-09
- ▶ **Accredited for Carbon Credits – 1.32 Mn. Annual VERs**



# Karcham Wangtoo HEP - 4x250 MW

Project Detail	Description
Location & size	1,000 MW Hydro Power project in Himachal Pradesh
Concession Period	35+20 Years
Total project cost	Rs. 7,150 Crores
Means of finance	Debt – Rs. 5,005 Crores Equity – Rs. 2,145 Crores
Equity holding	JAL – 43.13% JPVL – 56.87% (Currently JPVL holds 51% which is expected to increase post additional equity infusion)
Expected commissioning	<b>2011</b>
Offtake arrangement	Free power – 12% (first 12 years) & 18% (after 12 years)

- ▶ *Project likely to be commissioned 6 Months ahead of schedule (Mar-Jul'11 as against Aug-Nov'11).*
- ▶ *Eligible for CDM Benefits. Application in advanced stages of validation. 3.35 Mn CERs expected.*



# Jaypee Powergrid Limited - 217 KM Power Transmission Project

Project Detail	Description
Location & size	217 km transmission project to evacuate power from 1,000 MW Karcham-Wangtoo project
Concession Period	Owned
Total project cost	Rs. 1,000 Crores
Means of finance	Debt – Rs. 700 Crores Equity – Rs. 300 Crores
Equity holding	JPVL – 74% PGCIL – 26%
Expected Commissioning	<b>March 2011</b>

- ▶ *First 400 KV Quad Conductor Double Circuit Transmission Line in hilly terrain in India*
- ▶ *This transmission line will consist of about 150 km stretch of hilly terrain with snowfall of up to eight feet in some stretches*
- ▶ *Transmission License issued by CERC*
- ▶ *Current Status – Project awarded in 5 packages (3 for construction, 2 for supplies) to L&T and GAMMON (Towers), Sterlite, Apar (Conductors), & AB group (Insulators).*



# Bina TPP – 1,500 MW

Project Detail	Description
Location & size	1500 MW (In 2 phases) Thermal Power Plant in Dist. Bina in Madhya Pradesh, Phase-I consisting of 2x250 MW
Concession Period	Owned
Total project cost	Rs. 2,754 Crores for Phase – I
Means of finance	Debt – Rs. 1,928 Crores (Phase -1) Equity – Rs. 826 Crores (Phase -1)
Expected Commissioning	2011 (Phase -1)
Offtake arrangement for Phase - 1	GoMP- 70% (including 5% at variable cost) Merchant Power – 30%

- ▶ *Land – 694 hectares in possession. Property Fenced.*
- ▶ *Water- From River Betwa (100 cusecs).*
- ▶ *LoA by CIL for capacity of 2x250 MW received.*
- ▶ *Order for BTG package for Phase-I placed on BHEL.*
- ▶ *All works on site at advanced stages*



# Nigrie TPP - 2X660 MW

Project Detail	Description
Location & size	1320 MW <b>super critical technology boiler</b> , pit head based Thermal Power Plant at Dist Sidhi in Madhya Pradesh
Coal Blocks	Coal from Mines at Amelia (North) & Dongri Tal-II
Total project cost	Rs. 8,100 Crores
Means of finance	Debt – Rs. 5,670 Crores Equity – Rs. 2,430 Crores
Expected Commissioning	<b>2013</b>
Offtake arrangement	GoMP - 37.5% (including 7.5% at variable cost) <b>Merchant Power – 50%</b>

- ▶ **Pithead Located Captive Coal Block Based Plant - Joint Venture of JAL with MP State Mining Corporation for coal block mining to meet entire coal requirement for 25 years.**
- ▶ **50% Power to be sold on Merchant Power basis.**
- ▶ **Water- From River Gopad – 65.3 Cusec allocated.**
- ▶ **Land Acquisition nearing completion, entire plant land acquisition completed.**
- ▶ **Order for BTG package placed with L&T-MHI. Scheduled commissioning is Apr. 2013 & Sept. 2013 for Unit-I & Unit-II respectively.**



# Karchana TPP – 3x660 MW

Project Detail	Description
Location & size	1,980 MW <b>super critical technology boiler</b> based Project in Karchana, Allahabad, Uttar Pradesh
Concession Period	Owned
Total project cost	Rs. 10,800 Crores
Means of finance	Debt – Rs. 8,100 Crores Equity – Rs. 2,700 Crores
Expected Commissioning	<b>2014</b>
Offtake arrangement	1320 MW (Unit I & II): GoUP - 90%, <b>Merchant Power –10%</b> 660 MW (Unit III): GoUP - 20%, <b>Merchant Power – 80%</b>

- ▶ **Project was awarded on Case-II bidding.**
- ▶ **Tariff : Rs. 2.97/unit. Coal cost/ GCV/ Min. guaranteed quantity pass through in tariff.**
- ▶ **Lol issued on 21<sup>st</sup> February 2009, SPA executed on 23<sup>rd</sup> July 2009.**
- ▶ **Order for BTG package placed with L&T-MHI. Scheduled commissioning is Apr. 2014, Sep. 2014 & Feb. 2015 for Unit I, Unit II & Unit III respectively**
- ▶ **Mega Power Status awarded to 2x660 MW Phase-I**



\* Estimated

# Bara TPP – 5x660 MW

Project Detail	Description
Location & size	3,300 MW (in 2 Phases) <b>super critical technology boiler</b> based Project in Bara, Allahabad, Uttar Pradesh; Phase-I consisting of 3x660 MW
Concession Period	Owned
Total project cost	Rs. 10,780 Crores for Phase - I
Means of finance	Debt – Rs. 8,085 Crores Equity – Rs. 2,695 Crores
Expected Commissioning	<b>2014 (Phase – I)</b>
Offtake arrangement	1980 MW Phase-I : GoUP - 90%, <b>Merchant Power – 10%</b> 1320 MW Phase-II : GoUP - 20%, <b>Merchant Power – 80%</b>

- ▶ *Project was awarded on Case-II bidding.*
- ▶ *Tariff : Rs. 3.02 /unit. Coal cost/ GCV/ Min. guaranteed quantity pass through in tariff.*
- ▶ *Lol issued on 2<sup>nd</sup> March, 2009, SPA executed on 23<sup>rd</sup> July 2009.*
- ▶ *Order for BTG package for Phase – I placed with BHEL (in technical collaboration with Siemens & Alstom). Scheduled commissioning is Oct. 2013, Mar. 2014 & Aug. 2014 for Unit I, Unit II & Unit III respectively.*
- ▶ *Mega Power Status awarded to 3x660 MW Phase-I*



# Lower Siang HEP - 2,700 MW

Project Detail	Description
Location & size	2,700 MW (in 2 Phases) Hydro Power project in Arunachal Pradesh; Phase-1 consisting of 1500 MW
Concession Period	40 Years
Total project cost	Rs. 19,991 Crores
Expected Equity holding	JPVL - 89% Government of Arunachal Pradesh - 11%
Expected commissioning	2016*
Offtake arrangement	Free Power – 12% (First 10 years) & 15% (11th Yr onwards)  Merchant Power – 50% of the saleable power

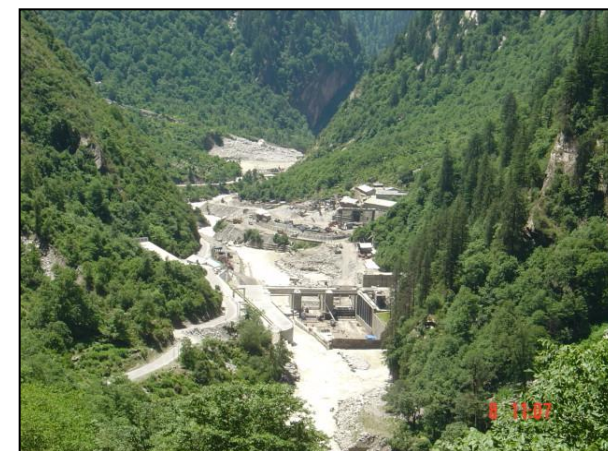
- ▶ *TEC from CEA received*
- ▶ *Environmental Clearance – Draft EIA/EMP draft reports submitted to AP State Pollution Board. Additional studies are being conducted as suggested by MOEF. Clearance expected by Mar 2011.*
- ▶ *Mega Power Project Status has been granted by Ministry of Power, GoI*
- ▶ *Work of widening & up gradation of Left bank road to dam site has been commenced by PWD contractor.*
- ▶ *Application for Open Access for Power Evacuation submitted to PGCIL.*



# Hirong HEP- 500 MW

Project Detail	Description
Location & size	500 MW Hydro Power project in Arunachal Pradesh
Lease Period	40 Years
Expected Equity holding	JPVL – 89% Government of Arunachal Pradesh - 11%
Expected commissioning	2018
Offtake arrangement	Free Power – 12% (First 10 years) & 15.5% (11th Yr onwards) Merchant Power – 50% of the saleable power

- ▶ *The DPR has been submitted to CEA for vetting in May-10. The hydrology chapter, installed capacity of 500 MW & corresponding power potential studies have been approved by CEA.*
- ▶ *The hydro-meteorological data is being collected on continuous basis.*
- ▶ *Work on additional drilling at Dam site is in progress.*
- ▶ *Report on site specific studies for seismic design parameters prepared IIT Roorkee has been submitted to NCSDP of Central Water Commission. In-principle approval received in Sep. 2010.*
- ▶ *EIA/ EMP studies completed. Report is under preparation by Delhi University.*



# Kynshi Stage – II HEP - 450 MW

Project Detail	Description
Location & size	450 MW Hydro Power project in Meghalaya
Concession Period	40 Years
Expected Equity holding	JPVL – 74% Government of Meghalaya - 26%
Expected commissioning	<b>2019</b>
Offtake arrangement	Free Power – 12% + 1% additional for social development by State Govt.  <b>Merchant Power – 50% of the saleable power</b>

- ▶ *MOA for 450 MW Kynshi HEP on river Kynshi in Meghalaya on BOOT basis has been signed on 11th Dec. 07.*
- ▶ *Application submitted to MOEF to accord approval for taking up preconstruction activities and TOR for preparation of EIA report. Expert Appraisal Committee has accorded approval for preconstruction activities and survey and investigation works in Nov. 2010.*
- ▶ *The approval of the Forest Department, Government of Meghalaya has been obtained to carry out the survey and investigation works.*
- ▶ *Mobilization for Survey and Investigation Works started*



# Umngot Stage – I HEP - 270 MW

Project Detail	Description
Location & size	270 MW Hydro Power project in Meghalaya
Concession Period	40 Years
Expected Equity holding	JPVL – 74%
	Government of Meghalaya - 26%
Expected commissioning	2019
Offtake arrangement	Free Power – 12% + 1% additional for social development by State Govt.
	Merchant Power – 50% of the saleable power

- ▶ *MOA for 270 MW Umngot HEP in Umngot River Basin, Meghalaya on BOO basis has been signed on 11th Dec. 07.*
- ▶ *Investigation works to be started soon*



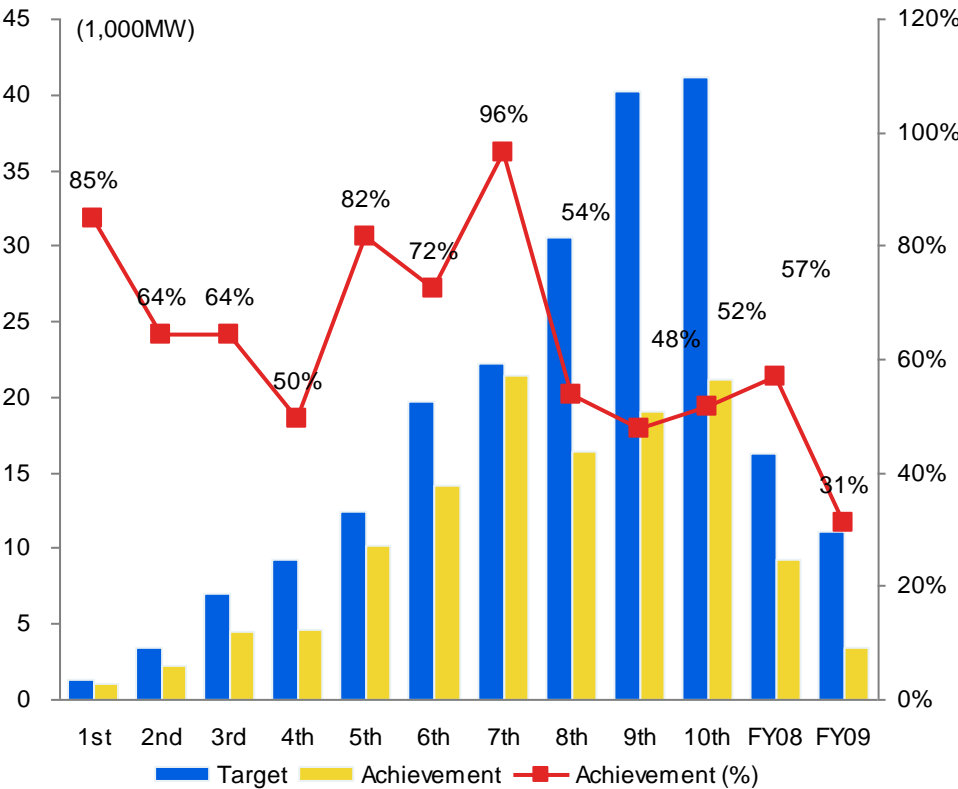


# **Indian Power Sector**

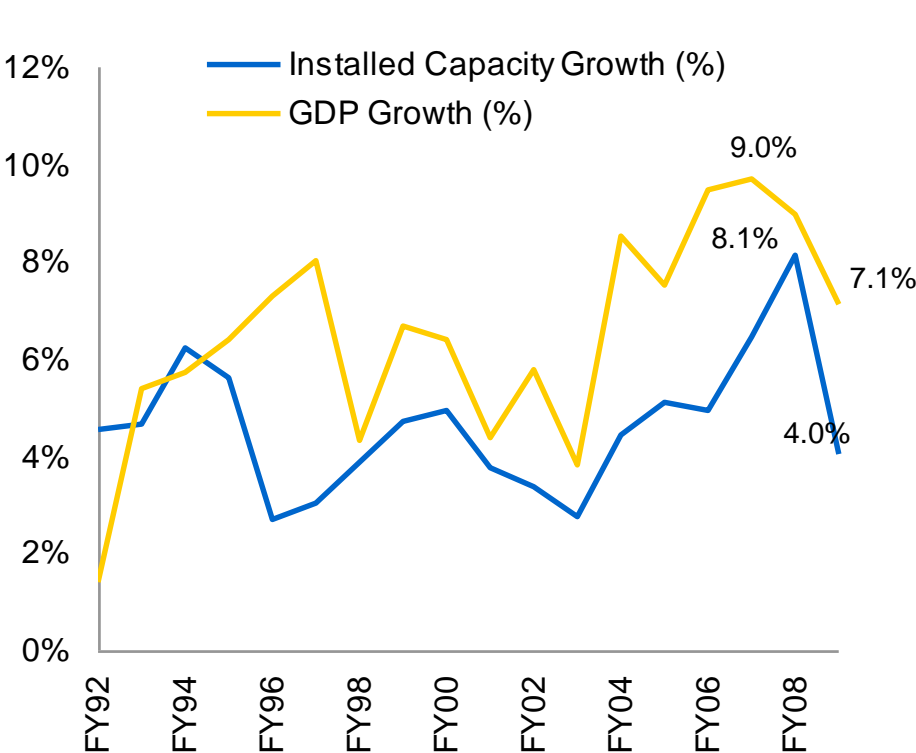
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# Capacity addition has underachieved the targets

Capacity Addition Targets and Achievements



Growth Lower than GDP Growth



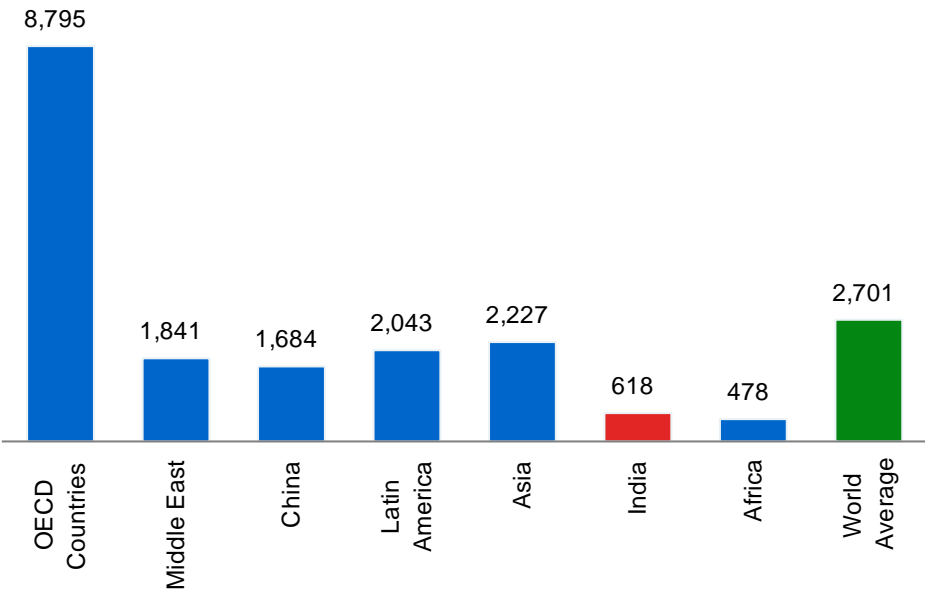
**Over the past 15 years, GDP growth has almost always been greater than the installed capacity growth**

\* Installed capacity growth annualised using June 09 installed capacity number  
Source: Planning Commission website, Gol, & Ministry of Power

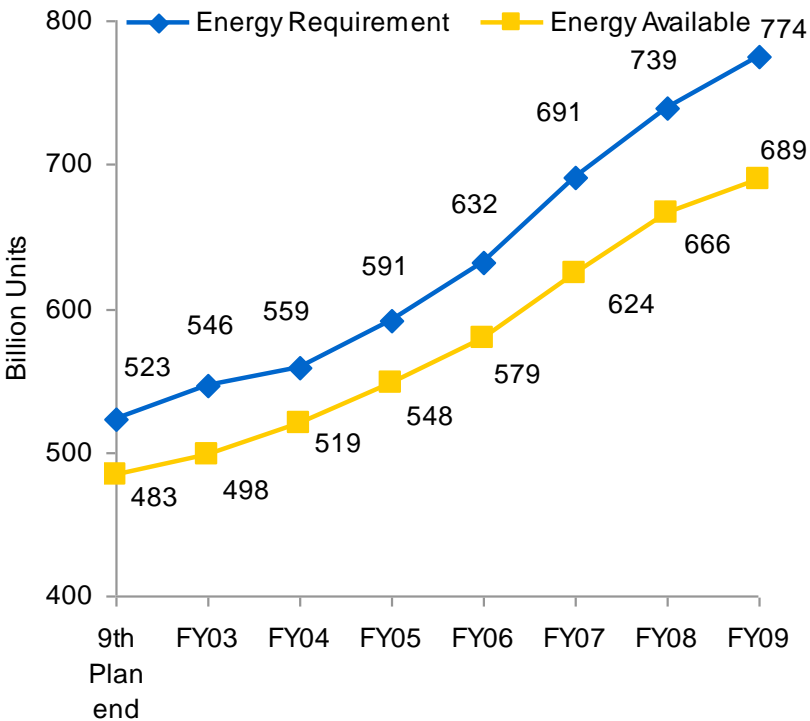
# Shortage of Power in India

## Low per capita consumption of Electric energy

(KWhr per capita)



## Electricity demand and supply



**The Power shortage problem is more acute in the North, West and the North-East regions where deficits were between 10% and 13.5% for Apr-Jun 2009**

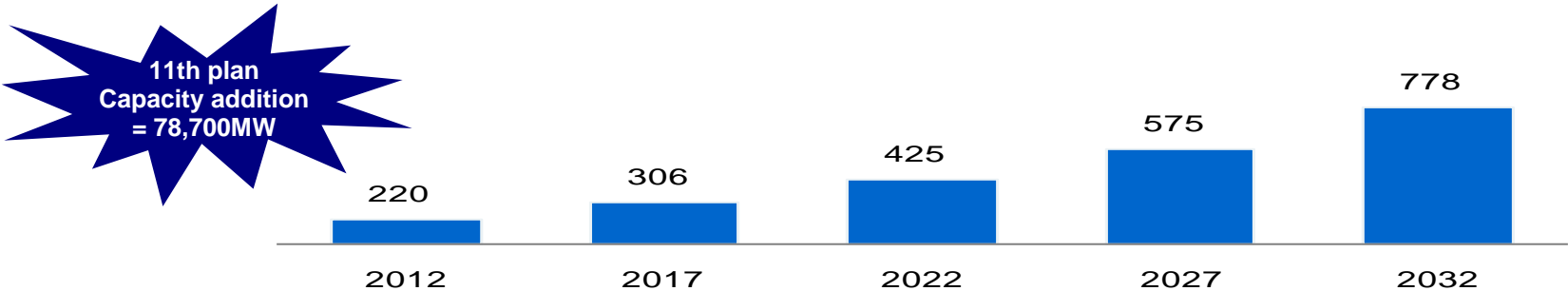
**Average per-capita consumption is rising at a rapid pace. The pace of growth in India will demand rapid increases in capacity generation in India. The per-capita consumption is expected to be ~1,000 KWh by FY12 resulting in a 50% growth in the XIth Plan**

Source: Power Scenario at a Glance, CEA, December 2009  
Hydro Power Policy, MoP, 2008 and Monthly Review of the Power Sector (Executive Summary), May 2009  
Human Development Report, 2007/2008

# Indian Power Sector: Driving significant investments

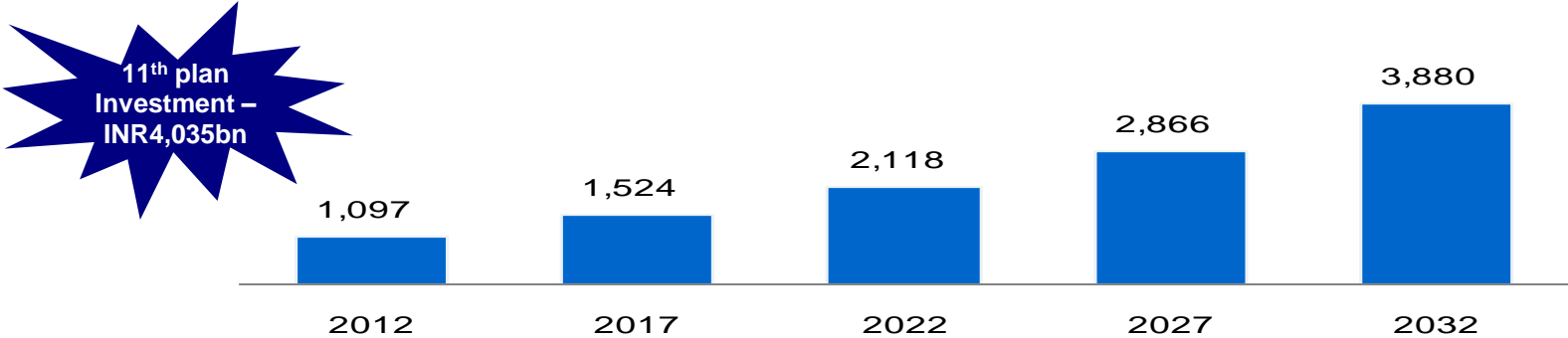
## Long-term outlook

Installed capacity (GW) required, at 8% GDP growth



Source: Government of India Integrated Energy Policy, Report of the Expert Committee (August 2006) available at [http://planningcommission.gov.in/reports/genrep/rep\\_intengy.pdf](http://planningcommission.gov.in/reports/genrep/rep_intengy.pdf)

Energy requirement (Billion kWh), at 8% GDP growth



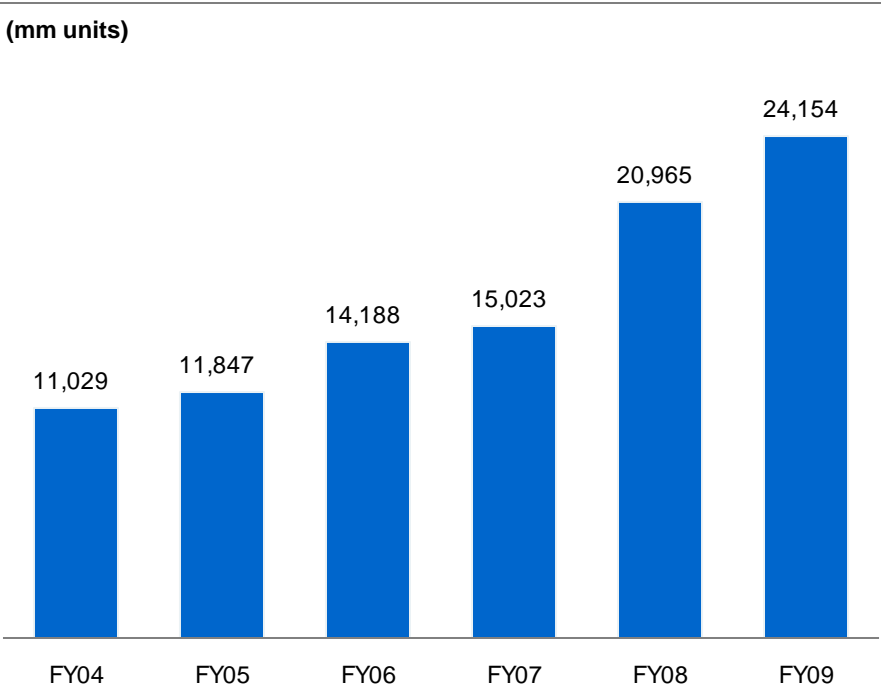
**The Indian power sector requires significant achievements to meet the planned capacity addition in the 11<sup>th</sup> (78,700MW) and 12<sup>th</sup> (86,000MW) Five year plans**

Source: Power Scenario at Glance Dec 09 (CEA); Projections of Investment in Infrastructure during the XI Oct 07 (Planning Commission) - [infrastructure.gov.in/pdf/Inv\\_Projection.pdf](http://infrastructure.gov.in/pdf/Inv_Projection.pdf);  
1&2 Increase in capacity required over FY12-FY17 based on 8% and 9% GDP growth rate as per 'Government of India Integrated Energy Policy, Report of the Expert Committee' (August 2006) available at [http://planningcommission.gov.in/reports/genrep/rep\\_intengy.pdf](http://planningcommission.gov.in/reports/genrep/rep_intengy.pdf)

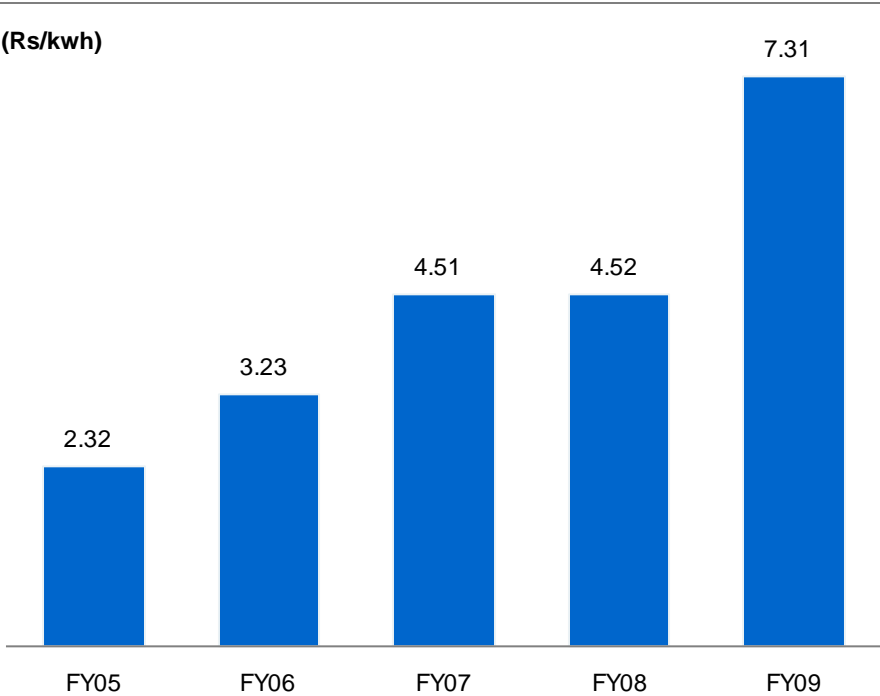
# Indian Power Sector – Merchant Power potential

*Trend Towards Rise in Traded Volumes & Tariffs*

Increasing Volumes of Power Traded<sup>1</sup>...



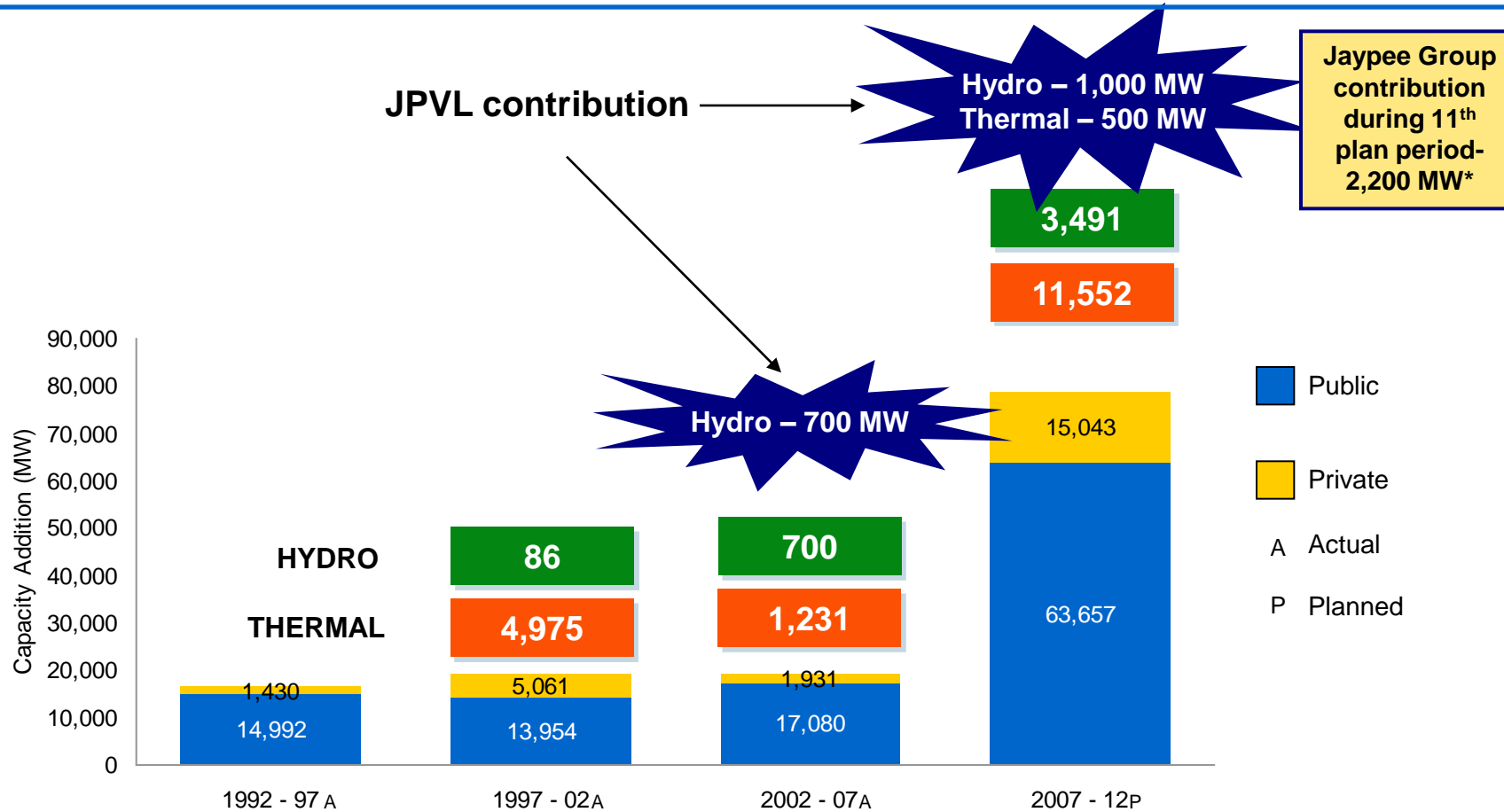
...Coupled with Rising Merchant Power Prices<sup>2</sup>



***Significant Potential from Merchant Power Plants due to Rising Tariffs***

<sup>1</sup> CERC; <sup>2</sup> <http://www.cercind.gov.in> – weighted average price of electricity transacted through Trading Licenses and Power Exchanges

# Increasing Role of Private Sector



**Thermal and Hydro account for ~89% of the current installed capacity**  
**In terms of additions planned in the 11<sup>th</sup> plan, ~75GW out of the 79GW planned are in the Thermal and Hydro power sectors. Jaypee group will contribute 1,000 MW in the Hydro sector and 500 MW in the Thermal sector in the 11<sup>th</sup> plan\***

\* In addition Jaypee Group shall also add 700 MW of coal based Captive Power Plants during the 11<sup>th</sup> plan period  
Source: Ministry of Power, Power Scenario at a Glance, CEA, Dec 2009



**THANK YOU**

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