

## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

PPI data update note 69

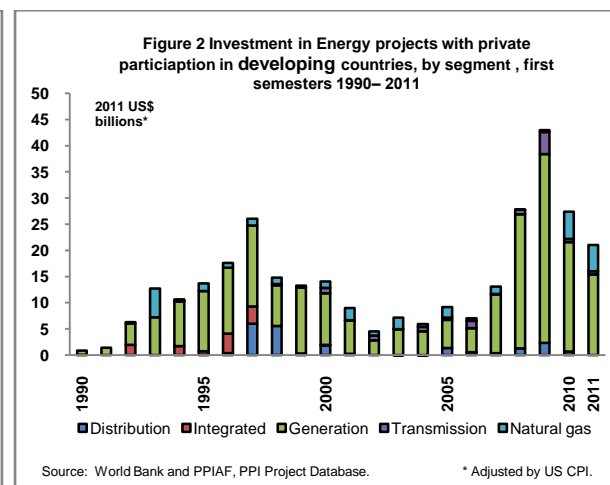
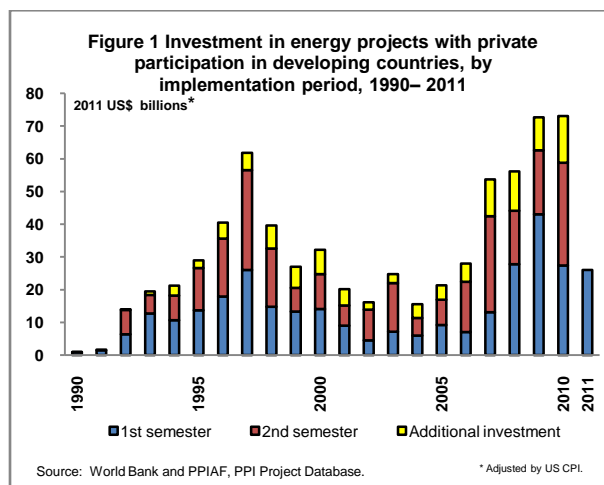
January 2012

### Private activity in energy projects decreased in the first semester of 2011, compared to the same period in 2010

In the first half of 2011, 66 energy projects with private participation reached financial or contractual closure in 13 low and middle-income countries.<sup>1</sup> Additionally, US\$4.8 billion was invested in the Phase II, 1224km expansion of Russia's Nord Stream Gas Pipeline, following the Phase I financial closure that occurred in 2010, bringing total investment commitments to the energy sector to US\$20.9 billion.<sup>2</sup>

Although this activity represents an 18% increase by the number of projects, this represents a 24% decrease by investment from the similar period in 2010 (figure 1). New investment activity in the sector was concentrated in three countries. India was the most active country, accounting for 21 projects, 42% of new investment in the sector and 32% of new projects. Brazil, the second most active country, attracted 14% of the new investment and 27% of new projects, followed by China with 4% of new investment and 11% of new projects. These three countries accounted for 60% of new energy investment and 70% of new projects during the first semester of 2011.

Regarding the investment commitments to the energy sector by segment for the period, electricity generation accounted for 57 projects and 74% of investments in the sector; natural gas transmission attracted 23% of investment in energy; electricity transmission accounted for the remaining 3% of sector investment (figure 2).



As per figure 3 below, **East Asia and the Pacific (EAP)**, three countries (China, Laos, and Thailand) implemented ten new projects, representing US\$1.5 billion in new investment in the first semester of 2011. Half of these projects were for electricity generation, representing a total installed capacity of 3.9 GW while the other half were natural gas distribution, representing a total network capacity of 1,530 thousand m<sup>3</sup>/day. China implemented two electricity generation projects for a total investment of US\$848 million. One such generation project, Huaneng Renewables Corp., Ltd., raised US\$799 million in its IPO which represented 53% of new regional investment and 3,520 MW of renewable power generation. China also implemented five natural gas distribution projects with total investments of US\$35 million. Laos closed a US\$441 million financing on a 322

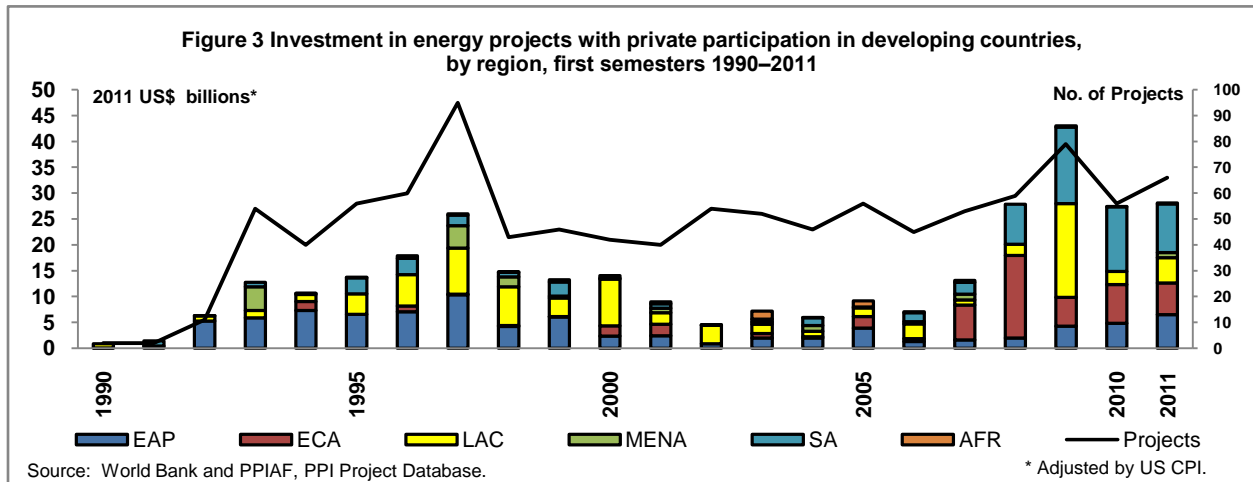
This note was written by Laura Kaliszewski and Koustubh Parulekar, Infrastructure Consultants, Finance, Economics, and Urban Development Department, Sustainable Development Network, World Bank.

<sup>1</sup> The PPI Project Database currently uses the FY12 World Bank country classification released in July 2011. Investment data are in 2011 US dollar using the US CPI to adjust to 2011 values. Data at <http://ppi.worldbank.org/> are reported in millions of current U.S. dollars unless otherwise indicated.

<sup>2</sup> The data on infrastructure projects with private participation include primarily medium-size and large projects as reported by the media and other public sources. Small-scale projects are generally not included because of lack of public information. Additional investment in some projects may have been omitted for the same reason.

# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

MW hydroelectric generation project; 80% of the plant generated electricity was to be sold to Vietnam. Thailand had two additional electricity generation projects representing a total investment of US\$192 million and generation capacity of 42.7 MW.



In **Europe and Central Asia (ECA)**, three countries (Georgia, the Russian Federation, and Turkey) implemented 9 new projects, representing US\$427 million in new investment for the 2011 first semester. Eight of these projects were power generation plants, with seven hydro-power projects in Turkey adding up to a total generation capacity of 81 MW and US\$271 million of investment. Of these, six were lease contracts adding up to 32 MW as part of the Turkish Privatization Administration's efforts to reform the energy sector by privatizing most of its generation and distribution network. The additional two were greenfield projects, adding 136 MW of new installed capacity. A cross-border hydropower plant project was implemented between Turkey and Georgia, designed to export power to Turkey for nine months of the year, adding up to 87 MW and costing US\$156 million. Apart from Nordstream Phase II pipeline, the Russian Federation saw the signing of a management contract for an electricity distribution project in West Siberia.

In **Latin America and the Caribbean (LAC)**, four countries (Brazil, Mexico, Panama, Peru) implemented 24 new projects – including 22 power generation projects and 2 transmission projects – representing US\$4.5 billion in new investment in 2011 first semester. Of these projects, eighteen were in Brazil including seventeen greenfield power plants with a total capacity of 1.723 GW involving US\$2.6 billion of investment, and one electricity transmission project with 987 kilometers (km) at an investment of US\$190 million. As in 2010, Mexico was the second most active country in the region in 2011 with four projects comprising one 433MW combined cycle power plant costing US\$420 million and three wind farms of 101.5MW each totaling US\$600 million in investment. In Panama, the Dos Mares Hydroelectric Complex consisting of three hydro power plants adding up to 118 MW attracted US\$450 million in investment. Peru attracted US\$230 million of investment in a greenfield 517 km energy transmission project. In addition, the government of Belize expropriated 70% of the assets (all shares owned by Fortis Inc. of Canada) of previously privatized Belize Electricity Limited.

In **South Asia (SA)**, two countries (India and Pakistan) implemented 22 new projects, representing US\$9.3 billion in new investment for the period. Most of the investment was in India with twenty new power generation projects totaling 7.534 GW of new capacity involving US\$8.6 billion of investment. Within power generation, renewable energy projects attracted significant investment including six solar projects adding 89 MW of capacity at a cost of US\$265 million and four wind projects adding 346 MW of capacity at a cost of US\$478 million. India also closed financing on a US\$222 million, 454 kilometer transmission line project. Pakistan attracted private investment of US\$500 million in a 404 MW combined cycle gas-fired power generation plant.

In **Sub-Saharan Africa (SSA)**, Zambia closed a US\$230 million financing for the Itezhi-Tezhi project during the first semester of 2011. The project added 120MW of hydropower generation capacity to Zambia's power sector.

No new project was reported in the **Middle East and North Africa (MENA)** region.



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

**Table 1. Projects with private participation in the energy sector reaching financial or contractual closing in the first semester of 2011**

East Asia and Pacific							
	Country	Project name	Type of PPI (Subtype)	Segment	Capacity	Total Investment *	Sponsor
1	China	Guangdong Dapu County LNG Project	Greenfield project (BOT)	Natural gas distribution	500 Cubic meters per day (thousands)	7.64	China Gas Holdings Limited (100% / Hong Kong, China)
2	China	Guangdong Wuhua County LNG Project	Greenfield project (BOT)	Natural gas distribution	500 Cubic meters per day (thousands)	7.64	China Gas Holdings Limited (100% / Hong Kong, China)
3	China	Huoqiu County Pipeline Gas Project	Greenfield project (BOT)	Natural gas distribution	Not Available	4.58	China Gas Holdings Limited (100% / Hong Kong, China)
4	China	Huazhou City Pipeline Gas Project	Greenfield project (BOT)	Natural gas distribution	Not Available	15.28	China Gas Holdings Limited (100% / Hong Kong, China)
5	China	Liaoyuan City Solid Waste Power Plant	Greenfield project (BOT)	Electricity generation	15 MW	48.9	TianYing ST Group ( / China)
6	China	Pipeline Gas Supply in River East Four Towns in Wangcheng County	Greenfield project (BOT)	Natural gas distribution	530 Cubic meters per day (thousands)	Not available	Xinao Gas Holdings Limited (55% / China)
7	China	Huaneng Renewables Corp., Ltd. IPO	Divestiture (Partial)	Electricity generation	3520 MW	799	Others (24% / China)
8	Lao PDR	Xekaman 1 Hydropower Project	Greenfield project (BOT)	Electricity generation	322 MW	441.6	Song Da General Construction Company (70% / Vietnam)



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

9	Thailand	Loxley Solar Farm	Greenfield project (BOO)	Electricity generation	8.7 MW	27	Loxley Plc (45%) Thailand
10	Thailand	Solarta PV Power	Greenfield project (BOO)	Electricity generation	34 MW	164.84	Ratchaburi Electricity Generating Holding Plc (49% / Thailand), Yanhee Group (51% / Thailand)

## Europe and Central Asia

	Country	Project name	Type of PPI (Subtype)	Segment	Capacity	Total Investment *	Sponsor
1	Turkey	Turuncova Finike River Hydro Plant (Group 5)	Management and lease contract	Electricity generation	0.552 MW	2.76	Fides Reklam Enerji Hizmet Lojistik Turizm San. Tic. (100% / Turkey)
2	Turkey	Camardi, Pinarbasi, Sizir River Hydro Plant (Group 10)	Management and lease contract	Electricity generation	8.308 MW	69.7	Kayseri ve Civari Elektrik (100% / Turkey)
3	Turkey	Degirmendere, Karacay, Kuzuculu River Hydro Plant (Group 11)	Management and lease contract	Electricity generation	1.172 MW	7.02	Ka-Fnih Enerji Uretim (100% / Turkey)
4	Turkey	Bayburt Cemisgezek Girlevik River Hydro Plant (Group 14)	Management and lease contract	Electricity generation	3.552 MW	29.05	Boydak Holding (100% / Turkey)
5	Turkey	Cag, Otluca, Ultudere River Hydro Plant (Group 16)	Management and lease contract	Electricity generation	16.32 MW	40.8	Nas Enerji (100% / Turkey)
6	Turkey	Adilcevaz, Ahlat, malazgirt, Varto-Sonmez River Hydro Plant (Group 17)	Management and lease contract	Electricity generation	2.103 MW	56.08	Er Bu Insaat (100% / Turkey)
7	Turkey	Garzan Dam & HEPP Project	Greenfield project (Merchant)	Electricity generation	49 MW	65.5	Fernas Energy (100% / Turkey)



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

8	Turkey and Georgia	Georgia Urban Enerji Ltd.	Greenfield project (BOT)	Electricity generation	87 MW	156.5	Anadolu Endustri Holding A.S. (AEH) ( / Turkey)
9	Russian Federation	OJSC Tomsk Distribution Company	Management and lease contract	Electricity distribution	Not available	Not available	Electricite de France (100% / France)

## Latin America and the Caribbean

	Country	Project name	Type of PPI (Subtype)	Segment	Capacity	Total Investment *	Sponsor
1	Brazil	Alhandra I Wind Park	Greenfield project (BOO)	Electricity generation	6.3 MW	13.4	Impel (100% / Spain)
2	Brazil	Linha Verde Transmissora de Energia	Greenfield project (BOT)	Electricity transmission	987 KM	190	Abengoa (51% / Spain)
3	Brazil	Renova Wind Parks	Greenfield project (BOO)	Electricity generation	294.4 MW	695.6	Renova Energia S.A. (100% / Brazil)
4	Brazil	Mangue Seco 1 Wind Park	Greenfield project (BOO)	Electricity generation	26 MW	53	Alubar Energia (49% / Brazil), Petrobras (51% / Brazil)
5	Brazil	Mangue Seco Wind Park 3 and 5	Greenfield project (BOO)	Electricity generation	52 MW	106	Enercon GmbH (49% / Germany), Petrobras (51% / Brazil)
6	Brazil	Vitor Batista Adami Small Hydro Power Plant	Greenfield project (BOT)	Electricity generation	25 MW	63	Jackson Empreendimentos Ltda (50% / Brazil), Adami S.A. (50% / Brazil)
7	Brazil	Duke Energy Small Hydro Power Plants	Greenfield project (BOT)	Electricity generation	32 MW	102.5	Duke Energy Corp. (100% / United States)



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

8	Brazil	Queiroz Galvao Mucuri Energia S.A.	Greenfield project (BOT)	Electricity generation	22.5 MW	81.8	Construtora Queiroz Galvao (100% / Brazil)
9	Brazil	Cacimbaes Thermal Power Plant	Greenfield project (BOO)	Electricity generation	127 MW	112	Thermes (100% / Brazil)
10	Brazil	Decasa Thermal Power Plant	Greenfield project (BOO)	Electricity generation	33 MW	45	Jackson Empreendimentos Ltda (100% / Brazil)
11	Brazil	Jose de Alencar Thermal Power Plant	Greenfield project (BOO)	Electricity generation	300 MW	288.3	Grupo Bertin (100% / Brazil)
12	Brazil	Parapanema Thermal Power Plant	Greenfield project (BOO)	Electricity generation	60 MW	62.8	Umoe AS (100% / Norway)
13	Brazil	Maracanau II Thermal Power Plant	Greenfield project (BOT)	Electricity generation	70 MW	93.8	Thermes (50% / Brazil), Grupo Equipav (25% / Brazil), Grupo Bertin (25% / Brazil)
14	Brazil	Escolha Thermal Power Plant	Greenfield project (BOT)	Electricity generation	337.6 MW	528.4	Trana Construcoes Ltda (67% / Brazil), Thermes (34% / Brazil)
15	Brazil	Companhia Energetica Rio das Flores Small Hydro Power Plants	Greenfield project (BOT)	Electricity generation	3 MW	11.9	Small local investors (75% / Brazil)
16	Brazil	Palmeiras de Goias Thermal Power Plant	Greenfield project (BOO)	Electricity generation	174.3 MW	162.3	Bolognesi Group (100% / Brazil)
17	Brazil	Sao Jose Colina Thermal Power Plant	Greenfield project (BOO)	Electricity generation	83 MW	Not Available	Tereos (69% / France), Petrobras (31% / Brazil)
18	Brazil	Gestamp's Serra de Santana Wind Park	Greenfield project (BOT)	Electricity generation	77.4 MW	225.6	Gestamp Renewables (100% / Spain)



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

19	Mexico	Norte II Combined Cycle Power Plant	Greenfield project (BOT)	Electricity generation	433 MW	420	Korea Electric Power Company (KEPCO) (56% / Korea, Rep.), Samsung Corporation (34% / Korea, Rep.)
20	Mexico	Oaxaca II Wind Farm	Greenfield project (BOO)	Electricity generation	101.5 MW	200	Acciona (100% / Spain)
21	Mexico	Oaxaca III Wind Farm	Greenfield project (BOO)	Electricity generation	101.5 MW	200	Acciona (100% / Spain)
22	Mexico	Oaxaca IV Wind Farm	Greenfield project (BOO)	Electricity generation	101.5 MW	200	Acciona (100% / Spain)
23	Panama	Dos Mares Hydro Complex	Greenfield project (BOO)	Electricity generation	118 MW	450	SUEZ (100% / France)
24	Peru	Zapallal-Trujillo Transmission Line	Greenfield project (BOT)	Electricity transmission	517 KM	230	Interconexion Electrica SA (ISA) (60% / Colombia), Empresa de Energia de Bogota S.A. ESP (40% / Colombia)

## South Asia

	Country	Project name	Type of PPI (Subtype)	Segment	Capacity	Total Investment *	Sponsor
1	India	AES Saurashtra Windfarms Private Limited	Greenfield project (BOO)	Electricity generation	39.2 MW	54.8	AES Corporation (100% / United States)
2	India	Athena Chattisgarh Power Limited	Greenfield project (BOO)	Electricity generation	1200 MW	1377.8	Athena Projects Pvt Ltd (52% / India), SEW Infrastructure (/ India), Abir Infrastructure Pvt Ltd (AIPL) (./ India)



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

3	India	CLP Andhra Lake Wind Farm	Greenfield project (BOO)	Electricity generation	113.6 MW	138.2	China Light and Power Ltd. (100% / Hong Kong, China)
4	India	DB Power Limited (Chattisgarh)	Greenfield project (BOO)	Electricity generation	600 MW	737.8	Dainik Bhaskar Group (100% / India)
5	India	Dheeru Powergen Limited (Chattisgarh)	Greenfield project (BOO)	Electricity generation	1050 MW	1283.5	Infrastructure Development Finance Company Ltd (IDFC) (74% / India), Ranhill Bhd (26% / Malaysia)
6	India	GP Wind (Jangi) Private Limited	Greenfield project (BOO)	Electricity generation	91.8 MW	152	Genting Group (100% / Malaysia)
7	India	Ind Barath Power (Madras) Limited	Greenfield project (BOO)	Electricity generation	660 MW	798.9	Ind-Barath Power Infra Private Ltd (100% / India)
8	India	LANCO Kondapalli Power Private Limited (Phase-III)	Greenfield project (BOO)	Electricity generation	742 MW	580	Lanco Group (100% / India)
9	India	Moser Baer Projects Private Limited (Madhya Pradesh)	Greenfield project (BOO)	Electricity generation	1200 MW	1386.7	Moser Baer India Limited (100% / India)
10	India	Om Power Corporation Limited	Greenfield project (BOT)	Electricity generation	15 MW	9.2	Om Power Corporation Limited
11	India	Simran Wind Project Private Limited	Greenfield project (BOO)	Electricity generation	101.4 MW	133.3	Techno Electric And Engineering Company Ltd (100% / India)
12	India	Tangnu Romai Power Generation Private Limited	Greenfield project (BOT)	Electricity generation	50 MW	71.1	NSL Renewable Power Private Limited (100% / India)
13	India	Torrent Energy Limited (Dahej)	Greenfield project (BOO)	Electricity generation	1200 MW	1251.7	Torrent Group (100% / India)





# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

14	India	UNOSUGEN Gas Power Plant	Greenfield project (BOO)	Electricity generation	382.5 MW	407.3	Torrent Group (100% / India)
15	India	Adani Power Limited - Kutch Solar Project	Greenfield project (BOO)	Electricity generation	40 MW	150.2	Adani Group (100% / India)
16	India	Comet Power Private Limited - Jodhpur Solar Project	Greenfield project (BOO)	Electricity generation	5 MW	19.1	Videcon Group (100% / India)
17	India	Integrated Coal Mining Limited- Kutch Solar Project	Greenfield project (BOO)	Electricity generation	9 MW	26.7	RPG Enterprises (100% / India)
18	India	Louroux Bio Energies Limited - Rajkot Solar Project	Greenfield project (BOO)	Electricity generation	25 MW	31.3	Ajanta Pharama Company Limited (100% / India)
19	India	AES Solar Private Limited - Jodhpur Solar Project	Greenfield project (BOO)	Electricity generation	5 MW	19.4	AES Corporation (100% / United States)
20	India	Videcon Industries Limited - Warora Solar Project	Greenfield project (BOO)	Electricity generation	5 MW	18.9	Videcon Group (100% / India)
21	India	East North Interconnection Company Limited	Greenfield project (BOT)	Electricity transmission	454 KM	222.1	Vedanta Resources Plc (100% / United Kingdom)
22	Pakistan	UCH-II Power (Private) Limited	Greenfield project (BOO)	Electricity generation	404 MW	500	International Power (75% / United Kingdom)



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

Sub-Saharan Africa							
	Country	Project name	Type of PPI (Subtype)	Segment	Capacity	Total Investment *	Sponsor
1	Zambia	Itezhi-Tezhi hydroelectric power plant	Greenfield Project (Merchant)	Electricity generation	120 MW	230	Tata Enterprises (50% / India)

Note: Greenfield BOT= Build, Operate, and Transfer; Greenfield BOO = Build, Own, and Operate; Concession (ROT) = Rehabilitate, Operate, and Transfer; Concession (BROT) = Build, Rehabilitate, Operate, and Transfer.

\*in current US\$ millions

Source: World Bank and PPIAF, PPI Database.