

# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

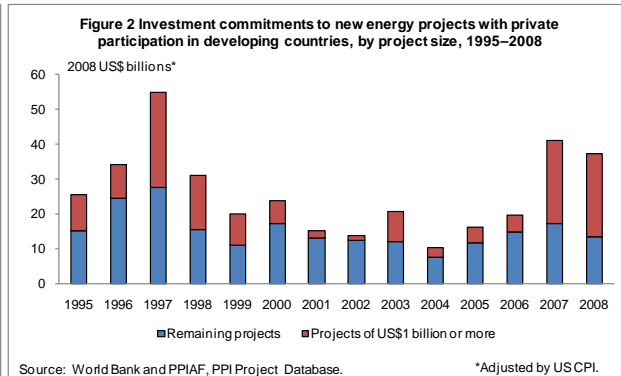
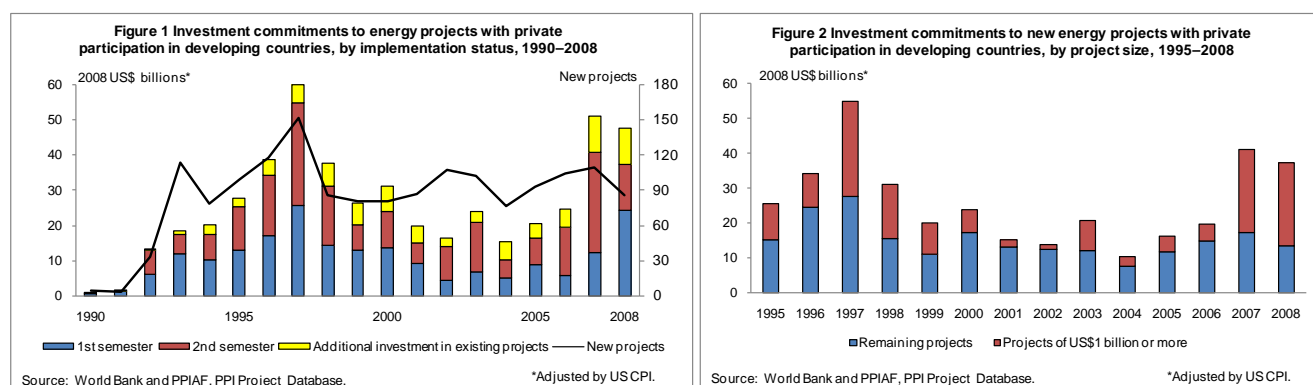
PPI data update note 26

November 2009

## Private activity in energy down, but still around peak levels

Private activity in energy showed mixed results in 2008, according to just-released data from the Private Participation in Infrastructure Project Database. Although investment commitments to energy projects with private participation were down, they remained strong—at the third highest level in 1990–2008. Activity in the first half of 2008 kept investment at a high level for the year. Investment slowed in the second half with the full onset of the financial crisis. The slowdown in the second half also led to a decline in the number of projects for the year.

In 2008, 86 energy projects with private participation reached financial or contractual closure in 23 low- and middle-income countries.<sup>1</sup> These involve investment commitments (hereafter, *investment*) of US\$37.2 billion. Energy projects implemented in previous years had additional commitments of US\$10.39 billion, bringing total investment in 2008 to US\$47.5 billion. That represents a drop of 7% from the level reported in 2007 (figure 1).<sup>2</sup> Lower payments to governments (such as concession or lease fees and divestiture revenues) account for the decline. By contrast, investment in physical assets, which amounted to US\$38.7 billion in 2008, was up 6% from that reported in 2007.



After growing for three consecutive years, the number of projects reaching financial or contractual closure declined by 22% in 2008 compared with 2007. The closure of larger projects explains the divergence in trends between investment and number of projects. Large projects (US\$1 billion or more) account for most of the investment growth in 2007 and 2008 (figure 2). With these projects excluded, investment grew from US\$14.7 billion in 2006 to US\$17.4 billion in 2007, then fell to US\$13.4 billion in 2008. The average project size grew from US\$120 million in 2004 to US\$435 million in 2008, while the median rose from US\$34 million to US\$152 million.

New projects and associated investment in 2008 were concentrated in the first half of the year, when 47 of the 86 projects reached closure. These involve investment of US\$24.3 billion, 65% of the total for new projects. Investment in the first semester of 2008 was up 95% from the same period of 2007—and

This note was written by Ada Karina Izaguirre, infrastructure specialist, and Edouard Perard, consultant, Finance, Economics, and Urban Development Department, Sustainable Development Network, World Bank.

<sup>1</sup> The data on energy 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. Equatorial Guinea, Hungary, the Northern Mariana Islands, Oman, and the Slovak Republic became high-income economies according to the 2008 World Bank country classification (released in July 2008) and are therefore excluded from the 2008 update of the PPI Project Database.

<sup>2</sup> Investment data are reported in 2008 U.S. dollars, using the U.S. consumer price index and 2008 as the base year. Data at <http://ppi.worldbank.org/> are reported in millions of current U.S. dollars unless otherwise indicated.

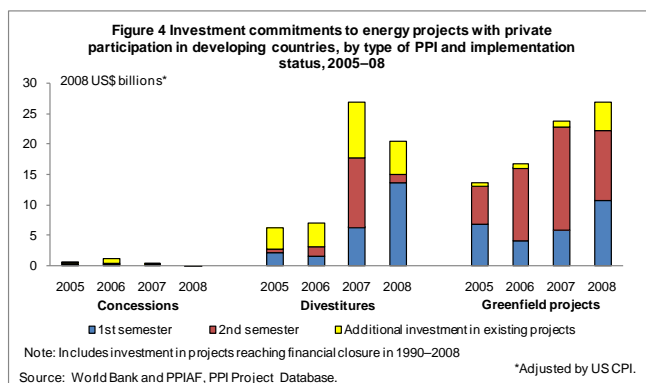
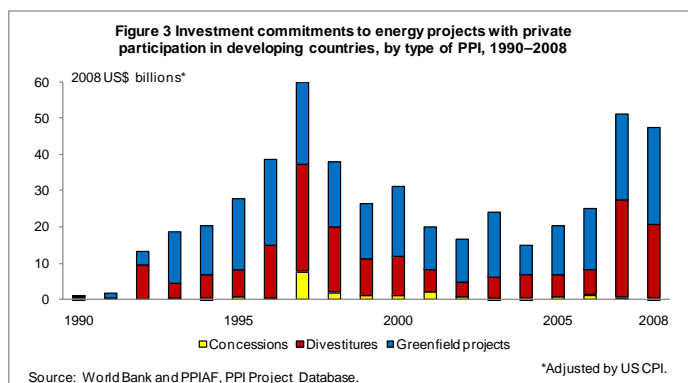
## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

the second highest of any first semester in 1990–2008. That suggested a continuation of the investment growth seen since the second semester of 2006 (see figure 1). But activity dropped off sharply in the second semester of 2008, with investment amounting to just US\$13 billion. Preliminary data for the first semester of 2009, however, suggest a strong recovery in activity. Investment reached a new peak of US\$35.6 billion, driven by the implementation of unusually large generation projects.<sup>3</sup>

New energy contracts were granted using different award methods and bidding criteria. Of the 86 projects in 2008, 32 were granted through direct negotiations while 27 were awarded through competitive tenders, 10 as a result of unsolicited proposals, and 6 through competitive negotiations. There was no public information on the award method for the other 11 contracts. For the projects awarded through competitive tenders or competitive negotiations, the main criteria were the highest price paid to government (used for 60% of these projects) and the lowest tariff (9%).

As in previous years, greenfield projects and divestitures were the most common types of private participation in 2008 (figure 3).<sup>4</sup> Sixty-five greenfield projects were implemented, representing 59% of the investment in new energy projects in 2008, while 19 divestitures reached closure, accounting for 40% of the investment. Investment in greenfield projects reached a new peak in 2008, thanks to the activity in both semesters: 33 greenfield projects involving US\$10.4 billion reached financial closure in the first semester, while 32 projects representing US\$11.5 billion reached closure in the second semester (figure 4). In addition, US\$4.7 billion was invested in previously implemented greenfield projects.

By contrast, investment in divestitures dropped by 23% in 2008 compared with 2007, as a result of the sharp decline in the second semester. The first semester saw 14 divestitures involving US\$13.6 billion in investment, the highest investment level for a first semester in 1990–2008. But divestiture activity slowed sharply in the second semester, with just 5 transactions representing investment of US\$1.4 billion, the lowest investment level since the second semester in 2005. The drop in divestitures in the second half of 2008 can be explained at least in part by the end of the privatization of Russian RAO UES's generating companies (see section on activity by region) and the more difficult investment environment that came with the full onset of the global financial crisis.



**Activity by subsector.** With 79 new projects involving US\$37 billion in investment in 21 countries, *electricity* accounted for most of the energy activity in 2008. In addition, investment in existing projects amounted to US\$9.3 billion, bringing total investment in 2008 to US\$46.3 billion, around the same level as in 2007 and the second highest level in 1990–2008 (figure 5). The number of projects, by contrast, declined by 14% in 2008 compared with 2007.

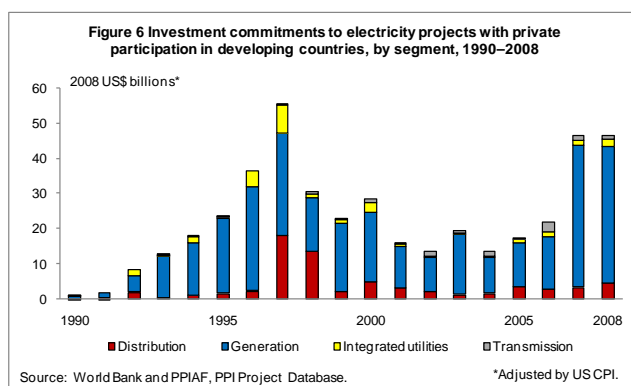
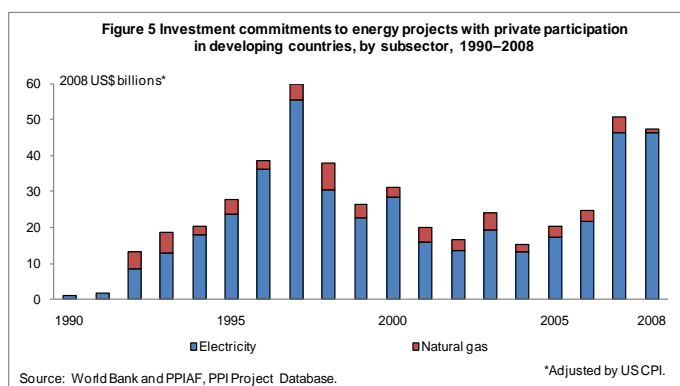
<sup>3</sup> "Assessment of the Impact of the Crisis on New PPI Projects: Update 4," PPI data update note 24 (October 2009).

<sup>4</sup> This note uses the term *greenfield project* as defined in the PPI Project Database methodology. The definition includes the following schemes: build, lease, and transfer (BLT); build, operate, and transfer (BOT); build, own, and operate (BOO); merchant; and rental.

## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

Within electricity, *generation* accounted for most of the activity, with 73 projects representing total capacity of 62,200 megawatts (MW). These projects involve US\$34.3 billion in investment. In addition, investment in previously implemented generation projects amounted to US\$5.3 billion, bringing the total to US\$39.5 billion, a level similar to the peak reached in 2007 (figure 6). Activity in electricity generation was concentrated in the first semester, when 41 projects involving investment of US\$22.1 million reached closure—the highest investment level for a first semester in 1990–2008.

Among the six other electricity projects, two were *electricity distribution* projects involving the divestiture of companies in Jordan and Romania and investment of US\$1.3 billion. Previously implemented electricity distribution projects had additional investment of US\$3.1 billion, bringing the total to US\$4.4 billion. In addition, there was a partial divestiture of an *integrated electricity utility* in Poland—ENEA, which operates 2,880 MW in power generation and distributes electricity in the northwestern part of the country. Finally, three *electricity transmission* projects were implemented in Brazil and India. These involve US\$700 million in investment and 864 kilometers of transmission lines.



New private activity in *natural gas* was limited to seven projects: six distribution projects and one integrated (transmission and distribution) project. These projects are located in Bangladesh, China, Georgia, and India and involve investment of US\$240 million. In addition, investment in existing natural gas projects amounted to US\$970 million, bringing the total in 2008 to US\$1.2 billion, the lowest in 1990–2008.

Most of the energy projects reaching closure in 2008 depend for their main source of revenue on contracts with public sector entities. Fifty-three generation projects have purchase agreements with public sector entities as their main revenue source, while 11 rely on purchase agreements with private sector entities. The remaining generation projects have a mix of revenue sources (purchase or transmission fee agreement with public or private entities and sales to wholesale markets). The 10 projects involving distribution services have user fees as their main source of revenue, while the 3 transmission projects have transmission fee agreements with private entities.

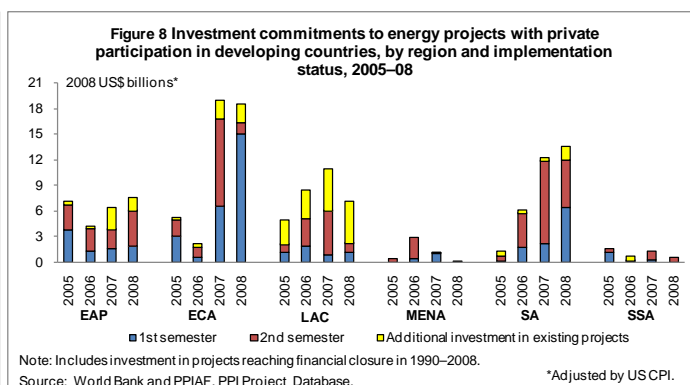
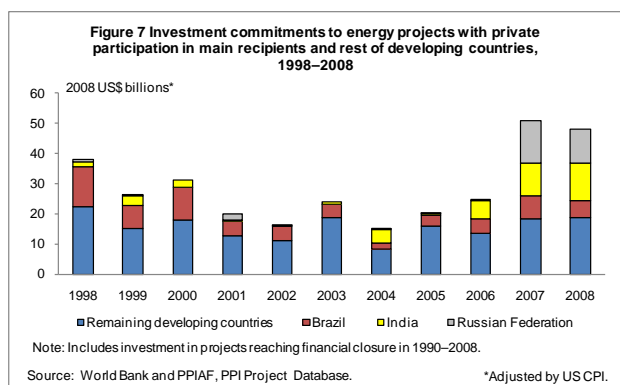
**Activity by region.** Private activity in energy was concentrated in a few countries in 2008. The top two countries, India and the Russian Federation, accounted for almost 50% of investment and 28% of new projects (figure 7). With Brazil and Turkey added, the top four countries represented 68% of investment and 43% of new projects.

The distribution of private activity between the first and second half of the year varied among regions. In Europe and Central Asia private activity was concentrated in the first semester, with little activity in the second (figure 8). In Latin America and the Caribbean and South Asia new activity was equally divided between the two semesters. In East Asia and Pacific, the Middle East and North Africa, and Sub-Saharan Africa the limited activity in 2008 took place mostly or entirely in the second semester.

## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

In *East Asia and Pacific* five countries implemented 20 projects (16 for electricity generation and 4 for natural gas distribution services; table 1). China implemented 10 projects, involving investment of US\$678 million. Six of these projects (five build-operate-transfer [BOT] contracts and one concession) are for electricity generation, for a total of 577 MW. The other four (three BOT contracts and one concession) are for natural gas distribution. Cambodia secured financing for an 18-MW hydropower plant to be developed on a BOT basis. Indonesia raised financing for four new power plants with total installed capacity amounting to 1,600 MW and investment of US\$2.4 billion. Of these projects, the largest by far is the US\$2.2 billion, 1,320-MW expansion of the Tanjung Jati B coal-fired power plant, which was developed under a 20-year build-lease-transfer (BLT) contract.

The Philippines finalized the divestitures of two power generation projects (the 1,200-MW Masinloc coal-fired power plant and the 225-MW Ambuklao-Binga hydroelectric power complex), with investment amounting to US\$1.4 billion. The Philippines also implemented a 42-MW hydropower plant on a build-own-operate (BOO) basis. Thailand secured financing for two power plants to be developed on a BOO basis: the US\$1.15 billion, 660-MW GHECO-One coal-fired power plant and the US\$224 million, 185-MW gas-fired SIPCO power plant.



*Europe and Central Asia* was the most active region, with seven countries implementing 26 projects. Russia led regional activity by divesting nine electricity generation companies with total installed capacity of 41,734 MW, through transactions involving investment of US\$11.4 billion. These divestitures were part of the restructuring of the Russian electricity sector, which included the spinoff of RAO UES, an electricity holding company, into several vertically disintegrated companies and the divestiture of six wholesale generation companies (OGKs) and 14 territorial generation companies (TGKs).

In Bulgaria, American AES Corporation secured financing for the US\$370 million, 156-MW St. Nikolas wind farm. In Croatia, German Wallenborn Projektentwicklung implemented the US\$85 million, 42-MW Senj wind farm project. Georgia fully divested its regional gas distribution network, with 30,000 connections, to State Oil Company of Azerbaijan Republic. Through an initial public offering, Poland sold a 23% stake of ENEA, the fourth largest integrated electricity utility in the country, for US\$738 million. In addition, Poland implemented five wind generation projects on a BOO basis, involving total capacity of 152 MW and investment of US\$500 million.

Romania finalized the sale of Electrica Muntenia Sud, which serves 1.1 million customers in the Bucharest area, to Italian Enel. The US\$1.2 billion transaction, for which the process started in 2005, consisted of selling the equivalent of a 50% stake in the company for US\$581 million and the subscription of a capital increase for US\$625 million, after which Enel owned a 64% stake. Romania also divested three micro-hydropower plants for US\$54 million. In Turkey four greenfield projects for electricity generation reached financial closure, representing investment of US\$1.9 billion and total installed capacity of 2,140 MW. The largest project consists of 10 hydropower plants with total capacity of 980 MW and a 920-MW natural-gas-fired thermal plant. The project was developed by a joint venture between Austrian Verbund and Turkish Sabanci Holding.



## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

In *Latin America and the Caribbean* three countries implemented 11 projects: 9 power plants with total capacity of 1,604 MW and 2 electricity transmission lines. Brazil was the most active, with nine greenfield projects: seven electricity generation projects, involving US\$1.1 billion in investment and 607 MW, and two electricity transmission lines, representing US\$467 million in investment and 616 kilometers. Argentina implemented one greenfield project: a US\$205 million, 178-MW expansion of Central Termica Loma de La Lata, to bring total installed capacity to 547 MW. Mexico secured financing for the US\$400 million, 450-MW natural-gas-fired power plant being developed by Spanish Union Fenosa under a 25-year BOT contract.

In the *Middle East and North Africa* only Jordan had new private activity. Jordan divested two regional electricity distribution companies, 100% of Electricity Distribution Company (EDCO) and its remaining share (55.4%) of Irbid District Electricity Company (IDECO), for US\$104 million. The two companies have a total of 438,000 connections.

*South Asia* was the second most active region, with 21 projects involving US\$12 billion in investment in three countries. India was by far the most active, with 15 projects. Of these projects, 13 are for electricity generation plants, involving almost 10,600 MW and US\$10.8 billion in investment. Four involve investment of more than US\$1 billion: the US\$4.2 billion, 4,000-MW Mundra Ultra Mega power project sponsored by Tata Enterprises; the US\$1.4 billion, 1,005-MW Monnet Ispat power project sponsored by the Monnet Group; the US\$1.1 billion, 1,200-MW Jamnagar power plant sponsored by the Essar Group; and the US\$1 billion, 1,050-MW Maithon Right Bank power project sponsored by Tata Enterprises. India also implemented a \$234 million electricity transmission line as well as a US\$55 million natural gas distribution project in Faridabad, in the state of Haryana. Through an initial public offering, Bangladesh divested 25% of Titas Gas Transmission and Distribution Company for US\$31 million. Finally, Pakistan implemented five greenfield electricity generation projects with total investment of US\$882 million and total installed capacity of 879 MW.

In *Sub-Saharan Africa* four countries implemented seven greenfield projects for power generation, involving investment of US\$522 million and total capacity of 366 MW. Angola signed a 60-MW rental contract. Information on the contract duration was not publicly available. Kenya secured financing for two power plants: the US\$155 million, 90-MW Rabai power plant and the US\$35 million, 35-MW Mumias power plant. Togo implemented the 100-MW Centrale thermique de Lome power project under a 25-year BOT contract. Uganda signed three BOT contracts representing 81 MW in total capacity and US\$142 million in investment.

**Potential new projects.** In addition to the 86 new projects reaching financial or contractual closure in 2008, at least 66 other projects were awarded but had not reached closure by the end of the year. In East Asia and Pacific there were seven potential electricity generation projects. In Europe and Central Asia there were 27 potential projects (21 for electricity generation, 5 for electricity distribution, and 1 for natural gas distribution). In Latin America and the Caribbean there were 16 potential projects (9 for electricity generation and 7 for electricity transmission). In the Middle East and North Africa there were 2 potential electricity generation projects, and in South Asia there were 10. In Sub-Saharan Africa there were four potential projects (three for electricity generation and one for electricity distribution).

**Canceled and distressed projects.** Three projects were canceled in 2008. In Argentina the Province of Catamarca nationalized Empresa Distribuidora de Energia Catamarca (Edecat) in October 2008. Edecat, the provincial electricity distribution company, had been partially divested in 1996. In Bolivia the national government completed the nationalization of Transredes in October 2008. Transredes, the country's natural gas transmission company, had been partially divested in 1997. In Cape Verde the national electricity and water utility, Electra, became a fully state-owned enterprise in May 2008 when Electricidade de Portugal signed an agreement with the government returning the stake it had acquired in the company. Electra had been partially divested to a consortium led by Electricidade de Portugal in 1999.



## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

Two projects that had been in international arbitration at the end of 2007 reached settlements and became operational during 2008. One of them, the Electroquil power plant in Ecuador, spent four years in international arbitration for nonpayment of generation fees by the government. The International Centre for Settlement of Investment Disputes ruled on the case in August 2008, requesting the government to pay US\$5.5 million plus interest to Duke Energy Corporation, the project sponsor. The other project was Energia del Sur in Argentina. BP America, the project sponsor, and the government of Argentina discontinued the international arbitration process that had started in 2004 because of disputes over compensation for losses caused by the devaluation of the Argentine peso in 2001.

As a result of these changes, the number of canceled or distressed energy projects grew by one in 2008, bringing the total number to 95. These projects represent 8% of the total investment in energy in 1990–2008.

**Concluded projects.** Two projects concluded in 2008. In Kenya the two-year management contract for the public utility Kenya Power and Lighting Company (KPLC), awarded in 2006 to Canadian Manitoba Hydro International, concluded in July 2008. KPLC, which manages about 800,000 connections, returned to public sector management, and the government has not announced any plan to reengage the private sector in the company. In Russia, RAO EES Rossii, the holding company for national and regional electricity utilities, was dissolved on July 1, 2008, as part of the power sector restructuring. The shares of RAO EES Rossii, which was partially divested in the early 1990s through the voucher privatization program and initial public offerings, were distributed among the spinoff companies.


**PRIVATE PARTICIPATION  
IN INFRASTRUCTURE DATABASE**
**Table 1 Energy projects with private participation reaching financial or contractual closure in 2008**

Note: .. = not available.

East Asia and Pacific										
	Country	Project name	Project status	Sub-sector	Type of PPI	Private equity (%)	Investment commitment (US\$ millions)	Capacity size and type	Contract period (years)	Main sponsors
1	Cambodia	Kirirom No.3 Hydropower Station	Construction	Electricity	Greenfield project (BOT)	100	47.1	18 MW	33	State Grid Xin Yuan Company Limited (100%, China)
2	China	Ganzi Jiulong River Hydropower Plant	Construction	Electricity	Greenfield project (BOT)	100	276	330 MW	44	China Light and Power Ltd. (65%, Hong Kong, China)
3	China	Gongzhulin Towngas Co., Ltd.	Operational	Natural gas	Concession	100	7.58	24,000 connections	30	Hong Kong and China Gas Company (100%, Hong Kong, China)
4	China	Guohua Hulunbeier Wind Farm Project Phase I	Operational	Electricity	Concession	49	12.27	49.5 MW	40	AES Corporation (49%, United States)
5	China	Houxingju Mazong Mount Wind Farm Project	Construction	Electricity	Greenfield project (BOT)	49	76.08	49.5 MW	30	China Windpower Group Limited (49%, China)
6	China	Huanghua Wind Farm Project Phase II	Construction	Electricity	Greenfield project (BOT)	49	74.22	49.5 MW	25	AES Corporation (49%, United States)
7	China	Huangshan City Pipeline Gas Project	Operational	Natural gas	Greenfield project (BOT)	100	10.01	..	30	Hong Kong and China Gas Company (100%, Hong Kong, China)
8	China	Quijiagou Wind Farm Phase I	Construction	Electricity	Greenfield project (BOT)	49	68.1	49.5 MW	30	China Windpower Group Limited (49%, China)
9	China	Siziwang Qi Wind Farm Project	Construction	Electricity	Greenfield project (BOT)	100	68.67	49.5 MW	20	Hong Kong Construction (Holdings) Ltd. (100%, Hong Kong, China)
10	China	Yunfu City LPG Project	Construction	Natural gas	Greenfield project (BOT)	100	21.46	..	30	China Gas Holdings Limited (100%, Hong Kong, China)
11	China	Zhaoqing City LPG and LNG Project	Construction	Natural gas	Greenfield project (BOT)	100	64.38	650,000 population	30	Xinao Gas Holdings Limited (100%, China)
12	Indonesia	Bangka Power Plant	Construction	Electricity	Greenfield project (BOO)	100	23	24 MW	25	PT Truba Alam Manunggal Engineering Tbk (100%, Indonesia)



## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

13	Indonesia	PLTA Poso	Construction	Electricity	Greenfield project (BOO)	100	134	195 MW	30	Bukaka Group (..%, Indonesia), Hadji Kalla Group (..%, Indonesia)
14	Indonesia	Pontianak Power Plant	Construction	Electricity	Greenfield project (BOO)	100	56.2	60 MW	25	PT Truba Alam Manunggal Engineering Tbk (100%, Indonesia)
15	Indonesia	Tanjung Jati B Units 3 & 4 Coal-Fired Power Plant	Construction	Electricity	Greenfield (BLT)	100	2,200	1,320 MW	20	Sumitomo Corporation (100%, Japan)
16	Philippines	Ambuklao-Binga Hydroelectric Power Complex	Construction	Electricity	Divestiture	100	495	225 MW	..	SN Power (50%, Norway), Aboitiz Equity Ventures (50%, Philippines)
17	Philippines	Hedcor Sibulan Hydro Plants	Construction	Electricity	Greenfield project (BOO)	100	105	42.5 MW	..	Aboitiz Equity Ventures (100%, Philippines)
18	Philippines	Masinloc Coal-Fired Thermal Power Plant	Operational	Electricity	Divestiture	100	930	1,200 MW	..	AES Corporation (92%, United States)
19	Thailand	GHECO-One Coal-Fired Power Plant	Construction	Electricity	Greenfield project (BOO)	100	1,150	660 MW	25	SUEZ (45%, France), Hemaraj Land and Development Plc (35%, Thailand)
20	Thailand	SIPCO Power Plant	Construction	Electricity	Greenfield project (BOO)	100	224	185 MW	..	Melewar Group (95%, Malaysia)

### Europe and Central Asia

	Country	Project name	Project status	Sub-sector	Type of PPI	Private equity (%)	Investment commitment (US\$ millions)	Capacity size and type	Contract period (years)	Main sponsors
1	Bulgaria	AES St. Nikolas Wind Farm near Kavarna	Construction	Electricity	Greenfield project (BOO)	100	370	156 MW	12	AES Corporation (89%, United States)
2	Croatia	Senj Wind Farm Project	Construction	Electricity	Greenfield project (BOO)	100	85	42 MW	..	Wallenborn Projektentwicklung GmbH & Co. KG (.., Germany)
3	Georgia	Regional Gas Distribution Companies Privatization	Operational	Natural gas	Divestiture (full)	100	50	30,000 connections	..	State Oil Company of Azerbaijan Republic (SOCAR) (100%, Azerbaijan)
4	Poland	Dobrzyn Wind Farm	Construction	Electricity	Greenfield project (BOO)	100	151.8	34 MW	12	Scan Energy A/S (100%, Denmark)
5	Poland	ENEA SA	Operational	Electricity	Divestiture (partial)	23	738	2,880 MW	..	Vattenfall (19%, Sweden)





# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

6	Poland	Goldap Wind Farm	Construction	Electricity	Greenfield project (BOO)	100	119	48 MW	..	Scan Energy A/S (100%, Denmark)
7	Poland	Inowroclaw Wind Farm	Construction	Electricity	Greenfield project (BOO)	100	141	32 MW	12	Scan Energy A/S (100%, Denmark)
8	Poland	Mogilno Wind Farm	Construction	Electricity	Greenfield project (BOO)	100	74	34 MW	..	Scan Energy A/S (100%, Denmark)
9	Poland	Walcz City Wind Farm	Construction	Electricity	Greenfield project (BOO)	100	13.6	4.5 MW	..	RP Global Holdings (100%, Spain)
10	Romania	Electrica Muntenia Sud	Operational	Electricity	Divestiture	64	1,201	1,100,000 connections	..	Enel SpA (65%, Italy)
11	Romania	Micro Hydropower (17-plant package)	Operational	Electricity	Divestiture	100	44.1	10.58 MW	..	Wienstrom GmbH (100%, Austria)
12	Romania	Micro Hydropower (7-plant package)	Operational	Electricity	Divestiture	100	7.5	2.4 MW	..	Romenergo (100%, Romania)
13	Romania	Micro Hydropower (9-plant package)	Operational	Electricity	Divestiture	100	2.9	3.4 MW	..	Wienstrom GmbH (100%, Austria)
14	Russian Federation	Territorial Generating Company TGK-10	Operational	Electricity	Divestiture	93	2,900	15,800 MW	..	Fortum Corporation (93%, Finland)
15	Russian Federation	Territorial Generating Company 14 (TGK-14)	Operational	Electricity	Divestiture	24	257	663 MW	..	ESN Group (24%, Russian Federation)
16	Russian Federation	Territorial Generating Company 4 (TGK-4)	Operational	Electricity	Divestiture	89	1,880	3,300 MW	..	ONEXIM Group (50%, Russian Federation)
17	Russian Federation	Territorial Generating Company TGK-6	Operational	Electricity	Divestiture	84	1,060	3,140 MW	..	Integrated Energy Systems Holding (IES) (60%, Russian Federation), Prosperity Capital Management (24%, Russian Federation)
18	Russian Federation	Territorial Generating Company TGK-13 (Yeniseiskaya)	Operational	Electricity	Divestiture	65	469	2,518 MW	..	Siberian Coal Energy Company (SUEK) (65%, Russian Federation)
19	Russian Federation	Territorial Generating Company TGK-2	Operational	Electricity	Divestiture	99	672	2,583 MW	..	SynteZ Group (51%, Russian Federation)
20	Russian Federation	Territorial Generating Company TGK-7 (Vologda TGK)	Operational	Electricity	Divestiture	55	1,150	6,880 MW	..	Integrated Energy Systems Holding (IES) (55%, Russian Federation)
21	Russian Federation	Territorial Generating Company TGK-8	Operational	Electricity	Divestiture	76	1,650	3,600 MW	..	EnergoStrategy (16%, Russian Federation), PromRegionHolding (17%, Russian Federation)

# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

22	Russian Federation	Territorial Generating Company TGK-9	Operational	Electricity	Divestiture	100	1,327	3,280 MW	..	Integrated Energy Systems Holding (IES) (75%, Russian Federation), others (25%, ..)
23	Turkey	Catalca Wind Farm	Operational	Electricity	Greenfield project (BOT)	100	100	60 MW	10	Sanko Holding (100%, Turkey)
24	Turkey	Dares Datça Wind Farm	Operational	Electricity	Greenfield project (BOT)	100	65	30 MW	..	Demirer Holding (100%, Turkey)
25	Turkey	Enerjisa 10 Hydro Plants and 920-MW Bandirma Gas-Fired Facility	Construction	Electricity	Greenfield project (merchant)	100	1,539	1,900 MW	..	Verbund (50%, Austria), Sabanci Holding (50%, Turkey)
26	Turkey	Erzurum and Nevsehir Hydroelectric Plants Project	Construction	Electricity	Greenfield project (merchant)	100	230	150 MW	35	Soyak Holding (100%, Turkey)

Latin America and the Caribbean										
	Country	Project name	Project status	Sub-sector	Type of PPI	Private equity (%)	Investment commitment (US\$ millions)	Capacity size and type	Contract period (years)	Main sponsors
1	Argentina	Central Termica Loma de La Lata (expansion)	Operational	Electricity	Greenfield project (merchant)	100	205	178 MW	..	Pampa Energia SA (100%, Argentina)
2	Brazil	Areia Branca Hydroelectric Project	Construction	Electricity	Greenfield project (BOT)	100	48	19.8 MW	..	SUEZ (100%, France)
3	Brazil	ATE III Transmissora de Energia	Operational	Electricity	Greenfield project (BOT)	100	401	441 km	30	Abengoa (100%, Spain)
4	Brazil	Beberibe Wind Park	Operational	Electricity	Greenfield project (BOT)	100	77	25.5 MW	30	SUEZ (100%, France)
5	Brazil	Corumba III Hydroelectric Power Plant	Construction	Electricity	Greenfield project (merchant)	63	121.7	93.6 MW	..	Previ (30%, Brazil), Iberdrola SA (24%, Spain)
6	Brazil	Cosan Bioenergia	Construction	Electricity	Greenfield project (BOO)	100	234.2	200 MW	..	Cosan SA (100%, Brazil)
7	Brazil	ERSA Small Hydroelectric Power Project	Construction	Electricity	Greenfield project (BOO)	100	423.1	137 MW	..	Empresa de Investimento em Energias Renovaveis SA (ERSA) (100%, Brazil)

# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

8	Brazil	IEMG Neves 1, Mesquita Transmission Line	Operational	Electricity	Greenfield project (BOO)	100	66.1	172 MW	30	ACS Group (Actividades de Construccion y Servicios) (40%, Spain), Interconexion Electrica SA (ISA) (60%, Colombia)
9	Brazil	Rio PCH 1 Small Hydro Plants	Construction	Electricity	Greenfield project (BOT)	100	90.3	39 MW	..	Performance Centrais Hidreletricas Ltda (PCH) (25%, Brazil), Previ (37%, Brazil), Iberdrola SA (30%, Spain)
10	Brazil	Salto do Rio Verdinho HPP	Construction	Electricity	Greenfield project (BOO)	100	189.3	93 MW	30	Votorantim (100%, Brazil)
11	Mexico	Norte-I Durango Combined Cycle Plant	Construction	Electricity	Greenfield project (BOT)	100	400	450 MW	25	Union Fenosa (100%, Spain)

Middle East and North Africa										
	Country	Project name	Project status	Sub-sector	Type of PPI	Private equity (%)	Investment commitment (US\$ millions)	Capacity size and type	Contract period (years)	Main sponsors
1	Jordan	Electricity Distribution Company (EDCO) and Irbid District Electricity Company (IDECO)	Operational	Electricity	Divestiture	100	104	438,000 connections	..	National Industries Group Holding (30%, Kuwait), Dubai Holding (40%, United Arab Emirates), United Arab Investors Company (UAIC) (30%, Jordan)

South Asia										
	Country	Project name	Project status	Sub-sector	Type of PPI	Private equity (%)	Investment commitment (US\$ millions)	Capacity size and type	Contract period (years)	Main sponsors
1	Bangladesh	Titas Gas Transmission and Distribution Co. Ltd.	Operational	Natural gas	Divestiture	25	31	10,890 km	..	Others (..%, ..)
2	India	Belgaum Wind Farm	Construction	Electricity	Greenfield project (BOO)	100	33.5	24.8 MW	..	Indian Energy Limited (..%, United Kingdom)
3	India	Bhoruka Power	Operational	Electricity	Greenfield project (BOO)	100	12	6 MW	..	Bhoruka Steel Ltd. (100%, ..)
4	India	Essar Power Gujarat Limited (Jamnagar Power Plant)	Construction	Electricity	Greenfield project (BOO)	100	1,129	1,200 MW	25	Essar Group (..%, India)



## PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

5	India	Faridabad City Gas Distribution Project	Construction	Natural gas	Greenfield project (BOO)	50	55.78	20 km	25	Adani Group (50%, India)
6	India	Jaypee Powergrid Ltd.	Construction	Electricity	Greenfield project (BOO)	74	234	248 km	..	Jaiprakash Associates Ltd. (74%, India)
7	India	Jharkhand Thermal Power Plant Phase I	Construction	Electricity	Greenfield project (BOO)	100	296	270 MW	25	Adhunik Group (..%, India)
8	India	Jindal Orissa Thermal Power Plant	Construction	Electricity	Greenfield project (BOO)	100	682	600 MW	25	B C Jindal Group (..%, India), Soyuz Trading (..%, India)
9	India	Lanco Kondapalli CCGP Expansion St-II	Construction	Electricity	Greenfield project (merchant)	100	278	366 MW	25	Lanco Group (100%, India)
10	India	Maithon Right Bank Power Project	Construction	Electricity	Greenfield project (BOO)	74	1,042	1,050 MW	25	Tata Enterprises (74%, India)
11	India	Monnet Ispat Power Project	Construction	Electricity	Greenfield project (BOO)	100	1,401	1,005 MW	25	Monnet Group (..%, India)
12	India	Mundra Ultra Mega Power Project	Construction	Electricity	Greenfield project (BOO)	100	4,200	4,000 MW	25	Tata Enterprises (100%, India)
13	India	Punjab Biomass Power Ltd.	Construction	Electricity	Greenfield project (BOO)	100	13	24 MW	20	Gammon India Ltd. (..%, India)
14	India	Rosa Thermal Power Project Phase II	Construction	Electricity	Greenfield project (BOO)	100	585	600 MW	25	Reliance ADA Group (100%, India)
15	India	Sidhi Thermal Power Plant	Construction	Electricity	Greenfield project (BOO)	100	984	1,320 MW	25	Jaiprakash Associates Ltd. (100%, India)
16	India	Usegaon Thermal Power Project	Construction	Electricity	Greenfield project (BOO)	100	152	120 MW	25	Gupta Corp. (..%, India)
17	Pakistan	Almoiz Bagasse-Fired Cogeneration Plant	Operational	Electricity	Greenfield project (BOO)	100	7.5	27 MW	10	Almoiz Industries Limited (100%, Pakistan)
18	Pakistan	Engro Power Project	Construction	Electricity	Greenfield project (BOO)	100	205	227 MW	25	Engro Chemical Pakistan Ltd. (100%, Pakistan)
19	Pakistan	Halmore Bhikki Power Project	Construction	Electricity	Greenfield project (BOO)	100	231	225 MW	..	Halmore Power Generation Company Ltd. (100%, Pakistan)
20	Pakistan	Nishat Chunian Power Project	Construction	Electricity	Greenfield project (BOO)	100	235	200 MW	25	Nishat Group of Industries (100%, Pakistan)
21	Pakistan	Nishat Power Project	Construction	Electricity	Greenfield project (BOO)	100	204	200 MW	..	Nishat Group of Industries (100%, Pakistan)



# PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

Sub-Saharan Africa										
	Country	Project name	Project status	Sub-sector	Type of PPI	Private equity (%)	Investment commitment (US\$ millions)	Capacity size and type	Contract period (years)	Main sponsors
1	Angola	Aggreko Luanda Temporary Power Stations 1 and 2	Operational	Electricity	Greenfield project (rental)	100	..	60 MW	..	Aggreko Plc (100%, United Kingdom)
2	Kenya	Mumias Power Plant	Construction	Electricity	Greenfield project (BOO)	100	35	35 MW	..	Mumias Sugar Company Limited (100%, Kenya)
3	Kenya	Rabai Power Plant	Construction	Electricity	Greenfield project (BOT)	100	155	90 MW	20	Aldwych International Ltd. (..%, United Kingdom), Mitsui Engineering & Shipbuilding Co. Ltd. (MES) (..%, Japan)
4	Togo	Centrale thermique de Lome	Construction	Electricity	Greenfield project (BOT)	100	190	100 MW	25	ContourGlobal (100%, United States)
5	Uganda	Bugoye Hydroelectric Power Project	Construction	Electricity	Greenfield project (BOT)	100	35	13 MW	20	Tronder Power Limited (100%, Norway)
6	Uganda	Mpanga Hydropower Project	Construction	Electricity	Greenfield project (BOT)	100	14	18 MW	20	South Asia Energy Management Systems (SAEMS) (100%, United States)
7	Uganda	Namanve Power Plant	Operational	Electricity	Greenfield project (BOT)	100	93	50 MW	6	Jacobsen Elektro (100%, Norway)