



PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

PPI data update note 69

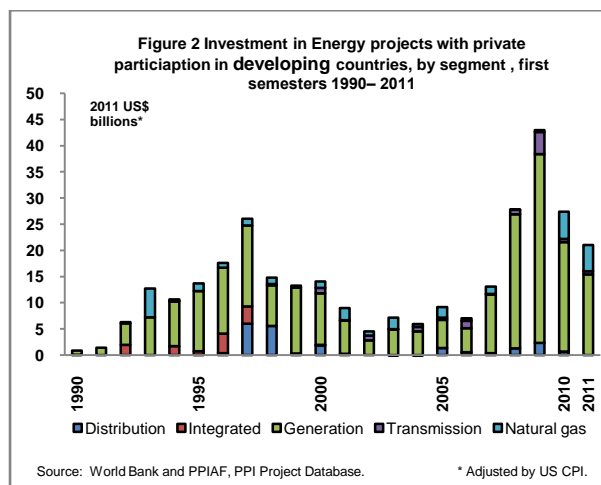
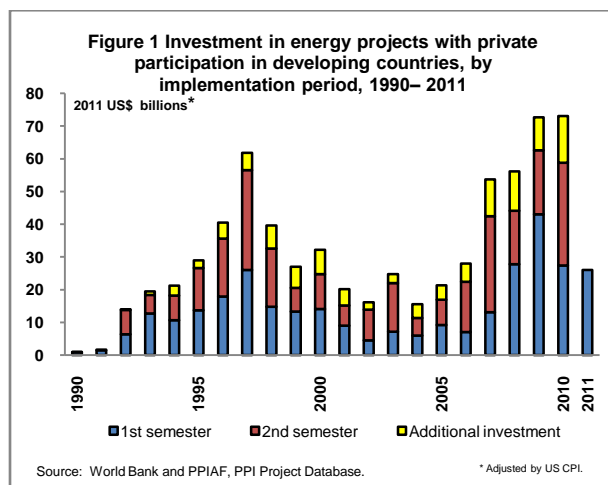
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Private activity in energy projects decreased in the first semester of 2011, compared to the same period in 2010

In the first half of 2011, 66 energy projects with private participation reached financial or contractual closure in 13 low and middle-income countries.¹ 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.²

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 m³/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

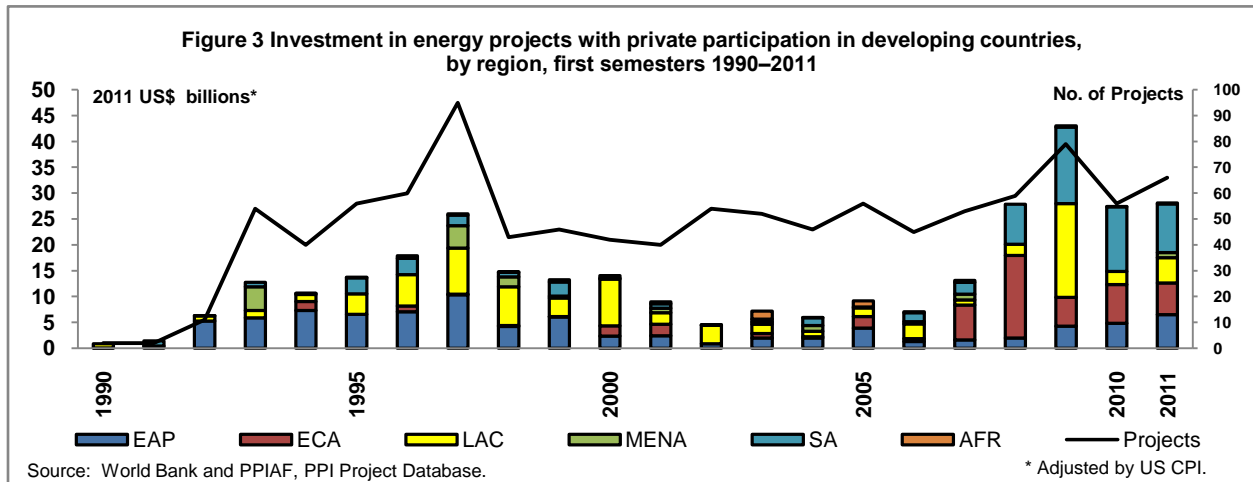
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¹ The PPI Project Database currently uses the FY12 World Bank country classification released in July 2011. Investment data are in 2011 US dollar using the US CPI to adjust to 2011 values. Data at <http://ppi.worldbank.org/> are reported in millions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

² 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.

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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.



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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) |



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|----|----------|-------------------|--------------------------|------------------------|--------|--------|---|
| 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) |



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|---|--------------------|---------------------------------|-------------------------------|--------------------------|---------------|---------------|---|
| 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) |



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|----|--------|--|--------------------------|------------------------|----------|---------------|---|
| 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) |



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|----|--------|-------------------------------------|--------------------------|--------------------------|----------|-----|---|
| 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) |



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|----|-------|--|--------------------------|------------------------|----------|--------|---|
| 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) |



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|----|----------|---|--------------------------|--------------------------|----------|-------|---|
| 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) |



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| 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.