

PRIVATE PARTICIPATION IN INFRASTRUCTURE DATABASE

PPI data update note 74

September 2012

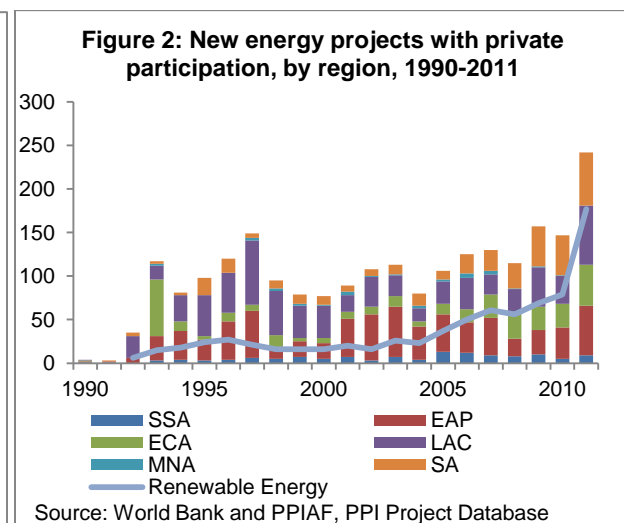
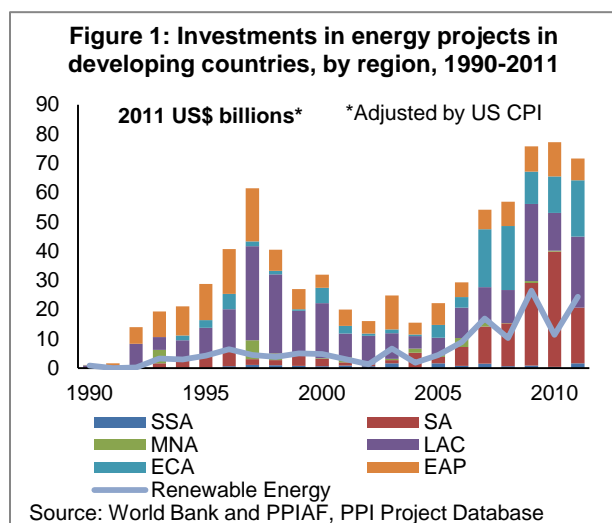
In 2011 total private investment in energy decreased by 11% compared to last year

Overview

In 2011, 242 new energy projects with private participation reached financial or contractual closure in 35 lower- and upper-middle income countries.¹ Total investment commitments (hereafter, *investment*) in energy projects reached US\$70.1 billion, of which US\$53.4 billion were investments in new projects and US\$16.8 billion were investments in existing projects. Overall investment in the energy sector decreased by 11% compared to last year, when investment totaled US\$78.5 billion. The main drivers of this slight downward trend are South Asia and East Asia and the Pacific. The distribution of investment by sector is shown in figure 3.

Globally, private investment in **renewable energy** has grown on average 38% annually since 2006, while the private energy sector as a whole grew 34% year-on-year (figure 1). As a share of total investment, the renewable energy sector grew from 30% to 33% of annual investments over the same period. In total, 44.3 GW reached financial closure in 2011. South Asia was the fastest growing market adding 15.2 GW to the grid and coal was the pre-dominant generation fuel in this region. The majority of new capacity in Africa was diesel-based, whilst natural gas was the largest contributor to new capacity in all other regions. The renewable energy sector was most active in Latin America, where 64% of new capacity was renewable (5.8 GW), mostly located in Brazil. By contrast, in South Asia only 8% of new capacity was renewable energy (1.2 GW).

Regional focus



This note was written by Bastiaan Johan Verink, consultant, Finance Economics and Urban Development Department, Sustainable Development Network, World Bank.

¹ Data on 242 projects with private participation include primarily medium-size and large projects in low and middle income countries as reported by the media and other public sources. Small-scale projects are generally not included because of lack of public information. More information is available at <http://ppi.worldbank.org/>.

In **Africa (AFR)**, six countries implemented 9 new projects: Botswana (1); Kenya (2); Rwanda (1); Sierra Leone (1); Tanzania (3); and Zambia (1). These projects represented US\$795 million in new investment. All projects were generation plants adding 752 MW, of which 135 MW were renewable valued at US\$260 million, and 220MW was rental power. The region added one hydro-power plant, Itezhi-Tezhi (120 MW, Zambia) and one biomass plant, Addax Biomass plant (15 MW, Sierra Leone).

In the non-renewable category, five diesel plants in Tanzania and Kenya added 427 MW. Two gas-fired power plants, the KivuWatt methane plant in Rwanda and the KSE Orapa and Mmashoro plant in Botswana added another 190 MW. KivuWatt was supported with a MIGA political risk guarantee covering 90% of the first equity tranche of US\$28 million.

All generation projects had at least 50% foreign equity, coming from: the United States, India, the United Kingdom and Turkey. The African Development Bank (AfDB) was the dominant multilateral development bank in the region, supporting 4 of the 9 projects. Diesel was the predominant generation fuel. Five existing power plant projects in the region were expanded, representing an additional US\$701 million in investment. These projects include three gas-fired power plants in Ghana and Côte d'Ivoire, as well as a cogeneration plant in Uganda. The Ormat geothermal plant in Kenya expanded for a second time, adding 36 MW to the existing 48 MW at a cost of US\$165 million. Financing was provided by OPIC, the World Bank issued a Partial Risk Guarantee and a MIGA guarantee issued earlier was extended. The total investment for Sub-Saharan Africa was US\$1,496 million. Foreign equity investors were active in 89% of the projects.

In **East Asia and the Pacific (EAP)**, seven countries implemented 56 new projects: China (34); Indonesia (1); Lao PDR (2); Malaysia (1); Philippines (3); Thailand (7); Vietnam (8). These projects represented US\$6.1 billion in new investment. Of these projects, 51 were generation plants and five projects were natural gas distribution contracts.

The generation plants were valued at US\$4.6 billion and added 4.2 GW, of which 2.4 GW was renewable. Wind farms were concentrated in China and added 626 MW, and 848 MW in solar plants reached closure. Vietnam and Lao PDR added 837 MW of hydro-power projects. Indonesia and the Philippines added two geothermal projects of 20MW and 5MW respectively. China added the largest private renewable generation capacity to its grid with 984 MW, valued at US\$1.7 billion. Sunedison Thailand Holdco Solar (520 MW, Thailand) with 51 bundled solar plants nationwide, was the largest project in the renewable energy category. In the non-renewable energy category, the Nong Saeng IPP (1.6 GW, Thailand) was the largest project.

China closed five natural gas distribution projects valued at US\$35 million, with China Gas Holdings (four LNG projects) and Xinao Gas Holdings. There were no expansions of existing projects. Total investment was lower than last year's high of US\$15.0 billion. Foreign equity investors were active in 9% of the projects.

In **Europe and Central Asia (ECA)**, seven countries implemented 47 new projects: Albania (1); Bulgaria (4); Georgia (1); Romania (5); Russian Federation (1); Turkey (31); Ukraine (3); and one cross-border hydropower project between Georgia and Turkey. These projects represented US\$10.1 billion in new investment. Of these projects, 43 were generation plants; two were distribution concessions and one was a distribution management contract.

The generation plants added 5.4 GW valued at US\$6.9 billion. Of the generation plants, 2.0 GW was renewable valued at US\$3.4 billion. Hydropower plants added 1.0 GW, wind farms 871 MW, and five solar plants in Bulgaria and Ukraine added 114 MW. With 1.2 GW, Turkey added the largest renewable generation capacity. Sanko Yedigöze hydro-power plant (320MW, Turkey) was the largest project in the renewable energy category. In the non-renewable category, the Egemer CCGT power plant (900 MW, Turkey) was the largest project. Natural gas was the dominant generation technology, with 2.8 GW in 2011.

Turkey also tendered three electricity distribution concessions of Toroslar Elektrik Dagitim A.S. and Akdeniz Elektrik Dagitim A.S. via competitive bidding based on highest price paid. There were no expansions of existing projects. In the Russian Federation, a management contract of Tomsk distribution company was awarded to Électricité de France. Foreign equity investors were active in 40% of the projects.

In **Latin America and the Caribbean (LAC)**, 11 countries implemented 68 new projects: Argentina (2); Brazil (46); Chile (2); Colombia (1); Dominican Republic (2); Honduras (2); Mexico (5); Nicaragua (1); Panama (2); Peru (4); St. Kitts and Nevis (1). These projects represented US\$18.0 billion in new investment. Of these projects, 59 were generation plants and nine projects were transmission lines.

The generation plants were valued at US\$14.4 billion and added 9.0 GW, of which 5.8 GW was renewable valued at US\$10.9 billion. Hydropower plants added 2.6 GW, and wind farms added 2.6 GW as well. Four solar plants added 45 MW. Brazil added the largest renewable generation capacity: 4.5 GW, valued at US\$8.1 billion. Teles Pires hydro-power plant (1,820MW, Brazil) was the largest project in the renewable energy category. In the non-renewable category, the Parnaiba Geracao de Energia power plant (1,531 MW, Brazil) was the largest project. Natural gas was the dominant generation technology, with 3.0 GW in 2011.

Brazil also tendered nine electricity transmission concessions of more than 7,677 kilometer via competitive bidding based on lowest required annual revenue, valued at US\$3.6 billion. BNDES supported five transmission deals, as well as 17 generation plants. Foreign equity in the transmission projects was mostly held by Interconexion Electrica SA (Colombia, 2,892 km) and Abengoa (Spain, 3,948 km). Existing projects invested US\$807 million, bringing total investment to US\$18.9 billion in 2011. Foreign equity investors were active in 59% of the projects.

In **South Asia (SA)**, four countries implemented 62 new projects: Bangladesh (6); India (51); Pakistan (2); and Sri Lanka (3). These projects represented US\$18.3 billion in new investment. Of these projects, 59 projects were generation plants and three projects were transmission lines.

The generation plants, valued at US\$18.0 billion, added 15.2 GW of which 1.2 GW was renewable valued at US\$2.4 billion. Hydro-power plants added 267 MW, wind farms 533 MW, and 22 solar plants added 374 MW. CLP Andhra Lake wind farm (113MW, India) was the largest project in the renewable energy category. In the non-renewable category, the Lalitpur Power Generation Company coal plant (1,980 MW, India) was the largest project. Coal power plants were the dominant generation technology, with 10.2 GW. Five rental power plants, both gas and diesel-fired, added 543 MW in Bangladesh at a total cost of US\$ 214 million over the contract length of five years.

Two transmission projects were competitively tendered: 643 km valued at US\$360 million. Vedanta Resources (UK) outbid three competitors in a tender on the lowest tariff, for the East North Interconnection Company. Maharashtra Eastern Grid Power Transmission Company was won by Adani Group (India).

Most projects in India were financed by domestic state-owned banks. In Pakistan all projects were MDB supported, and in Sri Lanka domestic commercial banks were dominant. Two existing coal plants in India and two diesel plants in Bangladesh expanded business and invested US\$903 million, bringing total investment to US\$19.2 billion. Investment decreased significantly from last year's high of US\$38 billion. Foreign equity investors were active in 20% of the projects.

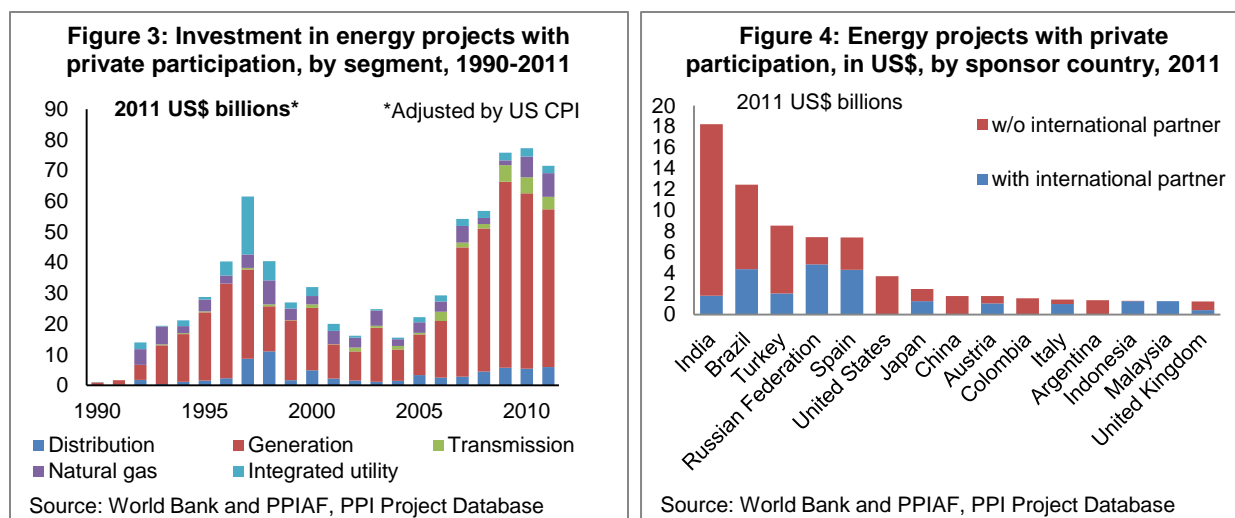
In **Middle East and North Africa (MENA)** there were no projects with private investment recorded in the energy sector for 2011. In 2010, the Kuraymat solar/gas-fired power plant (150 MW, Egypt) reached financial closure with support from the GEF and the Japan Bank of International Cooperation. In 2009, the Al-Qatrana power plant (373 MW, Jordan) was financed with support from the Islamic Development Bank and sponsored

by KEPCO (South Korea) and Xenel Industries (Saudi Arabia). In both 2006 and 2007 MENA had five new projects.

In **IDA countries** 22 projects reached financial closure, increasing generation capacity by 1.7 GW with investment of US\$1.7 billion. This is well below the 2006-2010 annual average of US\$3.5 billion, although higher than the years during the US financial crisis (2008-2009). 2011 projects included eight rental power plants (763 MW) in Tanzania, Kenya and Bangladesh. Hydropower plants added 442 MW in Zambia and Lao PDR with two large projects; five small hydropower plants added another 62.5 MW in Sri Lanka, Honduras and Lao PDR.

Sponsor focus

Figure 4 shows the activity of sponsors from different countries. Indian, Brazilian and Turkish sponsors were the most active, although 93% of their activities were domestic. With their respective domestic private infrastructure deals valued at US\$11.9 Billion (Brazil), US\$14.7 Billion (India) and US\$6.4 Billion (Turkey) in 2011, this was not surprising. The graph also shows how often sponsors form joint ventures with international partners; particularly Spanish and Brazilian sponsors.



Featured project

ContourGlobal KivuWatt Methane Gas-fired Power Plant | Lake Kivu, Rwanda | 25yr PPA

KivuWatt Ltd., registered in Rwanda, is a wholly-owned subsidiary of ContourGlobal Africa Holdings S.a.r.l., registered in Mauritius, itself a subsidiary of ContourGlobal from New York, USA. KivuWatt is an innovative project to produce electricity from extracted methane gas from Lake Kivu. Lake Kivu is a so-called 'explosive lake'. Capturing the methane is expected to prevent future potentially harmful explosions as well as become a source of electricity. The project, located in the Kibuye area of Karongi district, is constructed in two phases. The first phase, valued at US\$142 million, involved the construction of 25 MW of generation capacity and a methane gas extraction facility. Phase two includes the expansion of the project with 75MW, three additional gas extraction barges, and the construction of two new transformers to connect the additional capacity to the existing 220kV transmission system.

Contractual information

KivuWatt Ltd signed a 25- year power purchase agreement (PPA) on a take-or-pay basis in March 2009 with the Rwandan state-owned utility Rwanda Electricity Corporation (RECO, previously named Electrogaz), valued at US\$325 million. The PPA set the tariff in US dollars; the payments are denominated in local currency. The PPA is supported by a full sovereign guarantee of the off take and termination payments, but no liquidity support obligations were added. The generation equipment was procured under a standard EPC contract with Wartsila. ContourGlobal's equity portion covers cost overruns in the gas extraction equipment, which were installed by Civicon, from Kenya. The environmental and social impact assessments were conducted by SKM (sponsor-side) and E&S advisers (lender-side).

Financial information

Debt was provided by a consortium of lenders, and approved on February 3rd 2011. The AfDB and the Emerging Africa Infrastructure Fund (co-arranger) provided US\$25 million each. The Dutch development bank FMO provided US\$41.5 million, of which US\$10 million was syndicated to Belgium's development bank BIO. The total debt package of US\$91.5 million had a tenor of 15 years, including a two year grace period during construction. The interest rate was arranged as a combination of floating and fixed rates.

The upfront equity portion of KivuWatt represented US\$50.5 million, or 35.5%. ContourGlobal received a MIGA guarantee covering 90% of the first equity tranche of US\$28.6 million, which increased in 2012 to US\$95.4 million. The coverage was for a period of 20 years, against risks of expropriation, transfer restriction, war and civil disturbance, and breach of contract. The PPA risk provisions were tailored to the project, including a broader notion of 'force majeure' and a risk-split where ContourGlobal was responsible for an initial sum, and the Government of Rwanda covered the remainder.

Commissioning of the first phase was expected in July 2012. Phase two was expected to require an additional \$260 million, bringing total investment to \$400 million.

Table 1: Energy projects with financial or contractual closure in 2011 (total of 242 projects)

Africa										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity type	Capacity	Sponsors
1	Botswana	KSE Orapa and Mmashoro IPP	Operational	Electricity generation	Greenfield project	Build, lease, and transfer	104	MW	90	Kalahari Energy (50% / Botswana), TUTEN (50% / Turkey)
2	Kenya	Aggreko Westen Kenya Temporary Power Station	Operational	Electricity generation	Greenfield project	Rental	4.7	MW	60	Aggreko Plc (100% / United Kingdom)
3	Kenya	Thika Thermal Power Project	Construction	Electricity generation	Greenfield project	Build, own, and operate	150	MW	87	Others (100%)
4	Rwanda	KivuWatt	Construction	Electricity generation	Greenfield project	Build, own, and operate	142	MW	100	ContourGlobal (100% / United States)
5	Sierra Leone	Addax Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	30	MW	15	Addax & Oryx Group (100% / United Kingdom)
6	Tanzania	Aggreko Ubungo and Tegeta Temporary Power Station	Operational	Electricity generation	Greenfield project	Rental	0	MW	100	Aggreko Plc (100% / United Kingdom)
7	Tanzania	Symbion Dodoma Power Plant	Operational	Electricity generation	Greenfield project	Rental	4.7	MW	60	Symbion Power LLC (100% / United States)
8	Tanzania	Symbion Rental Ubungo Power Plant	Operational	Electricity generation	Concession	Rehabilitate, operate, and transfer	129.4	MW	120	Symbion Power LLC (100% / United States)

9	Zambia	TATA Itezhi-Tezhi HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	230	MW	120	Tata Enterprises (50% / India), Zambia Electric Supply Corporation (ZESCO) (50% / Zambia)
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East Asia and the Pacific										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment US\$ millions)	Capacity type	Capacity	Sponsor
1	China	Dejiang County Biomass Power Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	45.85	MW	60	Kaidi Electric Power (100% / China)
2	China	Fujian Lianjiang Saite Tianying Solid Waste Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	35.76	MW	7.5	TianYing ST Group (100% / China)
3	China	Geermu Shanyizhongchuan PV Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	22.01	MW	10	Shanyizhongchuan Solar Power (100% / China)
4	China	Guangdong Dapu County LNG Project	Construction	Natural gas distribution	Greenfield project	Build, operate, and transfer	7.64	Cubic meters per day (thousands)	500	China Gas Holdings Limited (100% / Hong Kong, China)

5	China	Guangdong Shantou Nanao Nanya Wind Farm Upgrade Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	46.83	MW	33	Guangdong Nanao Nanya New Energy Technology Development Co Ltd (100% / China)
6	China	Guangdong Wuhua County LNG Project	Construction	Natural gas distribution	Greenfield project	Build, operate, and transfer	7.64	Cubic meters per day (thousands)	500	China Gas Holdings Limited (100% / Hong Kong, China)
7	China	Guangxi Taijiang Wind Farm Project Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	79.47	MW	49.5	Guangdong Dongxing Fengying Wind Power Equipment Co.,Ltd. (100% / China)
8	China	Huazhou City Pipeline Gas Project	Construction	Natural gas distribution	Greenfield project	Build, operate, and transfer	15.28	Not Applicable	Not Applicable	China Gas Holdings Limited (100% / Hong Kong, China)
9	China	Hunan Longhui Biomass Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	45.39	MW	30	Kaidi Electric Power (100% / China)
10	China	Huoqiu County Pipeline Gas Project	Construction	Natural gas distribution	Greenfield project	Build, operate, and transfer	4.58	Not Applicable	Not Applicable	China Gas Holdings Limited (100% / Hong Kong, China)
11	China	Inner Mongolia Bayannur Wuyuan Huaxin Biomass Plant Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	32.57	MW	24	Wuyuan Huaxin Biomass Co Ltd (100% / China)

12	China	Inner Mongolia Chenbaerhu Qi Guohua AES Wind Farm Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	72.2	MW	49.5	AES Corporation (49% / United States)
13	China	Inner Mongolia Guigang Shengtai Wind Farm Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	61.13	MW	50	Inner Mongolia Guibang Shengtai Investment Co., Ltd. (100% / China)
14	China	Inner Mongolia Taipusiqi Toushijian Shenhua Xiehe Wind Farm Power Plant Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	68.01	MW	49.5	China Windpower Group Limited (46% / China)
15	China	Inner Mongolia Xinganmeng Haili Jinmangha Wind Farm Project Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	76.41	MW	49.5	UPC Group (100% / United States)
16	China	Jiangsu Jintan Changzhou Eging PV Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	12.23	MW	5.2	Changzhou Eging Photovoltaic Technology Co Ltd. (100% / China)
17	China	Jilin Baicheng Taobei Baoshan Ao Lu Jia Wind Farm Phase II	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	76.41	MW	49.5	NBT New Energy Development Ltd (50% / Norway)
18	China	Liaoning Jianping Wanjiayingzi Xiehe Wind Farm	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	74.88	MW	49.5	China Windpower Group Limited (45% / China)

19	China	Liaoning Jinzhou Beijing Tellhow Solar PV Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	9	MW	3	Beijing Tellhow Solar Energy Technology Co Ltd. (100% / China)
20	China	Liaoyuan City Solid Waste Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	48.9	MW	15	TianYing ST Group (100% / China)
21	China	New Energy Investment Dabancheng PV Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	30	MW	10	Xinjiang Yutian New Energy Investment Co (100% / China)
22	China	Ningxia Yanchi Gaoshawo Hanas STEG Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	122.26	MW	92.5	Hanas New Energy Group Co Ltd. (100% / China)
23	China	Ningxia Yanchi Wanglejing Wind Farm Project Phase I	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	76.41	MW	49.4	Ningxia Hanas Natural Gas (100% / China)
24	China	Pipeline Gas Supply in River East Four Towns in Wangcheng County	Construction	Natural gas distribution	Greenfield project	Build, operate, and transfer	0	Population (thousands)	530	Xiniao Gas Holdings Limited (55% / China)
25	China	Qinghai Delingha Baike PV Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	53.37	MW	20	China Technology Solar Power Holdings Limited (100% / China)
26	China	Qinghai Delingha China Windpower PV Plant	Operational	Electricity generation	Greenfield project	Build, operate, and	90	MW	30	China Windpower Group Limited (100% / China)

						transfer				
27	China	Qinghai Delingha Linuo PV Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	91.69	MW	30	Linuo Group Co Ltd (100% / China)
28	China	Qinghai Shengguang PV Plant Phase I	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	9	MW	3	Shengguang New Energy Ltd (100% / China)
29	China	Shandan County Xiuhuamiao Wind Farm Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	64.19	MW	49.5	China Windpower Group Limited (100% / China)
30	China	Shandong Yantai Zhuangzi Runfeng Wind Farm Power Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	71.83	MW	49.5	Yantai Runfeng New Energy Development Co Ltd (100% / China)
31	China	Shanghai Chongming Beiyan Wind Farm Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	77.16	MW	48	China Light and Power Ltd. (29% / Hong Kong, China)
32	China	Tianchang Gaoyou Lake Wind Farm Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	100	MW	49.5	China Windpower Group Limited (100% / China)
33	China	Tibet Xigaze Linuo PV Plant Project Phase I	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	38.05	MW	10	Linuo Group Co Ltd (100% / China)

34	China	Zhejiang Lanxi Solid Waste Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	27.51	MW	7.5	Mizuda Group (100% / China)
35	Indonesia	Atadei Geothermal Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	35	MW	5	PT Westindo Utama Karya (100% / Indonesia)
36	Lao PDR	Luangpaseuth Nam Long SHPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	10	MW	5	Luangpraseuth Construction Company (80% / Lao PDR)
37	Lao PDR	Viet-Laos Xekaman I HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	441.6	MW	322	Viet-Lao Power (70% / Lao PDR), Electricite de Laos (EdL) (30% / Lao PDR)
38	Malaysia	Cypark-LG Negeri Sembilan Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	24	MW	8	Cypark Resources BHD (100% / Malaysia)
39	Philippines	Maibarara Batangas Geothermal Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	74	MW	20	PetroEnergy Resources Corp (65% / Philippines), Trans Asia Oil & Energy Development (25% / Philippines)
40	Philippines	Ormin Power	Operational	Electricity generation	Greenfield project	Build, own, and operate	8.36	MW	6.464	Jollville Holdings Corp (100% / Philippines)
41	Philippines	South Luzon Thermal Energy	Construction	Electricity generation	Greenfield project	Build, own, and operate	266	MW	135	Ayala Corp (50% / Philippines), Philippine Investment-Management

										Corporation (PHINMA) (50% / Philippines)
42	Thailand	Loxley Prachin Buri Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	27	MW	8.7	Loxley Plc (45%)
43	Thailand	MEMC Solar Plants	Construction	Electricity generation	Greenfield project	Build, own, and operate	1500	MW	520	MEMC Electronic Materials, Inc (100% / United States)
44	Thailand	Nong Saeng IPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	1185	MW	1600	J-POWER (90% / Japan)
45	Thailand	Solarta Suphanburi Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	142.5	MW	34.25	Ratchaburi Electricity Generating Holding Plc (50% / Thailand), Yanhee Group (50% / Thailand)
46	Thailand	Sonnedix Chiangrai Solar Plants	Construction	Electricity generation	Greenfield project	Build, own, and operate	28.6	MW	9.5	Ch Karnchang Company Limited (30% / Thailand), Sonnedix (70% / Netherlands)
47	Thailand	Sonnedix Ratchasima Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	21.8	MW	7.5	Ch Karnchang Company Limited (30% / Thailand), Sonnedix (70% / Netherlands)
48	Thailand	SPCG Nakthon Ratchasima & Loei	Construction	Electricity generation	Greenfield project	Build, own, and	28.8	MW	12	SPCG Public Company Ltd

		Solar Plants				operate				(100% / Thailand)
49	Vietnam	Ba Thuoc 1 & 2 Hydropower Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	115	MW	140	Hoang Anh Gia Lai Group (Vietnam)
50	Vietnam	Nam Can II HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	35	MW	20	Nam Can Hydro Electric JSC (100% / Vietnam)
51	Vietnam	Phy Thanh Song Bung IVa HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	57.97	MW	45	Song Bung JSC (100% / Vietnam)
52	Vietnam	Song Bac HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	62.5	MW	42	Song Bac Hydroelectric (100% / Vietnam)
53	Vietnam	Song Tranh IV HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	76.2	MW	48	Song Tranh 4 Hydropower JSC (100% / Vietnam)
54	Vietnam	Thien Nam I-III HPPs	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	23.6	MW	19.6	Thien Nam JSC (100% / Vietnam)
55	Vietnam	Vinacomin Dong Nai V HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	161.6	MW	150	Vietnam National Coal - Mineral Industries Group (Vinacom) (100% / Vietnam)

56	Vietnam	VTEC Bac Me HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	69.8	MW	45	Vietnam Trading Engineering Construction JSC (100% / Vietnam)
57	China	Dejiang County Biomass Power Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	45.85	MW	60	Kaidi Electric Power (100% / China)

Europe and Central Asia										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity type	Capacity	Sponsor
1	Albania	Energy Partners Cerruje I & II SHPPs	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	4.16	MW	5.1	Energy Partners (100% / Albania)
2	Bulgaria	JV CO Bourgas Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	4	MW	1.3	ERG Renew (Italy), Lukoil (Russian Federation)
3	Bulgaria	Kosharevo Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	10	MW	3	GSG Studena ood (Bulgaria)
4	Bulgaria	Middle Iskar Cascade SHPPs Phase II	Construction	Electricity generation	Greenfield project	Build, lease, and transfer	34.6	MW	25.6	Petrolvilla Group (90% / Italy), Others (10%)
5	Bulgaria	SDN-KEPCO Veliko	Construction	Electricity	Greenfield	Build, own,	203.49	MW	42	SDN Company (50% / Korea,

		Tarnovo Solar Plant		generation	project	and operate				Rep.), Korea Electric Power Company (KEPCO) (50% / Korea, Rep.)
6	Georgia, Turkey	Georgia Urban Enerji Ltd.	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	156.5	MW	87	Anadolu Endustri Holding A.S. (AEH) (Turkey)
7	Georgia	InterRao Khrami I & II HPP	Operational	Electricity generation	Divestiture	Full	104	MW	227.2	Inter RAO UES (100% / Russian Federation)
8	Romania	EDPR Cernavoda I & II Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	266	MW	138	Electricidade de Portugal SA (85% / Portugal)
9	Romania	EDPR Pestera Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	170.24	MW	90	Electricidade de Portugal SA (85% / Portugal)
10	Romania	Enel Corugea Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	158	MW	70	Enel SpA (Italy)
11	Romania	Enel Moldova Noua Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	97	MW	48	Enel SpA (100% / Italy)
12	Romania	Martifer Babadag Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	80	MW	42	Martifer Group (Portugal)
13	Russian Federation	OJSC Tomsk Distribution Company	Operational	Electricity distribution	Management and lease	Management contract	..	N/A	N/A	Electricite de France (100%

					contract					/ France)
14	Turkey	Adilcevaz, Ahlat, malazgirt, Varto-Sonmez River Hydro Plant (Group 17)	Operational	Electricity generation	Management and lease contract	Lease contract	5.06	MW	2.1	Er Bu Insaat (100% / Turkey)
15	Turkey	Akdeniz Elektrik Dagitim A.S.	Operational	Electricity distribution	Concession	Build, rehabilitate, operate, and transfer	1170	N/A	N/A	Ciner Group (100% / Turkey)
16	Turkey	Akfen Camlica III HPP	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	45	MW	25.8	Akfen Holding (Turkey)
17	Turkey	Ayen Korkmaz Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	66.5	MW	48	Aydiner Insaat (Turkey)
18	Turkey	Bayburt Cemisgezek Girlevik HPPs - Group 14	Operational	Electricity generation	Management and lease contract	Lease contract	7.4	MW	3.5	Boydak Holding (100% / Turkey)
19	Turkey	Cag, Otluca, Ultudere HPPs - Group 16	Operational	Electricity generation	Management and lease contract	Lease contract	40.8	MW	16.32	Nas Enerji (100% / Turkey)
20	Turkey	Camardi, Pinarbasi, Sizer HPPs - Group 10	Operational	Electricity generation	Management and lease contract	Lease contract	16.97	MW	8.308	Kayseri ve Civari Elektrik (100% / Turkey)
21	Turkey	Darenhes Tatar HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	300	MW	130	Limak Holding (Turkey), Bilgin Enerji (Turkey)
22	Turkey	Degirmendere, Karacay, Kuzuculu	Operational	Electricity	Management and lease	Lease	7.02	MW	1.172	Ka-Fnih Enerji Uretim (100% /

		HPPs - Group 11		generation	contract	contract				Turkey)
23	Turkey	Denizli CCGT Power Project	Construction	Electricity generation	Greenfield project	Build, own, and operate	725	MW	775	RWE (70% / Germany), Turcas Elektrik Uretim A.S. (30% / Turkey)
24	Turkey	Dost Yuntdag II Wind Farm (Expansion)	Construction	Electricity generation	Greenfield project	Build, own, and operate	18.2	MW	15	Dost Enerji (Turkey)
25	Turkey	Egemer CCGT Power Project	Construction	Electricity generation	Greenfield project	Merchant	651	MW	900	Akkok Group (100% / Turkey)
26	Turkey	Enerjisa Dagpazari II Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	47	MW	33	Verbund (50% / Austria)
27	Turkey	Enerjisa Kavsakbendi HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	259	MW	183	Verbund (50% / Austria)
28	Turkey	Enerjisa Yamanli II HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	110	MW	78	Verbund (50% / Austria)
29	Turkey	Fernas Garzan Dam & HPP	Construction	Electricity generation	Greenfield project	Merchant	65.5	MW	49	Fernas Construction Company (Turkey)
30	Turkey	Galata Sah Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	147	MW	93	Agaoglu Group (Turkey)
31	Turkey	Gebze CCGT Power Project	Construction	Electricity generation	Greenfield project	Merchant	1000	MW	865	Ansaldo Energia SpA (40% / Italy), UNIT

										Investments SA, SPF (60% / Netherlands)
32	Turkey	Goy nuk-Bolu Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	351	MW	270	Aksa (100% / Turkey)
33	Turkey	Iltek Susurluk Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	90	MW	45	Eksim Investment holding (Turkey)
34	Turkey	Karesi Akres Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	66.5	MW	45	Yircali Group (100% / Turkey)
35	Turkey	Kayseri ve Civari HPPs - Group 13	Operational	Electricity generation	Concession	Build, rehabilitate, operate, and transfer	13.8	MW	5.092	Kayseri ve Civari Elektrik (100% / Turkey)
36	Turkey	Kent Solar HPPs - Group 1	Operational	Electricity generation	Concession	Rehabilitate, operate, and transfer	6.6	MW	0.984	Kent Solar Elektrik Uretim (100% / Turkey)
37	Turkey	Polat Poyraz Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	75	MW	55	Demirer Holding (50% / Turkey), EDF Energies Nouvelles SA (25% / France), Others (25%)
38	Turkey	Polat Soma II Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	99.9	MW	61.6	EEN TK Holdings AS (Turkey), EDF Energies Nouvelles SA

										(France)
39	Turkey	Rainpower Aslancik HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	220	MW	120	Dogus Holding (34% / Turkey), Dogan Group (33% / Turkey)
40	Turkey	Sanko Yedigoze HPP	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	400	MW	320	Sanko Holding (100% / Turkey)
41	Turkey	Sanliurfa NGPP	Operational	Electricity generation	Greenfield project	Merchant	351	MW	270	Aksa (100% / Turkey)
42	Turkey	Toroslar Elektrik Dagitim A.S	Operational	Electricity distribution	Concession	Build, rehabilitate, operate, and transfer	2075		Not Applicable	Yildizlar Holding (100% / Turkey)
43	Turkey	Turuncova Finike HPP - Group 5	Operational	Electricity generation	Management and lease contract	Lease contract	2.76	MW	0.552	Fides Reklam Enerji Hizmet Lojistik Turizm San. Tic. (100% / Turkey)
44	Turkey	Verbund Canakkale-Mahmudiye Wind Farm	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	49.2	MW	30	Verbund (50% / Austria), Sabanci Holding (50% / Turkey)
45	Ukraine	Active Ohotnikovo Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	200	MW	60	Activ Solar Holding (100% / Austria)

46	Ukraine	Active Rodnikovoye Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	25	MW	7.5	Activ Solar Holding (100% / Austria)
47	Ukraine	Novoazovskiy Wind Farm Phase I & II	Operational	Electricity generation	Greenfield project	Build, own, and operate	118.4	MW	57.5	Wind Park Novoazovskiy LLC (100% / Ukraine)

Latin America and the Caribbean										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity type	Capacity	Sponsor
1	Argentina	Canada Honda I Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	8.8	MW	2	Energias Sustentables S.A. (100% / Argentina)
2	Argentina	Canada Honda II Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	10	MW	3	Energias Sustentables S.A. (100% / Argentina)
3	Brazil	Adami Vitor Batista HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	63	MW	25	Jackson Empreendimentos Ltda (50% / Brazil), Adami S.A. (50% / Brazil)
4	Brazil	Alubar Mangue Seco 1 Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	53	MW	26	Alubar Energia (49% / Brazil)
5	Brazil	Bioenergy Aratua & Miassaba Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	120	MW	115.5	Bioenergy (100% / Brazil)

6	Brazil	Cacimbaes Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	112	MW	127	Thermes (100% / Brazil)
7	Brazil	Catxere Transmissora de Energia	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	180.2	KM	602	ACS Group (Actividades de Construccion y Servicios) (100% / Spain)
8	Brazil	Companhia Energetica Rio das Flores HPPs	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	11.9	MW	3	Small local investors (75%)
9	Brazil	ContourGlobal Asa Branca Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	440.5	MW	150	ContourGlobal (100% / United States)
10	Brazil	ContourGlobal Galheiros I HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	80	MW	12.6	ContourGlobal (100% / United States)
11	Brazil	Cosan Ipaussu Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	56.1	MW	76	Cosan SA (100% / Brazil)
12	Brazil	DESA Rio Grande do Norte Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	487.5	MW	145.2	DESA Dobreve Energia (100% / Brazil)
13	Brazil	Desenvix Bahia Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	246.7	MW	95.2	Jackson Empreendimentos Ltda (100% / Brazil)
14	Brazil	Desenvix Decasa Cogeneration Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	45	MW	33	Jackson Empreendimentos Ltda (100% / Brazil)

15	Brazil	Duke Energy Retiro & Palmeiras HPPs	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	102.5	MW	32	Duke Energy Corp. (100% / United States)
16	Brazil	EMPA Indaia HPPs	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	60	MW	30.2	Empa S.A. (100% / Brazil)
17	Brazil	Empresa de Transmissao de Energia do Mato Grosso	Operational	Electricity transmission	Greenfield project	Build, operate, and transfer	0	KM	235	Alusa (60% / Brazil), Bimetal Industria Metalurgica (40% / Brazil)
18	Brazil	Enerfin-Elecnor Rio Grande do Sul Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	431.2	MW	150	Elecnor (36% / Spain), Enerfin (64% / Spain)
19	Brazil	Energimp Ceara II Acarau Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	485	MW	211.2	Impsa (58% / Argentina)
20	Brazil	Energio Taiba & Icarai Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	290.4	MW	128.1	Energio Nordeste Energia Renovaveis (100% / Brazil)
21	Brazil	Escolha Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	528.4	MW	337.6	Trana Construcoes Ltda (67% / Brazil), Thermes (34% / Brazil)
22	Brazil	Galvao Rio Grande do Norte Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	346	MW	94	Grupo Galvao (100% / Brazil)
23	Brazil	Gestamp Serra de Santana Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	225.6	MW	77.4	Gestamp Corporation (100% / Spain)

24	Brazil	Gestamps Cabeco Preto & Pedra do Reino Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	215.6	MW	78.6	Gestamp Corporation (100% / Spain)
25	Brazil	Impel Alhandra I Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	13.4	MW	6.3	Impel (100% / Spain)
26	Brazil	Interligacao Eletrica do Madeira (IEMA)	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	1164	KM	2375	Interconexion Electrica SA (ISA) (51% / Colombia)
27	Brazil	Jose de Alencar Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	288.3	MW	300	Grupo Bertin (100% / Brazil)
28	Brazil	Lightger Paracambi HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	110	MW	30	Electricite de France (51% / France)
29	Brazil	Linha Verde Transmissora de Energia	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	190	KM	987	Abengoa (51% / Spain)
30	Brazil	Manaus Transmissora de Energia	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	796.6	KM	586	Abengoa (30% / Spain), FIP Brasil Energia (21% / Brazil)
31	Brazil	Maracanau II Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	93.8	MW	70	Thermes (50% / Brazil), Grupo Equipav (25% / Brazil), Grupo Bertin (25% / Brazil)

32	Brazil	Noble Sao Paulo Biomass Plants	Operational	Electricity generation	Greenfield project	Build, own, and operate	140	MW	90	Noble Group Ltd (100% / Hong Kong, China)
33	Brazil	Norte Brasil Transmissora de Energia	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	919.1	KM	2375	Abengoa (51% / Spain)
34	Brazil	Palmeiras de Goias Thermal Power Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	162.3	MW	174.3	Bolognesi Group (100% / Brazil)
35	Brazil	Parnaiba Geracao de Energia	Construction	Electricity generation	Greenfield project	Build, own, and operate	1800	MW	1531	EBX Capital Partners (100% / Brazil)
36	Brazil	Queiroz Galvao HPPs	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	81.8	MW	22.5	Construtora Queiroz Galvao (100% / Brazil)
37	Brazil	Renova Energia Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	695.6	MW	294.4	Renova Energia S.A. (100% / Brazil)
38	Brazil	Renuka Biopav II & Chapadao Biomass Plants	Operational	Electricity generation	Greenfield project	Build, own, and operate	236	MW	157	Grupo Equipav (50% / Brazil), Renuka Sugars (41% / India)
39	Brazil	Santander Ceara & Rio Grande do Norte Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	213	MW	90	Santander Bank (100% / Spain)
40	Brazil	Sao Jose Colina Biomass Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	125	MW	83	Tereos (69% / France)

41	Brazil	Sao Jose da Estiva Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	64	MW	42.5	Grupo W.J. de Biasi (100% / Brazil)
42	Brazil	Serra do Japi Transmission Line	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	90	KM	..	Interconexion Electrica SA (ISA) (100% / Colombia)
43	Brazil	Serveng Civilsan Rio Grande do Norte Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	444	MW	169.6	Serveng Civilsan S.A. (100% / Brazil)
44	Brazil	Suzlon Eolica Faisa Wind Farms	Construction	Electricity generation	Greenfield project	Build, own, and operate	277.8	MW	128.1	Suzlon Group (100% / India)
45	Brazil	Teles Pires HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	1760	MW	1820	Iberdrola SA (51% / Spain), Odebrecht SA (1% / Brazil)
46	Brazil	Transenergia Sao Paulo	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	46	KM	..	J. Malucelli Construtora de Obras LTDA (51% / Brazil)
47	Brazil	Umoe Paranapanema Cogeneration Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	62.8	MW	60	Umoe AS (100% / Norway)
48	Brazil	Wobben Mangue Seco III & V Wind Farms	Operational	Electricity generation	Greenfield project	Build, own, and operate	106	MW	52	Enercon GmbH (49% / Germany)
49	Chile	GDF Laja SHPP	Construction	Electricity generation	Greenfield project	Build, operate, and	112	MW	34.4	International Power (30% / United Kingdom), SUEZ (70%)

						transfer				/ France)
50	Chile	Vestas Talinay Oriente Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	100	MW	100	Vestas Wind Systems (100%)
51	Colombia	Emgesa El Quimbo HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	684	MW	400	Emgasud S.A. (Argentina)
52	Dominican Republic	Gamesa PECASA Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	126.7	MW	50	Gamesa (57% / Spain), Grupo BHD (29% / Dominican Republic)
53	Dominican Republic	Inveravante Bani Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	76	MW	34	Inveravante Inversiones Universales, S.L (Spain)
54	Honduras	CHER Humuya HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	126	MW	38.5	Adolfo Larach Foster (100% / Honduras)
55	Honduras	Sociedad Eléctrica Mesoamericana Mezapa SHPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	18.5	MW	9.4	Sociedad Eléctrica Mesoamericana, (SEMSA) S.A (100% / Honduras)
56	Mexico	Norte II Combined Cycle Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	420	MW	433	Korea Electric Power Company (KEPCO) (56% / Korea, Rep.), Samsung Corporation (34% / Korea, Rep.)
57	Mexico	Oaxaca II Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and	200	MW	101.5	Acciona (100% / Spain)

						operate				
58	Mexico	Oaxaca III Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	200	MW	101.5	Acciona (100% / Spain)
59	Mexico	Oaxaca IV Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	200	MW	101.5	Acciona (100% / Spain)
60	Mexico	Renovalia Piedra Larga I Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	187	MW	90	Renovalia Energy (100% / Spain)
61	Nicaragua	La Fe San Martin Wind	Construction	Electricity generation	Greenfield project	Build, own, and operate	110	MW	39.6	Construcciones Lacayo Fiallos S.A. (Nicaragua), M & Block, S.A. (Panama)
62	Panama	GDF Dos Mares HPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	450	MW	118	SUEZ (100% / France)
63	Panama	HSL Fonseca SHPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	10.5	MW	8.6	Grupo Cuerva (Spain)
64	Peru	Grupo T Arequipa Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	87.3	MW	20	Grupo T Solar (Spain), Solarpack (Spain), Assured Guaranty (United States)
65	Peru	Grupo T Reparticion Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	87.3	MW	20	Grupo T Solar (Spain), Solarpack (Spain), Assured Guaranty (United States)

66	Peru	Santo Domingo de los Olleros TPP (Phase I)	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	128.4	MW	196	Larrain Vial (50% / Chile), SCL Energia (50% / Chile)
67	Peru	Zapallal-Trujillo Transmission Line	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	230	KM	517	Interconexion Electrica SA (ISA) (60% / Colombia), Empresa de Energia de Bogota S.A. ESP (40% / Colombia)
68	St. Kitts and Nevis	Fairways St. Kitts Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	16.5	MW	5.4	Fairways Equities LLC (United States), MAS St. Kitts Wind (St. Kitts and Nevis), North Star Bellevue (/ St. Lucia)

South Asia										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity type	Capacity	Sponsor
1	Bangladesh	Comilla Union Consultants power plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	55	MW	50	Energy Venture Ltd (50% / Australia), A T Consultant Pvt Ltd (50% / India)
2	Bangladesh	Ghorasal (Max) power plant	Operational	Electricity generation	Greenfield project	Rental	30.962	MW	78	Max Power, Bangladesh (100% / Bangladesh)
3	Bangladesh	Khulna (KPCL) power plants	Operational	Electricity generation	Greenfield project	Rental	88.7	MW	225	Khulna Power Company Limited (100% /

										Bangladesh)
4	Bangladesh	Meghnaghat (IEL) power plant	Operational	Electricity generation	Greenfield project	Rental	39.5	MW	100	Others (100%)
5	Bangladesh	Noapara (Khanjahan Ali)	Operational	Electricity generation	Greenfield project	Rental	15.7	MW	40	Khan Jahan Ali Group (100% / Bangladesh)
6	Bangladesh	Siddirganj (Dutch Bangla power) plant	Operational	Electricity generation	Greenfield project	Rental	39.4	MW	100	Others (100%)
7	India	Abhijeet Naukh CSP Solar Plant Phase I	Construction	Electricity generation	Greenfield project	Build, own, and operate	185.5	MW	50	Abhijeet Group (100% / India)
8	India	Adani Abdasa Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	150.2	MW	40	Adani Group (100% / India)
9	India	Adani Power Rajasthan Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	1495.7	MW	1320	Adani Group (100% / India)
10	India	AES Saurashtra Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	54.8	MW	39.2	AES Corporation (100% / United States)
11	India	AES Solar Jodhpur Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	19.4	MW	5	AES Corporation (100% / United States)
12	India	AES Solar Patan Solar Plant Phase I & II	Construction	Electricity generation	Greenfield project	Build, own, and operate	44.7	MW	15	AES Corporation (100% / United States)
13	India	Ajanta Pharama Surendranagar	Construction	Electricity	Greenfield	Build, own, and	31.3	MW	25	Ajanta Pharama Company Limited

		Solar Plant		generation	project	operate				(100% / India)
14	India	Athena Chattisgarh Power Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	1377.8	MW	1200	Athena Projects Pvt Ltd (52% / India), SEW Infrastructure (India), Abir Infrastructure Pvt Ltd (AIPL) (India)
15	India	Beta Infratech Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	189.1	MW	225	Soma Enterprise Ltd (100% / India)
16	India	CLP Andhra Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	138.2	MW	113.6	China Light and Power Ltd. (100% / Hong Kong, China)
17	India	DB Power Limited (Chattisgarh)	Construction	Electricity generation	Greenfield project	Build, own, and operate	737.8	MW	600	Dainik Bhaskar Group (100% / India)
18	India	Dheeru Powergen Limited (Chattisgarh)	Construction	Electricity generation	Greenfield project	Build, own, and operate	1283.5	MW	1050	Infrastructure Development Finance Company Ltd (IDFC) (74% / India), Ranhill Bhd (26% / Malaysia)
19	India	East North Interconnection Company Limited	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	222.1	KM	454	Vedanta Resources Plc (100% / United Kingdom)
20	India	Enercon Pithodai Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	21.9	MW	60	Enercon India Ltd (100% / India)
21	India	Essar Power	Construction	Electricity	Greenfield	Build, own, and	1212.8	MW	1200	Essar Group (100%

		Jharkand Limited		generation	project	operate				/ India)
22	India	Genting Jangi Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	152	MW	91.8	Genting Group (100% / Malaysia)
23	India	Greenko Dikchu HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	158.5	MW	96	Greenko Group (100% / India)
24	India	Greenko Patan Taluka Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	91.5	MW	65.6	Greenko Group (100% / India)
25	India	Haldia Energy Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	725.1	MW	600	RPG Enterprises (100% / India)
26	India	Hindustan Electricity Generation Company Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	379.8	MW	350	Hiranandani Group (100% / India)
27	India	Ind Barath Power (Madras) Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	798.9	MW	660	Ind-Barath Power Infra Private Ltd (100% / India)
28	India	Inland Power Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	68	MW	63	Inland Power Limited (100% / India)
29	India	Jaihind Chadiyana Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	16.6	MW	5	Jaihind Projects (100% / India)
30	India	Jain Irrigation Shirsole Solar	Construction	Electricity	Greenfield	Build, own, and	28.2	MW	8.5	Jain Irrigation Systems Limited

		Plant		generation	project	operate				(100% / India)
31	India	Kaizen Power Plant Limited	Construction	Electricity generation	Greenfield project	Merchant	349.8	MW	300	Abhijeet Group (100% / India)
32	India	Kiran Charanka Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	61.2	MW	20	Kiran Energy Solar Power Private Limited (100% / India)
33	India	Lalitpur Power Generation Company Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	2520.8	MW	1980	Bajaj Hindustan (100% / India)
34	India	Lanco Chandiyana Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	17	MW	5	Lanco Group (100% / India)
35	India	LANCO Kondapalli Power Private Limited (Phase-III)	Construction	Electricity generation	Greenfield project	Build, own, and operate	580	MW	742	Lanco Group (100% / India)
36	India	Maharashtra Eastern Grid Power Transmission Company Limited	Construction	Electricity transmission	Greenfield project	Build, own, and operate	138.3	KM	219	Adani Group (74% / India)
37	India	MEMC Dhama Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	19.6	MW	5	Azure Power India (India), MEMC Electronic Materials, Inc (United States)
38	India	MEMC Rawara Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	14.6	MW	5	MEMC Electronic Materials, Inc (100% / United

										States)
39	India	Moser Baer Precious Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	49.3	MW	15	Moser Baer India Limited (100% / India)
40	India	Moser Baer Projects Private Limited (Madhya Pradesh)	Construction	Electricity generation	Greenfield project	Build, own, and operate	1386.7	MW	1200	Moser Baer India Limited (100% / India)
41	India	Moser Baer Solitaire Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	49.5	MW	15	Moser Baer India Limited (100% / India)
42	India	NSL Pabbar & Supin HPPs	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	71.1	MW	50	NSL Renewable Power Private Limited (100% / India)
43	India	Om Power Neogal HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	9.2	MW	15	Om Power Corporation Limited (100% / India)
44	India	Reliance Jaisalmer Solar Plant	Under development	Electricity generation	Greenfield project	Build, own, and operate	148.94	MW	40	Reliance ADA Group (100% / India)
45	India	Roha Dyechem Santalpur Taluka Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	76	MW	25	Roha Dyechem Private Limited (100% / India)
46	India	RPG Kutch Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	26.7	MW	9	RPG Enterprises (100% / India)

47	India	SEW Bichom HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	193.6	MW	96	SEW Infrastructure (100% / India)
48	India	Shree Ganesh Charnaka Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	85.1	MW	25	Shree Ganesh Jewellery House Limited (100% / India)
49	India	Simran Amuthapuram Wind Farms	Operational	Electricity generation	Greenfield project	Build, own, and operate	133.3	MW	101.4	Techno Electric And Engineering Company Ltd (100% / India)
50	India	Sonthalia Naukh Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	15.4	MW	5	Sonthalia Group (100% / India)
51	India	Sun Charanka Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	19.1	MW	6	Sun Group (100% / India)
52	India	SunBorne Karmaria I & II Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	44.5	MW	15	SunBorne Energy Services India Private Limited (100% / India)
53	India	TATA Mithapur Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	77.5	MW	25	Tata Enterprises (100% / India)
54	India	Torrent Energy Limited (Dahej)	Construction	Electricity generation	Greenfield project	Build, own, and operate	1251.7	MW	1200	Torrent Group (100% / India)
55	India	UNOSUGEN Gas Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	407.3	MW	382.5	Torrent Group (100% / India)

56	India	Videocon Jodhpur Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	19.1	MW	5	Videocon Group (100% / India)
57	India	Videocon Warora Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	18.9	MW	5	Videocon Group (100% / India)
58	Pakistan	UCH-II Power (Private) Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	500	MW	404	International Power (100% / United Kingdom)
59	Pakistan	Zorlu Sindh Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	158.7	MW	50.4	Zorlu Holding AS (100% / Turkey)
60	Sri Lanka	Hayleys Nimalapura Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	17.4	MW	10.5	Hayleys Group (30% / Sri Lanka), Akbar Brothers (Sri Lanka), Hirdaramani Group (Sri Lanka), Debug Group (Sri Lanka)
61	Sri Lanka	Hemas Magal Ganga SHPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	3.4	MW	2.4	Hemas Holdings Limited (100% / Sri Lanka)
62	Sri Lanka	Vallibel Denawaka Ganga SHPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	8.6	MW	7.2	Vallibel Holdings (100% / Sri Lanka)

Note: .. denotes missing data; N/A means not applicable. Investment commitments include payments to the government and investment in physical assets