



## PRIVATE PARTICIPATION IN INFRASTRUCTURE RESEARCH GROUP

Note 86

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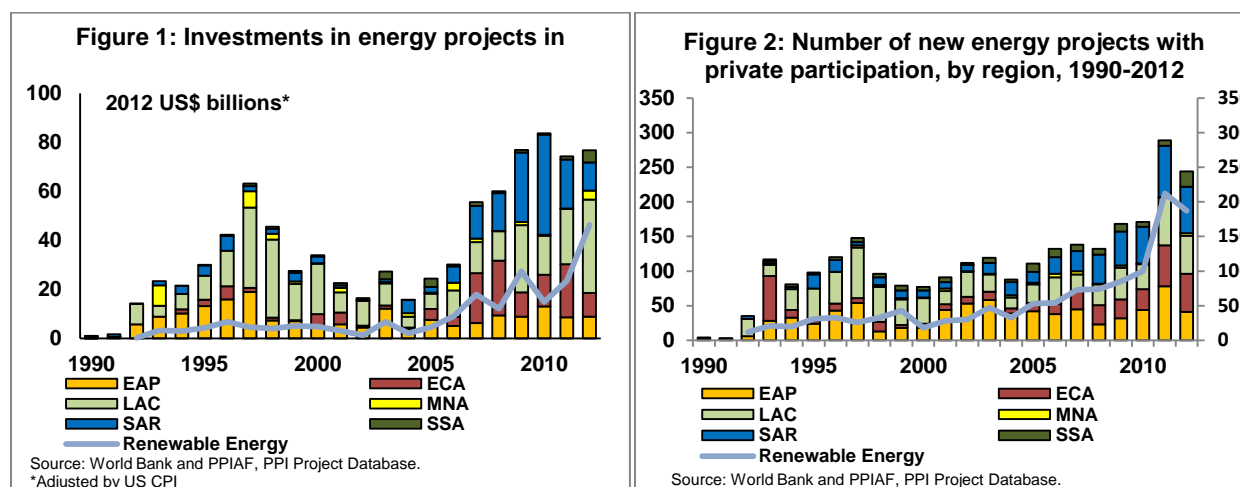
# Infrastructure Policy Unit 2012 PPI Data Update: Energy Sector

**Total investments in energy projects with private participation grew by 4 percent in 2012**

## Overview

In 2012, 244 new energy projects with private participation reached financial or contractual closure in 35 lower- and upper-middle income countries.<sup>1</sup> Total investment commitments (hereafter, *investment*) in energy projects reached US\$76.8 billion, of which \$66.8 billion were investments in new projects and \$10.0 billion were investments in existing projects. Overall investment in the energy sector increased by 3.6 percent compared to last year when investment totaled \$74.1 billion, following an 11 percent decrease from the year before. The main driver of this slight upward trend was Latin America and the Caribbean, where investment grew 69 percent to \$38.2 billion following the financial closure of the 11.2GW Belo Monte hydropower plant in Brazil, worth \$14.8 billion. The distribution of investment by sector is shown in figure 3. Global average annual growth in investments in the energy sector since 2002 has been 17 percent. Coal was the predominant generation fuel in the Middle East and North Africa as well as in South Asia. The majority of new capacity in Sub-Saharan Africa and Europe and Central Asia was wind-based, whilst natural gas was the largest contributor to new capacity in East Asia and the Pacific. Hydropower was the largest contributor in Latin America and the Caribbean.<sup>2</sup>

Globally, private investment in **renewable energy** has grown at an annual average of 21 percent since 2007, nearly doubling between 2011 and 2012. The private energy sector as a whole grew 7 percent on average annually during the same period. In total, 34.4GW reached financial closure in 2012.



This note was written by Bastiaan Johan Verink, Analyst, Infrastructure Finance to the Private Participation in Infrastructure Research Group, Infrastructure Policy Unit, Sustainable Development Network, World Bank Group.

<sup>1</sup> The PPI Project Database currently uses the FY12 World Bank country classification released in July 2012. Investment data are in 2012 US dollar using the US CPI to adjust to 2012 values. Data at <http://ppi.worldbank.org/> are reported in millions of current U.S. dollars unless otherwise indicated. St. Kitts and Nevis graduated to high income country status in July 2012.

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

## **Regional overview**

In **Sub-Saharan Africa (SSA)**, four countries implemented 22 new projects: Kenya (2); South Africa (18); Uganda (1); and, Zambia (1). These projects represented \$4.5 billion in new investment. The majority of projects were generation plants adding 1,260MW of capacity, of which 1,090MW were renewable energy projects valued at \$4.1 billion. The region added 9 solar PV plants (404MW, South Africa) and 2 solar CSP plants (150MW, South Africa); as well as 7 wind farms (523MW, South Africa). The Itzhi-Tezhi Power Corporation in Zambia developed a 134km 330kV double-cable and a 142km 220kV single-circuit transmission line as well as a 2x125 MVA substation, at a total cost of \$110 million, with support from the African Development Bank (\$35 million) and the European Investment Bank (\$35 million).

In the non-renewable category, two diesel plants in Kenya added 170MW, both covered by MIGA guarantees. Additionally, Triumph Heavy Fuel Oil (83MW) and Thika (87MW) received an IDA partial-risk guarantee of \$45 million each.

In 2011, all generation projects had at least 50 percent foreign equity, but in 2012 43 percent of the projects were identified as held by domestic sponsors. The majority of domestically owned projects were in South Africa, but Triumph HFO in Kenya was also domestically held. The International Finance Corporation (IFC) was the dominant multilateral lender in the region, supporting three projects in South Africa and Kenya. Wind was the predominant generation resource. Two existing power plant projects in the region were expanded, representing an additional \$490 million in investment. These projects include two gas-fired power plants in Ghana and Côte d'Ivoire.

In **East Asia and the Pacific (EAP)**, eight countries implemented 41 new projects: China (16); Indonesia (3); Lao PDR (2); Malaysia (3); Philippines (3); Mongolia (1); Thailand (9); Vietnam (4). These projects represented \$6.5 billion in new investment. Of these projects, all 41 were generation plants.

The generation plants were valued at \$6.5 billion and added 4.2GW of capacity, of which 1.6GW was renewable. Wind farms were concentrated in China and Mongolia and added 100MW. Furthermore, 258MW in solar plants reached closure. Hydropower plants contributed 895MW of new capacity in the Philippines, Lao PDR, Indonesia, Vietnam and China. Indonesia and the China added the largest private renewable generation capacity of 322MW to its grid, valued at \$459 million. Angat Hydropower Turbines IV & V (246MW, Philippines), was the largest project in the renewable energy category. In the non-renewable energy category, the Gulf Utai IPP (1.6GW, Thailand) was the largest project.

Expansion of existing projects added a further \$2.4 billion in investments, bringing total investments in the region to \$8.9 billion. The expansion of the Malakoff Tanjung Bin coal plant in Malaysia (2003) with 1,000MW to 3,100MW at a cost of \$2.1 billion was the largest single event. Financial closure was reached based on the principles of Islamic financing, with HSBC and Maybank as the lead arrangers.

In **Europe and Central Asia (ECA)**, seven countries implemented 55 new projects in eight countries: Albania (6); Bosnia (1); Bulgaria (8); Kosovo (1); Romania (7); Russian Federation (1); Turkey (13); Serbia (2); and, Ukraine (16). These projects represented \$9.3 billion in new investment. Of these projects, 41 were generation plants, three were electricity distribution divestitures (full), and eleven projects were natural gas distribution divestitures (partial).

The generation plants added 2.5GW valued at \$5.7 billion. Of the generation plants, 1.7GW was renewable valued at \$3.6 billion. Hydropower plants added 259MW, wind farms 1.2GW, and solar plants in Bulgaria, Romania and Ukraine added 314MW. With 1.2GW, Romania added the largest renewable generation capacity (702MW). Enel Tragusor-Zephyr wind farm (272MW, Romania) was the largest project in the renewable energy

category. In the non-renewable category, the Enerjisa Tufanbeyli coal plant (450MW, Turkey) was the largest project. Wind was the dominant generation technology, with 1.2GW in 2012.

Ukraine also tendered three electricity distribution divestitures and eleven natural gas distribution divestitures (partial) via competitive bidding based on highest price paid, raising \$3.7 billion. Four projects were expanded at a total cost of \$270 million.

In **Latin America and the Caribbean (LAC)**, 11 countries implemented 55 new projects in seven countries: Argentina (4); Brazil (36); Chile (6); Mexico (2); Nicaragua (2); Peru (3); and, Uruguay (2). These projects represented \$32.4 billion in new investment. Of these projects, 47 were generation plants and eight projects were transmission lines.

The generation plants were valued at \$30.0 billion and added 18.7GW, of which 17.4GW was renewable valued at \$28.6 billion. Hydropower plants added 14.5GW, and wind farms added 2.5GW as well. Four solar plants added 147MW. Brazil added the largest renewable generation capacity: 16.3GW, valued at \$22.9 billion. Belo Monte hydro-power plant (11,200MW, Brazil) was the largest project in the renewable energy category. In the non-renewable category, the Maranhao III thermal power plant (499MW, Brazil) was the largest project. Hydropower was the dominant generation technology, with 13.9GW in 2012.

Brazil also tendered eight electricity transmission concessions of more than 3,373 kilometers via competitive bidding based on lowest required annual revenue, valued at \$2.4 billion. BNDES supported two-thirds of Brazil's energy projects: seven transmission deals, as well as 17 generation plants. Existing projects invested \$5.7 billion, bringing total investment to \$38.2 billion in 2012.

In **South Asia (SAR)**, four countries implemented 67 new projects: Bangladesh (7); India (45); Nepal (1); Pakistan (9); and, Sri Lanka (5). These projects represented \$10.4 billion in new investment. Of these projects, 63 projects were generation plants and four projects were transmission lines.

The generation plants, valued at \$8.0 billion, added 6.4GW of which 3.1GW was renewable valued at \$4.8 billion. Hydro-power plants added 268MW, 37 wind farms 2.4GW, and 11 solar plants added 385 MW. Tadas wind farm (201MW, India) was the largest project in the renewable energy category. In the non-renewable category, the Jas Infrastructure and Power coal plant (1,320 MW, India) was the largest project. Wind power plants were the dominant generation technology, with 2.4 GW, closely followed by coal with 2.3GW. Two new rental power plants, both gas and diesel-fired, added 150MW in Bangladesh at a total cost of \$83 million.

Four transmission projects were competitively tendered: 3,753km valued at \$2.4 billion. The largest of these, the 1,290km Maharashtra Eastern Grid project, was awarded via direct negotiation to a joint-venture between Maharashtra State Electricity Transmission Company (26 percent) and Adani Group (74 percent). The other three projects were awarded via competitive tender based on lowest tariff.

Most projects in India were financed by domestic state-owned banks. In Pakistan, 78 percent of the projects were MDB supported, including six out of seven wind farms. Four existing coal plants in India, one diesel rental plant in Bangladesh, and a hydropower plant in Nepal expanded their business at a cost of \$1.0 billion, bringing total investment to \$11.4 billion. Investment decreased significantly since 2010, when investment hit \$38 billion.

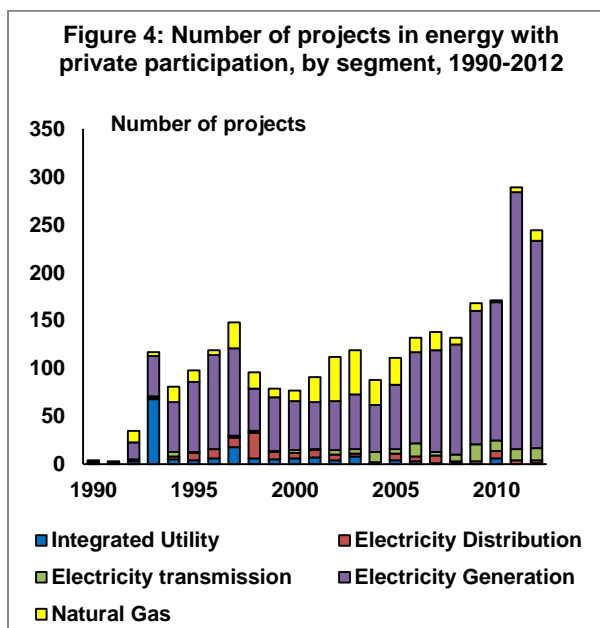
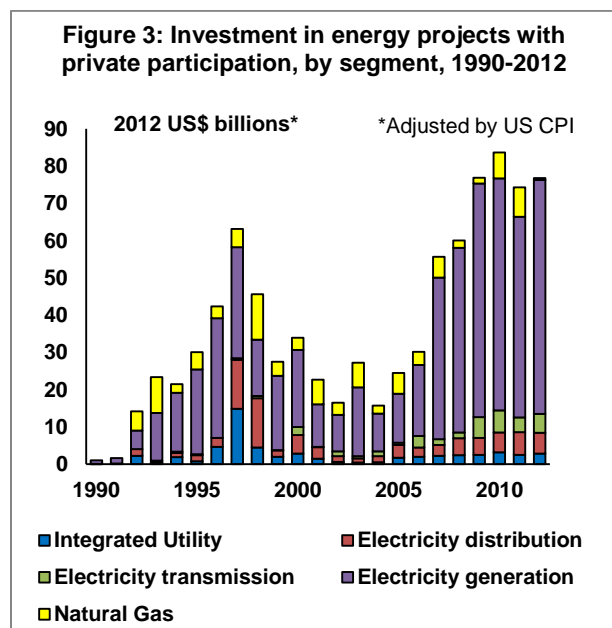
In **Middle East and North Africa (MNA)** there were four projects in two countries, whereas in 2011 no projects were recorded. In Morocco, three projects reached financial closure: Ouarzazate CSP solar plant (160MW), ADWEA Jorf Lasfar Coal IPP (700MW), and the Nareva Tarfaya wind farm (300MW). In Jordan, AES financed a diesel IPP (240MW). Total investment in 2012 was \$3.7 billion, of which \$1.9 billion was in renewable energy. In 2010, the Kuraymat solar/gas-fired power plant (150MW, Egypt) reached financial closure with support from the Global Environment Facility and the Japan Bank of International Cooperation. In 2009, the Al-Qatrana

power plant (373MW, 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** 21 projects reached financial closure, increasing generation capacity by 2.2GW with investment of \$2.7 billion, up from \$1.7 billion in 2011. This is close to the 2007-2011 annual average of \$2.8 billion, and higher than the years during the US financial crisis (2008-2009). 2012 projects included two rental power plants (150 MW) in Bangladesh. Natural gas projects added 911MW in Bangladesh. Hydropower plants added 379MW in Nepal, Lao PDR, Uganda, Nicaragua, and Sri Lanka; three of these projects were larger than 50MW; three were smaller than 50MW.

**Subsector overview**

The electricity sector accounted for 233 projects (95 percent of all new projects) and total investments of \$66.8 billion. Natural gas only had \$500 million in investments, in 11 new projects, all of which partial divestitures of natural gas distribution assets in Ukraine. The subsector of electricity includes: electricity generation, transmission and distribution.



## **Featured project**

### **Consortio Norte Brasil Energia Belo Monte Hydropower Plant | Xingu River, Brazil | 35 years**

Consortio Norte Brasil Energia, registered in Brazil, is a joint-venture between state-owned CHESF (49.98 percent) and eight Brazilian companies: Queiroz Galvao (10.02 percent), Mendes Junior Trading Engenharia SA (3.75 percent), Galvao Engenharia SA (3.75 percent), Serveng-Civilsan SA (3.75 percent), J Malucelli Construtora de Obras SA (9.98 percent), Contern Construcoes e Comercio (3.75 percent), Cetenco Engenharia SA (5 percent) and Grupo Bertin's subsidiary Gaia Energia e Participacoes SA (10.02 percent). The consortium was awarded the build-own-operate contract for the 11,233MW Belo Monte hydropower plant on the Xingu River, in the State of Para.

#### **Contractual information**

In a competitive tender with two final bidders, the consortium won a 30-year Power Purchase Agreement with state-owned electricity distribution company Cemig. The winning bid was priced at \$44.31/MWh, plus \$10.17 million in payments to the government upon commissioning. The other consortium was Consortio Belo Monte Energia, comprising of Andrade Gutierrez, Vale SA, Furnas, Eletrosul, CBA, and Neoenergia.

#### **Financial information**

The total project cost was \$14.8 billion. Financial closure of a \$10,561 million lending package took place in December 2012, after an initial \$2.2 billion loan commitment from BNDES in March 2011, and \$654 million in June 2011. The recent \$10,561 million (22.5 billion Reais) lending package included a \$3.3 billion (7 billion Reais) tranche from state-owned bank Caixa Economica Federal (CEF) and a \$940 million (2 billion Reais) tranche from BTG Pactual SA7, a local investment bank. BNDES was accountable for the remaining \$6.3 billion (13.5 billion Reais) in direct financing. The sponsor consortium contributed \$14.8 billion in equity. This loan package included \$1.54 billion earmarked for social and environmental activities.

**Table 1: Energy projects with financial or contractual closure in 2012 (total of 244 projects)**

Africa										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity type	Capacity	Sponsors
1	Kenya	Triumph HFO Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	140	MW	83	Broad Holding (..% / Kenya), Interpel Investments (..% / Kenya), Taceflex (..% / Kenya), Southern Inter-trade (..% / Kenya)
2	Kenya	Thika Thermal Power Project	Construction	Electricity generation	Greenfield project	Build, own, and operate	112	MW	87	Melec Group (90% / Lebanon)
3	South Africa	Abengoa KaXu Solar I CSP Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	844	MW	100	Abengoa (51% / Spain), Industrial Development Corporation (49% / South Africa)
4	South Africa	Abengoa Khi Solar I CSP Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	430	MW	50	Abengoa (51% / Spain), Industrial Development Corporation (49% / South Africa)
5	South Africa	Kathu Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	394	MW	81	Building Energy (..% / Italy)
6	South Africa	ACED Cookhouse Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	300	MW	139	Macquarie Infrastructure Group (MIG) (25% / Australia), Old Mutual

										(25% / South Africa), AFPOC (50% / Mauritania)
7	South Africa	SolarReserve Letsatsi Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	280	MW	75	Solar Reserve (..% / United States), Kensani Holdings (..% / South Africa), Oakleaf Investments (..% / South Africa), Intikon Energy (..% / South Africa)
8	South Africa	Solar Capital De Aar Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	259	MW	75	Solar Capital (90% / South Africa), Others (10% / ..)
9	South Africa	Scatec Kalkbuilt Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	259	MW	72.5	Scatec (38% / Norway), Itochu Corporation (23% / Japan), Others (..% / ..)
10	South Africa	Sumitomo Dorper Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	258	MW	100	Sumitomo Corporation (60% / Japan), Rainmaker Energy (15% / South Africa), Others (..% / ..)
11	South Africa	Standard Bank Kouga Oyster Bay Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	222	MW	77.6	Standard Bank (35% / South Africa), Inspire Evolution Investment Management (27% / South Africa)
12	South Africa	Gestamp Karoo Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	185	MW	75	Gestamp Corporation (60% / Spain), Shanduka Group (25% / South Africa),

										Others (15% / ..)
13	South Africa	Old Mutual Hopefield Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	173	MW	78	Macquarie Infrastructure Group (MIG) (39% / Australia), Old Mutual (39% / South Africa)
14	South Africa	Mainstream Droogfontein Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	150	MW	50	Mainstream Renewable Power (..% / Ireland), Genesis Eco-Energy (..% / South Africa), Globeleq (..% / United Kingdom)
15	South Africa	Old Mutual - Herbert Solar PV	Construction	Electricity generation	Greenfield project	Build, own, and operate	96	MW	20	Old Mutual (50% / South Africa)
16	South Africa	Biotherm - Dassiesklip Wind	Construction	Electricity generation	Greenfield project	Build, own, and operate	68	MW	27	BioTherm Energy (60% / South Africa)
17	South Africa	Metro Wind Van Staadens Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	50	MW	26	Metrowind (65% / South Africa), Basil Read (35% / South Africa)
18	South Africa	Old Mutual - Greefspan Solar PV	Construction	Electricity generation	Greenfield project	Build, own, and operate	48	MW	10	Old Mutual (50% / South Africa)
19	South Africa	Konkoonsies Solar PV	Construction	Electricity generation	Greenfield project	Build, own, and operate	34	MW	10	BioTherm Energy (60% / South Africa)
20	South Africa	Biotherm - Aries Solar PV	Construction	Electricity generation	Greenfield project	Build, own, and operate	34	MW	10	BioTherm Energy (90% / South Africa)



21	Uganda	SAEMS Nyamwamba SHPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	34	MW	14	South Asia Energy Management Systems (SAEMS) (100% / United States)
22	Zambia	Itezhi-Tezhi Power Corporation Transmission line	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	110	KM	142	Tata Enterprises (50% / India), Zambia Electric Supply Corporation (ZESCO) (50% / Zambia)

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	Neijiang Solid Waste Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	101.43	MW	18	Herrel Environmental Protection Industrial Co. Ltd. (100% / China)
2	China	Zhuzhou Solid Waste Power Plant Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	79.98	MW	24	Jinliy Group (Chuangzhi Group) (100% / China)
3	China	Binzhou Tiandiyuan Biomass Power	Construction	Electricity generation	Greenfield project	Build, operate, and	69.57	MW	48	Shandong Tiandiyuan Industrial Co., Ltd.

		Plant				transfer				(100% / China)
4	China	China WindPower Gaoyouhu Wind Farm Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	64.43	MW	49.5	China Windpower Group Limited (100% / China)
5	China	Yili Zhenfa 30MW PV Plant Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	63.39	MW	30	Jiangsu Zhenfa Solar Power Technological Development Co., Ltd. (100% / China)
6	China	Chibi City Liushanhu Town Biomass Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	51.69	MW	30	Kaidi Electric Power (100% / China)
7	China	Kai County Solid Waste Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	48.75	MW	12	Beijing Sound Environment Industry Group (100% / China)
8	China	Yongshun County Biomass Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	48.65	MW	30	Kaidi Electric Power (100% / China)
9	China	De'an Biomass Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	47.5	MW	30	Kaidi Electric Power (100% / China)
10	China	Yongxin County Biomass Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	44.37	MW	30	Kaidi Electric Power (100% / China)

11	China	Pingyang County Jinan QiQuan Biomass Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	35.6	MW	30	Jinan QiQuan Thermolectricity Co. Ltd. (100% / China)
12	China	Qiemo County Yutian 6MW PV Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	28.53	MW	6	Xinjiang Yutian New Energy Investment Co (100% / China)
13	China	Baicheng County Ahebulong 1st Cascade Hydropower Station	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	21.08	MW	15.4	Xinjiang Taisheng Energy Development Co., Ltd. (100% / China)
14	China	Yangjiang Hanergy Roof PV Plant Demonstration Project	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	12.96	MW	27	Herrel Environmental Protection Industrial Co. Ltd. (100% / China)
15	China	Jiangsu Changzhou Trina PV Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	0	MW	2	Trina Solar Ltd (100% / China)
16	China	Deqing Jianeng Solid Waste Power Plant Acquisition	Construction	Electricity generation	Divestiture	Full	0	MW	12	Mizuda Group (100% / China)
17	Indonesia	KOMIPO Wampu SHPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	174	MW	45	Korea Midland Power Corporation (KOMICO) (..% / Korea, Rep.), Daewoo E&C (..% / Korea, Rep.)

18	Indonesia	SGI-Mitabu Solar Plant Phase I	Construction	Electricity generation	Greenfield project	Build, own, and operate	104	MW	50	Solar Guys International (SGI) (..% / Australia), Mitabu Australia (..% / Australia)
19	Indonesia	Bina Puri Desa Patteneteang SHPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	10	MW	4.2	Bina Puri Group (80% / Malaysia)
20	Lao PDR	Sinohydro Nam Khan II & III HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	430	MW	173	Sinohydro (85% / China)
21	Lao PDR	HAG Nam Kong II HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	71.42	MW	66	Hoang Anh Gia Lai Group (100% / Vietnam)
22	Malaysia	Tanjung Bin Power Plant Expansion	Construction	Electricity generation	Greenfield project	Build, own, and operate	2211	MW	1000	Malakoff Bhd (100% / Malaysia)
23	Malaysia	Felda Global Jenka Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	36	MW	12.5	Tenaga Nasional Bhd. (40% / ..), Felda Holdings BHD (60% / Malaysia)
24	Malaysia	Cypark Pajam Solar/Biogas Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	17.2	MW	7	Cypark Resources BHD (..% / Malaysia), LG Electronics Inc. (..% / Korea, Rep.)
25	Mongolia	Newcom Salkhit Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	120	MW	50	Newcom (75% / Mongolia)

26	Philippines	Tranzen Agus III HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	500	MW	225	Lanao Hydropower Development Corporation (LHDC) (20% / Philippines), Tranzen Group Incorporated (80% / Philippines)
27	Philippines	Angat HPP Turbine IV & V	Construction	Electricity generation	Divestiture	Full	440.9	MW	246	Korea Water Resources Corporation (100% / Korea, Rep.)
28	Philippines	ASEA Aklan Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	12	MW	12	ASEA One Power Corporation (AOPC) (..% / Philippines), LG Group (..% / Korea, Rep.)
29	Thailand	Gulf Utai Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	1280	MW	1600	J-POWER (90% / Japan), Others (10% / ..)
30	Thailand	GPS Nakhon Sawan & Chai Nat Solar Plants	Construction	Electricity generation	Greenfield project	Build, own, and operate	54.6	MW	19.5	Gunkul Engineering (40% / Thailand), Electricity Generating Company (EGCO) (60% / Thailand)
31	Thailand	EGCO SunWat 1-4 Solar Plants	Construction	Electricity generation	Greenfield project	Build, own, and operate	52.7	MW	36	Electricity Generating Company (EGCO) (100% / Thailand)

32	Thailand	Korat 3-5 & 7-9 Solar Plants	Construction	Electricity generation	Greenfield project	Build, own, and operate	39.2	MW	36	SPCG Public Company Ltd (100% / Thailand)
33	Thailand	EGCO SPP5 Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	27.8	MW	8	Electricity Generating Company (EGCO) (100% / Thailand)
34	Thailand	SPCG Khon Kaen 3, 4, 5, 8	Construction	Electricity generation	Greenfield project	Build, own, and operate	26.1	MW	24	SPCG Public Company Ltd (.% / Thailand)
35	Thailand	Songkhla Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	20.2	MW	9.9	Ratchaburi Electricity Generating Holding Plc (40% / Thailand), Precise Power Producer Company (40% / Thailand), Assiddeek Savings Cooperative (20% / Thailand)
36	Thailand	Solarta Nakhon Pathom Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	18.6	MW	12.4	Yanhee Group (51% / Thailand), Ratchaburi Electricity Generating Holding Plc (49% / Thailand)
37	Thailand	Ratch Sao Thien-A Flared Gas Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	6.2	MW	4.2	Ratchaburi Electricity Generating Holding Plc (100% / Thailand)

38	Vietnam	Nam Na 3 Hydropower Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	120.2	MW	78	Hung Hai Construction Limited Company (100% / Vietnam)
39	Vietnam	VRG Dak Sin I SHPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	32.2	MW	27	Vietnam Rubber Group (VRG) (100% / Vietnam)
40	Vietnam	Nam Xay Noi II SHPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	12.8	MW	12	Song Da General Construction Company (100% / Vietnam)
41	Vietnam	Lang Bang SHPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	3.6	MW	3.6	Van Yen Exploitation Production and Construction JSC (100% / Vietnam)

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	ETEA Lapaj SHPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	19.4	MW	13.6	ETEA Group (100% / Italy)
2	Albania	Energo-SAS Sasaj SHPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	10.6	MW	8.6	AGNA Group (100% / Albania)

3	Albania	Ble-Klo-Ar Tervol SHPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	10.1	MW	12	Ble-Klo-Ar (100% / Albania)
4	Albania	Ostrovica Faqekuq I & II SHPPs	Operational	Electricity generation	Greenfield project	Build, own, and operate	9	MW	14	Ostrovica Energy (100% / Albania)
5	Albania	Fidia Verbe-Selce 1 & 2 SHPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	7.7	MW	5	Fidia Ambiente (..% / Italy), ADRE Group (..% / Italy), Xhemi (..% / Albania)
6	Albania	Erma Carshova SHPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	1.8	MW	1.5	Erma (100% / Albania)
7	Bosnia and Herzegovina	EFT Stanari Coal Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	661.9	MW	300	Energy Financing Team (EFT) (100% / United Kingdom)
8	Bulgaria	MEMC Karadzhalovo Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	235.8	MW	60.4	ACF Renewables (100% / Malta)
9	Bulgaria	Moncada Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	37.5	MW	16	Moncada Energy Group (100% / Italy)
10	Bulgaria	LS/CHINT Yambol Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	37.4	MW	14.5	CHINT Group (50% / China), LG Electronics Inc. (50% / Korea, Rep.)



11	Bulgaria	Helios Yerusalimovo Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	19.5	MW	5	Helios Power (100% / Bulgaria)
12	Bulgaria	CEZ Oreshets Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	13	MW	5	CEZ Group (100% / Czech Republic)
13	Bulgaria	Helios Montana Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	11.7	MW	3	Helios Power (100% / Bulgaria)
14	Bulgaria	Helios Zelena Svetlina Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	7.8	MW	2	Helios Power (100% / Bulgaria)
15	Bulgaria	Helios Sredetz Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	7.1	MW	1.8	Helios Power (100% / Bulgaria)
16	Kosovo	Kosovo Electricity Distribution and Supply (KEDS)	Operational	Electricity distribution	Divestiture	Full	424.1	Population (thousands)	1800	Limak Holding (50% / Turkey), Calik Holding (50% / Turkey)
17	Romania	Enel Targusor-Zephyr Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	532	MW	272	Elcomex Group (..% / Romania), Enel SpA (..% / Italy)
18	Romania	Verbund Casimcea 1 & 2 Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	332.5	MW	200	Verbund (63% / Austria)
19	Romania	EPGE Chimogeni-Independenta Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	169	MW	80	Joannou & Paraskevaides Ltd (20% / Channel)

										Islands), Marguerite Fund (50% / Luxembourg), EnerCap Power Fund (30% / Czech Republic)
20	Romania	Samsung Giurgiu Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	158.9	MW	45	Samsung Corporation (..% / Korea, Rep.), Green Source (..% / Austria)
21	Romania	EDPR Hehendinti, Olt & Dolj Solar Plants	Construction	Electricity generation	Greenfield project	Build, own, and operate	152	MW	39	EDP Renovaveis (100% / Portugal)
22	Romania	EDPR Sarichioi & Vutcani Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	108	MW	57	EDP Renovaveis (100% / Portugal)
23	Romania	Espe Sapanta SHPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	27.9	MW	9.9	Espe Group (100% / Italy)
24	Russian Federation	AltEnerg Belgorod Biogas Plant 1	Operational	Electricity generation	Greenfield project	Build, own, and operate	13	MW	2.4	AltEnerg (100% / Russian Federation)
25	Serbia	Mirotin Vrbas Biogas Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	7.2	MW	1	Sava Kovacevic (100% / Serbia)

26	Serbia	W&W Crkvina & Recica SHPPs	Construction	Electricity generation	Greenfield project	Build, own, and operate	4.2	MW	2.2	W&W Energy (100% / Serbia)
27	Turkey	Baskent Elektrik Dagitim A.S. (BEDAS)	Operational	Electricity distribution	Divestiture	Full	1960	Number of connections (thousands)	3080	Cengiz Holding (..% / Turkey), Kolin Group (..% / Turkey), Limak Holding (..% / Turkey)
28	Turkey	Enerjisa Tufanbeyli Coal Plant	Construction	Electricity generation	Greenfield project	Merchant	1350	MW	450	Verbund (50% / Austria), Sabanci Holding (50% / Turkey)
29	Turkey	Gediz Elektrik Dagitim A.S.	Operational	Electricity distribution	Divestiture	Full	1230	Number of connections (thousands)	2440	Elsan (..% / Turkey), Tumas (..% / Turkey), Turcas Elektrik Uretim A.S. (..% / Turkey)
30	Turkey	Enerjisa Bares Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	299	MW	142.5	Verbund (50% / Austria), Sabanci Holding (50% / Turkey)
31	Turkey	EDF Geycek Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	257	MW	168	EDF Energies Nouvelles SA (..% / France), Polat Enerji (49% / Turkey)

32	Turkey	Lodos Karaburun Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	227	MW	120	Alto Holding (..% / Turkey)
33	Turkey	Enerjisa Menge HPP	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	151.3	MW	89	Verbund (50% / Austria), Sabanci Holding (50% / Turkey)
34	Turkey	Ayen Gumushane HPP	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	99.1	MW	70.8	Aydiner Insaat (..% / Turkey)
35	Turkey	Bilgin Zeytineli Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	90	MW	50	Bilgin Enerji (100% / Turkey)
36	Turkey	Ozaltin Yedisu HPP	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	33.6	MW	24	Ozaltin (50% / Turkey)
37	Turkey	Eolos Senkoy Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	31.2	MW	24	Guris Group (100% / Turkey)
38	Turkey	Ayen Mordogan Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	30.75	MW	30.8	Aydiner Insaat (..% / Turkey)
39	Turkey	Akfen Demirciler SHPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	11.8	MW	8.4	Akfen Holding (100% / Turkey)
40	Ukraine	Activ Dunayskaya Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	168	MW	43.1	Activ Solar Holding (100% / Austria)

41	Ukraine	Activ Starokozache Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	167.5	MW	43	Activ Solar Holding (100% / Austria)
42	Ukraine	Activ Mityaev Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	123	MW	31.6	Activ Solar Holding (100% / Austria)
43	Ukraine	Novorossiske Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	16.2	MW	9	Vindkraft Ukraina (100% / Ukraine)
44	Ukraine	Luhanskgas PJSC	Operational	Natural gas distribution	Divestiture	Partial	10.5	Number of connections (thousands)	624	Gaztek (26% / Ukraine)
45	Ukraine	Dnipropetrovskgaz	Operational	Natural gas distribution	Divestiture	Partial	7.7	Number of connections (thousands)	Not Available	Gaztek (51% / Ukraine)
46	Ukraine	Rengy Porogi Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	7.5	MW	4.5	Rengy Development (100% / Ukraine)
47	Ukraine	Krymgaz OJSC	Operational	Natural gas distribution	Divestiture	Partial	6.3	Number of connections (thousands)	354	Gaztek (32% / Ukraine)
48	Ukraine	Ivano-Frankivskgaz	Operational	Natural gas distribution	Divestiture	Partial	4.1	Number of connections (thousands)	Not Available	Gaztek (35% / Ukraine)
49	Ukraine	Volynskgaz OJSC	Operational	Natural gas distribution	Divestiture	Partial	3.1	Number of connections (thousands)	Not Available	Gaztek (23% / Ukraine)

50	Ukraine	Zhitomirgaz	Operational	Natural gas distribution	Divestiture	Partial	2.4	Number of connections (thousands)	Not Available	Gaztek (60% / Ukraine)
51	Ukraine	Zaporizhgaz	Operational	Natural gas distribution	Divestiture	Partial	2.1	Number of connections (thousands)	Not Available	Gaztek (25% / Ukraine)
52	Ukraine	Chernivtsigaz OJSC	Operational	Natural gas distribution	Divestiture	Partial	1	Number of connections (thousands)	Not Available	Gaztek (20% / Ukraine)
53	Ukraine	Sevastopolgaz	Operational	Natural gas distribution	Divestiture	Partial	0.6	Number of connections (thousands)	2	Gaztek (25% / Ukraine)
54	Ukraine	Syrnygaz	Operational	Natural gas distribution	Divestiture	Partial	0	Number of connections (thousands)	Not Available	Gaztek (26% / Ukraine)
55	Ukraine	Mykolaivgaz	Operational	Natural gas distribution	Divestiture	Partial	0	Number of connections (thousands)	Not Available	Gaztek (51% / 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	Isolux Corsan Loma Blanca I & II	Construction	Electricity generation	Greenfield project	Build, own, and operate	261	MW	100	Isolux Corsan (100% / Spain)

2	Argentina	IMPESA - Malaspina Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	138	MW	50	Impsa (100% / Argentina)
3	Argentina	Isolux Loma Blanca VI Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	103	MW	50	Isolux Corsan (100% / Spain)
4	Argentina	IMPESA - Koluel Kayke II Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	81	MW	25	Impsa (100% / Argentina)
5	Brazil	Belo Monte Hydro Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	14800	MW	11200	Construtora Queiroz Galvao (10% / Brazil), J. Malucelli Construtora de Obras LTDA (10% / Brazil), Others (20% / ..), Grupo Bertin (10% / Brazil)
6	Brazil	Teles Pires HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	1896	MW	1820	Iberdrola SA (51% / Spain), Odebrecht SA (1% / Brazil)
7	Brazil	Interligacao Eletrica do Madeira (IEMA)	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	1793	KM	2375	Interconexion Electrica SA (ISA) (51% / Colombia)
8	Brazil	Forca Eolica Rio Grande do Norte Wind Parks	Construction	Electricity generation	Greenfield project	Build, own, and operate	832.7	MW	108	Iberdrola SA (70% / Spain), Previ (24% / Brazil)

9	Brazil	Renova Energia Alto Sertao II Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	717.2	MW	362.6	Renova Energia S.A. (100% / Brazil)
10	Brazil	Santo Antonio do Jari Hydro Power Plant	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	512.3	MW	373.4	EDP Renovaveis (100% / Portugal)
11	Brazil	Alusa Ferreira Gomes HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	466	MW	252	Alusa (100% / Brazil)
12	Brazil	Triunfo Garibaldi HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	428.1	MW	178	Triunfo (100% / Brazil)
13	Brazil	Brasventos Rio Grande do Norte Wind Farm	Construction	Electricity generation, Electricity transmission	Greenfield project	Build, own, and operate	378.2	MW	165.7	J. Malucelli Construtora de Obras LTDA (51% / Brazil)
14	Brazil	Energisa Renascenca Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	364.6	MW	150	Grupo Energisa (100% / Brazil)
15	Brazil	Maranhao III Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	306.8	MW	499	EBX Capital Partners (100% / Brazil)
16	Brazil	Tractebel's Trairi Wind Park	Construction	Electricity generation	Greenfield project	Build, own, and operate	265	MW	115.4	SUEZ (100% / France)



17	Brazil	Chesf-Brennand Sento Se Wind Farms	Operational	Electricity generation	Greenfield project	Build, own, and operate	214.5	MW	90	Brennand (51% / Brazil), Chesf (49% / Brazil)
18	Brazil	Santana do Livramento Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	208.6	MW	78	Rio Bravo Energia (41% / Brazil)
19	Brazil	CPFL Renovaveis Bio Alvorada & Bio Coopcana Biomass Plants	Construction	Electricity generation	Greenfield project	Build, own, and operate	184.9	MW	125	CPFL Energia (64% / Brazil), Ersá (36% / Brazil)
20	Brazil	Enel's Cristal Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	182.3	MW	90	Enel SpA (100% / Italy)
21	Brazil	Caetite Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	182.3	MW	60	Iberdrola SA (70% / Spain), Previ (24% / Brazil)
22	Brazil	Goiás Transmissao	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	180.6	KM	259	J. Malucelli Construtora de Obras LTDA (31% / Brazil), Jackson Empreendimentos Ltda (20% / Brazil)
23	Brazil	Pernambuco III Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	180	MW	200.8	Bolognesi Group (87% / Brazil)
24	Brazil	Jatai Thermal Power Plant	Operational	Electricity generation	Greenfield project	Build, own, and	179.1	MW	105	Cosan SA (100% / Brazil)

						operate				
25	Brazil	CPFL Renovaveis Rio Grande do Norte Wind Park	Construction	Electricity generation	Greenfield project	Build, own, and operate	152.3	MW	78.2	CPFL Energia (64% / Brazil), Ersa (37% / Brazil)
26	Brazil	MGE Transmissao	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	143.8	KM	258	J. Malucelli Construtora de Obras LTDA (20% / Brazil), Jackson Empreendimentos Ltda (31% / Brazil)
27	Brazil	Linhas de Transmissao de Montes Claros	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	137.2	KM	162	Cobra Group (100% / Spain)
28	Brazil	J. Malucelli Energia SHPPs	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	124.9	MW	76.1	J. Malucelli Construtora de Obras LTDA (100% / Brazil)
29	Brazil	Dunas do Paracuru Wind Power Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	92	MW	42	Ventos Brasil Comercio e Representacoes LTDA (60% / Brazil), Inversiones Teneria (40% / Spain)
30	Brazil	BEN Alagoas Biomass Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	79.8	MW	53	Bolognesi Group (100% / Brazil)
31	Brazil	Barra dos Coqueiros Wind Power Plant	Operational	Electricity generation	Greenfield project	Build, own, and	62.5	MW	30	Jackson Empreendimentos Ltda (56% / Brazil), SN

						operate				Power (39% / Norway), Small local investors (5% / ..)
32	Brazil	Salto Goes Small Hydro Power Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	58.3	MW	20	CPFL Energia (64% / Brazil), Ersa (37% / Brazil)
33	Brazil	ETVG - Empresa de Transmissao de Varzea Grande	Operational	Electricity transmission	Greenfield project	Build, operate, and transfer	44.6	KM	Not Available	Alusa (100% / Brazil)
34	Brazil	Empresa Santos Dumont de Energia	Operational	Electricity transmission	Greenfield project	Build, operate, and transfer	44.6	KM	Not Available	Alusa (100% / Brazil)
35	Brazil	Encruzo Novo Transmissora de Energia	Operational	Electricity transmission	Greenfield project	Build, operate, and transfer	43.1	KM	240	Elecnor (100% / Spain)
36	Brazil	Ze Tunin Small Hydro Power Plant	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	35.9	MW	8	Grupo Energisa (100% / Brazil)
37	Brazil	Atlantico - Concessionaria de Transmissao de Energia do Brasil	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	35.1	KM	79	CME Construcao e Manutencao Electromecanica (100% / Portugal)
38	Brazil	Rio Sirinhaem Energia Small Hydro Power Plants	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	25.3	MW	6.5	Grupo Cornelio Brennand (70% / Brazil), Klobtiz Ltda (30% / Brazil)

39	Brazil	Pioneiros II Thermal Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	6.2	MW	50	Pioneiros Bioenergia (100% / Brazil)
40	Brazil	Rio Bonito Energia	Operational	Electricity generation	Greenfield project	Build, operate, and transfer	0	MW	4.2	Rio Bonito Energia (100% / Brazil)
41	Chile	Pattern - El Arrayan Wind Project	Construction	Electricity generation	Greenfield project	Build, own, and operate	245	MW	115	AEI (..% / United States), Antofagasta PLC (..% / Chile)
42	Chile	Ingenostrum - Laberinto Este PV	Construction	Electricity generation	Greenfield project	Build, own, and operate	215	MW	77	Ingenostrum (100% / Spain)
43	Chile	SoWiTec Valle De Los Vientos Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	140	MW	90	Enel SpA (100% / Italy)
44	Chile	Sky Solar 18MW PV	Construction	Electricity generation	Greenfield project	Build, own, and operate	75	MW	18	Sky Solar (100% / China)
45	Chile	Endesa - Piruquina Small Hydro	Construction	Electricity generation	Greenfield project	Build, own, and operate	24	MW	7.3	Endesa (Chile) (100% / Chile)
46	Chile	Abengoa CSP - El Tesoro	Construction	Electricity generation	Greenfield project	Build, own, and operate	12	MW	12	Antofagasta PLC (100% / Chile)

47	Mexico	Macquarie Marena Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	1006	MW	396	Macquarie Infrastructure Group (MIG) (..% / Australia)
48	Mexico	ENEL Bee Nee Stipa II&III	Operational	Electricity generation	Greenfield project	Build, own, and operate	320	MW	144	Enel SpA (100% / Italy)
49	Nicaragua	Globaleq - Eolo Wind Project	Construction	Electricity generation	Greenfield project	Build, own, and operate	116	MW	44	Globeleq (100% / United Kingdom)
50	Nicaragua	Inversiones Hidroelectricas SA - Small Hydro	Construction	Electricity generation	Greenfield project	Build, own, and operate	14	MW	5	Inversiones Electricas SA (100% / Nicaragua)
51	Peru	Inkia - Cerro del Aguila	Construction	Electricity generation	Greenfield project	Build, own, and operate	905	MW	510	Israel Corp. (75% / Israel)
52	Peru	AEI - Fenix IPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	904	MW	530	AEI (88% / United States)
53	Peru	Conduit Panamericana/Tacna Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	210	MW	40	Conduit Capital Partners LLC (81% / United States)
54	Uruguay	IMPESA Libertador I Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	2177	MW	64.7	Impsa (100% / Argentina)

55	Uruguay	Abengoa - Palmaitir Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	144	MW	50	Abengoa (100% / Spain)
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Middle East & North Africa										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity type	Capacity	Sponsor
1	Morocco	Ouarzazate Solar Phase I	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	1438	MW	160	ACWA Power (85% / Saudi Arabia)
2	Morocco	ADWEA - Jorf Lasfar IPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	1400	MW	700	Abu Dhabi National Energy Company (TAQA) (100% / United Arab Emirates)
3	Morocco	Nareva Tarfaya Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	467	MW	300	International Power (50% / United Kingdom), Nareva Holdings (50% / Morocco)
4	Jordan	AES - Diesel IPP	Construction	Electricity generation	Greenfield project	Build, own, and operate	350	MW	240	AES Corporation (60% / United States), Mitsui (40% / Japan)

South Asia										
	Country	Project name	Project status	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity type	Capacity	Sponsor
1	Bangladesh	Munshiganj Mawa Orion-Long King coal-fired plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	578.9	MW	522	Long King (50% / China), Orion Group (50% / Bangladesh)
2	Bangladesh	Haripur Marubeni combined cycle plan	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	370	MW	360	Marubeni Corporation (100% / Japan)
3	Bangladesh	Meghnaghat II Power Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	300	MW	450	Summit Industrial and Mercantile Corp. (50% / Bangladesh), General Electric (50% / United States)
4	Bangladesh	Hosaf Fenchugonj Rental Power Plant	Operational	Electricity generation	Greenfield project	Rental	59.2	MW	50	Hosaf Group (100% / Bangladesh)
5	Bangladesh	Fujian Keraniganj HFO Power Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	59.2	MW	50	Fujian Longking Company (50% / China), Maisha Group (50% / Bangladesh)
6	Bangladesh	Midland Ashuganj Natural Gas Plant	Construction	Electricity generation	Greenfield project	Build, operate, and	32	MW	51	Viyellatex Group (50% / Bangladesh), Youth Group (50% /

						transfer				Bangladesh)
7	Bangladesh	Acorn Juldah HFO Rental Power Plant	Operational	Electricity generation	Greenfield project	Rental	23.7	MW	100	Acorn Infrastructure Services (100% / United Kingdom)
8	India	Jas Infrastructure and Power Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	1384.7	MW	1320	Abhijeet Group (100% / India)
9	India	Western UP Power Transmission Company Limited	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	941	KM	863	Cobra Group (84% / Spain)
10	India	Maharashtra Eastern Grid Power Transmission Company Limited	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	882.3	KM	1290	Adani Group (74% / India)
11	India	Rajasthan Sun Technique Energy Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	368.3	MW	100	Reliance ADA Group (100% / India)
12	India	Shirpur Power Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	329.9	MW	300	Sintex Industries Limited (100% / India)
13	India	Bhopal Dhule Transmission Company Limited	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	320.2	KM	990	Vedanta Resources Plc (100% / United Kingdom)
14	India	Bothe Windfarm Development Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	244.7	MW	174.6	Continuum Wind Energy (100% / Singapore)



15	India	Jabalpur Transmission Company Limited	Construction	Electricity transmission	Greenfield project	Build, operate, and transfer	218.5	KM	610	Vedanta Resources Plc (100% / United Kingdom)
16	India	Tadas Wind Energy Limited	Operational	Electricity generation	Greenfield project	Build, own, and operate	218.5	MW	200.8	Infrastructure Leasing & Financial Services (IL&FS) (100% / India)
17	India	Beta Wind Farm (Tamil Nadu) Private Limited	Operational	Electricity generation	Greenfield project	Merchant	198	MW	156	Shriram Group (100% / India)
18	India	Beta Wind Farm (Gujarat & Andhra) Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	183.4	MW	144	Shriram Group (100% / India)
19	India	Godavari Naukh CSP Solar Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	148.9	MW	50	Godavari Power & Ispat Limited (100% / India)
20	India	Nagai Power Private Limited	Construction	Electricity generation	Greenfield project	Merchant	143.7	MW	150	KVK Energy Private Ltd. (100% / India)
21	India	MEIL Green Power (Anantpur) Limited 50MW CSP	Construction	Electricity generation	Greenfield project	Build, own, and operate	134.7	MW	50	Megha Engineering & Infrastructures Limited (100% / India)
22	India	NuPower Renewables (Tirunelveli) Windfarm 100.5MW	Operational	Electricity generation	Greenfield project	Build, own, and operate	133.1	MW	100.5	NuPower Renewables Limited (100% / India)
23	India	Rayala Wind Power Company	Construction	Electricity generation	Greenfield project	Build, own, and	120.5	MW	100.8	Greenko Group (100% / India)

		Private Limited				operate				
24	India	CLP (Jaisalmer) Windfarm 102.4MW	Construction	Electricity generation	Greenfield project	Build, own, and operate	120	MW	102.4	China Light and Power Ltd. (100% / Hong Kong, China)
25	India	Fortune Five Hydel Projects Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	114.3	MW	100.8	Greenko Group (100% / India)
26	India	Torrent Sangli 75MW Windfarm	Construction	Electricity generation	Greenfield project	Build, own, and operate	97.5	MW	75	Torrent Group (100% / India)
27	India	NSL Wind Power Company (Satara) Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	96.4	MW	75	NSL Sugars Limited (100% / India)
28	India	Welspun Energy Jodhpur Solar Project 50MW	Operational	Electricity generation	Greenfield project	Build, own, and operate	90	MW	50	Welspun Energy Limited (100% / India)
29	India	Tata Mithapur Solar Plant	Operational	Electricity generation	Greenfield project	Build, own, and operate	78.2	MW	25	Tata Enterprises (100% / India)
30	India	SLREPL 25 MW Banskantha Solar Project	Operational	Electricity generation	Greenfield project	Build, own, and operate	72.7	MW	25	Moser Baer India Limited (100% / India)
31	India	Mytrah Vayu (Pennar) Private Limited	Operational	Electricity generation	Greenfield project	Build, own, and operate	72.6	MW	63	Caparo Group (100% / United Kingdom)
32	India	Bhilwara Green Energy Limited_49.5MW Windfarm	Operational	Electricity generation	Greenfield project	Build, own, and operate	59.6	MW	49.5	LNJ Bhilwara Group (100% / India)

33	India	ReNew Wind Energy (Vashpet) Windfarm	Operational	Electricity generation	Greenfield project	Build, own, and operate	59.2	MW	45	Renew Power Limited (100% / India)
34	India	Bindu Vayu Urja (Jamanvada) Private Limited	Operational	Electricity generation	Greenfield project	Build, own, and operate	58.7	MW	52.5	Caparo Group (100% / United Kingdom)
35	India	GMR Charanka Solar Plant 25MW	Operational	Electricity generation	Greenfield project	Build, own, and operate	56.1	MW	25	GMR Group (100% / India)
36	India	Torrent Jamnagar Windfarm_49.6 MW	Operational	Electricity generation	Greenfield project	Build, own, and operate	54.6	MW	49.6	Torrent Group (100% / India)
37	India	ReNew Wind Energy (Karnataka) Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	52.2	MW	50.4	Renew Power Limited (100% / India)
38	India	SEI Solar Power Jodhpur Solar Project	Construction	Electricity generation	Greenfield project	Build, own, and operate	50.6	MW	20	SunEdison LLC (.% / United States), CHINT Group (.% / China)
39	India	NSL Wind Power Company (Phoolwadi) Private Limited	Operational	Electricity generation	Greenfield project	Build, own, and operate	49.4	MW	49.5	NSL Sugars Limited (100% / India)
40	India	Essel MP Energy Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	39.1	MW	20	Essel Group (100% / India)
41	India	Moser Baer (Porbandar) Solar Project	Operational	Electricity generation	Greenfield project	Build, own, and operate	34.8	MW	15	Moser Baer India Limited (100% / India)

42	India	BLP Wind Project (Amberi) Private Limited	Operational	Electricity generation	Greenfield project	Build, own, and operate	33.2	MW	26.2	Bharat Light and Power (100% / India)
43	India	Bindu Vayu Urja (Chakala) Private Limited	Operational	Electricity generation	Greenfield project	Build, own, and operate	32.9	MW	39	Caparo Group (100% / United Kingdom)
44	India	ReNew Wind Energy (Varekarwadi) Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	31.6	MW	25.5	Renew Power Limited (100% / India)
45	India	Vaayu Renewable Energy (Mahanadi) Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	30.9	MW	28	Vaayu Renewable Energy (Mahanadi) (100% / India)
46	India	Green Infra (Theni) Wind Energy Limited 25.5MW	Construction	Electricity generation	Greenfield project	Build, own, and operate	28.7	MW	25.5	Green Infra Wind Energy Limited (100% / India)
47	India	ReNew Wind Energy (Rajkot) Private Limited	Operational	Electricity generation	Greenfield project	Build, own, and operate	26.3	MW	25.2	Renew Power Limited (100% / India)
48	India	Green Infra (Satara) Wind Energy Limited 18MW	Construction	Electricity generation	Greenfield project	Build, own, and operate	21.4	MW	18	Green Infra Wind Energy Limited (100% / India)
49	India	Sunborne Energy Rajasthan Solar Private Limited	Construction	Electricity generation	Greenfield project	Build, own, and operate	9.9	MW	5	SunBorne Energy Services India Private Limited (100% / India)
50	India	Bindu Vayu Urja (Kaladonger)	Operational	Electricity generation	Greenfield project	Build, own, and	0	MW	96.6	Caparo Group (100% / United

		Private Limited				operate				Kingdom)
51	India	Mytrah Energy Limited- 37.4MW Burgula Windfarm	Construction	Electricity generation	Greenfield project	Build, own, and operate	0	MW	37.4	Caparo Group (100% / United Kingdom)
52	India	Mytrah Energy Limited- 100.3MW Savalsang Windfarm	Construction	Electricity generation	Greenfield project	Build, own, and operate	0	MW	100.3	Caparo Group (100% / United Kingdom)
53	Nepal	Green Ventures Likhu IV HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	262.9	MW	120	LNJ Bhilwara Group (.% / India), Triveni Group (.% / Nepal)
54	Pakistan	K-Water Star Patrind HPP	Construction	Electricity generation	Greenfield project	Build, operate, and transfer	436	MW	147	Korea Water Resources Corporation (80% / Korea, Rep.), Others (20% / ..)
55	Pakistan	Zorlu Sindh Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	158.7	MW	56.4	Zorlu Holding AS (100% / Turkey)
56	Pakistan	Fauji Kuttikun II Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	135	MW	50	Fauji Foundation (55% / Pakistan), Tapal Group (20% / Pakistan)
57	Pakistan	Fauji Kuttikun I Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	135	MW	50	Fauji Foundation (65% / Pakistan)
58	Pakistan	Tapal/Fauji Gharo Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	126.5	MW	50	Fauji Foundation (.% / Pakistan), Tapal Group (.% /

										Pakistan)
59	Pakistan	Yunus Jhampir Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	70	MW	50	Yunus Brothers (100% / Pakistan)
60	Pakistan	Fauji Jhampir I Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	66.5	MW	49.5	Fauji Foundation (0% / Pakistan), Tapal Group (..% / Pakistan)
61	Pakistan	Fauji Jamphir II Wind Farm	Construction	Electricity generation	Greenfield project	Build, own, and operate	66.5	MW	50	Fauji Foundation (0% / Pakistan), Tapal Group (..% / Pakistan)
62	Pakistan	SSJD Sindh Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	16.7	MW	12	SSJD Group (..% / United States)
63	Sri Lanka	Renewgen Kaduwela Biomass Plant	Construction	Electricity generation	Greenfield project	Build, own, and operate	29	MW	10	RenewGEN Ventures (95% / India)
64	Sri Lanka	Daily Life Kalpitiya Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	16.8	MW	10	Daily Life Renewable Energy (DLRE) (100% / Singapore)
65	Sri Lanka	Powergen Uppudaluwa Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	14	MW	10.5	Windforce Private Limited (90% / Sri Lanka), Others (10% / ..)
66	Sri Lanka	Aitken Ambewala Wind Farm	Operational	Electricity generation	Greenfield project	Build, own, and operate	3	MW	3	Aitken Spence & Company Ltd. (100% / Sri Lanka)

67	Sri Lanka	PDL Koladeniya SHPP	Operational	Electricity generation	Greenfield project	Build, own, and operate	1.2	MW	1.2	Bank of Ceylon (100% / Sri Lanka)
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Note: .. denotes missing data; N/A means not applicable. Investment commitments include payments to the government and investment in physical assets.