



PRIVATE PARTICIPATION IN INFRASTRUCTURE RESEARCH GROUP

Note 88

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Infrastructure Policy Unit

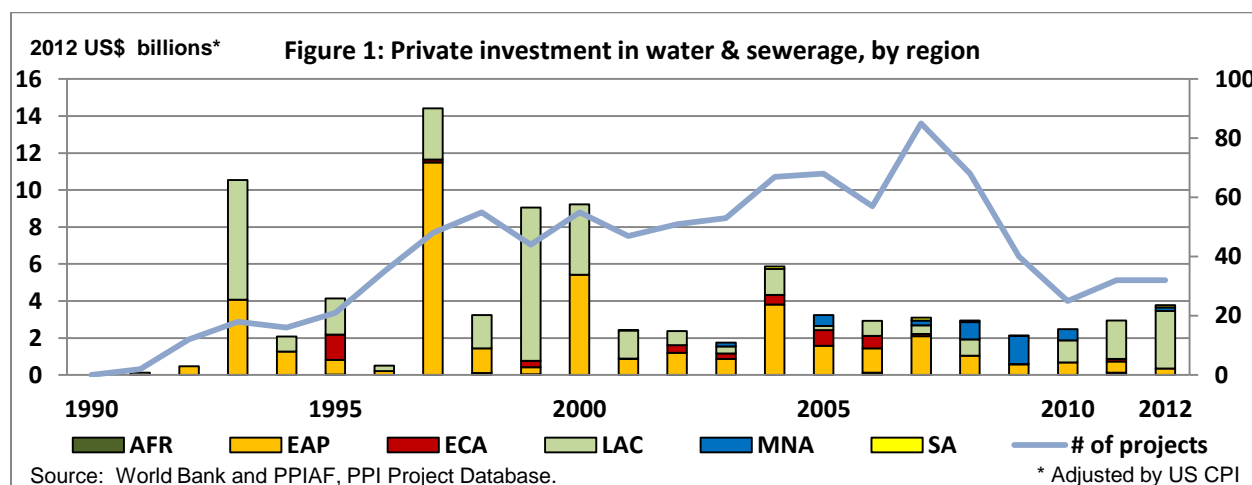
2012 PPI Data Update: Water & Sewerage Sector

Private activity in Brazil spurs investments by 50 percent in 2012

Overview

In 2012, 32 new water and sewerage projects reached financial or contractual closure in nine lower- and upper-middle income countries¹, the same number as the previous year. There were eleven projects in Brazil, fourteen projects in China, and one project each in Ghana, India, Indonesia, Jordan, Peru, the Russian Federation, and Serbia.² Four projects that closed before 2012 received additional investments in 2012. They were in Armenia, Indonesia, the Philippines, and Vietnam.

Total investment commitments (hereafter, *investment*, all in US\$ unless otherwise indicated) in water and sewerage projects amounted to \$4 billion this year, up 50 percent from 2011. Of this amount, \$3.9 billion was invested in new projects, while projects that closed before 2012 received additional investments worth \$178 million. Three large Brazilian concessions (two sewerage collection and treatment plants, one water utility with sewerage) attracted nearly \$2.5 billion, which accounted for most of the increase in investments in 2012. The compound annual growth rate in the water and sewerage sector was seven percent, in the period 2002-2012.



This note was written by Robbert van Eerd, consultant to the Infrastructure Policy Unit (TWISI), Transport, Water and ICT Department, Sustainable Development Network, World Bank.

¹ This note uses the World Bank country classification released in July 2012. St. Kitts and Nevis graduated to high-income status in July 2012 and is thus no longer included in the update. Investment data are in real 2012 US dollar (nominal values were adjusted using US CPI).

² Data on water 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. Additional investment in some projects may have been omitted for the same reason. For more information: <http://ppi.worldbank.org/>

Regional Overview

East Asia and the Pacific (EAP) saw 15 projects reach financial closure, the highest number of any region but significantly lower than the 2007 peak of 62 projects. The projects attracted investments of \$118 million. All but one project are located in China, the exception being the Bekasi potable water treatment plant in West Java, Indonesia.

The second largest region by number of projects was **Latin America and the Caribbean (LAC)**, where twelve projects closed. Because of three large projects in Brazil, the total amount invested in LAC in 2012 was a whopping \$3,113 million. There was one greenfield wastewater treatment plant in La Chira, Peru, while the other eleven projects were all 30-year concessions located in Brazil (split between water utilities with sewerage and sewerage collection and treatment plants, mostly contracted at the municipal level).

Europe and Central Asia (ECA) had not seen new private activity in the water and sewerage sector since 2008, but in 2012 there was one project each in the Russian Federation and Serbia, which brought \$133 of investments to the region. The Russian project was a build-rehabilitate-operate-transfer water utility with sewerage in Voronezh, the Serbian project a potable water treatment plant in Zrenjanin, Vojvodina.

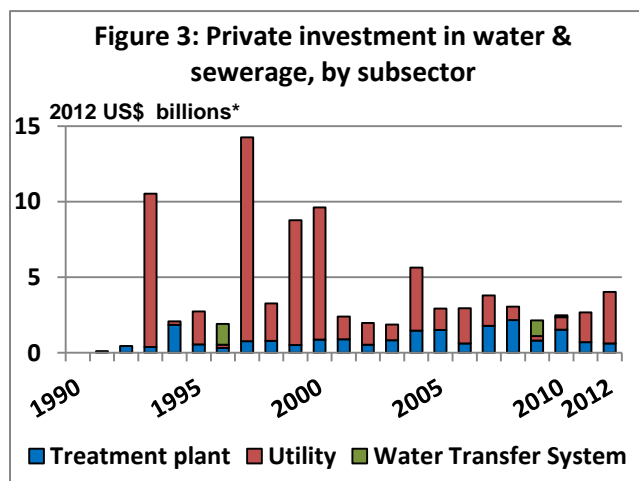
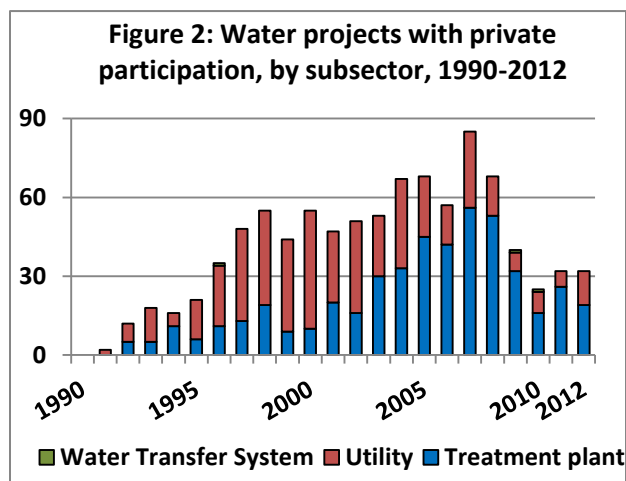
There was only one project in each of the **Sub-Saharan Africa (AFR)**, **Middle East and North Africa (MNA)**, and **South Asia (SAR)** regions. The projects were located in Ghana (\$126 million), Jordan (\$192 million), and India (\$116 million) respectively. The Ghanaian project was a greenfield potable water treatment plant in Accra. The project in India was a rehabilitate-operate-and-transfer water utility without sewerage in Nagpur, Maharashtra; the project in Jordan was a sewerage treatment plant concession in the country's Zarqa Governate.

Subsector Focus

Almost 60 percent of all projects were treatment plants, while the remaining 40 percent were utilities (see figure 2 below). Treatment plans were the only subtype in China, while utilities were the only subtype in Brazil, the two countries with the largest amount of projects this year.

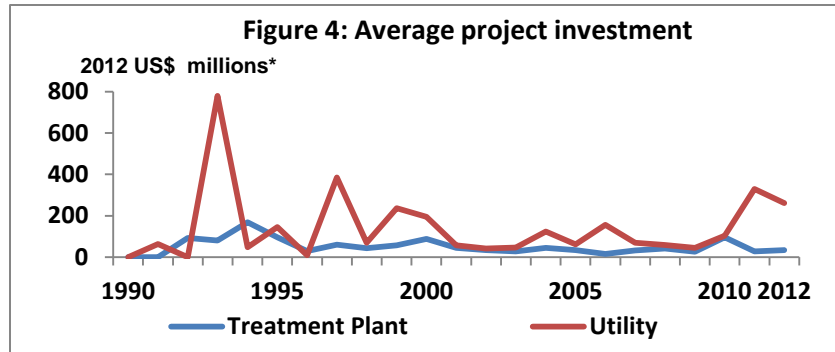
Total investments in treatment plants were \$0.63 billion in 2012, down from \$0.70 billion in 2011 (see figure 3 below). This corresponded with a 10 percent drop in treatment plant investments. The total amount for utilities was \$3.40 billion, compared to \$1.98 billion the year prior: a surge of 72 percent. Overall, 84 percent of all dollars invested went to utilities, the remainder to treatment plants. Since there were more treatment plants than utilities, this means that that average size of a treatment plant project was significantly smaller than the average size of a utility project.

One large utility concession in Brazil worth \$1.3 billion heavily skewed the numbers (see also 'featured project' at the end of this note).

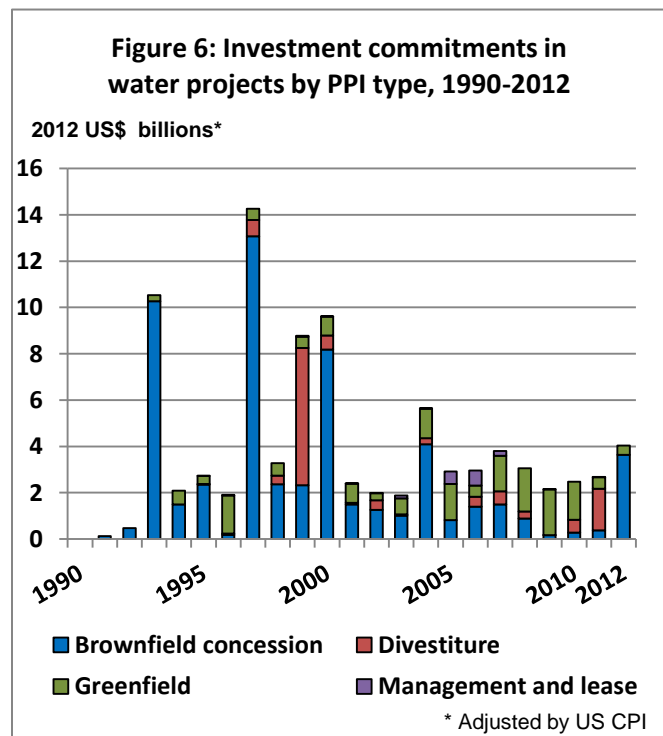
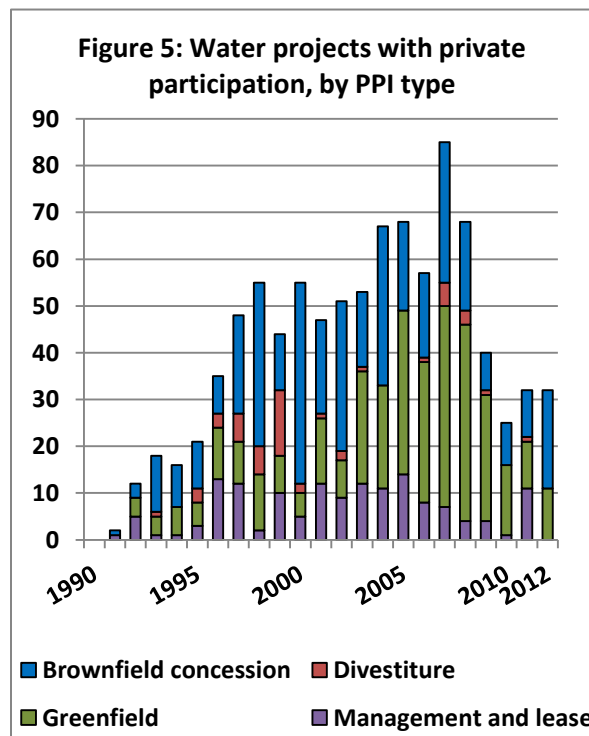


In 2012, the average investment in treatment plant projects was \$33 million, which was somewhat lower than the 20-year average of \$56.5 million.

The average utility in 2012 attracted \$262 million worth of investments, much more than the 20-year average of \$156 million. See also figure 4 to the right.

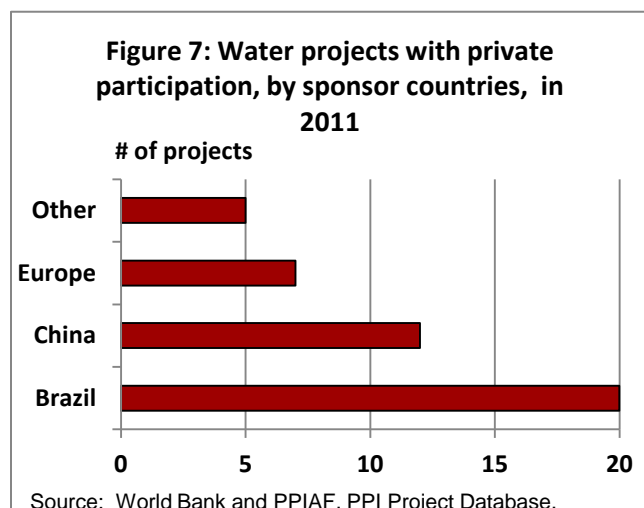


Contract Type Overview



In 2012, there were 21 brownfield concessions, including all 11 projects closed in Brazil (see figure 5). These 21 projects represented \$3.64 billion of investments, the highest amount invested in concessions since 2004 (see figure 6). The remaining 11 greenfield projects raked in another \$0.40 billion, the lowest amount since 2002. There were eight greenfield projects in China, and one in Peru, Jordan, and Serbia. In 2012, there were no divestitures or management and lease contract projects recorded.

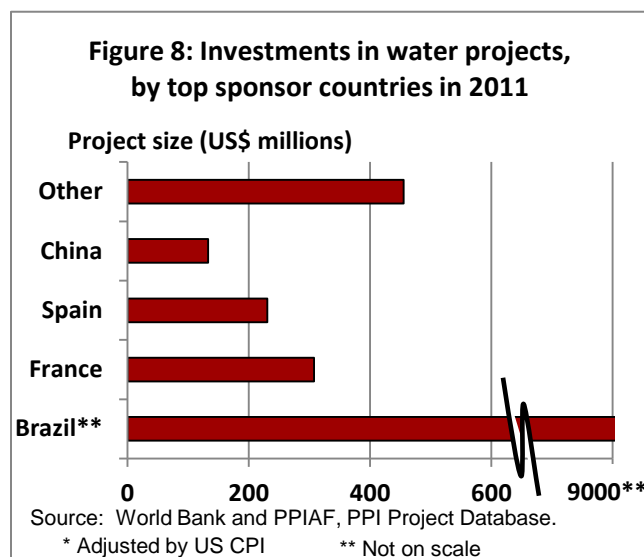
Sponsors Overview



Most projects in 2012 had a Brazilian sponsor (see figure 7 on the left). All eleven projects that closed in Brazil were done by at least one Brazilian sponsor. In total, there were 20 engagements by Brazilian sponsors in various projects.

In 2012, fourteen projects closed in China. Twelve of those projects were sponsored by Chinese companies, the other two were sponsored by BerlinWasser of Germany and MWH Global from the United States. Beijing Sound Environment Industry Group of China was involved five projects.

After Brazilian and Chinese companies, European companies were the most involved: seven projects were sponsored by various companies from France, Spain, Austria, Germany and Portugal.



Brazilian firms sponsored projects that represented the largest total investments (see figure 8 on the left; Brazilian companies' investment exposure is off the chart). Brazilian firms were involved in projects worth \$9 billion (whereby each firm's involvement in a project counts the full value of the project toward the exposure total). French sponsors were involved in projects worth \$308 million, Spanish sponsors in projects representing \$231 million of investments, and Chinese sponsors for another \$133 million.

Only two projects received support from multilateral institutions: the Aguas do Mirante utility in Sao Paulo, Brazil, received a \$62 million loan from the International Finance Corporation (IFC), and the Befesa desalination plant in Ghana received a \$180 million guarantee from the Multilateral Investment Guarantee Agency (MIGA).

Featured Project

Western Zone of Rio de Janeiro Sewerage Services (Brazil) | Utility | Brownfield concession (BROT)

The Brazilian company Foz Aguas 5, a partnership of Foz do Brasil and Saneamento Ambiental Aguas do Brasil (SAAB) or Aguas do Brasil group (itself a partnership of the Brazilian construction companies Developer, Queiroz Galvao, Trana Construcoes Ltda and Construtora Cowan S.A.), was awarded the 30-year concession contract to expand, rehabilitate and operate the sewerage facilities of the western zone of the city of Rio de Janeiro (Rio de Janeiro state) in November 2011. The contract was awarded by the municipality's central administration. The population of the concession area was estimated at 2.6 million.

Foz Aguas 5 was awarded the contract by offering the highest payment for the concession rights (the offer was of \$ 42.6 million or BRL 84.2 million, 8 percent above the floor established by the government). Only two other Brazilian companies took part in the contest: Construtora Delta and Equipav. The contract was signed in January 2012, and the private sponsor took over the operations of the sewerage services in May 2012.

The private sponsor committed to invest \$1,367 million (BRL 2,700 million) over the life of the project with the aim to treat 90 percent of the area's sewerage and to construct 2,100 km of collection pipes. At the time the contract was awarded, only 4 percent of the sewerage in the area was treated.

* By itself, this project represents 34 percent of the global total investments in the water and sewerage sector in 2012.

Table 1: Water & sewerage projects with financial or contractual closure in 2012 (total of 32 projects)

East Asia and the Pacific									
	Country	Project Name	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity Type	Capacity	Sponsors
1	China	Funing County Wastewater Treatment Plant Concession Agreement	Sewerage treatment plant	Concession	Rehabilitate, operate, and transfer	2.06	Cubic meters per day (thousands)	10	Anhui Guozhen Environmental Protection Science & Technology Co. Ltd. (100% / China)
2	China	Wuxue City Wastewater Treatment Plant Phase II	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	4.75	Cubic meters per day (thousands)	20	Xingyuan Kongjian Environmental Technology Co., Ltd. (100% / China)
3	China	Wuxue City Wastewater Treatment Plant Phase I Concession Agreement	Sewerage treatment plant	Concession	Rehabilitate, operate, and transfer	3.8	Cubic meters per day (thousands)	15	Xingyuan Kongjian Environmental Technology Co., Ltd. (100% / China)
4	China	Xian City Changan District Wastewater Treatment Plant Phase II	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	9.29	Cubic meters per day (thousands)	50	Beijing Sound Environment Industry Group (100% / China)
5	China	Emeishan City Wastewater Treatment Plant Concession Agreement	Sewerage treatment plant	Concession	Rehabilitate, operate, and transfer	13.31	Cubic meters per day (thousands)	50	Haitian Group (100% / China)
6	China	Suizhou City Wastewater Treatment Plant Phase II	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	8.69	Cubic meters per day (thousands)	50	Suizhou City Yulong Water Supply Company Ltd (100% / China)
7	China	Bozhou Wastewater Treatment Plant	Potable water and	Concession	Rehabilitate, operate, and	0	Cubic meters per day	80	Anhui Guozhen Environmental

		Concession Agreement	sewerage treatment plant		transfer		(thousands)		Protection Science & Technology Co. Ltd. (100% / China)
8	China	Shifang Wastewater Treatment Plant	Sewerage treatment plant	Concession	Rehabilitate, operate, and transfer	5.72	Cubic meters per day (thousands)	30	MWH Global Inc (60% / United States)
9	China	Hailun City Wastewater Treatment Plant	Sewerage treatment plant	Concession	Rehabilitate, operate, and transfer	4.75	Cubic meters per day (thousands)	20	Beijing Sound Environment Industry Group (100% / China)
10	China	Dangtu County No. 2 Wastewater Treatment Plant	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	5.03	Cubic meters per day (thousands)	15	Shuguang Group (100% / China)
11	China	Chuzhou City No. 2 Wastewater Treatment Plant	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	23.77	Cubic meters per day (thousands)	50	BerlinWasser (100% / Germany)
12	China	Anshan City Dagushan Wastewater Treatment Plant	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	14.9	Cubic meters per day (thousands)	30	Beijing Sound Environment Industry Group (100% / China)
13	China	Anshan City Ningyuan Wastewater Treatment Plant	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	30.11	Cubic meters per day (thousands)	80	Beijing Sound Environment Industry Group (100% / China)
14	China	Anshan City Dongtai Wastewater Treatment Plant	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	36	Cubic meters per day (thousands)	100	Beijing Sound Environment Industry Group (100% / China)
15	Indonesia	Bekasi Water Project	Potable water treatment plant	Concession	Build, rehabilitate, operate, and transfer	15	Cubic meters per day (thousands)	19	Moya Holding Company (95% / Bahrain)

Europe and Central Asia									
	Country	Project Name	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity Type	Capacity	Sponsors
1	Russian Federation	Voronezh Water Utility	Water utility with sewerage	Concession	Build, rehabilitate, operate, and transfer	100	Cubic meters per day (thousands)	477	Anhui Guozhen Environmental Protection Science & Technology Co. Ltd. (100% / China)
2	Serbia	EVN Zrenjanin Water Plant	Potable water treatment plant	Greenfield project	Build, operate, and transfer	33.3	Number of connections (thousands)	86	Xingyuan Kongjian Environmental Technology Co., Ltd. (100% / China)

Latin America and the Caribbean									
	Country	Project Name	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity Type	Capacity	Sponsors
1	Brazil	Aguas de Porto Espiridiao	Water utility with sewerage	Concession	Build, rehabilitate, operate, and transfer	1.5	Population (thousands)	11	Grupo Equipav (100% / Brazil)
2	Brazil	CAB Atibaia	Sewerage collection and treatment	Concession	Build, rehabilitate, operate, and transfer	50.2	Population (thousands)	125	Construtora Queiroz Galvao (100% / Brazil)
3	Brazil	Aracatuba Water and Sewerage Services	Water utility with sewerage	Concession	Build, rehabilitate, operate, and transfer	365.8	Population (thousands)	180	Construtora OAS (100% / Brazil)
4	Brazil	Aguas de Jauru	Water utility with sewerage	Concession	Rehabilitate, operate, and transfer	0	Population (thousands)	11	Grupo Equipav (100% / Brazil)
5	Brazil	Western Zone of Rio de Janeiro Sewerage Services	Sewerage collection and treatment	Concession	Build, rehabilitate, operate, and transfer	1409.6	Population (thousands)	2600	Odebrecht SA (50% / Brazil), Construtora Cowan LTDA (13% / Brazil), Construtora Queiroz Galvao (13% / Brazil), Trana Construcoes Ltda (13% / Brazil), Carioca Christiani-Nielsen Engenharia S.A. (13% / Brazil)
6	Brazil	Aguas de Votorantim	Sewerage collection and treatment	Concession	Build, rehabilitate, operate, and transfer	47.1	Population (thousands)	108.8	Construtora Cowan LTDA (15% / Brazil), Trana Construcoes Ltda (15% / Brazil), Construtora Queiroz Galvao (15% / Brazil), Carioca Christiani-Nielsen Engenharia S.A.

									(15% / Brazil), Grupo Somague (40% / Portugal)
7	Brazil	Tubarao Saneamento	Water utility with sewerage	Concession	Build, rehabilitate, operate, and transfer	121.5	Population (thousands)	100	Cab Ambiental (..% / Brazil), Enops Engenharia Ltda (..% / Brazil)
8	Brazil	Sao Gabriel Saneamento	Water utility with sewerage	Concession	Build, rehabilitate, operate, and transfer	55.7	Population (thousands)	60	Vega Engenharia Ambiental (50% / Brazil), Grupo Solvi (50% / Brazil)
9	Brazil	Aguas Mirante do	Sewerage collection and treatment	Concession	Build, rehabilitate, operate, and transfer	151.9	Population (thousands)	367.3	Grupo Equipav (100% / Brazil)
10	Brazil	CAB Cuiaba	Sewerage collection and treatment	Concession	Build, rehabilitate, operate, and transfer	717	Population (thousands)	553	Cab Ambiental (100% / Brazil)
11	Brazil	Aguas Agreste do	Sewerage collection and treatment	Concession	Build, rehabilitate, operate, and transfer	88.6	Population (thousands)	220	Cab Ambiental (100% / Brazil)
12	Peru	La Chira Waste Water Treatment Plant	Sewerage treatment plant	Greenfield project	Build, operate, and transfer	104.5	Cubic meters per day (thousands)	544	Grana y Montero SA (50% / Peru), Acciona (50% / Spain)

Middle East and North Africa									
	Country	Project Name	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity Type	Capacity	Sponsors
1	Jordan	As-Samra Wastewater Treatment Plant Phase II	Sewerage treatment plant	Concession	Build, rehabilitate, operate, and transfer	192	Cubic meters per day (thousands)	98	SUEZ (100% / France)

South Asia									
	Country	Project Name	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity Type	Capacity	Sponsors
1	India	Nagpur, 24x7 Water Supply Project	Water utility without sewerage	Concession	Rehabilitate, operate, and transfer	115.6	Number of connections (thousands)	450	Veolia Environnement (50% / France)

Sub-Saharan Africa									
	Country	Project Name	Segment	Type of PPI	Subtype of PPI	Investment commitment (US\$ millions)	Capacity Type	Capacity	Sponsors
1	Ghana	Befesa Desalination Plant	Potable water treatment plant	Greenfield project	Build, own, and operate	126	Cubic meters per day (thousands)	60	Abengoa (50% / Spain), Sojitz Corporation (44% / Japan)