

References by activity



Environment and Water



References by activity



Environment





ENVIRONMENT

ARICO'S PLANT

LOCATION ▶ Arico. Tenerife (Spain)

CUSTOMER ▶ "Cabildo" Inter-island Council, Tenerife

PROJECT SCOPE:

Design, construction and start-up of an All-in-One bag sorting plant, with a processing capacity of 300,000 t/year

AMOUNT ▶ EUR 10 million

START DATE ▶ october 2005

FINISH DATE ▶ december 2008

CHARACTERISTICS:

- ▶ Primary trommel to separate solids
- ▶ Secondary trommel to separate organic matter and packaging
- ▶ Ballistic separators
- ▶ Optic, magnetic and induction separators
- ▶ Metal and plastic sluice units
- ▶ Solids plant with a 30 t/h capacity, for separating, grinding and compacting
- ▶ Additional civil engineering work (incoming pit and processing unit)

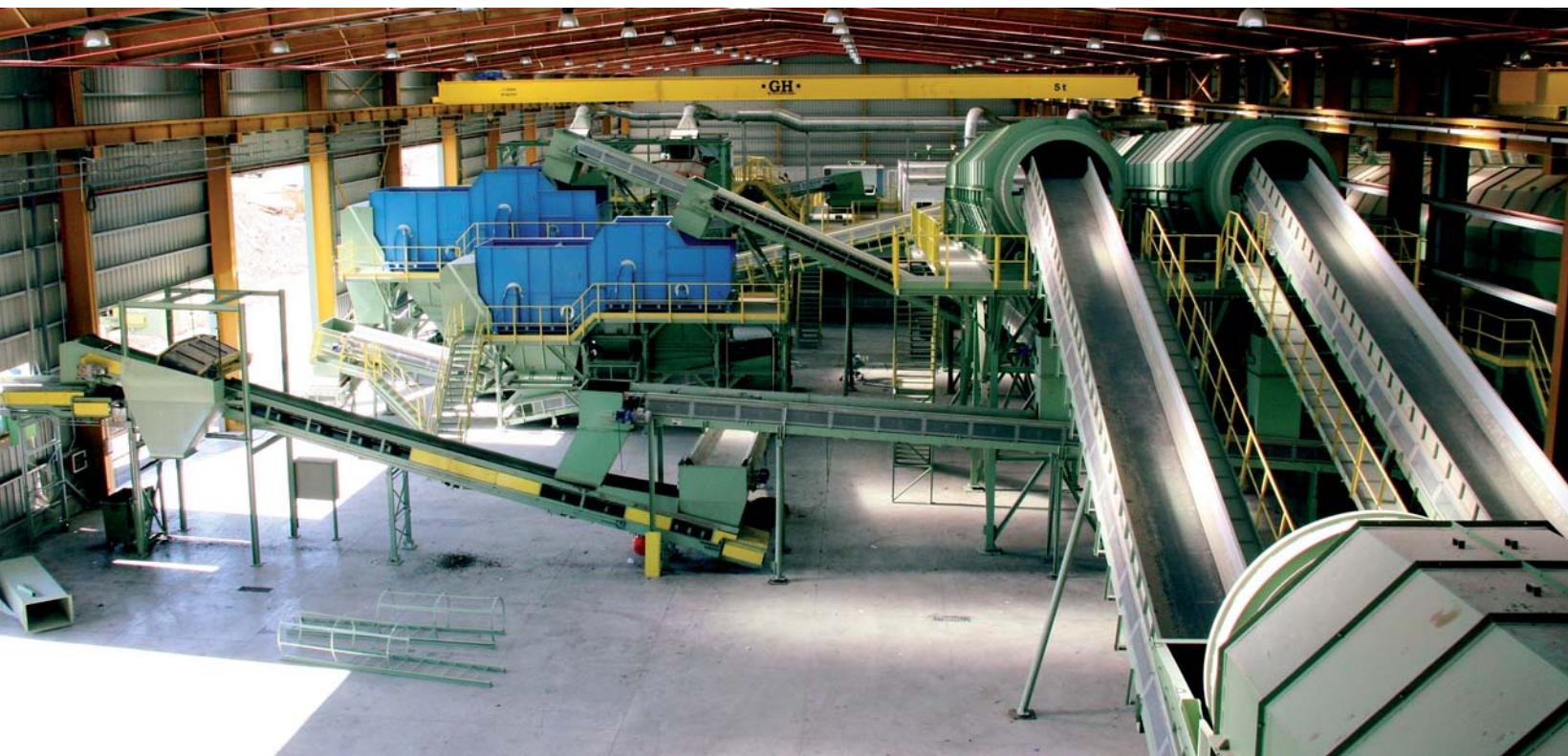
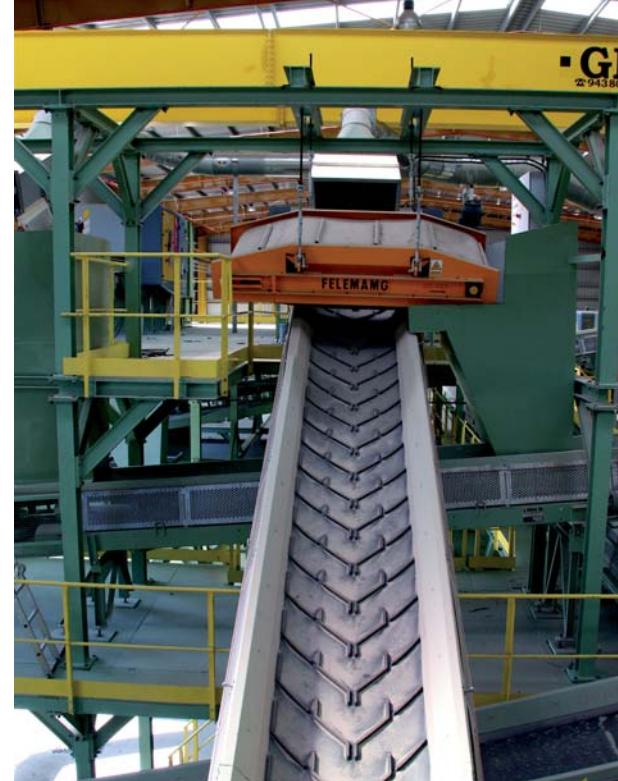




SPAIN

Arico, Tenerife (Spain)

ENVIRONMENT
**ARICO'S
PLANT**





MAINTENANCE
**GREEN AREAS AND
BEAUTIFICATION OF
NEIGHBOURHOODS**

LOCATION ▶ Getafe (Madrid)

CUSTOMER ▶ Getafe City Council

PROJECT SCOPE ▶

Conservation, maintenance and improvement of green spaces and trees in urban areas.

AMOUNT ▶ EUR 10.2 million

START DATE ▶ July 2019

FINISH DATE ▶ July 2024

CHARACTERISTICS:

- ▶ 140 hectares
- ▶ Approx. 268,150 photovoltaic modules
- ▶ 6,500 street trees



ESPAÑA
Getafe (Madrid)

MANTENIMIENTO
**ZONAS VERDES Y
EMBELLECIMIENTO
DE BARRIOS**





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ENVIRONMENT GUADALHORCE TREATMENT PLANT

LOCATION ▶ Málaga (Spain)

CUSTOMER ▶ Gas Natural

PROJECT SCOPE:

Turnkey engineering, construction, supply, assembly and start-up of tertiary treatment plant at the WWTP. The purpose of the plants is to convey treated water from the Guadalhorce treatment plant to the Gas Natural combined-cycle plant in Málaga

AMOUNT ▶ EUR 8 million

START DATE ▶ july 2008

FINISH DATE ▶ march 2010

CHARACTERISTICS:

- ▶ Tertiary treatment plant: the plant's design flow rate is 1,512 m³. Treatment consists of:
 - ✓ Coagulation/flocculation
 - ✓ Decantation
 - ✓ Open sand filter filtration
 - ✓ UV channel disinfection
 - ✓ Post-chlorination treatment with chlorine dioxide
- ▶ Tertiary treatment plant: the plant's design flow rate is 900 m³/h Treatment consists of:
 - ✓ Mesh filtering: 500 µm
 - ✓ Membrane ultrafiltration: 8 racks, with 52 membranes per rack
 - ✓ Ancillary facilities: make-up water pumping, membrane wash facility etc



SPAIN

Málaga (Spain)

ENVIRONMENT

GUADALHORCE TREATMENT PLANT



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ENVIRONMENT

PHYTOREMEDIAZIÓN

LOCATION ▶ Cabezuela, Ortigosa del Monte, Prádena, Santa María la Real de Nieva, Villaverde de Íscar y Zarzuela (Segovia)

CUSTOMER ▶ Aguas de las Cuencas de España

PROJECT SCOPE ▶

Construction and operation of six wastewater treatment plants and their corresponding collectors in several municipalities in the province of Segovia.

AMOUNT ▶ EUR 3.6 million

START DATE ▶ July 2015

FINISH DATE ▶ March 2017

CHARACTERISTICS:

- ▶ CABEZUELA WWTP
 - ✓ Design parameters: 220 m³/day and 60 kg Biological Oxygen Demand (BOD₅)
- ▶ ORTIGOSA WWTP
 - ✓ Design parameters: 286 m³/day and 78 kg BOD₅
- ▶ PRÁDENAS WWTP
 - ✓ Design parameters: 176 m³/day and 48 kg BOD₅
- ▶ SANTA MARÍA LA REAL DE NIEVA-NIEVA WWTP
 - ✓ Design parameters: 418 m³/day and 114 kg BOD₅
- ▶ VILLAVERDE WWTP
 - ✓ Design parameters: 330 m³/day and 90 kg BOD₅
- ▶ ZARZUELA DEL MONTE WWTP
 - ✓ Design parameters: 220 m³/day and 60 kg Biological Oxygen Demand (BOD₅)



SPAIN

Cabezuela, Ortigosa del Monte,
Prádena, Santa María la Real de
Nieva, Villaverde de Íscar y Zarzuela
(Segovia)

ENVIRONMENT
PHYTOREMEDIA





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ENVIRONMENT TREATMENT PLANTS ARAGÓN

LOCATION ▶ Aragón (Spain)

CUSTOMER ▶ Instituto Aragonés del Agua

PROJECT SCOPE:

Public concession to design, construct and operate wastewater treatment plants for a period of 20 years in Zones 4 and 6 (SADAR), 7 (SADEP 60%) and P2 (SAPIR 50%) on the Aragón Special Water Treatment Plan

EPC AMOUNT ▶ EUR 51 million

O&M AMOUNT ▶ EUR 2.5 million per year

INVESTMENT ▶ EUR 56.1 million (ENO 70%)

START DATE ▶ may 2006

FINISH DATE ▶ Construction ongoing

CHARACTERISTICS:

- ▶ 75 treatment plants (19 operational)
- ▶ Total flow for treatment: 45,000 m³/day
- ▶ Equivalent population: 192,440 residents



SPAIN

Aragón (Spain)

ENVIRONMENT
**TREATMENT
PLANTS ARAGÓN**





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ENVIRONMENT

VILLENA SUW PLANT

LOCATION ▶ Villena, Alicante (Spain)

CUSTOMER ▶ VAERSA

PROJECT SCOPE:

Design, supply and start-up of electromechanical processing equipment for a solid urban waste treatment plant with capacity for 73,000 t/year, and design and construction of composting and maturing tunnels

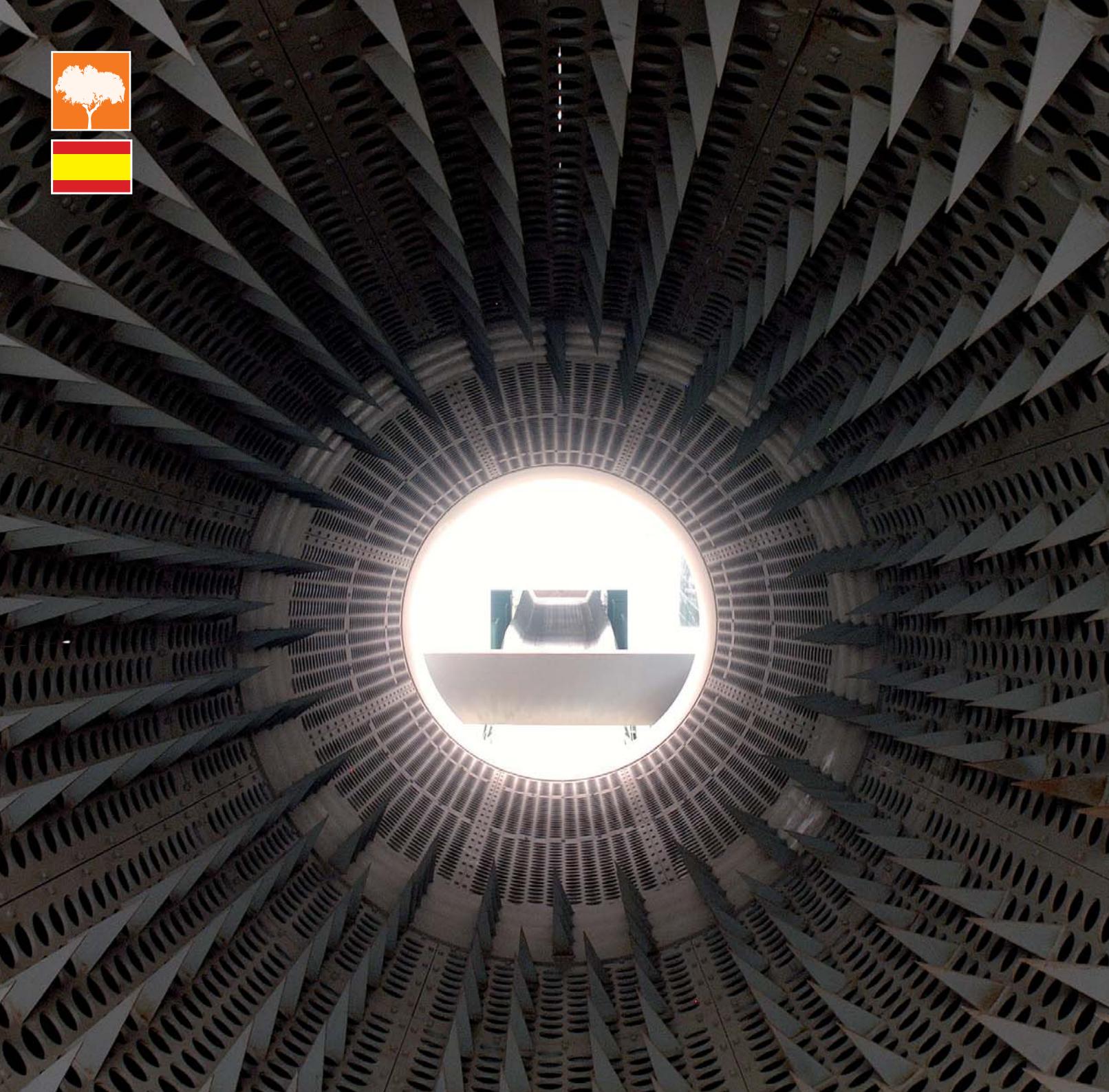
EPC AMOUNT ▶ EUR 10 million

START DATE ▶ february 2001

FINISH DATE ▶ may 2003

CHARACTERISTICS:

- ▶ 2 x 25 t/hour classification lines
- ▶ Composting of organic matter in 16 maturing tunnels
- ▶ Tertiary treatment of the compost produced, with double-level sieving and a shaker screen
- ▶ Reject disposal facility
- ▶ Maximum classification capacity: 304,000 t/year





SPAIN

Villena. Alicante (Spain)

ENVIRONMENT

VILLENA SUW PLANT





ENVIRONMENT WWTP IN BAJO GUADALHORCE



LOCATION ▶ Alora, Pizarra and Coín (Málaga, Spain)

CUSTOMER ▶ Agencia de Medioambiente y Agua de Andalucía (Environment and Water Agency of Andalusia)

PROJECT SCOPE ▶

Waste water treatment plant for urban centres in Bajo Guadalhorce.

AMOUNT ▶ EUR 5.6 million

START DATE ▶ June 2017

FINISH DATE ▶ September 2018

CHARACTERISTICS:

- ▶ Flow rate of 8,295 m³/d
- ▶ 69,124 ha
- ▶ **WATER LINE**
 - ✓ Roughing and desanding (degreasing, including sand classifier and grease separator)
 - ✓ Measurement and regulation of the flow to the rest of the treatment plant, including bypass
 - ✓ Biological treatment: extended aeration
 - ✓ Secondary decanting
 - ✓ Chlorination
 - ✓ HDPE outlet pipe (DN 710 mm) to the discharge point
- ▶ **SLUDGE LINE**
 - ✓ Recirculation of biological sludge
 - ✓ Pumping of excess biological sludge
 - ✓ Gravity thickener
 - ✓ Sludge dewatering with centrifuge
 - ✓ Storage of dewatered sludge in a hopper



SPAIN

Alora, Pizarra and Coín (Málaga)

ENVIRONMENT

WWTP IN BAJO GUADALHORCE



References by activity



Water





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WATER
**ARAÑUELO
REGION**

LOCATION ▶ Cáceres (Spain)

CUSTOMER ▶ Conf. Hidrográfica del Tajo

PROJECT SCOPE:

Design and construction of the water supply for the new Campo Arañuelo region

AMOUNT ▶ EUR 28 million

START DATE ▶ january 2007

FINISH DATE ▶ december 2013

CHARACTERISTICS:

- ▶ 114 km of DN 100-600 cast iron piping
- ▶ 13 tanks (300 - 5,300 m³)
- ▶ 8 pumping stations
- ▶ Talayuela water purification plant: 100 l/s (mechanical-chemical/decanting/filtration)
- ▶ Navalmoral de la Mata water purification plant: 210 l/s (mechanical-chemical/decanting/filtration)





SPAIN

Cáceres (Spain)

WATER

ARAÑUELO REGION





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WATER

SOUK TLETA

LOCATION ▶ Tlemcen (Algeria)

CUSTOMER ▶ Algérienne des Eaux

PROJECT SCOPE:

Transfer of drinking water from the Souk Tleta desalination plant to the Tlemcen region's distribution network to supply the local area and associated tanks

AMOUNT ▶ EUR 257 million

START DATE ▶ may 2008

FINISH DATE ▶ september 2011

CHARACTERISTICS:

- ▶ Water flow conveyed: 200,000 m³/day
- ▶ Supply for 645.000 residents
- ▶ Pipe length: 160 km
- ▶ Steel pipe, ductile iron and HDPE
- ▶ Main line spanning 73 km in DN 1,400 mm, 1,000 mm iron and cast iron
- ▶ 29 connection points to existing network
- ▶ 5 pumping stations: 3 on the main line, and 2 on secondary lines
- ▶ Installed pump capacity: 28.5 MVA
- ▶ 5 storage tanks: Capacity 46,500 m³
- ▶ Remote SCADA system with 160 km of optic fibre and supervision of 10,000 signals
- ▶ 500 manholes
- ▶ 2,000,000 m² of open routing
- ▶ 800,000 m³ of trench excavation
- ▶ 500,000 m³ of earth moved
- ▶ 4,500 tonnes of steel used as reinforcement
- ▶ 55,000 m³ of reinforced concrete
- ▶ 15,000 tonnes of imported cement
- ▶ 800 staff





AFRICA
Tlemcen (Algeria)

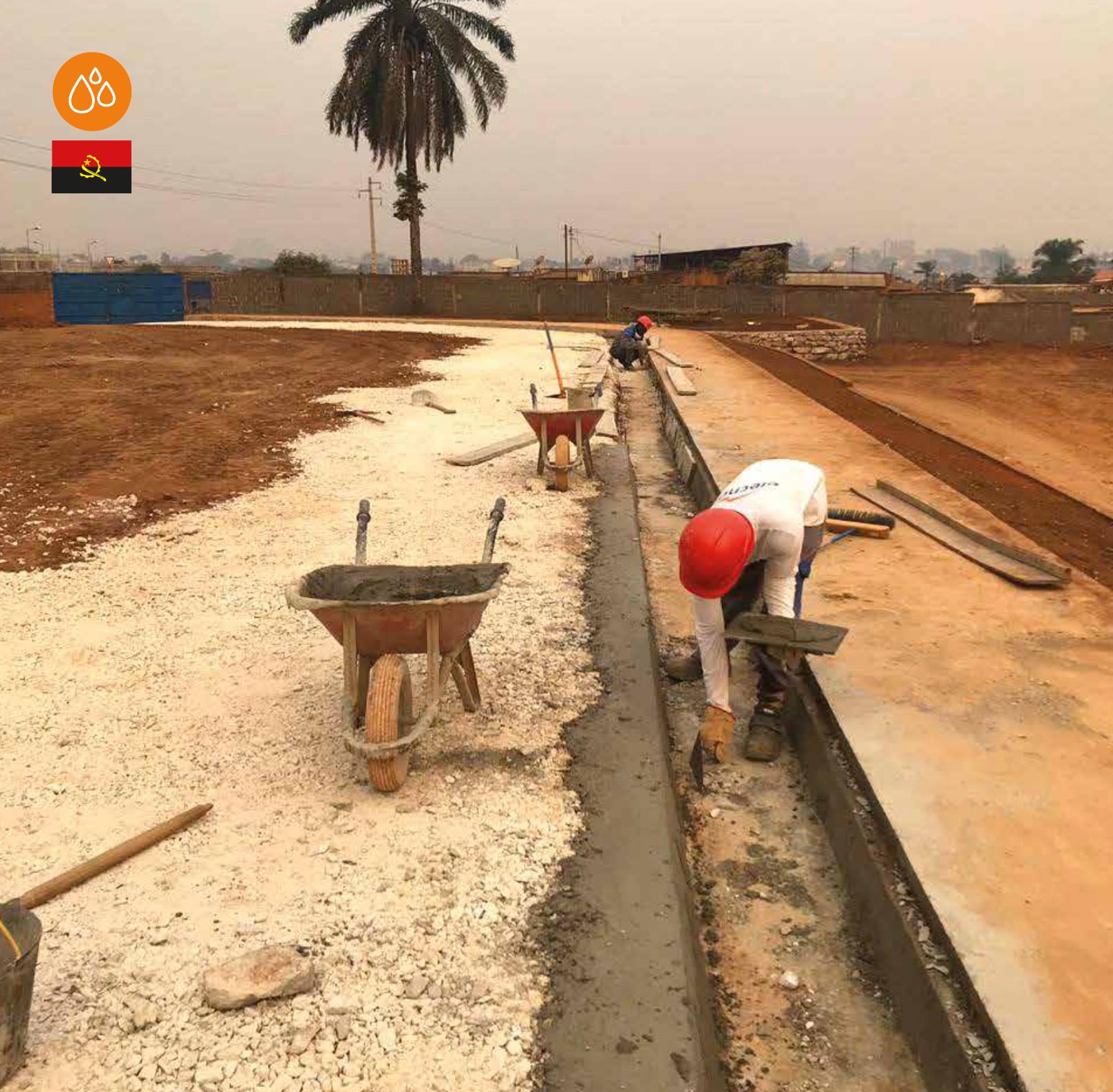
WATER

SOUK TLETA





WATER DUNDO AND UIGE WATER SUPPLY NETWORK



LOCATION ▶ Dundo, Lunda Norte Province, and Uige, Uige Province (Angola)

CUSTOMER ▶ National Directorate of Water, financed by the World Bank

PROJECT SCOPE ▶

Construction of the 250 km water supply network

AMOUNT ▶ EUR 20 million

START DATE ▶ July 2019

FINISH DATE ▶ July 2022

CHARACTERISTICS:

► DUNDO

- ✓ 150 km network with diameters between 450 and 63 mm
- ✓ 15,000 domestic connections. Not very complex terrain
- ✓ Neighbourhoods with high densification and difficult access
- ✓ Difficulties with logistics/supply due to its distance from Luanda

► UIGE

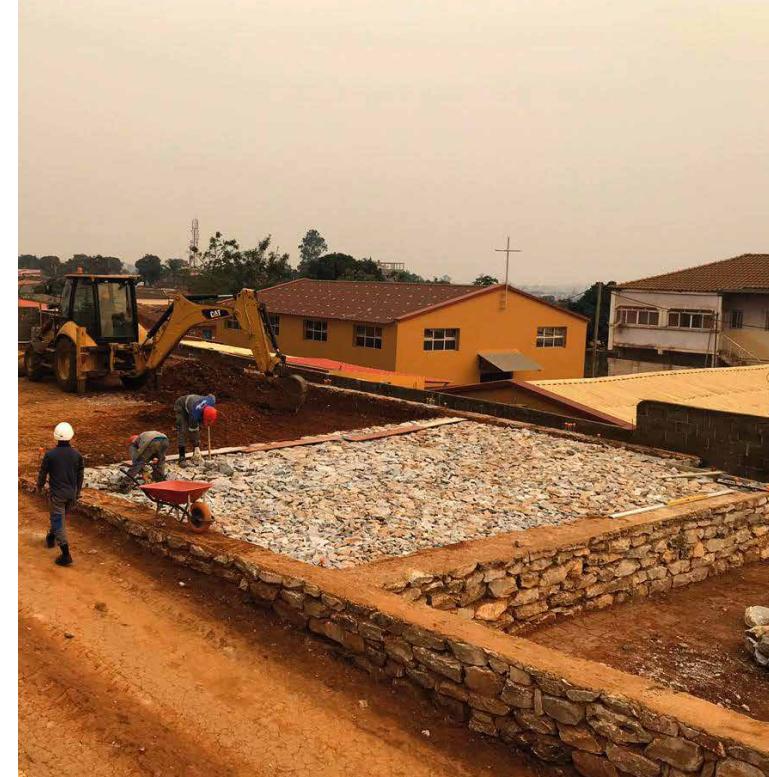
- ✓ 100 km network with diameters between 315 and 63 mm
- ✓ 10,000 domestic connections
- ✓ Complex terrain
- ✓ Mostly peri-urban neighbourhoods with high densification and complex working areas



AFRICA

Dundo, Lunda Norte Province,
and Uige, Uige Province (Angola)

WATER
**DUNDO AND
UIGE WATER
SUPPLY
NETWORK**





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WATER

LUBANGO WATER TRANSPORT GRID

LOCATION ▶ Lubango. Huíla province (Angola)

CUSTOMER ▶ Ministry for Energy and Water

PROJECT SCOPE:

Construction of the water transport grid for the city of Lubango (phase 2)

AMOUNT ▶ EUR 13 million

START DATE ▶ July 2016

FINISH DATE ▶ September 2017

CHARACTERISTICS:

- ▶ 140 km of pipeline (DN 630-63)
- ▶ 20,000 household connections



AFRICA

Lubango. Huíla province (Angola)

WATER

LUBANGO WATER TRANSPORT GRID



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WATER

AL BATINAH TRANSPORTATION NETWORK

LOCATION ▶ Al Batinah Region (Oman)

CUSTOMER ▶ Public Authority For Water (Diam)

PROJECT SCOPE ▶

Reinforcement of the current water transportation and distribution network from desalination plants located in Barka and Sohar (north of the country) to the drinking water network

AMOUNT ▶ EUR 192 million

START DATE ▶ November 2019

FINISH DATE ▶ April 2022

CHARACTERISTICS:

- ▶ 144 km of pipeline (Welded steel and ductile cast iron pipes)
- ✓ 100 km X-52 CS tubería Dn 1000-1800
- ✓ 44 km DI Pipe DN 600-800
- ▶ FO based leak detection System
- ▶ 5 pumping stations with a flow between 4,213 m³/h and 17,137 m³/h
- ▶ 5 new tanks with a capacity of between 5,000 and 50,000 m³
- ▶ Scada
- ▶ 11 kW Power supply
- ▶ Complementary civil works
- ▶ Auxiliary installations: LV, lightning, fire protection, drinking water, HVAC



ASIA

Al Batinah Region (Oman)

WATER

AL BATINAH TRANSPORTATION NETWORK



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WATER
**QURAYYAT WATER
TRANSPORT GRID**

LOCATION ▶ Qurayyat (Oman)

CUSTOMER ▶ PAEW (Public Authority of Electricity and Water)

PROJECT SCOPE:

Transport of drinking water from the Qurayyat desalination plant (IWP) to the Muscat water grid

AMOUNT ▶ EUR 60 million (60% ENO)

START DATE ▶ january 2016

FINISH DATE ▶ november 2017

CHARACTERISTICS:

- ▶ Pumping:
 - ✓ 6 pumps powered by 11 kV medium voltage converters (3.2MW each)
 - ✓ 4 pumps online and 2 on stand-by
 - ✓ Medium voltage (MV) converters
 - ✓ 11 kV MV power supply from adjacent substation
 - ✓ Hydraulic connection to adjacent water tanks
 - ✓ Building measuring 1,917 m²
 - ✓ Electrical power distribution
 - ✓ Auxiliary installations: LV, lighting, fire protection, drinking water, ventilation and air conditioning
 - ✓ SCADA, to be integrated within PAEW's general system

- ▶ Piping:
 - ✓ 12.5 km
 - ✓ Diameter: 1,400 mm
 - ✓ Steel piping (PN60 API 5L grade X52, 20 mm wall thickness) from the pumping station (FPS) to the repumping site (BPS2)





ASIA

Qurayyat (Oman)

WATER

QURAYYAT WATER TRANSPORT GRID





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