

CASE STUDY

BUSKI D12-2 HEPP, Bursa, Turkey



KEY STATISTICS

Customer: Buski A.S.
Turbine type: Francis
Number of Turbines: 1
Power (kW): 690 kW
Net Head: 70 m
Flow: 1.1 m³/s
Runner Dia: 475 mm
Speed: 1000 rpm

SCOPE OF SUPPLY

Gilkes horizontal Francis Turbine model 475G150
Penstock connection pipe
Turbine main inlet valve (MIV)
MIV automatic pressure equalising bypass
Synchronous generator 6300V, 760 KVA, 0.9 PF
Hydraulic pressure unit (HPU) for turbine, MIV, MIV bypass and generator brake
Turbine energy dissipating bypass valve
Pipework system emergency relief valve
Control and SCADA system
Electrical balance of plant
Delivery to the project site
Installation, commissioning and testing

The Buski D12-2 HEPP was installed by Buski A.S. on their drinking water system feeding the city of Bursa in Turkey. The turbine-generator unit acts as a power recovery break pressure device within the drinking water system at the entrance to a large storage tank. Rather than using energy dissipating valves to reduce the water pressure to the required value Buski A.S. decided to install a turbine-generator unit to recover the power available in the water at the entrance to the water storage tank.

A careful study of the whole pipework system associated with the hydroelectric installation was carried out which included transient modelling all possible scenarios that could affect the integrity of the drinking water pipework system as a result of the operation of the new and existing turbine-generator systems.

The contract for the supply of the M&E equipment was awarded to Gilkes Elektromekanik San. Ve Tic. A.S., a joint venture company between Gilkes in the UK and Marbeyaz Makina Sanayi A.S. in Turkey.

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The joint venture company was set up in January 2015 to focus on supplying hydroelectric equipment packages in Turkey and neighbouring countries with the aim of manufacturing and procuring all equipment in Turkey to take advantage of the Turkish government FIT incentives for products manufactured in Turkey. All tendering, design, supervision of assembly, installation, commissioning, start up and testing is provided by the UK team with Gilkes Elektromekanik overseeing the manufacture of the turbine by its partner Marbeyaz and the sourcing of ancillary plant defined by Gilkes from the Turkish market.

Gilkes Elektromekanik is one of the first companies in Turkey to have been accredited by the TSE with certification for local manufacture to allow the project owner to be eligible the FIT incentive



Overall Scope of Supply



Turbine-Generator Unit



Hydraulic Pressure Unit