

**40 MW COMBINED CYCLE MWM TCG2032 V16 COMPLETE  
N.GAS POWER PLANT  
2017**



# INTRODUCTION



# 40 MW GAS POWER PLANT TECHNICAL INFORMATION

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Capacity	Commissioning Date	Annual Power Generation
38.85 MW	Nov 2012	319,200,000 kWh

Number of Gas Engines : 8  
Running hrs: 12.000 hrs for 6 engines and 7.200 hrs for 2 engines  
Engine Power : 4.3 MW  
Total 8 Engine Power : 34.4 MW  
Steam Turbine Capacity : 4.45 MW  
Total Facility Power: 40 MW

# INFORMATION – GAS ENGINE

Producer : MWM  
Model : TCG2032V16  
Speed : 1000 t/min.  
Number of Cylinder : 16  
Total Unit Number : 8  
Electrical Power per Unit : 4300 kWe  
Natural Gas Calorific Value : 8.800 kCal/Nm<sup>3</sup>  
Natural Gas Consumption : 6.402 Sm<sup>3</sup>/h  
Electrical Efficiency : %100 Load, % 42,0  
Efficiency (Mechanical) : %100 Load, % 42,9  
Generator Producer : AvK  
Generator Model : AvK DiG 156 m6  
Generator Power : 5336 kVA  
Generator Voltage : 11kV



CONTROL PANELS

# 40 MW GAS POWER PLANT TECHNICAL INFORMATION – GAS ENGINE

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**LOW VOLTAGE DISTRIBUTION PANELS**



**GENERATOR COOLING FANS**

# INFORMATION – STEAM TURBINE GENERATOR

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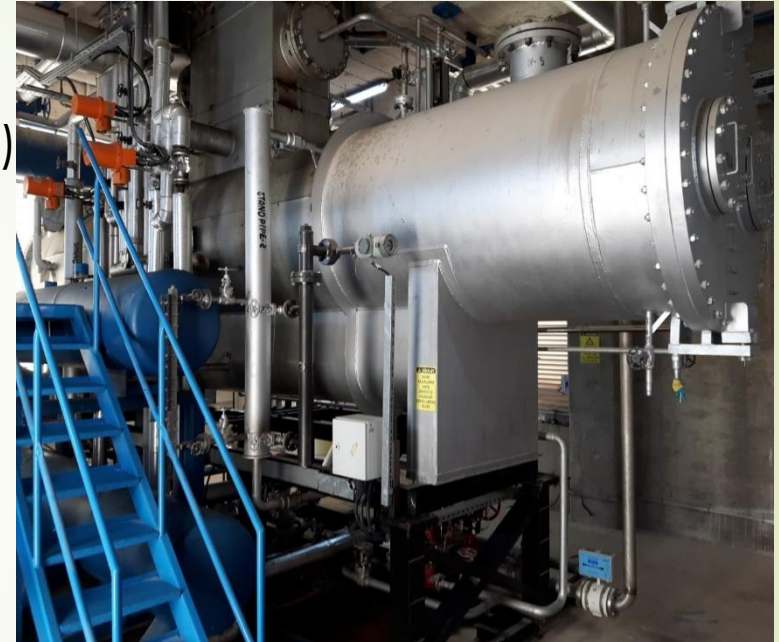
Producer	: ARANI
Model	: API611
Type	: Multi level, impulse type,
Full condensing	
Total Unit Number	: 1
Unit Electrical Power	: 4450 kWe
Unit Mechanical Power	: 4500 kWm
Stream Consumption	: 22640 kg/saat
Stream Input Pressure	: 18 bar(a)
Stream Input Temperature	: 352°C
Efficiency (Isontrepic)	: %100 Load %88.2
Generator producer	: AvK
Generator power	: 5625 Kva
Generator voltage	: 11 kV



# INFORMATION – STREAM TURBINE CONDENSER

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Producer	: ARANI
Unit Number	: 1
Fluid	: Water / Water-Glycole (%20 )
Design Pressure	: 7,85 bar(g)
Heat Transfer Surface	: 664 m <sup>2</sup>
Thermal Power	: 4988 kWth
Stream flow	: 22640 kg/saat
Cooling Water Flow	: 1450 m <sup>3</sup> /saat
Cooling Water Input Temperature	: 29 °C
Cooling Water Output Temperature	: 38 °C



# STREAM TURBINE EQUIPMENTS

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**OIL COOLING SYSTEM**



**CONTROL PANELS**



**MEDIUM VOLTAGE DISTRIBUTION AND FEEDING PANELS**



# INFORMATION – WASTE HEAT RECOVERY BOILER

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Type	: Hot stream with water pipes
Total Unit Number	: 8
Water Circulation Inside Boiler	: Natural
Exhaust Gas Input Flow	: 23944 kg/h
Exhaust Gas Input Temperature	: 465 °C
Produced Stream Flow	: 2940 kg/h (1 boiler)
Produced Stream Temperature	: 352 °C
Produced Stream Pressure	: 18 bar(g)
Heat Load	: 2290 kWth
Boiler Exit Temperature	: 146 °C
Pressure Loss- Gas Side	: 125 mmSS

