



# GÖK HEPP

## ASSESSMENT REPORT

### LOCATION:

GÖK HEPP is located in southern part of Turkey. Because it is in the region of “Toroslar Mountain Series”, the resource of the water is generally regular and clean. It has a huge amount of water capacity with high hill mountains full of snow.

### BRIEF INFORMATION:

Gök HEPP has been commissioned in 2010 and has the license guarantee to the year 2056 by the government.

Because of the environment and the mountain series, GÖK HEPP has around 30m net head in only 3 km length water way. This length is very good for construction costs but also the operation of the power plant. Less water way means less problems while operation.

Around the power plant, there are some villages and a main road connecting these villages. The distance to the Tarsus district is around 45km away which is 40mins trip.

The nearest airport is in Adana province and 1,0 hours car trip distance.

The other technical and financial details of the power plant are listed below.

### TECHNICAL INSPECTION

The technical values

show the relation

between the civil

construction,

equipments regarding

the design values.

## **PROJECT GENERAL INFORMATION:**

<b>Company name</b>	: GÖK ENERJİ ELEKTRİK TİC. ve SAN. A.Ş.
<b>Company address</b>	: Turgutlu Sok. No:11 GOP Çankaya / ANKARA
<b>Company Tel/Fax</b>	: 0 312 436 36 34 / 0 312 436 79 98
<b>1/25.000 map location</b>	: Adana N33-d2
<b>Reservoir 6° UTM Coordinates</b>	: 4 114 868(K), 652 604(D)
<b>Power Plant 6° UTM Coordinates</b>	: 4 112 906(K), 654 030(D)
<b>City</b>	: Mersin
<b>District</b>	: Tarsus
<b>River Basin</b>	: Eastern Mediterranean
<b>River/Stream Name</b>	: Kadıncık (Karageçit) Stream
<b>Basin Area (km<sup>2</sup>)</b>	: 326,3
<b>Average Flow Rate (m<sup>3</sup>/s)</b>	: 22,140
<b>Ave. Annual Total Flow (hm<sup>3</sup>)</b>	: 698,34
<b>Q<sub>2</sub> Flood Flow Rate (m<sup>3</sup>/s)</b>	: 167,1
<b>Q<sub>100</sub> Flood Flow Rate (m<sup>3</sup>/s)</b>	: 363,4
<b>Q<sub>500</sub> Flood Flow Rate (m<sup>3</sup>/s)</b>	: 435,85
<b>Dam/Reservoir Type</b>	: Natural Spilway With Concrete Dam
<b>Dam Level (m) (at Walking area)</b>	: 439,00
<b>Maximum Water Level (m)</b>	: 437,00
<b>Minimum Water Level (m)</b>	: 432,50
<b>Tailrace Water Level (m)</b>	: 406,60
<b>Water Way Type</b>	: Trapez (sloped concrete)
<b>Water Way Length (m)</b>	: 2.800
<b>Water Way Slope</b>	: 0,0004
<b>Penstock Diameter (m)</b>	: 3,50
<b>Penstock Length (m)</b>	: 22,75
<b>Turbine Type</b>	: Vertical Kaplan
<b>Number of Units</b>	: 3 equal
<b>Grid Voltage (kV)</b>	: 34,50
<b>Transmission Line</b>	: 2x3/0 MCM
<b>Transmission Line Length (km)</b>	: 2,50
<b>Gross Head (m)</b>	: 28,78
<b>Net Head (m)</b>	: 28,70
<b>Project Flow Rate (m<sup>3</sup>/s)</b>	: 43,00
<b>Capacity (MW)</b>	: 10,50
<b>Firm Capacity (MW)</b>	: 1,757
<b>Firm Energy (GWh)</b>	: 16,04
<b>Secondary Energy (GWh)</b>	: 28,03

**Total Energy (GWh)** : **44,07**

### **FINANCIAL ASSESMENT:**

The annual costs of the power plant is listed below.

<b>GÖK HEPP OPERATION COSTS</b>	<b>EURO</b>	<b>DOLAR</b>
STAFF SALARY	76.143 EUR	86.475 USD
BASIN OBSERVATION	9.758 EUR	11.082 USD
LICENSE FEE	29.514 EUR	33.519 USD
FUEL	7.579 EUR	8.607 USD
GRID CONNECTION FEE	94.644 EUR	107.486 USD
STAFF INSURANCE	30.666 EUR	34.827 USD
WITHHOLDING TAX	12.456 EUR	14.147 USD
PLANT INSURANCE	6.248 EUR	7.095 USD
TAX	103.308 EUR	117.326 USD
GENERAL COSTS	45.639 EUR	51.832 USD
ACCOUNTANT FEE	2.032 EUR	2.308 USD
<b>TOTAL COST</b>	<b>417.986 EUR</b>	<b>474.703 USD</b>

Below table, it is shown the annual energy productions from the year 2011.

<b>YEARS</b>	<b>PRODUCTION(kw/h)</b>
2011	35.778.385
2012	46.783.752
2013	35.069.291
2014	30.886.743
2015	43.464.638
2016	23.289.275
2017	44.752.416
2018	38.133.600
<b>TOTAL PRODUCTION (for 8 years)</b>	<b>298.158.101</b>
<b>AVE. PRODUCTION</b>	<b>37.269.763</b>
<b>ELCTRICTY SALES PRICE</b>	<b>0,073 USD</b>
<b>TOTAL INCOME (average per year)</b>	<b>2.720.693 USD</b>

Then we get the conclusion values resulting below;

Average Income: 2.720.693 USD

Average Cost: 474.703 USD

**NET INCOME: 2.245.990 USD (average per year)**

This report has been prepared regarding the recorded values of the company who owns the Gok HEPP. Report has been submitted by;

**Zekayi DEMİRCAN**

Finance Manager

**Ayhan DİNCER**

Electrical Eng.