



**TURKEY ENERGY
INVESTMENT OPPORTUNITIES**

2014

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INTRODUCTION MARKET OVERVIEW

- Electricity consumption in Turkey has been growing with a 5.1% CAGR since 2000
- The Turkish electricity sector is one of the fastest growing in the world.



- Sector **GROWTH** due to increasing industrialization, urbanization and population.
- The **COMPETITIVE** and **TRANSPARENT MARKET** environment is attracting investors.
- Energy sector in Turkey is fragmented, but a **CONSOLIDATION** on the **POWER GENERATION** side is expected.
- Both **DOMESTIC** and **FOREIGN INTEREST** for electricity generation assets.



INTRODUCTION MARKET OVERVIEW

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- Significant **INCENTIVES** especially for **RENEWABLE ENERGY INVESTMENTS**.
- Privatization of EÜAŞ is expected to continue with the **TENDERS OF HEPPS** in 2014 and 2015.
- The **HIGH NUMBER OF BIDS** received for the recent HEPP privatizations illustrates **STRONG INVESTOR INTEREST**.
- Desire to penetrate the sector by **ACQUIRING** an already **OPERATIONAL PLANT**.



INSTALLED CAPACITY & CONSUMPTION FORECAST

- Electricity consumption reached 245.5 TWh in 2013, increasing by 1.3% compared to 2012.

- Installed capacity reached 64.0 GW in 2013, increasing by 12.2% compared to 2012.

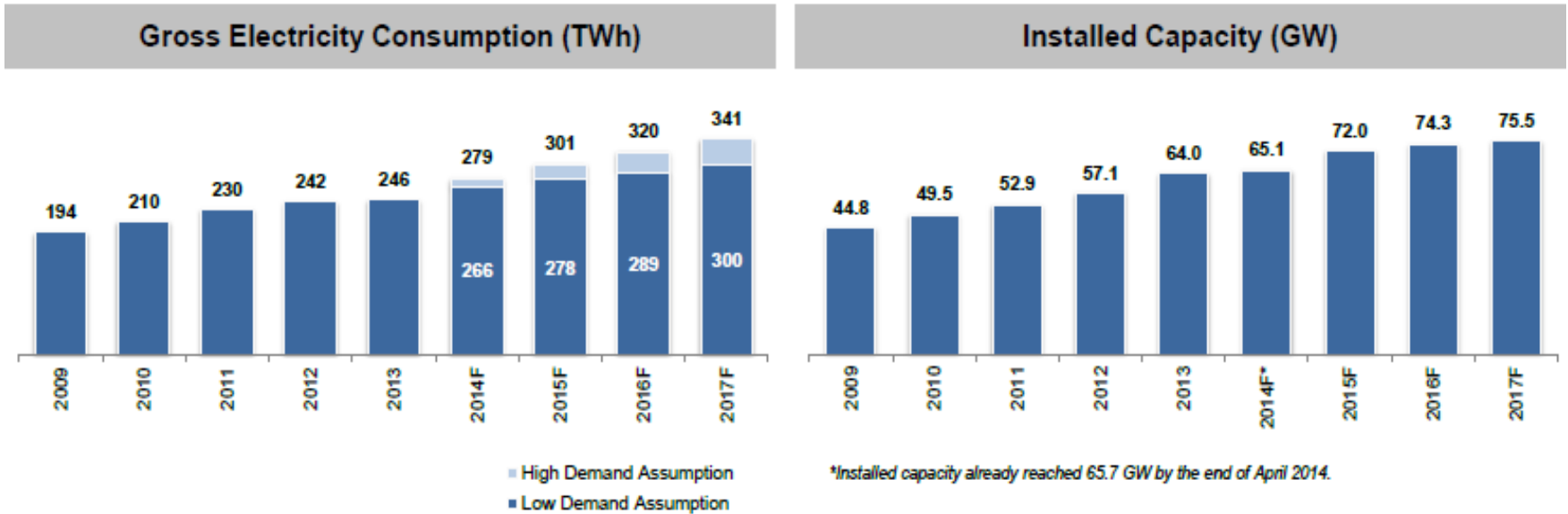
Installed Capacity and Consumption	Unit	2009	2010	2011	2012	2013
Installed Capacity	MW	44,761	49,524	52,911	57,059	64,044
Peak Demand	MW	29,870	33,392	36,122	39,045	38,274
Production	GWh	194,813	211,208	229,395	239,497	239,308
Import	GWh	812	1,144	4,556	5,827	7,425
Export	GWh	1,548	1,918	3,645	2,954	1,231
Consumption	GWh	194,079	210,434	230,306	242,370	245,502



INSTALLED CAPACITY & CONSUMPTION FORECAST

- Electricity consumption reached 245.5 TWh in 2013, increasing by 1.3% compared to 2012.

Electricity consumption and installed capacity projections between the years 2014 and 2017 have been taken from “Turkey’s Electricity Energy Five Year Production Capacity Projection” report by TEİAŞ, November 2013.



TURKISH MARKET BREAKDOWN BY PRODUCER & FUEL TUPE

BY PRODUCER	INSTALLED CAPACITY (MW)			
	2012		2013	
EÜAŞ	24,775	43.4%	23,783	37.1%
Independent Producers	19,686	34.5%	27,429	42.8%
Autoproducers	3,202	5.6%	3,457	5.4%
Concession Companies (BOO, BOT, TOR)	9,397	16.5%	9,375	14.6%
TOTAL	57,059	100.0%	64,044	100.0%

BY FUEL TYPE	INSTALLED CAPACITY (MW)			
	2012		2013	
Lignite + Hard Coal + Imported Coal	12,391	21.7%	12,428	19.4%
Fuel Oil + Diesel Oil + Naphta + Asphaltite + LPG	1,362	2.4%	708	1.1%
Natural Gas + LNG	17,171	30.1%	20,270	31.7%
Multi-Fuel (Natural Gas + Liquid + Solid)	3,945	6.9%	5,042	7.9%
Biomass + Waste + Geothermal	321	0.6%	548	0.9%
HEPP	19,609	34.4%	22,289	34.8%
WEPP	2,261	4.0%	2,760	4.3%
TOTAL	57,059	100.0%	64,044	100.0%



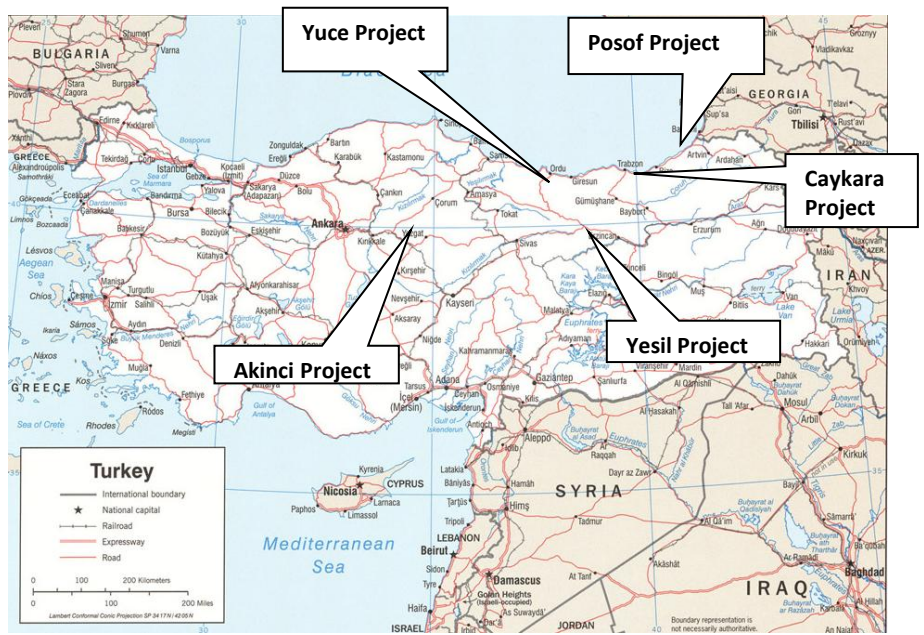
OUR POWER GENERATION PLANTS IN TURKEY

General information		EMSAT	MENER	OLCA	YESIL	CAYKA	TOTAL
General	Plant	Merekler	Yuce	Akinci	Yesilbas	Caykara	
	Location	Ardahan	Giresum	Kayseri	Silvas	Trabzon	
	Essentium Stake (%)	70%	65%	100%	70%	100%	
Energy	Installed power (MW)	11,0	11,0	12,3	14,0	34,0	82.3 MW / 71MW
	No. of generators	2,0	2,0	2,0	3,0	4,0	
	Annual production (GWh)	36,6	24,1	48,5	34,3	107,2	
	First operations	Jul-13	Jul-13	Dec-14	Dec-09	May-14	
Turbines	Turbine model	Francis	Pelton	Kaplan	Francis	Francis	
	Unitary power (MW)	5,6	5,5	6,0	4,7	8,5	
	Capacity factor	38,0%	25,0%	45,0%	28,0%	36,0%	
	Full Load Hours (h)	3.329	2.190	3.942	2.453	3.154	
	Operational life (in years)	50	50	50	50	50	

Investment breakdown		EMSAT	MENER	OLCA	YESIL	CAYKA	TOTAL
Total costs		20,89	20,86	34,60	22,26	59,00	157,61
Funding	Equity	9,89	10,86	18,00	6,56	24,00	69,31 / 44%
	Debt	11,00	10,00	16,60	15,70	35,00	88 / 56%



OUR POWER GENERATION PLANTS IN TURKEY



Yesil Hydropower Plant and Substation 14MW



Caykara Weir and Substation 34MW



Yuce Tunnel 11MW



Merckler Penstock and Powerhouse 11MW



CONCLUSION REASONS TO INVEST



- **FAVOURABLE LEGAL FRAMEWORK** in a market with **HIGH GROWTH** potential.
- Low currency risk as Turkish **RENEWABLE SUPPORT SCHEME** provides a cap set in USD.
- With rapidly **GROWING DEMAND** for energy and an awarding **INVESTMENT INCENTIVES SCHEME** in place, Turkey offers foreign energy companies hard-to-miss deals.



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