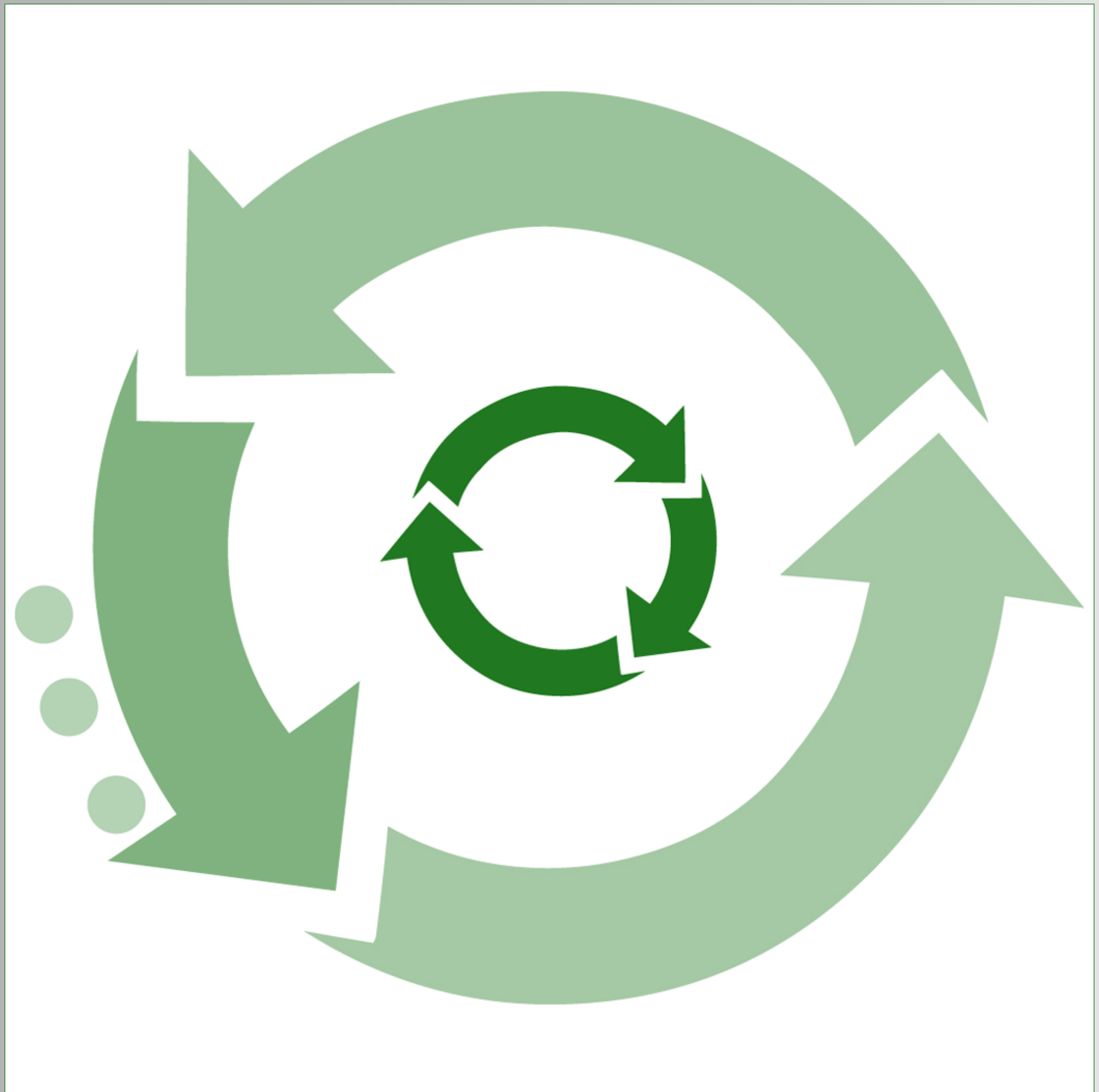


RENEWABLE ENERGY DRIVE IN TURKEY

- **Energy Market Structure:**
  Investment opportunities in Turkey
- **Legal Framework:**

Turkish Electricity Market Law

Rules, regulations, and regulators

- **Capacity Projections**
- **Major players**

ENERGY MARKET STRUCTURE

2009 Electricity Production (inc. October, in GWh)

EÜAŞ– own plants	58,988.8	36.6%	
EÜAŞ– affiliated	15,687.3	9.8%	
Mobile Power Stations	0.0	0.0%	46.4%
TETAŞ– BO	36,290.9	22.6%	
TETAŞ-BOT	11,509.0	7.2%	
Operational Rights	3,602.1	2.2%	32.0%
Autoproducers	11,680.8	7.2%	
Private Producers	23,106.7	14.4%	21.6%
Total	**160,865.6**		**100.0%***

* Shares in electricity production for EÜAŞ, TETAŞ and others

ENERGY MARKET STRUCTURE

Resource Planning (in GWh)

Thermal(*)	90,000.1	80.6%
Hydro	20,960.1	18.8%
Wind	704.5	0.6%
	111,664.7	100.0%

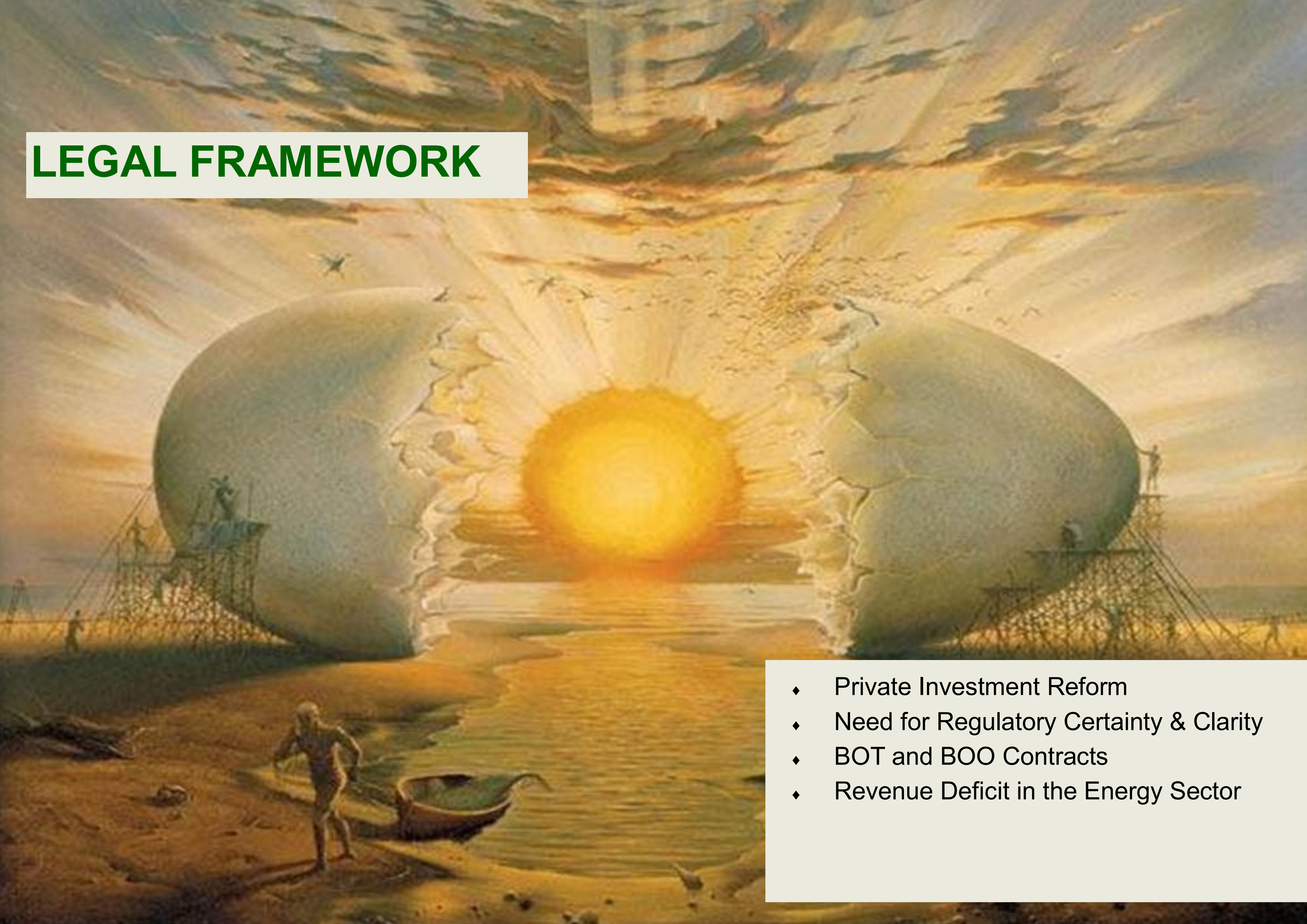
(*)Natural Gas constitutes 47.8% (53,431.3 GWh)

Hydro and Wind total < 20.0% (EU target 22%)

ENERGY MARKET STRUCTURE

	Electricity Production (GWh)	Peak Power (MW)	Installed Capacity (MW)	Peak Power/ Installed Capacity	Production in Hours
2000	124.926	19.390	27.264	71.12%	4.582
2001	122.725	19.612	28.332	69.22%	4.332
2002	129.400	21.006	31.845	65.96%	4.063
2003	140.581	21.729	35.587	61.06%	3.950
2004	150.698	23.485	36.824	63.78%	4.092
2005	161.956	25.174	38.844	64.81%	4.169
2006	176.300	27.594	40.565	68.02%	4.346
2007	191.558	29.249	40.836	71.63%	4.691
2008	198.418	30.517	41.817	72.98%	4.745

LEGAL FRAMEWORK



- Private Investment Reform
- Need for Regulatory Certainty & Clarity
- BOT and BOO Contracts
- Revenue Deficit in the Energy Sector

EXISTING SITUATION

Existing Power Plants (2009):

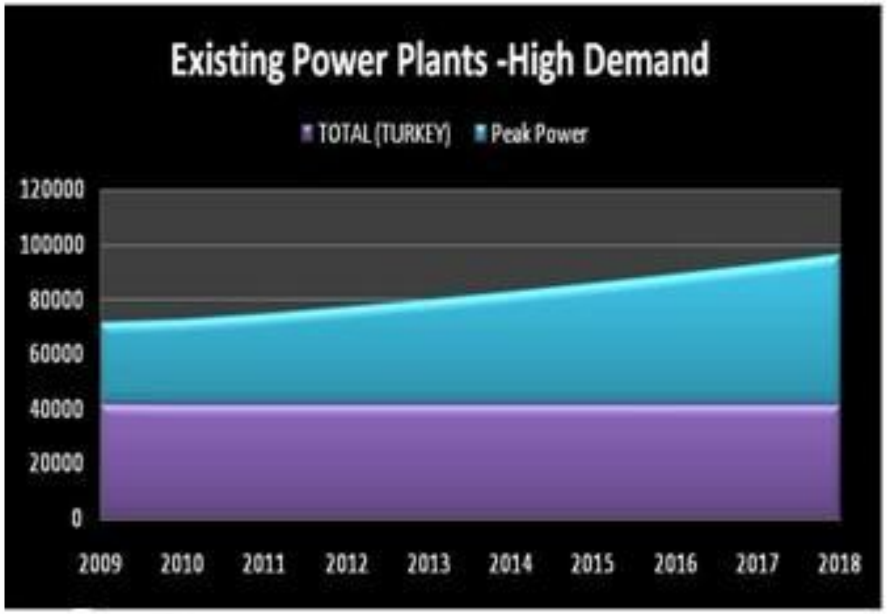
Thermal	27,557 MW
Hydro	13,829 MW
Renewables	432 MW
Total	41,817 MW
Peak Power	29,900 MW
Capacity Reserve	28.5%

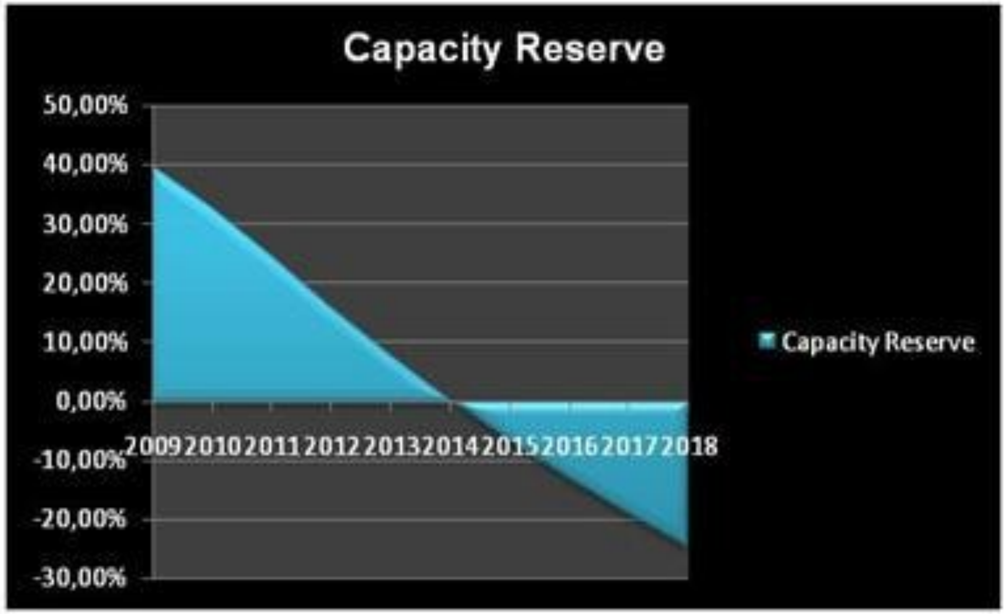
EXISTING POWER PLANTS

High Demand (MW)	Years									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Thermal	27557	27257	27257	27257	27257	27257	27257	27257	27257	27257
Hydro	13829	13829	13829	13829	13829	13829	13829	13829	13829	13829
Renewables	432	432	432	432	432	432	432	432	432	432
TOTAL (TURKEY)	**41817***	**41517**	**41517**	**41517**	**41517**	**41517**	**41517**	**41517**	**41517**	**41517**
Peak Power	29900	31246	33276	35772	38455	41339	44440	47728	51260	55053
Capacity Reserve	**39,90%**	**32,90%**	**24,80%**	**16,10%**	**8%**	**0,40%**	**-6,60%**	**-13,00%**	**-19,00%**	**-24,60%**

***2009 year beginning**

Source: Production Capacity Projection (2009-2018), Turkish Electricty Transmission Company

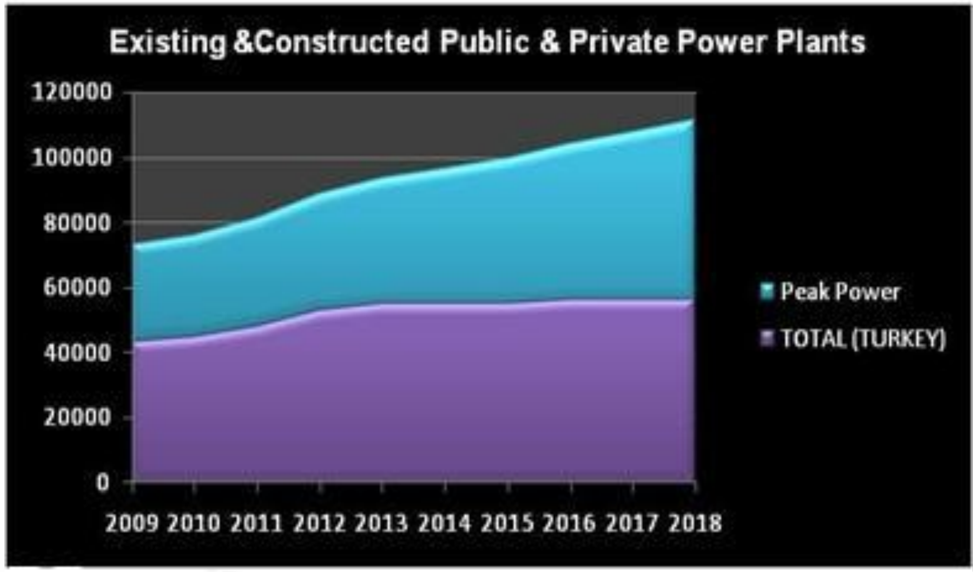


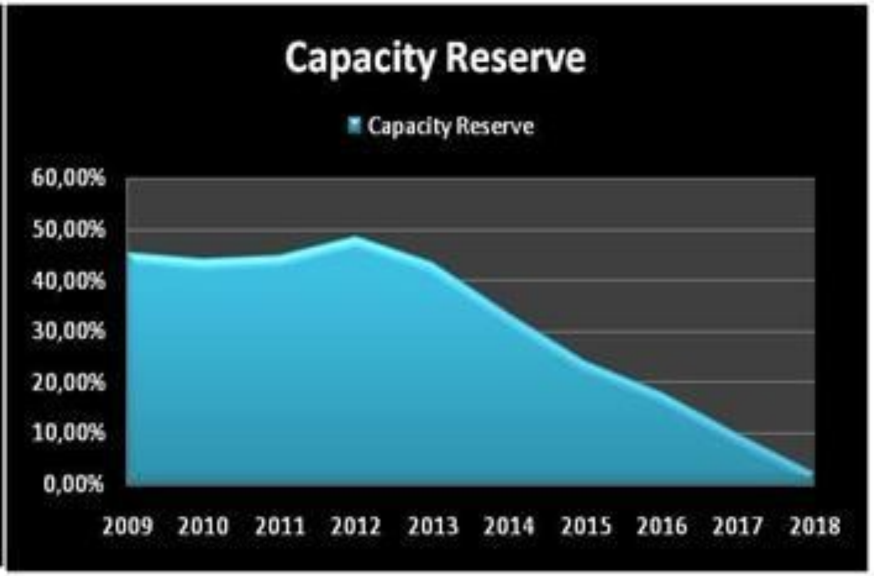


EXISTING & CONSTRUCTED PUBLIC & PRIVATE POWER PLANTS

High Demand (MW)	Years									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Thermal	27905	27750	28966	32094	34147	34147	34147	34147	34147	34147
Hydro	14886	16381	18058	19877	19877	19877	19877	21077	21077	21077
Renewables	695	880	1157	1157	1157	1157	1157	1157	1157	1157
TOTAL (TURKEY)	**43485**	**45011**	**48182**	**53128**	**55182**	**55182**	**55182**	**56382**	**56382**	**56382**
Peak Power	29900	31246	33276	35772	38455	41339	44440	47728	51260	55053
Capacity Reserve	**45,40%**	**44,10%**	**44,80%**	**48,50%**	**43,5%**	**33,50%**	**24,20%**	**18,10%**	**10,00%**	**2,40%**

Source: Production Capacity Projection (2009-2018), Turkish Electricty Transmission Company





CAPACITY PROJECTION-1

Scenario I - High Demand until 2017:

Thermal	53,984 MW	26,734 MW
Hydro	35,472 MW	22,077 MW
Renewables	1,250 MW	1,059 MW
Total	**91,827 MW**	**49,870 MW**
Peak Power	62,782 MW	
Capacity Reserve	46.3%	

49,870 MW to be constructed until 2017!

CAPACITY PROJECTION-5

Electricity Consumption (2000– 2008)

2000	128,276	GWh	100.0%
2001	126,871	GWh	98.9%
2002	132,553	GWh	103.3%
2003	141,151	GWh	110.0%
2004	150,018	GWh	116.9%
2005	160,794	GWh	125.4%
2006	174,637	GWh	136.1%
2007	191,559	GWh	149.3%
2008	198,055	GWh	154.4%

HYDROPOWER AVAILABILITY

Months	Average Water Inflow	2008 Actual	2009 Program	2009 Actual	Change with Respect to Average %	Change with Respect to 2008%	Change with Respect Program %
January	4.737,9	2.530,8	3.023,8	3.421,0	-27,8	35,2	113,1
February	5.200,1	2.553,4	3.349,1	5.614,8	8,0	119,9	167,7
March	9.381,5	9.738,3	6.374,6	9.088,5	-3,1	-6,7	142,6
April	16.102,4	9.210,3	9.823,9	11.265,9	-30,0	22,3	114,7
May	14.608,1	5.817,8	8.057,2	10.751,6	-26,4	84,8	133,4
June	7.143,6	3.865,5	4.412,1	4.888,7	-31,6	26,5	110,8
July	3.508,0	2.447,5	2.534,2	3.409,3	-2,8	39,3	134,5
Aughust							
September							
October							
November							
December							
Yearly Total	60.681,6	36.163,6	37.574,8	48.439,8	-20,2	33,9	128,9

POWER PLAYERS

According to Installed Power:

⇒ Leading Groups with more than 2,500 MW
- ....Ltd
- ....Ltd
- ....Ltd

⇒ Medium League with 500 - 2,500 MW
- ....Ltd
- ....Ltd
- ....Ltd

⇒ Small and Regional less than 500 MW
- ....Ltd
- ....Ltd
- ....Ltd

RENEWABLE RESOURCES

- ⇒ Hydropower (1500 €/kW, 3000 hrs / yr)
  - Small and compact hydro
  - River basins against development
- ⇒ Wind
  - Grid limitations
- ⇒ Solar (2500 €/Kw, 2000 hrs/ yr)
  - Photovoltaics or csp?

If you are interested in, please do not hesitate to contact us for the full article.
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