



AKENERJİ ELEKTRİK ÜRETİM A.Ş.

2020



COMPANY OVERVIEW



➤ Private Energy Company

- 1.224 MW active power capacity (Natural gas, Hydro and wind)
- 904 MW CCGT launched in 2014
- 198 MW hydro at development stage

➤ Role in Market

- Established in 1989, one of the largest and most experienced players in the market.
- Single-handedly has the capability to generate 3 % of energy need of Turkey and is one of the market leaders among private generation companies. (4 % of private generators)

➤ Ranking in the Major 500

- Ranked in the list of “500 Major Industrial Enterprises of Turkey Research” by Istanbul Chamber of Industry consequently 7 times in past 10 years.

➤ Ownership Structure

- IPO-ed in June 2000

Akkök	37,36 %
CEZ	37,36 %
Public	25,28 %



STRONG SHAREHOLDER SYNERGY



AKKÖK GROUP

- One of the biggest industrial groups in Turkey
- Active in several sectors with main focus on Chemicals, Energy, Real Estate, Port Operations, IT and Insurance
- The group with over 5,000 employees, consolidated revenues amounting to TL 5,6 billion in 2019.
- Sectoral Breakdown of Group's Turnover in 2019:
 - Chemicals : 39%
 - Energy : 55%
 - Others : 6%

www.akkok.com.tr



CEZ GROUP

- CEZ is the largest Czech corporation, and the largest corporation among 10 new EU member states
- 8th largest Power Utility company in terms of market capitalization in Europe
- Vertically integrated in the Czech Republic – from mining through generation to distribution and supply
- Expertise in distribution and supply in Bulgaria and Romania
- Growing in renewables, with asset in Germany, Poland, Romania and Czech Republic
- Generation know-how in lignite, coal, hydro and nuclear energy
- CEZ's 2020 EBITDA is 65 billion CZK (2,5 billion EUR) and revenue is 214 billion CZK (8,2 billion EUR).

www.cez.cz



AKENERJI HIGHLIGHTS



- **Diversified and flexible portfolio mix**
- **Experienced trading staff**
- **Profitability Margins have been expanding thanks to renewables in the portfolio**
- **The total capacity of 320 MW renewable portfolio enables Akenerji to avoid ~1 million tons of CO2 release.**
Akenerji completed its validation process for voluntary emission trading certificates for ALL of its renewable projects
- **All of Akenerji's renewable projects are eligible to benefit from the Renewable Energy Law (YEKDEM)- i.e. a purchasing guarantee for 10 years at a price to be determined by EMRA on annual basis. (Currently 7,3 \$ cent/kwh)**
- **Akenerji applies 30% equity-70% debt structure to its investments.**



OPERATIONS and INVESTMENTS



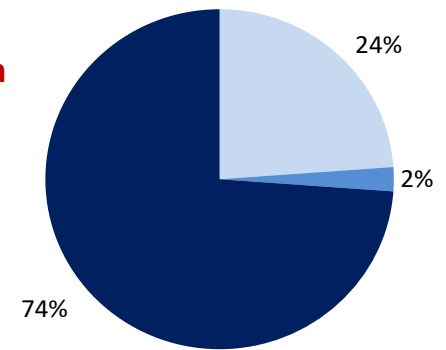
Ongoing project

Kemah HPP project with a capacity of 198 MW is in the development phase.
Ayyıldız Extention WPP with a capacity of 13 MW has started to operate in Jan 2017.

Operational Power Plants	Capacity [MW]	2020 Generation [MWh]
Erzin CCGT	904	3.822.324
Ayyıldız WPP	28	91.048
Bulam HPP	7	30.609
Uluabat HPP	100	179.531
Burç HPP	28	98.323
Feke I HES	30	108.686
Feke II HPP	70	157.301
Himmetli HPP	27	100.977
Gökkaya HPP	30	104.473
TOTAL	1.224	4.693.273

Above table shows gross generation amounts.

Capacity Diversification by 2020



Hydro Wind Natural Gas



SALES & PRICING ASSUMPTIONS

Akenerji has 4 main types of sales channels : eligibles, wholesale customers, YEKDEM and DUY system.



ELIGIBLE SALES

➤ Tariff for Eligible customers is set as a function of the government's tariff. Akenerji applies a discount rate for eligible customers.

WHOLESALE CONTRACTS

➤ Akenerji is selling to the wholesale players in the market with the bilateral contracts with fixed prices.

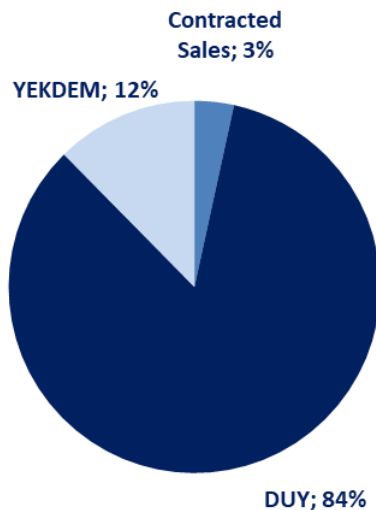
DUY SALES

➤ In the DUY Market, since the price is set by the generation company according to the supply and demand dynamics, and is not limited by the official tariff. Approximately 80% of sales in Turkey are sold with bilateral contracts with regulated tariff and the remaining take place in the DUY Market.

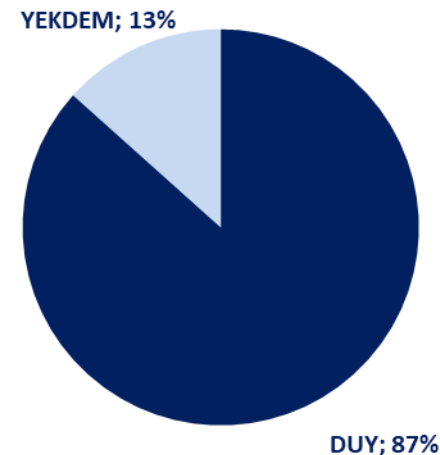
YEKDEM SALES

➤ Renewable energy sources participating in YEKDEM guarantee USD based feed-in tariffs, based on the type of facility and ratio of local parts in utilized in facility.

2020 Sales Breakdown



2021 Sales Breakdown (Expected)

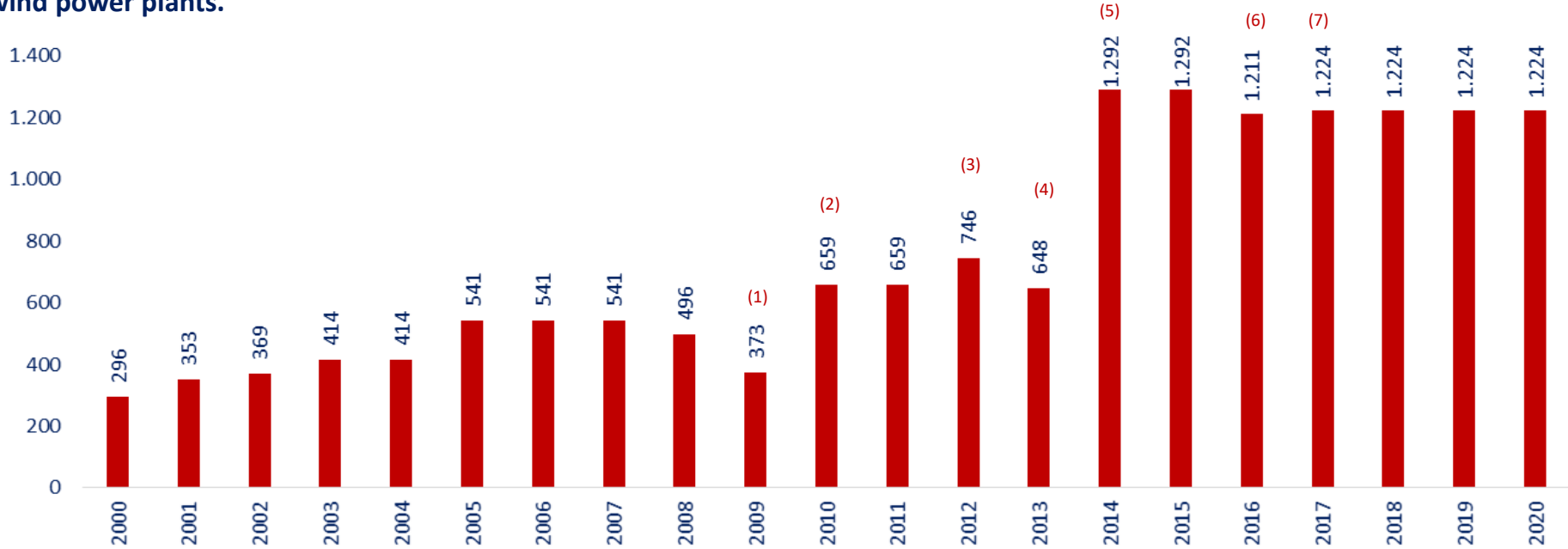


CAPACITY & SALES DEVELOPMENT



➤ With the completion of Egemer Project and Ayyıldız WPP Extension, Akenerji's power generation capacity has increased to 1.224 MW.

➤ In 2013 (an average year in terms of precipitation), average capacity utilisation rate calculated as 32 % for hydros and 35% for wind power plants.



- (1) : Ayyıldız WPP (15MW) became operational
Yalova NG PP (70MW) was sold to Akso (Akkök Group Company).
69MW installed capacity in various locations of Turkey was sold
- (2) : Five HPPs commenced operations with a total capacity of 286MW
- (3) : 3 HPPs, total capacity of 87 MW, became operational
- (4) : Çerkezköy NG PP (98MW) operations ended
- (5) : 904MW Egemer NGPP project became operational
Bozüyük NGPP(132 MW) and Kemalpaşa (127,6 MW) licences cancelled.
- (6) : Akocak HPP (81MW) was sold
- (7) : 13MW Ayyıldız Extension WPP became operational.



ERZIN HIGHLIGHTS



- Erzin is a 904 MW, natural gas Combined Cycle Power Plant
- The plant is the largest investment of Akenerji
- One of the most efficient plant in Turkey with a desirable coastal location, located in Erzin/Hatay, in the south of the country
- The plant has been operational in July 2014
- Designed to be as an eco-friendly and contemporary power plant with annual generation capacity of 7,4 billion kWh of electricity
- The power plant employees around 50 people during operation
- Flexible source for auxiliary services (Services with value added)
- Turnkey EPC Agreement (Engineering/Procurement/Construction) was signed with GE&Gama
- The plant employed more than 500 people during construction
- The plant financed with 70:30 debt:equity structure
- Sizeable savings achieved from the project cost





TRENDS & EXPECTATIONS IN ENERGY MARKET



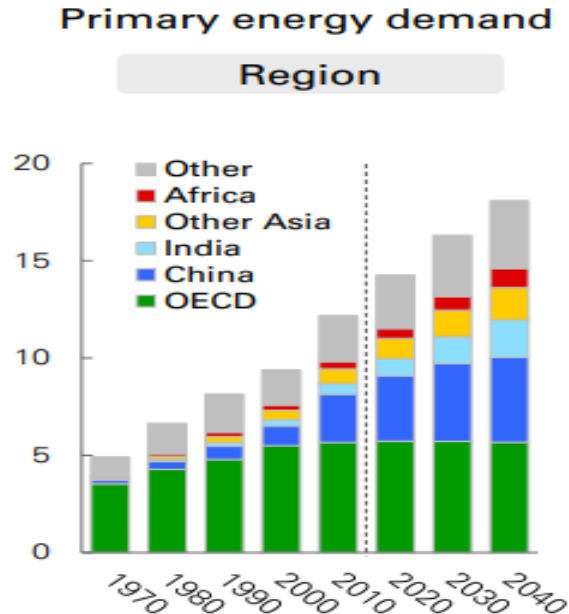
DEMAND FOR ENERGY IS DRIVEN BY EMERGING MARKETS



- According to BP World Energy Outlook Report 2018, growth in the world economy means more energy is required;
- Energy consumption is projected to increase by 35% until 2040.
- China and India account for half of the growth in global energy demand.
- It is forecasted that the increased need in baseload capacity will be primarily met through coal and renewable sources.

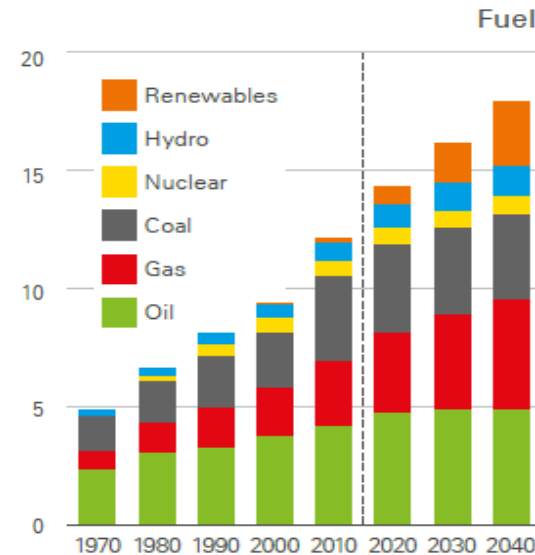
Consumption by region forecast

Growth in primary energy demand by region (Billion toe)



Production Breakdown Forecast

World's net Electricity Generation by Energy Source (Billion toe)



Sources: BP, World Energy Outlook Report, 2018 and 2019.

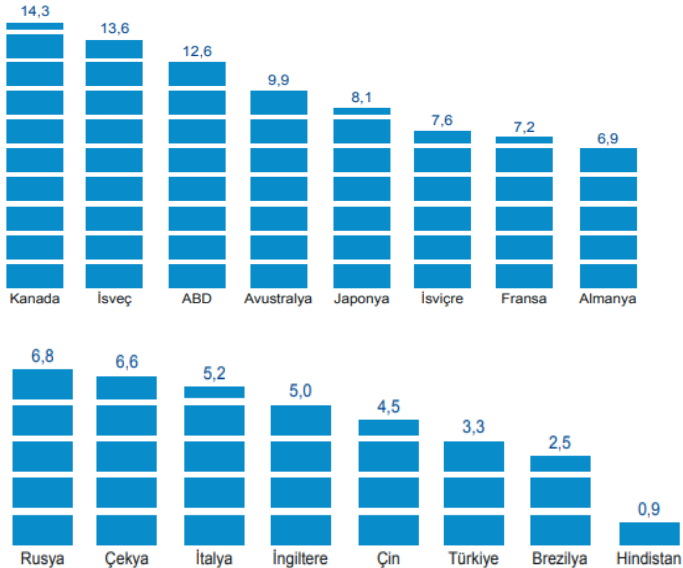


* Renewables include wind, solar, geothermal, biomass and biofuels.

DEMAND GROWTH & POTENTIAL



Consumption per Person (MWh)*



*International Energy Agency, Key World Energy Statistics 2019

➤ Turkey represents a significant potential in terms of consumption per capita compared to the other countries on the back of its increasing young population and economic growth potential.

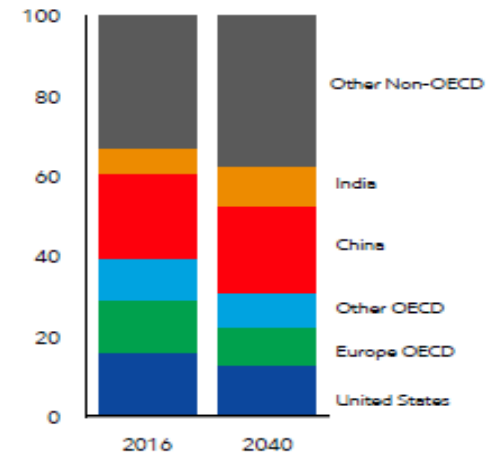
➤ Electricity consumption is mainly effected by GDP growth, population growth, urbanization, climate change and efficiency applications.

GDP	2013	2014	2015	2016	2017	2018	2019
Turkey	4.2%	2.9%	6.1%	2.9%	7.4%	2.6%	0.9%
EU	0.3 %	1.7%	2.4%	2.0%	2.6%	2.0%	1.5%

Source: Eurostat, TÜİK

➤ Global energy demand increase comes from non-OECD countries. In OECD countries according to energy efficiency and structural shifts in economy, less energy is required to generate economic growth.

Energy demand shifts toward non-OECD
Percent of primary energy (%)



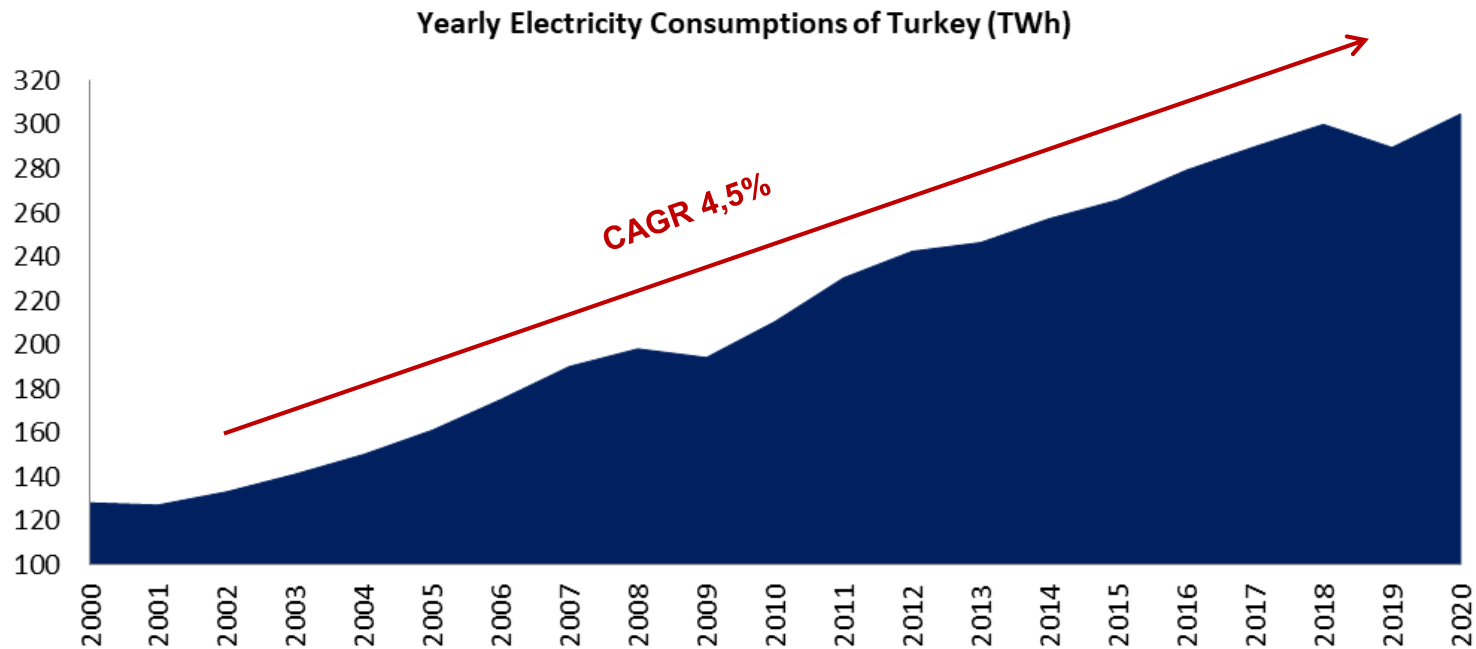
*Source: Exxon Mobil 2018 Outlook for Energy



TURKEY GROWTH TRENDS



- In the last 20 years, electricity consumption increased remarkably, pointing to a CAGR of 4,5%.
- TEIAS forecasts an average annual consumption growth rate is around 4,5 % per year for 2020 to 2028 period. As consumption growth is susceptible to global downturns, the imbalance stands out as a major problem.



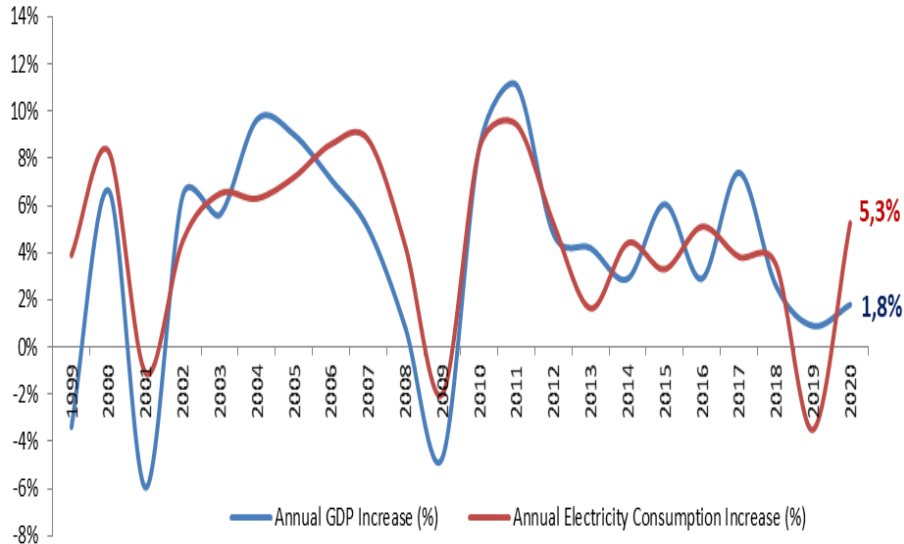
TWh	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Turkey	128	127	133	141	150	161	175	190	198	194	210	230	242	246	257	266	279	290	300	290	305



TURKEY CONSUMPTION DYNAMICS



Electricity Consumption Trend



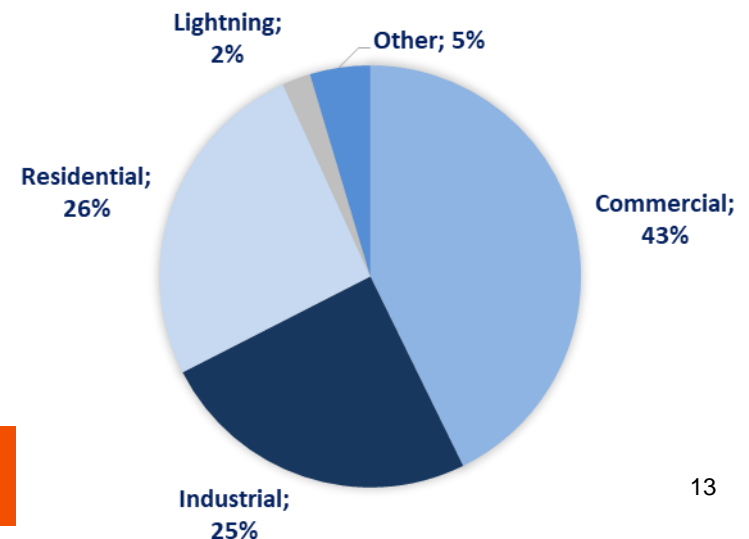
➤ Prior to 2013, GDP growth was generally realized parallel to yet below the electricity demand growth. This trend reversed in 2013, when GDP growth rate surpassed the electricity demand growth. This trend change mainly stemmed from the sources of GDP growth. While GDP growth was mainly driven by production and investment prior to 2013, consumption has become the main driver of growth between 2013-2017 Period.

➤ GDP growth rate for 2020 was announced as 1,8%, whereas electricity demand was increased by 5,3% .

➤ Electricity consumption proved to be resilient to the downturns in the economy. Increase in electricity demand has mostly been much higher than the increase in national income in booms, while residing in the positive territory during recession years:

	Years : Financial Crises	
	2001	2009
GDP in Turkey	-6,0%	-4,7%
Elec. Consumption	-1,1%	-2,0%

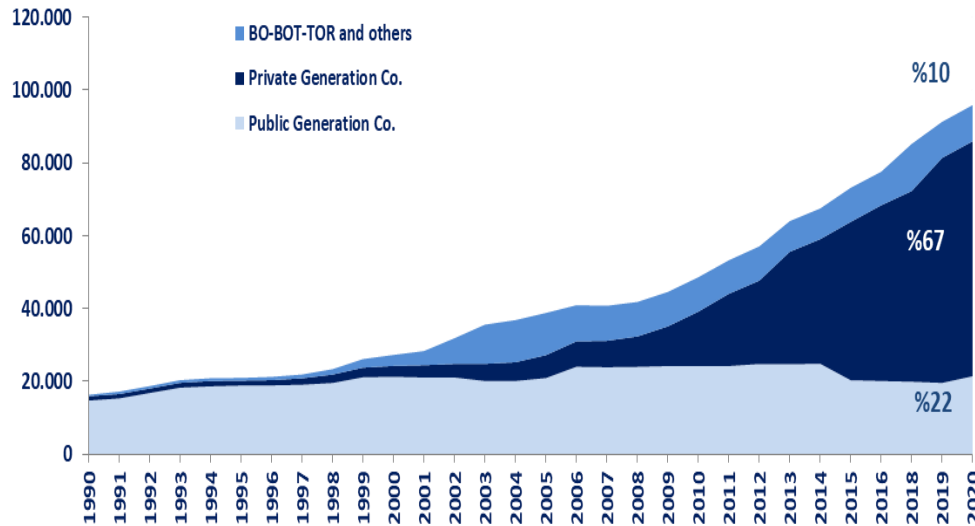
Power Consumption Breakdown (2020)



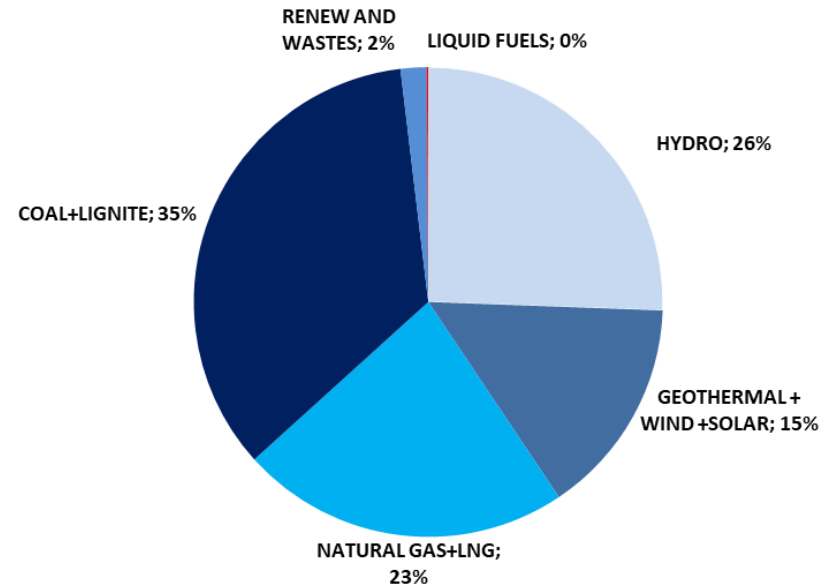
GENERATION CHARACTERISTICS



Turkey's Installed Capacity by Generation Companies (MW)



Fuel Sources of Electricity Generation (2020)



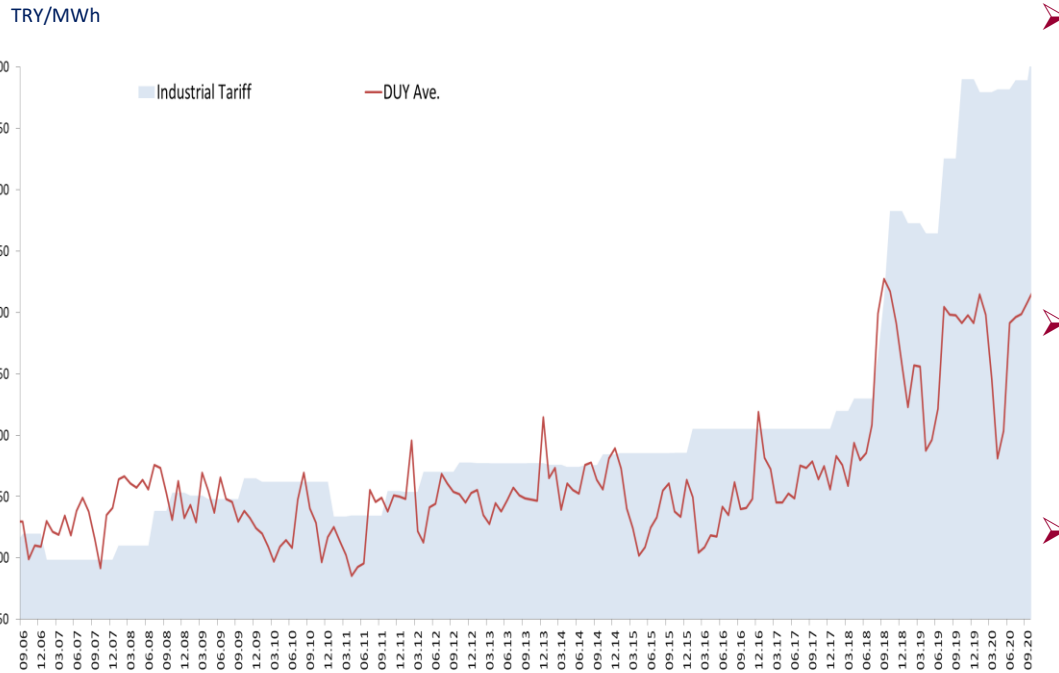
➤ Today, substantial amount of the electricity produced in Turkey is generated through state-owned/operated power plants.

➤ Import and Export of electricity depend on governmental permits. Due to technical infrastructure, capacity for trade is very limited.

➤ Currently, the majority (97%) of natural gas is being imported by the government, limited alternative for supply and competition in the market. As a result, the electricity price is mainly sensitive to the NG price trend.



ELECTRICITY MARKET MECHANISM



➤ The official electricity tariffs (for residential /commercial/industrial use) are set by the government every 3 months. Most of the consumption can be contracted outside of the official markets based on the DUY** prices different from the tariffs.

➤ NG tariffs are determined by the government and adjusted quarterly. The NG prices affect electricity prices because NG fueled plants are working as marginal producers.

➤ The amount of imbalance in the market drives the price since the marginal producers are predominantly NG/ fuel-oil plants → increasing electricity shortage forecasts indicate higher prices to come.

Private sector generation companies have the following sales platforms:

- 1) Contract the customer directly and provide them a discount rate from the official tariff
- 2) Selling to DUY system by quoting generation price/power plant and per the specific time-segment of the day (price, that the company itself announces per its own power plants)
- 3) Bilateral contracts with other players in the market with fixed prices

**DUY : Clearing house system was initiated in Aug.2006, and provides an “open-market platform” for the power generation companies, since the price is set by the generation company according to the supply and demand dynamics, and is not limited by the official tariff. Sales to the DUY(Electricity Market Balancing and Settlement Regulation) system are exempt from TRT/Energy fund and transmission losses.



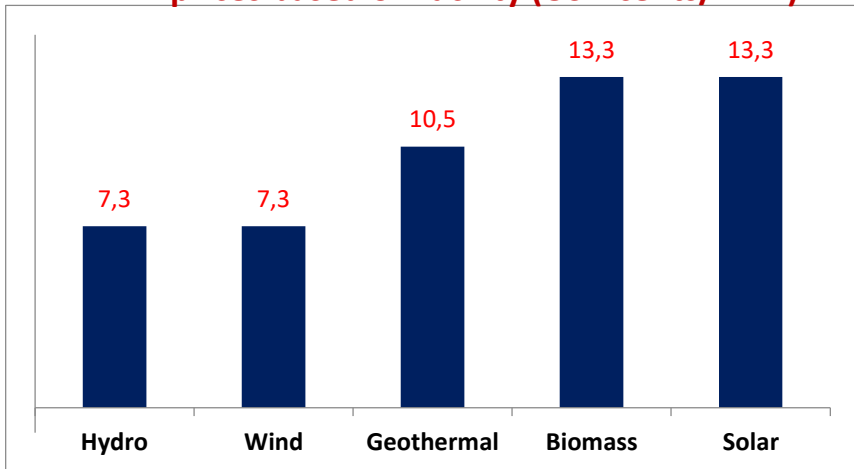
YEKDEM MECHANISM

YEKDEM: Turkish Renewable Energy Resources Support Mechanism



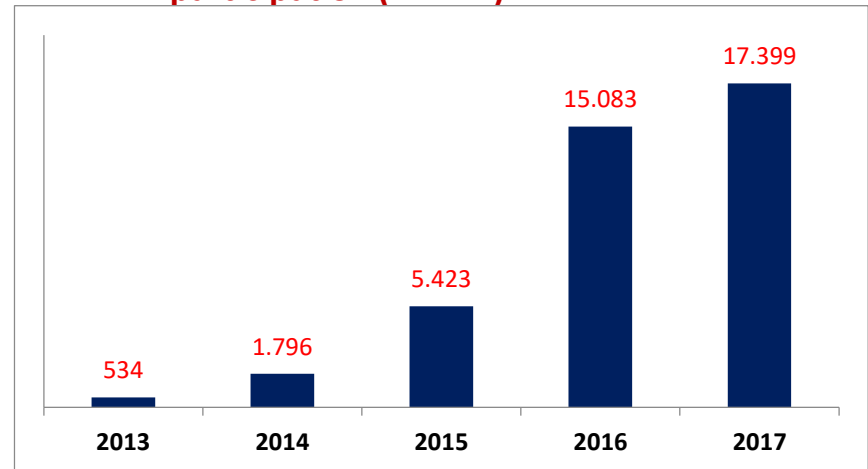
- Predictable returns on renewable energy investments thanks to YEKDEM Law, offering guaranteed prices for 10 years after commissioning.
- Legislation deploys a differentiated feed-in tariff scheme to plants participating in YEKDEM based on the type of production facility.
- Incentive scheme, first introduced in 2010, attracts more and more attention from investors with stagnating reference electricity prices in DUY market and appreciating US Dollar against the Turkish Lira, which widen the spread between the YEKDEM and the DUY prices.
- Guaranteed prices are applied to production facilities that are or will be commissioned as from 2005 to 30.June.2021 and qualified to operate within the scope of the renewable law.

YEKDEM prices based on facility (USD cents/kWh)



➤ Qualified plants are also eligible for an add-on feed-in tariffs if certain equipments used in the plants are manufactured in Turkey, for a duration of 5 years after commissioning, raising the guaranteed tariffs upto 9,6 UScents/kWh for hydro; 11,0 UScents/kWh for wind; 16,1 UScents/kWh for geothermal; 22,5 UScents/kWh for solar power plants.

YEKDEM participation (in MW)



DECREASING APPETITE IN YEKA TENDERS & PRIVATIZATIONS



Privatizations: [2014](#) - 5 bn USD, [2018](#) - 100 mio USD, [2019](#) – 0, [2020](#) – 1.5 mio USD

YEKA tenders: [2017](#): Tenders realized; 1000 MW Solar, 1000 MW Wind
[2018](#): Tenders cancelled; 1000 MW Solar, 1200 MW Offshore Wind
[2019](#): Tender realized; 1000 MW Wind
[2020](#): Tender in 19-23 Oct.2020; 1000 MW Solar

YEKA Solar 3 PV

Capacity: 1000 MW

Bids taken: 19-23 Oct 2020

- 74 tenders planned in 36 cities with a total capacity of 1000 MW
- Ceiling price: 30 kuruş/kWh
- PPA: 15 years

Privatization

Ahiköy 1-2 HES

Capacity: 4.2 MW

Bids taken: 26 Aug 2020

- Ceiling Price: 8.00 Şcent/kWh, PPA: The first 50 TWh of generated electricity.
- Method: Transfer of Operation Rights
- Highest Offer: Ergezen Yapı Ticaret Ltd. Şti. with 11.300.000 TL

YEKA Onshore Wind 2

Capacity: 1000 MW

Bids taken: 18 Apr 2019

- Total capacity of 1000 MW in 4 regions. Ceiling price:5,5 Şcent.
 - ✓ Aydın : 250 MW - Lowest Bid: 4.56 Şcent – Winner: Enerjisa
 - ✓ Çanakkale : 250 MW - Lowest Bid: 3.67 Şcent – Winner: Enerjisa
 - ✓ Muğla : 250 MW - Lowest Bid: 4.00 Şcent – Winner: Enercon
 - ✓ Balıkesir : 250 MW - Lowest Bid: 3.53 Şcent – Winner: Enercon

YEKA Onshore Wind 1

Capacity: 1000 MW

Bids taken: 27 Jul 2017

- ✓ Winner: Siemens-Türkerler-Kalyon consortium (Bid: 3.48 Şcent)
- ✓ Total 1000 MW capacity in 4 region(Kırkklareli, Edirne, Sivas, Eskişehir)
- ✓ The Wind Turbine factory completed, waiting for NTP for starting turbine generation. Financing alternatives being searched.

YEKA Solar 1 PV

(Karapınar)

Capacity: 1000 MW

Bids taken: 14 Mar 2017

- ✓ Winner: Kalyon – Hanwha consortium with 6,99 Şcent/kWh
- ✓ South Korean giant Hanwha pulled out of the partnership in Feb.2019.
- ✓ Kalyon received government incentives in Sep 2019 to finish the project
- ✓ Production began in Turkey's first integrated solar cell factory in Aug 2020.

CAPACITY MECHANISM



- The purpose of the mechanism is to establish the necessary and sufficient installed power capacity for the provision of security of supply in the market and to safeguard the installed power capacity for the purpose of ensuring long-term system security.
- Only 46 Power Plants (14 CCGTs-inc.Erzin, remaining coal fired and hydros) are eligible to benefit from the incentive in 2021.
- Lignite & natural gas power plants are eligible for capacity payment, regardless of being available. As of Jan 2019, hydro power plants with no feed-in tariff incentive are also eligible for capacity mechanism. Lignite power plants have the priority to benefit from the budget. (Total Budget announced for 2021 is 2.6 billion TRY)

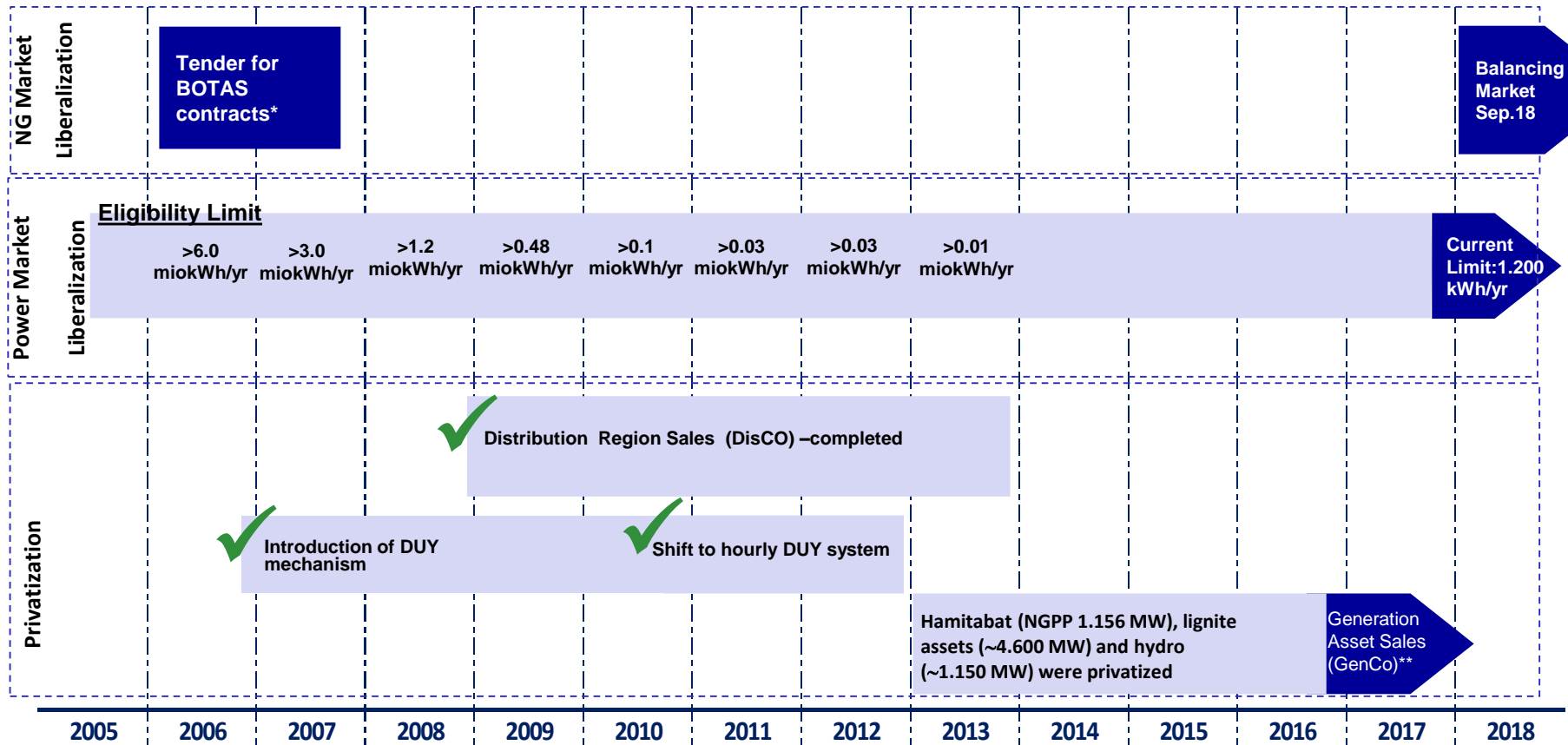
As of Jan 2019, mechanism works as follows;

- Capacity payments are not fixed payments, the payment is linked to variables.
- For each type of plant a fixed cost & availability parameter is assigned. Fixed cost coefficient is updated on a monthly basis depending on the FX rate and PPI. These parameters are multiplied with the total installed capacity for plant type.
- Total monthly budget is divided to each plant according to calculations above.
- Erzin has received app.11 mio USD per year from the mechanism in 2019 and 2020 .

MARKET LIBERALIZATION SCHEDULE



Turkish Energy Market deregulation is developed after the UK Model and has been proceeding as per below schedule. Privatization & Liberalization should be expected to start to help create a transparent & competitive market environment.



➤ The delays in the liberalization result in prolonging of regulated period.

*The privatization tenders for NG will continue until the market share of BOTAŞ will be reduced to 20%. 4 billion m3 has been privatized at 2006.

**Plants will be brought to market in stages.

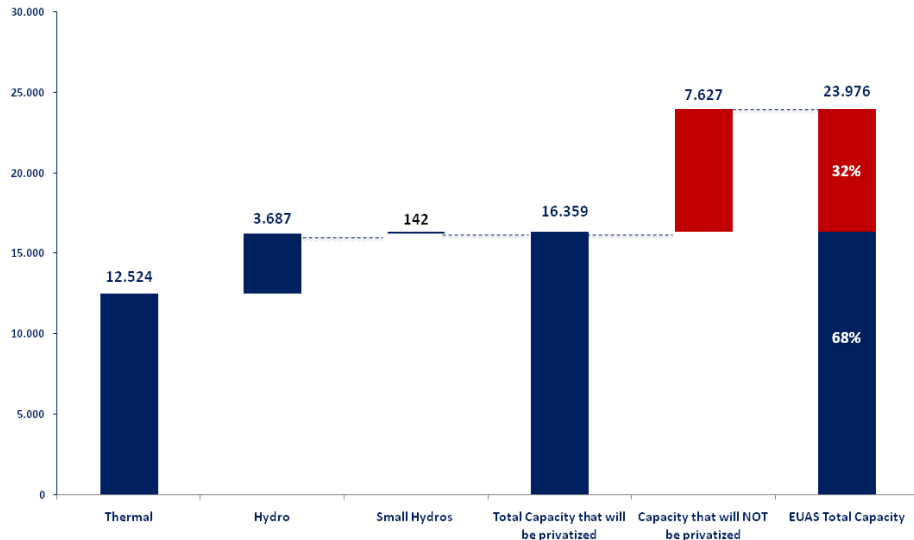


CURRENT PRIVATIZATION OVERVIEW



The aim of the GenCo privatizations is to increase the efficiency in the market and provide cheap electricity to the end-user.

GenCO



DisCO



- 37% of Turkey's capacity should be offered to the private sector.
- The Government has started to privatize 97 of its power plants with a total capacity of 16.359 MW. Hamitabat (NGPP 1.156 MW), lignite assets (~4.600 MW) and hydro (~1.150 MW) were privatized. Other GenCo tenders remain unannounced.

- Privatization of 21 DisCos were completed.



NATURAL GAS MARKET MECHANISM



BOTAŞ Tariff vs OTSP



- Currently, the majority (97%) of natural gas is being imported by BOTAS (Govt. Natural Gas Company) >> limited alternative for supply and competition in the market.
- The official natural gas tariffs for electricity generators are set by BOTAS and updated every 3 months.
- There are only a few number of private natural gas suppliers in the market other than BOTAS that has direct long term contracts with Russia.
- Natural gas consumption can be contracted based on BOTAS prices, USD rates or OTSP** prices different from the official tariffs.

- Although the production activity is not counted as a market activity as required by the Law, the production companies may provide the natural gas they produce to wholesale companies, import companies, export companies, distribution companies, CNG sales companies and CNG transmission and distribution companies. In addition, production companies can export the natural gas they produce provided that they obtain an export license.
- Akenerji will carry out the necessary activities to supply the natural gas to be needed by CCGT power plant under the most favorable conditions.

**OTSP : Clearing house system was initiated in 2019, and provides an “open-market platform” for the natural gas licenced companies, since the price is set by the participants according to the supply and demand dynamics, and is not limited by BOTAS tariff. Sales to OTSP are excluding transmission fees.



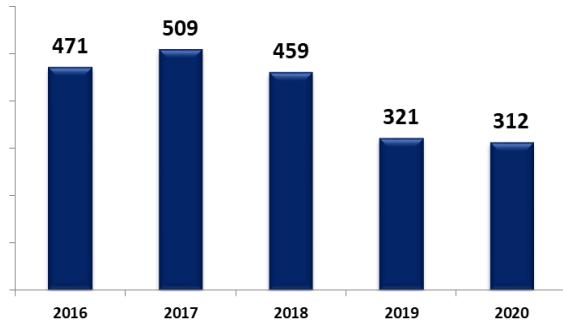
AKENERJI FINANCIAL INFORMATION



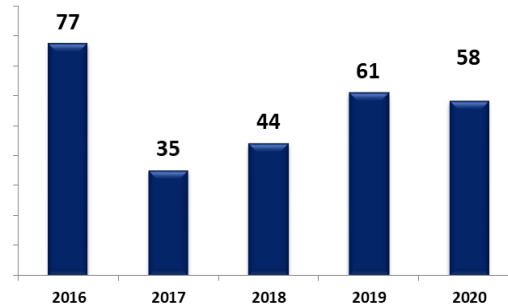
FINANCIAL PERFORMANCE



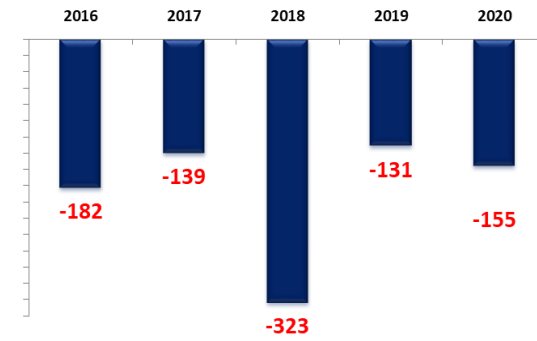
Net Sales (mio USD)



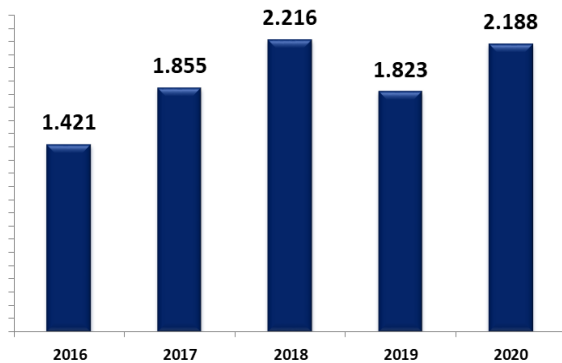
Ebitda (mio USD)



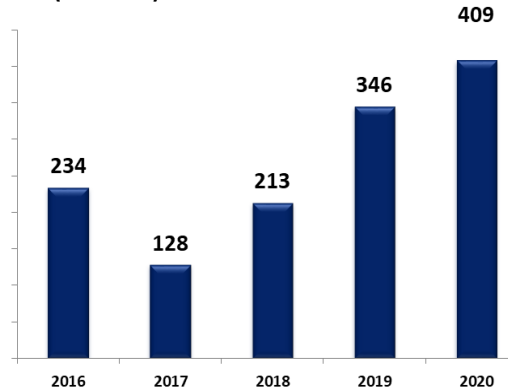
Net Profit (mio USD)



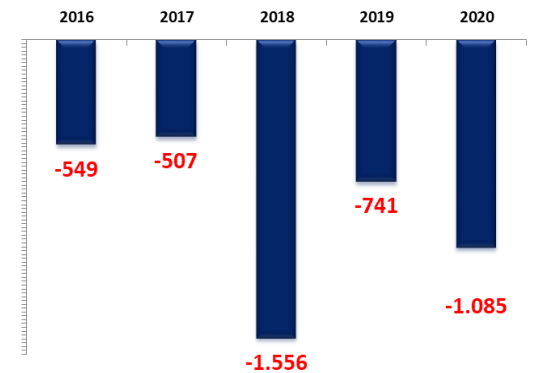
Net Sales (mio TRY)



Ebitda (mio TRY)



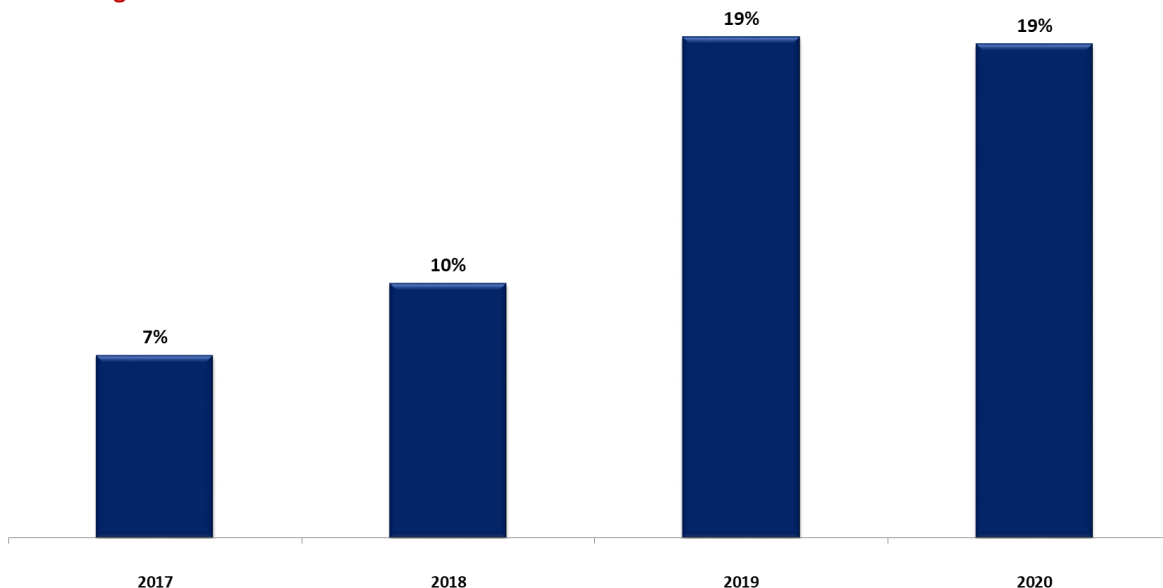
Net Profit (mio TRY)



PROFITABILITY PERFORMANCE



EBITDA Margin



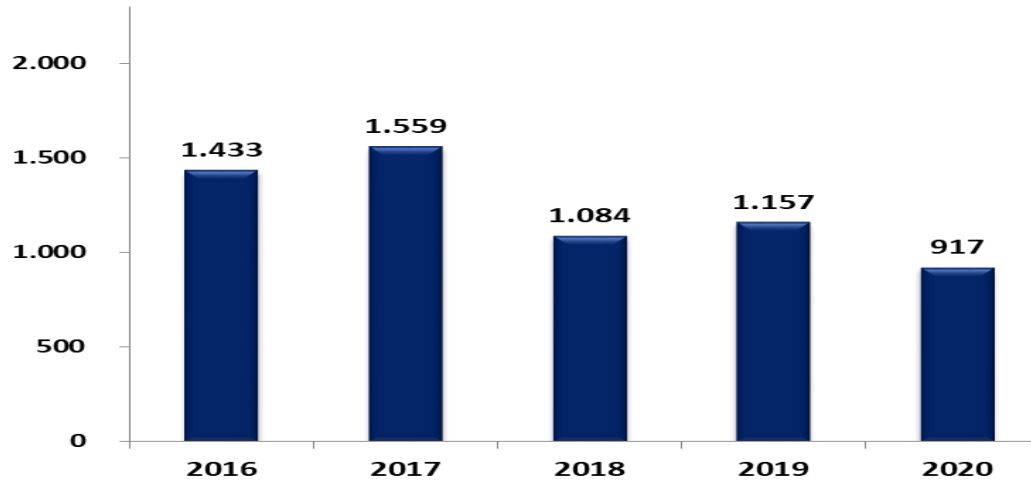
- In the last four years, Akenerji incurred yearly min 7% and max 19% Ebitda Margin with its diversified portfolio.
- Inflow coming to reservoirs in 2017 was lower than the long term average, Akenerji could succeed 7% Ebitda Margin.
- Although 2018 proved difficult for the Turkish Electricity Market with uncertainties, sharp hikes in the Natural Gas prices, falling liquidity in the commercial market, Akenerji finished a successful year in terms of operational profitability with its balanced production portfolio, its experience in trading and its proactive approach.
- Because of the wet year conditions in 2019, company has incurred higher EBITDA margin.
- The drought threat, which started to effect especially in the second half of 2020 throughout our country, also negatively impacted our hydroelectric power plants. Compared to the previous year, the total generation amount of our renewable power plants declined by 17%. However, we managed to close this gap easily with our balanced portfolio. Our Erzin Natural Gas Power Plant had a very successful year in terms of operational profitability by raising its production by 35% compared to the previous year.



CONSOLIDATED BALANCE SHEET



Size of Balance Sheet (mio USD)



<u>Debt Structure (mio USD)</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Cash	123	12	4	15	29
Short-term Financial Debt	103	101	212	31	35
Long-term Financial Debt	827	751	645	828	793
Net Debt	-807	-841	-854	-843	-799

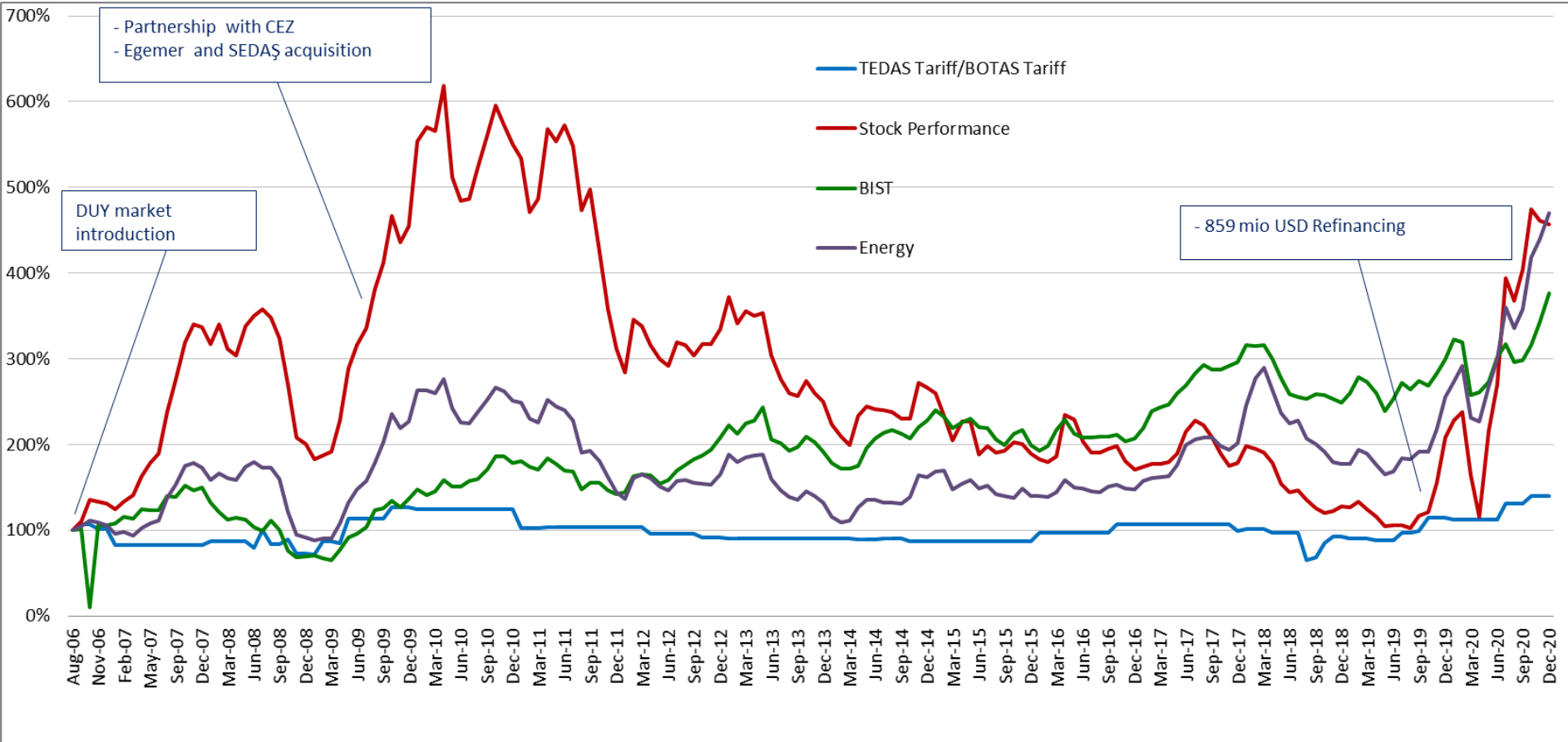
<u>Key Ratios</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Current Ratio	1,1	0,3	0,2	0,5	0,6
Leverage	3,6	2,1	11,4	6,2	(53,4)
Total Liabilities/Total Assets	0,8	0,7	0,9	0,9	1,0

Leverage = Total Liabilities / Shareholders's Equity

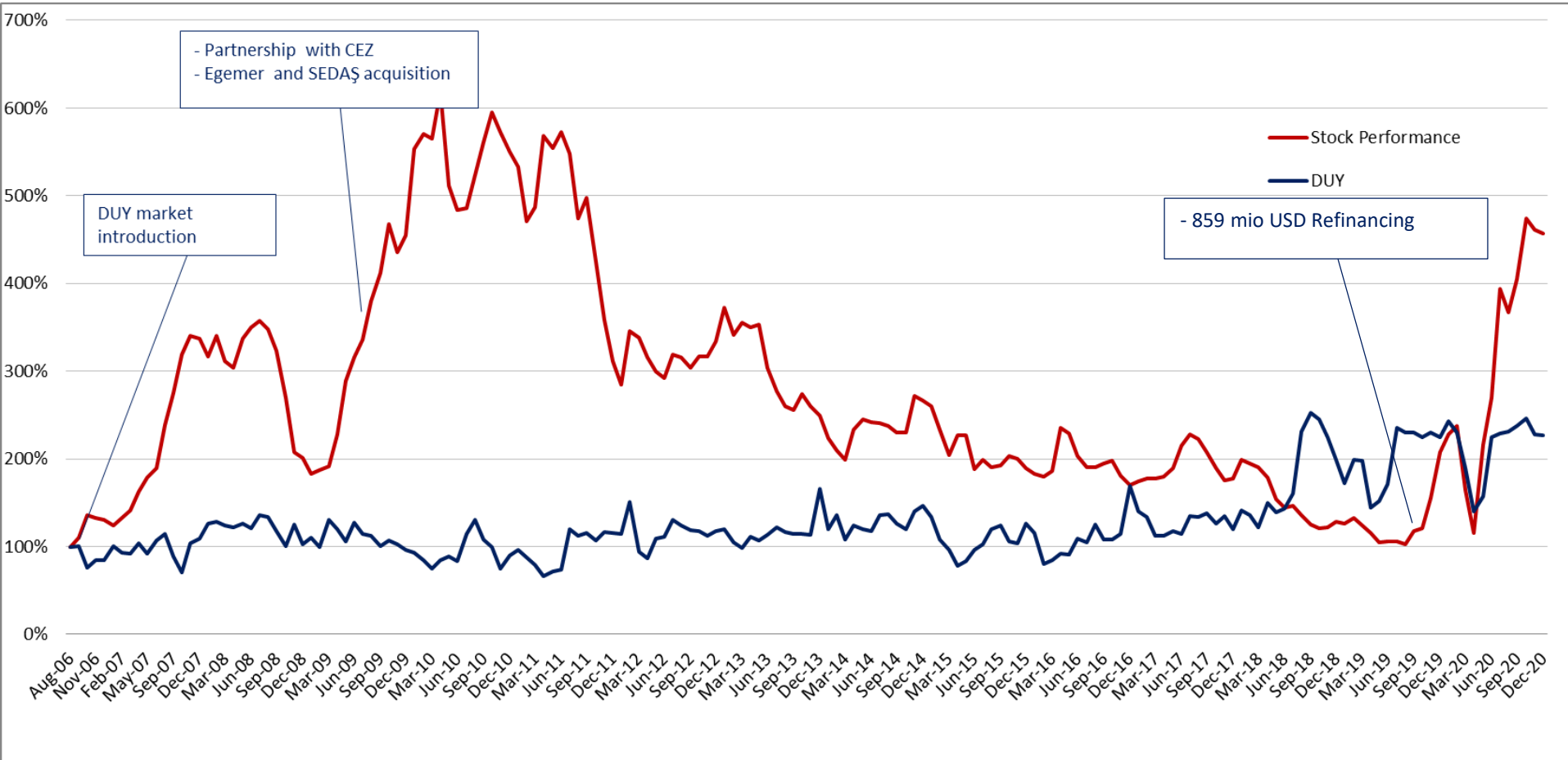
Current ratio = Current Assets / Short-term Liabilities



STOCK PERFORMANCE



STOCK PERFORMANCE vs DUY PRICES



ABBREVIATIONS



MW	: Megawatt
TWh	: Terawatt hours
NG	: Natural Gas
GDP	: Gross Domestic Product
CAGR	: Compound Annual Growth Rate
DUY	: Electricity Market Balancing and Settlement Regulation System
DISCO	: Distribution Companies
TRT	: Turkish Radio - Television Corporation
HPP	: Hydroelectric Power Plant
WPP	: Wind Power Plant
CCGT	: Combine Cycle Power Plant
USD	: US Dollars
mio \$: Million Dollars
PP	: Power Plant
EMRA	: Electricity Market Regulatory Authority
EBITDA	: Earnings Before Interest, Tax, Depreciation & Amortisation
TRY	: Turkish Lira



AKENERJI INVESTOR RELATIONS



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