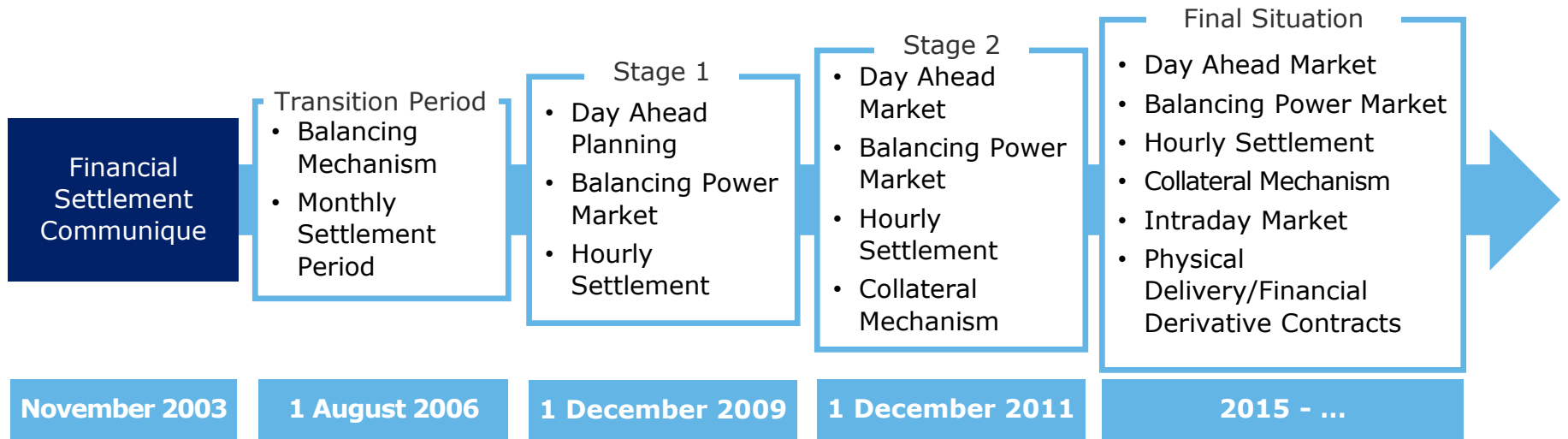




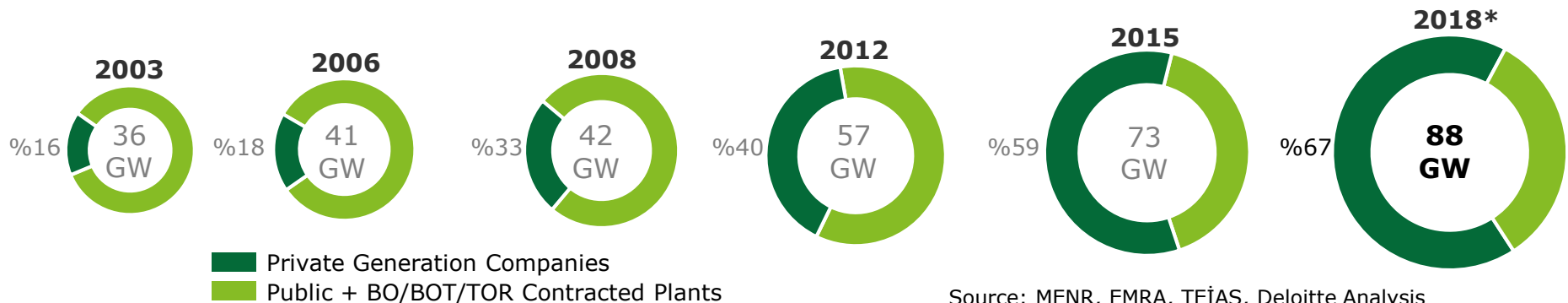
Energy Investments and Financing

September 2018

Liberalization process supported with developing market places resulted in increased investments from private sector...



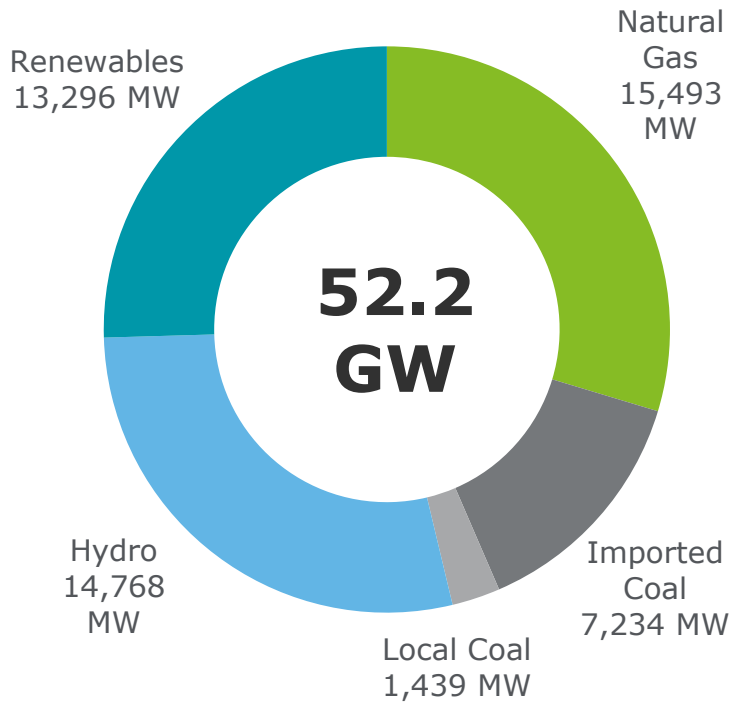
Installed Capacity Development



Source: MENR, EMRA, TEİAŞ, Deloitte Analysis
 * As the end of August, 2018

Investments in Power Sector

Additional Installed Capacity 2008 – 2018*

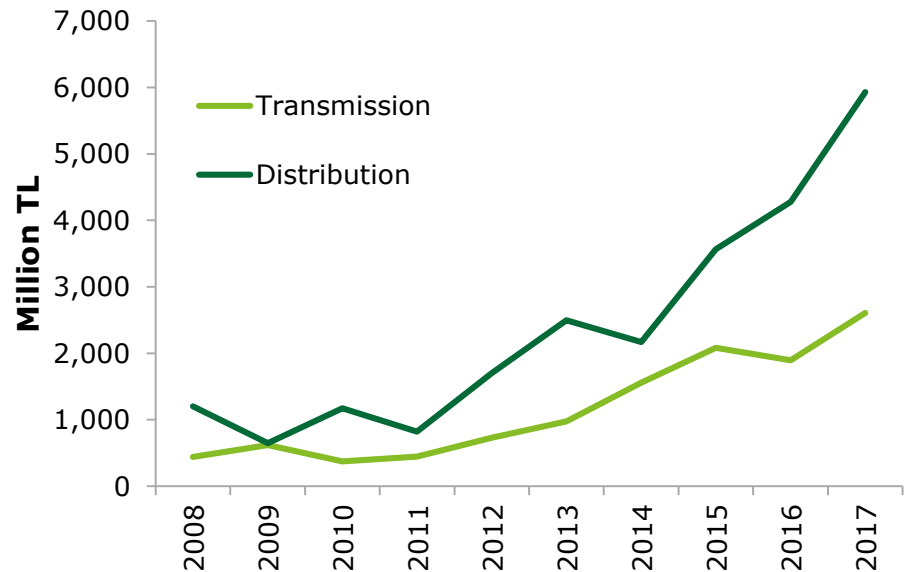


Source: MENR, EMRA, TEİAŞ, Deloitte Analysis
 * As the end of August, 2018

Installed capacity has more than doubled during last decade and reached to 88 GW.

Power transmission & distribution investments increases continuously in parallel with soaring installed capacity.

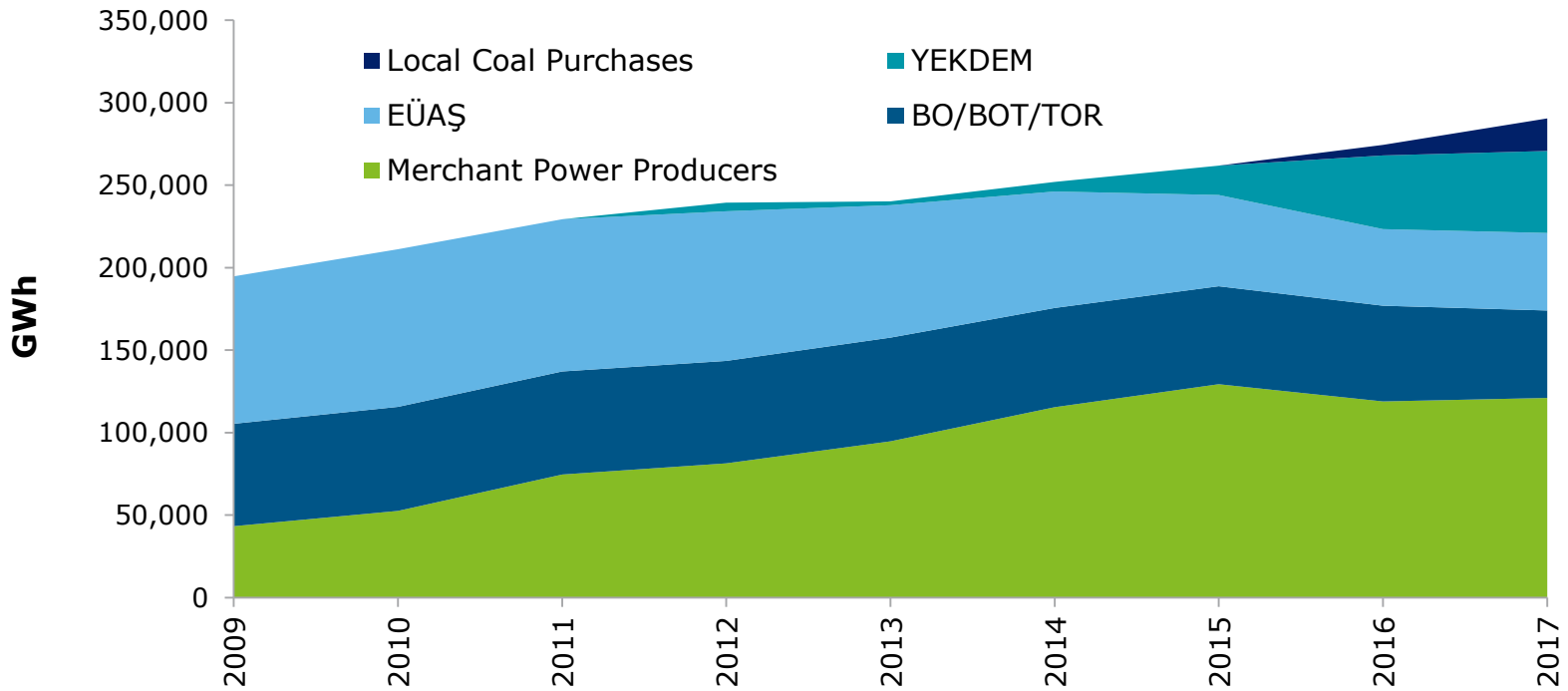
Investments in Power Transmission and Distribution



Source: EMRA, TEİAŞ,

Merchant Power Producers vs. Bilateral Agreements

Power Generation Figures by Ownership 2008 – 2017

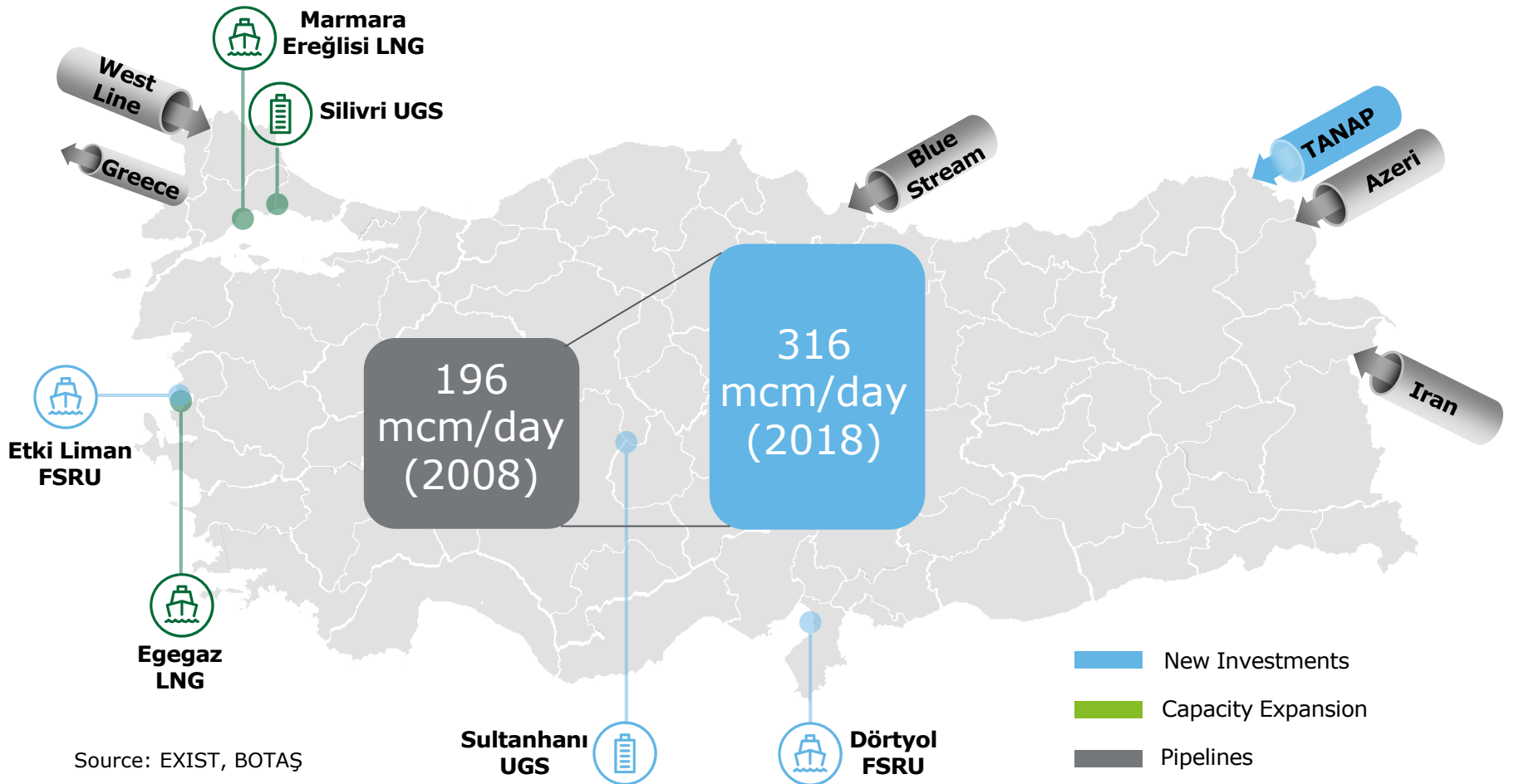


Source: MENR, EXIST



Investments in Natural Gas Entry Capacities

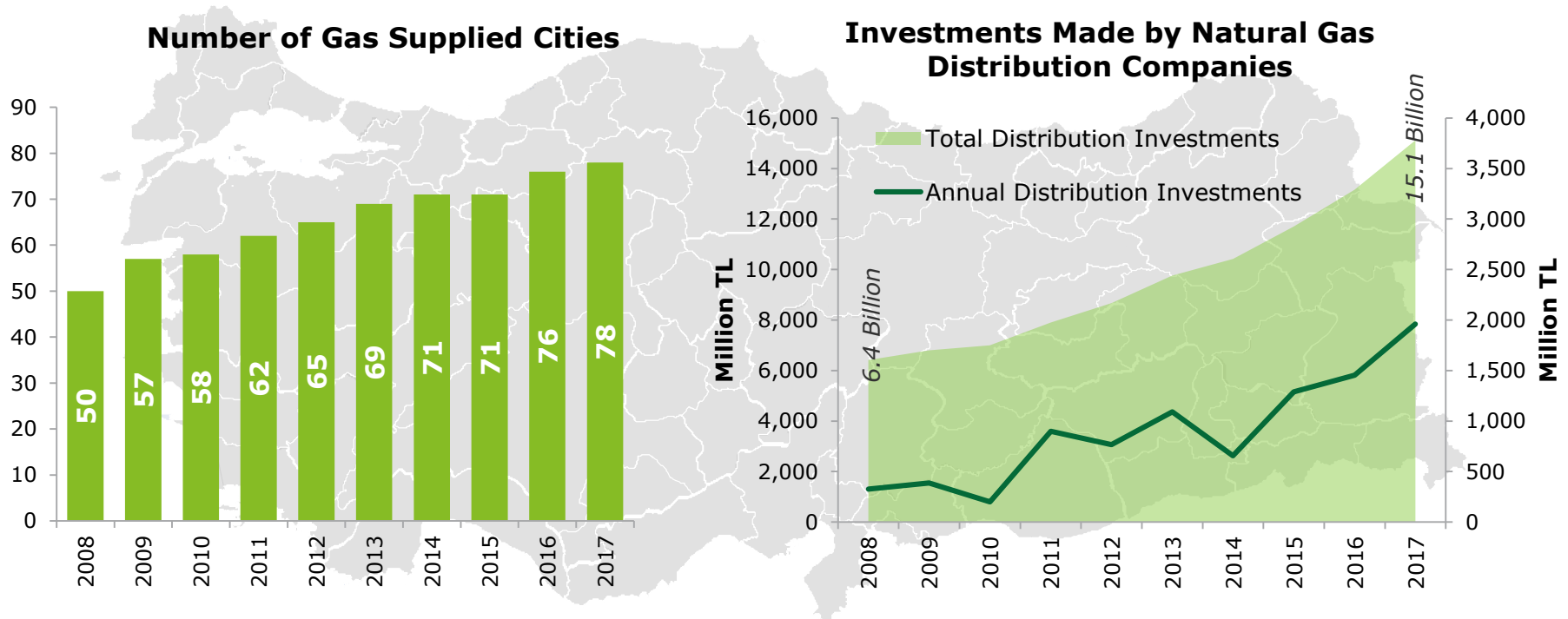
Natural Gas Entry Points of Turkey



Investments in Natural Gas Distribution

Turkey has overcome natural gas supply issues owing to new pipeline, storage and LNG investments.

To increase penetration of natural gas throughout Turkey, considerable budget has been allocated in natural gas distribution investments in the last decade.

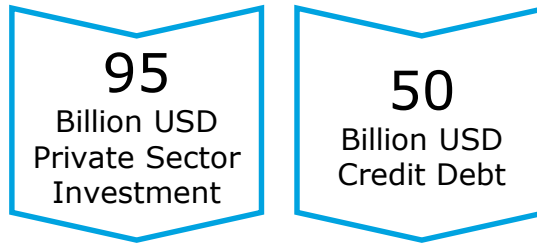


Source: EMRA

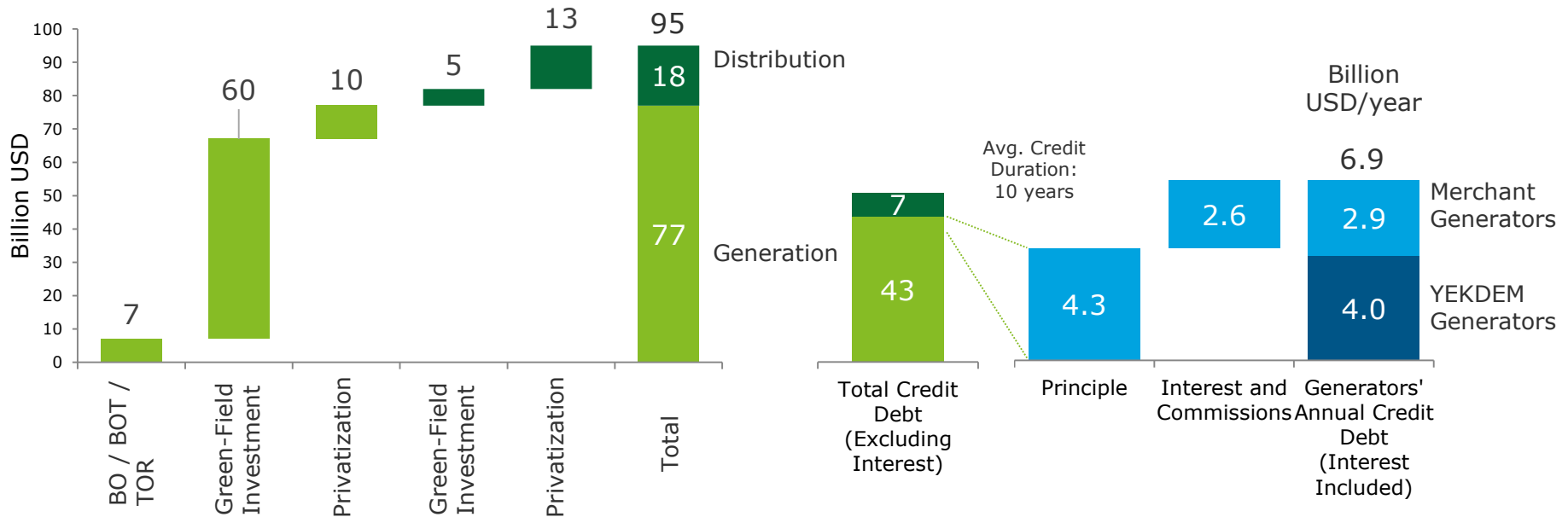
Source: EMRA, Deloitte Analysis

Turkey has entered an intense investment period during the last decade

In parallel with intense investment period, a total of 107 Billion USD Private Sector investment has been realized in last 15 years.



Private sector companies that invest 95 Billion USD in power sector, have faced with a total of 50 Billion USD credit debt.

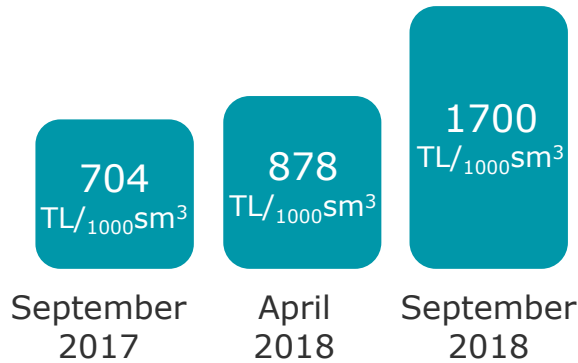


Note: 2016 figures are illustrated

Source: TÜSİAD

Prominent Issues in Turkish Energy Markets

Natural Gas Prices for Power Generators Has More Than Doubled



WACC



Issues in Investing in Power Distribution Grid

Borrowing Costs

17.1%

17.6%

30.7%

WACC+PPI

22.6%

23.8%

31.5%

September 2017

April 2018

September 2018

Price Advantage of Wholesale Market Has Shrunk



PTF + YEKDEM

177 TL/MWh

199 TL/MWh

367 TL/MWh

Active Energy Prices

221 TL/MWh

214 TL/MWh

267 TL/MWh

August 2016

August 2017

August 2018

4.48 Million

August 2017

2.28 Million

April 2017

0.66 Million

August 2018

Number of Eligible Consumers Has Decreased more than 80%



The questions need to be answered...



How to ensure financial sustainability?



Which steps should be taken to establish a predictable market?



Which investment models should be implemented?



When will reliability be re-established?



Which lessons should be taken from the past?



Which actions should be taken to restructure accumulating debts?



How the end users will be affected from recent developments?



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