



**Q2 2016  
INVESTOR PRESENTATION**

**02** Refining  
Industry

**03** Company  
Overview

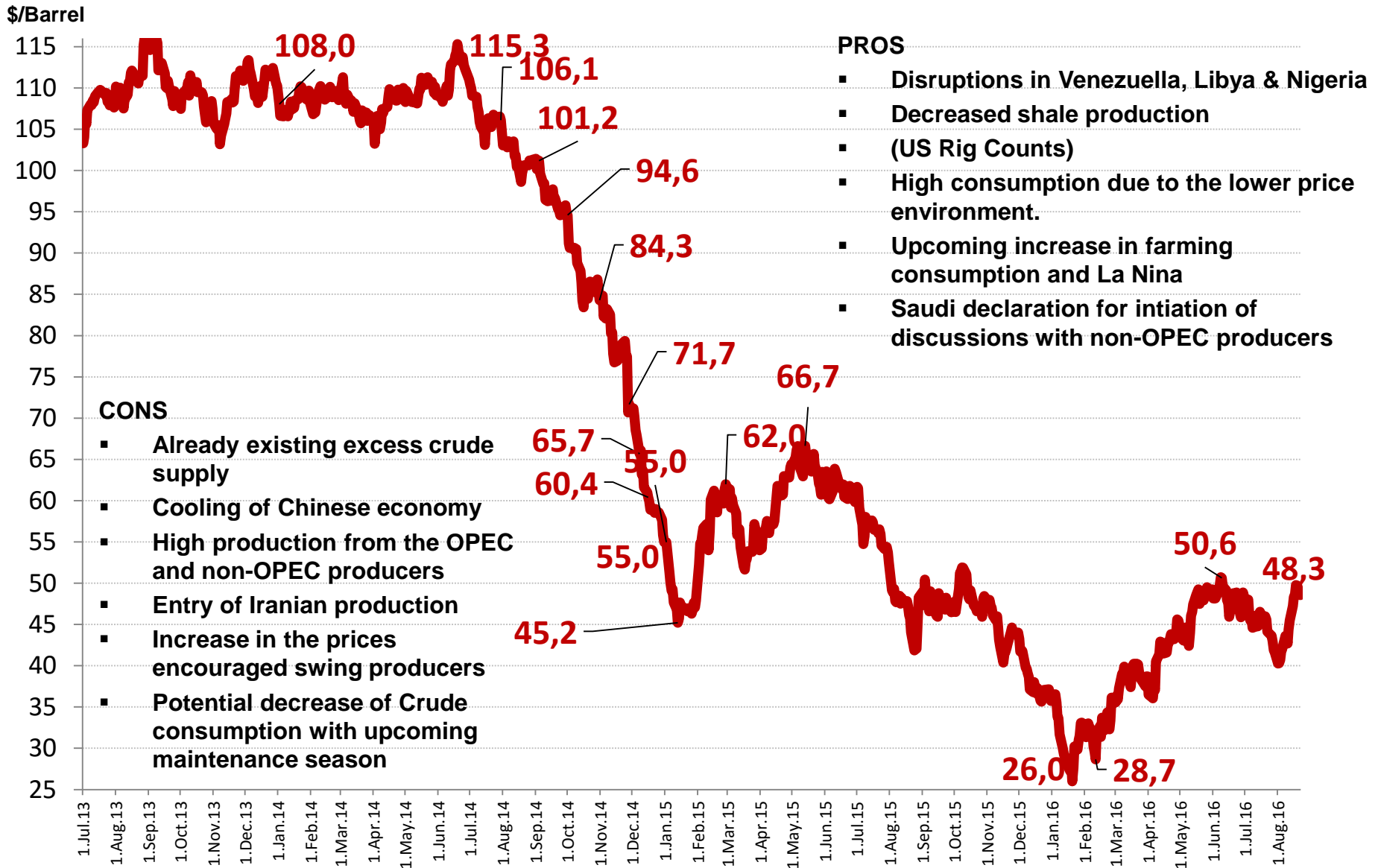
**04** Investments

**05** Key  
Financials

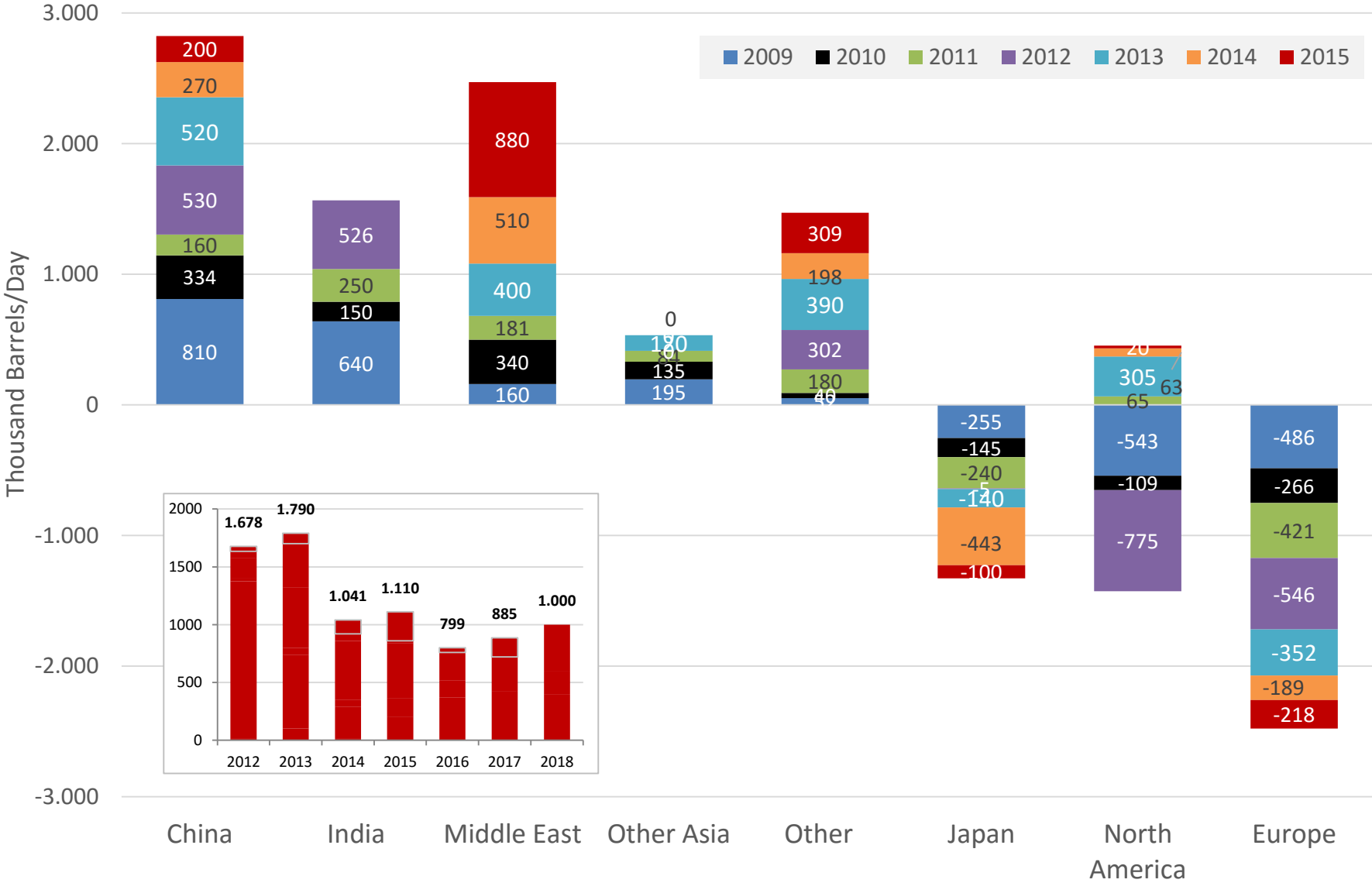
# Refining Industry



# Brent Crude Oil Prices



# Refinery Capacity Change

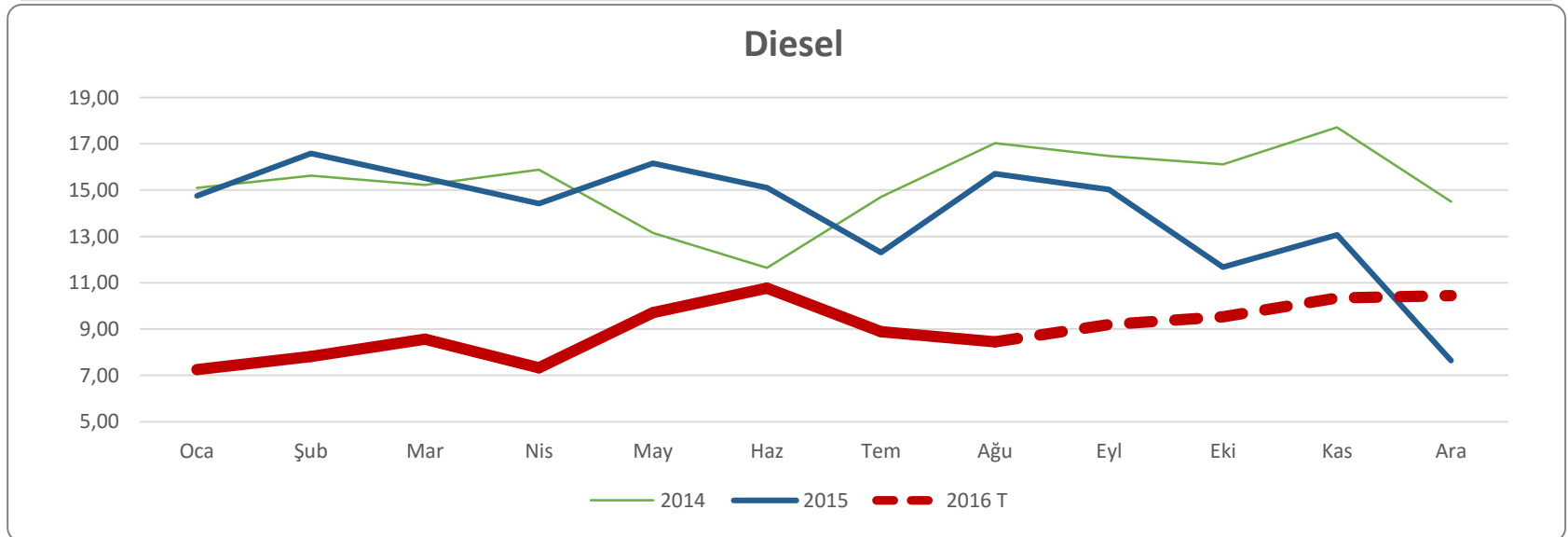
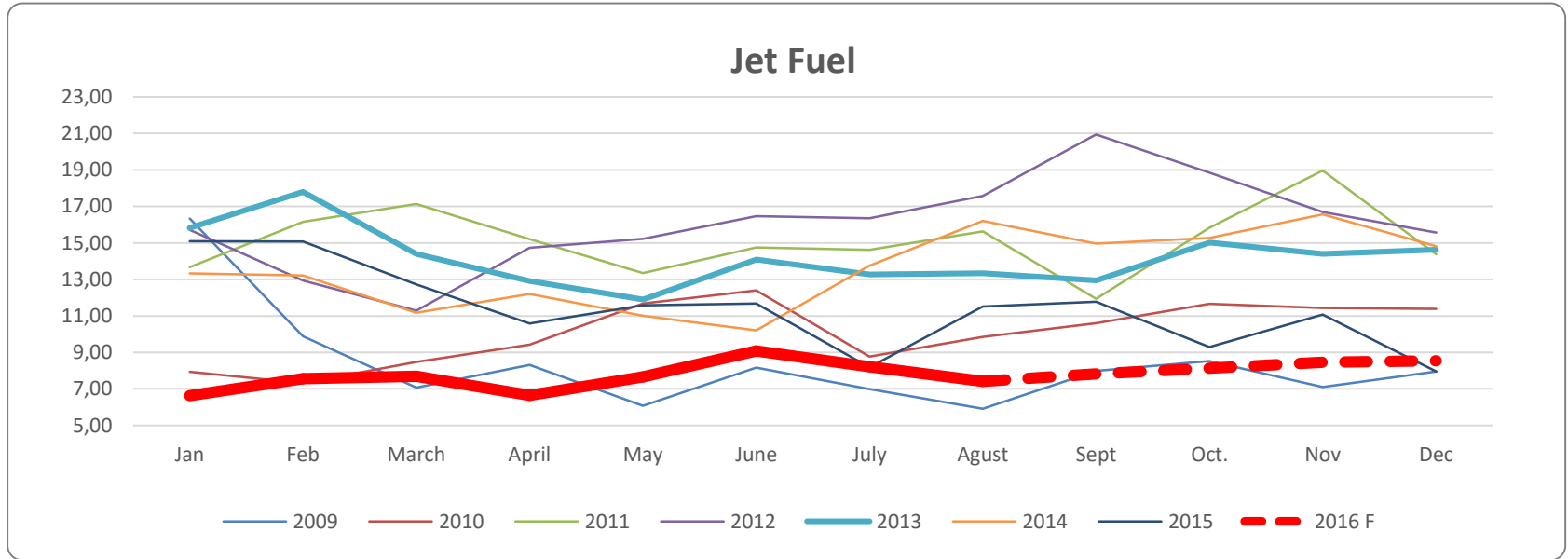


Source : Tüpraş, Reuters, Reports

# Refinery Value

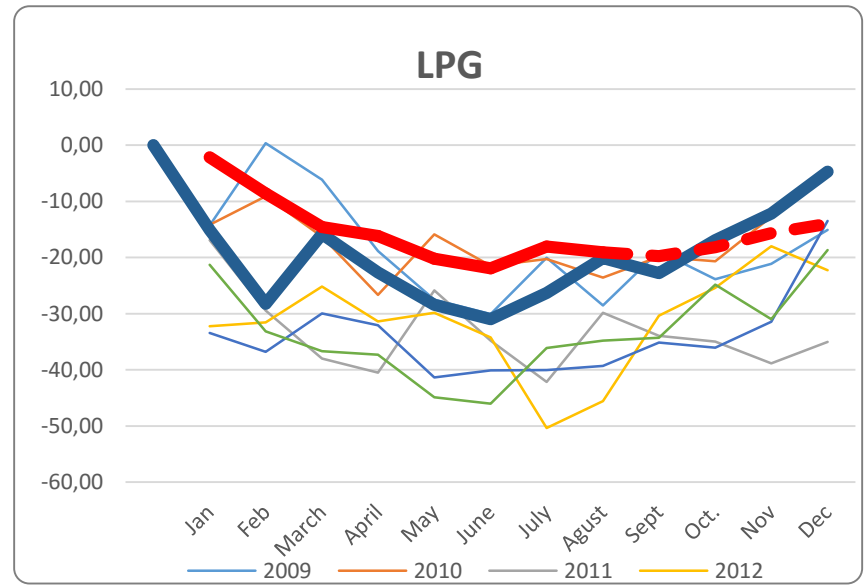
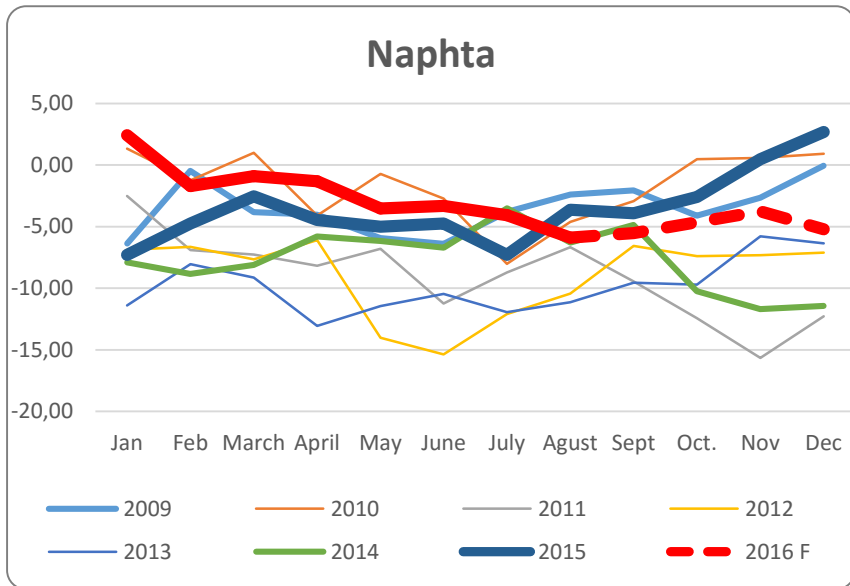
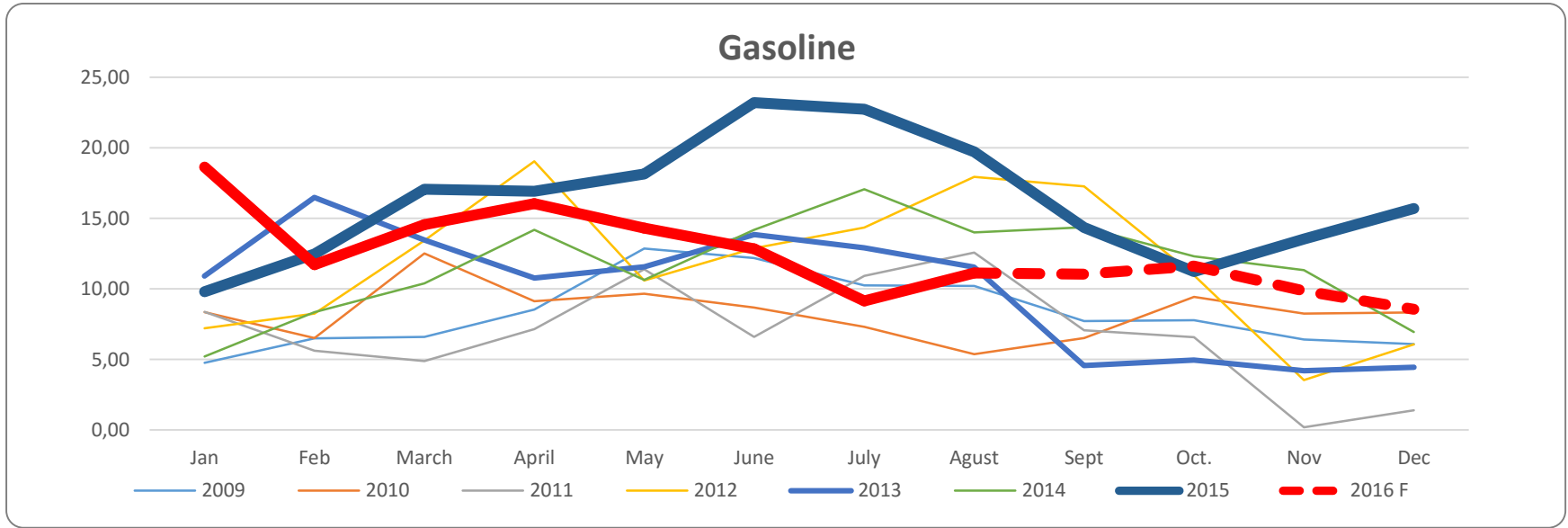


# Product Crack \$/bbl



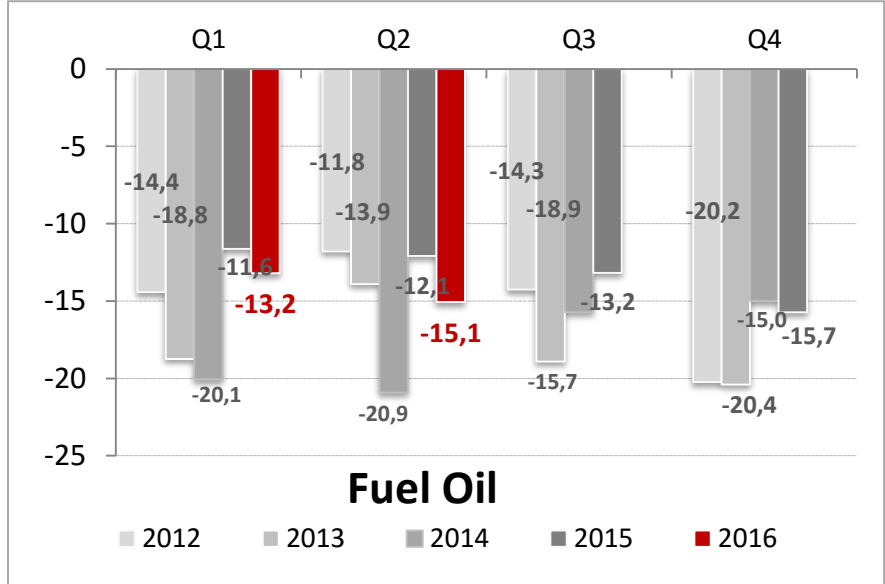
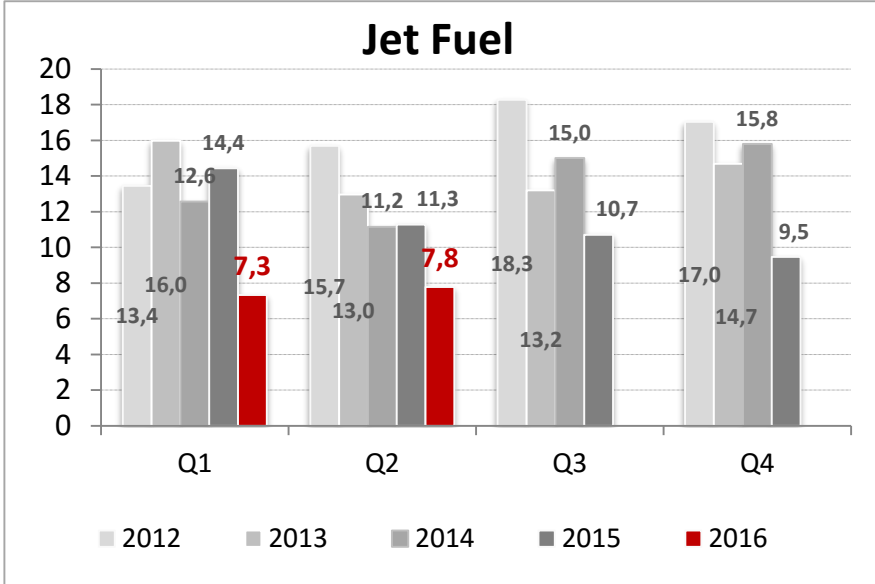
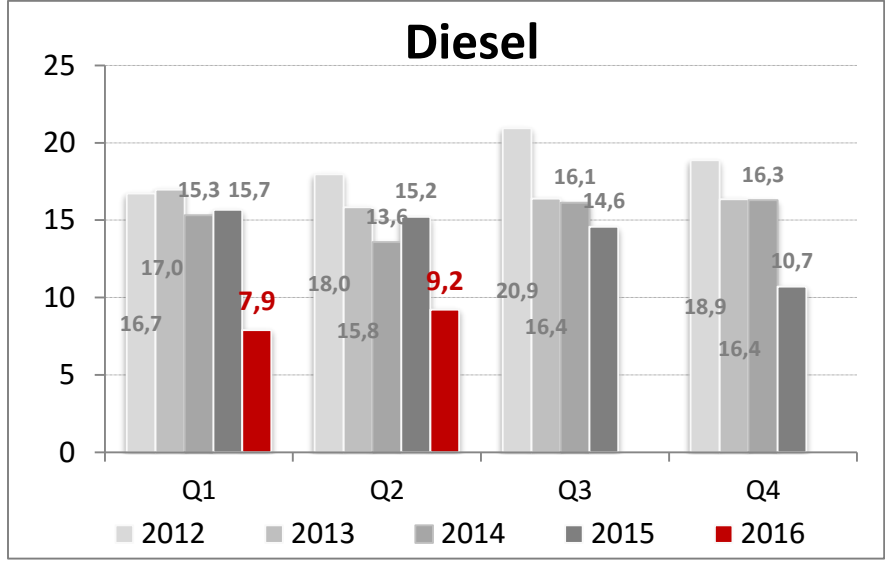
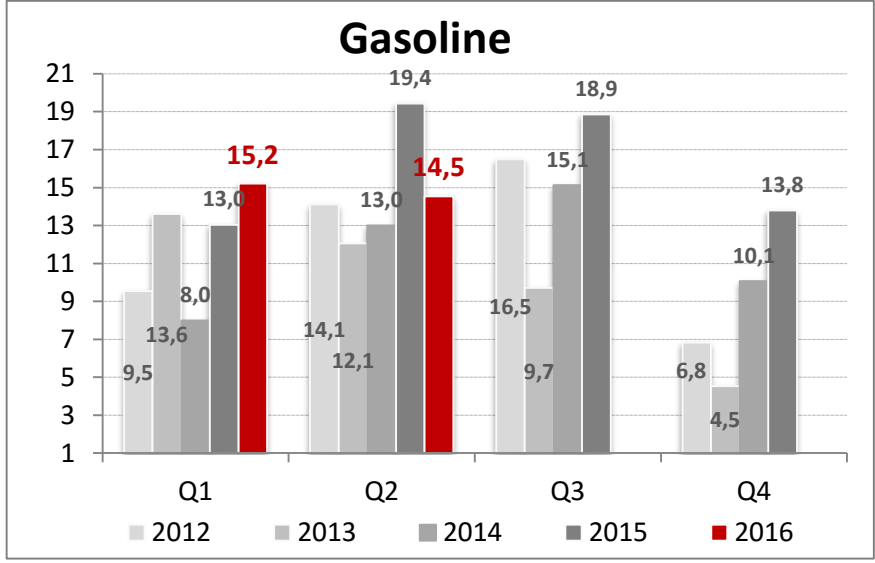
Note: 2009- August 2016 Platts Data, 2016 (September-December) estimation

# Product Crack \$/bbl



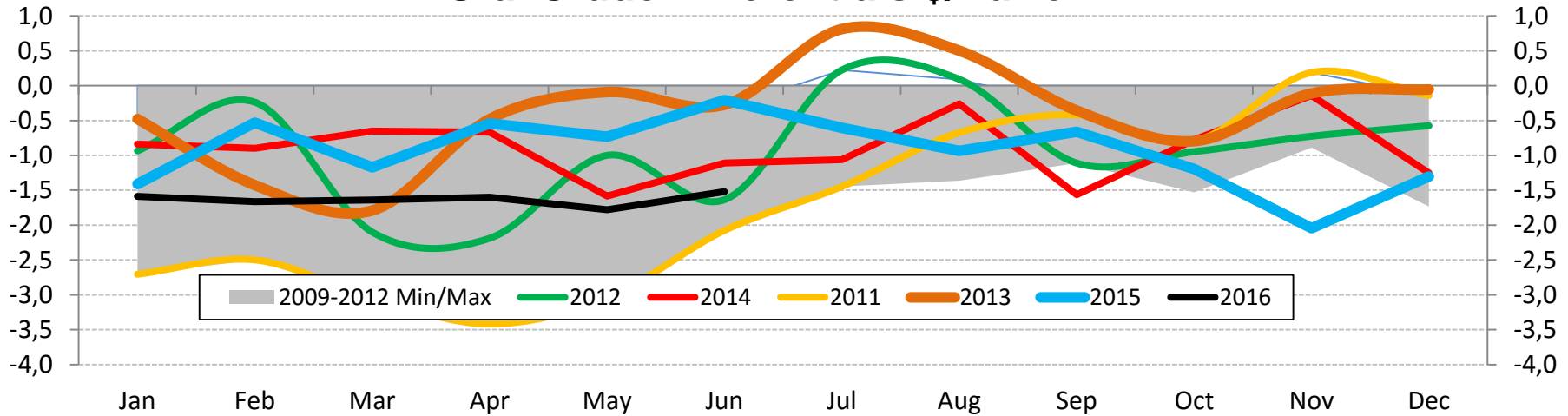
Note: 2009- August 2016 Platts Data, 2016 (September-December) estimation

# Quarterly Product Crack Margins, \$/bbl

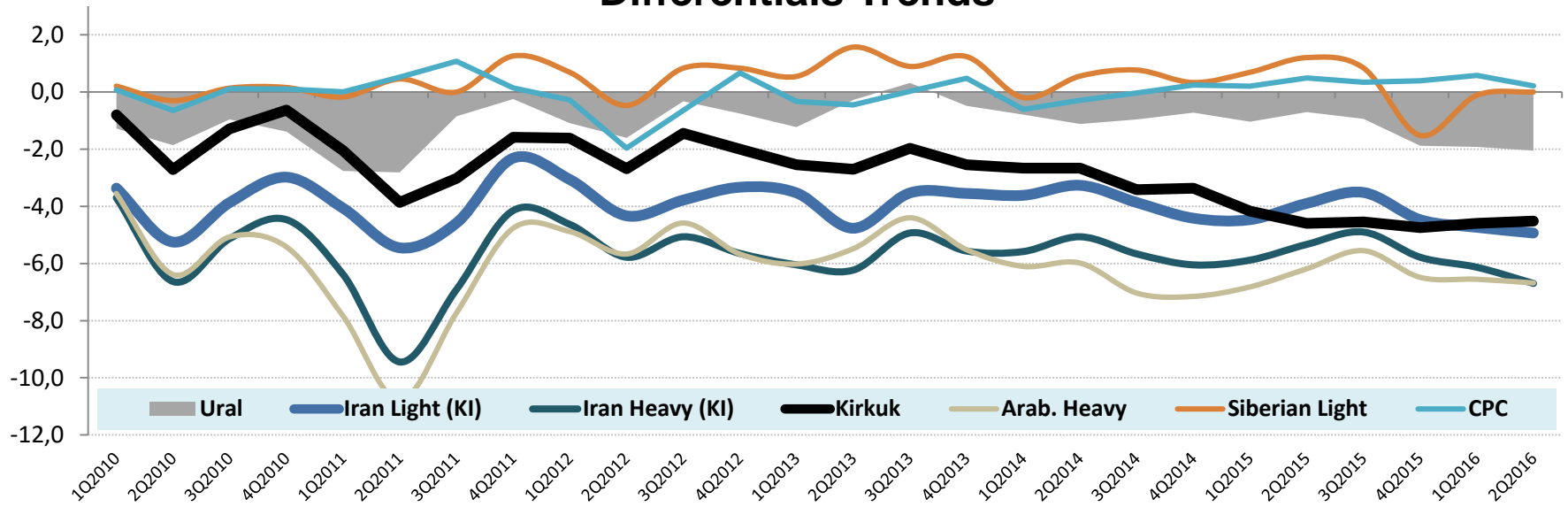


# Crude Differentials \$/Barrel

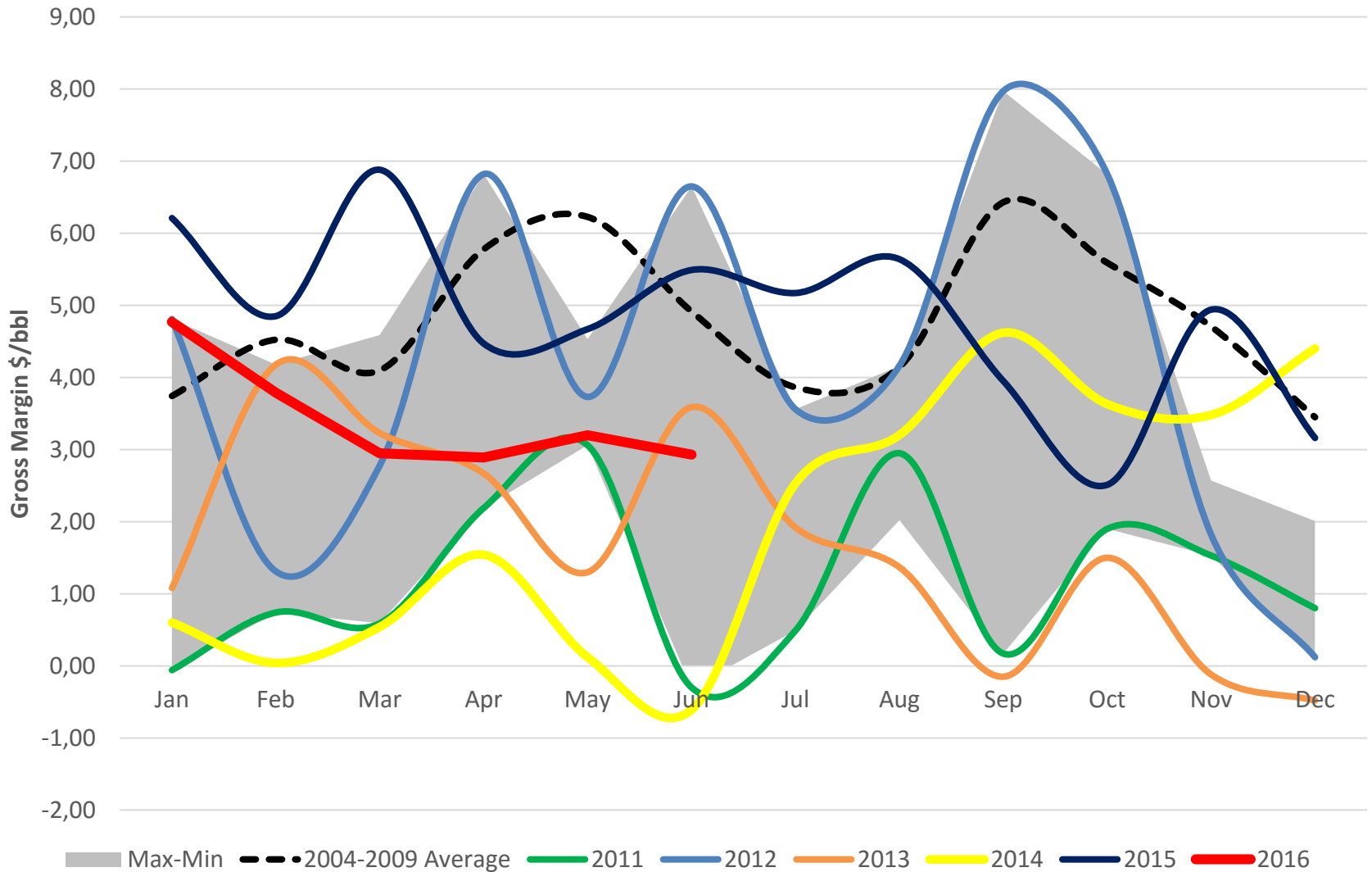
## Ural Crude Differentials \$/Barrel



## Differentials Trends



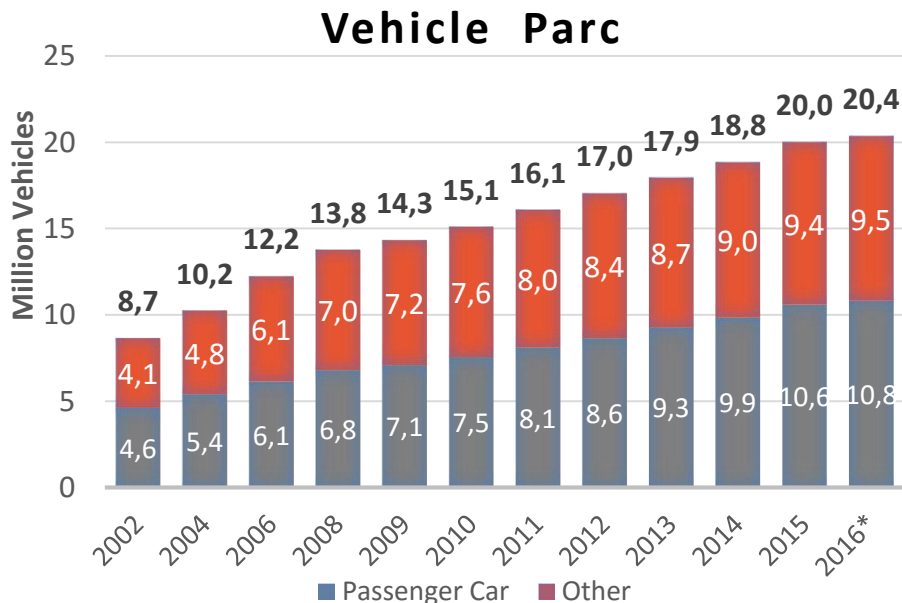
# Med Complex Refining Margins



# Turkish Sector Outlook

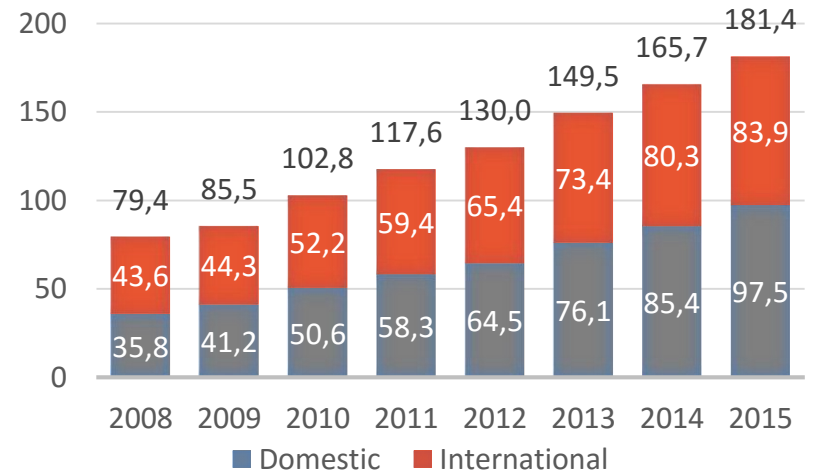
## ❖ Primary driver of demand is growing vehicle parc

- Auto sales continue to massively outstrip removals
- Very high gasoline tax has led to LPG & Diesel substitution
- Gasoline car sales improving



\*By the end of April

## Air Passengers - Million



## ❖ Jet Fuel demand growing strongly

- Highly competitive liberalised market
- Big infrastructure investments
- Istanbul has become a hub for Turkish Airlines

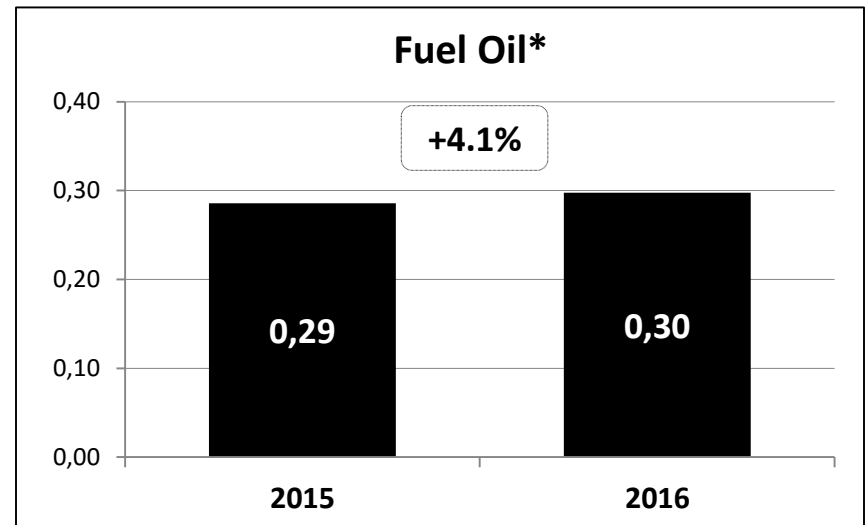
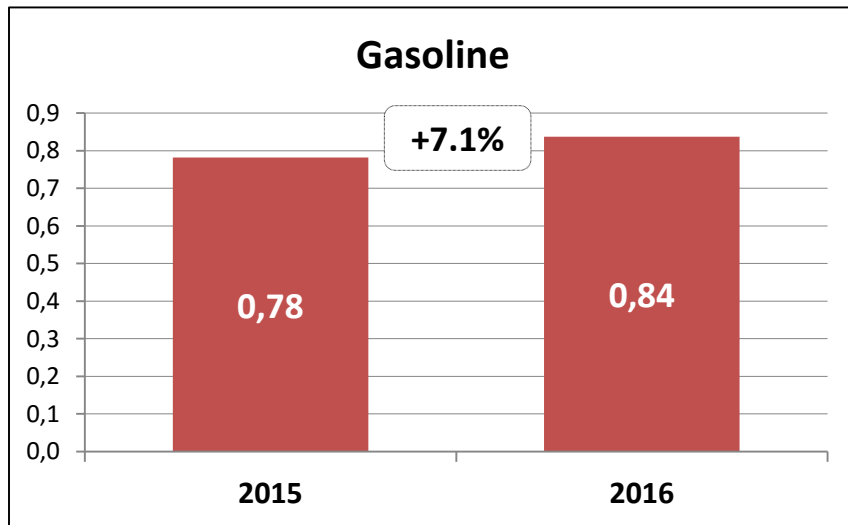
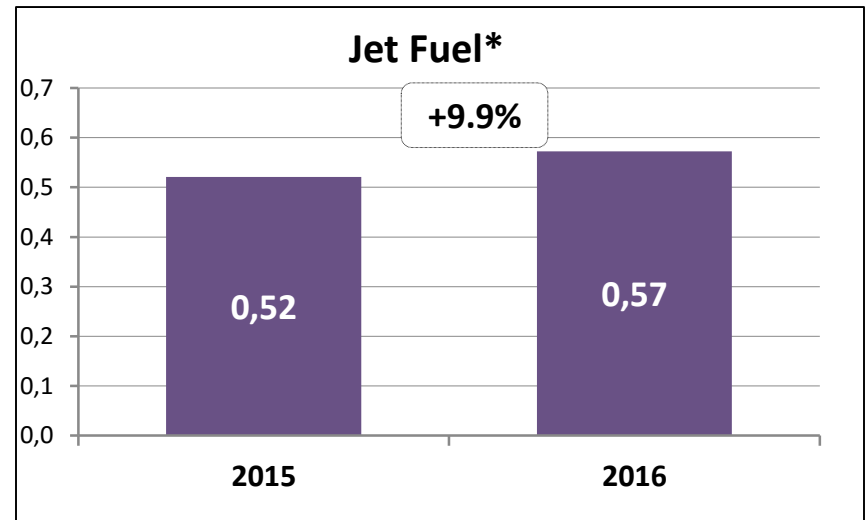
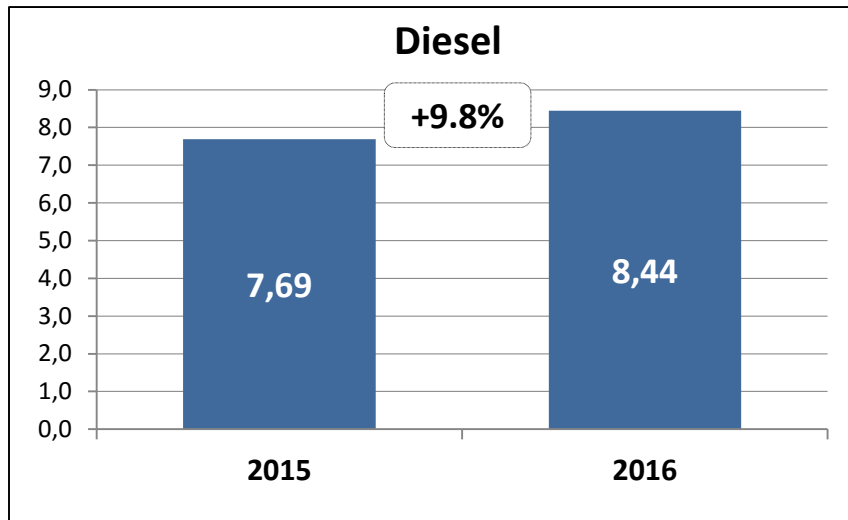
## ❖ Fuel Oil demand is declining

- Natural gas substitution
- Switching is dependent on price

## ❖ Long Term Asphalt Demand Growth

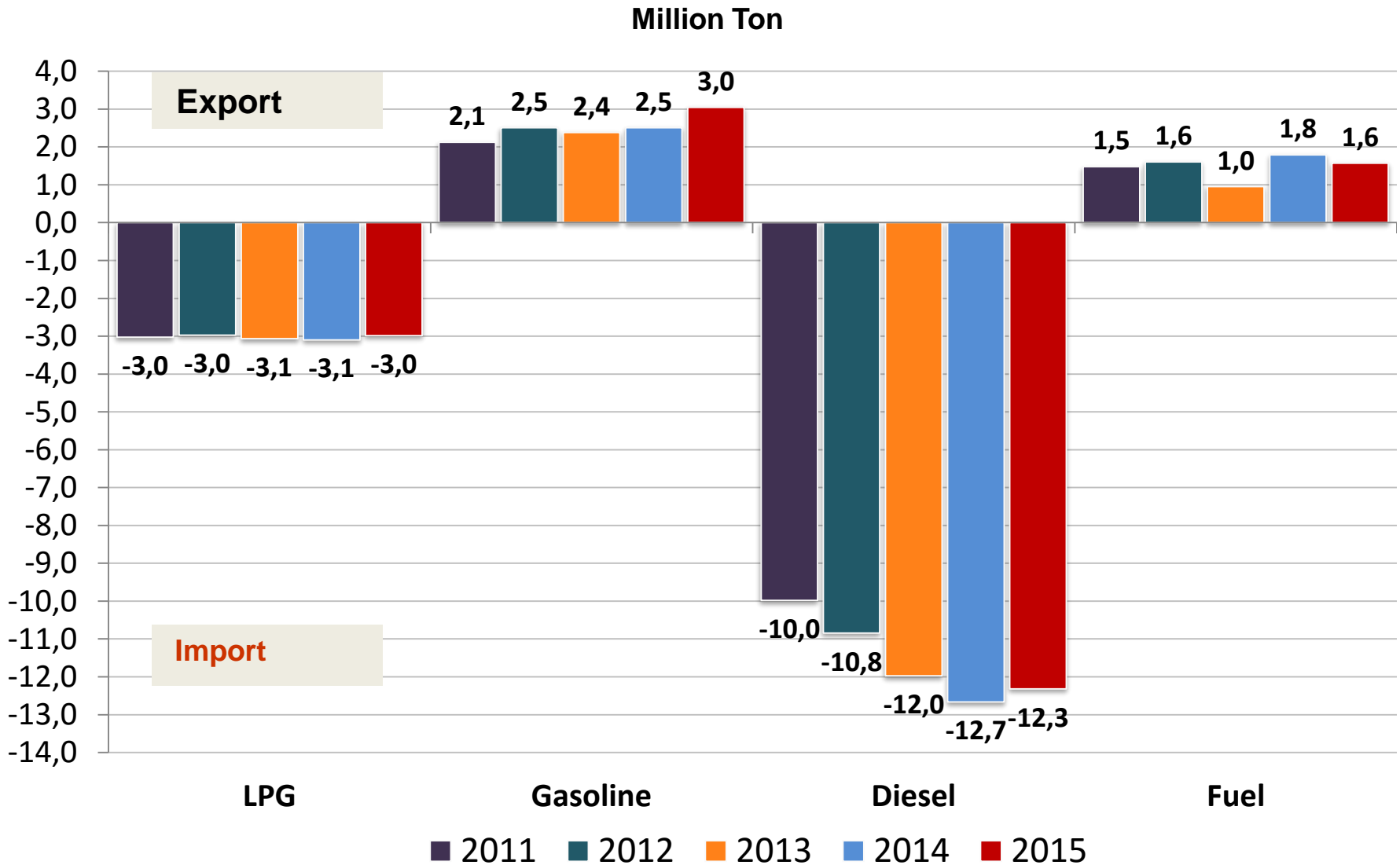
- Infrastructure investments

# 5 Months 2016 - Turkish Consumption (Million tons)



Source: EMRA  
\*bunker excluded.

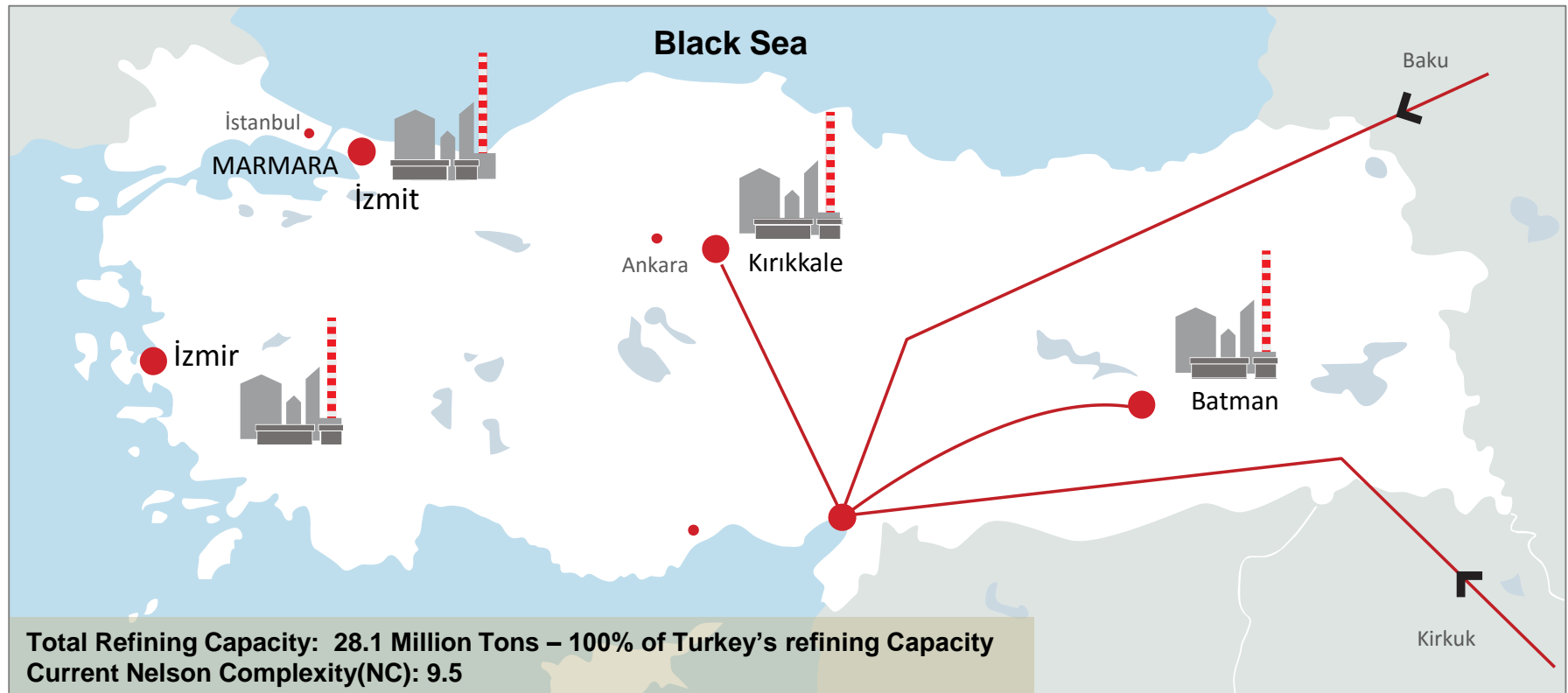
# Turkey's Import / Export Balance (Net)



# Company Overview



# Tüpraş Refining Assets



## İzmit

- 11.0 MT Capacity
- NC: 14.5
- Storage Capacity :  
3.0 Mn M<sup>3</sup>

## İzmir

- 11.0 MT Capacity
- NC: 7.66
- Storage Capacity :  
2.5 Mn M<sup>3</sup>
- Lube Oil Production 400  
thousand ton

## Kırıkkale

- 5.0 MT Capacity
- NC: 6.32
- Storage Capacity :  
1.4 Mn m<sup>3</sup>

## Batman

- 1.1 MT Capacity
- NC: 1.83
- Storage Capacity :  
0.3 Mn m<sup>3</sup>



1.457 Stations

- 1.024 Opet Brand
- 433 Sunpet Brand



1.1 Million M3 Storage

- Major Terminals in Marmara, Aegean, Black Sea & Mediterranean



International Trading

- London



Jet Fuel Sales

- Turkish Airlines JV



Lubricants

- Fuchs JV



A Sector Leader

- 2nd Biggest Player
- # 1 Brand

# DİTAŞ – Marine Transportation – Tüpraş Share %79.98

**Cumhuriyet**



- Crude
- 2001
- 164,86 K DWT

**Sevgi**



- Products
- 2008
- 10,98 K DWT

**Gönül**



- Products
- 2009
- 10,98 K DWT

**Leyla**



- Products
- 2011
- 6 K DWT

**Suna**

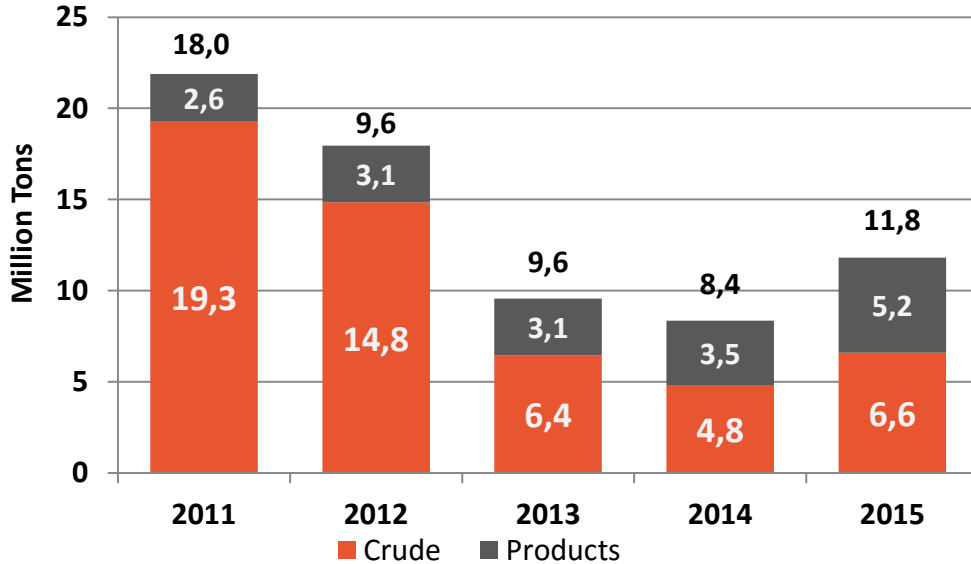


- Products
- 2012
- 55 K DWT

**Esra & Aylin**



- Bitümen
- 2x20 K DWT
- Esra 2014
- Aylin 2015



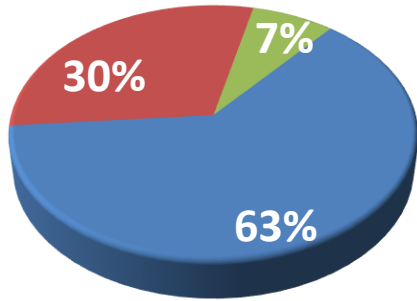
**19 Tugboats**

**Financials**

Million \$	2011	2012	2013	2014	2015
Net Sales	146,4	159,0	103,7	101,7	113,6
Op. Profit	17,9	22,8	25,2	27,3	36,8

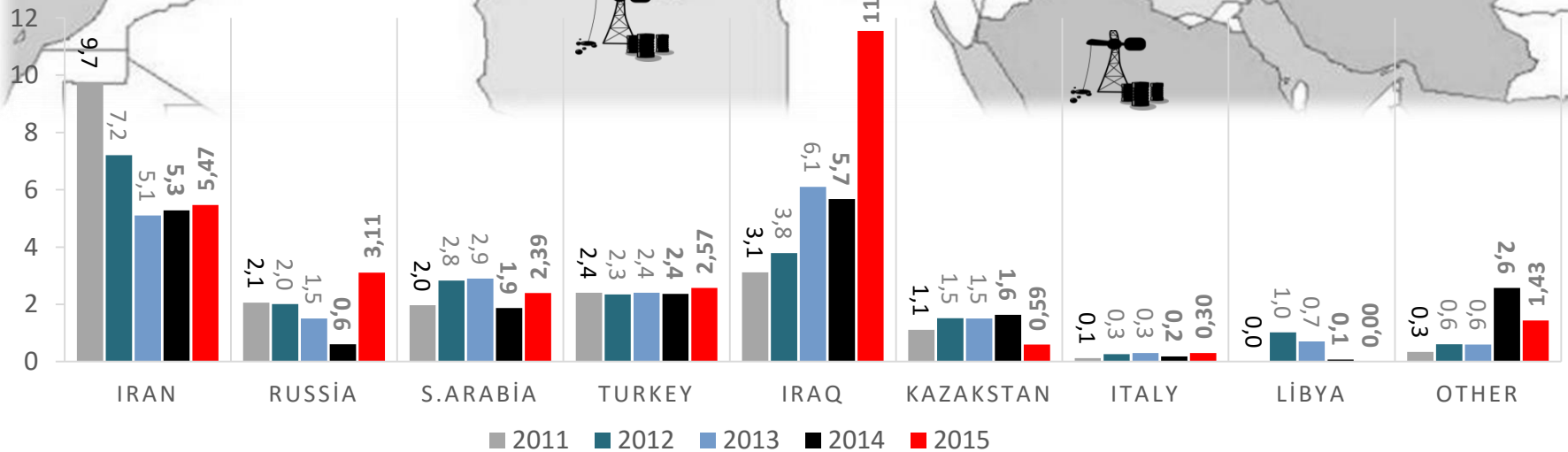
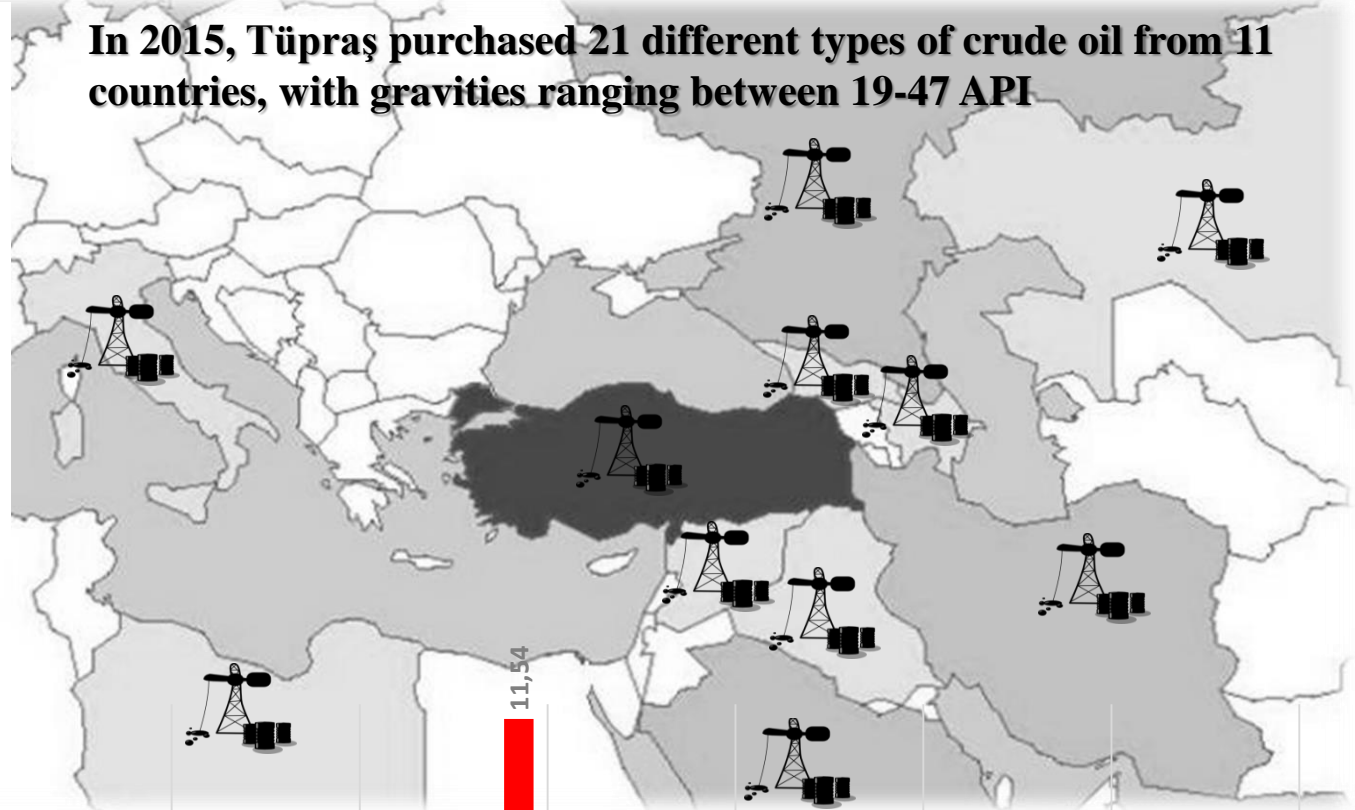
# Crude Suppliers of TÜPRAŞ (Million Tons)

Crude Type - 2015



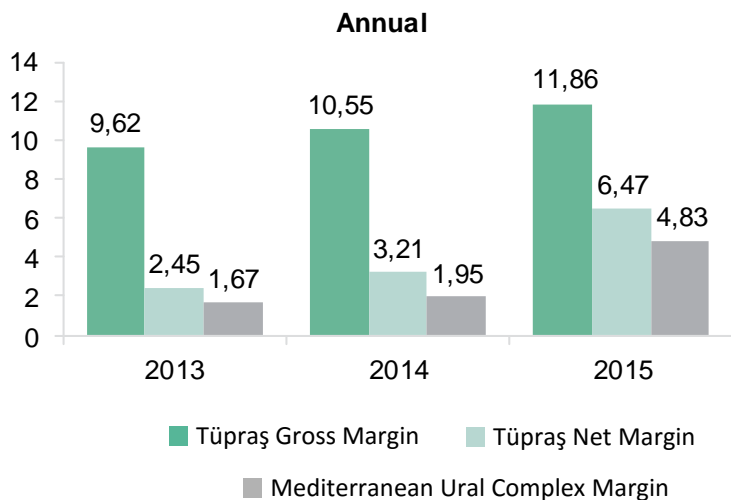
- Heavy / Sour
- Medium Heavy / Sour
- Light & Sweet

In 2015, Tüpraş purchased 21 different types of crude oil from 11 countries, with gravities ranging between 19-47 API

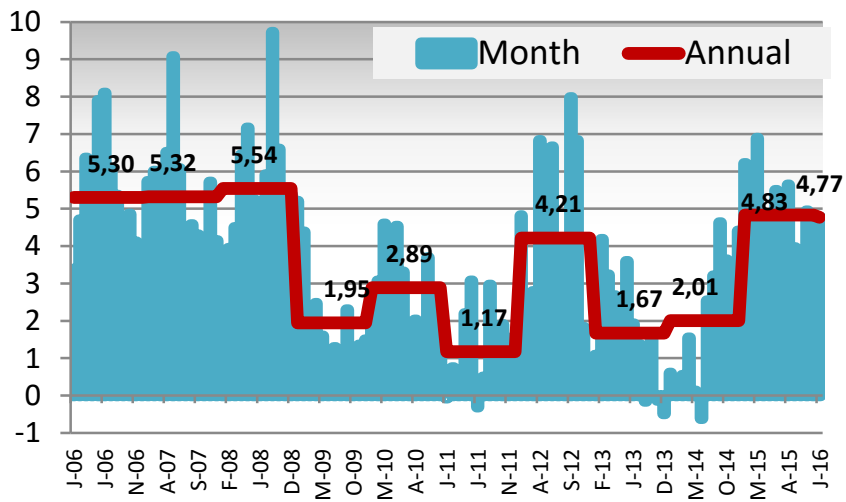


# Margin Environment

## Tüpraş Refining Margins (\$/bbl)



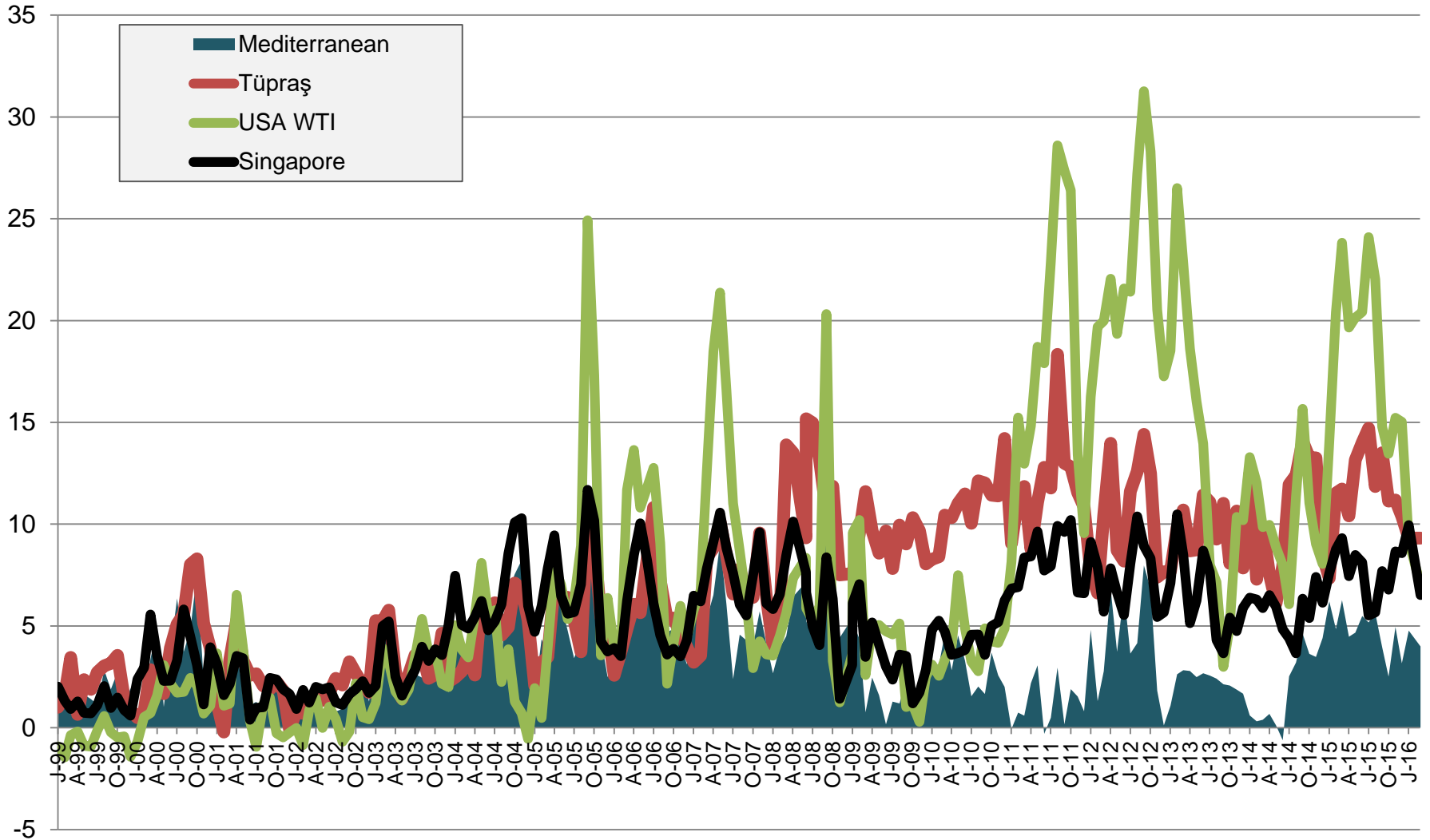
## Med Complex



## Premium to the benchmark Mediterranean peers' refining margin due to:

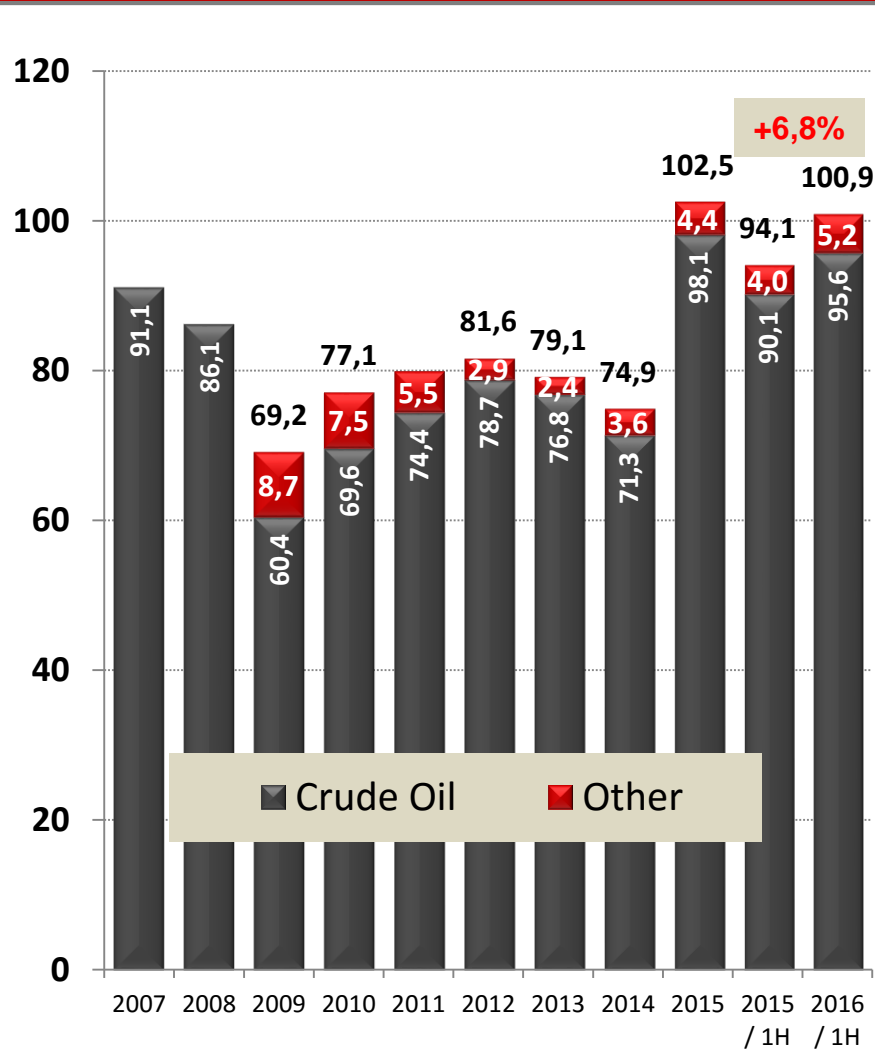
- ▶ Refined products deficit characteristic to the Turkish market (for diesel, jet fuel, LPG and specialist products such as lube oil and extract)
- ▶ Access to cheaper sources of crude oil
  - Ability to use heavier and sour crudes
- ▶ Proximity to major suppliers
  - Reduces transport costs
- ▶ Implemented cost reduction measures
  - Energy efficiency programs
- ▶ Capacity to produce higher value added range of refined products
- ▶ Direct pipeline connections with domestic clients
- ▶ High export capability

# Gross Refinery Margins, \$/bbl

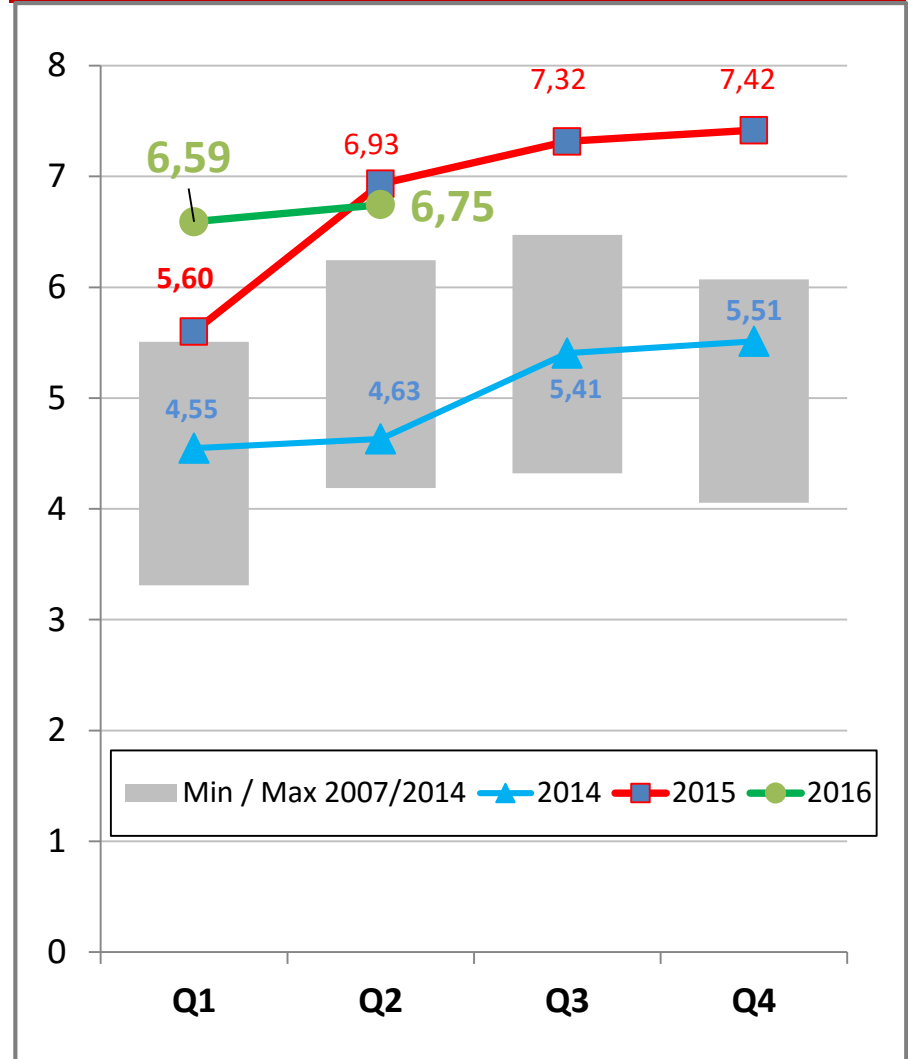


# Production

## Capacity Utilisation (%)

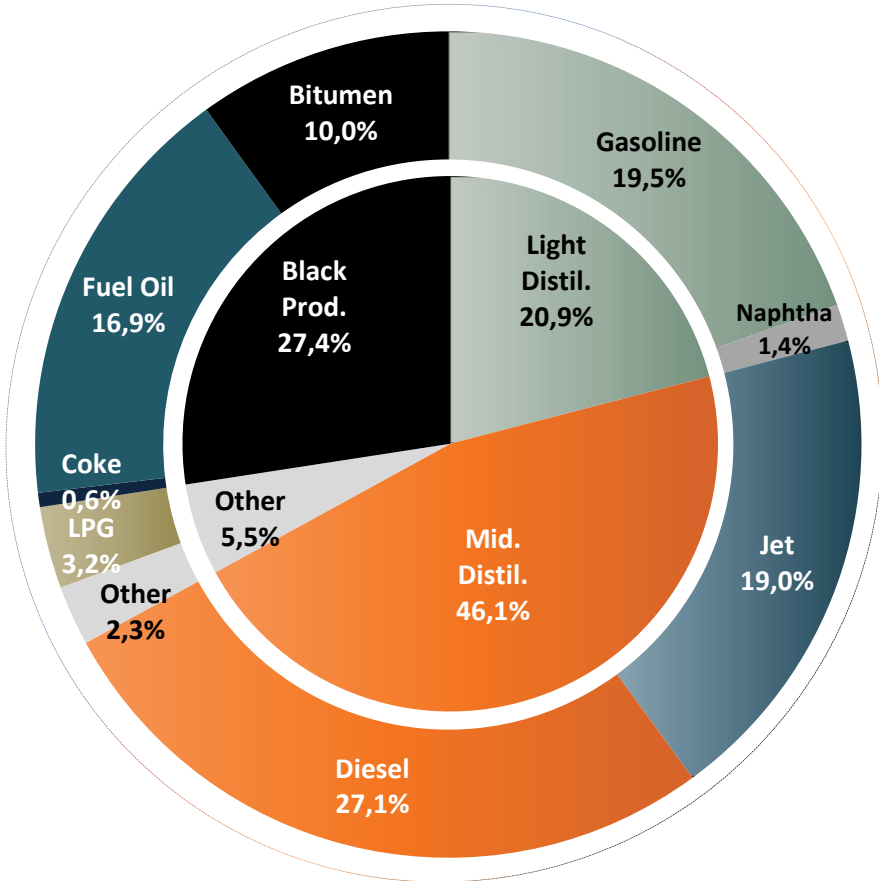


## Quarterly Production Volume (Mn Tons)



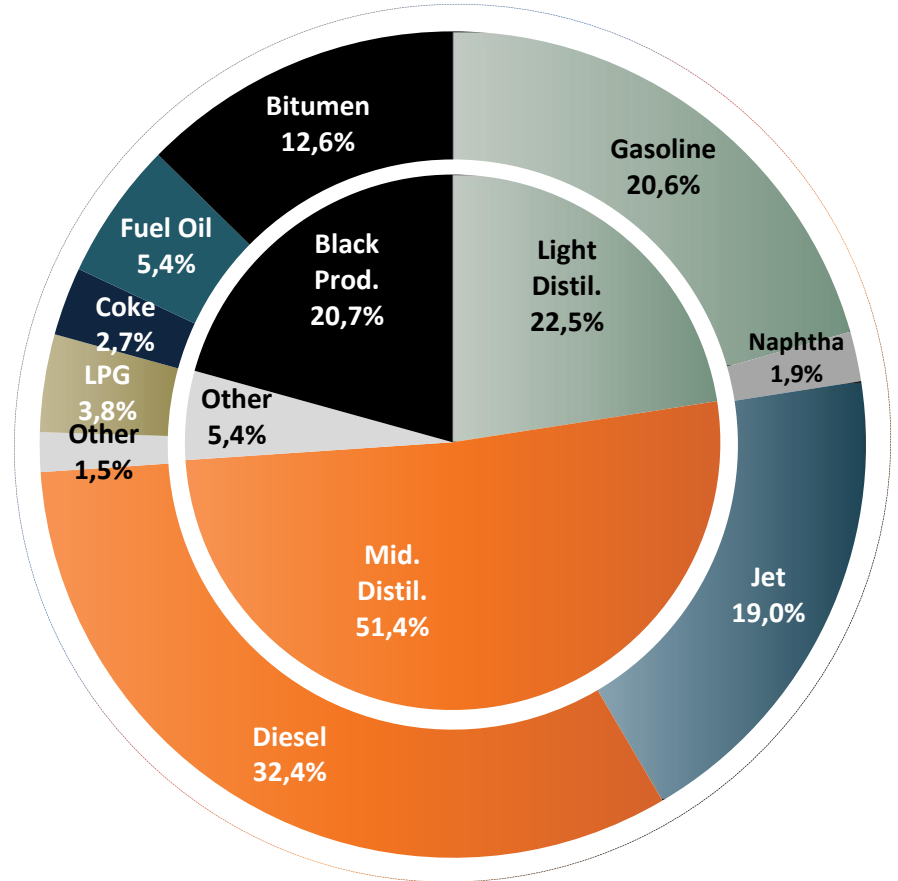
# 2nd Quarter Product Yields

2015



**White Product 71.83%**  
**Production 6.8 mn ton**  
**API:32.21**

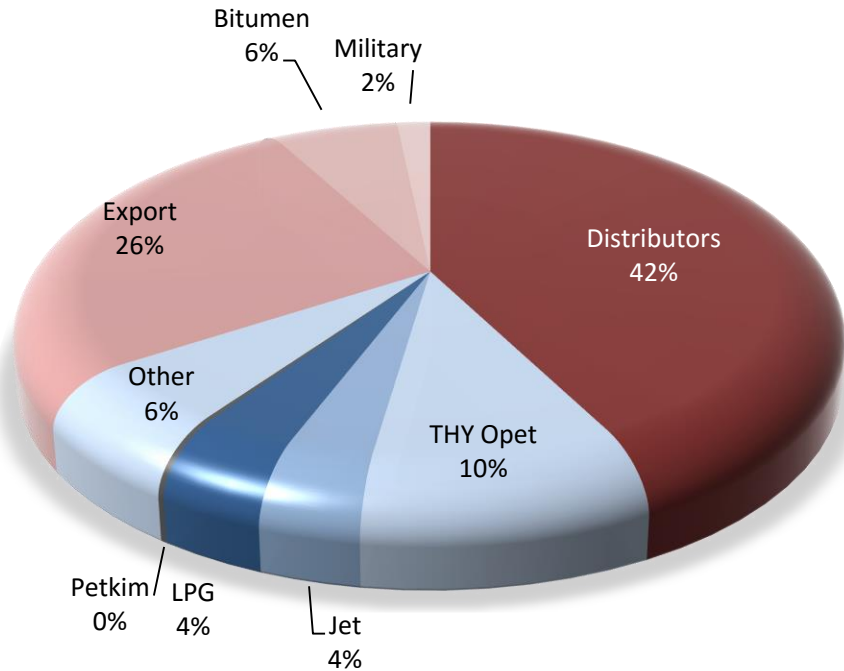
2016



**White Product 78.20%**  
**Production 6.6 mn ton**  
**API:30.83**

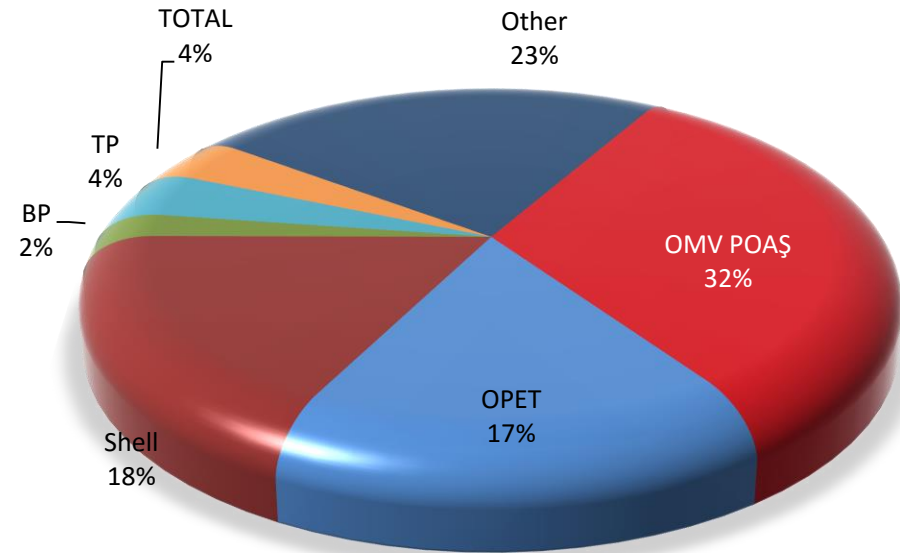
# Sales By Customer 1Q 2016

## Customer Groups



**Total: 6,9 million ton**

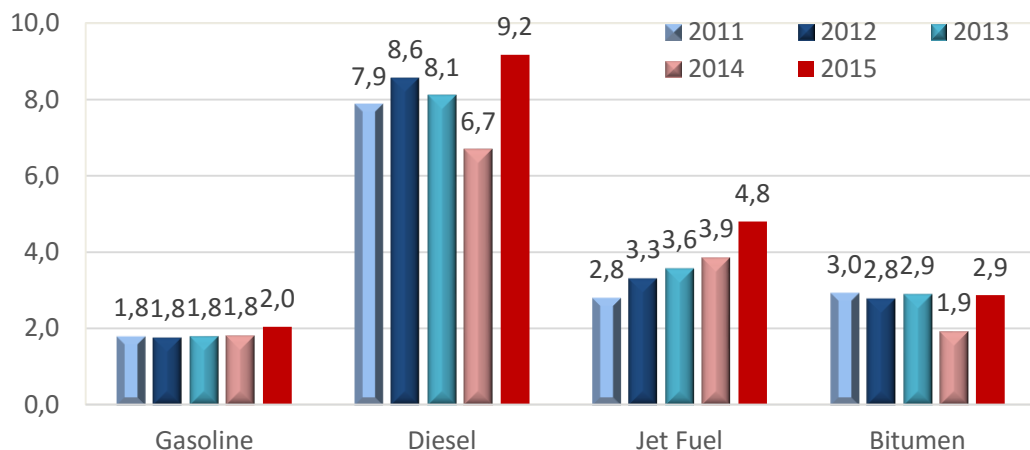
## Sales to Distributors



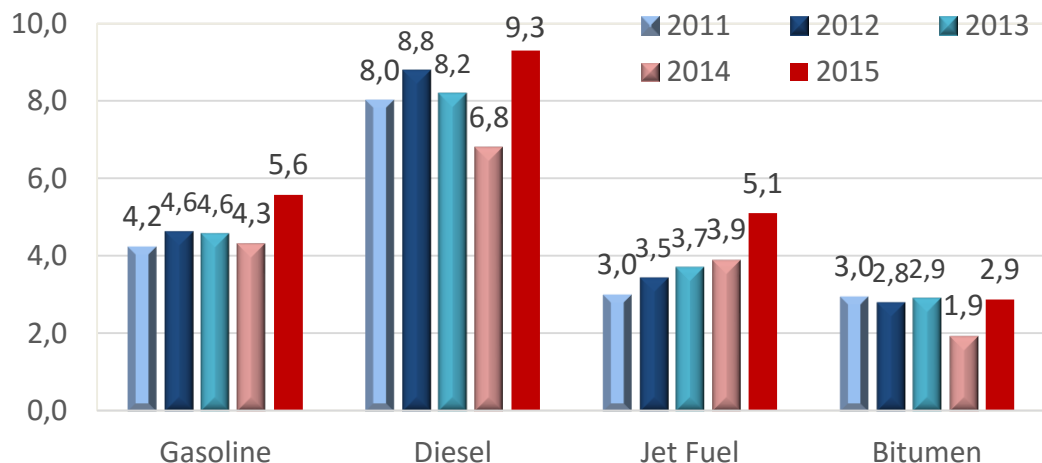
**Distributors : 3,2 million tons**

# Refining Sales

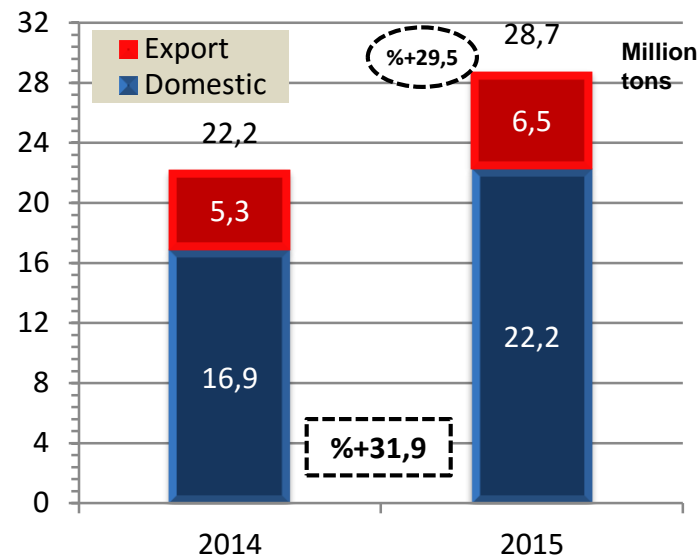
## Domestic Sales, Million Tons



## Total Sales, Million Tons



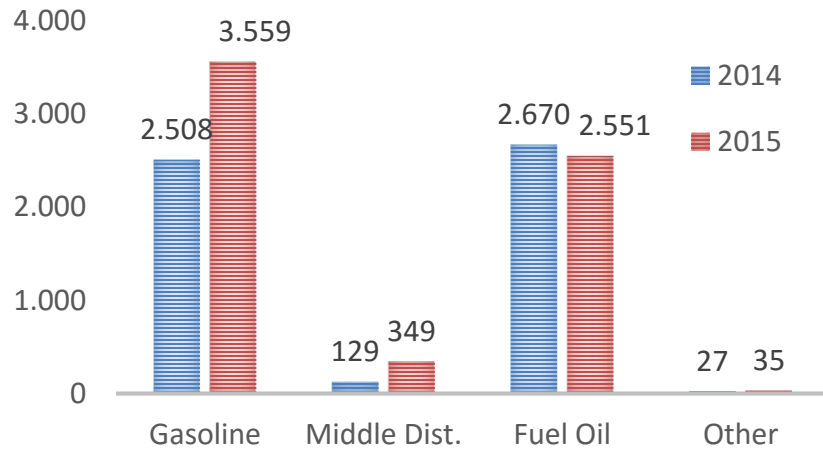
## Sales Breakdown & Comparison



- ▶ Sales to distributors in Turkey are made at prices established by Tüpraş
  - In accordance with a formula based on Italian "CIF" prices plus a margin below a maximum approved by EMRA
  - Tüpraş's prices are affixed to all distributors, including Opet, on an equal basis
- ▶ Export sales are generally made to traders, on FOB basis

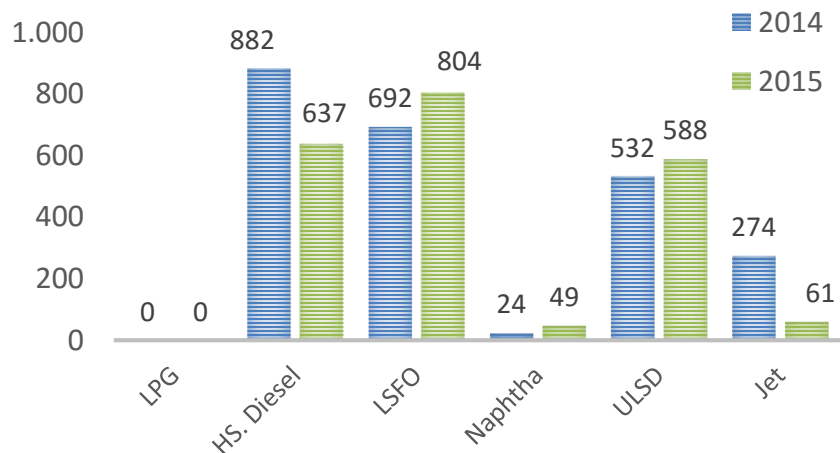
# 12M Trading Activities

## Exports, Ton\*000

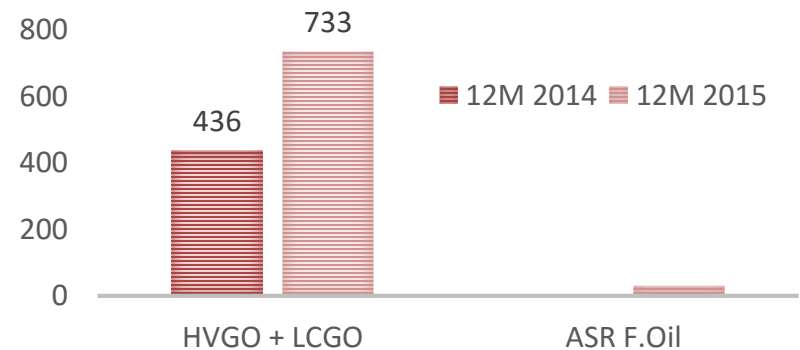


- ❖ Exports
  - High CUR = big increases in export
- ❖ Finished Products
  - ❖ High Sulfur Diesel imports decreased due to low desulphurisation arbitrage profits.
  - ❖ ULSD imports were higher due to the trading arbitrage.
- ❖ Intermediates
  - Additional HVGO + LCGO imported to increase Capacity Utilisation of conversion units.

## Product Imports, Ton\*000



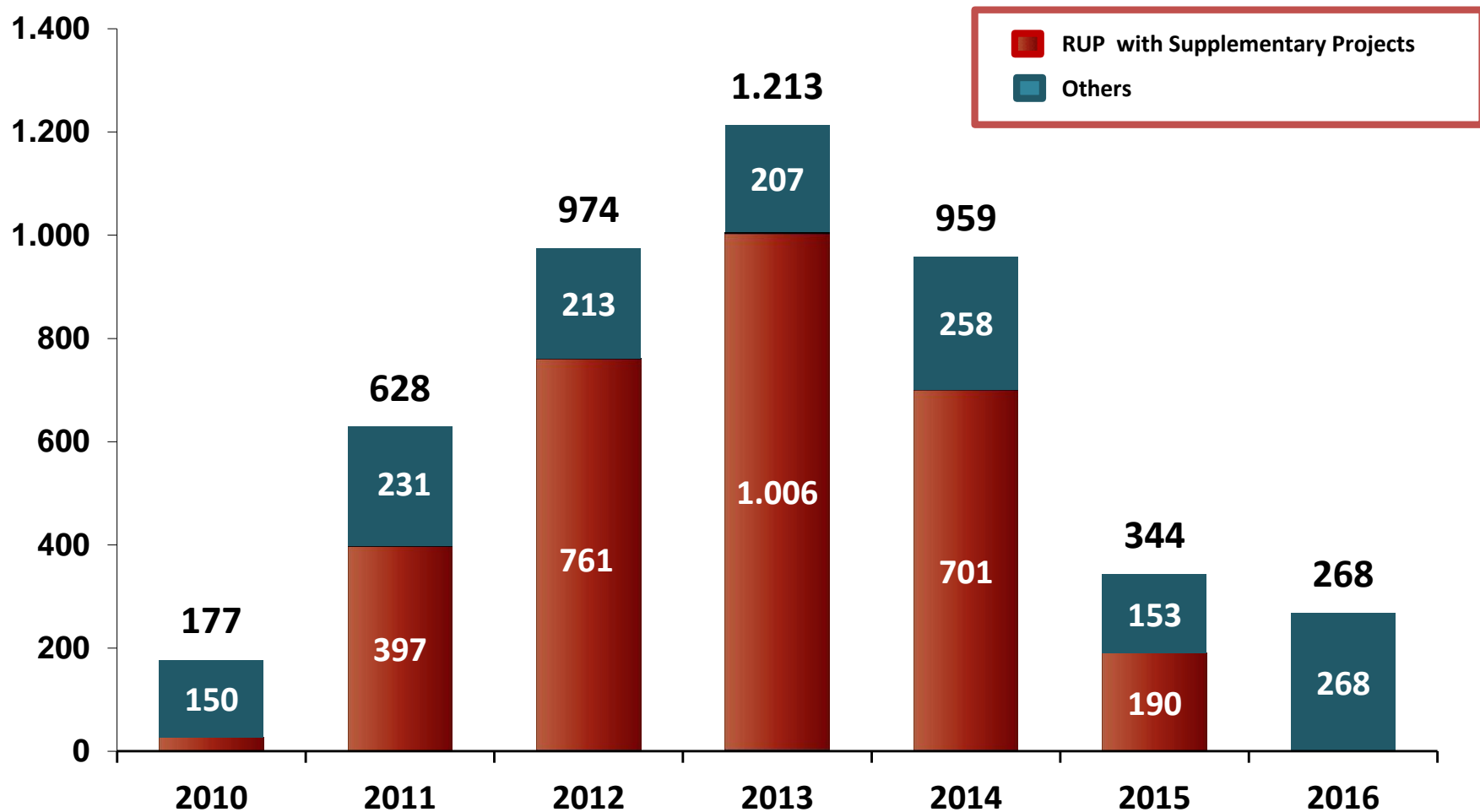
## Intermediate Imports, Ton\*000



# Investments



# Investments, million \$



# Other Major Projects

## Izmit Waste Water Treatment

### Project Aims

- To reduce the need for fresh water

### What the Project Entails

- A water treatment plant to process municipal & refinery waste water
- Two temporary systems were built to serve until the main system was completed
- Project completed in 2015

### Investment

- **22 Million USD**



## Izmir Crude Oil Revamping

### Project Aims

- Eliminating low energy efficiency in the furnaces
- Enables sustainable full capacity utilization

### What the Project Entails

- Configuration Changes
  - De-salter & Pre-flash column
- Heat recycling – Heat Exchanger
- Replace column internals
- New pre-flash drum

### Expectations

- **Investment: 31.9 Million USD**
- **IRR > 40%**



## Kırıkkale Power Plant

### Project Aims

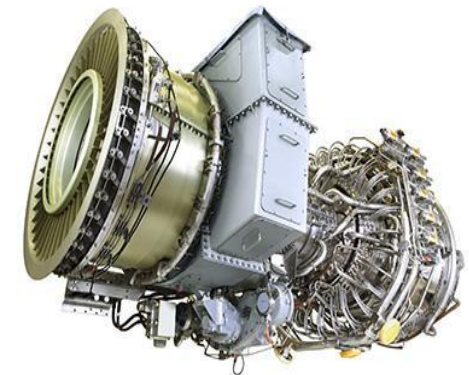
- Improving Energy Efficiency at Kırıkkale with a combined heat & power plant
- The other refineries are already equipped
- Expected completion: 2016

### What the Project Entails

- A new gas turbine
- New steam turbines
- New boilers
- One existing steam turbine will be utilized
- Total power: 60 MW

### Investment

- **84 Million USD**
- **IRR: >30%**



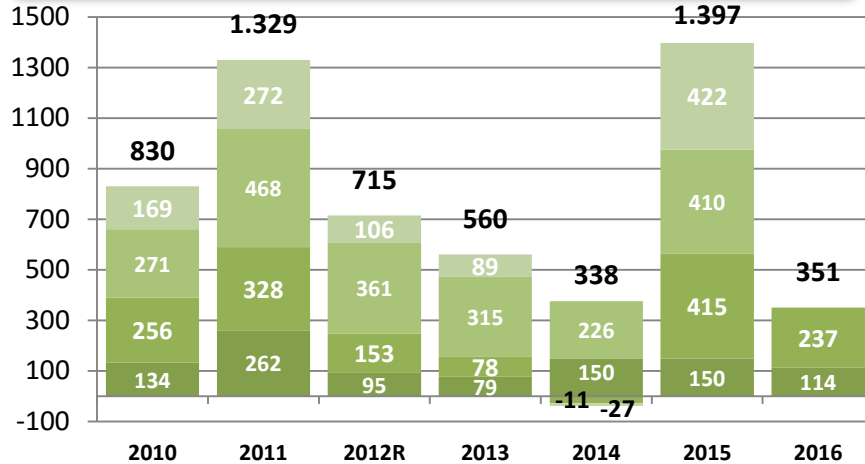
# Key Financials



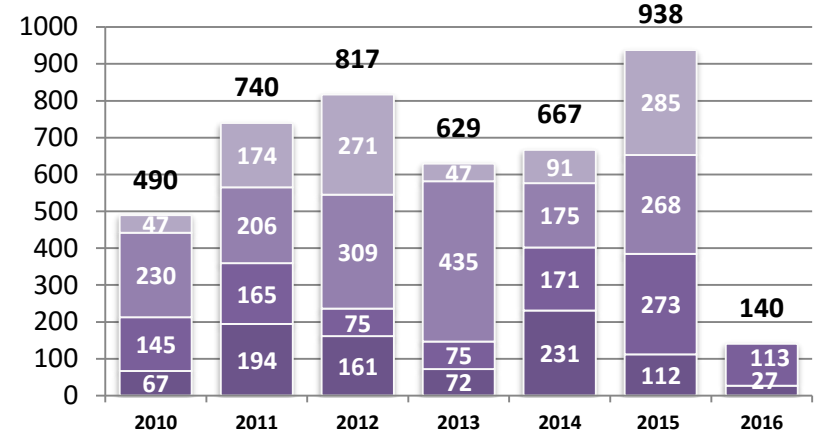


# Financial Highlights (mn \$)

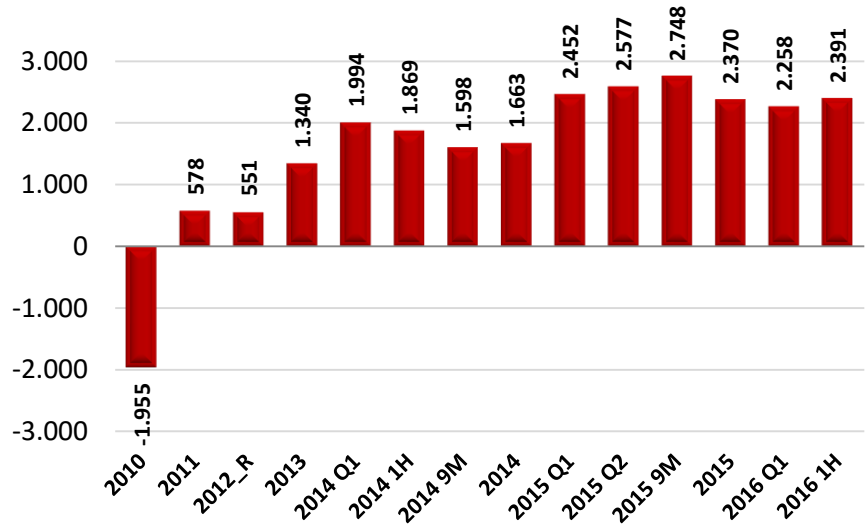
## EBITDA



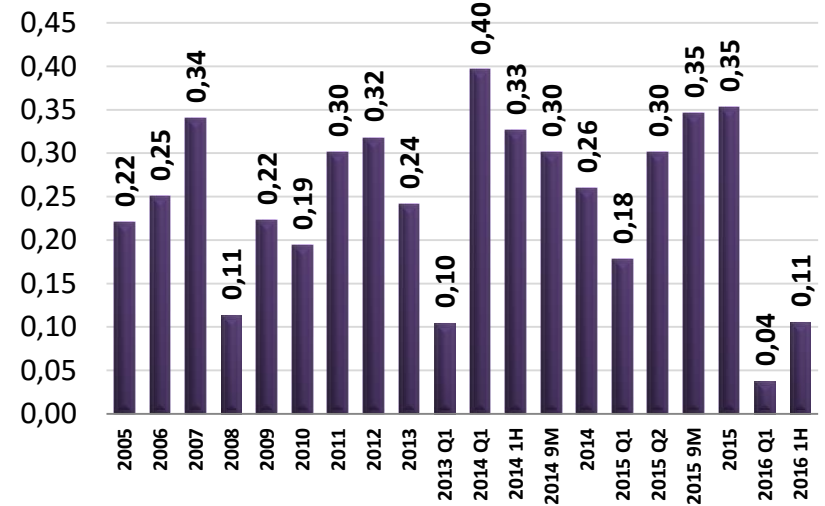
## Net Income



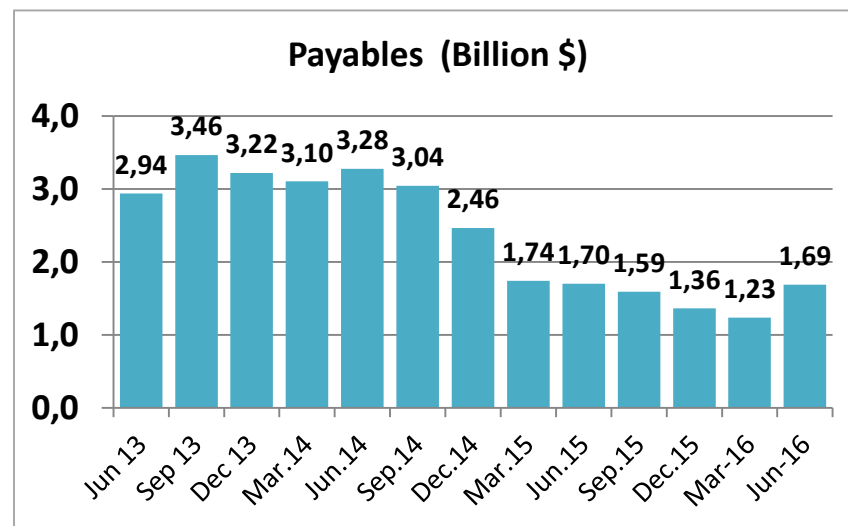
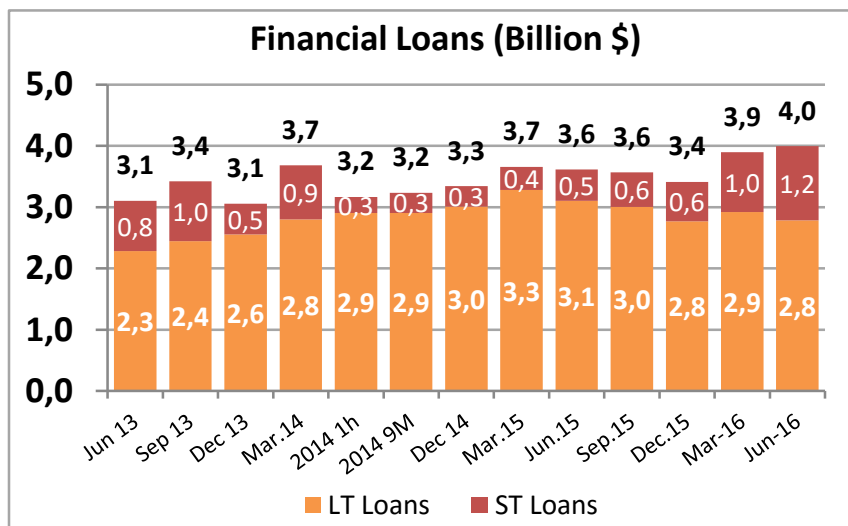
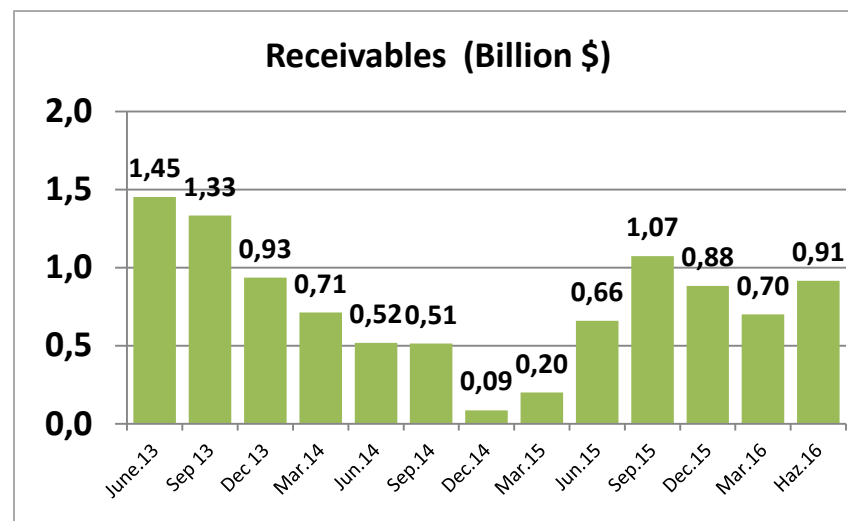
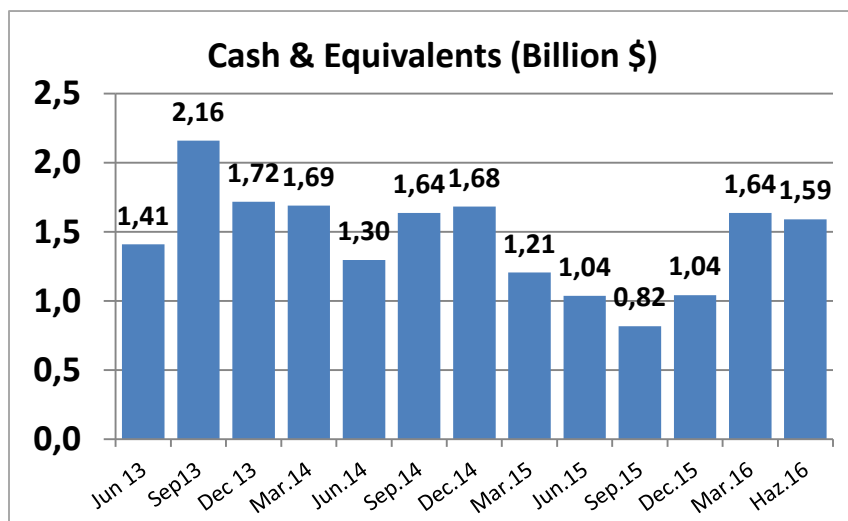
## Net Debt



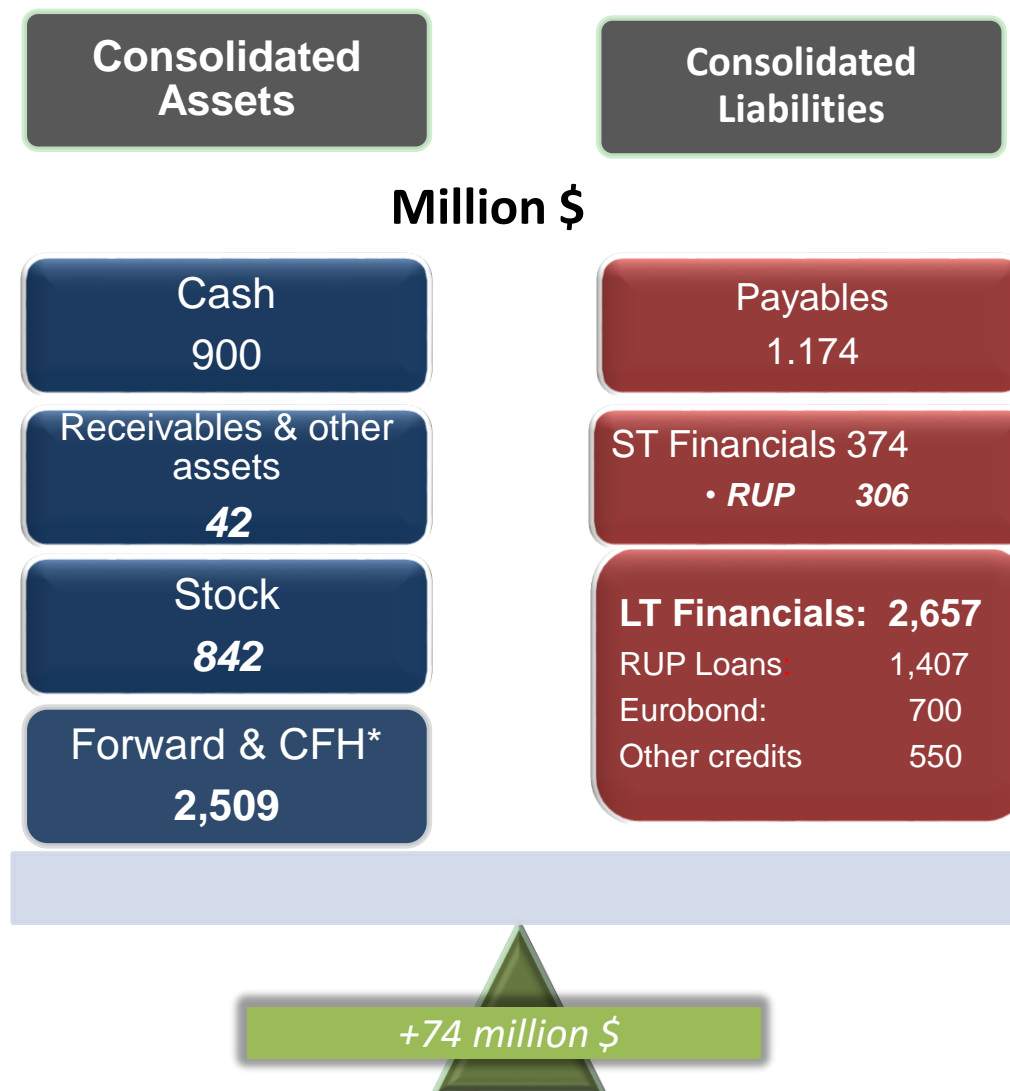
## Return on Average Equity



# Balance Sheet Analysis



# FX Risk Exposure (30 June 2016)



\*Cash flow hedge accounting : 1,568 mn \$

# Future Expectations

## Brent Price Estimation

- The average Brent price in 2016 is expected to be 45-55 dollars per barrel band.

## Med Complex Margin

- We expect Med Complex margins to be 3.5 – 4.0 dollars per barrel band in 2016.

## Tüpraş Net Margin

- Net Tüpraş refinery margin is expected to be in the region of 4.5 – 5.0 dollars per barrel

## Capacity Utilisation

- Expected Capacity Utilisation in 2016 will be around 100 %.
- Production will therefore be approximately 28 million tons
- Imports of finished products will be minimal, as we focus on selling increased volumes of production
- Total sales volume will be 30.0 million tons

## Investment

- Total investments for 2016 will be about 270 Million dollars

# Income Statement

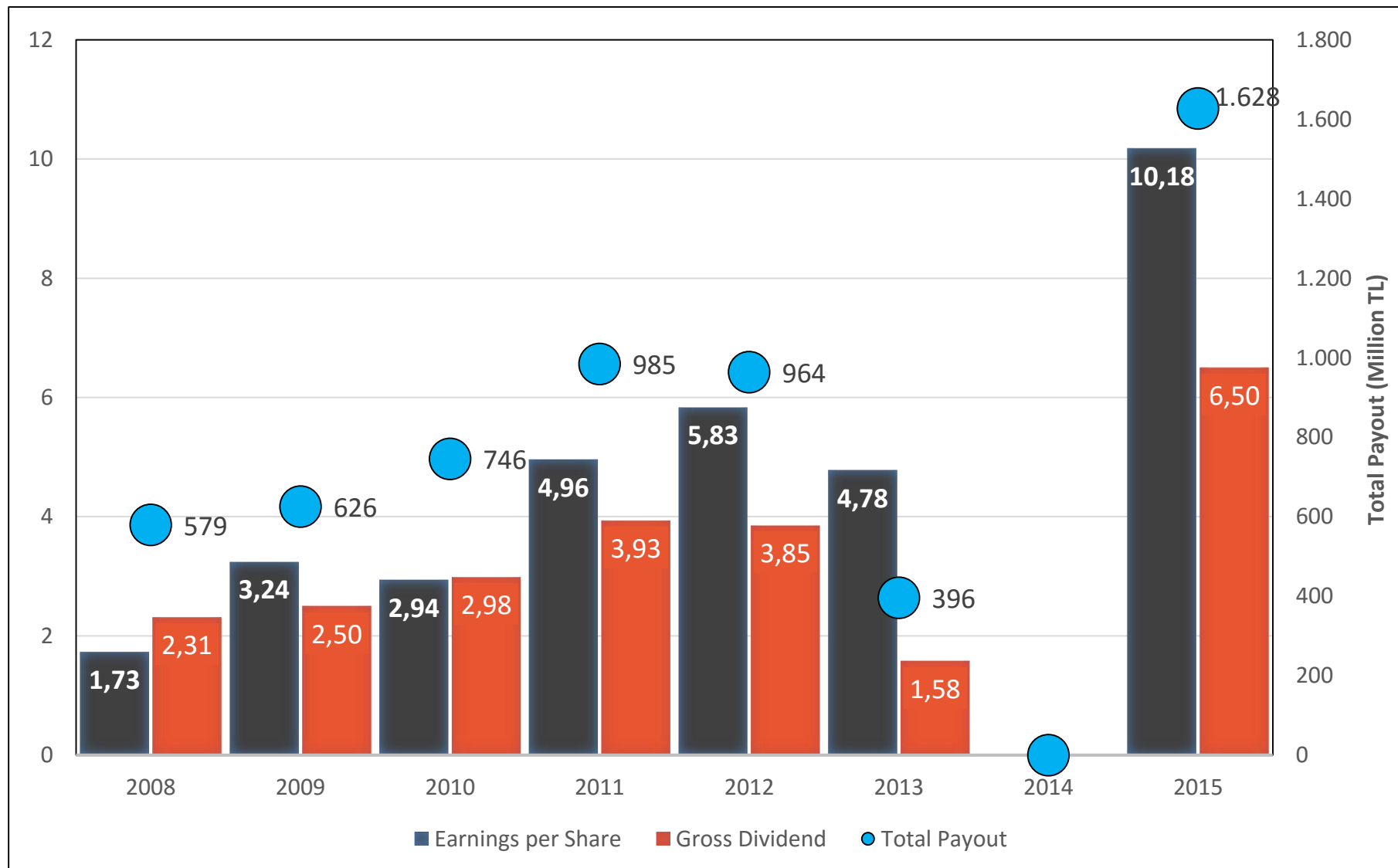
Q2 2015	Q2 2016	% Diff.	Million USD	6 M 2015	6 M 2016	% Diff.
4.024,3	2.914,7	-28	Net Sales	6.853,6	5.016,0	-27
431,2	221,3	-49	Gross Profit	634,3	387,9	-39
-72,0	-78,9	10	Operating Expenses	-142,0	-155,8	10
-21,3	27,3	-228	Income/Loss from other operations	-112,1	30,6	-127
<b>337,9</b>	<b>169,7</b>	<b>-50</b>	<b>Operating Profit</b>	<b>380,2</b>	<b>262,6</b>	<b>-31</b>
12,9	18,5	43	Income/Loss from equity investment	3,7	23,5	527
350,9	188,2	-46	Operating Profit Before Fin. Income/Loss	383,9	286,1	-25
12,2	-16,6	-235	Financial Income	192,9	45,1	-77
-85,5	-34,8	-59	Finance Expenses	-311,2	-161,8	-48
277,6	136,8	-51	Profit Before Tax & Minorities	265,7	169,4	-36
<b>272,7</b>	<b>113,5</b>	<b>-58</b>	<b>Net Profit</b>	<b>384,8</b>	<b>140,2</b>	<b>-64</b>

380,6	216,6	-43	EBITDA (mn.\$)	452,7	355,1	-22
313,6	99,5	-68	EBITDA (mn.\$)- CCS	455,9	260,5	-43

# Tüpraş Balance Sheet

Million USD	30.06.2016	31.12.2015	Difference	% Difference
<b>Current Assets</b>	<b>3.598</b>	<b>2.984</b>	<b>615</b>	<b>21</b>
Cash & C. Equivalents	1.590	1.041	549	53
Receivables	915	882	32	4
Derivatives	7	6	0	2
Inventories	892	723	169	23
Pre-paid expenses	50	45	5	11
Other Current Assets	144	285	-141	-49
<b>Long Term Assets</b>	<b>5.829</b>	<b>5.776</b>	<b>53</b>	<b>1</b>
Financial Assets & Subsidiaries	274	264	10	4
Fixed Assets	3.984	3.950	34	1
Derivatives	69	86		
Pre-paid expenses	79	62	18	29
Deferred Tax	1.071	1.101	-30	-3
Other Long Term Assets	352	314	38	12
<b>Total Assets</b>	<b>9.427</b>	<b>8.760</b>	<b>668</b>	<b>8</b>
<b>Short Term Liabilities</b>	<b>4.035</b>	<b>3.036</b>	<b>998</b>	<b>33</b>
Financial Loans	1.202	644	559	87
Payables	1.689	1.363	327	24
Derivatives	73	14	60	429
Deferred Incomes	2	8	-6	-72
Provisions	37	24	12	51
Other ST Liabilities	1.030	984	46	5
<b>Long Term Liabilities</b>	<b>2.868</b>	<b>2.845</b>	<b>23</b>	<b>1</b>
Financial Loans	2.778	2.768	10	0
Payables & Provisions	70	67	3	4
Derivatives	19	9	10	103
Other LT Liabilities	1	1	0	1
Equity	2.500	2.856	-357	-12
Minority Interests	25	22	3	14
<b>Total Liabilities</b>	<b>9.427</b>	<b>8.760</b>	<b>668</b>	<b>8</b>

# Dividends (TL)



2012/2013 EPS includes the tax incentive

# Disclaimer

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This presentation contains forward-looking statements that reflect the Company management's current views with respect to certain future events. Although it is believed that the expectations reflected in these statements are reasonable, they may be affected by a variety of variables and changes in underlying assumptions that could cause actual results to differ materially.

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Deniz Değirmenci

*Investor Relations Manager*

The Investor Relations section of our company website has a rich content of updated information for the interested investors

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The background features a light gray grid on the left side and a large, faint gear-like graphic on the right side. The gear has several teeth and concentric circular bands. A solid red horizontal bar is positioned across the middle of the page, containing the text 'Supplements' in white.

# Supplements

# Product Price Effect on Tüpraş in 2Q

## FOB Italy Prices

2nd Quarter	Product Price, \$/ton		Tüpraş Product Yield %	Crack Margin, \$/bbl	
	2016	2015		2016	2015
LPG	293,63	388,50	3,6%	-19,42	-27,33
Gasoline	486,65	660,19	20,1%	14,40	19,42
Naptha	379,49	506,55	1,1%	-2,73	-4,74
Jet Fuel	419,55	575,55	17,5%	7,80	11,28
Diesel	408,16	574,27	32,5%	9,27	15,23
Diesel 1000	399,00	561,47	0,7%	8,04	13,51
Fuel Oil 1%	213,86	335,09	0,2%	-12,58	-10,25
Fuel Oil 3,5%	198,42	323,04	18,8%	-14,96	-12,10
<b>Total Crack Margin, \$/bbl</b>				<b>3,76</b>	<b>7,59</b>
<b>Dated Brent Avg. \$/Bbl</b>	<b>61,9</b>	<b>45,6</b>	<b>94,5%</b>		
<b>Margin Differences, \$/bbl</b>					<b>-3,8</b>
Total Raw Materials Charge, mn Barrel					51,94
Total Effect of Product Price, mn \$					-198,8
<b>Total Effect of Price Ratio, mn TL</b>					<b>-575,2</b>

□ Impact of Med FOB Prices on Tüpraş Operations was - 575,2 million TL

# Product Price Effect on Tüpraş in 1H

## FOB Italy Prices

2nd Quarter	Product Price, \$/ton		Tüpraş Product Yield %	Crack Margin, \$/bbl	
	2016	2015		2016	2015
LPG	289,75	386,58	3,6%	-13,93	-23,53
Gasoline	441,58	602,31	20,1%	14,68	16,27
Naptha	339,58	470,78	1,1%	-1,39	-4,80
Jet Fuel	371,69	556,16	17,5%	7,55	12,79
Diesel	359,51	546,14	32,5%	8,57	15,42
Diesel 1000	349,65	530,40	0,7%	7,25	13,31
Fuel Oil 1%	179,40	313,01	0,2%	-12,06	-9,68
Fuel Oil 3,5%	166,24	298,88	18,8%	-14,09	-11,85
<b>Total Crack Margin, \$/bbl</b>				<b>3,92</b>	<b>7,46</b>
<b>Dated Brent Avg. \$/bbl</b>	<b>39,7</b>	<b>57,9</b>	<b>94,5%</b>		
<b>Margin Differences, \$/bbl</b>					<b>-3,5</b>
Total Raw Materials Charged, mn barrel					102,88
Total Effect of Product Prices, mn \$					-364,5
<b>Total Effect of Product Prices, mn TL</b>					<b>-1.063,6</b>

□ Impact of Med FOB Prices on Tüpraş Operations was –1.063,6 million TL

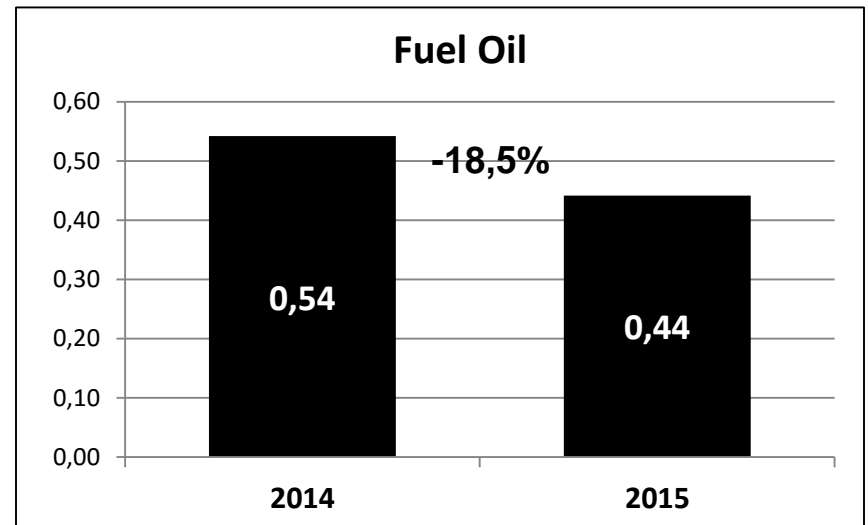
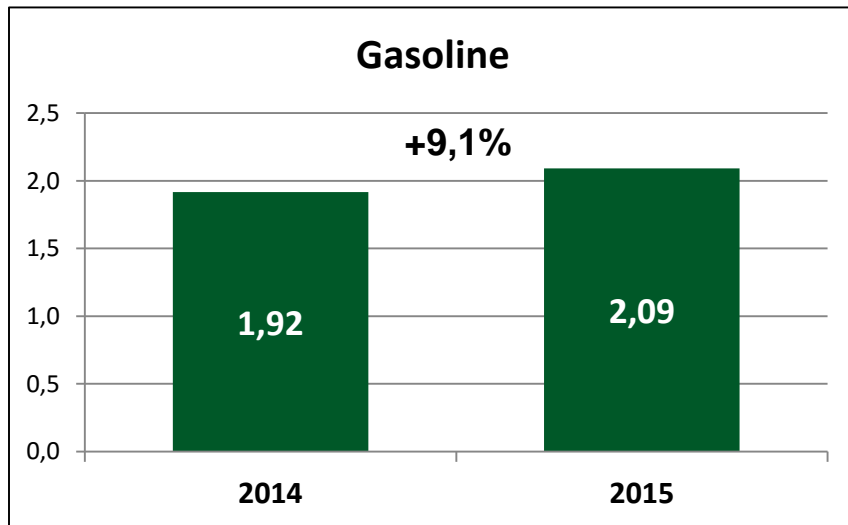
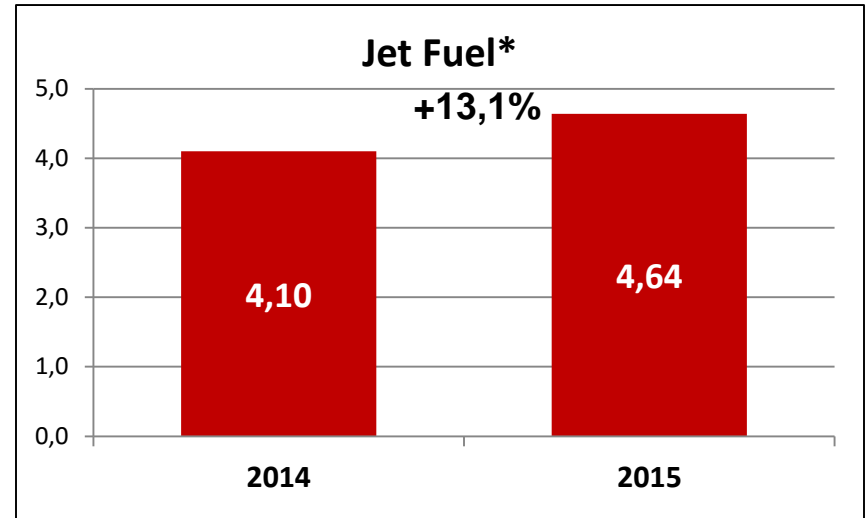
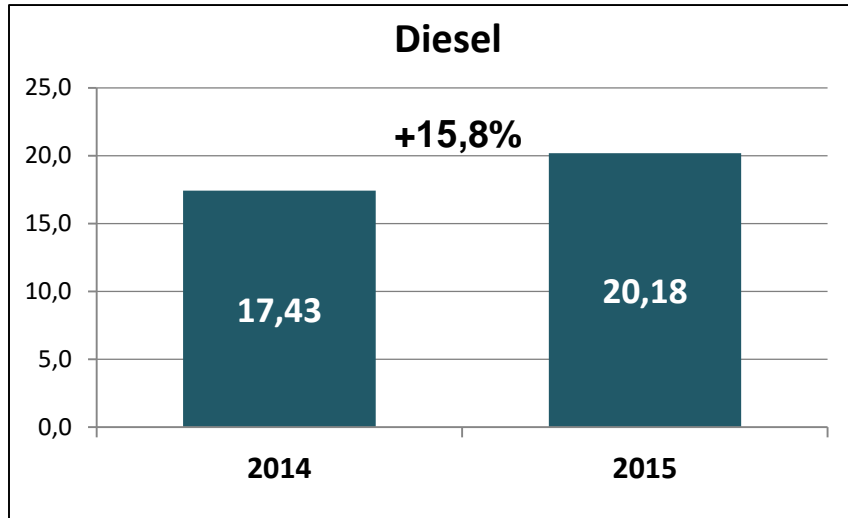
# Inventory Effect\* Analysis

\$ million	2015			2016		
	Crude	Product	Total	Crude	Product	Total
<b>1st Quarter</b>	<b>-35,1</b>	<b>-35,1</b>	<b>-70,2</b>	<b>-9,0</b>	<b>-13,4</b>	<b>-22,4</b>
Apr	9,1	25,3	34,4	7,2	16,6	23,8
May	16,8	12,0	28,8	26,3	43,3	69,6
Jun	2,2	1,7	3,9	13,4	10,2	23,6
<b>2nd Quarter</b>	<b>28,1</b>	<b>38,9</b>	<b>67,1</b>	<b>46,9</b>	<b>70,1</b>	<b>117,0</b>
<b>6 Months</b>	<b>-7,0</b>	<b>3,9</b>	<b>-3,1</b>	<b>37,9</b>	<b>56,7</b>	<b>94,6</b>

*\*FX effect Included, hedging excluded*

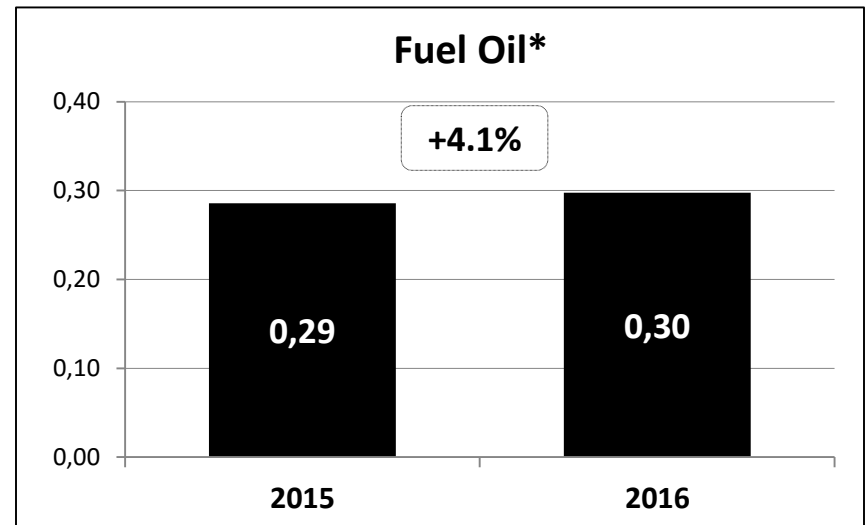
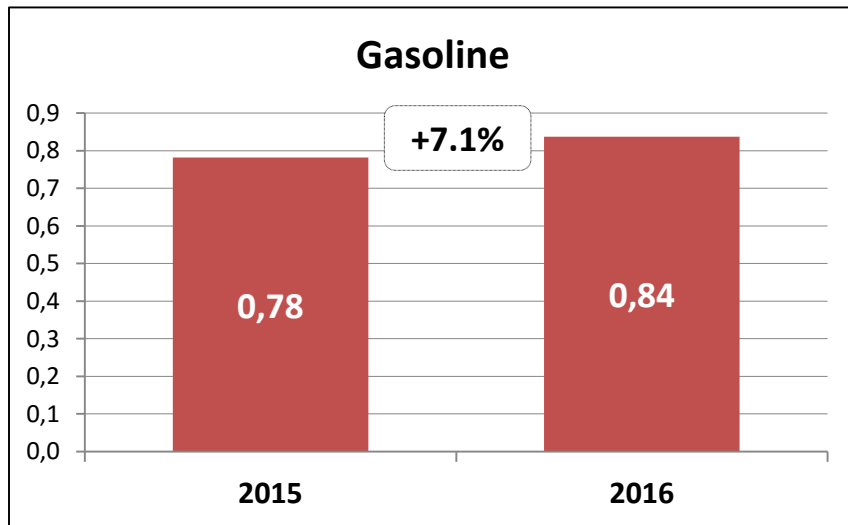
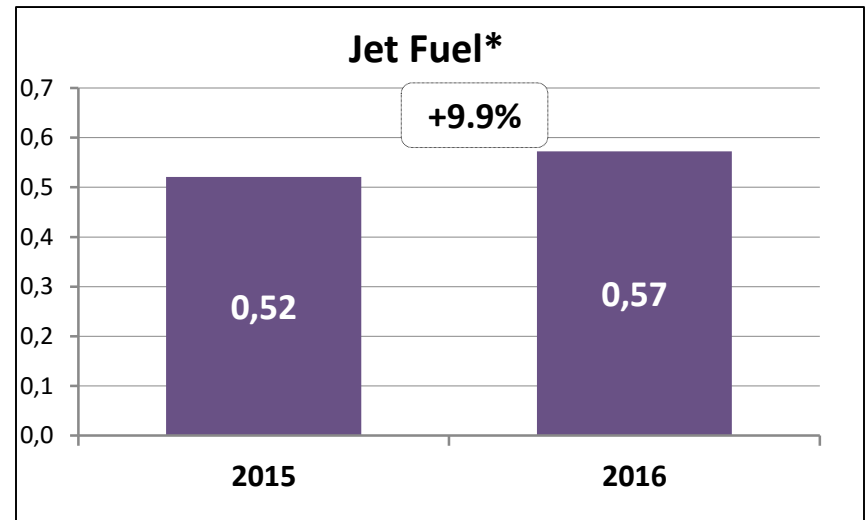
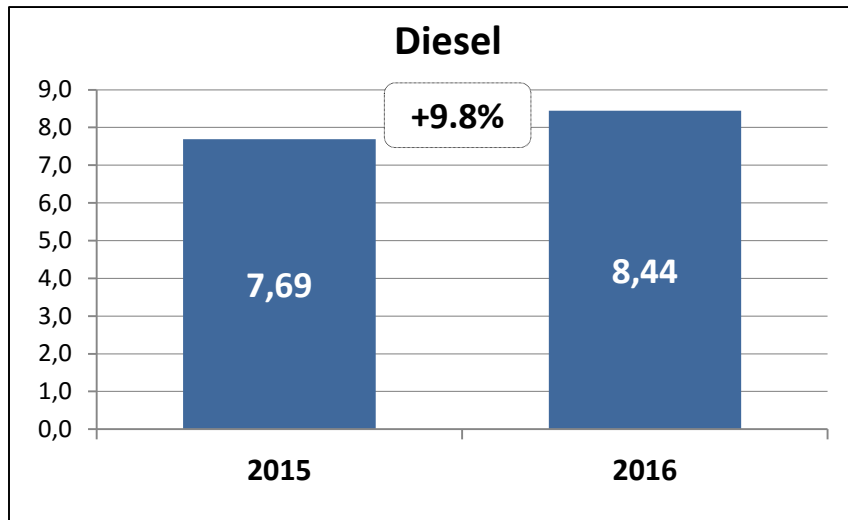
# HIGH DEMAND in 2015

(12 Month 2015 - Turkish Consumption (Million ton))



\* Tüpraş sales + Distributor's Imports

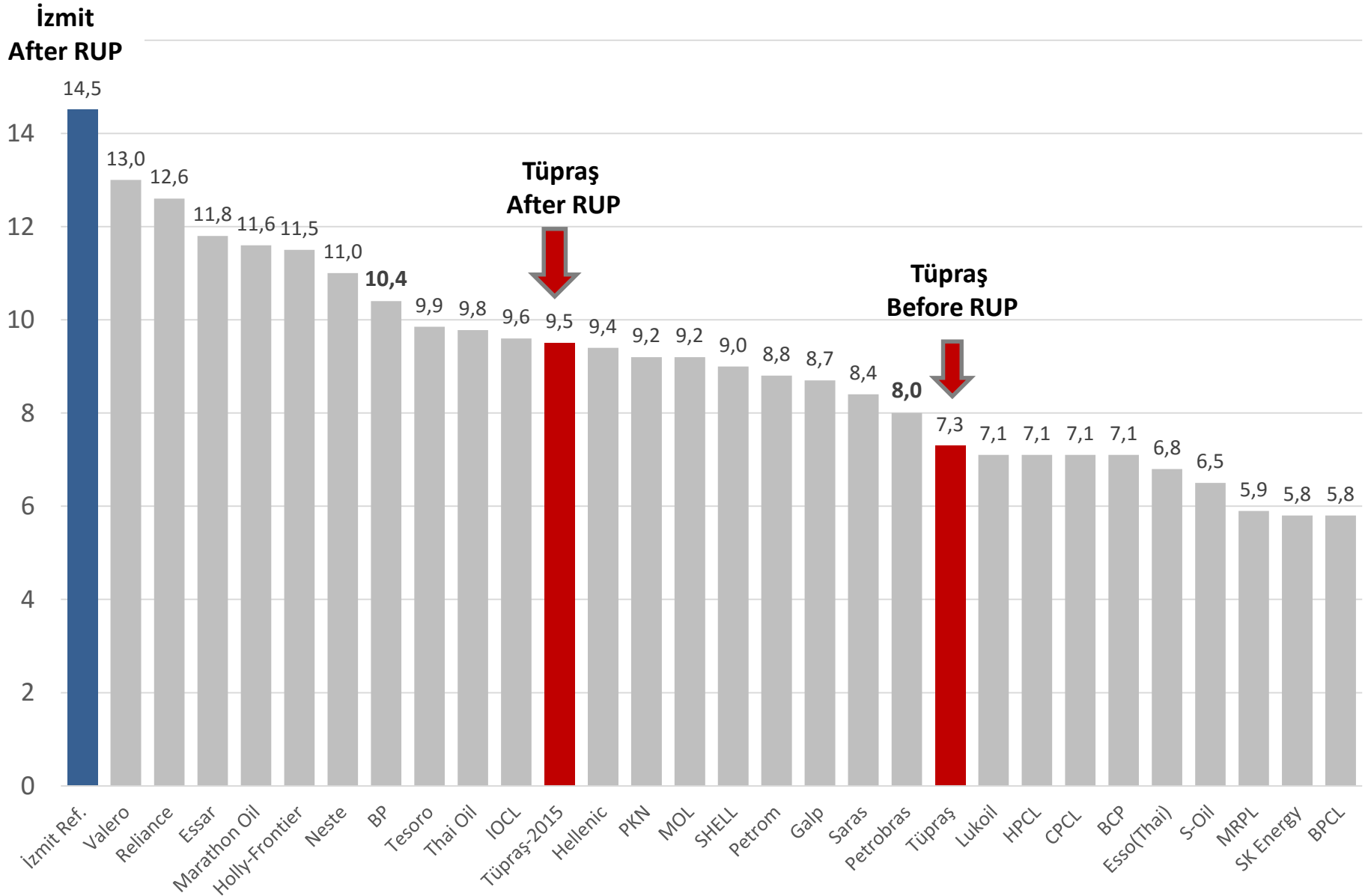
# 5 Months 2016 - Turkish Consumption (Million tons)



Source: EMRA  
\*bunker excluded.

# HIGH COMPLEXITY #1

(Nelson Complexity of Refining Companies)

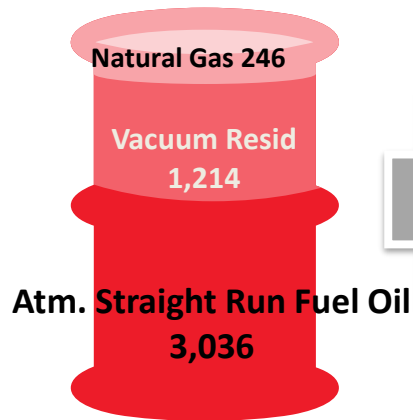


# HIGH COMPLEXITY # 2

(Resid Upgrading Units Production – (Thousand Tons))

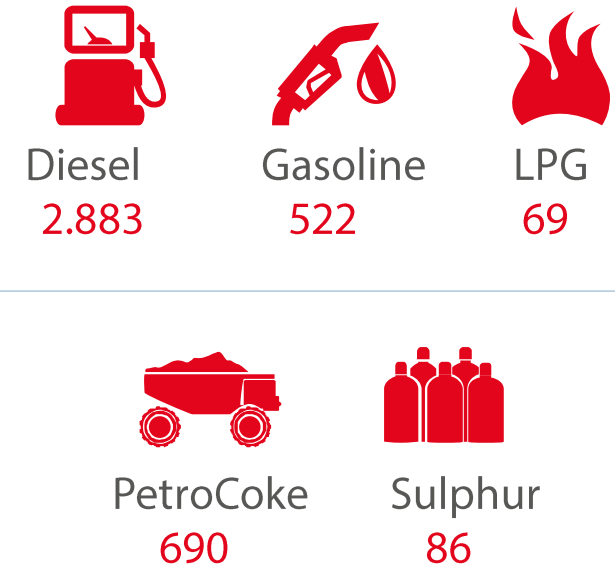
## Raw Materials

(kton)



## Products

(kton)

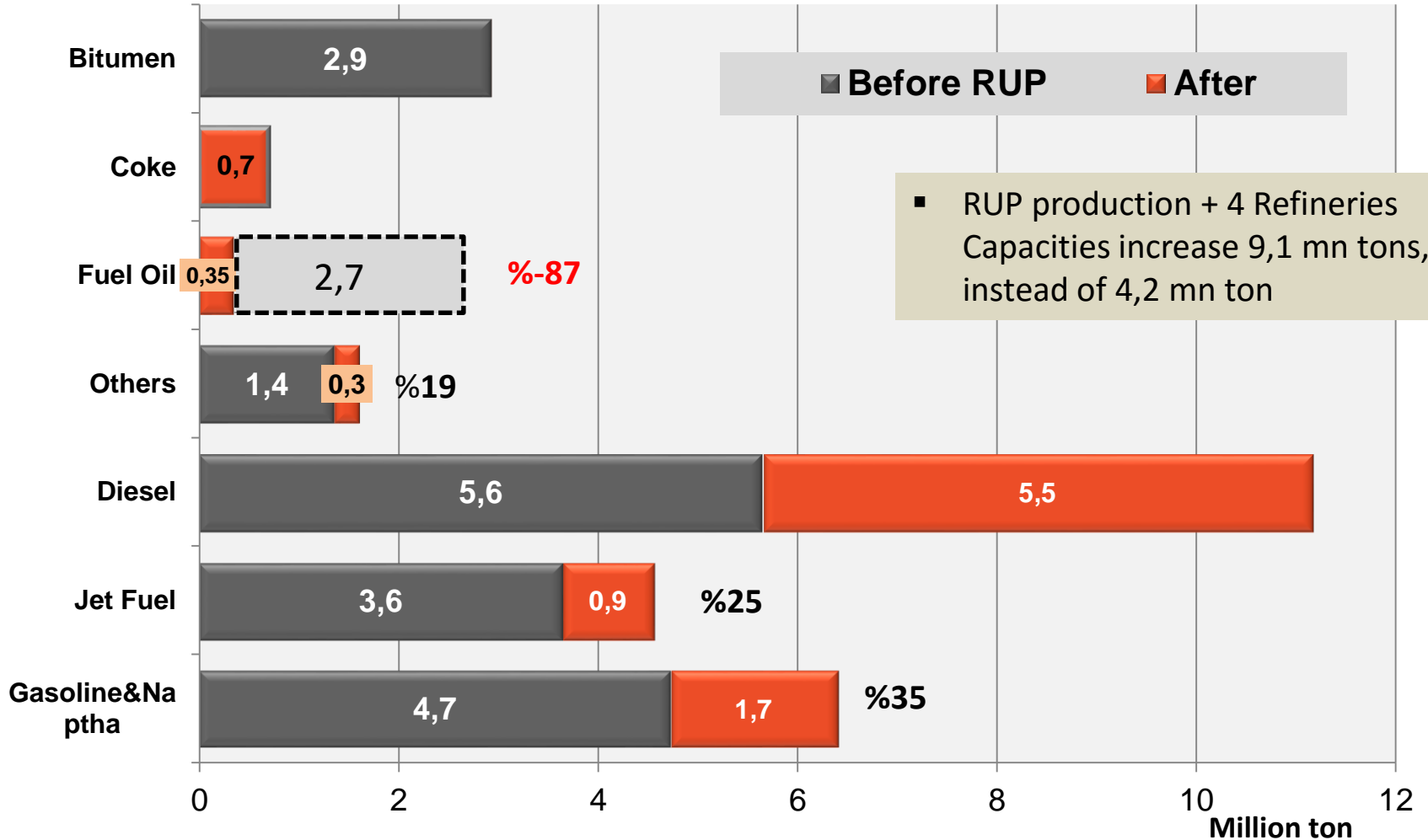


**Total Feed 4,496**

**Total Production 4,250**

# HIGH COMPLEXITY # 3

(Tüpraş Total Production Change After RUP)



## HIGH COMPLEXITY # 4

(Tüpraş Tax Incentive From RUP)

### Large Scale Investment Incentive 21.10.2010

- Valued at 30% of project cost
- Realised after completion
- Tax rate of 10% on project earnings until total incentive is reached

### Strategic Investment Incentives 19.10.2012

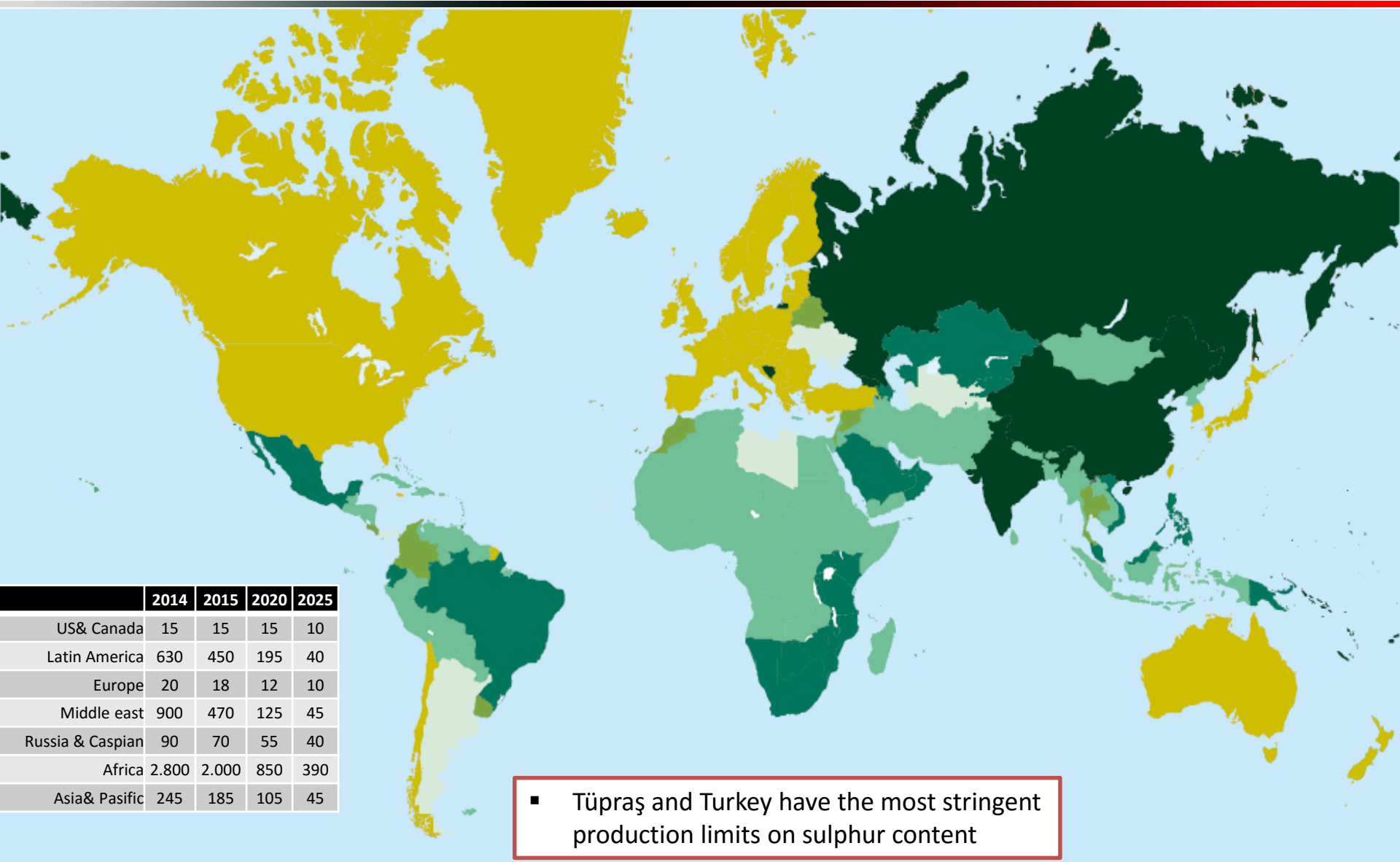
- Valued at 50% of project cost
- Partly realised during construction
- Tax rate of 2% on project earnings until total incentive is reached

### Total incentive

- **is 3,66 billion TL.**
- **344 mn TL of Investment incentive income deducted** from Strategic Investment Incentive total

# HIGH QUALITY

(Maximum on-road diesel sulphur limits, January 2014)



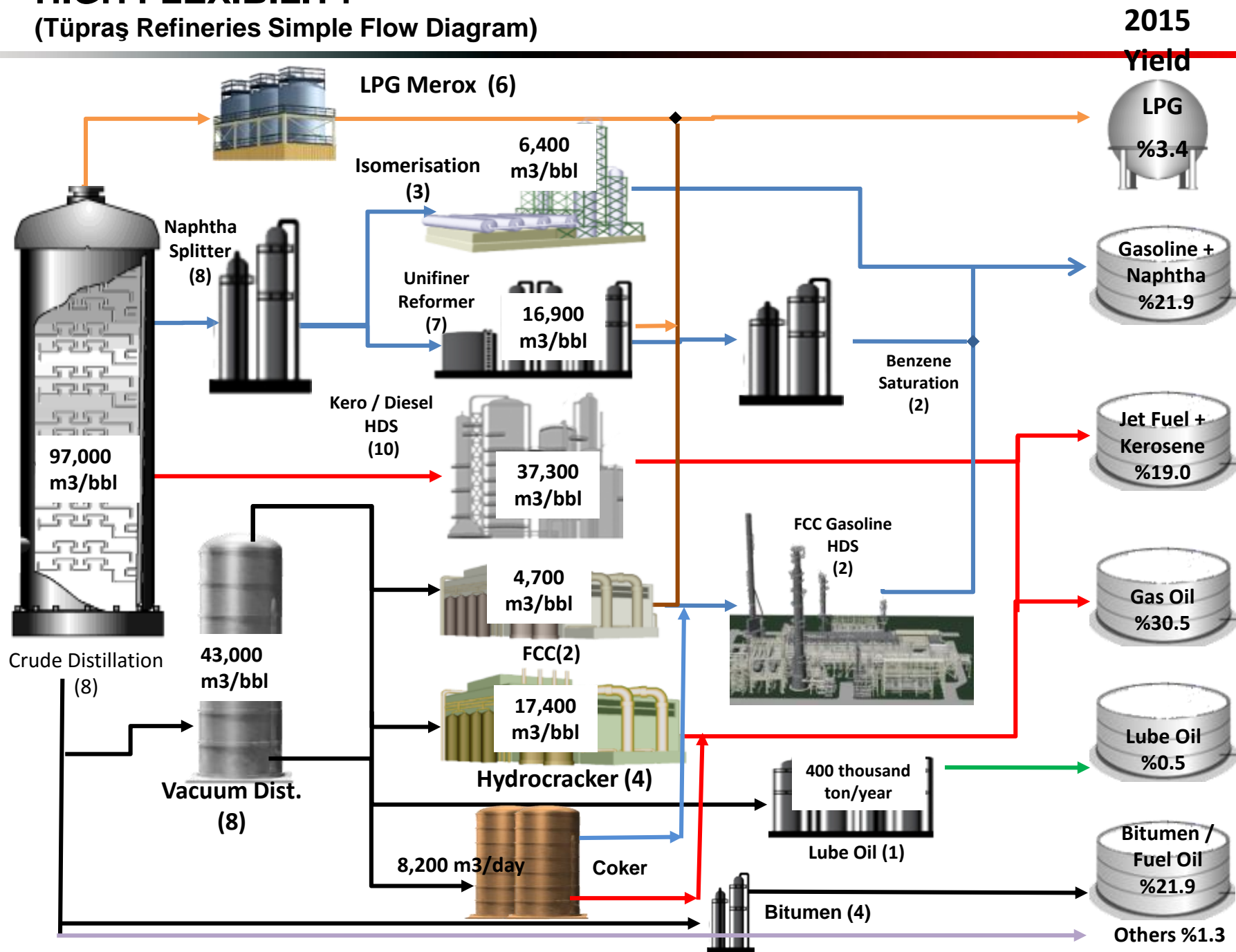
	2014	2015	2020	2025
US& Canada	15	15	15	10
Latin America	630	450	195	40
Europe	20	18	12	10
Middle east	900	470	125	45
Russia & Caspian	90	70	55	40
Africa	2.800	2.000	850	390
Asia& Pasific	245	185	105	45

Source:Stratas Advisors

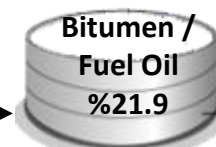
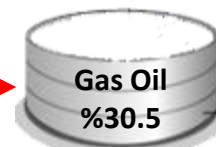
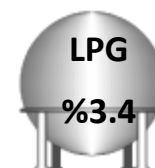


# HIGH FLEXIBILITY

(Tüpraş Refineries Simple Flow Diagram)



2015  
Yield

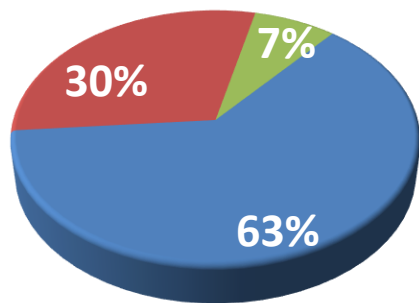


Others %1.3

# LOCATIONAL ADVANTAGE & HEAVIER CRUDES

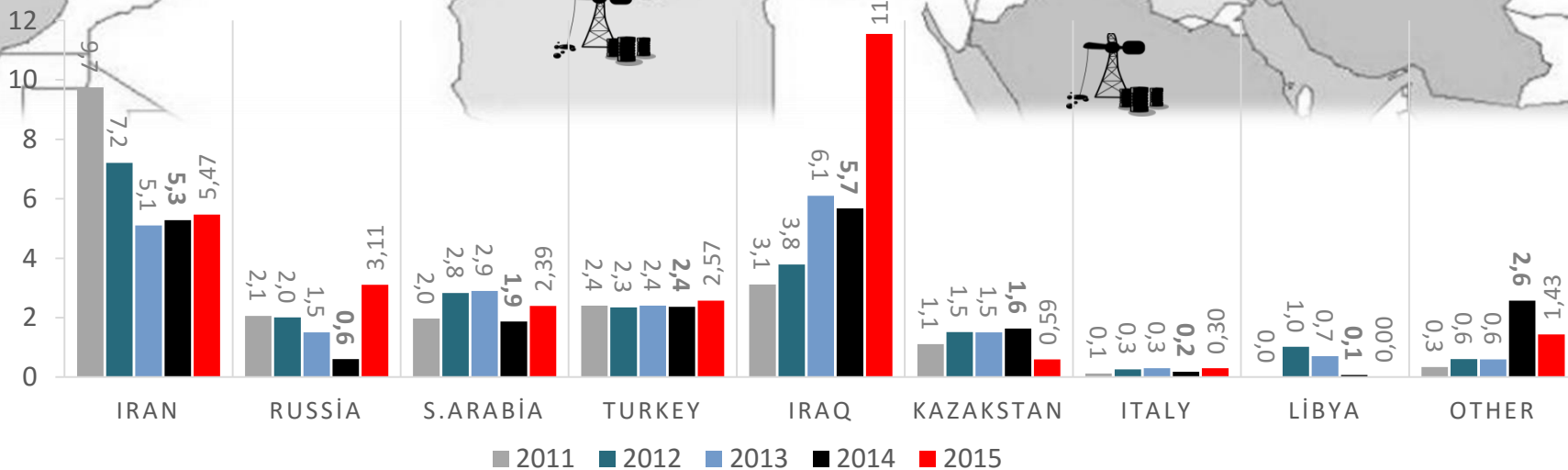
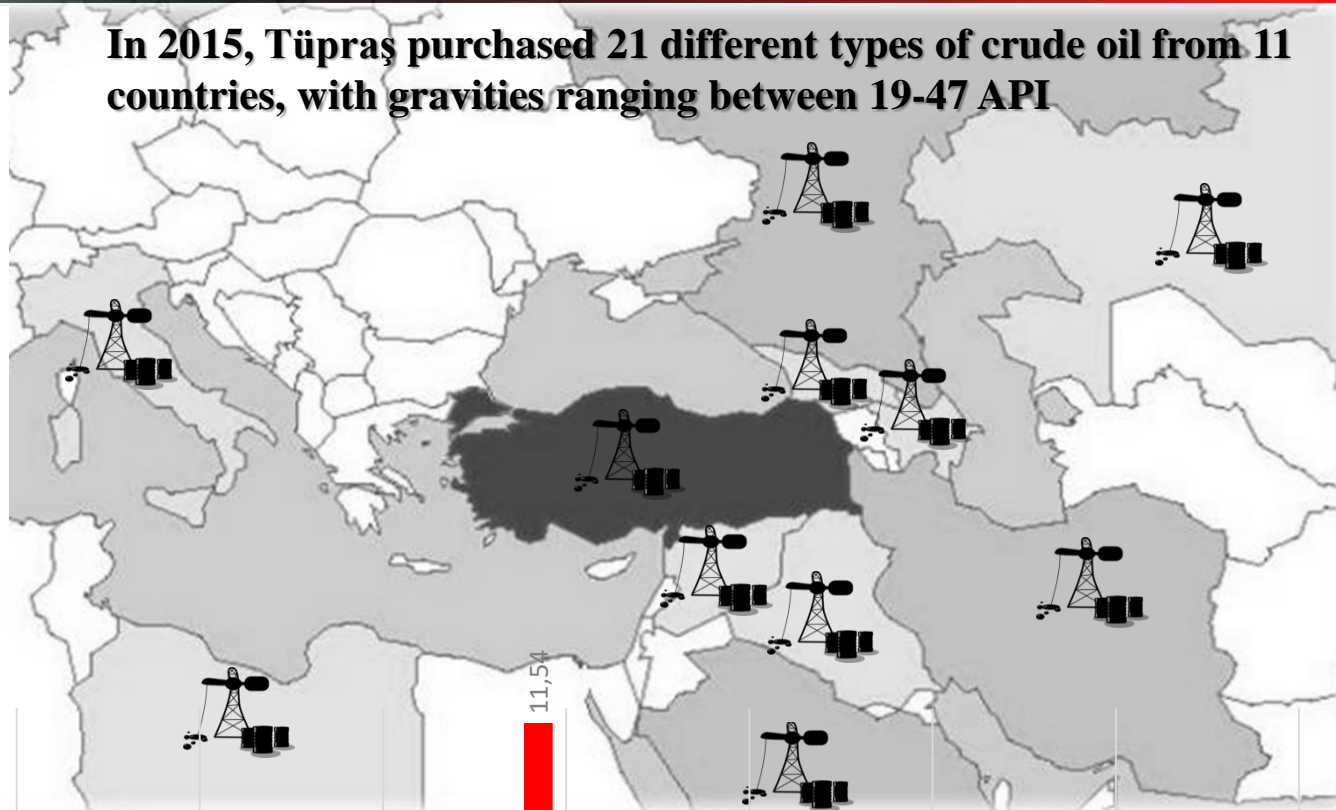
(Crude Suppliers of TÜPRAŞ (Million Tons))

Crude Type - 2015



- Heavy / Sour
- Medium Heavy / Sour
- Light & Sweet

In 2015, Tüpraş purchased 21 different types of crude oil from 11 countries, with gravities ranging between 19-47 API

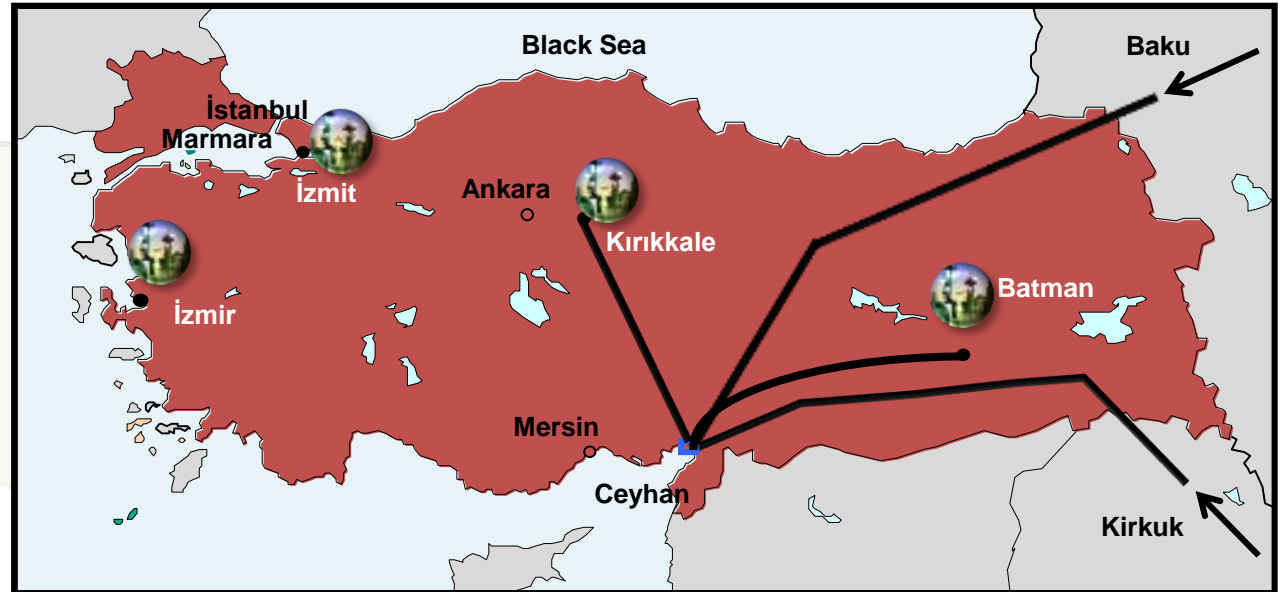


# COVERING WHOLE COUNTRY

## Operations

Tüpraş operates the only 4 refineries in Turkey

- 3 Large Refineries produce Euro V Diesel & Gasoline, plus jet fuel, fuel oils, asphalt, LPG, naphtha and others



### *Izmit*

- 11.0 MT Capacity
- NC: 14,5
- Storage Capacity: 2.2 Mn M<sup>3</sup>
- Sales Channels:
  - Pipeline, Ship, Railway & Truck

### *Izmir*

- 11.0 MT Capacity
- NC: 7.66
- Storage Capacity: 1.9 Mn M<sup>3</sup>
- Only lubricant, base Oil, producer
- Sales Channels:
  - Pipeline, Ship, & Truck

### *Kırıkkale*

- 5.0 MT Capacity
- NC: 6.32
- Storage Capacity: 1.2 Mn M<sup>3</sup>
- Sales Channels:
  - Pipeline, Railway & Truck

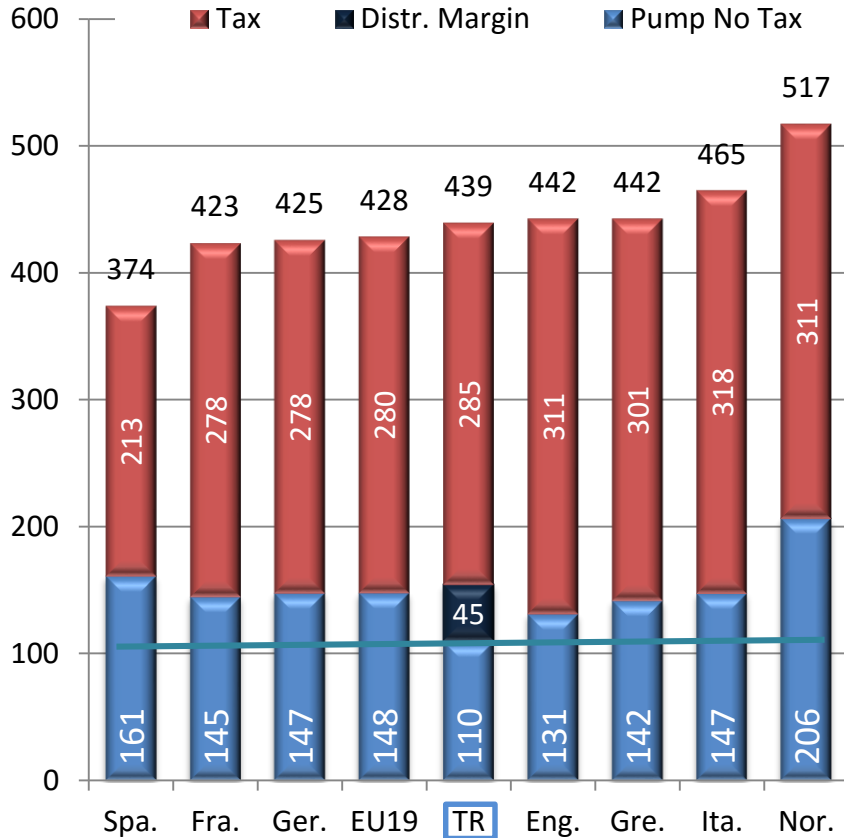
### *Batman*

- 1.1 MT Capacity
- NC: 1.83
- Storage Capacity: 0.2 Mn M<sup>3</sup>
- Asphalt - 70% of product yield
  - Semi-finished products sent for further processing
- Sales Channels:
  - Pipeline, Railway & Truck

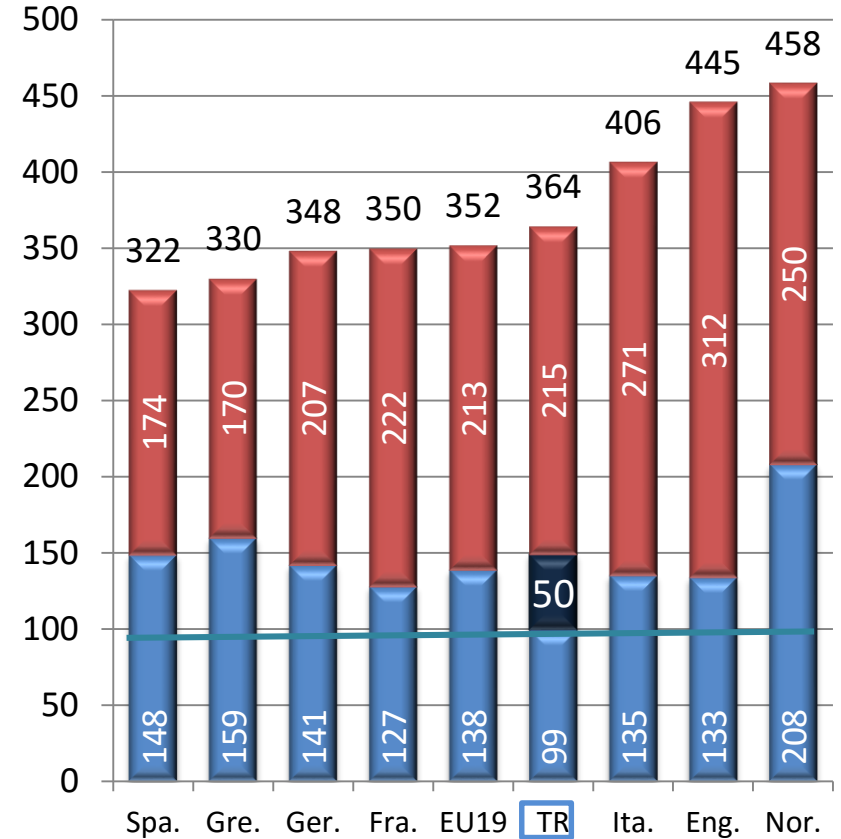
# COMPETITION # 1

## (European Pump Price Comparison)

### Gasoline (Kırş / Lt)



### Diesel (Kırş / Lt)

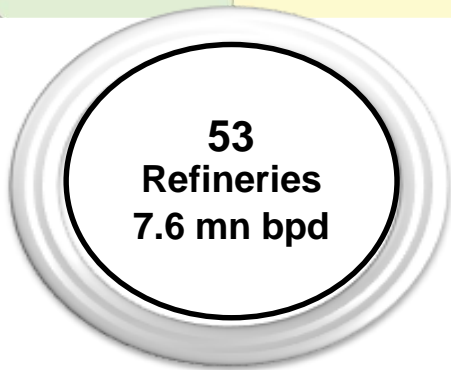
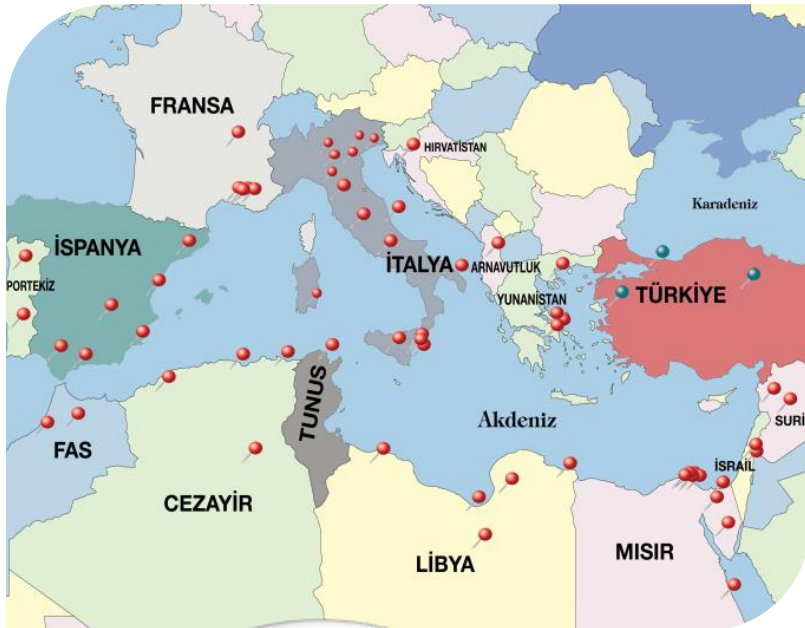


Not: Prices valid on 02 May 2016'. Norway prices as of 05 May 2016, Türkiye prices updated as of 27 April 2016 the latest.

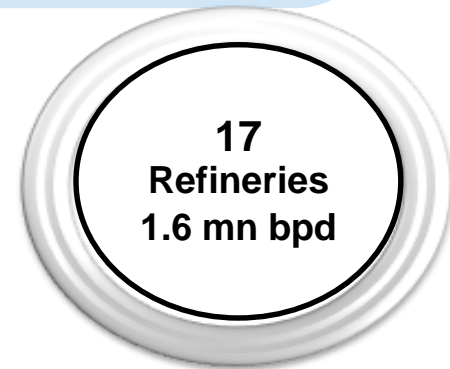
# COMPETITION # 2

(Regional Competition)

## Mediterranean



## Black Sea



# COMPETITION # 3

## (SOCAR-STAR Refinery)



### STAR Refinery Production (k ton)

#### Fuels

• Diesel	5.000
• Jet Fuel	1.700
• Sulphur	158
• Petrocoke	698

#### Petrochemical feedstock

• LPG	260
• Naptha	1.300
• Mixed xylene	460
• Reformate	524

10,100

- Goldman Sachs has acquired a 13 percent stake in SOCAR Turkey for \$1.3 billion.
- Goldman Sachs has the right to resell 10 percent of its stakes to Socar, and the remaining 3 percent to 'Sermaye Investments Limited' owned by SOCAR within 6 year at the same price.

▪ Credit	: <b>3.3 Billion \$</b>
▪ Equity	: <b>2.4 Billion \$</b>
▪ Total Investment:	<b>5.7 Billion \$</b>

- **3,3 billion dollar** credit aggrement. First 4 year grace period total **15-18 year term**.
- Project finance is supplied to company (US\$ 1.5 billion)
- It is planned to be commissioned in 2018.

# COMPETITION # 4

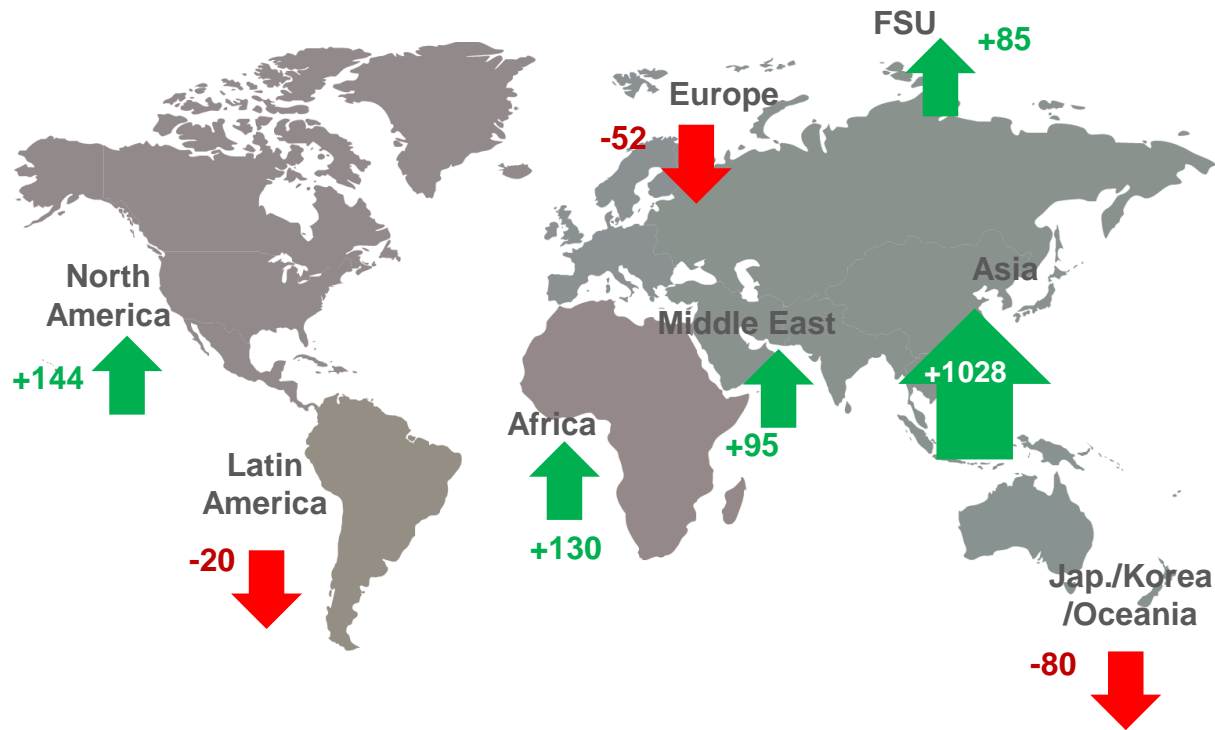
(Turkey consumption balance & the effect of new refinery)

Million ton	2018			2018*	
	Turkey Demand	Tüpraş Production	Turkey-Tüpraş	Star SOCAR	Deficit/ (Excess)
Crude Oil		28,1		10,0	
Semi product+Other charge		0,8			
<b>Total processed</b>		<b>28,9</b>		<b>10,0</b>	
<b>Products</b>					
LPG	4,1	1,1	-3,0	0,3	-2,7
Petrochem. charge: <i>Naptha, Reformate/xylene</i>	2,8	0,6	-2,2	2,3	0,1
Gasoline	2,2	5,7	3,5		3,5
Jet fuel/Kerosene	5,4	5,6	0,2	1,7	1,9
Diesel	21,9	10,2	-11,7	5,0	-6,7
Fuel Oil	1,1	0,9	-0,2		-0,2
Asphalt	3,3	2,7	-0,6		-0,6
Sulphur & other	1,8	0,5	-1,3	0,2	-1,1
Coke	3,0	0,8	-2,2	0,7	-1,5
<b>Total</b>	<b>45,5</b>	<b>28,4</b>	<b>-17,1</b>	<b>10,1</b>	<b>-7,0</b>

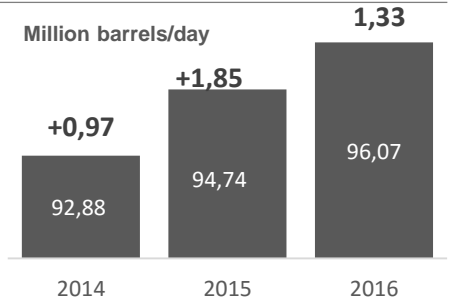
\*Expected to be completed by the end of 2018

# CRUDE DEMAND

- While the demand in Asia, Middle East & Africa is still increasing, growth is less than 2015



## Global Consumption & Growth



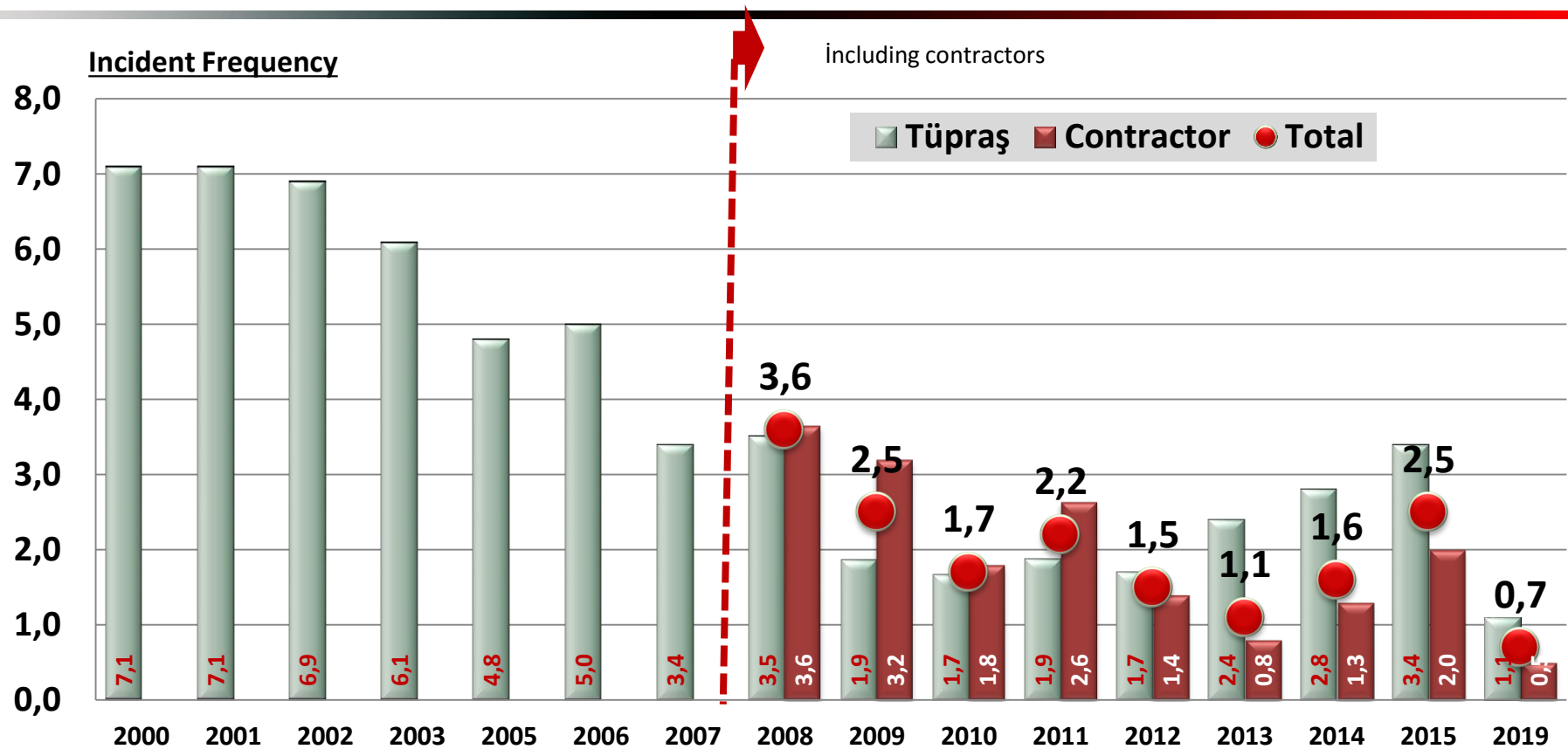
## Global Balance

Million Barrels/day	2008-2014	2015	2016
Demand Change (1)	5,71	1,85	1,33
Capacity Increase (2)	-10,02	-1,51	-0,80
Refinery shut-downs (3)	5,95	0,42	0,15
<b>Total (1-2-3)</b>	1,64	0,76	0,68

Source :IEA:14 April 2016

\* Demand includes crude, NGL-condensate and Biofuels

# Tüpraş HSE KPI: Loss Time Incident Frequency and Severity Frequency Ratios

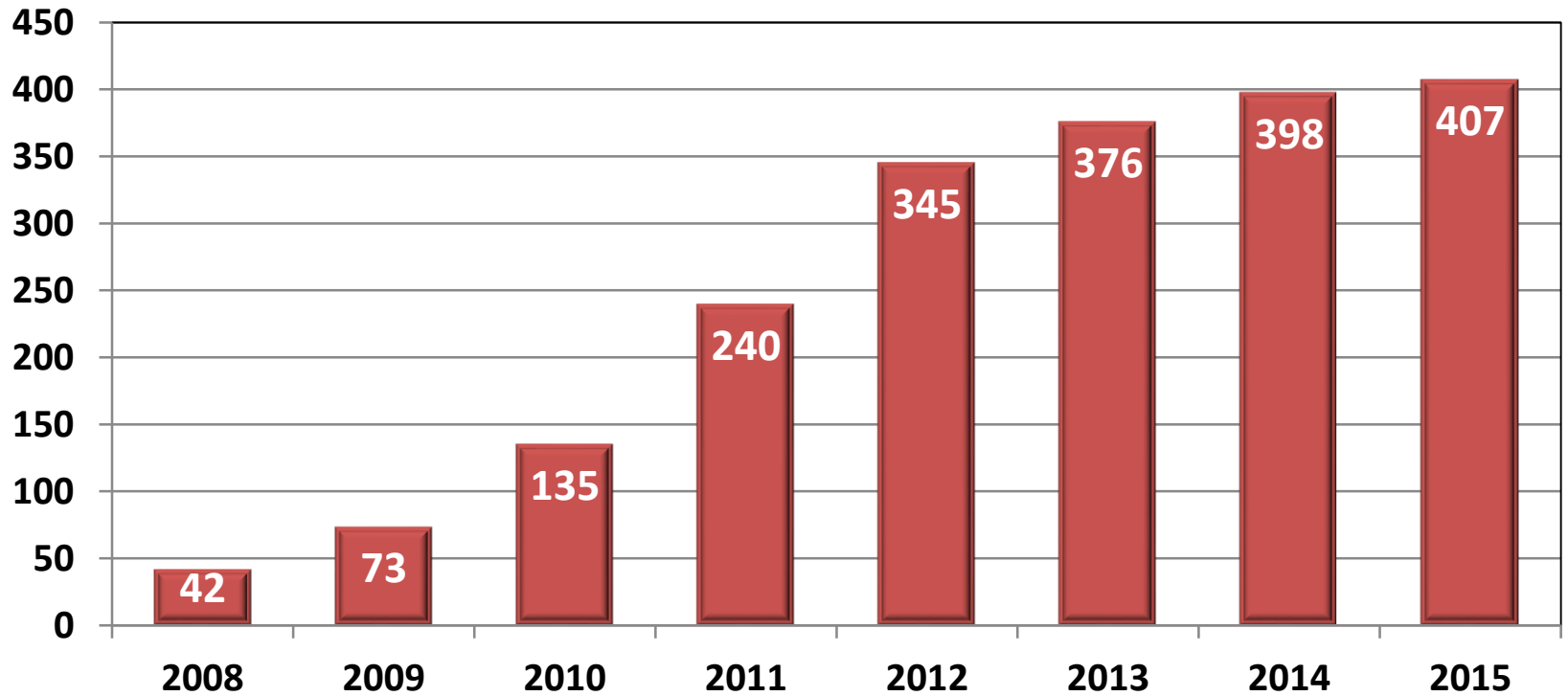


Loss Time Severity Frequency Rate (2015 Target →30)	2008	2009	2010	2011	2012	2013	2014	2015	2020
<i>Tüpraş</i>	92	44	40	53	65	61	59	719	20
<i>Contractor</i>	116	101	81	118	424	17	378	51	20
<i>Total</i>	105	73	57	83	289	26	308	315	20

loss time incident frequency rate = number of incident \*1000000/man hours

loss severity frequency rate = loss time\*1000000/man hours

# Energy Saving Projects , mn\$



Energy Index 119,1 99,2

	2008	2009	2010	2011	2012	2013	2014	2015	Total
Tüpraş Energy consumption (TJ)	76.653	65.265	67.010	70.792	71.086	69.147	67.034	90.796	577.783
Energy-saving(TJ)	978	10.891	3.155	3.053	5.255	2.841	1.772	1.031	28.976
Energy Efficiency Project	36	52	65	92	97	40	22	21	425
Savings (mn \$)	42	32	62	105	106	31	22	10	407