



# How to Discuss Energy Security in Regional Perspective?

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*Japan-Turkey Dialogue in Times of Global Transitions*

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# About PETFORM



Established in 2000, PETFORM has played a crucial role in the transfer of private sector views to the public authorities regarding to Turkish energy legislation amendments. Member companies mainly have activities in 2 sectors:

- Exploration & Production Sector
- Natural Gas Market

# Member Companies



- AKENERJİ
- AKMERCAN ENERJİ
- AKFEL
- AKSA
- ALPIQ
- ALADDIN MIDDLE EAST
- ATLI ENERJİ
- AVRASYA GAZ
- AYGAZ DG
- BATI HATTI GAZ
- BORDRILL
- BP
- ÇALIK ENERJİ
- DANSKE COMMODITIES
- EGEgaz
- ENERCO ENERJİ
- ENERJİSA
- ENERYA
- ENGIE
- EQUINOR
- ETKI LIMAN
- ERDGAZ
- EWE ENERJİ
- EXXONMOBİL
- GENEL ENERGY
- GUNVOR
- GÜNEY YILDIZI PETROL
- KİBAR ENERJİ
- MARSA ENERGY
- MET ENERJİ
- NATURELGAZ
- OMV
- PALMET ENERJİ
- PERENCO
- RWE
- SHELL ENERJİ
- SHELL UPSTREAM
- SISECAM ENERJİ
- SOCAR
- TEKFEN
- THRACE BASIN
- TRANSATLANTIC PETROLEUM
- TURCAS
- VALEURA ENERGY
- VOLT ENERJİ
- YETAŞ

# IEA Energy Security Definition



The IEA defines energy security as the uninterrupted availability of energy sources at an affordable price.

Long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs. On the other hand, short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance.

# Turkey's Overall Energy Balance (1990 – 2018)



	1990	2018	Change
Total Energy Demand (million toe)	52.9	145,3	↑ 174% ↑
Total Domestic Production (million toe)	22.0	35.3	↑ 37% ↑
Total Energy Imports (million toe)	30.9	110	↑ 255% ↑
Coverage of Domestic Production to Total Consumption	48%	24%	↓ - 50% ↓

# Gas Import Sources of Turkey (2014-2018)



	2014	2015	2016	2017	2018	Share in Overall (2018)
<i>(bcm)</i>						
Russia	26.975	26.783	24.534	28.690	23.642	47 %
Iran	8.932	7.826	7.719	9.251	7.862	16 %
Azerbaijan	6.074	6.169	6.479	6.544	7.341	15 %
Algeria (LNG)	4.179	3.916	4.059	4.617	4.599	9 %
Nigeria (LNG)	1.414	1.240	1.078	2.080	1.746	4 %
Spot LNG	1.689	2.493	2.483	4.068	4.977	9 %
Toplam	49.262	48.427	46.352	55.250	50.168	



# Physical Gas Entry Capacity



ENTRY POINTS	2017	2018	2019	2020	2021	2022	2023
MALKOÇLAR-BALKAN	51,4	51,4	51,4	14,7	14,7	14,7	14,7
DURUSU-BLUE STREAM	48	48	48	48	48	48	48
GÜRBULAK-İRAN	28,5	28,5	28,5	28,5	28,5	28,5	28,5
TÜRKGÖZÜ-SHAHDENİZ	19	19	19	19	19	19	19
ESKİŞEHİR-TANAP	0	5,7	11,3	14	16,4	16,4	16,4
TRAKYA-TANAP	0	0	0	0	8,2	8,2	8,2
KIYIKÖY-TURK STREAM	0	0	0	46,9	46,9	46,9	46,9
M. EREĞLİSİ LNG	22	37	37	37	37	37	37
ALİAĞA LNG	24,5	40	40	40	40	40	40
ALİAĞA FSRU	20	(20) 14,1	14,1	14,1	20	20	20
SAROS FSRU	0	20	20	20	20	20	20
DÖRTYOL FSRU	0	20	20	20	20	20	20
AKÇAKOCA-TP	0,36	0,36	0,36	0,36	0,36	0,36	0,36
GELİBOLU-MARSA	0,42	0,42	0,42	0,42	0,42	0,42	0,42
K. MARMARA	25	25	25	50	75	75	75
TUZGÖLÜ	13	20	20	30	80	80	80
<b>TOTAL</b>	<b>252,18</b>	<b>329,48</b>	<b>335,08</b>	<b>382,98</b>	<b>474,48</b>	<b>474,48</b>	<b>474,48</b>



# The Share of Energy in Turkey's Total Imports (2011 – 2018)

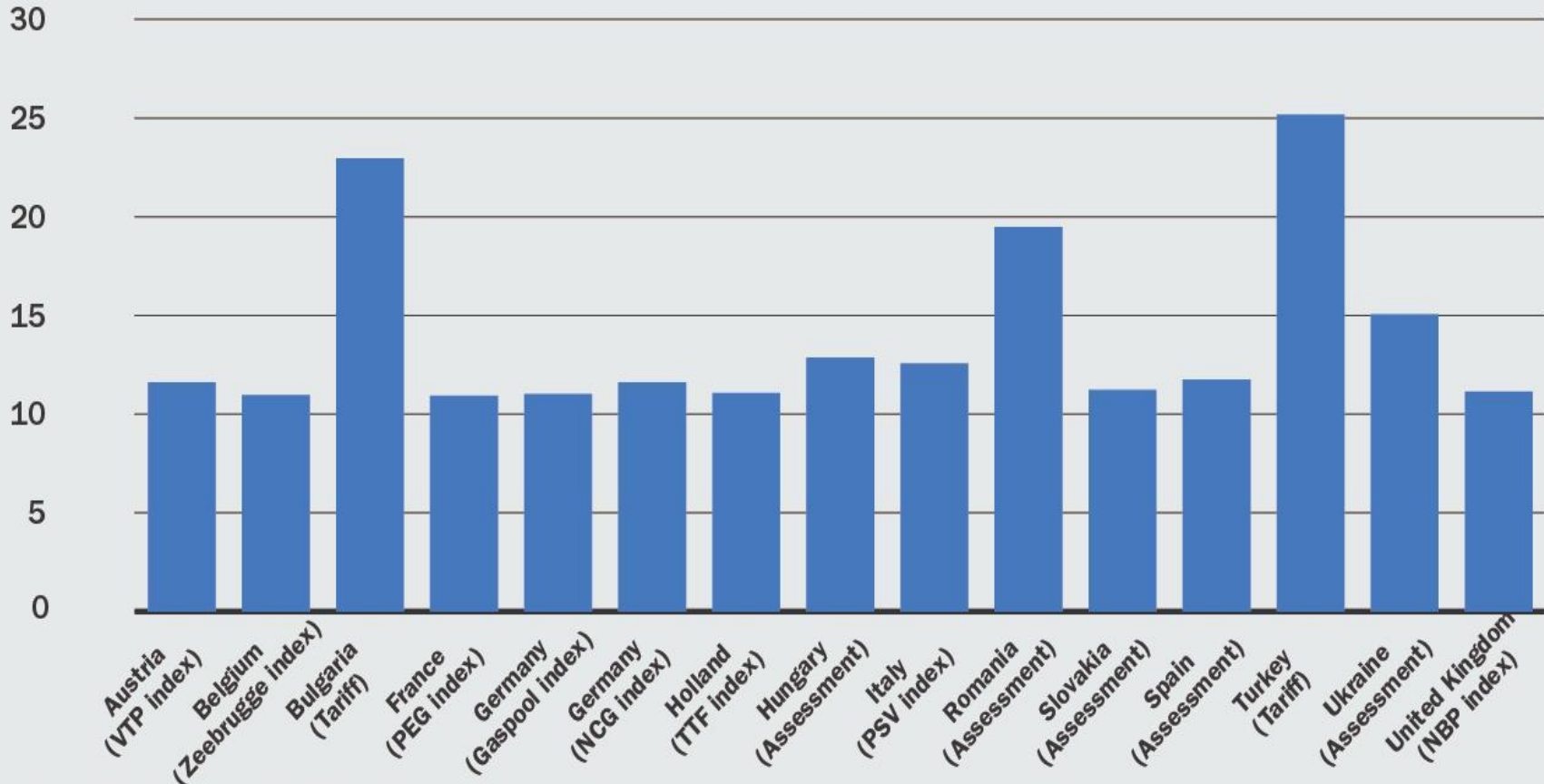


(billion USD)	2011	2012	2013	2014	2015	2016	2017	2018
Crude Oil and Petroleum Products	29,2	31,5	29,4	27,1	17,7	13,1	18,5	21,9
Natural Gas	20,2	23,2	21,2	23,1	16,1	11,3	15,1	17,9
Coal	4,1	4,6	4,3	4,6	4	2,7	3,1	3,1
Total Energy Import	54,1	60,1	55,9	54,8	37,8	27,1	37,2	42,9
Turkey's Total Import	240,8	236,5	251,6	242,1	207,2	198,6	233,8	223,1
Share of Energy in Turkey's Total Import	%20,5	%23,1	%22,2	%22,6	%18,2	%13,6	%15,9	%19,2



## AUGUST '19 GAS PRICES ACROSS MARKETS

€/MWh

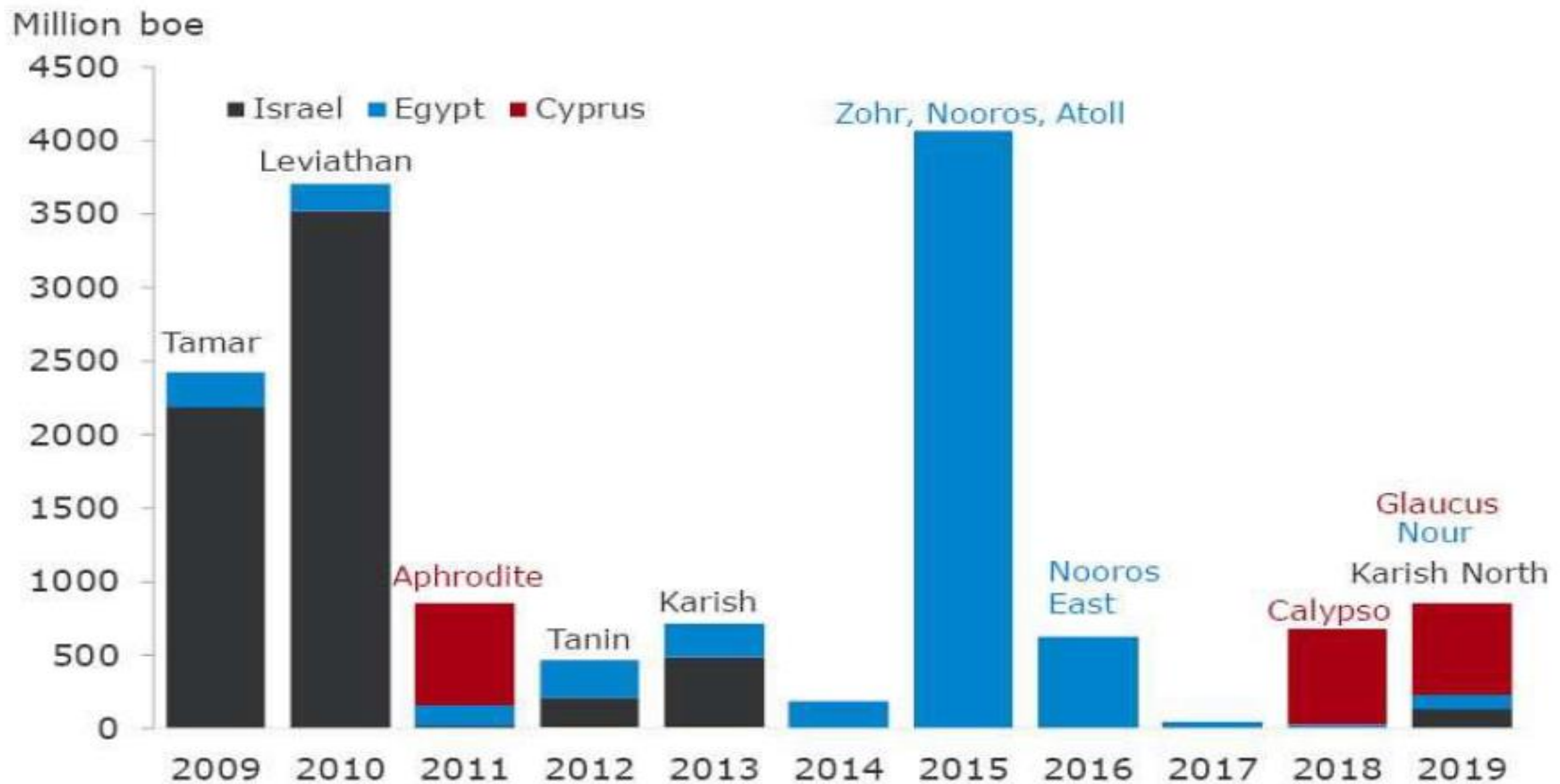


SOURCE: ICIS, BOTAS, Bulgartransgaz

# East Med – 1

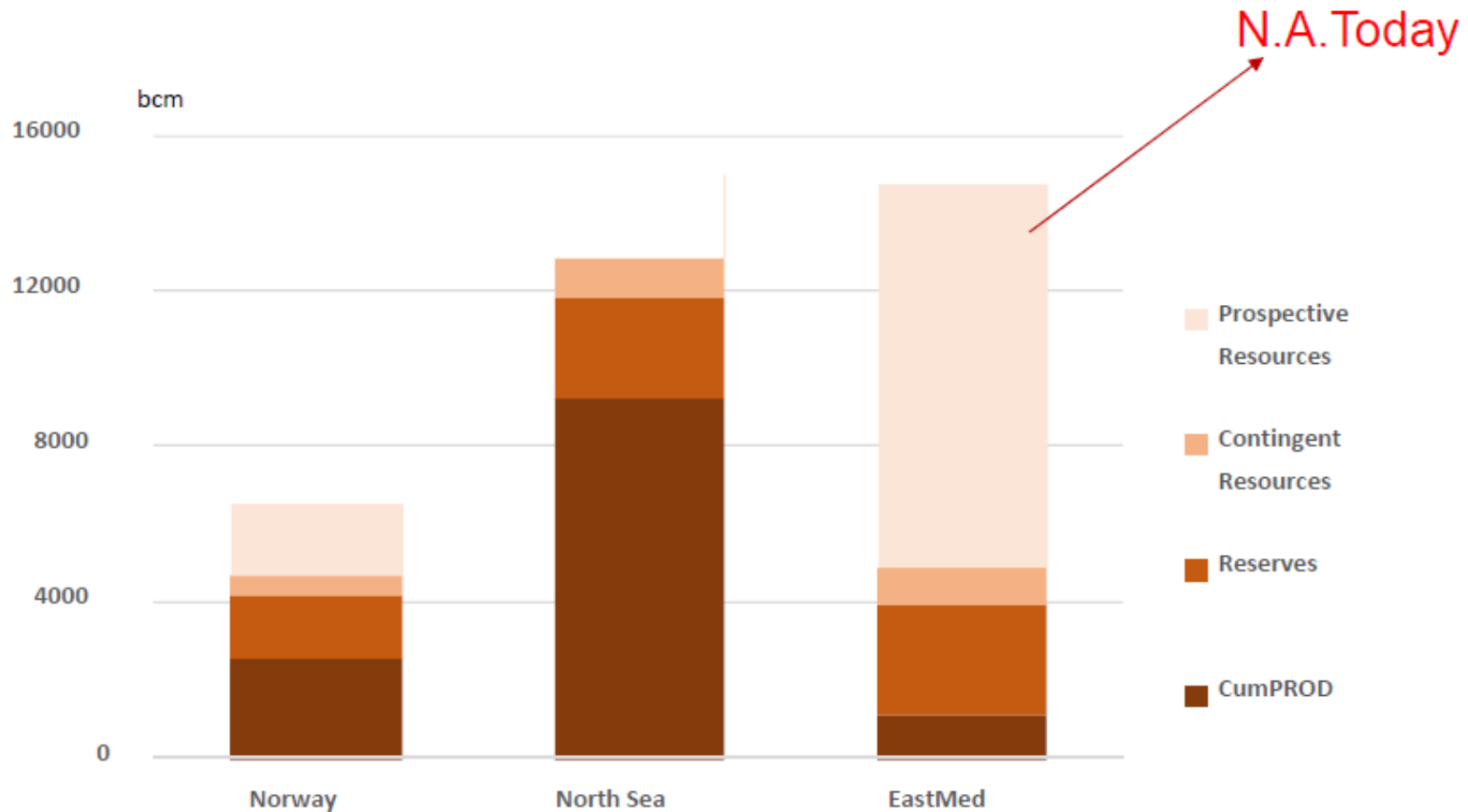


## Natural Gas Discoveries in EastMed: Jan2009-Sept2019



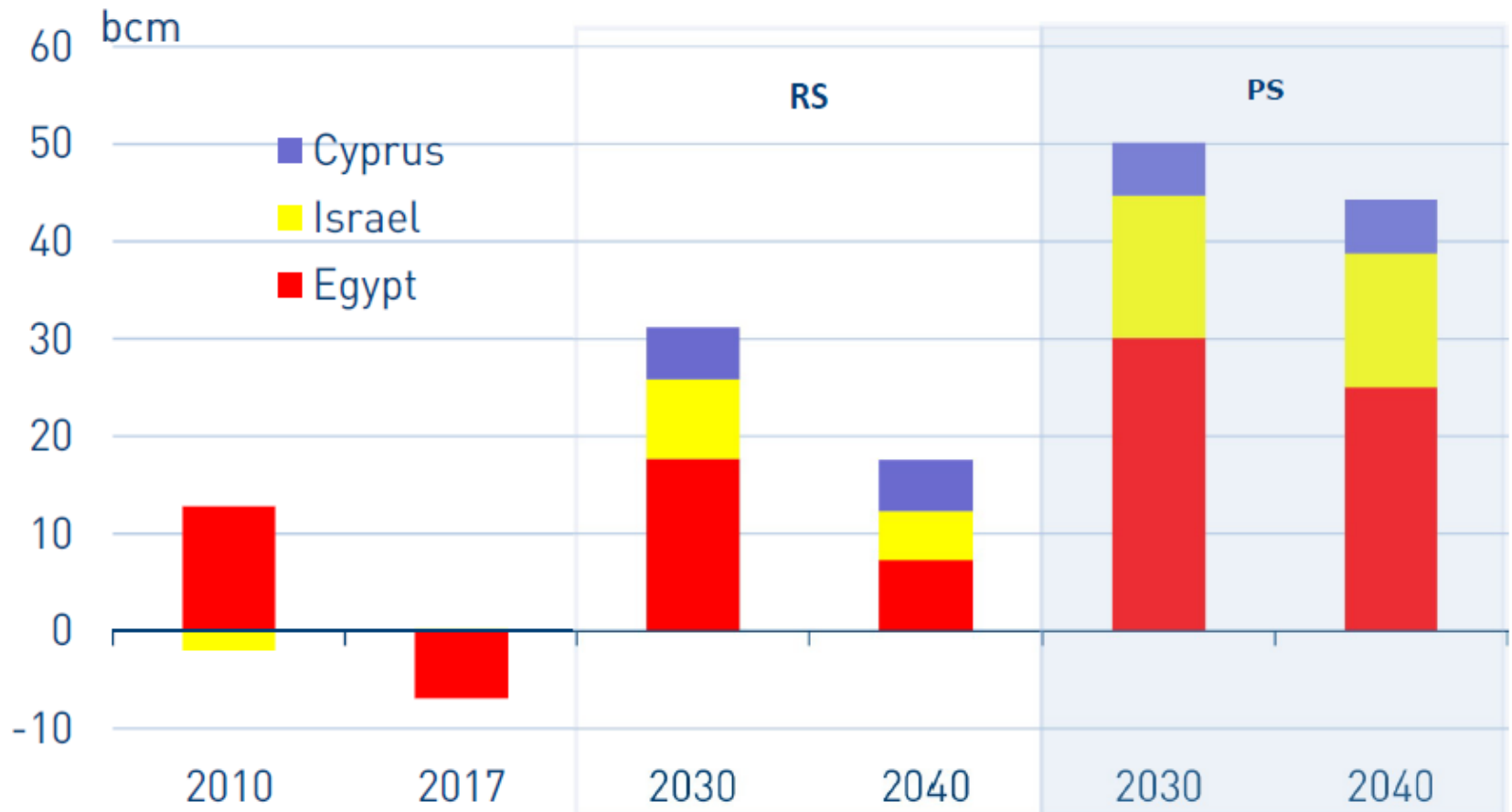
Source: Rystad Energy UCube

# East Med – 2



Source: Sohbet Karbuz, Bilkent Enerji Notlari No.12, Temmuz 2019.

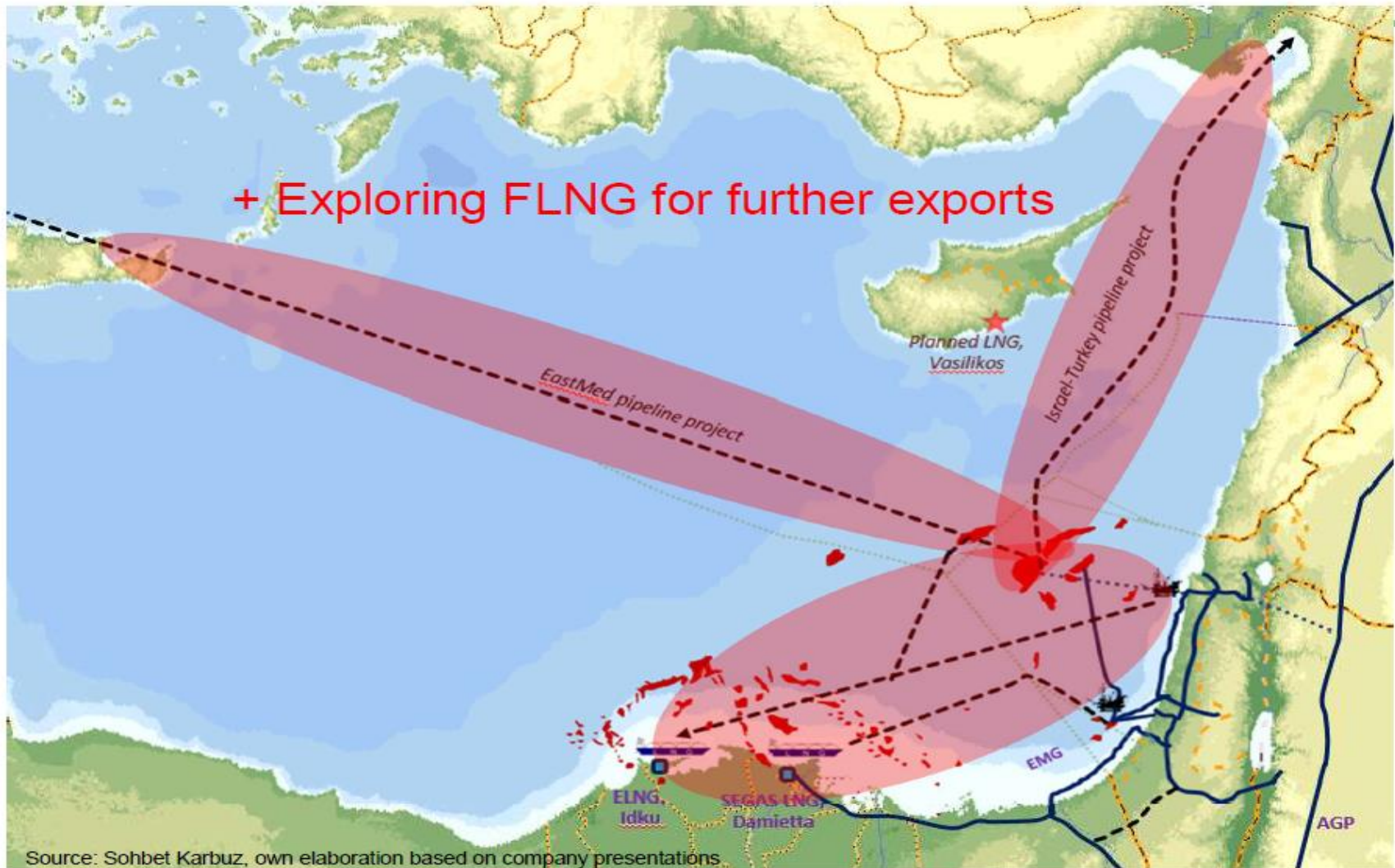
# East Med – 3



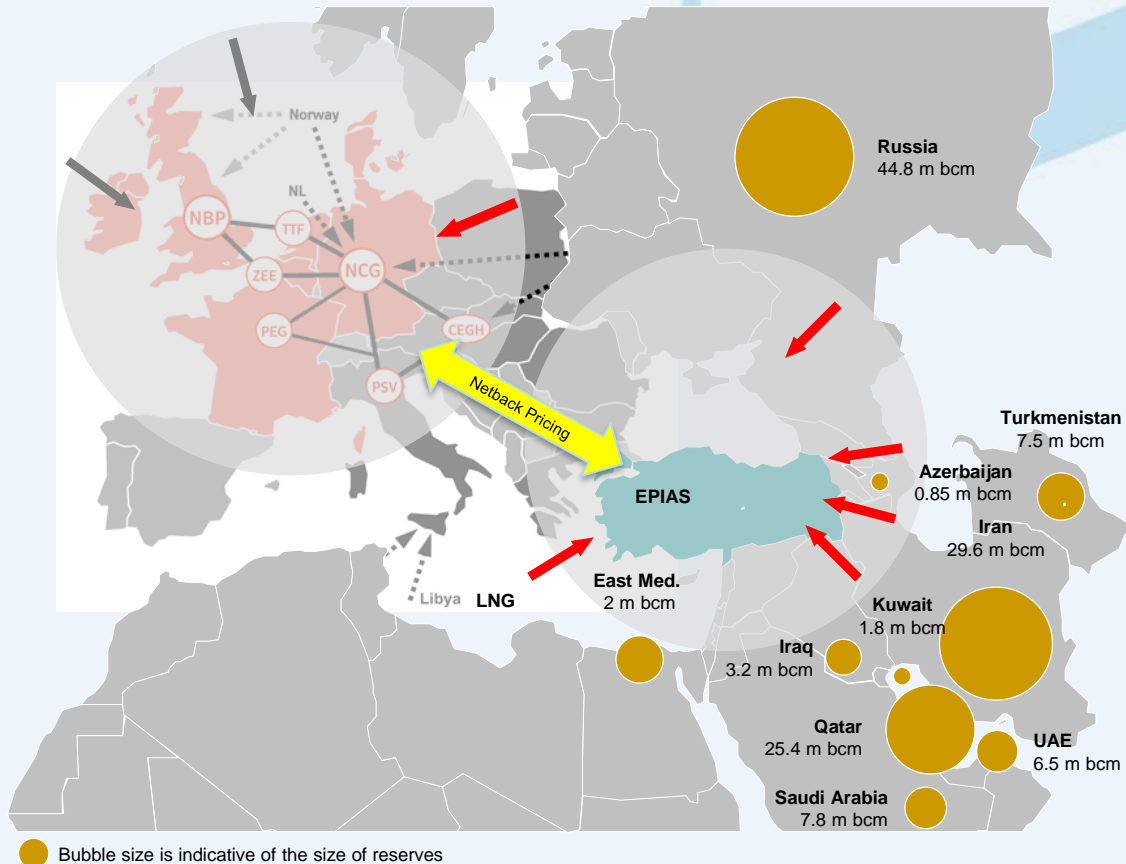
Source: MEP2018, OME

Source: OME

# East Med – 4



# Integration of Turkey with European Gas Hubs



- 8 Major European Trading Hub
- Trading on OTC's via Brokers
- Trading on Energy Exchanges

**When Turkey completed structural reforms, Turkish natural gas market will be integrated with European trading hubs and generate reference price for natural gas trade in the region.**





***THANK YOU...***

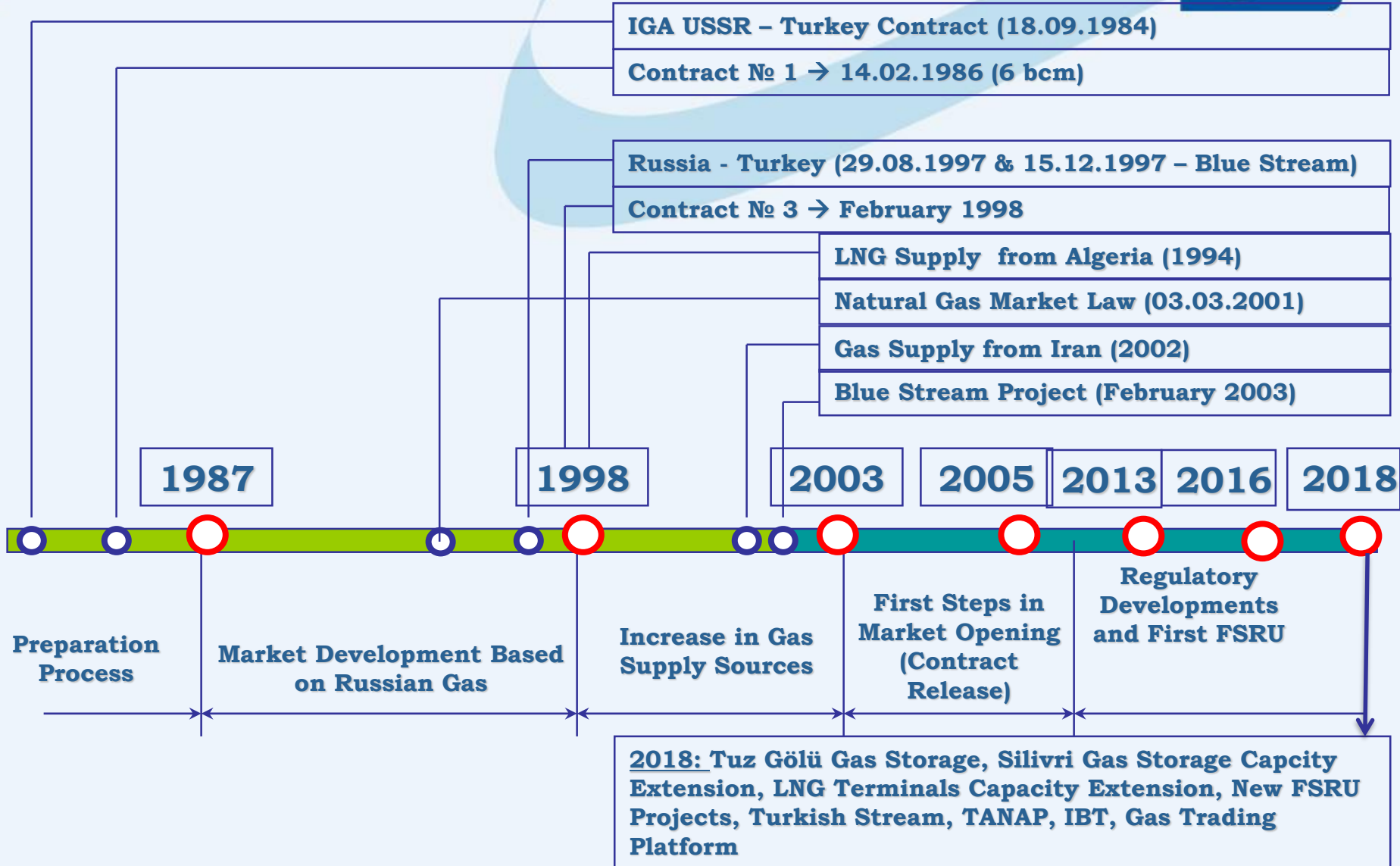
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# Back Up

# Market Development and Liberalization Process



# Gas Import Contracts



Supplier	Type	Volume (bcm/yr)	Period (years)	Start Date	End Date
Russia (Balkan route)	Pipeline	4	23	1998	2022
Russia (Balkan route)	Pipeline	1	23	2013	2036
Russia (Balkan route)	Pipeline	5	30	2013	2043
Russia (Balkan route)	Pipeline	4	23	1998	2022
Russia (Blue Stream)	Pipeline	16	25	2003	2028
Algeria	LNG	4,4	30	1994	2024
Nigeria	LNG	1,2	22	1999	2021
Iran	Pipeline	10	25	2001	2026
Azerbaijan	Pipeline	6,6	15	2007	2022
Total		52,2			

# Prerequisites for Liberal Natural Gas Market



## Physical Infrastructure

- Very well developed and maintained physical infrastructure
- No restrictions and congestions to meet peak demand
- Cross border capacity development with minimum congestion
- New storage and LNG facilities for supporting supply security to seasonal and peak demands

## Regulatory Framework

- Policy drafting regulatory body should understand the real Dynamics of the Energy, TPA, Network Code, Independent TSO etc.
- Implementation of policies via EU directives.
- Monitoring of wholesale market integrity, competition (antitrust) and effective consumer interest protection is needed for competition
- Unbundling of transmission and counteraction of incumbents' vertical dominance

## Independence of Transmission System Operator

- Appropriate capacity-booking model (entry/exit model, use it or lose it principle)
- Effective balancing mechanism
- Effective nomination processes
- Publicized imbalance charging structures (not overly punitive)
- Very well integrated storage injection and withdrawal processes to the transmission system
- Transparent tariffs for system entry and exit

## Commercial and Market Conditions

- Formation and active promotion of common pricing reference
- Free day ahead and intraday price assessment mechanism
- Standard and commonly expected physical contracts
- No barrier for new entries
- No destination clauses
- Transparent price-discovery mechanisms / platforms ,functioning forward market
- Good synchronization between balancing, nearby and forward markets
- Stable financial and credit environment and mechanisms