Eastern Mediterranean Gas: The Turkish Factor

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The Future of Eastern Mediterranean Gas
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Chateau Status - Nicosia

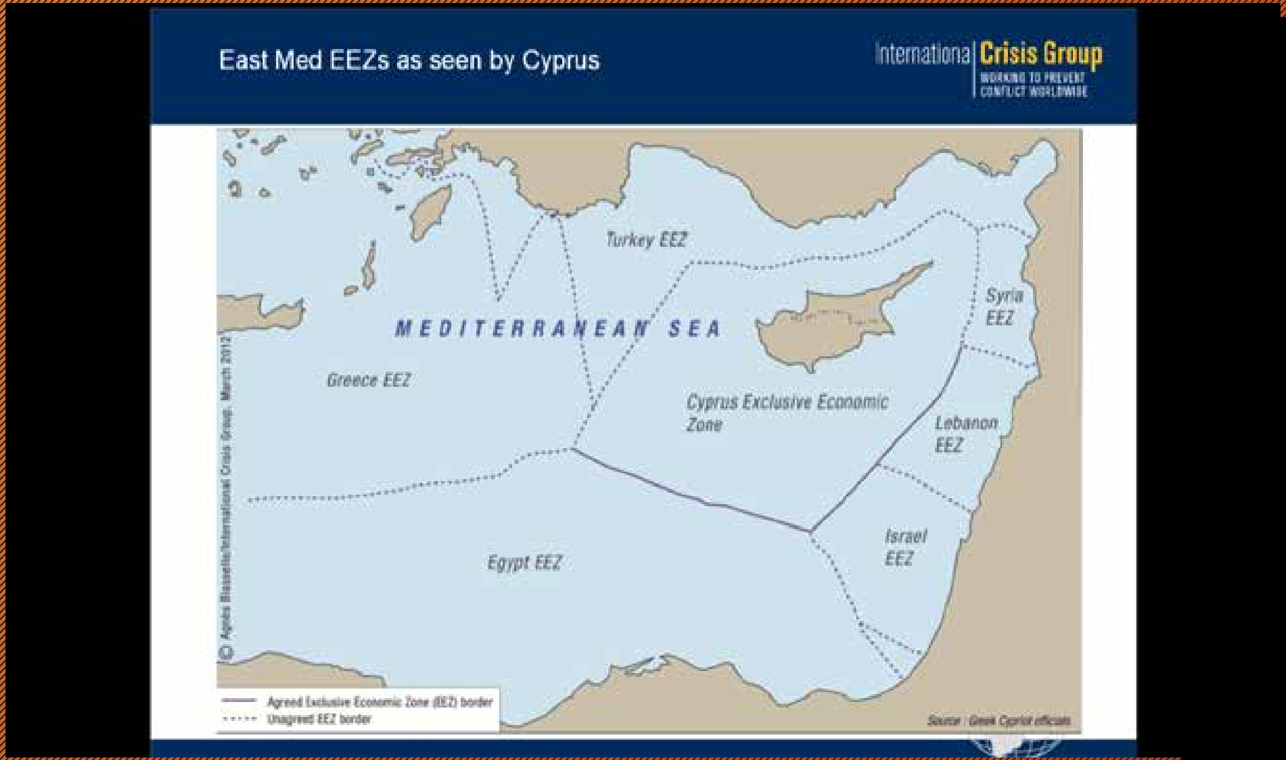
Eastern Mediterranean: Too Early to Judge

- No realistic figure for export availabilities in 2020.
- Export destination: Probably Europe but
- -- What prospects for reviving Egypt's LNG plants?
- -- What prospects for reaching Turkey by pipeline or CNG?
- Overall: As and when Leviathan is approved for export, then perhaps 10-15 bcm/y by 2020 (making due allowance for sales to Jordan and Palestine).
- IF Aphrodite's reserves are augmented, then LNG scale deliveries in the 2020s.
- NOTE: Good prospects for further discoveries but seismic not the same as drilling.

Israel-Turkey

- Serious interest
- Ministerial discussions
- Logical
- But practical?

East Med EEZs: Different Concepts



Gas Pipelines in Turkey 2008-2016
Plus ça change…….

- This

The Turkish Coup - Immediate issues

- 16 July 2016: Turkish Straits closed to tankers “for safety and security reasons”
- Routine traffic through the Bosphorus: 2.9 mb/d.
- Pipelines: Not affected

The Turkish Coup: Long-term issues - Oil

The importance of Turkey in oil transit

Oil: The Bosphorus:
    2.9 mb/d per day.

Oil through the BTC line:
    735,000 b/d in 1H 2016.

Oil through the Kirkuk-Ceyhan line:
    2H 2015: 565,000 b/d
    IH 2016: 467,347 b/d

The Turkish Coup: Long-term issues - Gas

CURRENT
6.6 from Azerbaijan via BTE
7.8 bcm from Iran via Dogubayezit (2015)
12.9 bcm from Russia via Eastern Balkans System (2014)
14.4 bcm from Russia via Blue Stream (2014).

FUTURE
2H 2018: 6.0 bcm/y via TANAP to Turkey
2020: 10.0 bcm/y via TANAP as transit
2018-20 ?? 5-10 bcm from northern Iraq via Sirnak-Mardin

Turkish Stream and Eastern Mediterranean gas ????

Southern Gas Corridor Source Fields (Theoretical)

Field	Country	Estimated Reserves	Output & Production Timing
• Shah Deniz Phases I and II	Azerbaijan	1.2 tcm	25 bcm/y during 2018-2022
• Shah Deniz Phase III	Azerbaijan	c. 500 bcm	?
• ACG Deep Level	Azerbaijan	300-500 bcm	5-10 bcm/y by 2025-7???
• Apsheron	Azerbaijan	350 bcm	Startup in 2021. 5 bcm /y by 2023?
• Umid, Babek, Nakhchivan, Zafer-Meshel, Araz-Alov-Sharq, Asiman-Shafaq	Azerbaijan	2.7 tcm	Post-2025.
• Kurdistan	Iraq	?	5-10 bcm/y before 2020; 10-20 later?
• Akkas	Iraq	59.4 bcm (GOI)	5-10 bcm/y long-term (ISIL factor)
• Galkynysh	Turkmenistan	Up to 26.2 tcm (gas in place)	10-30 bcm/y by 2016-2025
• Dauletabad	Turkmenistan	1 tcm	30 bcm/y with E-W pipeline
• Offshore Block 1	Turkmenistan	180 bcm	10 bcm/y by 2017-18

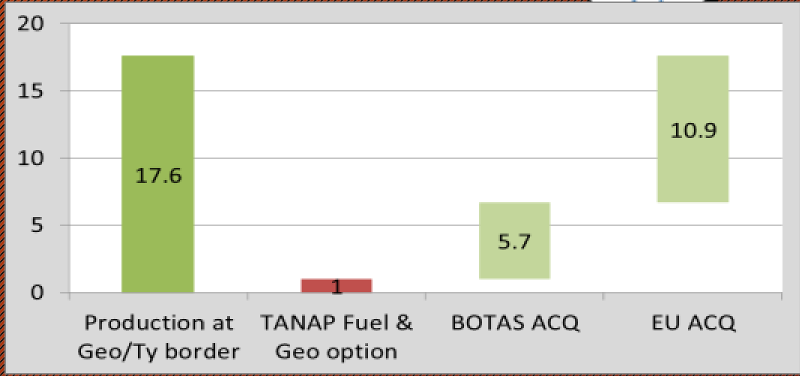
• Source: Methinks Ltd.

The Southern Gas Corridor: Practicalities (

(Source: SOCAR)

Gas sales to EU buyers signed in 2013:
Axpo, GDF Suez, Gas Natural, E.ON, Shell
Hera, ENEL, Bulgargaz, DEPA
Gas to Europe to start ~1 yr later than 1st gas

Gas sales volumes (bcma)



Shah Deniz Field

South Caucasus Pipeline Expansion (SCPX)

Trans Anatolian Pipeline (TANAP)

Trans Adriatic Pipeline (TAP)

Gas sales to BOTAS
Stage 2 sales signed in 2011
(First Gas in 2018)
Complementing current Stage 1 sales

ACQ: Annual Contract Quantity

SGC Costs (2013-2016)

	Initial costings: (FID, Late 2013) 2013		Revised Costings. (N. Aliev June 2016) 2016
SD2:	$22.5bn	(FID)	18.9
SCP-X	$5.4bn	(FID)	4.9
TANAP	$10-16 bn Best: $12.8bn.	(Est)	9.3
TAP c.	$4bn - 5bn.	(Est)	6.0
Total:	c. $42-49 bn.	(Est)	39.1

- Socar CEO Rovnag Abdullayev: $48bn total (8 Dec 2014)
- Implementation under way: c. $11bn of contracts issued (late 2015).

TURKEY – A Summer of Dangers (2015)

27 July 2015: PKK attack on the Iran-Turkey gasline near Agri in Eastern Turkey.

29 July 2015: PKK attack the Kirkuk-Ceyhan oil pipeline in Sirnak Province of southeastern Turkey.

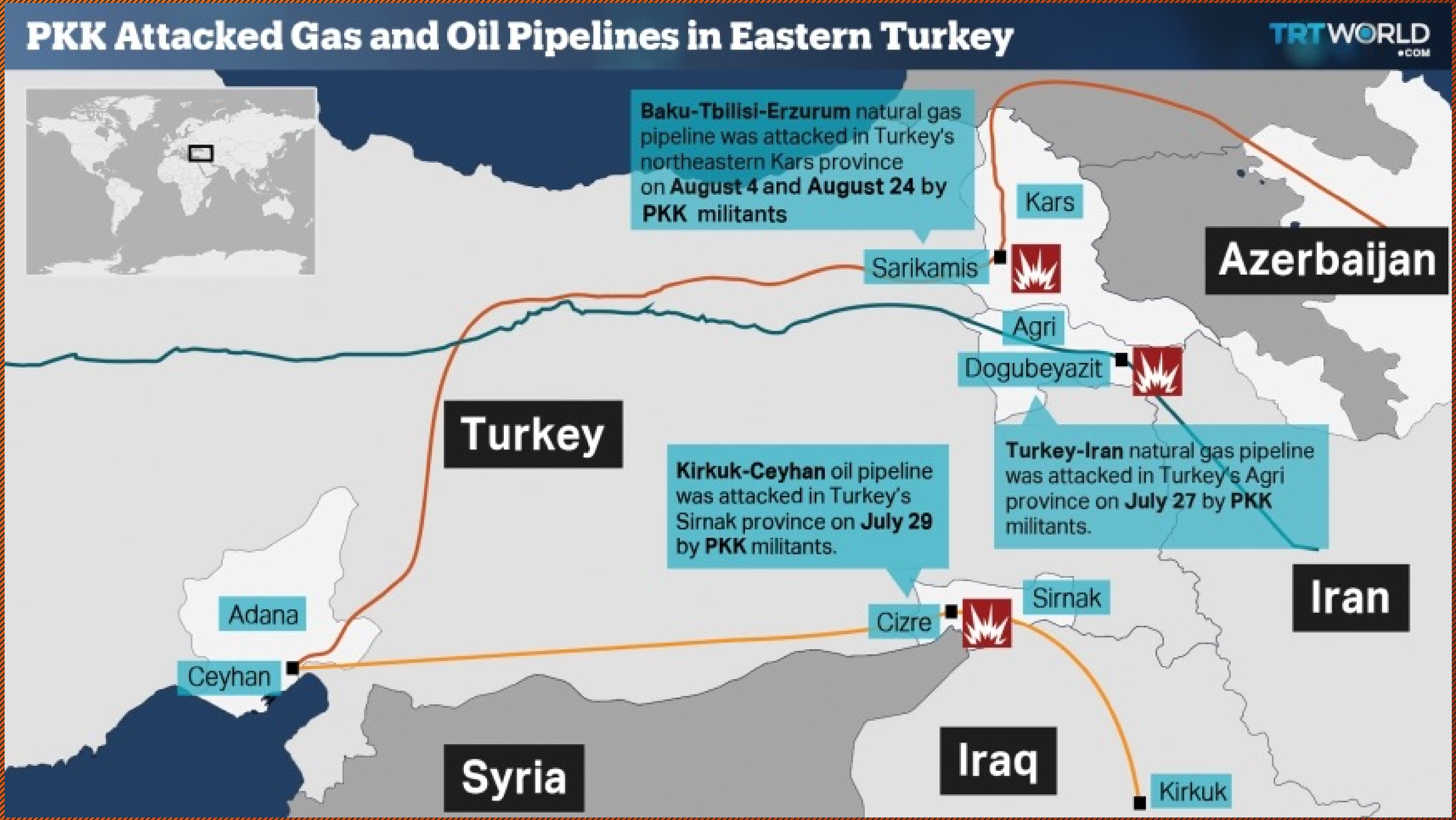
30 July 2015. PKK attack train carrying pipe for TANAP near Sarikamis in the northeastern Turkish province of Kars.

4 August 2015: PKK attack the Baku-Tbilisi-Erzurum (BTE) gasline near Sarikamis.

24 August 2015: PKK again attack the BTE line near Sarikamis.

2003 – 2015: Repeated attacks by various anti-Baghdad forces on the Iraqi section of the Kirkuk-Ceyhan oil pipeline.

MAP: A Month of Attacks



- PLUS attack on train carrying pipes to northeastern Turkey for construction of TANAP

TRT World 25 Aug 2015.
TRT is the Turkish Radio and Television Corporation.

Turkey: It really is a war

- “Today the Turkish Air Forces are actually waging a war. More than just a medium-scale war, it is fighting on two fronts.” The two fronts to which Commander Ünal was referring are southeastern Turkey and northern Iraq.
- Air Force Commander Abidin Ünal, October 2015.
- *Hurriyet*, “Top commander says Turkey ‘actually waging war’ since July,” October 6, 2015, http://www.hurriyetdailynews.com/Default.aspx?pageID=238&nID=89490&NewsCatID=338.

Casualty Estimates in Turkey's Renewed Kurdish War (since July 2015)

1. Government reported fatalities (May 2016):
- 483 members of the security forces;
- 2,583 PKK fighters and youth-wing militants in Turkey itself;
- 2,366 in air strikes in northern Iraq.

2. PKK reported fatalities (26 June 2016):
- 6,705 members of the security forces;
- 721 PKK fighters and militants.

3. Civilian fallout (The International Crisis Group, March 2016):
- 400 civilians killed;
- 350,000 people displaced.

Sources: Next Slide.

Sources: Casualty Estimates in Turkey’s Renewed Kurdish War (since July 2015)

Government claims: Ana Sayfa, “7 bin 78 PKK’lı etkisiz hale getirildi Kaynak: 7 bin 78 PKK’lı etkisiz hale getirildi,” Yenicag, May 23, 2016, http://www.yenicaggazetesi.com.tr/7-bin-78-pkkli-etkisiz-hale-getirildi-138066h.htm.

2. Hisham Arafat, “PKK claims killing 7,000 Turkish soldiers,” kurdistan24.net, June 22, 2016, http://www.kurdistan24.net/en/news/8c60f8cf-02e5-4037-8e6a-dd9dd4970941/PKK-claims-killing-7-000-Turkish-soldiers.

3. International Crisis Group, The Human Cost of the PKK Conflict in Turkey: The Case of Sur (Diyarbakir/Istanbul/Brussels, March 2016), http://www.crisisgroup.org/en/regions/europe/turkey-cyprus/turkey/b080-the-human-cost-of-the-pkk-conflict-in-turkey-the-case-of-sur.

Outages on Kirkuk-Ceyhan line

The PKK has on several occasions attacked the Kirkuk-Ceyhan pipeline. In August 2015, PKK sabotage disrupted flows with the KRG estimating the value of lost exports at $250 million.

February 17 to March 11, 2016. Line closed for 23 days. Cause not confirmed. No initial indication that the line had been damaged.
February 25, Turkish officials report an explosion

Losses to KRG: More than $13 million per day, roughly $300m in export revenues.

"It's not impossible that the Turks are sending a warning to Iraqi Kurdistan saying, 'You can only go so far before we yank your leash'." Marina Ottaway quoted by Keith Johnson, "A Mysterious Pipeline Closure Is Bankrupting Iraqi Kurds," Foreign Policy blog, March 2, 2016, http://foreignpolicy.com/2016/03/02/a-mysterious-pipeline-closure-is-bankrupting-iraqi-kurds/.

Northern Iraq: Gas from Kurdistan

The costs and consequences of Iraqi breakup & Kurdish independence.

Kurdistan-Iraq:

- Stranded production, not just stranded resources.
- November 2013: Government of Turkey signs a GSA with the KRG on gas exports to Turkey.
- Volumes set at initial 4 bcm/y in 2017, 10 bcm/y by 2020 and an option to move to 20 bcm/y thereafter. Current Understanding: Export start in 2018.
- Principal resource base: Genel Enerji’s fields at Miran and Bina Bawi.
- Kobani: What next?

The Sirnak-Mardin gasline

- **20 November 2016: KRG Minister of Natural Resources Ashti Hawrami and Genel Enerji Chairman Tony Hayward say Kurdistan-Iraq will be in a position to deliver 20 bcm/y to Turkey in the early 2020s.**
- **December 2015 (and April 2016) Turkey organizes a tender for construction of a 185-km, 20 bcm/y capacity pipeline from Sirnak on the Iraqi-Turkish border to a connection with the Turkish grid at Mardin.**
- **Fenruary 2016: After evaluating responses to the initial tender Botas says that the low bid of $29.8 million is still too much above the target cost of $25 million, and that a fresh tender will therefore be issued on 26 April 2016.**

Sirnak-Mardin: the PKK response

“We will not accept such an agreement to bolster Turkey and to let it stand on its feet since this agreement is a conspiracy putting the lives of the Kurdish nation at risk."

Statement by Demhat Agid, spokesman for the Group of Communities in Kurdistan (KCK), an offshoot of the PKK.
18 February 2016.

Russian & Turkish Energy Relations: August 2015

•7/8 July: Gazprom tells Saipem project is deferred.

•Talks on Turkish Stream on hold pending 1 November elections
Kommersant, 3 August 2015

"We have sent to Turkey two proposals on the intergovernmental agreement on the Turkish Stream pipeline. The first is on the construction of the first string, the second is on the construction of all four branches," the (Energy Ministry) representative said."
RIA Novosti, 7 August 2015

•**Turkey sends draft IGA to Russian Government 23 August 2015**
Kommersant, 23 August 2015

Russian & Turkish Energy Relations – Late 2015

- “Gazprom has cut the projected capacity of the yet-to-be-built Turkish Stream natural gas exports pipeline to 32bcm of gas, the gas monopoly's CEO Alexey Miller told Interfax. This figure takes into account the throughput capacity of the Nord Stream pipeline, Miller said.”

  RosBusiness Consulting 6 October 2015

- “We are Russia's number one natural gas consumer. Losing Turkey would be a serious loss for Russia. If necessary, Turkey can get its natural gas from many different places.”

  Turkish President Recep Tayyip Erdogan, 8 October 2015
  (following reports of Russian warplanes in Turkish airspace)

- “These are matters for Russia to think about. If the Russians don't build Akkuyu, another will come and build it.”

  Turkish President Recep Tayyip Erdogan, 8 October 2015.

- 24 November 2015. Turkish warplanes down Russian Sukhoi bomber over Turkish-Syrian borderlands.

Turkey: New Directions since 24 November 2015

3-4 December 2015: Turkish Prime Minister Ahmet Davutoglu discusses possible increased gas supplies and speeding up of TANAP during visit to Baku.

7 December 2015: SOCAR Turkey’s president Kenan Yavuz declares in Baku:
“As the operators of TANAP, we will see what can be done more for completing the project earlier.”
Re TAP, “until its construction is completed, Turkey can use more gas from TANAP than it was planned previously.”
"During 2023-26 years when TANAP's capacity increases to 31 bcm, there will be a greater opportunity for Turkey because when necessary, all the additional capacity can be used in Turkey….”
“Also, when Turkmenistan's gas reserves are connected to TANAP….”

9 December 2015: Tehran halves routine 28-30 mcm/d supply to Turkey citing wintry conditions in Iran (brief halt only).

11-12 December: President Erdogan visits Turkmenistan – with gas on the agenda.

(5 January 2016: Turkmenistan declares Russia has stopped buying its gas.)

South Stream & Turkish Stream 2014-2015

South Stream: Contracts awarded but failure to comply with EU legislation.

Turkish Stream in 2015 – and 2016???

Source: Gazprom

1 Dec 2014: Turkish Stream launched by Putin in Ankara.

I July 2015: Italian pipe laying vessels leave Burgas for Anapa.

8 July 2015: Vessels told they will not be needed this year.

24 Nov 2015. Turkish warplanes down Russian bomber over Turkish-Syrian borderlands.

Ukraine’s EEZ and South Stream Black Sea Routes

Source: East European Gas Analysis

Conclusions

The Turkish-Russian rapprochement and the revival of Turkish Stream:

- The challenge to Ukraine and gas transit across Ukraine
- The potential to thwart the expansion of the Southern Gas Corridor

The consequences of intensified warfare within Turkey:

- The risk to TANAP and the Southern Gas Corridor
- The elimination of gas from Kurdistan
- Repercussions for Cyprus & East Med gas flows

Insurance mechanisms:

- Diversified Infrastructure in Europe
- LNG from Atlantic & Gulf suppliers
- Marine-based development of East Med gas.

Questions?

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