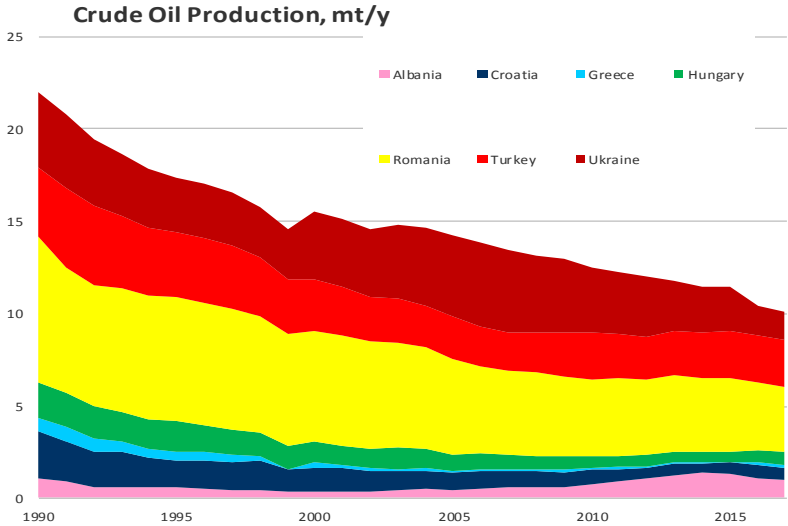


**3rd SE Europe Hydrocarbons Upstream Workshop**  
*Royal Olympic Hotel, Athens, October 30-31, 2018*

**Presentation BBSPA**

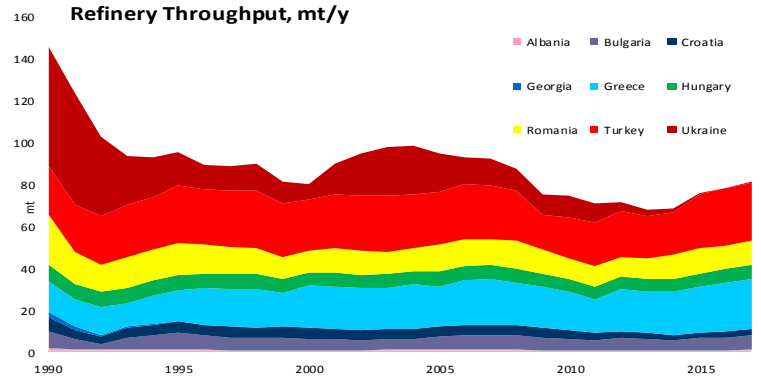
Valentin Kunev  
Manager, BBSPA

# Oil production and consumption (refinery throughput) in the BBS Region



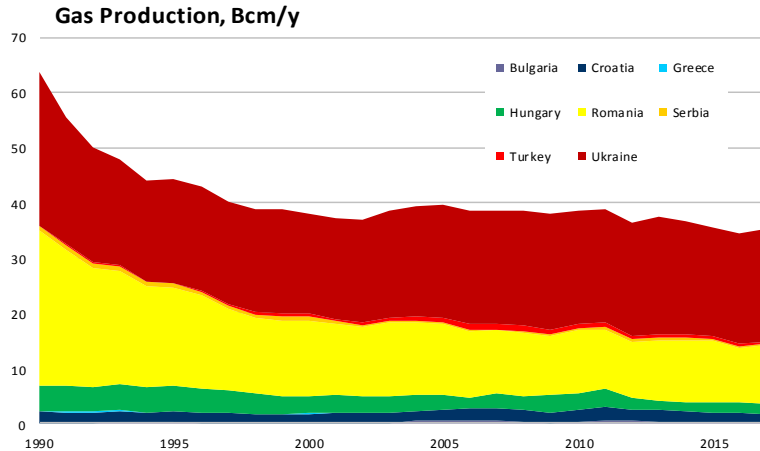
Crude oil output in 2017 down by 4%

Hungary slightly increased production while Albania, Romania, Ukraine and Turkey decreased



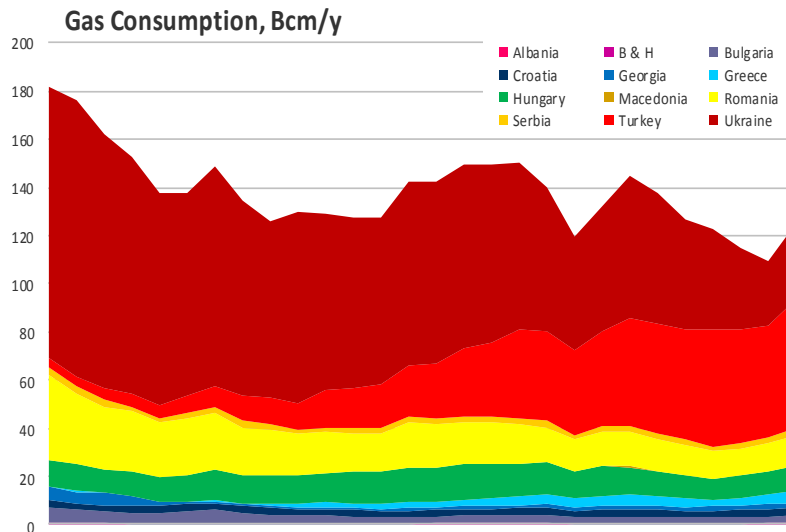
The need for oil in the region increased. Refinery throughput was up 4%

# Gas production and consumption in the BBS Region

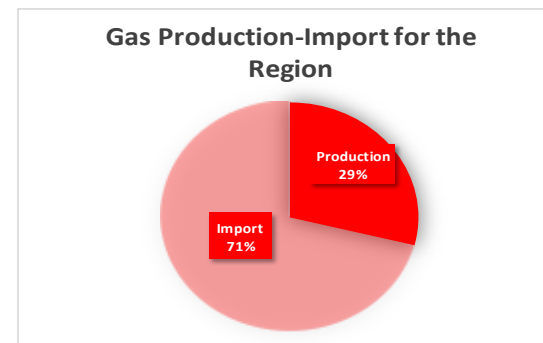
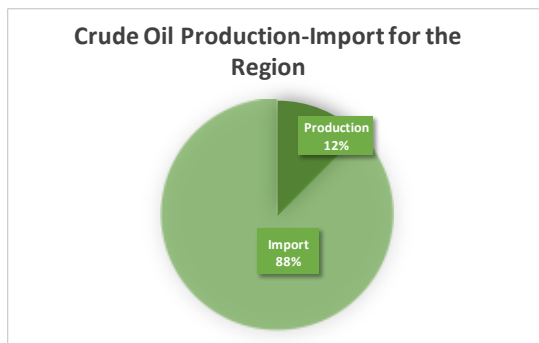
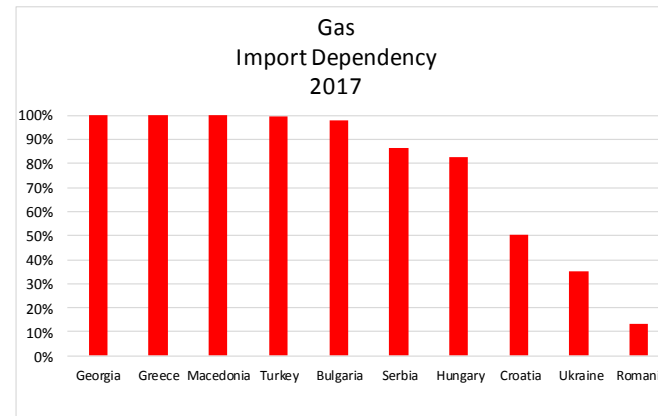
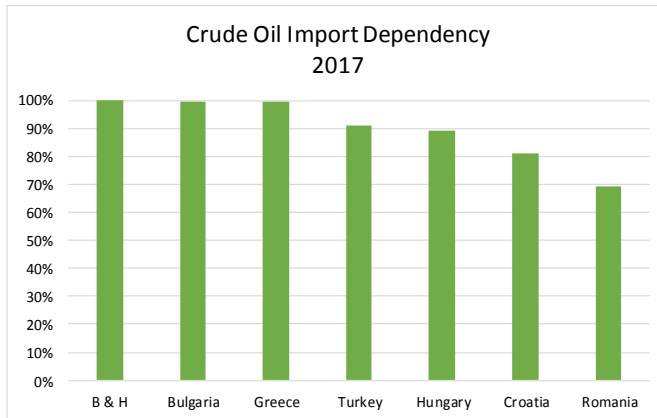


Gas output in 2017 up by 2% due to increase in Romania and Ukraine

Demand up by 15%, concentrated in Turkey and Ukraine



# Oil and gas import dependency in the BBS Region



In 2017 the region produced 12% of the total quantities processed in the refineries, while 88% was imported. Countries were more than 60% dependent on oil import.

The gas produced in 2017 was 29% of the total consumption, while 71% was imported. The majority of the countries were more than 80% dependent on import. Croatia and Romania were less than 50% dependent on gas import.

# Gas Pipeline Projects in the BBS Region

| Projects/Phase                               | Idea/Concept | Feasibility Study | Design | Construction |
|--|--------------|-------------------|--------|--------------|
| <b>Existing Projects</b>                     |              |                   |        |              |
| TAP  |              |                   |        |              |
| Turkish Stream                               |              |                   |        |              |
| Greece-Bulgaria                              |              |                   |        |              |
| BRUA   |              |                   |        |              |
| KRK LNG Project and related infrastructure   |              |                   |        |              |
| Poland- Slovakia Interconnectio              |              |                   |        |              |
| Turkey-Bulgaria                              |              |                   |        |              |
| Bulgaria-Serbia                              |              |                   |        |              |
| Ionian-Adriatic Pipeline                     |              |                   |        |              |
| Croatia – Slovenia Interconnection           |              |                   |        |              |
| Slovenia-Hungary gas pipeline project        |              |                   |        |              |
| AGRI   |              |                   |        |              |
| Alexandroupolis/ Kavala LNG Project          |              |                   |        |              |
| Balkan Gas Hub                               |              |                   |        |              |
| Podisor-Black Sea                            |              |                   |        |              |
| Tesla Project                                |              |                   |        |              |
| Eastring                                     |              |                   |        |              |
| Romania - Serbia                             |              |                   |        |              |
| Vertical Gas Corridor                        |              |                   |        |              |
| White Stream                                 |              |                   |        |              |
| EastMed                                      |              |                   |        |              |
| <b>Cancelled Projects</b>                    |              |                   |        |              |
| Nabucco                                      |              |                   |        |              |
| Poseidon                                     |              |                   |        |              |
| South Stream                                 |              |                   |        |              |
| <b>Commissioned projects</b>                 |              |                   |        |              |
| TANAP  |              |                   |        |              |
| Bulgaria- Romania Gas Pipeline               |              |                   |        |              |
| Moldova-Romania Gas Pipeline Interconnection |              |                   |        |              |
| Hungary – Croatia Gas Interconnection        |              |                   |        |              |
| Hungary – Romania Gas Interconnection        |              |                   |        |              |
| Slovakia – Hungary Gas Pipeline              |              |                   |        |              |
| Vojany-Uzhgorod gas pipeline                 |              |                   |        |              |

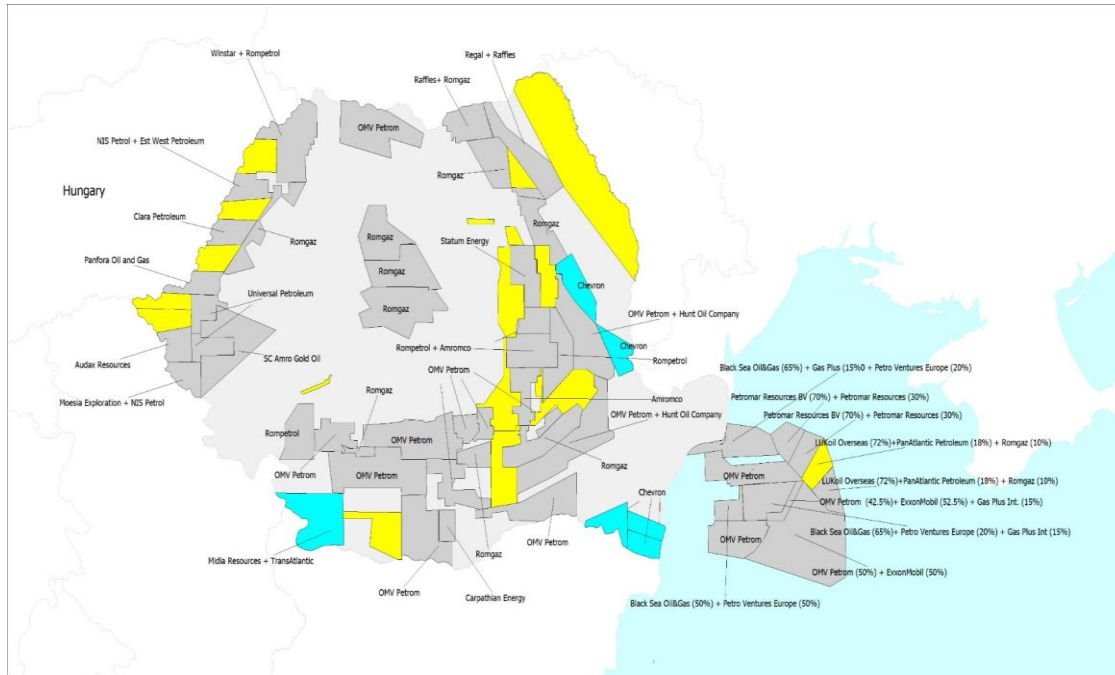
All projects will bring gas from outside the region. The projects either will change the routes of Russian gas supply or the supply source – Azerbaijan, LNG or Eastern Mediterranean new discoveries.

One project, however, will bring new gas internally: Podisor – Black Sea

Some projects are on the stage of construction, others are about to start. Some are less certain.

But realities show that sometimes less certain projects happen first

# Romanian Exploration Blocks



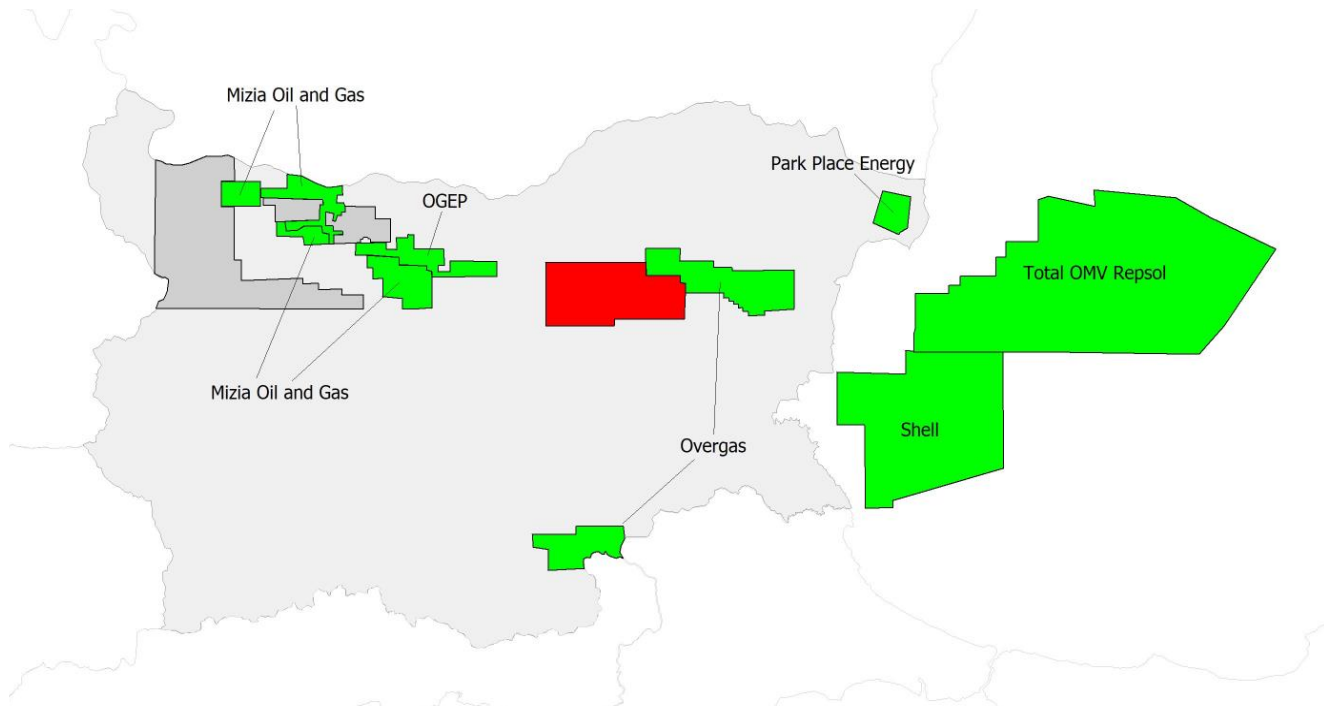
Relinquished, or to be relinquished

Free block

Active license

- OMV Petrom offshore production: 0.29 mt/y and 1.36 Bcm/y
- Black Sea Oil & Gas, Ana and Doina gas fields: 10-20 Bcm reserves
- Domino gas discovery: 40-80 Bcm
- LUKoil/ PanAtlantic/Romgaz gas discovery: 30 Bcm

# Bulgarian Exploration Blocks



Petroceltic holds a gas field of 0.3 Bcm reserves

Total/OMV/Repsol drilled two deep water wells, one more to start

Shell plans to drill one deep water well

Bulgarian energy ministry prepares a tender for one deep water block

Relinquished block    Active license    Closed tender    Ongoing tender

# Deep water wells in the Black Sea

## Romania

**Domino 1** well + 7 more appraisal wells at the water depth of 900 m drilled by OMV/Exxon in Neptun block to the depth of 3600 m. Gas discovery in Miocene Siliclastic reservoirs. Biogenic gas. 40-80 Bcm reserves.

**The Lira-1X** well + one more well drilled at the water depth of 700 m, drilled by by LUKoil/Pan-Atlantic/Romgaz in Trident block to the total depth 2700 m, 30 Bcm of reserves.

## Bulgaria

**Polshkov well + 1 more well** drilled in Han Asparuh block at the depth of 2000 m by Total/OMV/Repsol. Oil finding reported.



# Deep water wells in the Black Sea

## Turkey

**Sile 1** well drilled by Shell/TPAO in 2015 at the water depth of 2000 m to the depth of 3920 m in the block on the border with Bulgaria.

**Sinop 1** well drilled by TPAO/Petrobras/ExxonMobil at the water depth of 2200 m to the depth of 5525 m in the block bordering with Bulgaria.

**Surmene 1 well** drilled by TPAO at the water depth of 2000 m to the depth of 4830.

**Yassihoyuk 1** well drilled by TPAO at the water depth of 2000 m to the depth of 5300 m.

**Kastamonu 1** well drilled by ExxonMobil and TPAO at the water depth of 2200 m to the depth of 5000 m.

# Deep water wells in the Black Sea

## Russia

**Maria 1** well drilled by Eni/Rosneft at the water depth of 2000 m to the depth of 6126 m.

## Summary

18 wells were drilled in the deep waters of the Black Sea, from which 8 wells at the depth of 2000 m and more.

FID to be made for Domino discovery.

Planned wells in Bulgaria and Turkey

Thank you for your attention