The Oil Drum
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Tech Talk - The Potential for Future Production from Romania

Posted by Heading Out on January 23, 2012 - 1:57pm
Topic: Supply/Production
Tags: black sea, crude oil production, natural gas resources, ploetsi, romania, ukraine [list all tags]

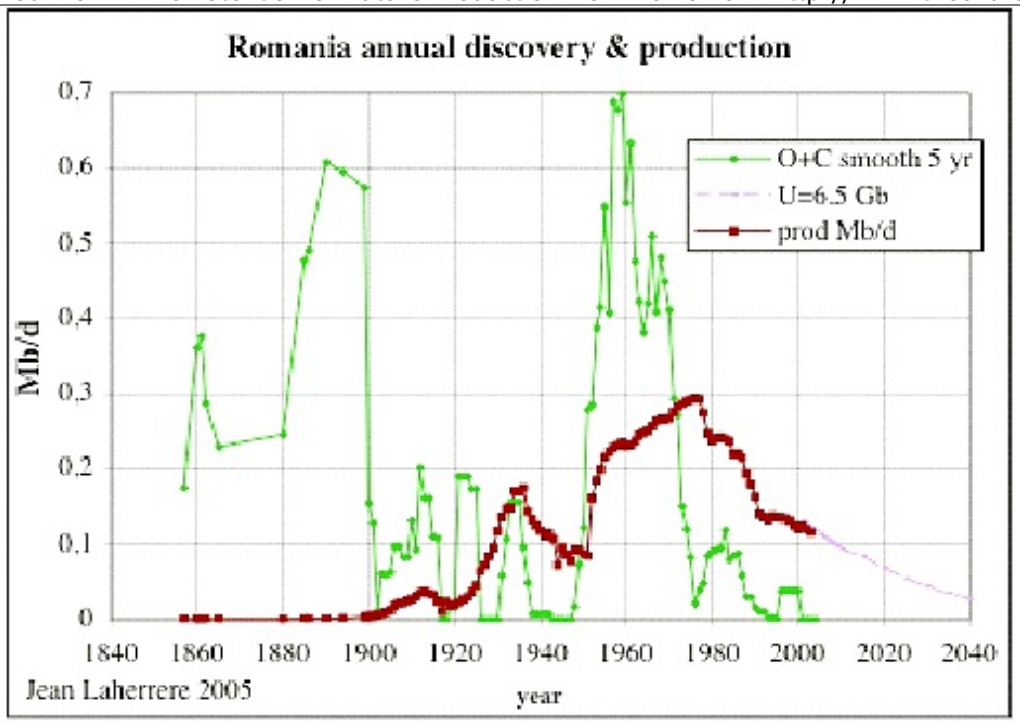
There are violent protests taking place in Bucharest, Romania, which carry with them the threat of destabilizing the government, as we have seen in countries which lie further south. But while countries involved in the "Arab Spring" have oil and natural gas that are being exported, Romania is no longer a leader in production and export of petroleum products, and now imports them. Yet back in 1837, it was reportedly the first country to have an oil industry, reaching a production of 1719 barrels a year. It was also, in 1900, the first country to export gasoline, at a time when it was producing some 5,000 barrels a day. That made it the then third largest producer in the world. But by the 1930's the country had fallen to seventh place, even though Romania was still the second largest producer in Europe, behind the Soviet Union.

By the time of the Second World War, the oil fields of Ploetsi were underpinning the operations of the German military machines, providing an estimated third of that country's need. Attempts to bomb the fields were prolonged and, though they were not always successful and the fields and refineries continued to provide fuel for most of the war, the continued bombing finally got production down to 7% of capacity.

Location of Romania and Ploiesti (Home of Heroes)

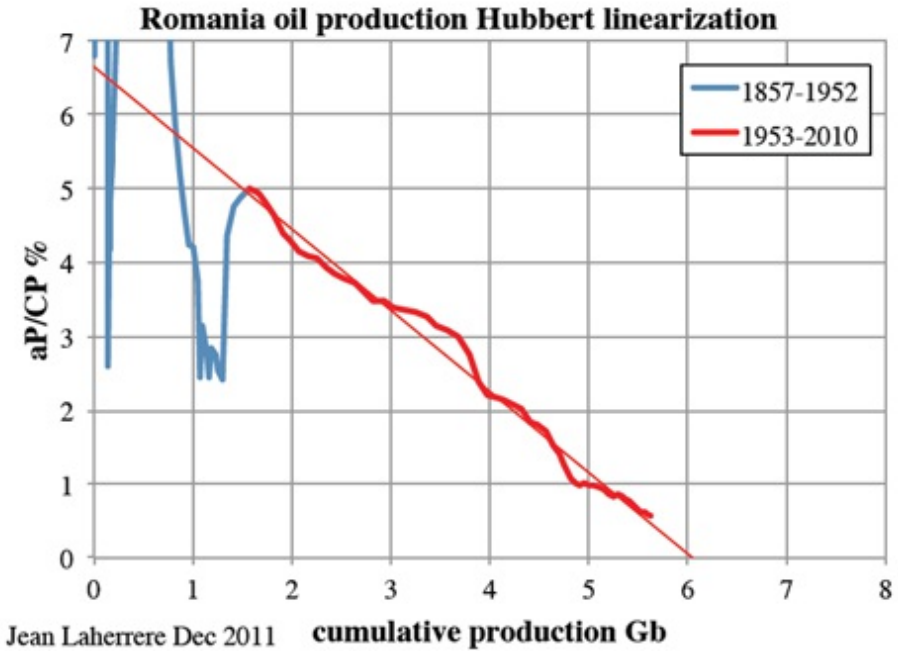
UPDATE: I have added Jean Laherrere's more recent prediction below the fold.

Following the war, the region fell into the Soviet zone of influence. Production picked up and rose until 1980, following which, it has declined until fairly recently.



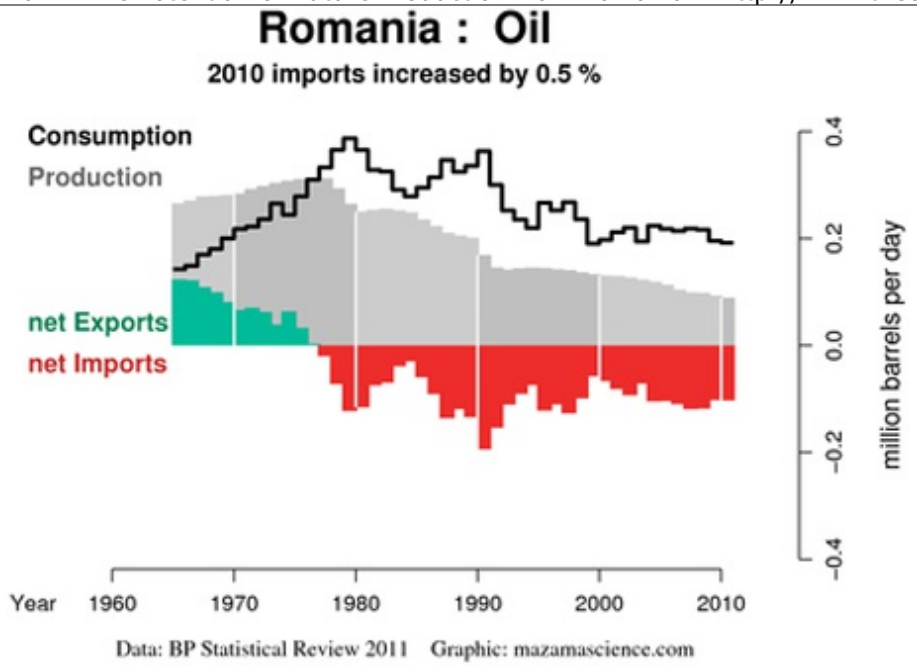
Annual production and discovery (Jean Laherrere)

UPDATE: Jean Laherrere has been kind enough to update this figure with a more recent plot, as follows, and I thank him for the kindness.



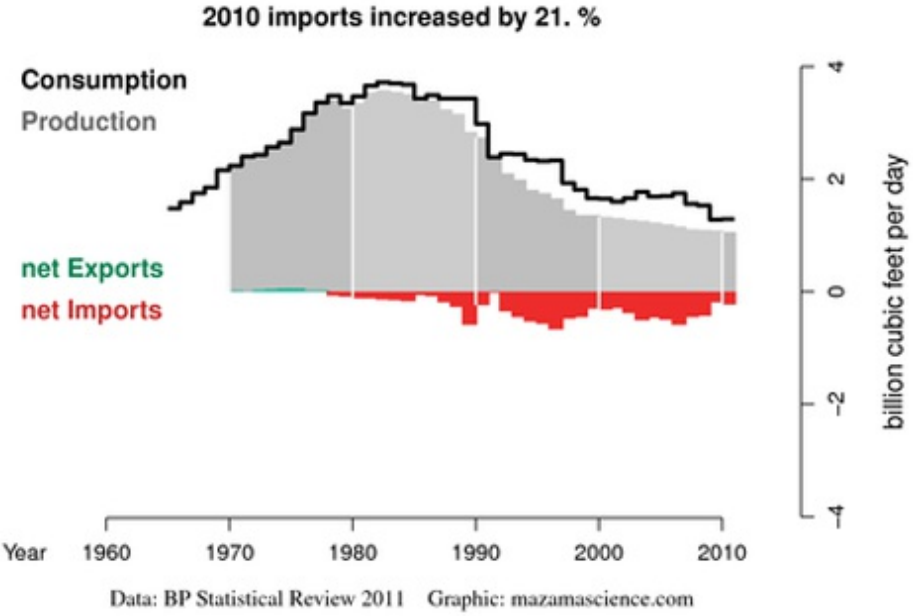
Jean Laherrere's new Romanian Prediction

More recently, as demand has continued to rise, the country has had to rely increasingly on imports.



Recent Romanian oil balance (Energy Export Databrowser)

Similarly, peak natural gas production was also around 1980, with the country barely keeping a declining supply in tune with falling demand since then.

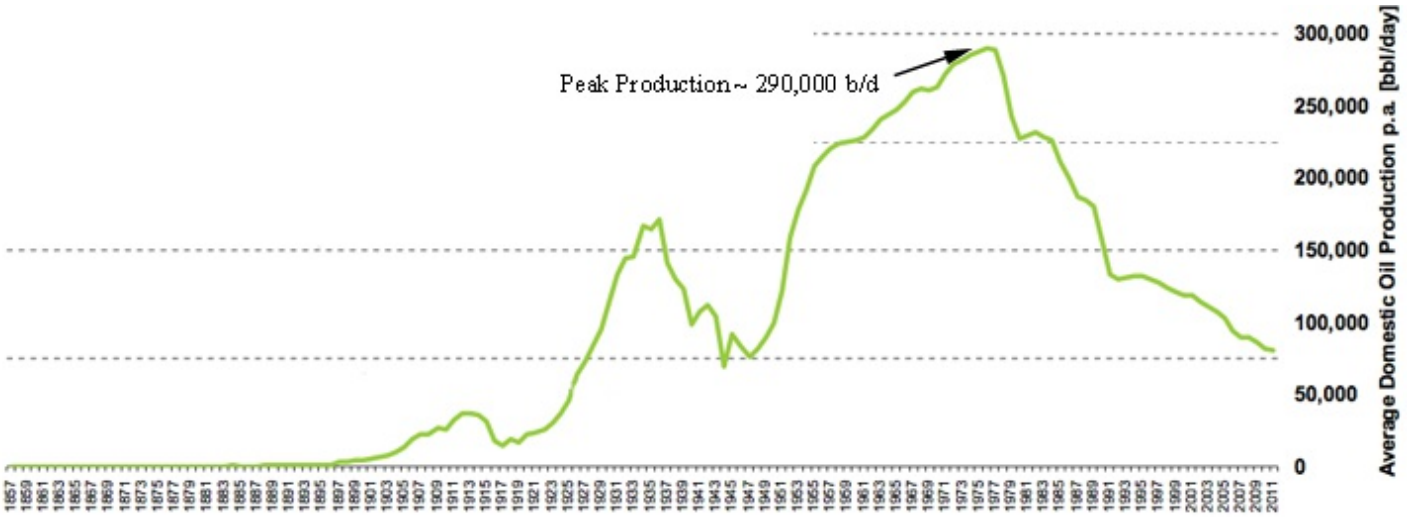


Recent Romanian natural gas production (Energy Export Databrowser)

(The country started nuclear production in the late '90s and has significant coal production.)

The nine oil fields in the Ticleni region, one of the older oil producers in the country, has just changed management hoping thereby to increase production of 4,500 bd from some 300 wells to over 6,000 bd.

Seismic exploration, introduced after WW II, helped make the majority of the discoveries that led to peak oil production in 1976. It has been the use of 3-D seismic that revealed much of the potential not developed in the past.



Romanian oil production and peak (Petrom)

Petrom was privatized in 2004, and began paying a dividend in 2010. Exploration offshore began in 1975, with oil production starting in 1987 from the Lebada East Field. By the end of 2010, total production from a total of 250 fields had risen to 174 kbd.

Encouraged by recent activity, Melrose has begun investing money in the offshore Black Sea. This follows a recent trend in which the Deepwater Champion entered the Black Sea to drill off Turkey, last March. Just this month it has moved off the Romanian coast, after having terminated work at two sites off Turkey. Drilling is under an ExxonMobil/Petrom partnership, with Exxon Mobil providing the funds. If the initial well proves out, plans are to invest more than $3 billion in developing the prospect.

The historic fields have all been onshore around Torcesti for oil and Mamu for natural gas, while the new fields offshore are in deeper water, such as the Delta. It is currently anticipated that crude oil reserves are around 420 million barrels, with some 2 Tcf of natural gas, though there is potential for more.

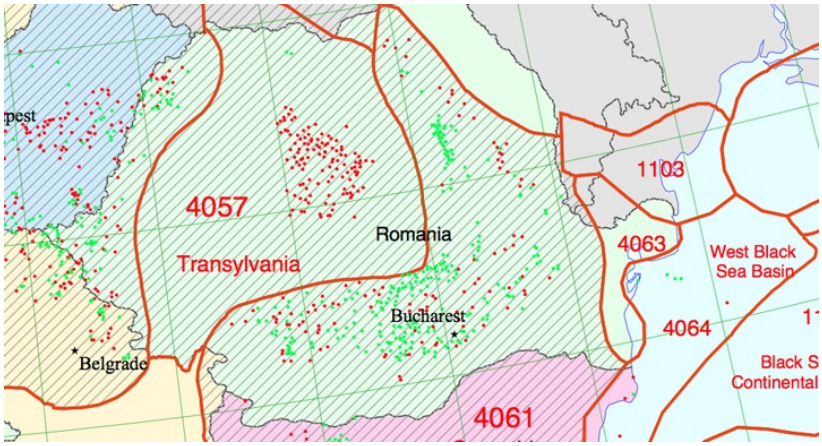
Map of the Black Sea showing the relative position of Romania. (World Atlas)

There is still an ongoing effort to redevelop mature oilfields in the country; steam injection will be tried this year using long horizontal holes, rather than the vertical used to date, in the heavy oil

SUPLAC field in the west of the country. Water injection is to be tried in the OPRISENESTI field in the East, and polymer injection is being considered for the VIDELE field in the South. VIDELE was earlier the site for a successful World Bank funded project that used in-situ combustion to try and reverse the declining production of this and the BALARIA fields. The treatment was intended to increase ultimate oil recovery from 15% to 39% of the OIIP. In 1998, Supalcu de Barcau was the largest in-situ combustion project in the world, with about 9,000 bd of production.

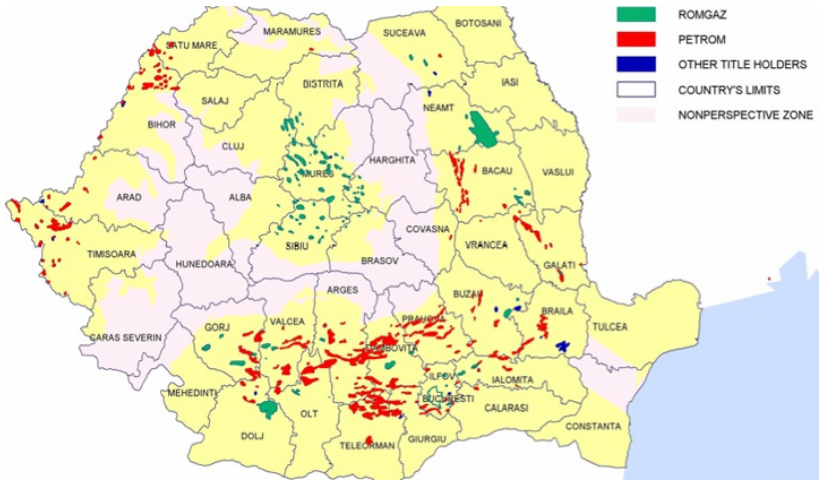
More recently, the discovery of a new reservoir in the TOTEA gas field, and a new well currently on test, has the potential to be the largest gas find on shore in six years.

However, much of the future looks deep offshore in the potential of fields such as the NEPTUN. (Though the company is hedging its bets by also building a wind farm).



Romanian oil and gas fields (USGS)

The new exploration and development is shared between Petrom and Romgaz, who have 55% of the natural gas sites in the country.



Romanian concession holders (Romanian National Agency for Mineral Resources)

Offshore production from the Histeria Block

While the current production from the Delta IV field is on the Continental Shelf, the new exploration is ranging into the deeper waters of the NEPTUN field, where the Deepwater Champion program is scheduled to last some 90 days. Water depth fluctuates from 160 ft to 5,500 ft over the field, but the first hole has been spudded in 3,200 ft of water. The field is a hundred miles offshore, and has undergone the largest 3-D seismic survey in Romanian history prior to the drilling program.

Deepwater Champion (Transocean)

The maritime dispute with Ukraine was settled in 2009, setting up the bidding offshore, and estimates for the Neptun field run up to 3 Tcf of natural gas and 73 million barrels of oil. Unfortunately, even if these discoveries pan out they are unlikely to have much impact on the problems in Bucharest, although perhaps by the time that oil is brought ashore, they will be over and production might be sufficient to help with the country's budgets. But that thought includes a lot of possibly wishful thinking . . . and that future will not be here for several years yet, even if it should come to pass.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