

OPEC quotas and crude oil production

It is hard to obtain reliable graphs of OPEC oil production and quotas and to know how the quotas are decided. The few graphs that I found are incomplete and inaccurate.

OPEC website http://www.energyintel.com/print_me.asp?document_id=657213&pID=1 reports the oil production allocations (quotas or ceilings) from April 82 to Nov 2007, but OPEC 2009 annual report extends the data up to Dec 2009 with the total (24.845 Mb/d without any detail since January 2009).

Energy Intelligence http://www.energyintel.com/print_me.asp?document_id=657213&pID=1 gives the breakdown by country as target since 2009.

Quotas are agreed by each member during OPEC meetings, but the detail of the compromise is not given, only the results.

Quotas started in 1982 and are called now production allocations or ceilings. The base for estimating allocation quotas is given by Rafael Sandrea Oil & Gas Journal Volume 101.29 (July 28, 2003) http://www.ipc66.com/publications/OPEC_Nex_Challenge_quota_system.pdf “*OPEC’s Next Challenge – Rethinking their Quota System*”:

-Proposed Formula for Allocations

In 1986, OPEC conducted an in-depth analysis of their system of allocating quotas with the view to set up a durable formula, equitable to all members. They defined eight criteria, falling into two categories: oil related and socio-economic. The factors considered were:

- Reserves*
- Production capacity*
- Historical production share*
- Domestic oil consumption*
- Production costs*
- Population*
- Dependence on oil exports*
- External debt*

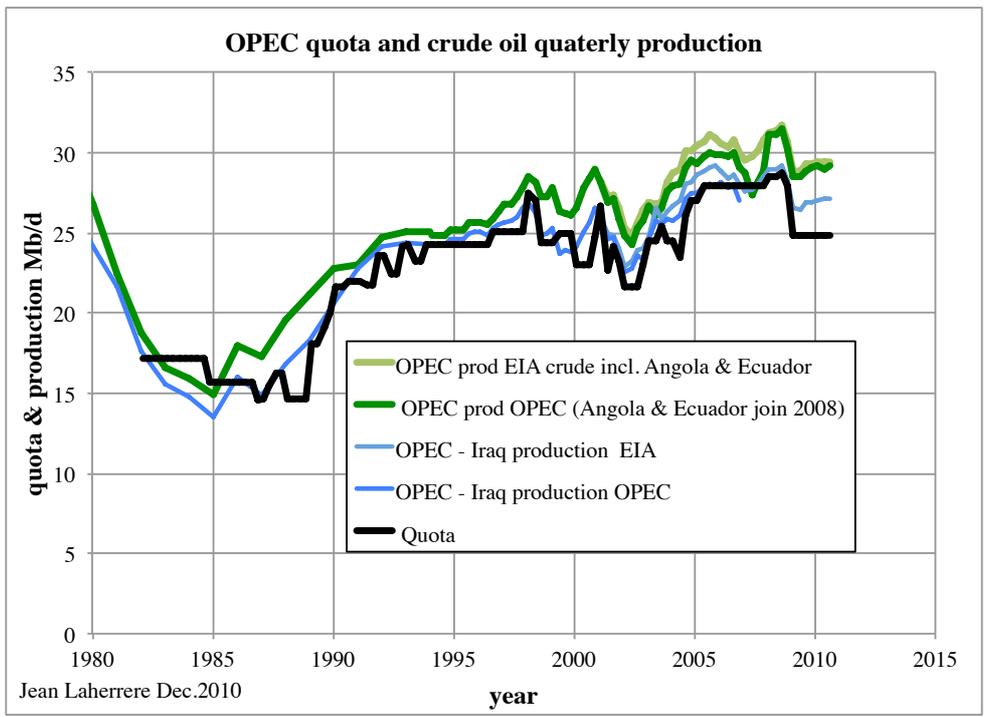
A previous paper “*Fairness Measures and Importance Weights for Allocating Quotas to OPEC Member Countries*” Ahmad Saleh Alsalem, Subhash C. Sharma and Marvin D. Troutt The Energy Journal, 1997, vol. 18, issue 2, pages 1-22 <http://econpapers.repec.org/article/aenjournal/1997v18-02-a01.htm> indicates the main factors: proven reserves, productive capacity, GDP and domestic investment needs. The conclusion on the violation of the quotas on the period March 1982-June 1990 was that *Venezuela seems to be the only member to violate the production agreement even though apparently fair quotas were assigned.*

The comparison between OPEC quotas and crude oil production is disturbed by the variation of the number of members. OPEC started in 1960 with 5 members Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. The other members are Qatar 1961, Indonesia 1962 suspending in 2009, Libya 1962, UAE 1967, Algeria 1969, Ecuador 1971 suspending Dec 1992 to Oct 2007, Angola 2007 and Gabon 1975-1994. Iraq quota was suspended in 1988 and since 1999

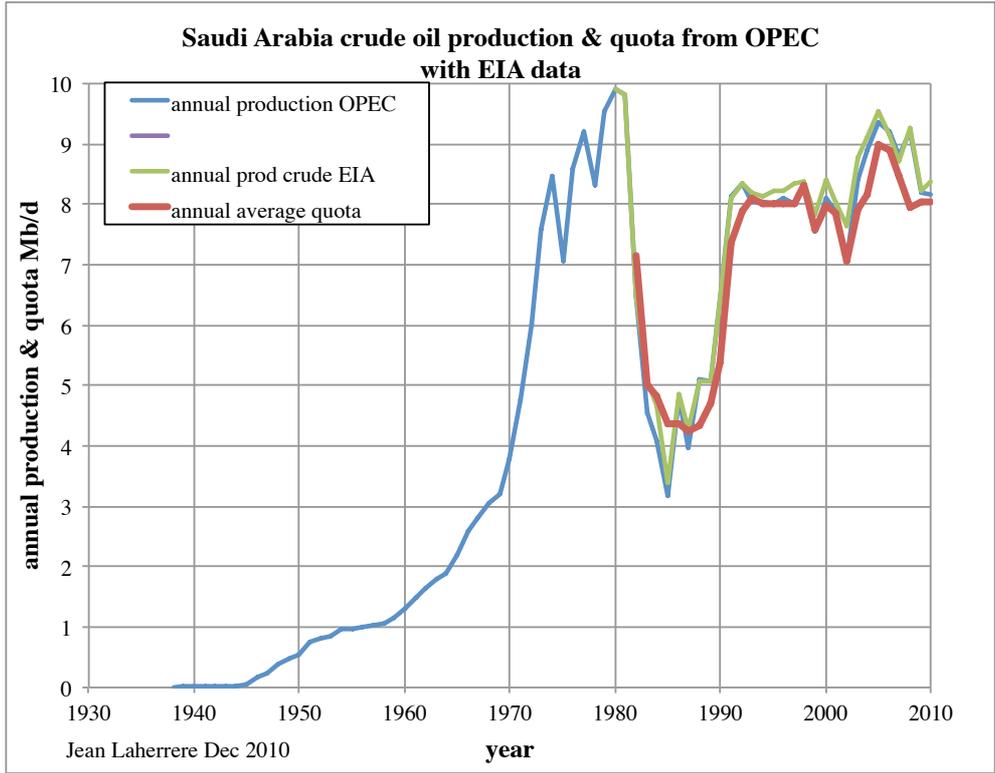
OPEC annual reports publish the annual and cumulative crude oil production of its members, but not the other liquids and in particular condensate which is excluded from the quotas. Monthly OPEC bulletins report crude oil production up to November 2010.

In contrary USDOE/EIA reports for each country since 1980 the crude oil and condensate production (because in the US condensate at wellhead is not distinguished from crude oil) (<http://tonto.eia.doe.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=57&aid=1&cid=&syid=1980&eyid=2010&unit=TBPD>) and for OPEC members the crude oil production (table 42).

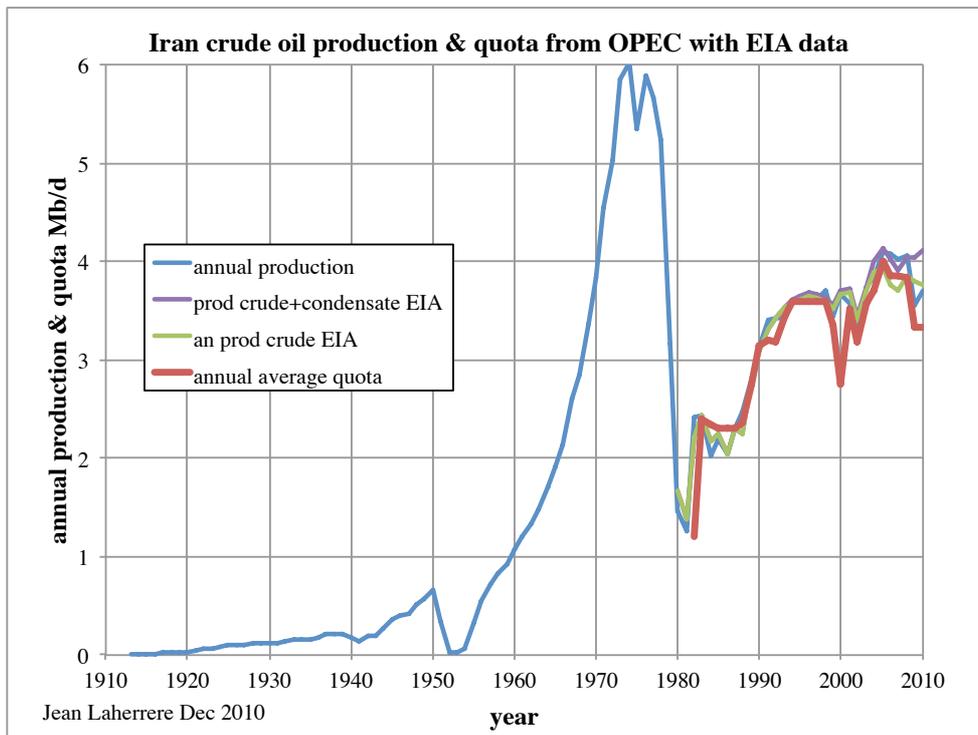
The number of members varying, OPEC global production is not the best graph to look at. It is n more interesting to look at each OPEC member ranked with the peak production



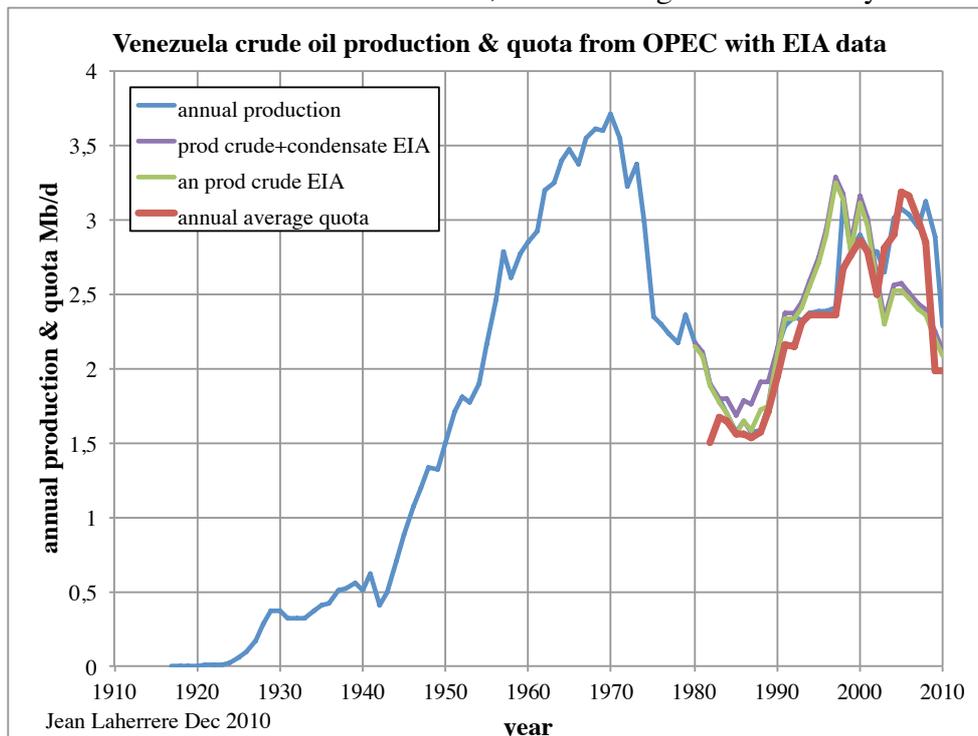
The largest producer Saudi Arabia was the swing producer and its production follows fairly well the quota, being a little over producing since 2002



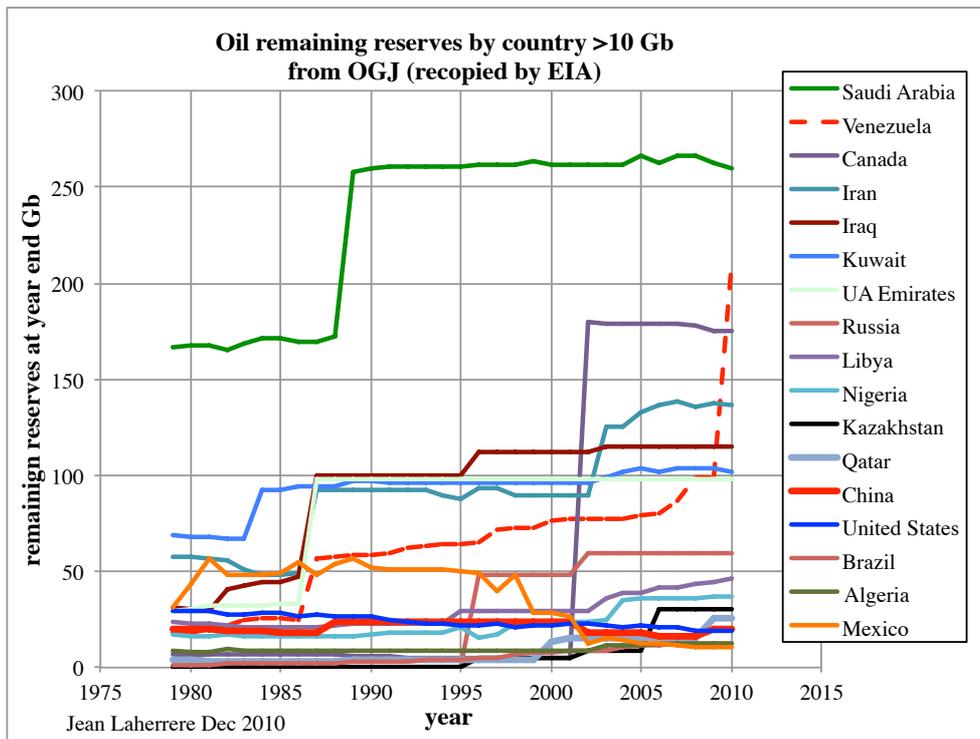
Iran production follows quotas except for last two years!



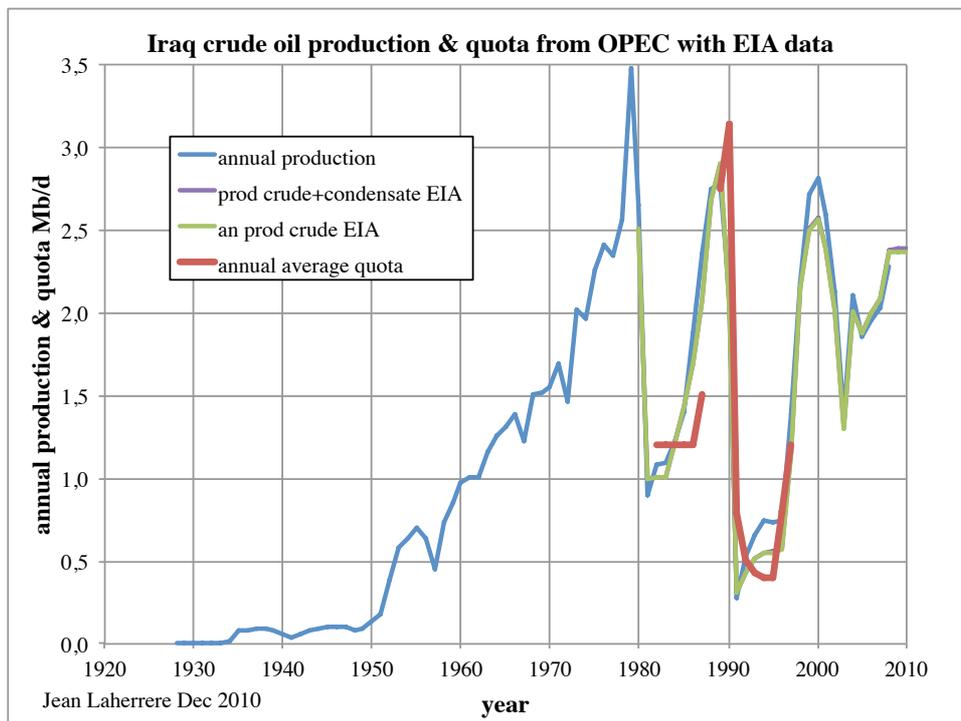
Venezuela was overproducing until 2001 but with the collapse of production after Chavez fight with PDVSA and nationalisation, production data are unreliable with a large discrepancy between OPEC data and EIA data! OGJ in its *worldwide look at reserves* 6 Dec 2010 has increased at end 2010 Venezuela reserves from 99.38 Gb to 211.2, Gb including the extra-heavy oil like for Canada!



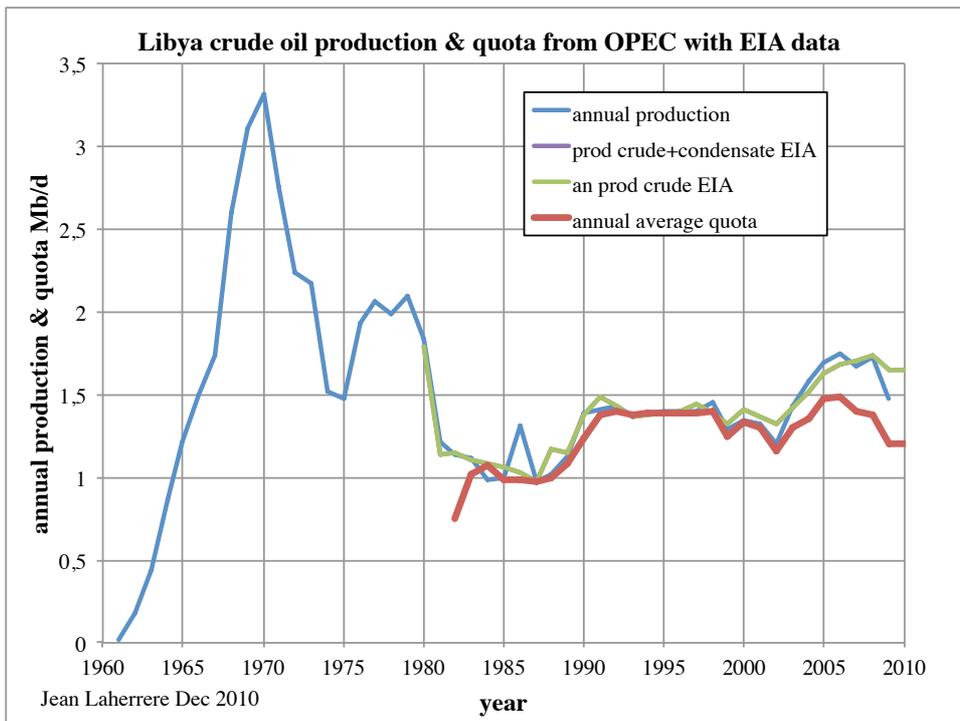
The remaining reserves (so called proved reserves at year end estimated before the end of the year with an enquiry carried out by OGJ and recopied later by EIA) is plotted from 1979 to 2010 for country over 10 Gb. Venezuela oil political reserves increase, but production decreases!



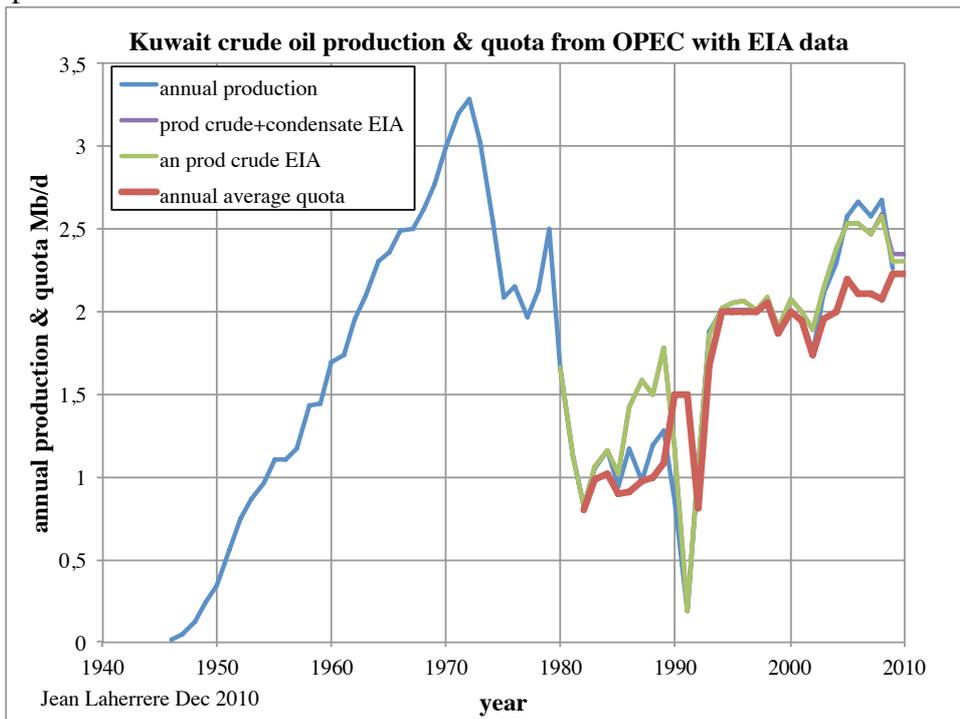
Iraq quota has been suspended since April 1998.



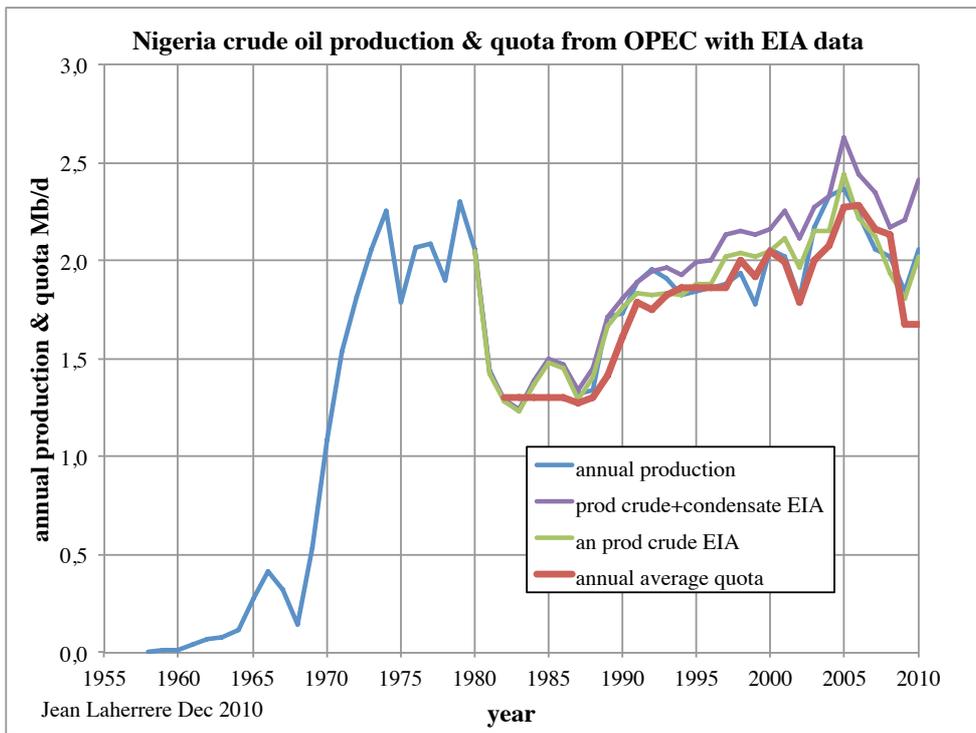
Libya is overproducing lately



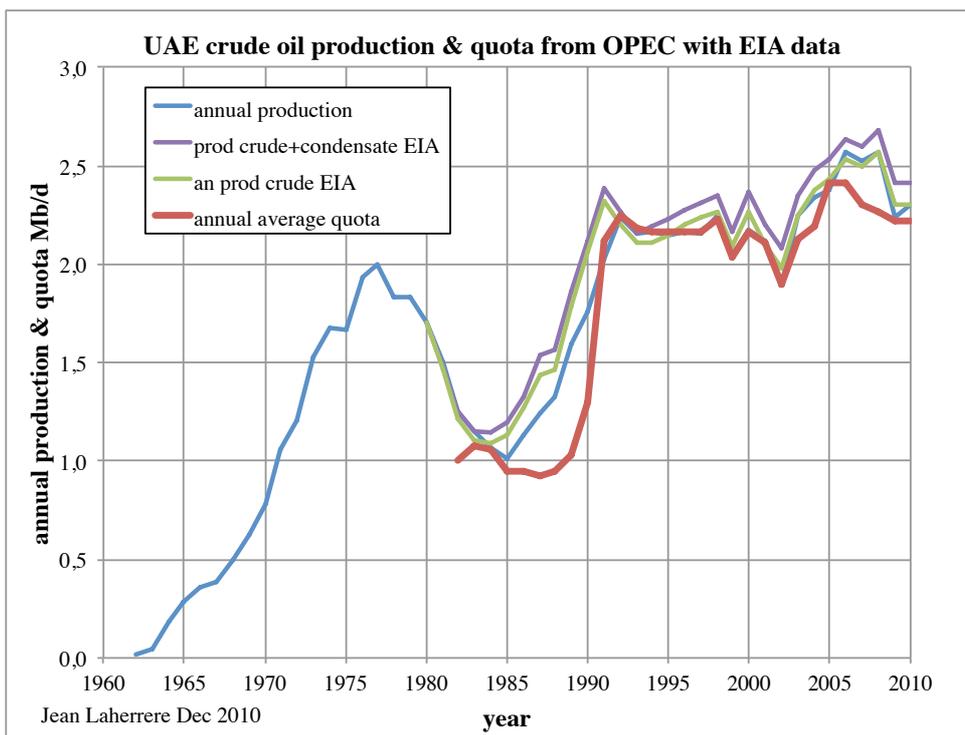
Kuwait overproduced since 2003



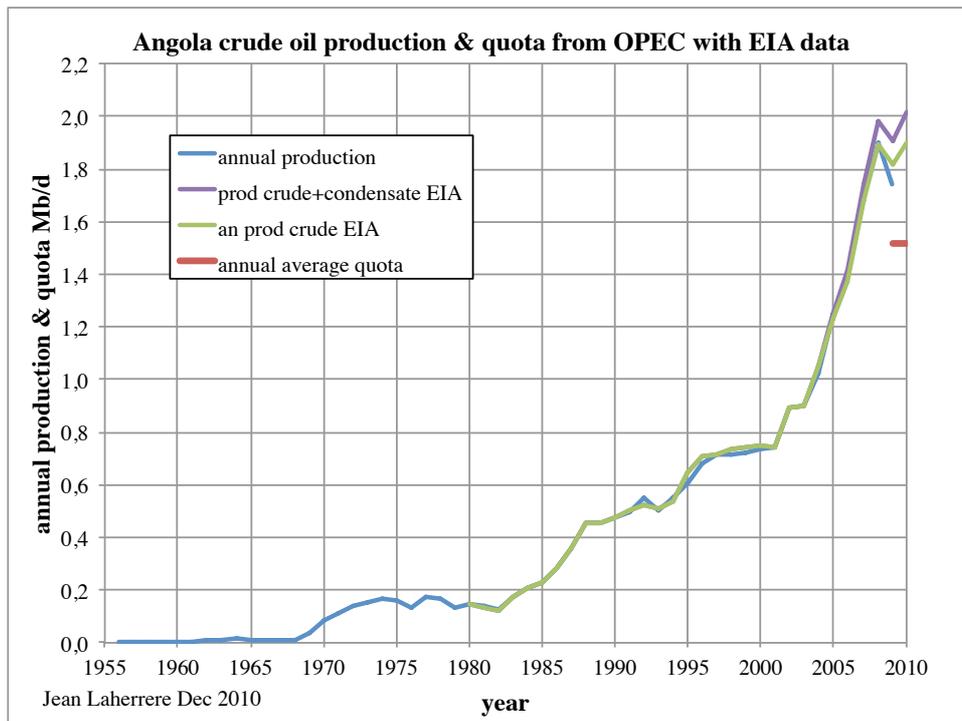
Nigeria in 2007 was underproducing, but not anymore



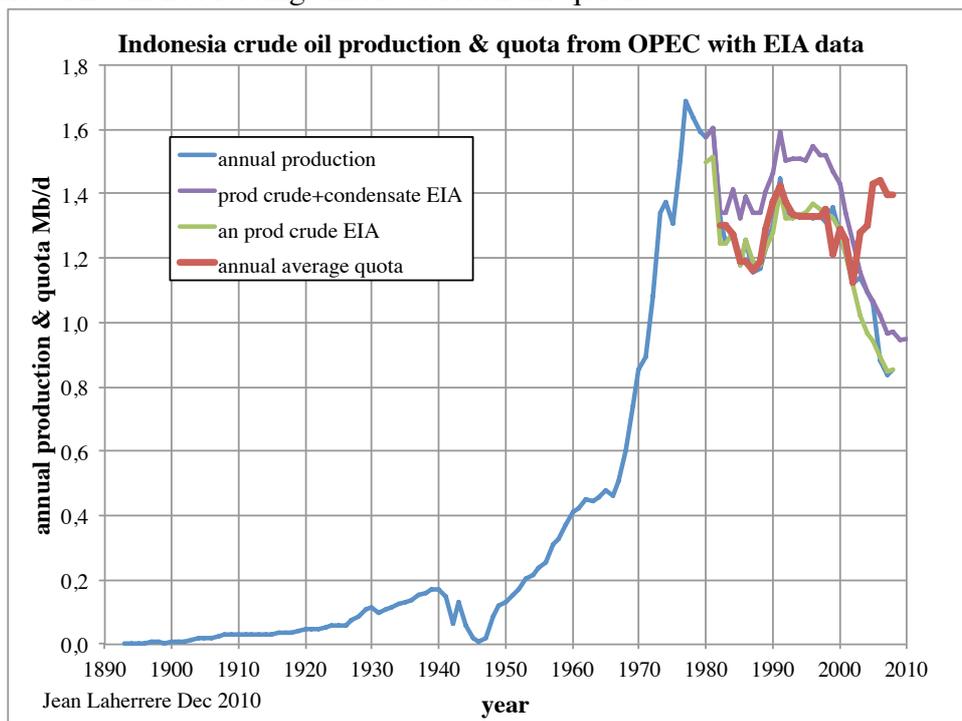
UAE also overproduces since 2006



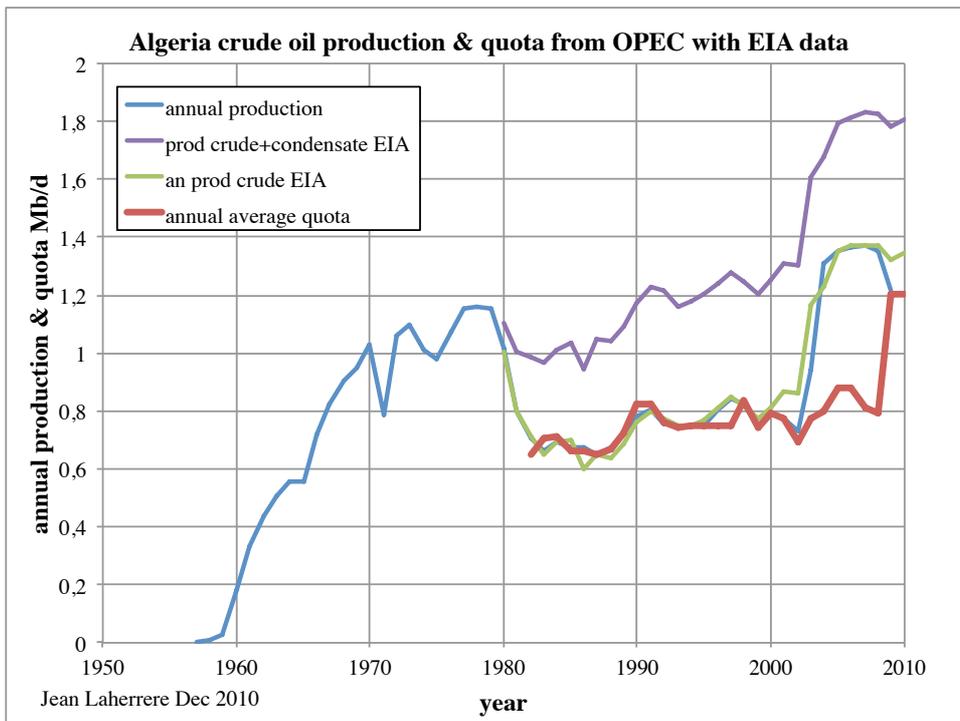
It is strange for Angola going through a large oil production increase since 2001 to join OPEC with quota in 2009!



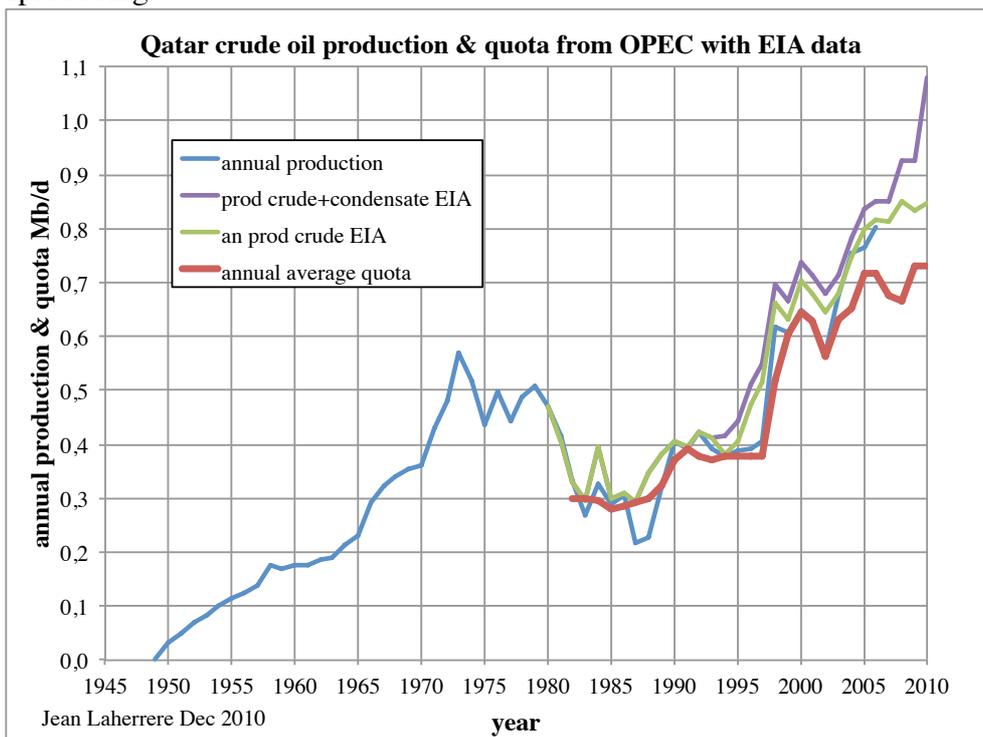
Indonesia left OPEC in 2008 being unable to reach the quota.



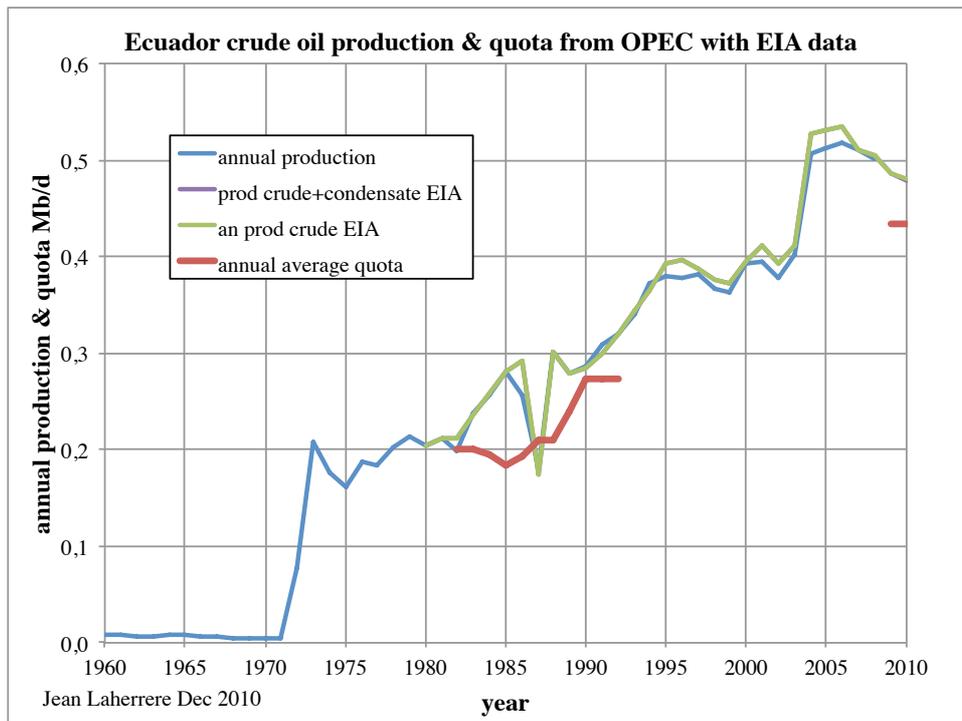
Algeria overproduced from 2003 to 2008. In fact Algeria produces a large volume for condensate (stripping Hassi R'Mel rich natural gas and reinjecting). Algeria target was increased in 2009 to diminish this overproduction.



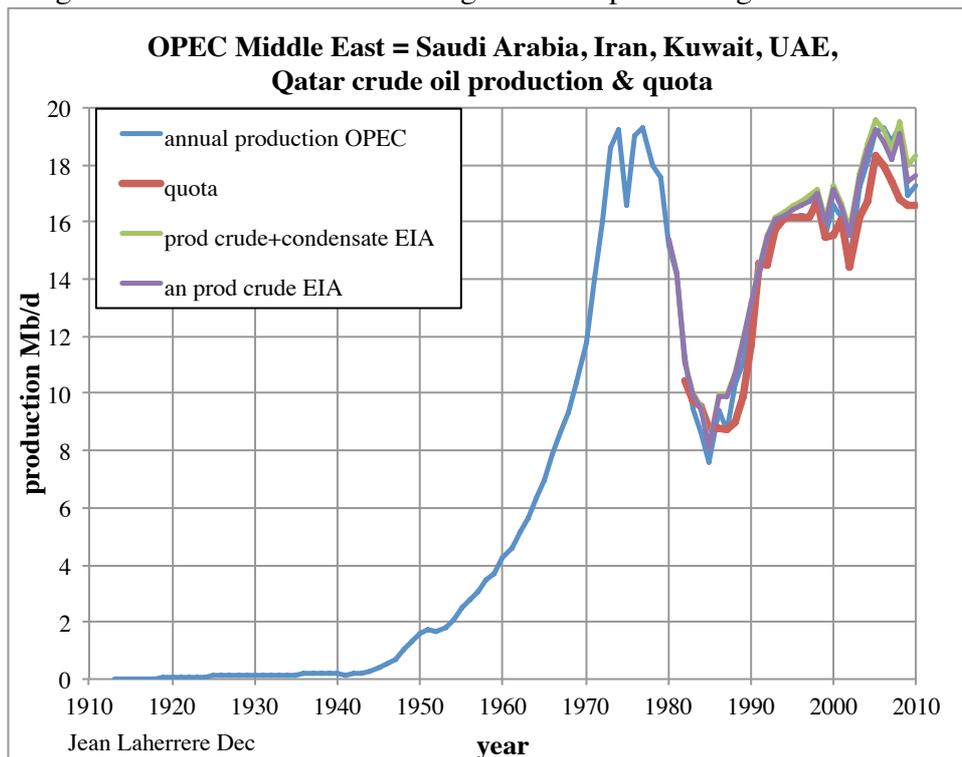
Qatar is overproducing



Ecuador re-joined OPEC in 2009 and overproduces!



The OPEC Middle East countries excluding Iraq have clearly overproduced the ceilings, showing that these ceilings do not matter much as long as the oil price is high

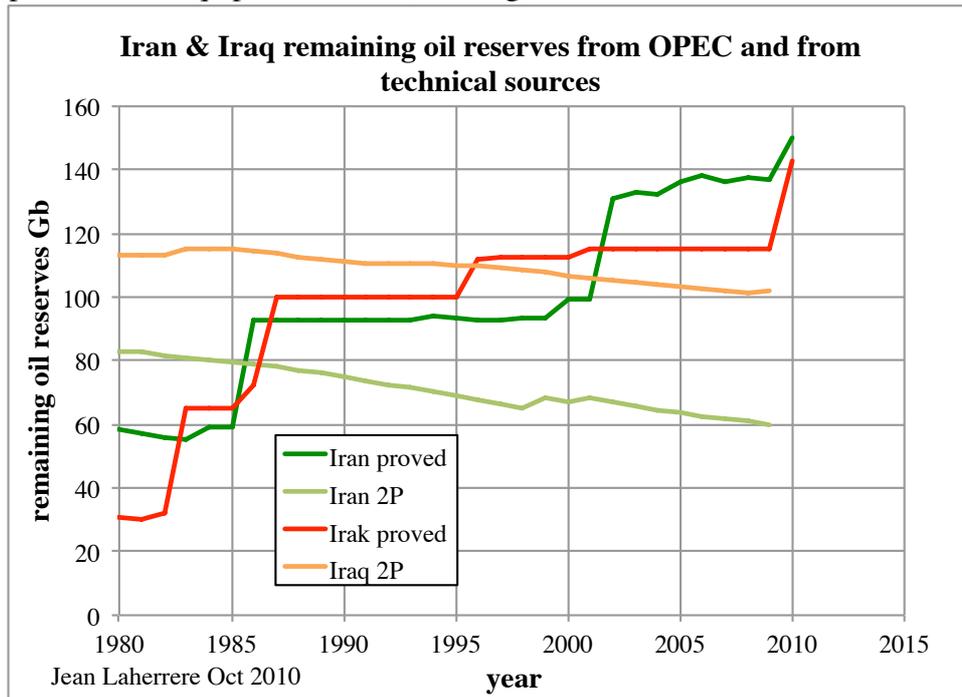


Conclusion

Ceilings are still the rules in OPEC and did not change since January 2009. It is hard to find how these ceilings are decided.

It is well known now that OPEC increased their so-called proved reserves by 300 Gb from 1986 to 1989 (that Sadad al-Husseini called speculative resources in 2007) because their fight on quotas. Despite that quotas are now agreed within OPEC meetings without any reference to reserves, the recent October increase of Iraq reserves followed by Iran reserves increase indicates that OPEC members are still keen to stay at the same rank. It is not surprising to find that the technical

remaining reserves are quite different. In its last 6 December 2010 estimate of proved reserves, OGJ did not accept Iran and Iraq updated values, waiting further discussions!



As long as quotas will prevail, OPEC members will cheat on reserves and even on oil production.