ASPO USA PEAK OIL REVIEW
Association for the Study of Peak Oil & Gas USA
June 17, 2013
Tom Whipple, Editor

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1. Oil and the Global Economy

The announcement on Friday that the US is to supply arms to rebel forces in Syria resulted in a sharp jump in oil prices that had been rising slowly in anticipation of such a development. New York futures traded above $98 a barrel on Friday and London touched $106.64 before settling lower. These prices are only about $10 a barrel below the highs we have seen since the 2008 price spike suggesting that the current Syrian turmoil is creating another "war scare premium" such as we had during the Libyan uprising and the Iranian/Israeli nuclear tensions last year.

The White House announcement came after weeks of debate and was largely driven by the belief that large scale intervention by Hezbollah and Iran into the Syrian uprising would lead to a government "victory" at terrible human cost. At a minimum, the Hezbollah/Iranian intervention coupled with the western response will clearly prolong the fighting, giving more time for the conflict to spread across the region. Most states are lining up on one side or the other along religious lines.

Other than concerns about Syria, lower Libyan production and a renewal of tension between the Sudans supported prices, while bad economic news from China and Europe, and mixed news from the US, kept oil price increases in check.

In its monthly *Oil Market Report*, the IEA is forecasting a jump in demand for crude later this summer as more new and newly-refurbished refining capacity comes on line. If this new capacity is worked too hard we could have a glut of oil products later in the year. The IEA is holding to its previous forecast that the global demand for oil will increase by 785,000 b/d this year.

"Tanker trackers" note that shipments from the Middle East to the US are due to fall next month as US domestic production hit 7.3 million b/d in May, the highest level since 1992. Most Middle Eastern oil is now going to Asia.

The oil price surge took NY gasoline futures 3.5 cents per gallon higher, closing at $2.89 which is only 10-20 cents a gallon below the highs we have seen in the last four years. The increase came while the EIA is forecasting lower gasoline prices for the summer ahead.

US natural gas futures, which closed Friday at $3.73 per million, continued to fall last week on forecasts of mild weather across the US except in the Southwest.

2. The Middle East / North Africa

Iran: The "moderate" candidate for Iran's next President, Hassan Rouhani, scored a surprise first-ballot victory gaining just over 50 percent of the vote against his five more conservative opponents. Prior to Rouhani's impressive victory most observers held that the election would have little impact on Iranian policy as their constitution leaves final authority with Ayatollah Ali Khamenei who decides on important issues such as nuclear weapons and intervention in Syria. The scale of Rouhani's victory, 18 million votes to 4 million for Saeed Jalili, who was widely touted as the Ayatollah's favorite, gives the new President a mandate in the intra-leadership power struggles. The 72 percent turnout and the desire for change was also a victory for the Western policy of economic sanctions, as Rouhani was seen by the voters as the only candidate who would work to improve relations with West and attempt to end the economic hardships the sanctions are bringing.

Any changes in Iranian policies will be slow in coming, but Rouhani will have a seat at the policy table and given the adroitness of his election may have the unusual political skills necessary to bring about change. There will clearly be hard times ahead. Direct Western intervention in Syria will bring about tough policy decisions on the part of Tehran as it strives to keep Assad in power and Hezbollah supplied; Israel is still threatening to strike Iran's nuclear facilities if it continues to enrich uranium; the West keeps tightening the sanctions on Iran's economy; and many of the 1.3 billion Sunnis in the world are becoming increasingly hostile to Shiite Iran and its policy of killing fellow Muslims to keep Assad in power. Rouhani does not take office until August and it will likely take many months to convince the Ayatollah and his colleagues that change is necessary.

Syria: The scope of the uprising expanded sharply last week when Washington announced that it would supply arms to selected rebel forces. With the recent battlefield successes of the government forces supported by Hezbollah and Iran, the Obama administration could no longer resist the pressure to insure that the better armed government forces did not overwhelm the rebels. Government jets and artillery continue to bombard rebel positions across the country.

Repercussions from Hezbollah's participation in the new offensive are taking place across the region. Fighting between Sunnis and Shiites is increasing in Lebanon with rocket attacks on Shiite towns becoming more frequent. In Egypt, the Muslim Brotherhood has declared its support for the Sunni insurgents and Cairo has severed diplomatic relations with Damascus. President Morsi has called on Hezbollah to leave Syria and authorized individual Egyptians to join the insurgents. Sunni clerics in Arab countries are giving emotional anti-Shiite sermons, with some advocating jihad against the Shias, thereby raising fears of local Shiites in areas where both branches of Islam co-exist.

The Syrian situation will be the top of the Agenda at the G-8 meeting this week. The West will attempt to pressure Moscow into changing its policies and the Western powers will confer about military aid to the insurgents. The US will leave its Patriot air defense missiles and F16 fighters in Jordan at the end of the current exercise to further pressure Damascus. Washington, however, is resisting the establishment of a no-fly zone over Syria, which is sought by the insurgents, supported by the UK, and vehemently opposed by Russia who well remember what happened in Libya two years ago.

This situation is becoming more of a morass with each passing day. Sunni-Shiite passions are reaching heights unprecedented in recent years with sectarian massacres take place in Syria with increasing frequency. Except for the modest loss of Syrian oil production there has yet been little impact on Middle Eastern oil exports, but for now it seems only a matter of time before the fighting spreads to Iraq and perhaps to other oil exporting countries.

Iraq: The week started with bombings and gun battles that killed more than 70 and deepened fears of a return to civil war. On Sunday a dozen coordinated bombings killed 30 across in the country including six people in the southern oil capitol of Basra which has been relatively immune from violence. Most of the bombings are directed towards Shiite neighborhoods and are designed to provoke civil war. Iraqi youth of both Sunni and Shiite persuasion are making their way into Syria to fight for their particular cause. The head of al-Qaeda in Iraq is ignoring orders from al-Qaeda central not to form a coalition with Syria's al-

Nusra Front insurgent group. A brigade of the Iraqi Army composed mostly of Kurds has defected to the Regional Kurdish Government after Baghdad tried to appoint a Shiite to command of the unit.

Prime Minister al-Maliki's visit to the Kurds last week has produced no visible results. Erbil continues to go its own way. The visit may have been aimed at patching things up with the Kurds long enough to deal with the growing violence against Shiites coming from the Sunni's.

Baghdad officially cut its overly ambitious plans to become the world's largest oil producer by pumping out 12 million b/d of crude in 2017. The new plan calls for producing 4.5 million b/d, up from the current 3.5 million, by the end of next year and 9 million b/d by 2020. The investment required to achieve such an increase in production runs into the hundreds of millions of dollars. Given the harsh terms offered foreign oil companies and the increasing dangers of operating in the country, Baghdad will be lucky to have any foreign investors by the end of next year.

Egypt: The country of 85 million people is facing so many problems it is difficult to know where to begin. Cairo no longer has enough money to import the oil necessary for gasoline and diesel. Wheat imports have been cut to save foreign exchange in anticipation of a bumper harvest which is not happening. Climate change is driving temperatures as much as 20^{o} F above normal and Ethiopia has begun restricting the water flowing down the Nile. The length of the daily blackouts is increasing.

The political situation is a mess, with the Muslim Brotherhood who took over from the Mubarak regime ignoring all others in an effort to create an Islamist state. The economy is deteriorating without tourism. Unemployment is rising and it is only a matter of time before the mobs again take the streets once again. For now the top priority is to import wheat and fuel, but this effort seems to be going nowhere.

A few Arab states are trying to aid Egypt. Qatar has promised five free cargoes of LNG this summer in an effort to keep the lights on. Resuming the import of adequate oil supplies is more difficult and banks and insurers no longer want to deal with the bankrupt state unless solid foreign guarantees are forth coming.

While Egypt produces little oil and natural gas, it does manage the Suez Canal and the Su-Med pipeline through which comes a substantial amount of Europe's oil. For now the security of this vital transportation corridor is under control of the Egyptian Army making it unlikely that it will be blocked in the near future. For now, Egypt is giving every indication that it will fall into turmoil before the year is out with unpredictable implications for the rest of the region.

Libya: It was revealed last week that the increasing political instability is starting to take a toll on Libya's oil production. Pre-uprising oil production was 1.6 million b/d. In recent months most sources have been reporting that production was around 1.4 million or close to the pre-war high. Last week, however, the Libyan National Oil Corp announced that its production was now below 1 million b/d because of "some individuals" who managed to shut down export terminals and oil fields during recent protests. The situation has since improved, but protest groups still find shutting oil facilities a more effective tactic than complaining to powerless government councils.

The government has never been able to establish any kind of effective control over the dozens of well-armed militia groups that arose during the uprising so the instability is likely to continue. Over the weekend six soldiers were killed in clashes with armed protestors in Benghazi.

There is still plenty of oil in Libya and various groups were predicting substantial increases in production. Given the security situation, however, most foreign firms are unwilling to send their workers into the country. For the immediate future increases in production are unlikely as the political situation remains uncertain.

3. China: Pollution vs. Growth

Last week China's State Council released a new pollution control plan which includes 10 "tough" measures to deal with air pollution that reached hazardous levels last winter. The new plan requires that major polluters such as coal fired power plants release details of their emissions to the general public. Environmental groups say that these 5000 plants produce some three-fifths of the country's industrial pollution. While releasing information does nothing to reduce emissions, it could result in increased pressure on local governments who have the major say on controlling pollution in their jurisdictions.

The centerpiece of the new plan is a requirement that heavy polluters reduce emissions by 30 percent by the end of 2017. While this may sound impressive, the reduction is tied to units of output, so if a plant grows its production by 7 or 8 percent annually, the actual reduction could be minimal.

Over the weekend the pollution index for Beijing reached 250 which is termed "very unhealthy." This is just 50 points below "hazardous" at which point everyone should remain indoors and people with respiratory problems start to die. Perhaps one of the more realistic parts of the plan is for cities to develop plans to restrict vehicle use and close factories during periods of very severe pollution.

China has made many efforts to clean up its air before, but these have foundered at the local level where success is measured by economic growth and not by pollution counts. Penalties on polluters are minimal. This time the weight of the national government is behind the plan. What is unsaid in all this is that large, rapid reductions in emissions are almost certain to have a major impact on economic growth which is China's and the communist party's major *raison d'detre*. It will be interesting to see how this turns out.

Naturally if economic growth contracts under the weight of emission controls so will the demand for oil. Another key aspect of the new program is the refining of much cleaner gasoline and diesel fuel which is said to be many times dirtier than that which can be sold in OECD countries.

Most indicators show that China's economy continues to slow in the 2nd quarter. Some analysts are even starting to say that the country could miss its 2013 growth target of 7.5 percent. China's power consumption, which is a good indicator of the rate of economic growth, increased by only 4.9 percent in the first five months of the year. The IEA is starting to worry about the forecast growth in China's oil consumption.

4. Quote of the Week

- "The internal divide between Shi'ite and Sunni Muslims is as deep and as wide as the fault lines between Arabs and Israelis and that statement speaks volumes about the very violent and threatening storms that are brewing in Arab lands."

  --Fawaz Gerges, Professor of Middle Eastern Politics at the London School of Economics.

5. The Briefs

- **US** crude-oil production grew by more than one million barrels a day last year, the largest increase in the world and the largest in U.S. history. The growth in U.S. output was a major factor in keeping oil prices from rising sharply, despite a second consecutive year of large oil supply disruptions, though oil prices still remained at record-high levels last year. (6/13 #20)
- In **Siberia** the Bazhenov shale**,** which is 80 times bigger than Bakken, covers an area the size of France and contains enough oil to double Russia's reserves.(6/11 #9)
- **Former Soviet Union** crude oil exports declined from 6.76 million b/d in 2010 to 6.39 million b/d in 2012 (-370,000 b/d), or 5.5 percent, mainly due to a 13 percent decrease in Black Sea

shipments…Russia's oil production seems to have hit its second and last oil peak, with growth coming to an end due to decline in existing fields and a lack of new fields coming on stream. (6/11 #32)

- **Iraq** will ramp up oil production to 4.5 million barrels per day by year-end in 2014, an increase of about 1.6 million that the country currently produces, an Iraqi senior official announced. (6/13 #8)
- Net energy ratios (NERs) from the **Canadian oil sands** have been updated. NERs for in-situ (steam-assisted gravity drainage) were between 3.5 and 4 to 1 in 2010 while NERS for mining operations were between 5.5 and 6 to 1. Overall energy return on investments (EROI) for conventional oil commonly show energy returns on the order of 10-20 to 1. (6/10 #14)
- Current **high oil prices** are reducing demand in both China and India, based on a recent report from the US Energy Information Administration. At $100 per barrel prices, there is a definite flattening in per capita consumption for both India and China. (6/10 #17)
- The International Energy Agency trimmed demand forecasts for **OPEC's crude** in the second half of the year amid signs of slowing growth in China as output from the producer group rose to a seven-month high on gains from Saudi Arabia, Iran the UAE and Kuwait. (6/12 #9)
- In an new EIA report on **shale oil and natural gas resources**, a highlight is a 10-fold increase in the estimate of technically recoverable shale / tight oil from 32 billion barrels (from the EIA's *Annual Energy Outlook 2011*) to 345 billion barrels. (6/11 #5)
- **South Sudan's** President Salva Kiir said Sudan's threat to halt its oil exports amounted to a declaration of war and reiterated his government's denial that it supports rebels in the neighboring country. (6/11 #27)
- **China's** largest oil-and-gas company expects to firm up a draft agreement to join a large refinery project in Ecuador and expand its oil-exploration efforts there by the end of this year. (6/10 #11)
- **India** is hoping to unlock its shale gas reserves, believed to be about 63 trillion cubic feet, more than 20 times the size of the country's largest conventional gas field. But experts say it may take years for the country to access and realize profits from the natural resource because of a lack of infrastructure, opposition to raising gas prices, a paucity of information about exactly where to find the gas, and lack of a policy framework for development. (6/11 #30)
- During a recent panel before the Senate Energy & Natural Resources Committee forum on natural gas supplies and exports, Deborah Rogers was the only person invited to participate who even questioned **the conventional wisdom of supply abundance**….The EIA has been consistently wrong in their forecasts, and almost always in favor of over-estimations. (6/10 #16)
- In the IEA's latest ***Oil Market Review***, they anticipate that crude supply will struggle to keep up with refining demand until price effects helped rebalance the market. The IEA also said that significant risks to its supply outlook remain, especially in Nigeria, Iraq, Libya and the Sudans where violent disruptions to supply are ongoing. (6/12 #6)
- Malaysia's state-owned Petronas said it is prepared to invest $20 billion in a liquefied-natural-gas project in British Columbia, upping the ante in a bid to remake North America into a global export hub for natural gas. (6/12 #20)
- The world is heading for **a glut of refined products** as new Asian and Middle East refineries increase oil processing by 9.5 million b/d of new crude distillation capacity in a move likely to

force less advanced competitors in developed countries to close, the IEA said on Wednesday. (6/13 #7)

- A little-known UK **Ministry of Defence report** published earlier this year warns that converging global trends will dramatically affect economic prosperity through to 2040. The report says that depletion of cheap conventional "easy oil", along with shortages of food and water due to climate change and population growth, will sustain rocketing energy prices. Long-term price spikes are likely to lead to a long recession in Western economies, fuelling internal unrest and the rise of nationalist movements. (6/11 #34)
- Global **emissions** of carbon dioxide from energy use rose 1.4 percent to 31.6 gigatons in 2012, setting a record and putting the planet on course for temperature increases of as much as 5.3 deg. C (9 deg. F)—well above climate goals—the IEA said. (6/10 #3)
- **Egypt's president has warned Ethiopia** that "all options are open" in dealing with its plan for a Nile dam that threatens to leave Egypt with a dangerous water shortage. (6/11 #15)
- **Indonesian workers** frustrated by long waits to get exit visas from Saudi Arabia protested outside their Jeddah consulate on Sunday, setting fire to the building's outer wall and briefly clashing with security forces. Hundreds of thousands of foreign workers in the world's top oil exporter must rectify their immigration status or leave the country before July 3, when the government will resume a crackdown on illegal labor. (6/11 #18)
- **Coal** remained the world's fastest-growing fossil fuel in 2012, despite the rate of consumption slipping below the 10-year average of 4.4% during the year, according to the BP 2013 Statistical Review of World Energy released Wednesday. (6/13 #6)
- **Ethiopia**'s parliament has endorsed the Nile River Cooperative Framework Agreement, an accord that replaces colonial-era deals that awarded Egypt and Sudan the majority water rights to the world's longest river. The agreement, already signed by five other Nile River countries, was unanimously endorsed by Ethiopia's 547-member parliament on Thursday. (6/13 #11)
- The **UN** reports that the world's population is expected to hit 7.2 billion next month and reach 10.9 billion by 2100. India's population is expected to surpass China's around 2028. Some analysts are troubled by these projections, pointing out they are based on past growth rates and do not account for the increasing scarcity of many resources and the effects of climate change. (6/14, #3)
- **Brazil** says that its Libra oil field can easily reach 1 million b/d. The field is to eventually have 12-18 production vessels each pumping some 30,000 b/d. Bidding for stakes in the field is due to start in October (6/14, #14)
- **Nicaragu**a has approved a deal for a Hong Kong company to build a second Panama Canal connecting the Pacific with the Caribbean. Given the massive cost, political and environmental problems involved in such a project many analysts doubt that it will ever be build, (6/14, #15)
- **Venezuela**'s Oil Minister is complaining that some of its "partners" in developing the Orinoco heavy oil belt are not meeting production goals. The Minister warned that companies failing to fulfill their commitments could have their contracts revoked. (6/14, #16)
- **India** plans to increase its LNG imports to 20 million tons per year. The country relies on imported LNG for about 25 percent of its natural gas consumption. The imported gas, however, may cost on the order of $10-12 per million BTU's which is three times higher than government fixed prices paid by consumers. (6/13, #18)

- US **coal exports** fell by 31 percent in April from the prior month due to lower demand from China. (6/14, #23)
- US Energy Secretary Moniz says that decisions will be made on applications to **export LNG** before the end of the year. (6/14, #24)
- US **exports of diesel fu**el to Europe rose to a 23 year high. The US is producing considerably more diesel than is consumed domestically, and demand from the Middle East is cutting into shipments to Europe from the region. (6/15, #5)
- The EIA says that US crude production could reach 10 million b/d between 2020 and 2040. An even more optimistic case has US all-liquids production hitting 18 million b/d by 2040. (6/15, #16)
- Crude production from the **Bakken shale** formation increased to a record 727,000 b/d in April despite bad weather which held production gains to only 1.2 percent over March. Total US crude production the week before last was 7.22 million b/d which was down by 76,000 b/d from the recent high of 7.37 million b/d hit in early May. (6/15, #19)
- President Obama plans to unveil a package of proposals to reduce US **greenhouse gas** emissions. This action may be directed at appeasing environmentalists should the administration eventually approve the Keystone pipeline. (6/15, #22)

7.Commentary -- The Oil Production Story: Pre- and Post-Peak Nations

updated June 2013 with 2012 data

The news media chant that "peak oil is dead." If so, why are Americans consuming ten percent less than they did in 2007? Could it be that high oil energy prices, including record-high oil prices in 2012, are contributing to a slowing economy and ongoing demand destruction?

In reviewing BP's latest statistics, we find ourselves wondering how many journalists understand that 20 nations produce the vast majority (86%) of the world's oil, or appreciate that only Iraq, the U.S., and perhaps Brazil appear able to add 1 million b/d or more to their production over coming years. The top ten nations produce 64% of world oil; many increased their production in 2012. At the same time, most of those ranking 11-20 saw their production decline. With global crude oil more or less flat since 2005, the world is trying to fuel economic growth with natural gas liquids and biofuels, which makes for tough sledding.

The chart below tells a story about: 1) nations that are past peak (see "Peak Year," turquoise fill), because of geologic limits (e.g., Norway, the U.K.) or for above-ground reasons; and 2) nations that have yet to clearly peak. It appears that 10 of the top 20 nations have seen their all-time highs in production. But in a number of these, production is *temporarily* increasing, with America the poster child. Russia and China approach peak oil as we speak. In 2012, three ***non-OPEC nations increased*** *by over 100,000 barrels/day-year (vs. 12 in 2004), while f**our non-OPEC nations experienced declines** of roughly 100,000 b/d-year (vs. two in 2004).*

Adding it all up, peak oil appears close but not yet here, delayed rather than dead, and disguised by the inclusion of natural gas liquids in BP's accounting. After the 2005-2009 plateau, oil production has grown for three straight years, due to US shale oil, Libya's recovery and OPEC increases. Looking ahead, key themes to follow are: demand destruction, violence in the Middle East, resource nationalism, Chinese demand, and peak oil exports. While contemplating the numbers, you might not want to hold your breath waiting for American "energy independence." Despite the happy talk, our petroleum future may not be a romance with abundance, but a plea bargain with depletion.

Source: British Petroleum, using 2012 data. Includes crude oil, shale oil, oil sands, and natural gas liquids (NGLs); excludes biomass

	Increasing (black in column #4 = OPEC declines)	***Flat/Volatile***	***Decreasing***	***Change*** barrels/day	***Trend*** (years)	**Million** barrels/day	***Peak year***	***Peak Rate*** mb/day	**Net exporter or *net importer*** million b/day	***Comments***
1	**Saudi Arabia**			**386000**	3	11.5	na		**8.6 exports**	Perennial swing producer; how much spare capacity?
2	**Russia**			**133000**	14 of 16	10.6	1987	1987 = 11.4	**7.5 exports**	16-yr strong recovery hasn't ended yet, but it has slowed
3	**USA**			**1037000**	8 of 22	8.9	1970	11.3	***imports 9+/-***	Largest year-over-year US gain ever; still import 45%+/-
4	**China**			81000	47 of 49	4.2	na		***imports 6+***	Imports now = 60% of consumption, steadily growing.
5	**Canada**			**215000**	12 of 16	3.7	na		**1.33 exports**	All exports from tar sands--very expensive process
6			**Iran**	**-678000**	just 1 yr	3.7	1974	6.06	**1.71 exports**	Geopolitics ended their 6-year production plateau
7	**U.A.E.**			61000	2	3.4	na		**2.66 exports**	Domestic consumption has nearly doubled in 10 years
8	**Kuwait**			**247000**	7 of 10	3.1	1972	3.34	**2.65 exports**	Second year of large increase
9	**Iraq**			**314000**	volatile	3.1	1979	3.49	not available	Domestic violence increasing; Kurds going own way
10			**Mexico**	-29000	**8 yrs**	2.9	2004	3.83	**0.84 exports**	Permanent decline slowed; exports still way down
	TOP TEN					***55.1 mbd***				***Top Ten Produce 64% of global oil.***
11			**Venezuela**	-41000	**10 of 14**	2.73	1970	3.75	**1.94 exports**	Resource nationalism apparently didn't die with Chavez
12		**Nigeria**		-43000	4 decades	2.42	na	2.52	n/a	Violence continues, even against offshore platforms
13	**Brazil**			-44000	14 of 16	2.15	na		*rough balance*	One-year decline not expected to continue in 2013.
14	**Qatar**			**130000**	15 of 17	1.97	na		**1.72 exports**	Production doubled in past decade, but LNG = *not* oil…
15			**Norway**	**-124000**	**11**	1.92	2001	3.42	**1.67 exports**	Slipped from 7th to 14th in 11 years
16		**Angola**		58000	6 yrs	1.78	na		n/a	6 years of bumpy plateau, or back on increase?
17	**Kazakhstan**			-30000	16 of 17	1.73	na		**1.46 exports**	**1 million b/d gain since 2000 paused last year**
18			***Algeria***	-17000	**5 yrs**	1.67	2007?	1.99	**1.30 exports**	Could repeak, but how bout them politics?
19			***Libya***	**1030000**	**3 of 4**	1.51	1970	*3.36*	n/a	Post-Arab-spring blues; nice recovery, now uncertainy
20			**United Kingdo**	**-147000**	**11 of 12**	0.97	1999	2.91	***imports 0.50***	**Used to be in Top 10; drops out of Top 20 in 2013**

	Nations 11-20					***18.9 mbd***				***Nations 11-20 produce 22% of global oil.***
21	**Columbia**			29000	7 yrs	0.94	n/a		**0.67 exports**	Columbia has hit new peak; big surge continues
22			**Indonesia**	-34000	14 of 16	0.92	1977	*1.69*	***imports 0.65***	Former OPEC member used to export; now net importer
23	**Oman**			31000	5 yrs	0.92	2001	0.96	n/a	Sustained 5-year upturn; will hit new peak this year
24		**India**		-9000	17 yrs	0.89	na		***imports 2.76***	India flat, imports rising, but in middle of 3-yr growth?
25			**Azerbaijan**	-47000	2 yrs	0.87	na		**0.78 exports**	**Rapid increase 5 years (+230%) reversed in 2011**
26		**Egypt**		1000	11 yrs	0.73	1993	0.95	*rough balance*	Egypt is gas prone. No longer substantial exports.
27			**Argentina**	-23000	10 of 11	0.66	2001	0.91	**0.05 exports**	Despite talk of shale oil, long decline (27%) continues
28			**Malaysia**	17000	5 of 8	0.66	2004	0.78	***imports 0.04***	Small bounce-back after sustained 25% decline
29		**Ecuador**		4000	9 yrs	0.51	na		**0.27 exports**	Politics still volatile (ask Chevron)
30			**Australia**	-38000	8 of 12	0.46	2000	0.81	***imports 0.56***	Down 41% in a dozen yrs; offshore didn't help in 2012
	Nations 21-30					**7.56 mbd**				***Nations 21-30 produce 9% of global oil.***
31	**Thailand**			11000	16 of 17	0.44	na		***imports 0.77***	Last year's consumption growth offset production incr.
32		**Vietnam**		31000	6 of 7 yrs	0.35	2004	0.42	***imports 0.01***	During 10 yrs production flat, consumption nearly double
33		**Congo**		3000	15	0.30	na		n/a	Plateau for last three years; population growth exploding
34			**Eq. Guinea**	31000	3	0.28	2005	0.36	n/a	Three-yr decline followed by this year's increase; next?
35		**Gabon**		-9000	13 yrs	0.25	1997	0.37	n/a	13-yr plateau; arrival of offshore finds won't help soon
36			**Denmark**	**-18000**	8 yrs	0.21	2004	0.39	**0.05 exports**	Consumption dropped but not as fast as production decline
37		**Turkmenistan**		5000	10 yrs	0.22	na		**0.12 exports**	decade-long plateau
38			**Yemen**	**-48000**	10 yrs	0.18	2002	0.46	n/a	down 60% in decade since peak; politically problematic
39		**Brunei**		-7000	5	0.16	1979	0.26	n/a	down 30% from 2006 secondary peak
40			**Syria**	**-163000**	**9 of 10**	0.16	2002	0.68	n/a	Decade-long slow decline fell off cliff last yr; total -76%
	Nations 31-40					***2.55 mbd***				***Nations 31-40 total produce 3%, or less than Mexico.***
41		**Peru**		9000	4 yrs	0.11	1982	0.20	***imports 0.09***	Peru production only meets half of domestic demand
42			**Sudan +So.**	**-320000**	4 yrs	0.11	2008?	0.48	n/a	combined figure for both Sudans….sank like a rock
43			**Trinidad&Tob**	-19000	6 yrs	0.12	1978	0.23	**0.08 exports**	down 37% in last 6 years
44			**Chad**	-13000	6 of 7 yrs	0.10	2005?	0.17	n/a	producing for a decade; down 42%; fell short of the hype
45		**Italy**		2000	19 yrs	0.11	na	0.12	***imports 1.23***	Mama mia: a small Italian bump is a drop in their bucket
46			**Romania**	-3000	30 of 34 yrs	0.09	1976	0.31	***imports 0.1***	world's first oil wells drilled here and Baku; now imports
47			**Uzbekistan**	-9000	13	0.07	1999	0.19	***imports 0.01***	down 50% over the last decade
48			**Tunisia**	-3000	24 of 32 yrs	0.07	980	0.12	n/a	Arab Spring instigator continues long oil slide
49		Rest of world		-8000	na	1.26	na	na	n/a	"Everybody else" equals less than Libya's production.
	Nations 41-48 + Rest of World					**2.04 mbd**				***Remaining nations produce less than Brazil***
						86.15	**world: +2.2**	(vs. 2011)		

Use of BP production data set is no better than those from IEA and EIA. It's simply used here on a once-a-year basis.

***Lots of BP's previous, non-current-year production numbers for nations are changed without any notice or footnotes.*

--Example: in 2011, world production for that year was listed as 83.576 million b/day. In 2012, the production for 2011 was increased (corrected?) to 84.210 mb/day; no footnote

Authors: Steve Andrews and Randy Udall; #s updated (and Steve's 2011 errors corrected) by Steve Andrews