Paris Energy Club

10 April 2014

A summary of remarks

Session 1: The recent history of Iran

Iran has a very long history. It was probably humiliated at the time of the Great Game (rivalry between Russia and the British Empire – the aim of the British Empire was to prevent Russia reaching the sea). At this time the USA defended the integrity of Iran (against Russia and England). The USA then went on to protect Iran against Stalin.
However in 1952 – 1953 there was a crisis. The Anglo Iranian oil company refused to apply the 50/50 split of profits between the company and the state of Iran. Mossadegh, Prime Minister of Iran at the time, threatened to nationalize Anglo Iranian. The episode culminated with the nationalization of the fields, the creation of NIOC (National Iranian Oil Company) and the transformation of Anglo Iranian into British Petroleum. At the beginning of the crisis Truman was the US president and he did not want to attack the Mossadegh government. But Eisenhower then came into power with Allen Dulles and went on to organize a coup to oust Mossadegh from power.

The Shah came back to power and for nearly 30 years Iran was one of the pillars of US policy in the Middle East. After the revolution of 1979 (return of Iman Khomeiny), the relationships between Iran and the USA were, of course, very poor.

Sanctions have created very deep problems, leading Iran to the negotiating table. However at the same time Iran has improved the uranium enrichment process.

Israel: good relations at the time of the Shah
Khomeiny supports Palestine to demonstrate that its people are good Muslims.

Relations between Iran and the Arab Gulf States

There is a concentration of major diplomatic, strategic, religious and energy issues in the relations between Iran and the Arab Gulf countries. There is a different interpretation of Islam (Shiite versus Sunni).

The Gulf Cooperation Council (GCC) was established in May 1981. The political systems in the Gulf States and in Iran are very different. Iran and the Arab Gulf countries have formed different alliances.

There are numerous territorial disputes between Iran and the Arab Gulf countries (especially regarding islands in the Gulf). Last but not least, the population of Iran is 70 million compared to a total of 47 million in the Arab Gulf States.

Kuwait – Iran. The relations between the two countries are complex. In 1979, Kuwait congratulated the Iranian revolution. In 1986 Iran attacked Kuwaiti tankers to dissuade Arab support for Iraq. In 1990 Iraq invaded Kuwait leading to an improvement in Kuwaiti-Iranian relations. In 2006, Iranian President Ahmadinejad visited Kuwait (first visit by an Iranian high ranking official in almost 3 decades). However the Dorra gas field has long been a bone of contention between Kuwait and Iran, which also lays claim to part of the field.

Bahrain – Iran. Shiites make up 70% of the Bahraini population while the government is Sunni. Shiite-led opposition protests in 2011 asked for an end to what the opposition says is economic and political marginalization by Bahrain's Sunni regime. The Bahraini authorities accused Iran of aiding and training the militants. In March 2011, the Saudis and the other members of the Gulf Cooperation Council deployed about 1,000 troops in Bahrain. Strong ties exist between the Al Khalifa ruling family of Bahrain and Saudi Arabia. Bahrain receives oil via a submarine pipeline from Saudi Arabia (Abu Safa offshore field). Bahrain is also the base for the U.S. Fifth Fleet.

Qatar – Iran. The two countries share the largest natural gas deposit, the Qatari portion being called North Field (discovered in 1990) and the Iranian share South Pars. The development of Qatar's gas resources came quickly, making the country the world's leading exporter of LNG since 2006, while US and international sanctions were preventing Iran from developing South Pars.

Qatar is the base of the U.S. Combat Air Operations Center for the Middle East. Qatar is also the host of the Gas Exporting Countries Forum (GECF), headed since January 2014 by Ahmed Hossein Adeli, an Iranian diplomat.

UAE – Iran. The two countries have a longstanding dispute over the Islands of Abu Musa, Greater Tunb and Lesser Tunb, but have significant economic and commercial ties (trade, banking, etc.).

A pipeline (1.8 million barrels a day) was built in 2012, stretching from Abu Dhabi to Fujairah on the Gulf of Oman, to bypass the Strait of Hormuz following Iran's threats to block this route in retaliation against sanctions targeting the country's nuclear program.

Saudi Arabia – Iran**.** Many issues oppose the 2 heavyweights but confrontation has been operated through proxies up to now**.** Recently Saudi Arabia has been vocal in its displeasure over the change in Washington's policy toward Iran.

The fight for religious domination (the Shiite-Sunni war) does not take place between the two countries but in Iraq, Syria, Lebanon and the Gulf. While Iran is now in control of the political Shiite sphere, the Sunni-Sunni conflict to dominate the politics of Sunni Islam is still ongoing. Neither Turkey, nor Saudi Arabia, nor any Islamist movement has been able to fully dominate the Sunni Scene.

Oman – Iran**.** Oman has always distanced itself from regional interactions**.** Oman never had a hostile attitude toward Iran, even during the eight year-long war between Iran and Iraq**.** Oman served as one of the places for US-Iranian direct negotiations leading to the nuclear deal**.** Rouhani's first visit to an Arab country in the Persian Gulf was to Oman**.** In early April 2014, Iran and Oman signed a preliminary agreement to build a $1-billion, 200-kilometre submarine pipeline to import gas from Iran.

Post Iran-West Nuclear Deal. Bahrain has called on major powers to confirm that "the deal will not come at the expense of the security of any GCC country". The latest developments have led some Gulf countries to rethink their strategies and the GCC block is not entirely united**.** Tensions between Qatar and neighboring Persian Gulf monarchies emerged in early March 2014 over its support for the Muslim Brotherhood and allied Islamists around the region**.** Qatar's relations with Iran have improved substantially.

Direct and military confrontation between the countries on both sides of the Gulf seems improbable. Alliances, although re-thought and reshaped, are likely to remain as they are in the foreseeable future

Further discussion

Iran cannot build a bomb now. It will take 2 or 3 years to reach this objective. Some Iranian authorities think they will have more problems with the bomb than without. Israel needed the atomic bomb as protection. Otherwise it could be swept in a few hours by a powerful army.
Nobody wants to destroy Iran.

Rouhani has limited support in the Majlis. Khamenei is suspicious of the possibility of a deal but supports Rouhani. Rouhani has the political will to succeed (Important: he can control the Pasdarans). It should be stressed that the election of Rouhani was a democratic one with several candidates and this election gives legitimacy to the regime.

As a comparison, Cuba is for the USA (and the reverse is also true) "the enemy we like to hate". Could the Iranian regime survive a peaceful relationship with the West?

The position of Russia is important. Russia will be capable of separating the different problems. They are able to separate questions. (US/Russian cooperation for the evacuation of US troops from Afghanistan). Russia has an interest in the success of the negotiations because – inter alia – they are selling equipment. Russia will help Iran in the rebuilding of its oil sector. Iranian production was already in decline before the sanctions (IEA forecasted 3 Mbd for 2015).
The future of Iranian oil and future gas production are unknown. Increasing production will be a slow and difficult process. Iranian oil managers recognize that they are in a very difficult situation.

The next meeting between Iran and "the West" will be held on July 21 (possibility of an extension). There is competition between the "pro" and "anti" agreement sides. Obama and

Kerry are strongly in favor of an agreement – Obama has to justify his Nobel Prize. Obama has no success on the international scene. We can also observe that by the end of the year, Bachar El Assad will probably be in power in Syria, and Hezbollah will be dominant in Lebanon. This is not a brilliant situation for the USA.

The Iranian revolution wants to spread in the region. Iran created Hezbollah (now in Lebanon but also in other countries). Attacks in Mecca … Katami wanted to repair all the destruction created by the early years of the revolution. Rouhani is a big asset when it comes to restoring relations with other countries. Iranians will have to demonstrate that they want stability.
It will be difficult to convince Congress to lift the sanctions. However the enemies of lifting the sanctions were recently defeated.
Also, if Congress says no, delegates: what do you want to do? Do you want to send troops to Iran? In which case go to your constituencies and tell this to your voters.

Session 2: China's energy development and its global implications

How big is China's economy?

The official GDP is US$9.31 trillion or 13.37 if measured in "Purchasing Power Parity", i.e. taking into account the cost of living in the country (usually countries with a low official GDP have a higher GDP if it is measured in PPP. This is the reverse for rich countries). According to some statistics, China now has a higher GDP than the USA, making the country the "richest" in the world.

The Official Chinese GDP is 55.68% of the US GDP but the PPP GDP is 79.96% of the US one. For Greater China (*Mainland + HK + Macau + Taiwan)*, the official GDP is 60.52% of the US one and the PPP GDP is 88.07%.

China is the biggest energy producer in the world. Total energy production in 2013 was the equivalent of 3.75 billion tons of standard coal. Coal accounted for (in 2012) 66.4% of total energy consumption, oil 18.9%, and gas 5.5% (5.9% in 2013). Per capita energy consumption in China is about one third of per capita consumption in developed countries.

The Achilles' heel of China is its oil consumption: China's oil consumption was 500 million tons in 2013 and oil imports totaled 300 million tons. Total oil consumption is forecast to increase to more than 700 million tons by 2020. Reliance on oil imports was at 58% in 2013 and is expected to rise to more than 70% by 2020. So several dangers threaten China: maritime security for oil shipping; safety and security of cross-border oil & gas pipelines; risk of a major jump in imported oil & gas prices; insufficient strategic reserves (China is nonetheless following the US example and building extensive Strategic Petroleum Reserves).

A new Chinese Achilles' heel concerns gas imports. China's gas consumption was 167.6 billion cm (an increase of 13.8% over 2012) in 2013; in 2020 gas consumption could reach 350 billion cm. In 2013 natural gas represents about 5.9% of China's energy consumption.

However, only about 14% of China's population uses natural gas. Imports accounted for 31.6% of total gas consumption in 2013 and the reliance on oil imports is likely to increase.

The energy mega trends in China are as follows:

- Oil: Demand is increasing fast. Need to add 200 to 300 million tons to oil consumption by 2020
- Gas: The government has ordered that gas consumption be doubled in five years
- Coal: Consumption needs to go down by 65 % compared to 2014
- Nuclear: Will go up. 26 new nuclear power stations are being built. Increase to 5%, or even to 10% of total energy consumption?
- Hydro: How much more can it grow?
- New & Renewable: We have to keep faith and spare no efforts. But, alas, how much can they really contribute to China's staggering energy demand?
- The great variables:
  - Shale gas: When and how can they be developed en masse? Shale gas can be considered as a bonus and an insurance policy.
  - Improving energy efficiency: How to improve? How much to improve?

Today, half of China's imported oil comes from the Middle East; 1/3 comes from Africa. China will continue to heavily depend on OPEC members for its imported oil and gas for many years to come.

China will continue to attract significant gas supplies from Australia. China offers the best alternative market for the oil and gas supply from Canada, once the United States no longer needs to import significant amounts of energy from the country. China is willing to work closely with Canada to develop in Canada infrastructures allowing exports of oil – and gas – to China. With North America achieving energy independence, China offers a very attractive market for the oil and gas that America will no longer import from the rest of the world, including the Middle East, Africa and Latin America.

Recent developments in Ukraine and Crimea may cause repercussions for years to come.
The sanctions imposed on Russia by Western countries may create a dynamic for more Russian oil and gas going east. This may further strengthen energy cooperation between China and Russia in the long term.

The knowns and the unknowns. Irrespective of the many unknowns and uncertainties in the oil and gas sector around the globe, the most important known factor is China's continued demand for oil and gas, and its continued reliance on oil and gas imports.

China's ultimate goals are:

- 20% of global world economy
  - 12.6% in 2013 (*official exchange rate*).
  - 15.3% in 2013 (*PPP*).
- 20% of global world trade
  - Total foreign trade in goods in 2013 @ US$4.14 trillion; about 11% of global trade.

- 20% of international patent registrations
  - China surpassed the USA in 2011 as the world's leading new patent filer.
- 20% of Fortune 500 companies - 95 in 2013 (Mainland China, Hong Kong and Taiwan)

In conclusion China is likely to become the world's biggest economy, with about 20% of the global economy and about 20% of global trade. China will be the biggest importer of oil and gas, and will continue to invest in mega deals in oil and gas around the globe. Rmb will become a major reserve currency. China will settle major imports in Rmb. The USA may export oil and gas to China. China will have greater democracy and transparency and better governance and rule of law than today.

After focusing on China, the discussion moved to South Asia, where the engine of energy demand growth is now located. China is the main driver of increasing energy demand in the current decade, but India will take over in the 2020s as the principal source of growth.

The first factor driving energy growth will be the need for mobility. The passenger light-duty vehicle fleet (PLDV) worldwide is projected to expand from around 900 million in 2012 to over 1.7 billion in 2035, with most of this growth coming from non-OECD countries.

Due to this increase in PLDV in Asia (home to 60% of the world's population), there is an ever-growing crude trade between the Middle East & Asia. North America's imports are falling as it becomes more self-sufficient, Europe's imports are decreasing with falling demand, and Middle East exports are being increasingly drawn to Asia.

Another point that should be mentioned is that gas growth is strongest in emerging markets. The biggest absolute increases in demand are in China and the Middle East, LNG is moving towards the Asian market. Asia's share in global LNG imports has risen to 70%. Japanese LNG imports have jumped by 12 bcm (10%) due to a further decline in nuclear power generation. China's LNG imports have increased by 22% to 20 bcm, driven by economic growth and the expansion of LNG import capacity. LNG imports in Europe have fallen by 26%. The UK has dropped from third to seventh place on the list of global LNG buyers.

Southeast Asia's energy needs will continue to grow. Southeast Asia's energy demand is expected to nearly double in the period to 2035, i.e. to increase by more than the current consumption of Japan. Still in Southeast Asia; coal demand is likely to jump from a 16% share of the energy mix in 2011 to 28% in 2035, consistent with the trend observed in recent decades for its larger neighbors, China & India. Regarding oil and gas production, Southeast Asia is a mature oil-producing region, with limited new prospects; gas production has grown rapidly since 1990, but is struggling to keep up with demand.

The power sector is fundamental to the energy outlook of Southeast Asia. Electricity generation has increased by more than the current power output of India; coal is emerging as the fuel of choice, accounting for 58% of the growth. Displacing coal in Asia will not be that easy. A relatively high CO_2 price would be necessary to trigger a fuel switch from coal to gas.

Session 3.1: Russia

Is there a new Russian energy export strategy? Russia remains the biggest energy exporting country and we can observe changing energy relationships between Russia and Europe, Russia and Asia.

Gazprom, which has a legal export monopoly for pipeline gas, has opted for a gas price maximization strategy, so the margin for growth in Russian gas export volumes is now very limited.
There are 4 Russian LNG projects under consideration currently. All of them face commercial, technical and regulatory challenges. New Russian LNG may only become available post 2020.

There are discussions between China and Russia for the sale of Russian Gas (from Eastern Siberia) to China. Note: at the time of the Club meeting, no decision had been reached. By 20 May, a huge agreement (400 billion dollars for the supply of more than 30 bcm per year of gas over 30 years) had been announced.

The European gas market is going to be tight until at least 2015-2016 as LNG is diverted to Asia; in 2016-2018 very limited new supplies will become available and there will be an additional call on take-or-pay volumes

Existing long-term contracts guarantee stable sales volumes for Russia until at least 2022.

<u>Russia on the international stage</u>

Several events in Russia were highlighted during the discussions. Under the terms of a US-Russian deal on the destruction of Syrian chemical weapons (reached in September 2013), Syria is obliged to transfer all its chemical weapons for removal abroad and subsequent destruction. As of 4 March 2014, Syria had shipped out about a third of its chemical weapons stockpile, including mustard gas, for destruction abroad.

On 24 November 2013, Iran agreed to suspend its nuclear activity in exchange for a limited easing of sanctions in a deal with the USA, France, Germany, the UK, China and Russia.

Edward Snowden got Russian citizenship in 2013. He exposed to the press vital US intelligence sources and American secret operation methods in order to review and alter established practices. He leaked data revealing that the USA spied on governments such as China, Germany, Russia, etc.

In December 2013, a number of people were released from prison under a general amnesty law:
- Mikhail Khodorkovsky
- the political action group Pussy Riot
- the Greenpeace 30

The aim was probably to calm the situation in the run-up to the Sotchi Games.

On 21 February 2014, Ukraine's President, Viktor Yanukovich, and opposition leaders signed an EU-backed agreement on ending the political crisis in the country (German, French and Polish foreign ministers participated). On 22 February, the Ukrainian parliament voted to strip the President of his powers and Viktor Yanukovich left the country.
Ukrainian ultra-nationalist groups actively fought on Maidan Square to overthrow President Yanukovich. Now they are unwilling to give up their violent ways, unleashing their "revolutionary" power against local authorities.

Crimea Referendum: Over 90 percent of Russians approve of Crimea re-joining the Russian Federation. On 20 March 2014, Crimea and Sevastopol were accepted into the Russian Federation and formed the 9th Federal region. Sevastopol is a city with a special federal status and a navy base. The EU and the USA imposed sanctions against Russian officials after Crimea became part of Russia.

The European Union and the United States have threatened Russia with various sanctions over its position on the Ukrainian political crisis and the support to the Crimean Autonomous Republic (visa bans for Putin's "Circle", asset freezes and economic restrictions for business associated with the "Circle" including Visa&Master Card operation blocked for certain banks).

At the consultations of the 28 EU Foreign Ministers in Brussels on 17 March, the EU member states agreed on targeted sanctions against high-level representatives of Russia and Crimea. In other words the G8 has gone but the G20 stays

West Qurna-2. On 12 December 2009, a consortium made up of LUKOIL and Norway's Statoil won a tender for the development of the West Qurna-2 field in Iraq. Its estimated recoverable oil reserves total approximately 13 bbl. West Qurna-2 is one of the biggest oil fields in the world.
On 29 March 2014, LUKOIL started commercial production at the oil field at the target level of 120 kbpd.

Session 3.2: Environment: where are we?

The IPCC 2013-physical science report makes some important points:

- It tries to differentiate levels of confidence in various observations and inferences.
- It is extremely likely that human influence has been the dominant cause of the warming observed since the mid-20th century.
- The global mean surface temperature change for the period 2016–2035 relative to 1986–2005 is likely to be in the range of 0.3°C to 0.7°C (medium confidence).

- It is projected that the increase in global mean surface temperatures for 2081–2100 relative to 1986–2005 is likely to be in the ranges derived from the concentration-driven CMIP5 model simulations, i.e. from 2012:

0.3°C to 1.7°C if 270 GtC emitted by 2100
1.1°C to 2.6°C if 780 GtC emitted by 2100
1.4°C to 3.1°C if 1060 GtC emitted by 2100 - 1210 for >50% probability of max 2°C warming
2.6°C to 4.8° C (RCP8.5), (1685 GtC by 2100)

NB "…changes [were made] to the underlying report to ensure consistency with the language used in the approved Summary for Policymakers…"

IPCC 2014 Impact report: There is high confidence in climate-related extreme events. The report magnifies other stresses (including conflicts, uneven distribution, ecosystems).
"Human influence on the climate system is clear. "*Yet determining whether such an influence constitutes "dangerous anthropogenic interference" involves both risk assessment and value judgments"*
Decisions have to be taken in a context of unavoidable uncertainty and more adaptation must be planned.

Calendar to 2015:

COP19 (Warsaw Nov.2013)
- Verification and monitoring
- Forest rules
- Climate fund for mitigation
- Mechanism for mitigating impacts in developing countries

IPCC 5th Assessment
- Sept. 2013: Physical science basis
- March 2014: Impact of climate change
- April 2014: Mitigation options

June 2014: UNFCC Subsidiaries in Bonn
Sept. 2014: UN SG's Climate Summit (New York)
Dec. 2014: COP 20 (+ Kyoto 10), Lima: First draft for 2015
Sept. 2015, Paris, COP 20: New deal

Pre-positioning

EU: June 2014 European commission (EC) proposal for 2030 targets (40% reduction not so far agreed). By October 2014 EC Council decision on 2030 targets. December 2014: Blueprint for adaptation:
Feb. 2014 US /China joint declaration "*It is not at others' demand but our own will. We have already taken a lot of measures and will take more in the future," President Xi Jinping to Kerry on China's serious attitude toward environmental protection.*

USA: June 2013 Obama action plan (executive actions)
- Carbon standards for new power plants (Sept. 2013), existing plants (2014-15)
- End support for overseas coal plants
- Doubling renewable capacity (federal land)
- Post 2018 CAFE standards
- 2.5% per year improvement in building efficiency
- Support global gas market with US exports

Conclusions

- IPCC report provides improving basis for policy, but less panic
- US-China co-operation on policy detail rather than grand targets
- Shift towards adaptation
    - Funds for developing countries
- EU losing initiative despite past achievements:
    - Will EU policy now relax renewables targets and focus on emissions?
    - High cost and low scale of wind and biofuels changing fast
- Implications for industry
    - Downward pressure on fossil fuel demand will continue