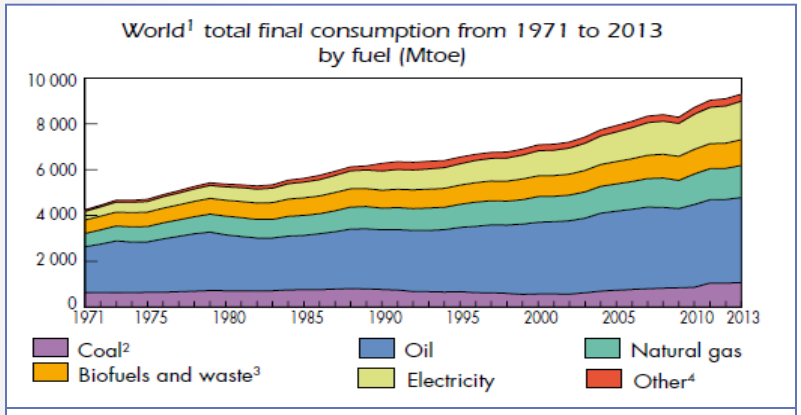
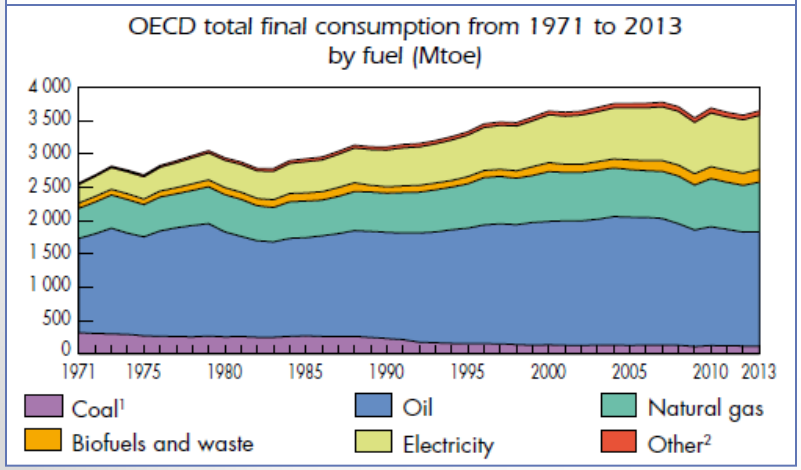
The Political economy of oil and gas in Central Asia

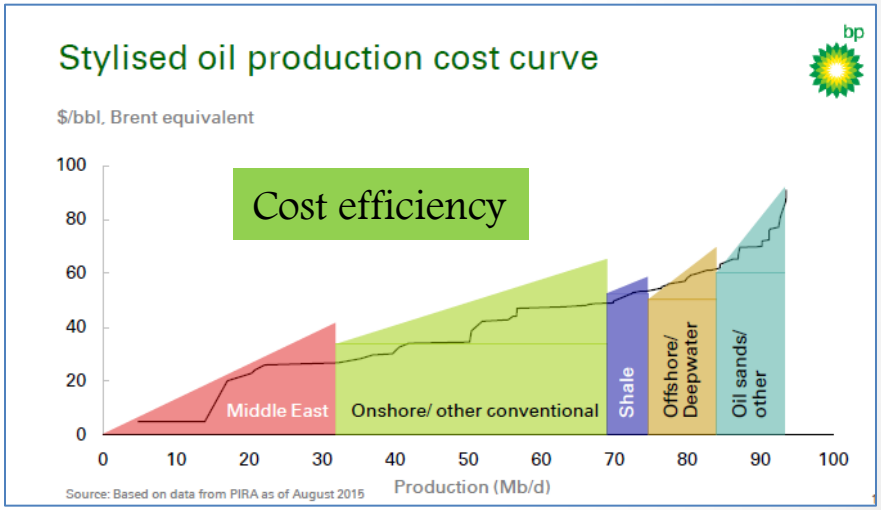
Thomas Chan
One Belt One Road Research Institute,
Chu Hai College,
Hong Kong, May 2018

The 21st Century is still an age of oil

Oil as the primary source of energy for socio-economic development is still irreplaceable by other sources because of – high energy intensity & efficiency, easy exploration & convenience in transport.







Oil & gas consumption determines country development level

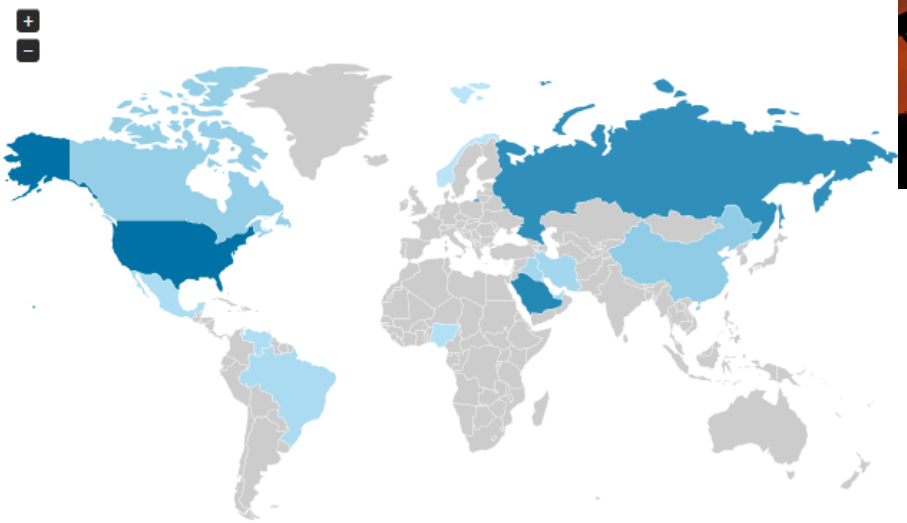
Source: Spencer Dale, BP Group chief economist, *New Economics of Oil*, Society of Business Economists Annual Conference, London, 13 October 2015

Source: International Energy Agency, *Key World Energy Statistics*, 2015

Total Petroleum and Other Liquids Production - 2014 ›

Thousand Barrels Per Day

1. United States
2. Saudi Arabia
3. Russia
4. China
5. Canada
6. United Arab Emirates
7. Iran
8. Iraq
9. Brazil
10. Mexico
11. Kuwait
12. Venezuela
13. Nigeria
14. Qatar
15. Norway



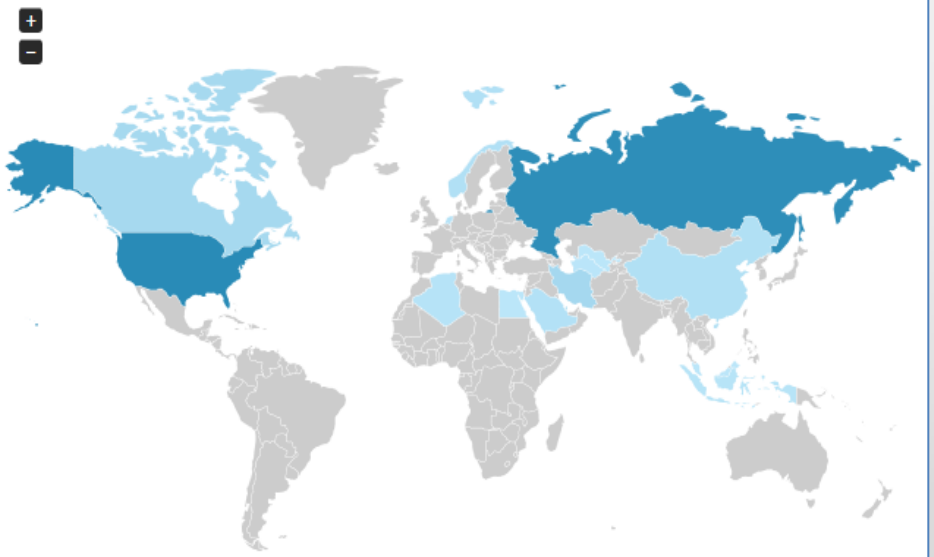
The energy (oil & gas) factor on energy and economic security of both producing and consuming countries

Geographical distribution of current production of world oil & gas – a major factor affecting nation's development

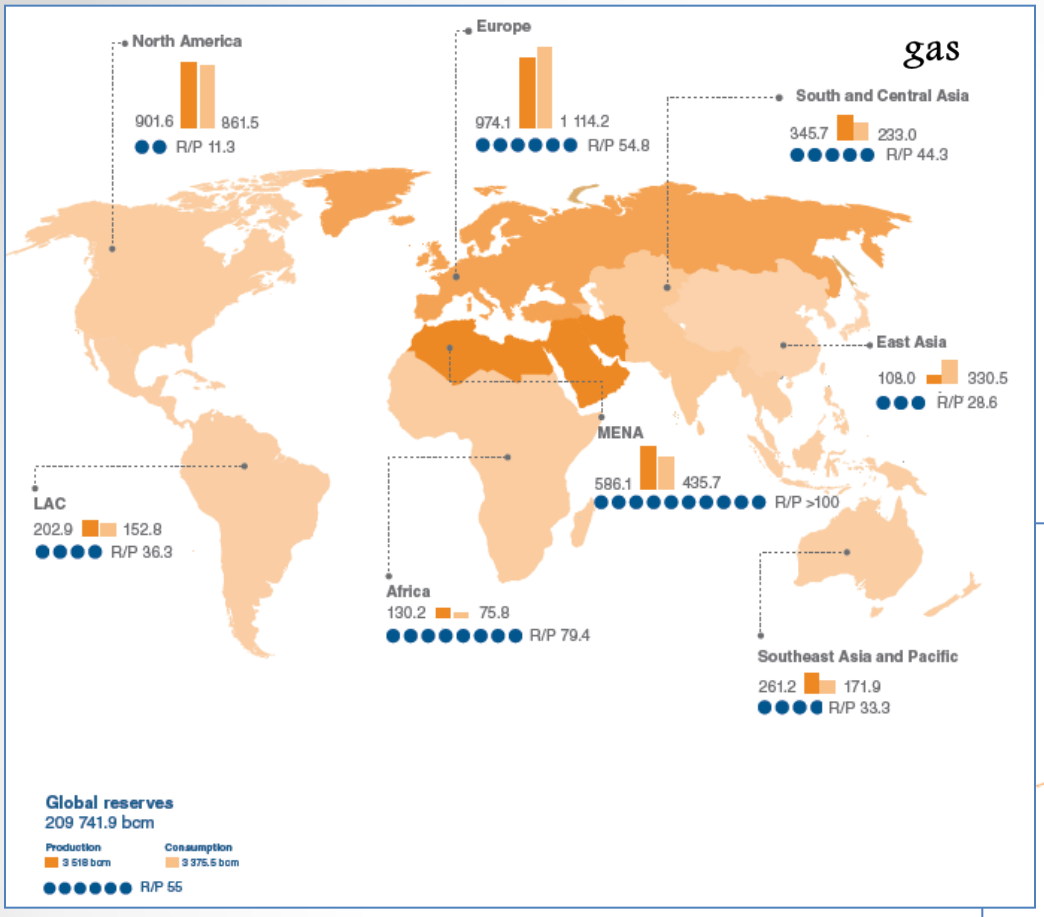
Dry Natural Gas Production - 2011* › (*most recent year with sufficient data for ranking)

Billion Cubic Feet

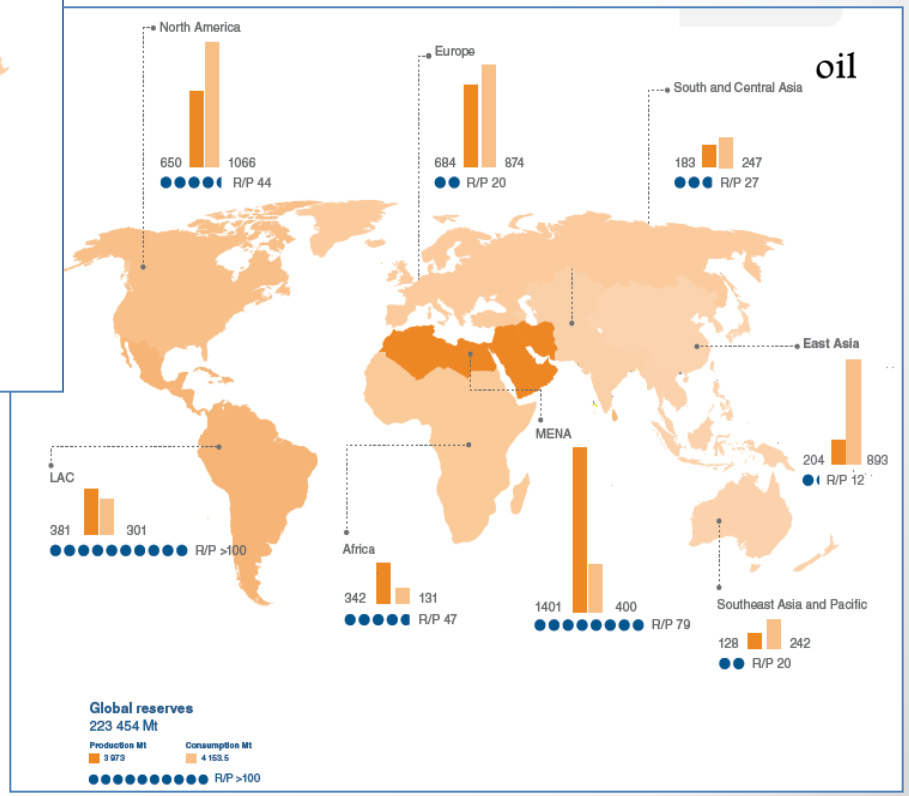
1. United States
2. Russia
3. Iran
4. Canada
5. Qatar
6. China
7. Norway
8. Saudi Arabia
9. Algeria
10. Netherlands
11. Indonesia
12. Turkmenistan
13. Uzbekistan
14. Malaysia
15. Egypt



Source: U.S. Energy Information Administration

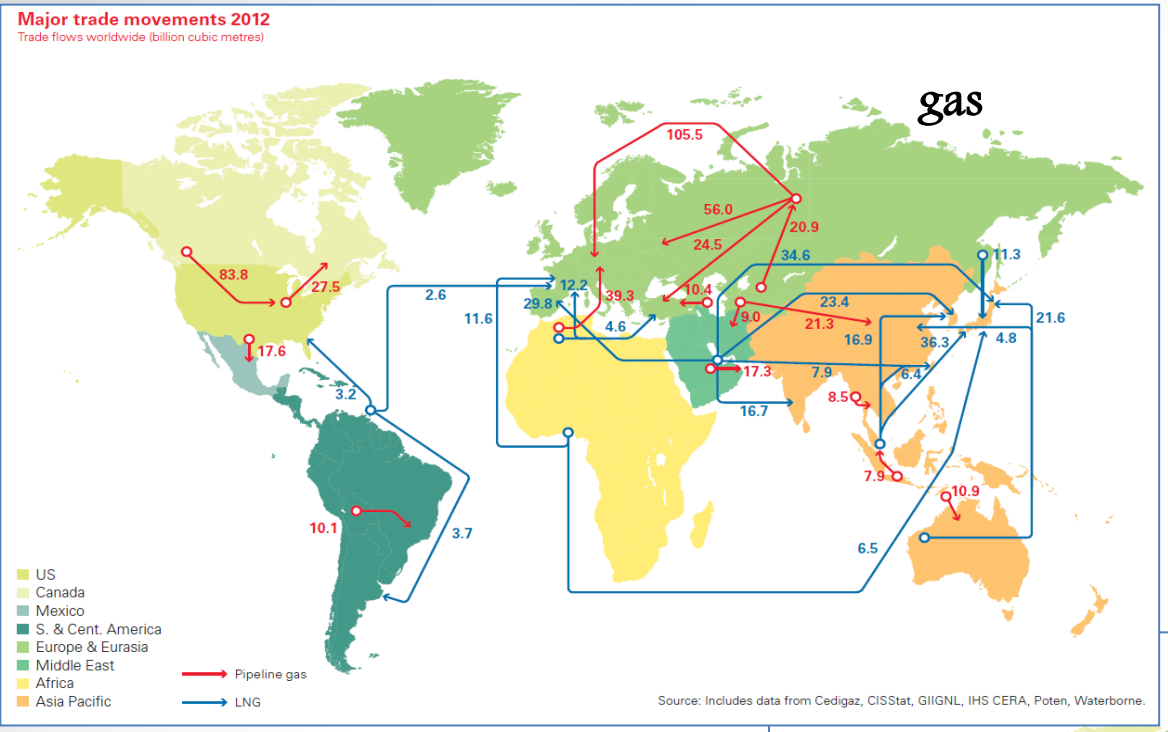


Reserve & production of world oil & gas in major regions of the world



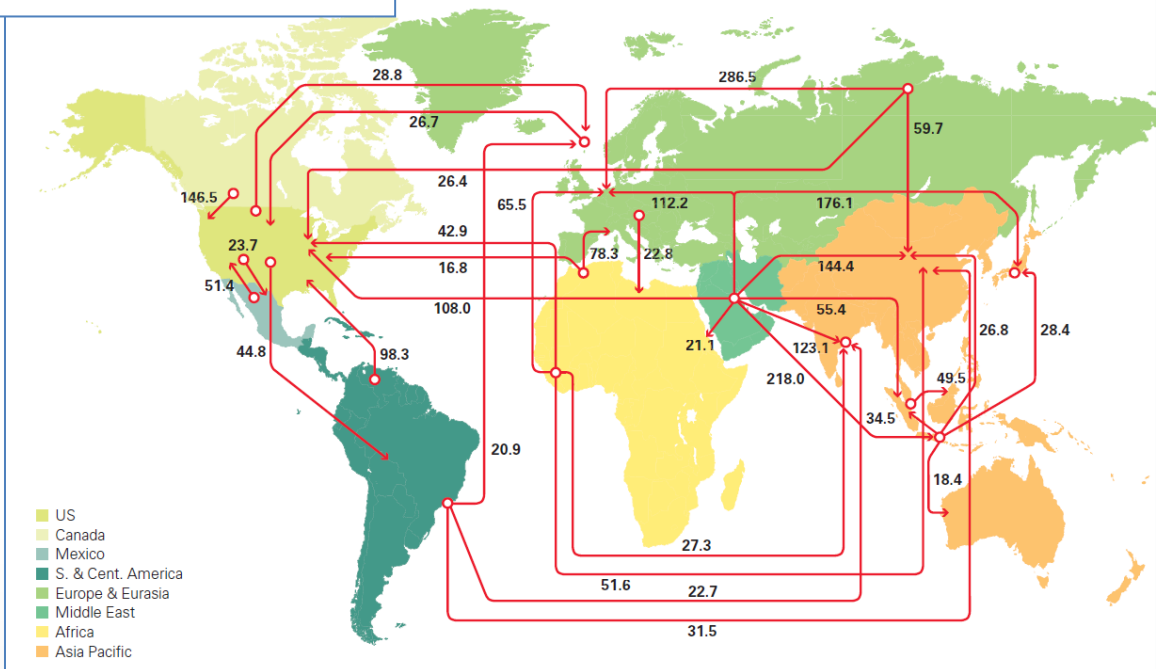
Geographical distribution of reserves concentrated in the Middle East (Saudi Arabia & Qatar) but recent findings would put Iran & Caspian Sea as major areas of gas reserves.

Source: World Energy Council, *World Energy Resources: A Summary*, 2013



Central Asia reemerged after 1990s as the alternative or competitor to oil & gas from the Middle East

oil

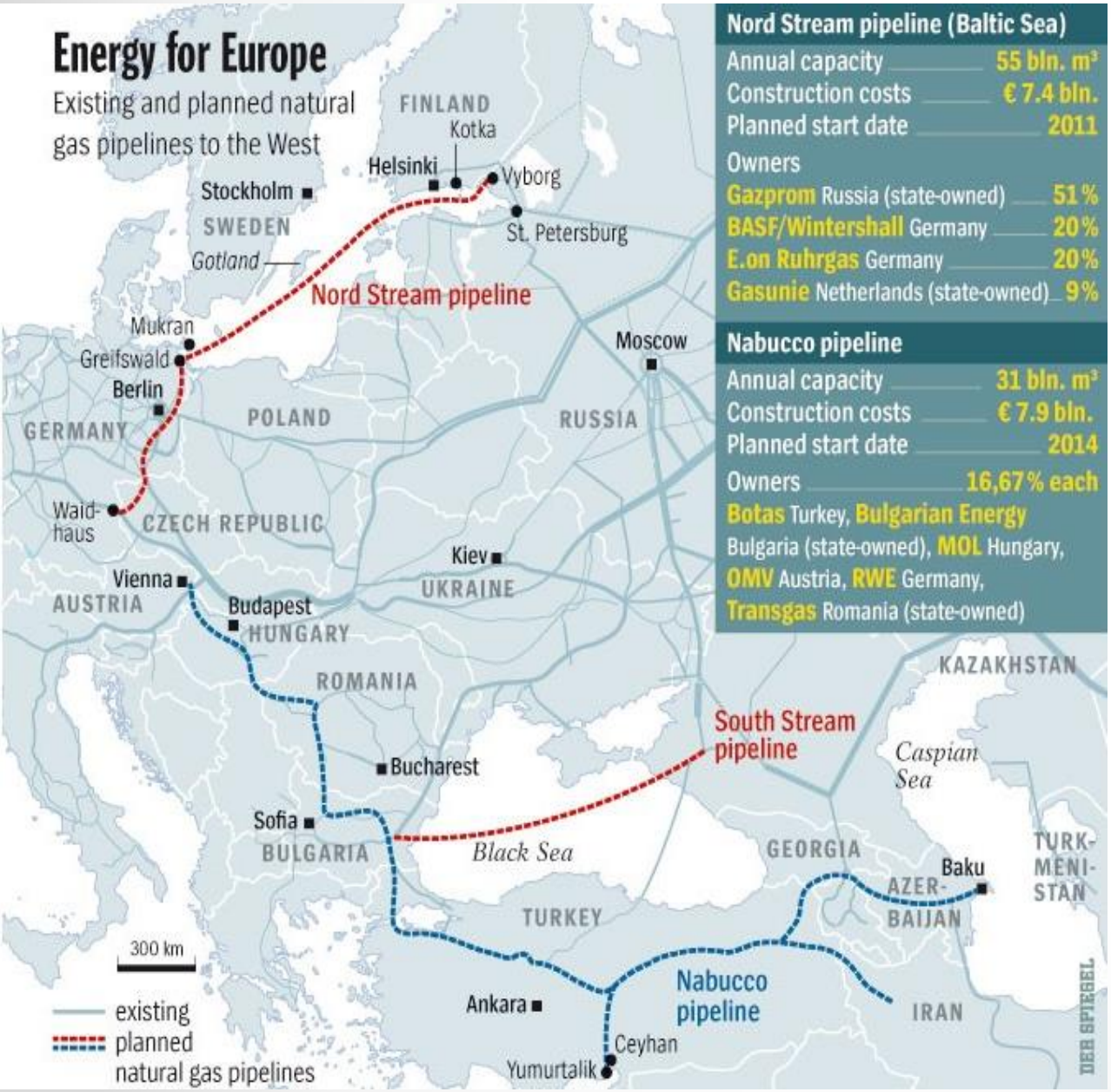


2012 Global trade movements of oil & gas

Oil mostly spreads from the Middle East to China and East Asia, whilst gas flow from the Middle East, Russia & Central Asia to China and Europe

Source: US EIA

European dependence on Russian Gas – impact on gas pipeline competition & regional politics & economics



The gas factor for Europe

Production of gas in the North Sea dwindles that there is a heavy European dependence on Russian gas, especially for Baltic & East European countries and Germany.

Unreliable Ukraine transit

Source: http://stavrev.net/wp-content/uploads/2014/05/image-59202-galleryV9-rdxc.jpg

Oil & gas boom in the Central Asia

1. In the 1990s Caspian Sea was said to be the next Alaska or North Sea for the oil and gas industry. The reserves of the Caspian basin were estimated to be at least the second richest in the world. The most conservative estimations of the Caspian basin's energy wealth set it at 200 billion barrels of oil and natural gas. An amount exceeded only by the reserves of Saudi Arabia.
2. In 2003, the Energy Information Administration (EIA) estimated the Caspian basin area to hold 48 billion barrels (bn bls) of oil and 292 trillion cubic feet (tcf) of natural gas in proved and probable reserves. By comparison, the Middle East's proven reserves alone amount to more than 803 bn bls of oil and about 2,827 tcf for gas (including Iran, which holds about 158 bn bls of oil and 1,201 tcf of gas). ('Instead of the 16 per cent of world reserves the US State Department implies, it is likely to be closer to 3 per cent')
3. Yet, the geology of the region has not been fully explored. The Kashagan oil field, discovered in 2000 in Kazakhstan, was then hailed as the largest oil discovery in 50 years; it is currently the largest offshore oil field outside the Middle East. The Shah Deniz gas field in Azerbaijan is the largest gas field in the Caspian Sea and among the 20 biggest in the world. There are new discoveries in Uzbekistan, Kazakhstan, Turkmenistan and even Tajikistan with Turkmenistan as a major gas producer.

Country	Proven oil reserves (million tonnes)	Share of world total (in %)	Proven gas reserves (trillion cubic metre)	Share of world total (in %)
Azerbaijan	1000	0.4%	0.9	0.5%
Kazakhstan	3900	1.8%	1.5	0.8%
Turkmenistan	100	less than 0.05%	17.5	9.4%
Total	5000	2.25%	19.9	10.7%

Source: BP, 2014

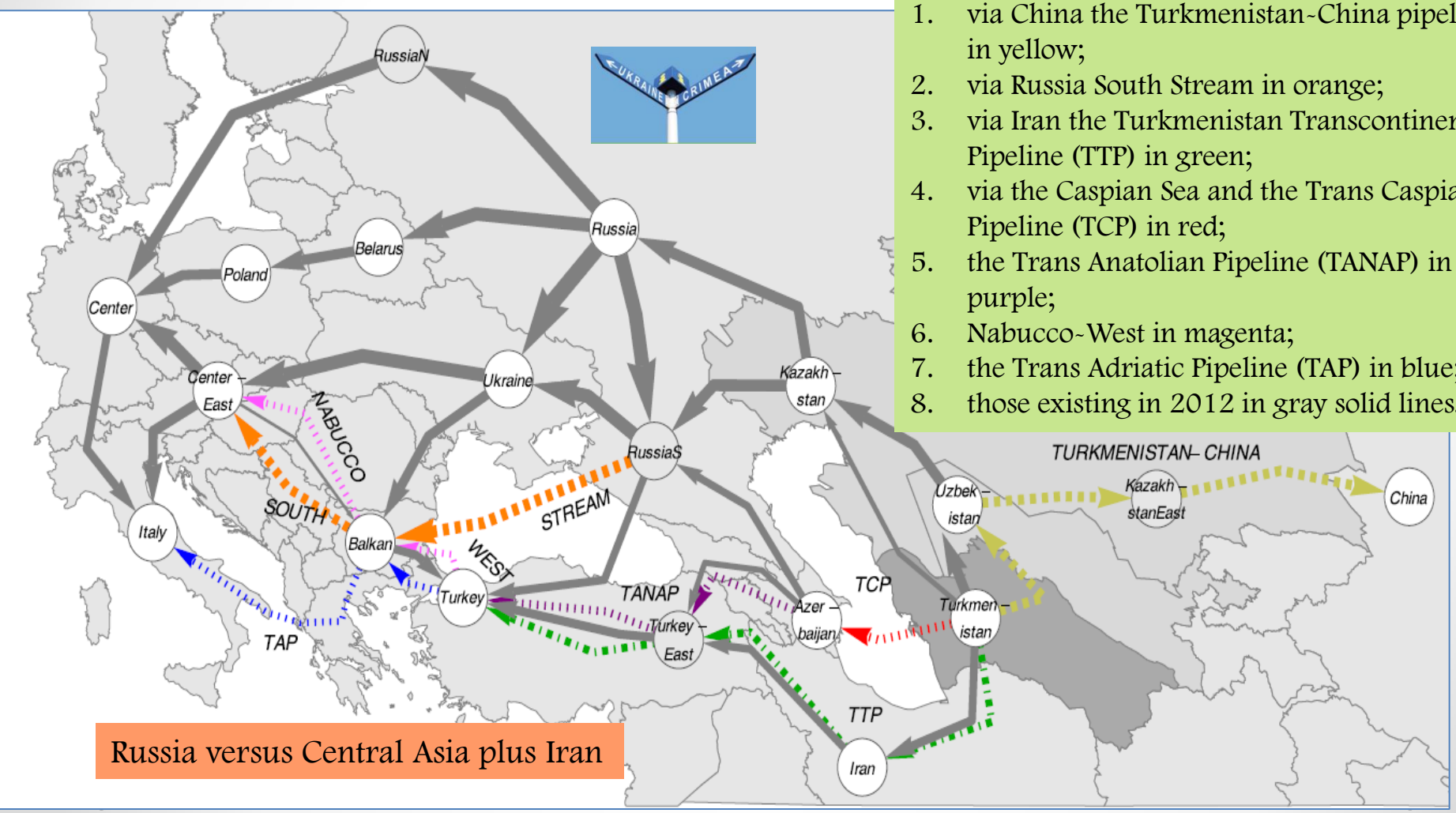
1. After 1991, the U.S. had hopes that the Caspian Sea could become an alternative to the Middle East as a source of oil, especially because its states, apart from Iran, do not belong to the Organization of the Petroleum Exporting Countries (OPEC). The EU also hoped that supplies from the region would reduce its dependence on Russian gas. There has been a strong incentive to construct the east-west energy corridor with pipelines from the Caspian Sea to create a secure oil supply in Eurasia as it steers away from a dependency on Middle East oil.
2. With the resurgence of Russia under Putin after 2000, US & EU would like to reduce the influence of Russia in the Central Asia and South Caucasus and favours the construction of non-Russian pipelines to divert oil & gas resources away from Russia. Hence there have been an intensive struggle with Russia over location & routing of the Eurasian pipeline system with the southern stream being the focus of the competition.

Strategic importance of Caspian Oil & Gas

Political economy of oil & gas pipelines – location of production & transport plus price competition

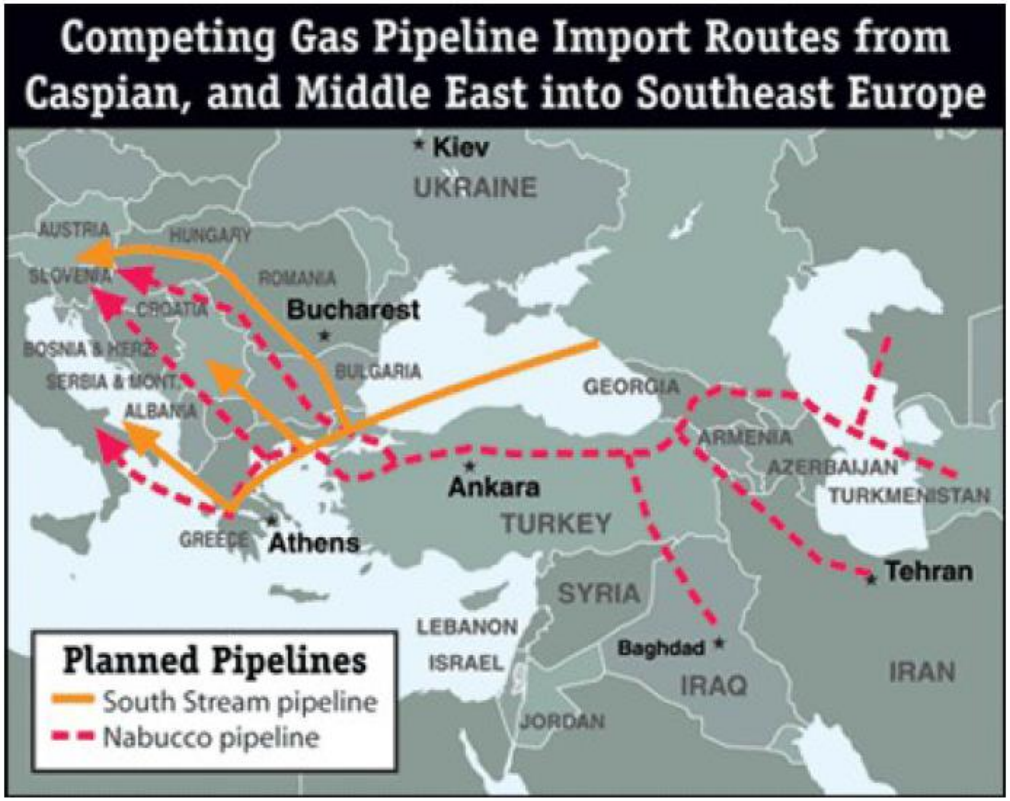
Pipelines:

1. via China the Turkmenistan-China pipeline in yellow;
2. via Russia South Stream in orange;
3. via Iran the Turkmenistan Transcontinental Pipeline (TTP) in green;
4. via the Caspian Sea and the Trans Caspian Pipeline (TCP) in red;
5. the Trans Anatolian Pipeline (TANAP) in purple;
6. Nabucco-West in magenta;
7. the Trans Adriatic Pipeline (TAP) in blue; &
8. those existing in 2012 in gray solid lines.



Russia versus Central Asia plus Iran

Source: Onur Cobanli, Central Asian gas in Eurasian power game, *Energy Policy*, 68(2014), 348–370.



The Turkey factor

Turkey and/or Bulgaria would be the main transits that would determine which pipeline(s) would be chosen for Europe

To reduce European dependence on Russian gas, there has been competition between EU and Russia for pipelines in the southern routes allowing Central Asia (Azerbaijan & Turkmenistan) plus Iran to supply Europe versus strengthening Russia's control over gas supplies to Europe

Sources :
http://www.engdahl.oilgeopolitics.net/print/Syria%20Turkey%20Israel%20and%20a%20New%20Greater%20Middle%20East%20War.pdf & https://positivity.files.wordpress.com/2009/04/oil-pipelines-east-and-west.jpg

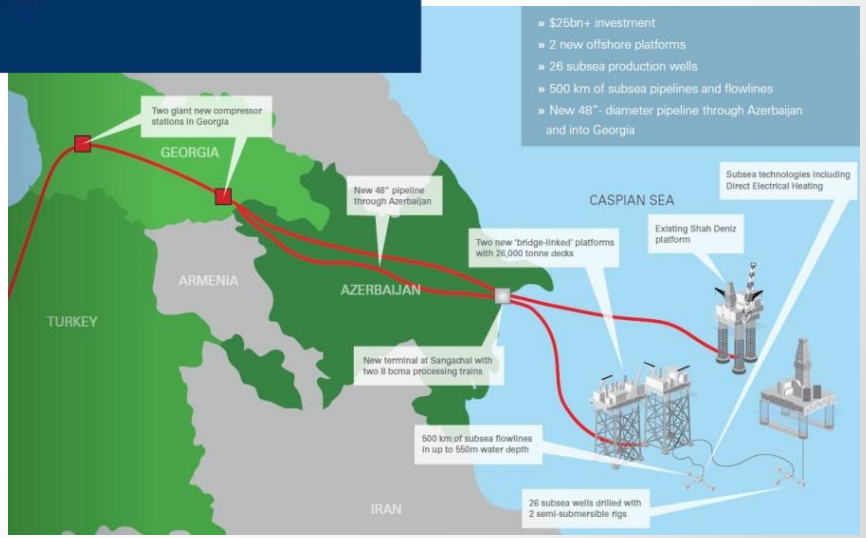
Due to Geopolitical Considerations and Economic attractiveness the EU has been giving Political support to the Southern Gas Corridor Projects

Business supportive environment, liberalized market and moderate tax regime are appealing factors to develop Southern Gas Corridor projects considering Transit of Caspian Gas through GEORGIAN territory

Gas originated from the Shah Deniz Gasfield of Azerbaijan, but passes through Georgia. But Russia & Iran might join

The Southern Gas Corridor

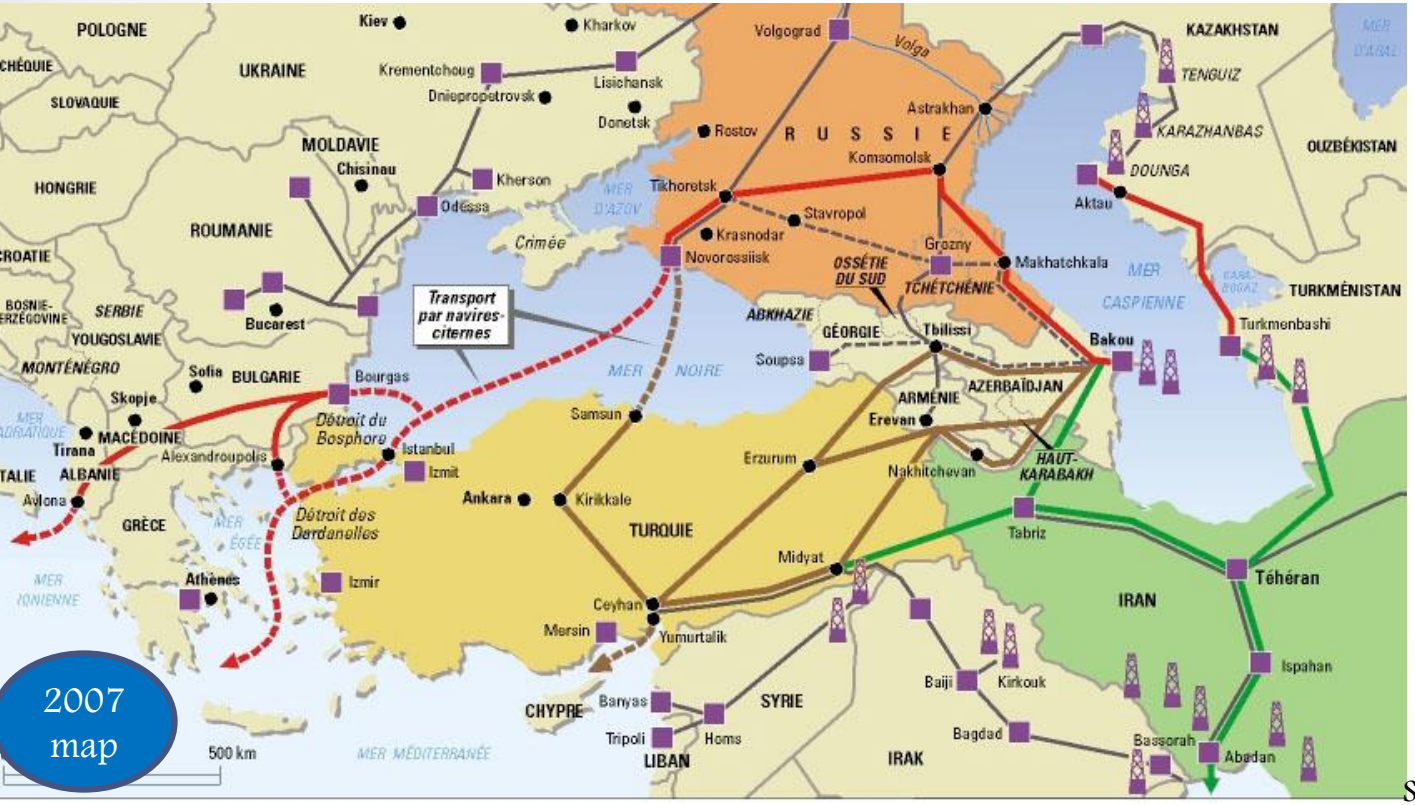
The first gas supplies through the corridor to Georgia and Turkey are given a target date of late 2018. Gas deliveries to Europe are expected just over a year after, but it was abandoned subsequently



Source: http://www.birgitwetzel.de/wp-content/uploads/2014/12/Bild1.png & http://www.pipeline-journal.net/sites/default/files/field/image/Shah_Deniz_Stage_2.jpg

Italy & Azerbaijan signed in March 2016 a MoU regarding deliveries of Russian natural gas to Italy. In February 2016 Gazprom & other companies agreed deliveries of Russian gas via an undersea pipeline in the Black Sea & through third countries to Greece and from Greece to Italy

Source: Anakhanum Hidayatova, Azerbaijan's Southern Gas Corridor – the only real project, Italy says, Trend: 4 March 2016.



2007 map

Raffineries
Principaux champs pétrolifères
Principaux oléoducs existants
Oléoducs existants, actuellement en travaux
Les projets d'oléoducs proposés par...
la Russie
la Turquie
l'Iran

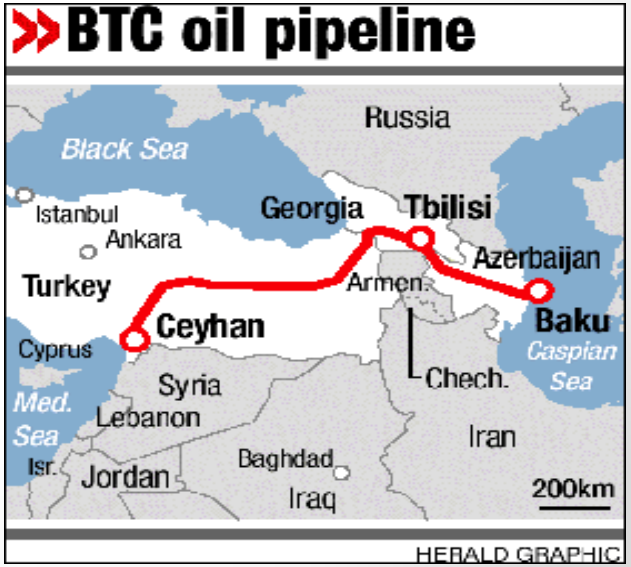
The Southern Gas Corridor , which envisages transportation of the Azerbaijani gas to Europe, is the only real project in this sphere, said Italy's Ambassador to Azerbaijan, Giampaolo Cutillo

Source: http://web.archive.org/web/20091227143136/http://eldib.files.wordpress.com/2007/10/pipeline.jpg

Pipeline to Europe that could bypass Iran and Russia and boost the exports from the Caspian region – Nabucco Pipeline, promoted by the US

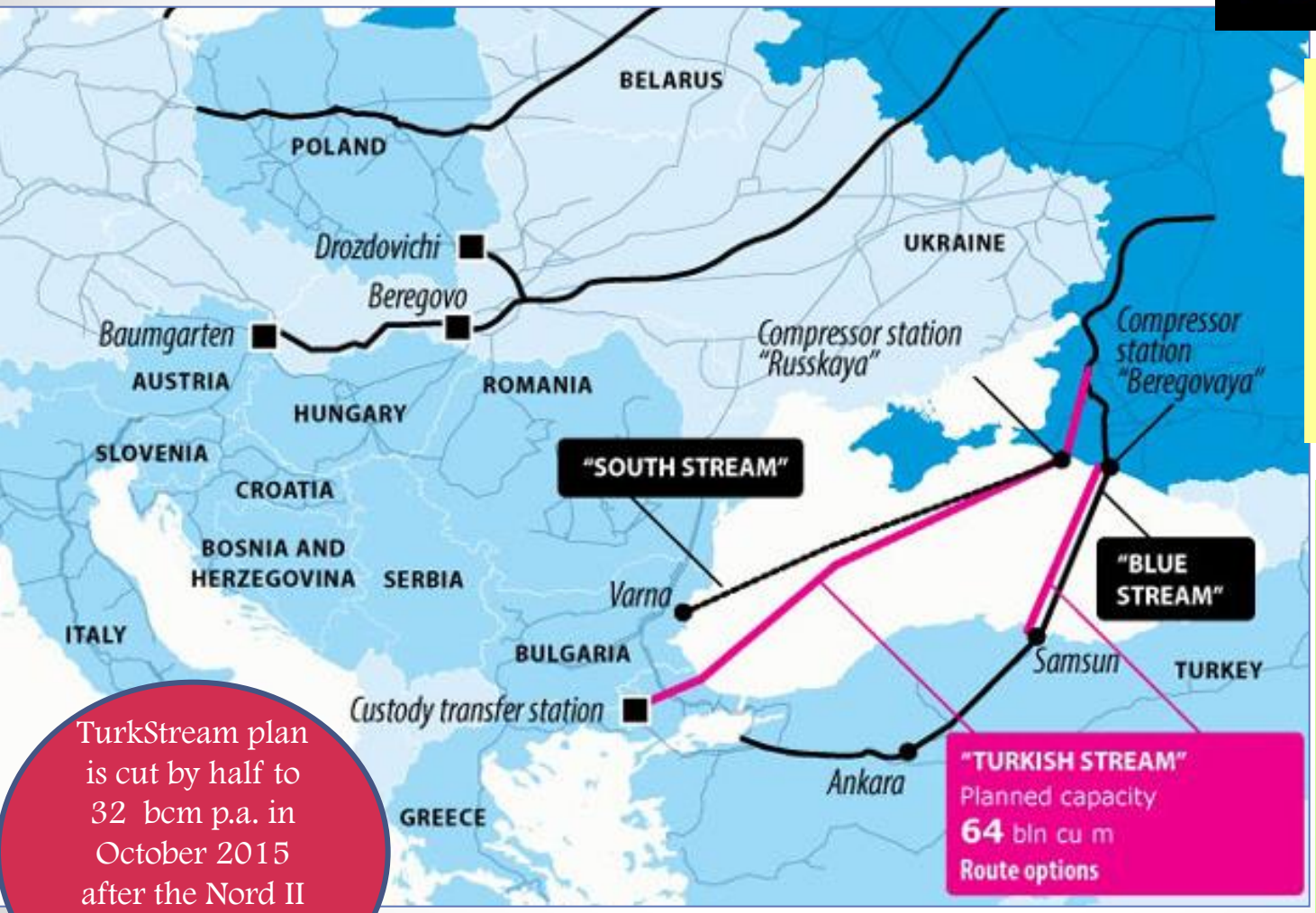
Source: The revival of Nabucco West: myth or reality, http://www.naturalgaseurope.com/the-revival-of-nabucco-west-myth-or-reality-23537

The Nabucco Pipeline was proposed in 2002, and replaced by Nabucco West in 2005 with inter-government agreement signed in 2009. It is intended to rival Russia's South Stream project. It is revived in 2015 , mostly by Bulgaria, when Russia abandoned the South Stream project under pressure. BTC is an integral part of it but has completed already.



Source: http://2.bp.blogspot.com/-t3xBb1RGxmo/Tk1o8KnuNjI/AAAAAAAAAE8/hAymU8afDbE/s320/oil2.gif

Russia's proposal for a Turkish Stream with support from Hungary and Turkey



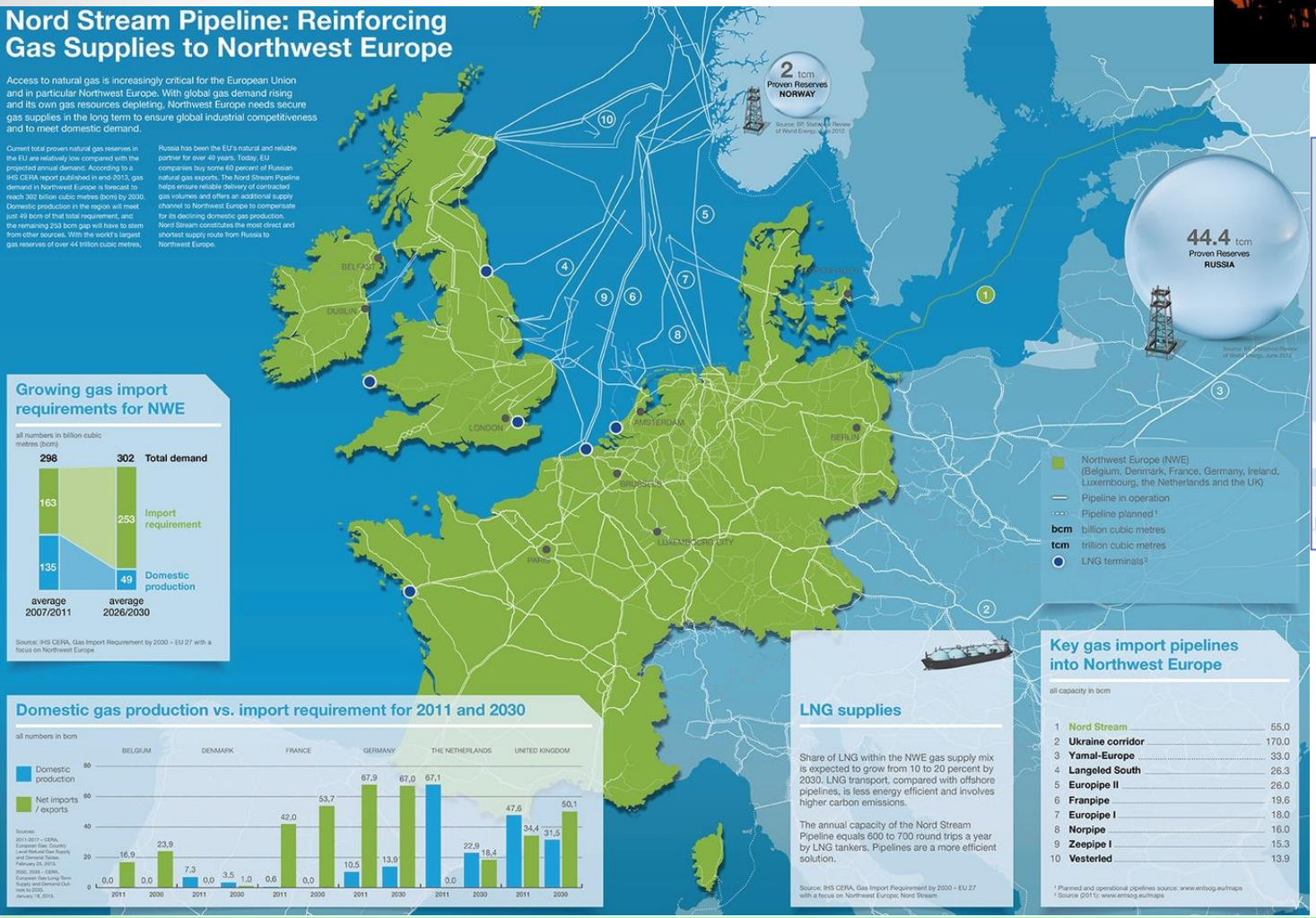
2015 plan – a $40 billion route passing through Turkey, Greece, Macedonia and Serbia, then into Hungary and perhaps on to Austria

Russia intends to use it to replace the South Stream that was abandoned in 2014 & to achieve a halt to gas supply to Europe via Ukraine by 2018. It faces opposition from the US & EU

TurkStream plan is cut by half to 32 bcm p.a. in October 2015 after the Nord II & suspended in November

Source: Turkish Stream pipeline with Balkan nations, *Bosnia Today*, 14 April 2015

Lately attempts in 2015 to address the energy security of Europe – to avoid the disruption caused by possible stoppage of Russia gas supply through Ukraine – Nord Stream II



Source: http://www.nord-stream.com/press-info/images/construction-of-the-nord-stream-pipeline-in-finnish-waters-3096/ & https://www.stratfor.com/interactive/interactive-veins-influence

Agreement singed in September between Russian & German firms to build a second Nord Stream parallel to the original Nord Stream (operational in 2011) to double the supply of 55 billion M3 per year. It is intended to rebalance the expected reduced production from the North Sea, to be operational by end 2019.

Oil and gas resources in Russia and Central Asia

Source: Caspian Basin Alert: Oil & Gas Economics, by Sarah Smith and Nathan Somers, http://academic.evergreen.edu/g/grossmaz/caspianecon.html

Source: http://euromaidanpress.com/2014/10/20/moscow-forced-to-intensify-efforts-to-find-new-natural-resource-deposits/

2003 production and reserve estimates

Selected Oil and Gas Pipeline Infrastructure in the Former Soviet Union

Oil Production, 2003[a]

Region or Basin	Thousand Barrels/Day
West Siberia	5,882
Volga-Urals	1,887
Precaspian	679
South Caspian	454
Timan-Pechora	373
Middle Caspian	261
South Turgay	209
Central Asia	161
North Caucasus	72
Far East	65
Azerbaijan onshore	32
East Siberia	32
Baltic	—
Barents Sea	—
Total Region	**10,107**
Total World[b]	**79,110**

Gas Production, 2003[a]

Region or Basin	Billion Cubic Meters
West Siberia	573.1
Central Asia	90.0
Precaspian	25.9
Volga-Urals	25.1
South Caspian	15.7
East Siberia	8.8
Timan-Pechora	3.6
Far East	1.9
Azerbaijan onshore	0.4
Barents Sea	—
Total Region	**744.5**
Total World[c]	**2,618.5**

Source: https://upload.wikimedia.org/wikipedia/commons/7/79/Former_USSR_Oil_and_Gas_map.svg

One-quarter of all energy for Europe comes from Russia, which is after the US the largest producer of natural gas in the world

The real long-term threat to Russian influence in Europe comes less from Azerbaijan than from the building of liquefied natural gas (LNG) terminals. These are facilities located on coastlines that convert LNG back to natural gas after it has been liquefied to enable transport across seas and oceans. With an LNG terminal, a country is less dependent on pipelines emanating from Russia.

Source: Russia's Pipelines of Empire, Robert Kaplan, Stratfor, November 14, 2013

Baku-Tbilisi Ceyhan (BTC) pipeline

It carries oil from the Azeri-Chirag-Deepwater Gunashli (ACG) field and condensate from Shah Deniz across Azerbaijan, Georgia and Turkey. It links Sangachal terminal on the shores of the Caspian Sea to Ceyhan marine terminal on the Turkish Mediterranean coast. In addition, crude oil from Turkmenistan continues to be transported via the pipeline. It also transports Tengiz crude oil from Kazakhstan.

The pipeline that became operational in June 2006 was operated by BP, represents the first non-Russian pipeline to Europe from Central Asia

Source: http://bpi.ge/wp-content/uploads/2015/07/789-e1461397749834.jpg

Source: http://www.mdpi.com/2073-445X/6/3/55/htm

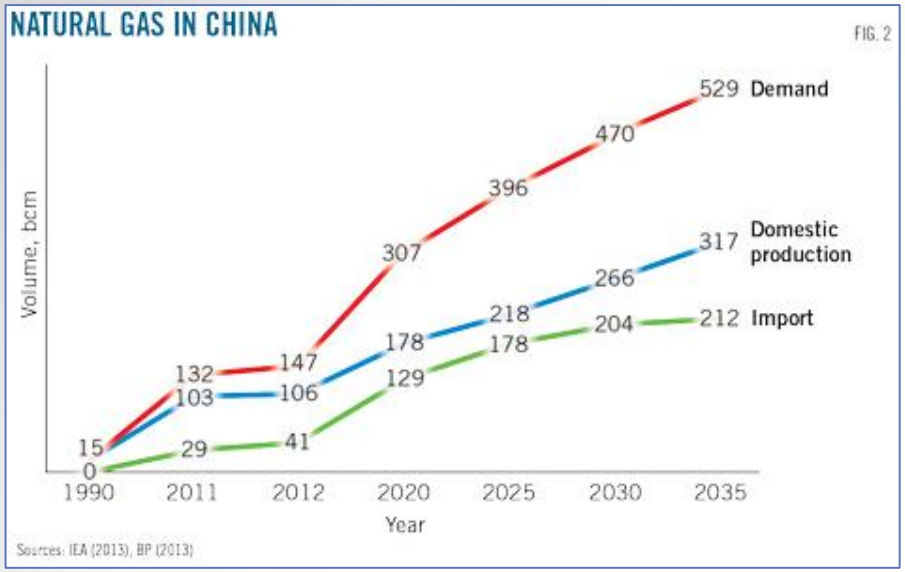
China uses Central Asia as its main vehicle of diversifying its energy imports

Source: Based on http://www.un.org/Depts/Cartographic/map/profile/centrasia.pdf.

Oil mainly from Kazakhstan and gas from Turkmenistan and Uzbekistan

Source: www.chathamhouse.org/sites/files/chathamhouse/publications/research/2016-03-08-turkmenistan-bohr.pdf

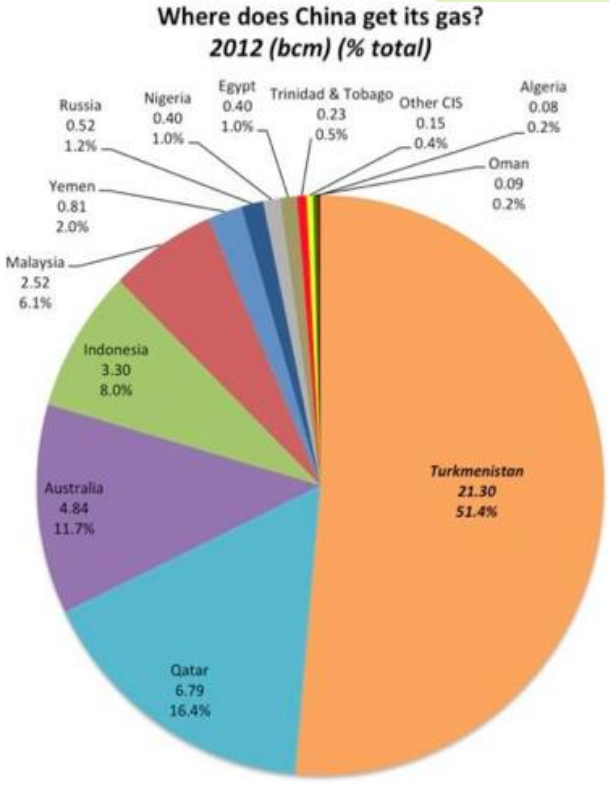
Gas pipelines A & B completed in 2009, 2010, C in 2014 & D by 2018

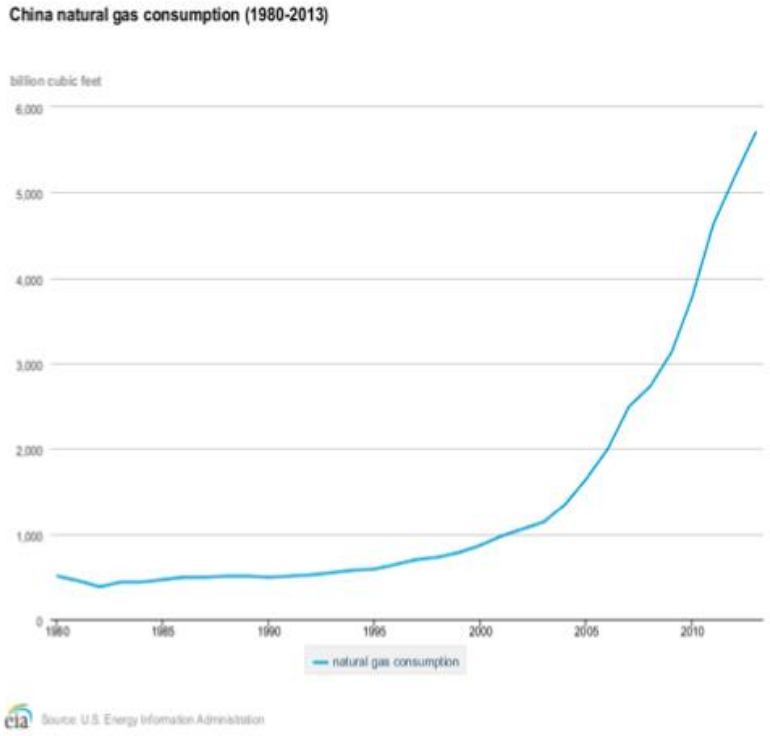


The annual volume of natural gas supplied by Turkmenistan to China will increase from 40 bcm in 2014 to 65 bcm in 2020 (after gas from the Galkynysh field will start flowing), the fourth branch (D) of the pipeline through Uzbekistan, Tajikistan and Kyrgyzstan is being built for that purpose

Source: Qaya Mammadov, Turkmenistan positions itself as Eurasian natural gas power, Oil and Gas Journal, 12 July2015

China's domestic deposits of oil and gas are limited. Proven oil reserves are estimated to be 17.4 billion barrels, or 1.0% of world reserves, and gas reserves are 3.1 trillion cubic metres, or 1.7% of the world

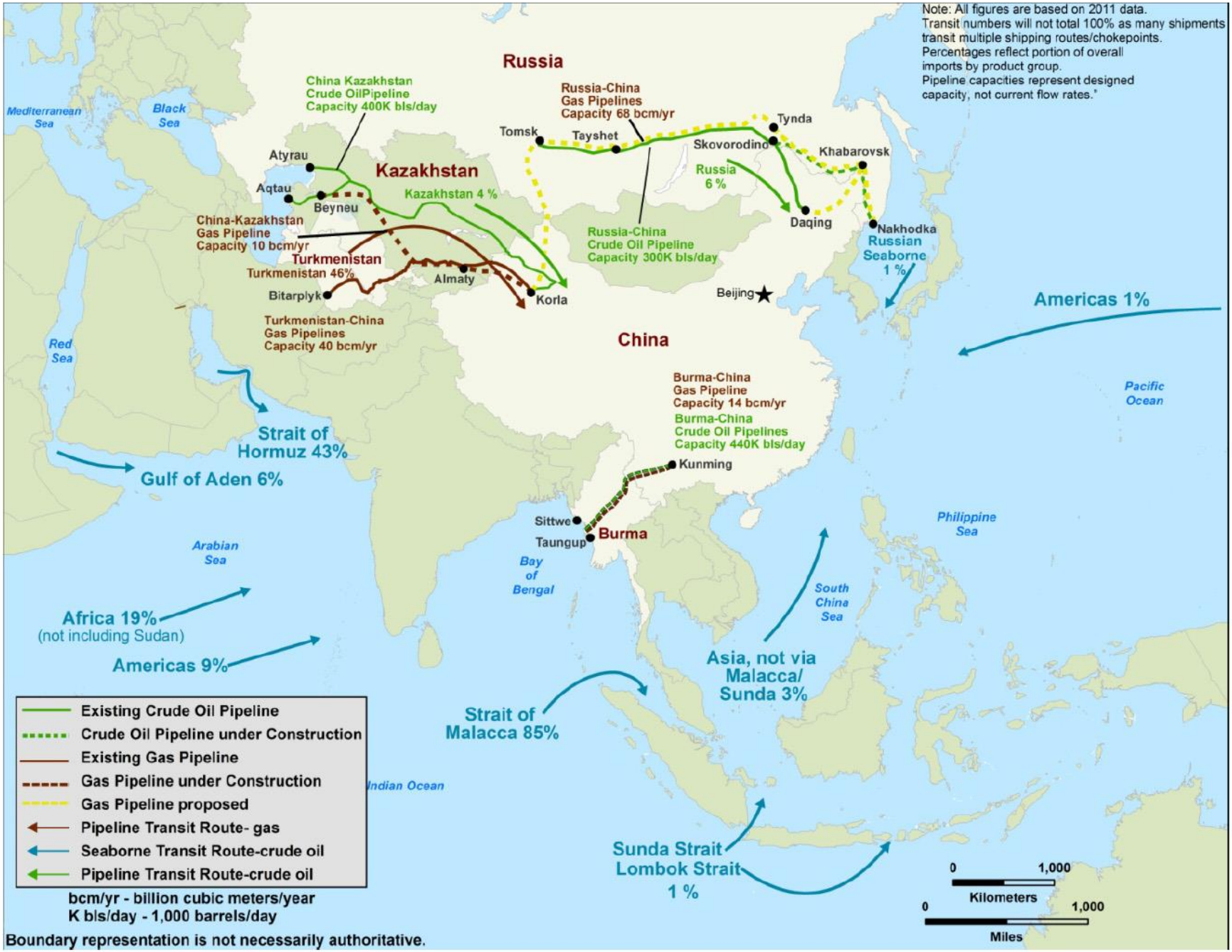




Source: Caspian sea littoral states' perspectives on the southern gas corridor, EU cooperation and Chinese dominance, September 25th, 2014, http://www.naturalgaseurope.com/azerbaijan-turkmenistan-kazakhstan-southern-corridor-eu-cooperation-china

Source: WANG Zhuwei, Securing Energy Flows from Central Asia to China and the Relevance of the Energy Charter Treaty to China, Energy charter Secretariat Knowledge Centre, 2015

- China has invested US$ 7.1 billion in 2009 & 2011 in Turkmenistan's Galkynysh gas field, among the largest in the world, and has a production share contract for Bagtyyarlyk contract territory and in Amu River. Turkmenistan supplies nearly 40 percent of China's total gas imports via a central Asia-China trunkline and shipments by tankers of super-chilled liquefied natural gas (LNG).
- In 1997 China first promised to invest U.S. $9.5 billion (65.5 billion yuan) in Kazakhstan. It controls approximately 20 percent of Kazakhstan's oil production and has constructed one of the world's longest oil pipelines, running 2,300 km from the Caspian Sea to Xinjiang province. CNPC owns a significant stake in the Kashagan oil field in the Caspian Sea, while Chinese companies own several key oil fields around the western city of Aktobe.
- China has concluded with Uzbekistan a $15 billion bilateral energy deal in 2013.
- China has also financed two refineries in Kyrgyzstan, in the towns of Kara-Balta and Tomok.
- In 2013, CNPC acquired a one-third interest in Tajikistan's Bokhtar oil and gas field, which was said to 3.2 trillion cubic meters of gas reserves.

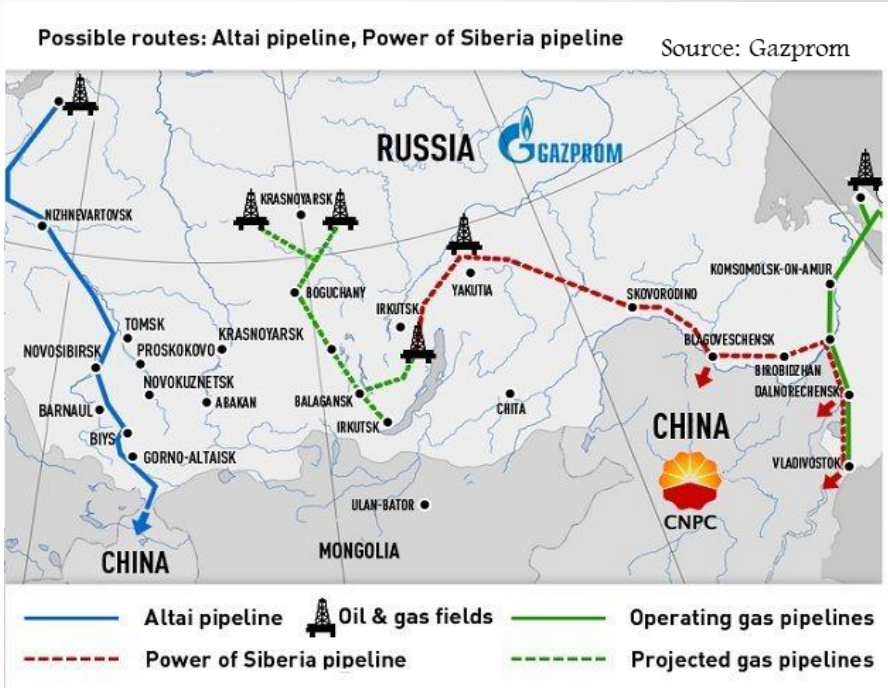


Source: https://www.zerohedge.com/sites/default/files/images/user5/imageroot/2014/01/China%20import%20transit%20routes.jpg

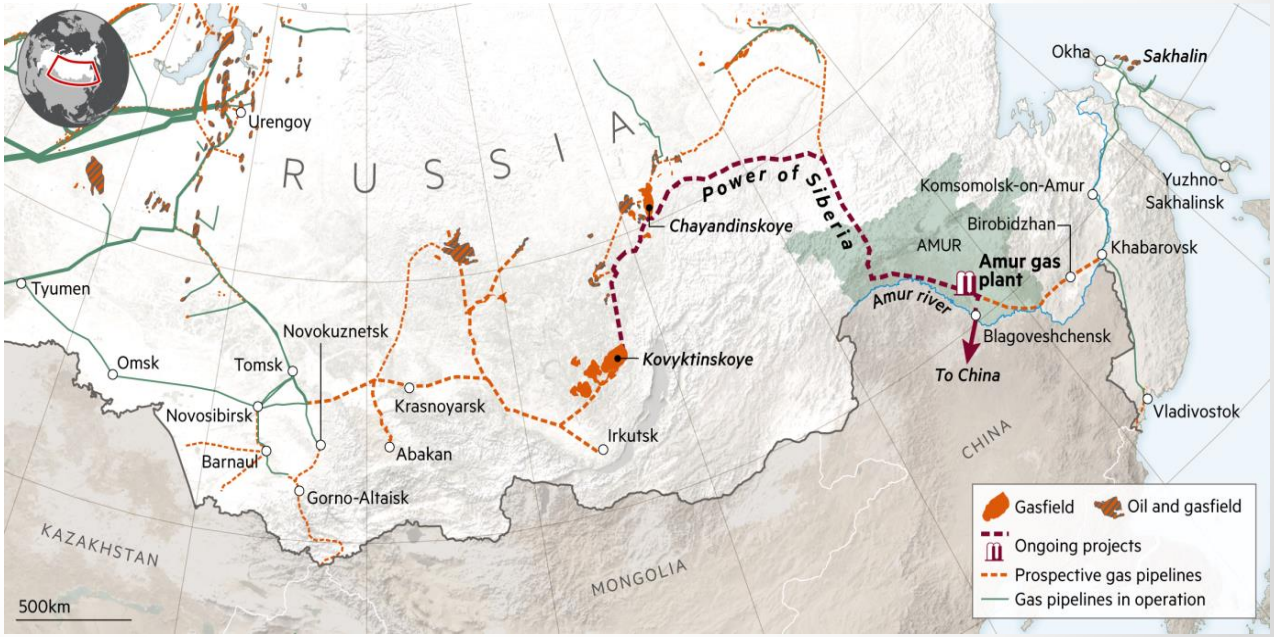
Russian competition with Central Asia for gas supplies to China

Turkmenistan promised to increase gas exports to China to 38 bcm 2017, 9% jump.

Drop of Central Asia exports of gas to China in early 2018



1. Russia and China have signed a 30-year, $400bn (£237bn) deal for Gazprom to deliver Russian gas to China in a deal to provide 38bn cubic metres of gas each year.
2. Russia delivers most of its production of gas (8 bcm in 2017 to 16 bcm in 2020) in Uzbekistan to China under China-Uzbekistan agreement



Source: Russia's $55bn pipeline gamble on China's demand for gas, *The Financial Times*, 3 April 2018.