
GEORG ZACHMANN (georg.zachmann@bruegel.org) is a Senior Fellow at Bruegel

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Executive summary

CONCERN IS GROWING IN the European Union that a rapprochement between Russia and China could have negative implications for the EU. We argue that energy relations between the EU and Russia and between China and Russia influence each other. We analyse their interactions in terms of four areas: oil and gas trading, electricity exchanges, energy technology exports and energy investments.

WE DISCUSS FIVE KEY findings

1. There is no direct competition between the EU and China for Russian oil and gas;
2. China and the EU both have an interest in curbing excessive Russian energy rents;
3. The EU, Russia and China compete on the global energy technology market, but specialise in different technologies;
4. Intercontinental electricity exchange is unlikely;
5. Russia seems more worried about Chinese energy investments with strategic/political goals, than about EU investments.

WE FIND NO EVIDENCE of a negative spillover for the EU from the developing Russia-China energy relationship. But, eventually, if these risks – and in particular the risk of structural financial disintermediation – do materialise, central banks would have various instruments to counter them.



Energy is a key area for cooperation between the European Union and Russia, and between China and Russia. These bilateral relationships influence each other and each relationship is of strategic interest to the respective third party, with potential spillovers that present risks and opportunities. In principle, there are four main areas of cross-border energy relations: hydrocarbon trading, energy technology trading, electricity trading and foreign energy sector investments. We discuss five key hypotheses that describe a likely development in these four areas in the next decade and their potential impact on Europe:

1. There is no direct competition between the EU and China for Russian oil and gas;
2. China and the EU both have an interest in curbing excessive Russian energy rents;
- 3.

... (...)

Source: Based on BP Statistical Review of Energy 2009 and 2019, and CIA World Factbook, Russian Federation. LNG = Liquefied Natural Gas.

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Source: Based on Eeva, CIA World Factbook, Russian Federation, and BP Statistical Review of Energy 2018.

There is a concern in the EU that greater cooperation between Russia and China on energy could be detrimental to the EU's energy interests. For example, if Russia becomes less reliant on the EU as a destination for its energy exports, Russia might become more assertive in energy negotiations and also political negotiations⁷. Russia's leadership has highlighted on various occasions the increasing importance of China for the Russian energy sector. But is such a shift realistic and would it be a problem for the EU?

Only about 10 percent of Russian oil exports go via direct pipelines to the EU. Another 10 percent goes already via pipelines to China⁸. In the oil market, it is already largely possible for Russia to ship all its oil to China via the sea route. But this would involve high transport costs, and refineries in China are not optimised for Russian oil grades. At the same time, the impact on the EU would be manageable because China would then have to import less oil from other countries – allowing the EU to buy elsewhere, though with higher transport costs and with some intra-European disruption (refineries in the east might become less competitive relative

7 We cannot explore the logic behind current observed and potential Russian gas and oil projects as they are often a complex combination of foreign-policy objectives (such as forging alliances), economic motives (such as linking new sources to new consumers) and internal distributional motives (such as providing rents for powerful stakeholders).

8 See [https://en.wikipedia.org/wiki/G13.3510_TBE_\(tim\)epact](https://en.wikipedia.org/wiki/G13.3510_TBE_(tim)epact)

Source: B...



Russia is a dominant gas and oil supplier to the EU. In the gas market, Russia has exercised its market power in various ways to prevent competition and achieve higher prices. Measures include various interventions (including export taxes, export monopoly, dominance of state-owned enterprises, control over foreign investments and preventing independent pipeline transit from Central Asia), specific infrastructure investments (in pipelines and storage) and pricing strategies (such as price discrimination between countries and predatory pricing).

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(1), China (4) and India (2) (World Nuclear Association, 2019). A further seven are under construction and 11 have been contracted (World Nuclear Association, 2019). In other energy technologies Russia remains largely limited to post-Soviet markets.

EU energy technology exports are very diverse. Wind and gas turbines, network infrastructure and energy management systems are some of the EU's strengths. But the EU has become less competitive on global markets for coal, nuclear and photovoltaic plants.

Consequently, the competition between Russia, China and the EU on the global market for electricity supply technologies is less a competition over where a certain type of technology (eg PV panels) comes from (typically China), but rather over choices about what technology is installed (for example, a Russian nuclear reactor or a European wind park).



Russia in 2018 exported about four terawatt hours (TWh) to the Baltic countries, eight TWh to Finland and three TWh to China²⁸. Together, these exports only represented a little over 1 percent of Russian electricity production (1100 TWh)²⁹.

One exciting prospect for China-Russia-EU collaboration would be the opportunity to transmit electricity from one end of the Eurasian landmass to the other. With high shares of renewables it would in principle be very attractive if wind-power from the Atlantic and Pacific coasts, solar power from Central Asia and hydropower from Siberia could be pooled together to ensure more stable electricity supply.

The Russian power grid already covers 10 time zones and is interlinked with 15 countries (forming the Integrated Power System). Interconnecting this huge grid in synchronous or asynchronous³⁰ mode with the EU continental power system (Entso-E) has been discussed and studied in the past (UCTE, 2008), but currently it seems more likely that EU countries (the Baltic states) and non-EU countries (Ukraine, Moldova) that are still linked to the Integrated

(for example the Global Energy Interconnection Development and Cooperation Organisation, <https://en.geidco.org/>) is a dedicated intercontinental supergrid. Instead of coupling existing alternating current transmission systems, a new dedicated direct current system would be constructed. The JRC (2017) proposal foresees a 4-10 gigawatt connection over a distance of 5600 kilometres, costing some €15 billion. This would imply that such a line would only be commercially viable either if capital costs are very low or the price differentials between the EU and China would be high in most hours³². Current price pointers for China (which only feature regional experimental markets such as Guangdong) and the EU (where we use the German wholesale electricity price (EEX) that is also relevant for most of Germany's neighbours) indicate that price differentials at the same moment can be quite small (Figure 6). Consequently, on a commercial basis, a dedicated intercontinental electricity system seems rather unlikely, unless the cost of these systems drops dramatically, or high and persistent price differentials emerge.

Figure 6: Wholesale electricity prices in China and the EU (€/MWh) (2018)



There is a risk for Russia that isolated investments by Chinese state-owned companies will reinforce the trend of Russia becoming a mere resource provider. By contrast, investment by European companies has likely led to much more positive spillovers in terms of know-how transfer, anchoring reforms that improve the business climate and diversifying the economy. But some of those benefits have been lost with the rollback in Russia in recent years of the more liberal market environment in which European companies could operate competitively.

Economic relations are already difficult because the EU, Russia and China follow quite different economic, legal and regulatory models. These differences are amplified by politically motivated EU and Russian economic sanctions and countersanctions, concern about Russian use of financial and energy resources for political purposes, and concern about politically motivated investment by Chinese companies in strategic sectors in the EU and Russia.

Economic policy tools including trade and investment agreements or regulatory harmonisation thus come up against their limits in the broader political landscape. These issues are beyond the scope of this paper. Within these political framework conditions, there is no clear reason for the EU to relinquish a self-interested energy policy that is focused on pushing hydrocarbon import prices lower, exporting EU energy technology and making profitable investments. Because of shifting and uncertain demand and supply in the energy sector, this will be largely based on a transactional approach, rather than long-term strategic alliances.

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