The Paradox of the New Great Game: Do Europe and China Need More Pipelines from Eurasia?

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ABSTRACT
Transition to low-carbon energy is on the political agenda of most developed states, supported by investment in green technologies and legislative initiatives. The EU is actively elaborating the 2050 climate and energy policy framework and has adopted the Long-Term Low Greenhouse Gas Emission Development Strategy to make the EU ‘climate-neutral’ by 2050. Meanwhile, China’s President Xi Jinping announced China’s goal to achieve carbon neutrality by 2060. These strategic goals are in line with China’s and the EU’s international commitment to ‘global climate action’ under the 2016 Paris Accords. These plans go in stark contrast with rising investment in pipeline projects in Central Asia and the South Caucasus that compete with Russia’s expanding transit capacities and with the dramatic development of LNG markets in Europe and Asia. The New Great Game seems to have been turning 180°—from rivalry among consumers over upstream assets and transportation routes in Central Asia and the South Caucasus towards competition between producers over sales markets in Europe and China, although the recent and sudden global gas supply crisis suggests a more complicated picture. So, what do the net-zero strategies mean for Eurasia? This article attempts to answer this question by exploring the prospects for gas pipeline expansion amid the carbon neutrality pledges of the major net consumers.

Introduction
The first two decades of the new millennium have brought lots of events that might dramatically transform the global energy system in the following decades: the shale oil and gas revolution, the emergence of the US as a net gas exporter, a turn from scarcity to abundance in the hydrocarbon markets, followed by pledges for carbon neutrality by some economic giants out of fear for the planet’s environmental degradation and potential overheating. Transition to low-carbon energy is on the political agenda of most developed states, supported by investment in green technologies and legislative initiatives. Climate change, environmental sustainability and energy efficiency have become important components of the Security Strategies of most states. The build-up of environmental sustainability is expected by shifting towards renewables (geothermal,
hydro, solar, wind power, etc.), towards low carbon fuels (e.g., sustainable aviation fuel, biodiesel, bioethanol, renewable compressed natural gas), by investing in the ‘biggest innovation opportunities’ in various sectors, from oil and gas, to construction, building and transportation (e.g., advanced batteries, hydrogen electrolyser, direct air capture and storage, etc.).¹ Recent breakthroughs in the field of nuclear fusion have also brought the tantalizing prospect of abundant, cheap green energy a step closer,² but a decisive transition to green energy before that happens implies a change in people’s beliefs, behaviour and consumption patterns.

Accelerated decarbonization is believed to be the key to ensuring a stable climate globally, and there have been some advancements in this direction. Thus, in 2014, the EU began an active elaboration of the 2050 climate and energy policy framework, initially targeting 27% energy efficiency savings, 27% renewables and a 40% GHG emission reduction by 2030. To boost the coherence of its member states, the European Commission adopted a series of documents, among them the 2015 Energy Strategy that sets an integrated governance and monitoring process, the 2016 Clean Energy package, the 2019 European Green Deal, and the 2020 Long-term Low Greenhouse Gas Emission Development Strategy that aims at making the EU ‘climate-neutral’ by 2050. According to the Green Deal, ‘all parts of society and economic sectors—from the power sector to industry, transport, buildings, agriculture and forestry’, are expected to ‘play a role’.³ These strategic targets are in line with the EU’s international commitment to ‘global climate action’ under the 2016 Paris Climate Agreement (known as the Paris Accord) to limit emissions to levels compatible with a 1.5°C global temperature rise above pre-industrial levels and to constantly monitor progress via the Nationally Determined Contributions (NDCs) mechanism. Other developed regions also adopt similar programmes and measures. Importantly, the newly elected US President Joe Biden re-joined the Paris Accord in 2021 (after Trump’s withdrawal in 2020) and set the 2030 ‘Greenhouse Gas Pollution Reduction Target aimed at creating well-paid union jobs and securing U.S. leadership on clean energy technologies’.⁴ Moreover, Chinese President Xi Jinping, speaking to the UN General Assembly in 2020, announced the country’s goal of ‘having CO2 emissions peak before 2030 and achieve carbon neutrality (Net Zero) before 2060’ and urged other nations to ‘achieve a green recovery of the world economy in the post-COVID era and thus create a powerful force driving sustainable development’.⁵

Meanwhile, the joint new report from the IEA, World Bank and World Economic Forum, published in June 2021, shows these individual plans are not sufficient to achieve carbon neutrality, and ‘concerted international efforts are needed for a sustainable and resilient economic future in a developing world’.⁶ Yet, ‘concerted efforts’ remain a very difficult and tricky task to attain, given contradictory trends in the global energy markets, energy policies of individual states, especially in the Global South, unprepared and reluctant to decarbonize. In places, the rhetoric for a concerted move towards ‘carbon neutrality’ goes in stark contrast with the real state of affairs. Chances that hydrocarbons will preserve the leading role in the world’s energy mix in 2050, covering up to 80% of the world’s needs, remain very high. In fact, investments in oil and gas upstream and downstream, liquefied natural gas (LNG) and gas pipeline projects are on the rise. Moreover, according to the IEA, ‘despite many pledges and efforts by governments to tackle the causes of global warming, CO2 emissions from energy and industry have
increased by 60% since the United Nations Framework Convention on Climate Change was signed in 1992. The most contradictory messages are coming out of China, where coal prices reached a record high in September 2021 ($150/tonne, up from $85/tonne a year ago), signalling a shortage of coal to fuel the growing residential and industrial demand for electricity. In the first half of 2021 alone, a total of 18 new blast furnace projects and 43 new coal-fired power plants, with a total capacity of 35 million tonnes per year were announced, producing an estimated 150 million tonnes of CO2 emissions per year, which is ‘equal to Netherland’s total emissions’. This expansion of the coal sector is seemingly at odds with China’s stated intention of reducing coal-fired power generation in the long run, leading many commentators to believe that China’s commitments are empty promises made for tactical reasons.

This article aims at exploring the paradox of a continuous and stable investment flow in hydrocarbons amid a progressive carbon-neutrality agenda. This will be done by looking at the transit security agenda and at the geopolitics of gas routes in Eurasia that encompasses the South Caucasuses—the land bridge area between the Caspian Sea and the Black Sea (Armenia, Azerbaijan and Georgia), and landlocked Central Asia (Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan). These are the regions where secondary players have had a long history of competing over their influence, some as rival producers—Russia and Iran, and since the shale gas revolution the US, and some as consumers—Turkey, the EU and China. The article will focus on existing and planned gas transportation routes in Eurasia, and counterpose those plans to the energy security strategies of the countries—points of destination (i.e., China in the East and the EU in the West). The research will address the following questions: 1. What do the net-zero strategies in China and the EU mean for Eurasia’s gas upstream and transportation projects? In other words, is there any sense in building new pipelines if the main consumers aim at becoming carbon neutral? 2. How viable are the plans for carbon neutrality, given the current dynamic of the global energy markets, remaining scepticism and the reluctance of some major public and private players to decarbonize their economies? In exploring these competing tendencies, the article aims at contributing to the new Great Game debate and to the literature on energy security, related to the ownership, production, and transportation of natural gas. This will be done, first, by looking at the transformation of energy security as a concept and as a contextual background for analysis; second, by assessing the contingent future role of natural gas and LNG in the global energy market; and finally, by exploring the prospects for gas pipeline expansion amid the carbon neutrality pledges of the major net consumers.

**Energy security**

Energy and energy transit security and the geopolitics of oil and gas routes in Eurasia have been extensively examined in the literature on the ‘New’ Great Game in Eurasia, and in the papers on energy security (i.e., related to the ownership, production and transportation of energy). Energy security debates have been heating up since the 1970s. Back in 1973, the decision of the Arab states (except Iraq) to outlaw oil exports to countries that supported Israel during the Yom Kippur War, provoked an extensive oil crisis, ending the era of ‘cheap’ energy. Soon afterwards, the Iranian Revolution of 1979 resulted in another sharp shortage in oil supplies. Edinger, Bowlus and Aydin (2020)
provide an interesting assessment of how these two crises served as a ‘wake-up call’ for Western states, pressuring them to diversify energy sources and coordinate consumer policies to secure the continuous flow of oil and hydrocarbons, should another crisis reoccur. Cooperation in energy security led to the creation of the International Energy Agency in 1974 and in the elaboration of national energy security strategies. The United States was the frontrunner in developing an energy security strategy that presupposed contingency plans to intervene in the Middle East to secure oil supplies in the event of disruption. The US Rapid Deployment Force (RDF), launched in 1979, permitted swift intervention in regions beyond original NATO and US operational areas, including the Persian Gulf region. Meanwhile, the so-called Carter Doctrine, adopted in 1980, after the Soviet Union’s invasion in Afghanistan, explicitly stated that the USA would ‘defend Gulf oil’. The Carter Doctrine culminated in the creation of US Central Command (CENTCOM) in 1983, with the strategic goal of securing routes, especially the Strait of Hormuz, the Bab-el-Mandeb, and the Suez Canal. These extraterritorial legal mechanisms served as a justification for the application of military force by the US during the 1984–1988 Tanker War (during the Iran–Iraq War).

As such, most hydrocarbons, predominantly oil since the 1970s, and natural gas since the 1990s, have become geopolitical strategic tools. The expanding role of natural gas in the global economy was attributed to a steep rise in gas demand due to the new power generation revolution in the 1990s (i.e., the introduction of the new generation of gas aircraft-derived turbines into the market), as before that gas was produced alongside oil, consumed locally, flared, or re-injected to maintain pressure in reservoirs. This gas-related technological advancement coincided with the dissolution of the USSR that opened up the Eurasian space for global competition, making Central Asia and the Caucasus ‘the hottest geopolitical rediscovery of the 1990s’. The so-called ‘New’ Great Game in Eurasia is attributed to the geopolitical rivalry over access to energy sources and transportation routes, dictated by energy security needs and strategies of emerging and developed economies, such as the US, the EU, China, Japan and India. The US set the target to integrate Eurasian oil and gas reserves and transportation routes into a wider US-led order. According to US policy makers, such as Bill Richardson, President Clinton’s Energy Secretary, rising geopolitical concerns over the dominance of Russia and China in the region should be addressed ‘through supporting the construction of new, westwards-pointing pipelines’.

In the 2000s, geopolitical tensions significantly escalated due to the rise of global terrorism, growing antagonism towards Iran, and the invasion of the United States and the UK into Iraq in 2004 that undermined the country’s oil industry. All this led to shortages in global oil markets and a surge in prices—to over $100 for Brent, higher than in the period of the Iranian Revolution. The oil market overheating was accelerated by a rapid global economic boom and expanding energy needs. Such an unfavourable geopolitical situation for consumers raised the importance of the Eurasian region as a potentially secure supplier of hydrocarbons. As the former US National Security Adviser Zbigniew Brzezinski had predicted, the New Great Game was marked by great power competition over access to the Caspian resources and by the active efforts of the US and the EU to promote large pipeline projects to link the region to Europe and to lessen the EU’s reliance on Russian gas (i.e., the BTC oil pipeline and the planned Nabucco gas pipeline). Westbound pipeline projects went parallel to the ‘deployment of
combat forces’ to ‘establish military ties with friendly local governments’ in order to secure control over the political dynamics in Central Asia and in the South Caucasus.\(^7\) For their part, Russia and China used all available means to play on the chessboard of energy transmission geopolitics, to gain or maintain their ‘great power’ status by enhancing control over export routes in the region.\(^13\) This was done through FDI in downstream and transportation, and through closer cooperation via intergovernmental institutions, such as the Commonwealth of Independent States (CIS—1991), Collective Security Treaty Organization (CSTO—1992), the Shanghai Cooperation Organization (SCO—2001), and later via the SCO’s Energy Club (2013), China’s Belt and Road Initiative (BRI—2013), and the Eurasian Economic Union (EAEU—2015).

In the late 1970s, energy security was included in the expanded definition of national security of many countries. However, energy security means different things to different states and regions, and its definition remains highly contextual. Therefore, it would be deceiving to theorize energy security by using one of the known IR or IPE perspectives. For instance, one of the dominant conventional perspectives that ‘draws from a neo-mercantilist and realist tradition’ almost unquestionably defines energy security as the ability of Western energy consumers to ensure the stability of energy supplies.\(^10\) Therefore, security strategy should be focusing on bringing OPEC and ‘non-OPEC resources to the international marketplace’, and on a proper assessment of the risks to international security of the growing global reliance on imported hydrocarbons.\(^14\) Many analysts who agree with this definition believe that both energy-dependent and energy-rich states are vulnerable to this ‘zero-sum game’. For Eurasia, for instance, energy is ‘more than just a tradeable commodity’, as it plays a predominant role for the region’s economic development;\(^15\) therefore, energy strategy should aim at securing sales markets via long-term contracts. For large energy exporters, such as Russia and Iran, energy security should be conceptualized not only in economic but also in geopolitical terms, as for them the development of the energy sector ‘strengthens their position in the world’,\(^14\) allowing them to accumulate sufficient currency reserves for domestic needs.

In the US, such neo-mercantilist and realist thinking was reflected in G.W. Bush US energy strategy\(^10\), and after the shale gas revolution—in Trump’s and Biden’s LNG strategies, aimed at securing the country’s leading position in the global gas market; moreover, US energy security strategy has been increasingly linked to the military security and extraterritorial sanctions legislation by the OFAC.\(^16\) In contrast, liberal accounts deny the realist and neo-mercantilist definitions of energy security as potentially damaging. For instance, the European Commission holds a ‘liberal political economy’ position in promoting coordinated measures to address a growing interdependence between states and markets. From this standpoint, energy security should be achieved not only by diversifying supplies but also by effective demand management through a ‘truly unified and interconnected energy network within Europe’, based upon ‘freely and internationally traded commodities’.\(^10\)(p146)

Since the 2000s, growing awareness of income and wealth inequalities both within states and between states and of the risks to environmental sustainability and climate change has affected energy security debates, purposing an urgent need to conceptualize energy security within a wider security framework that covers humanitarian, societal and ecological matters. There was a multitude of critical (including Marxist) accounts that conceptualized energy security through the lens of ‘disaster capitalism’, according to
which the ecosystem was seen as ‘constructed out of the contradictory unity of capital and nature’. From this standpoint, the market in carbon trading is nothing more than a ‘source of speculative gain for hedge funds’ that has done little to ‘curb total global carbon emissions’. Most importantly, unrestrained penetration of capitalist market relations in the ecosystem is ‘the greatest danger’ of all, as capital ‘thrives upon and evolves through the volatility of localised environmental disasters’ and threatens to bring the planet ‘beyond some irreversible tipping point’. 

No matter which account influenced politics more (there is a general agreement that the dominant political paradigm is neoliberal), in the 2010s, environmental risks have become central to energy strategies of most developed states (e.g., the EU Energy Strategy, the US Greenhouse Reduction Target, China’s 14th 5-year development plan, etc.). However, for most developing resource-rich states, the plea for decarbonization does not resolve, but intensifies their acute domestic problems. For them, energy security should account not only for ‘resource curse’, or ‘rentier state’ phenomena but should reconcile two opposing targets: decarbonization, on one side, and urgent socio-economic problems that could be resolved by stable hydrocarbons export revenues, on another (e.g., famine, epidemics, terrorism, social instability, etc.). For instance, some African states criticize the IEA’s ‘Cancel Fossil Fuels movement’, stating that the IEA does not take into account that poor nations ‘cannot afford to throw away their best chances for economic growth, full employment, infrastructure development and modern living standards—to satisfy the whims and demands of wealthy Europeans’. As such, Namibian Minister of Mines and Energy Tom Alweendo stated that ‘Namibia is endowed with an active onshore petroleum basin’, hoping that ‘oil and gas development will bring economic stimulus, increased infrastructure, access to potable water, and investments in environmental protection and wildlife conservation’. Moreover, despite the ambitious plans of Western oil majors to develop renewable energy strategies by investing in the solar and wind power sectors (i.e., in 2020–2030, Total plans to spend $60bn to expand its renewable capacity to 100 GW, BP is targeting a renewable capacity of 30 GW, while Shell will invest $2bn to $3bn a year into green energy projects), for now, according to market analysts, ‘majors’ renewable investments in Africa, unlike those in natural gas, remain cosmetic.’ Also, for oil producing states, such as Brazil and Saudi Arabia, and the world’s coal consumers, such as the Philippines, oppose the carbon offsetting mechanism of the Paris Climate Agreement, as fossil fuels remain key to economic sustainability.

Another issue related not only to the problems of the Global South but also of the Global North, is that most Western policy-makers and academia are ‘environmental economists’ who define environmental risks within the dominant GDP-based economic growth paradigm that only tangibly considers global inequality and other social challenges to the capitalist value system. For environmental economists, the environment is as a subsystem within the market; therefore, they believe, the problem of environmental degradation could be overcome through market-oriented economic growth that enables a reconciliation of two opposing goals—i.e., of economic growth and the stability of the environment. In contrast, for ‘ecological economists’, the economy is a subsystem within the environment: the target of economic growth maximization undermines minimization of the waste of finite resources. In other words, these two goals cannot be reconciled by the means of man-made capital, and the dominant ‘environmental economics’ paradigm requires a change. Despite the efforts of ecological economists,
environmental economics that offer market-based solutions to tackle environmental issues (i.e., banning dirty industries, taxation, the carbon ‘capping’ trade system, etc.) remains by far the most dominant approach, as it promotes mainstream economics paradigm of economic growth, while ecological economists challenge it by suggesting that the only way to protect the environment is to lower consumption.\textsuperscript{19} Although growth-based policies to resolve environmental issues by hand-made capital (i.e., by investing in cleaner technologies) have been quite successful in some Western states, the international carbon emission system continues to be focused on relative rather than absolute, global gains—this is a big problem, as consumption is on the rise and dirty industries continue to move into and operate within developing states to meet growing demand. Overall, whichever the paradigm, one thing is clear—emerging policy objectives and new business ‘green’ initiatives will continue to transform the global energy landscape. Given the regional focus of the article, it is important to investigate the changing role of natural gas in this transformation and the destiny of a multitude of existing and planned pipeline projects. The following section is going to address this question, so important for the EU and Eurasia’s political and economic stability.

**Future role of natural gas in global energy landscape**

Before assessing gas transit projects in Eurasia, it is important to say a few words about the global energy market. How will the energy system change out to 2050? In the following 30 years—which is the maximum payback period for a major gas pipeline project (although typically 10-15 years)—global energy demand will continue to grow, driven by increasing living standards in the emerging world. The decline in energy consumption in developed states (as they try to decarbonize) will be compensated by continuous demand growth in emerging economies, such as India, and even China (despite its plea for carbon neutrality by 2060), as they will use gas to reduce reliance on coal. Nevertheless, the role of fossil fuels in the structure of energy demand will decline, offset by an increasing share of renewable energy, and a growing role for electricity. The most prominent institutions and major corporations that regularly publish long-term scenarios for energy markets, such as the IEA, OPEC, McKinsey, BP, ENI, Shell, etc. remain optimistic regarding the dominant role of natural gas (hereafter ‘gas’) and LNG in the energy balance of most states in the near future. For instance, according to McKinsey,\textsuperscript{20} gas is ‘the only fossil fuel that is expected to grow beyond 2030’, peaking in 2037, and then gradually declining by 4% a year from 2037 to 2050. This relatively moderate decline is explained by a ‘hard-to-replace gas use in the chemical and industrial sectors, which limits the impact of an accelerating decline in gas used for power’.

According to all three of BP’s scenarios-2050 (i.e., Rapid, Net Zero and Business-as-usual), oil and gas will continue to play an important role: demand for oil will nevertheless decline, but the outlook for gas stays resilient—gas demand will increase by a third, up to 5300 billion cubic metres per year (hereafter bcm/yr), as the cleanest hydrocarbon, gas offers an interim solution to move to a more sustainable energy system, from a fossil fuel-dominated one.\textsuperscript{21} That is the reason for this article to focus on the political economy of gas and gas pipeline projects in Eurasia, rather than on oil, as significance of oil in global trade will be declining and so will the competition over oil markets. BP analysts suggest that gas will play two important roles in the transition to a low-carbon
system: first, it will be used for a shift away from coal; and second, it will become a source of (near) zero-carbon power (when combined with carbon capture use and storage, either as a direct source of energy or as a source to produce blue hydrogen). Much of the global gas exports will proceed in the form of LNG, due to increases in output in the US, Middle East, Russia and Africa. Nevertheless, pipelines remain the most reliable, easy-to-secure, and economic means of transportation.

In the 2000s, the geopolitics of global gas has been transformed by a series of dramatic events. The first one was the shale gas revolution, thanks to which the US has led world gas production growth since 2005. Between 2015 and 2020, U.S. gas production grew roughly twice as fast as consumption, reaching around 920 bcm/y in 2020, 67 bcm/y of which was exported in the form of LNG. The second consequent event was the expansion of LNG, driven by the emergence of fast-growing importers such as India and China. This coincided with diversification on the supply side, as the main LNG producers Qatar, Australia, the US and Russia started offering shorter and more flexible contracts. If a decade ago, only 23 countries had access to LNG, import terminals were expensive and took years to construct, and supply contracts were inflexible, today’s market is very different. In 2020, the number of LNG importing countries reached 43, created more room and flexibility for consumers due to rising competition among suppliers. Moreover, with the development of floating storage and regasification unit (FSRU) technology, LNG supply capacity has become more responsive and adjustable to changes in local gas demand. In fact, ‘FSRUs allow any country with a coastline to access LNG supply within 2 years’.

The third dramatic event was the disruptions of gas supplies from Russia to Europe. EU is the largest net importer of primary energy in the world—its external energy bill is €1 billion per day, and energy dependency rate is over 50%, partly because of the exhaustion of domestic supplies. Russia is the main EU supplier of oil and gas, accounting for almost 3/4 of EU gas imports. After the disruption of gas transit from Russia to Europe via Ukraine in 2006, the EU and the US set the aim of reducing Europe’s dependence on Russia, but ‘concrete actions were not taken until the disruption in 2009’, when Europe adopted a series of legislative acts, such as the Third Energy Package in 2011. The same year, in 2011, Russia completed the Nord Stream 1, which transports 30% of its European-bound exports. In 2014, the conflict in Ukraine raised concerns regarding Russia’s supplies via gas pipelines, such as Soyuz, Progress, and even Urengoi-Pomary-Uzhgorod. Meanwhile, the Third Energy Package and the surge in LNG ‘put the EU in a stronger position to negotiate with Russia’. It succeeded in forcing Russia to redirect South Stream through Turkey (instead of Bulgaria as previously planned). This situation was favourable for Turkey, which, along with China ‘has been exploiting the East–West rift to gain long-term energy supplies at bargain prices’.

Since 2012, Russia has also been working on the construction of a second parallel Nord Stream pipeline to double the total capacity of the project from 55 bcm/y to 110 bcm/y. Nord Stream 2 case was a culmination in Putin’s efforts to diversify its transit options to Europe to reassert Russia’s dominance over its former satellites, especially Ukraine (as diversification of gas transit away from Ukraine deprives the country from a profit of around $3 billion per year). The first step to strengthen its position was taken by Russia in the 1990s with the completion of the Yamal-Europe gas pipeline through Belarus in 1999, which bypassed Ukraine. It is no wonder that Nord Stream 2 provoked
a strong disagreement between the EU and the US, as well as within the EU, undermining the fragile consensus regarding the overall approach towards Russia. The supporters of the project (e.g., Germany and Austria) see more pipelines from Russia as a diversification of routes, those who oppose the project (e.g., the Baltic States, Poland and other Eastern European states, supported by the US) believe that more pipelines will increase Russia’s overall geopolitical leverage over Europe. As Hackenbroich and Liik put it, Nord Stream 2 ‘is not a clear-cut energy security issue, as it is sometimes presented: Nord Stream 2 would not inevitably increase the amount of Russian gas in Europe or Europe’s dependence on it, nor would it need to limit individual countries’ access to gas. Instead, the issue is a thorny one because it combines a multitude of considerations—from supply diversification to different countries’ business interests; from legal commitments to historical distrust and sanctions against allies’ projects—and spices them up with the political passions of the day.’ Therefore, the authors continue, ‘if Europe thinks that killing the pipeline will punish Russia and drive the EU’s dissatisfaction home to Moscow, it is wrong to do so’, as scrapping Nord Stream 2 would not be the same as scaling back gas purchases from Russia: Europe would still be buying the same amount of Russian gas via the Ukrainian pipeline.

The US would not support this argument, as from the standpoint of American LNG producers, killing the project would mean freeing up space for the US liquid gas supplies. However, in May 2021, having recognized the tensions between the US and Germany, the Biden Administration waived sanctions against Russia’s Gazprom Nord Stream 2 operating company and its CEO. German foreign minister Heiko Maas welcomed this decision as a ‘constructive’ step in relations between Washington and Berlin. As for Germany’s position regarding the pipeline, as lot depends on the next parliamentary election in September 2021, as the leader of the German Green Party Annalena Baerbock, quite successful in the pre-electoral campaign, stated she would not allow Nord Stream 2 to finalize.

Leading gas producers in Central Asia and South Caucasus

The EU has made it the energy security policy priority to reduce dependence on Russia by investing in alternative sources, by developing new receiving LNG terminals, and also by expanding its pipeline imports from other regions, including 1) Africa, from Libya (i.e., GreenStream, as part of the Western Libyan Gas Project), from Algeria (i.e., Maghreb-Europe Gas Pipeline and MedGas to Spain, and Trans-Mediterranean pipeline, to Italy); 2) from the South Caucasus (i.e., TANAP and TAP, as part of the Southern Gas Corridor), and potentially 3) from Central Asia (i.e., Trans Caspian project, in the case the demarcation agreement of the Caspian basin).

Apart from Russia, Eurasia comprises the Central Asian states and the South Caucasus. Central Asia is the landlocked area between China and the Caspian Sea that includes former Soviet republics (i.e., Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan and Kyrgyzstan), while the South Caucuses is the land bridge area between the Caspian Sea and the Black Sea (i.e., Armenia, Azerbaijan and Georgia). Energy plays the central role in the economies of Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan. Table 1. Kazakhstan is a major oil producer; however, most of its gas reserves are located in oil fields: the two largest oil fields—Karachaganak and Tengiz—are also the two largest gas
fields. Also, the gas in the two large fields, Tengiz and Kashagan, is high in sulphur, requiring special handling and is more costly to process. Therefore, much of Kazakhstan’s gas is reinjected to increase oil production (more than 35%), some of it is consumed domestically or transported via the Central Asia Centre pipeline (CAC), which runs from Turkmenistan via Uzbekistan and Kazakhstan to Russia and is controlled by Gazprom, and also via the Turkmenistan–China pipeline. Although Kazakhstan (and Uzbekistan) is an oil and gas producer, no dramatic changes are expected in its energy sector in the near future. Therefore, this article focuses on Azerbaijan and Turkmenistan, as these states have a viable potential to expand gas supply to Europe and China.

Azerbaijan holds 2.8 trillion m$^3$ of proven gas reserves, most of which are located on the Caspian shelf (e.g., Shah Deniz). BP holds 29% in Shah Deniz, other participants are Az. SOCAR, Turkey’s TPAO, Petronas and Lukoil. In 2018, the second phase of Shah Deniz-2 started output, adding 16 bcm/y to the existing capacity of 10 bcm/y—lifting the total capacity to 26 bcm/y. Another potentially significant exporter in the region is Turkmenistan, with its massive proven gas reserve of 19.5 trillion m$^3$ (the fourth largest gas holder in the world). The giant Galkynysh gas field discovered in 2006 is the world’s second largest gas field. Therefore, these two gas fields—Shah Deniz-2 in Azerbaijan and Galkynysh in Turkmenistan—are the main sources of gas, which can potentially fill in the expanding gas pipeline infrastructure. For analytical purposes, it is helpful to distinguish between West-bound and East-bound routes from the Caspian area, starting with the pipelines that run from the region to the West.

### Westbound pipelines

The major gas pipeline that transports gas from the Caspian region to Europe is the Southern Gas Corridor (SGC). SGC comprises Baku-Tbilisi-Erzurum (BTE or South Caucasus Pipeline that goes through Azerbaijan, Georgia and Turkey) that connects to Trans–Anatolian Pipeline (TANAP, 16 bcm/y that runs across Turkey), and later joins the Trans-Adriatic pipelines (TAP, 10 bcm/y, runs from Turkey under the Adriatic Sea to southeast Europe, transversing Greece, Albania, to Italy). Before the completion of SGC, Azerbaijan used to export gas through Georgia to Turkey via Baku–Tbilisi-Erzurum. However, in 2006, after the Ukraine gas supply crises, the European Commission launched the Nabucco project as an alternative to Russian gas. Nabucco was planned as an extension of the BTE that would run from Erzurum, Turkey via Balkans to Austria. Nabucco was also seen as a competing project to Gazprom-Eni’s South Stream (cancelled later, substituted with TurkStream). The main gas supplier to Nabucco was supposed to be Iraq (and also, potentially, Azerbaijan, Turkmenistan, and

| Country     | Oil reserves, billion tonnes | Share % | Gas reserves, trillion m$^3$ | Share % |
|-------------|------------------------------|---------|-------------------------------|---------|
| Azerbaijan  | 1.0                          | 0.4     | 2.8                           | 1.4     |
| Kazakhstan  | 3.9                          | 1.7     | 2.7                           | 1.3     |
| Turkmenistan| 0.1                          | *       | 19.5                          | 9.8     |
| Uzbekistan  | 0.1                          | *       | 1.2                           | 0.6     |
| Russia      | 14.7                         | 14.7    | 38.0                          | 19.1    |
| Iran        | 21.4                         | 9       | 32.0                          | 16.1    |

Source: IEA 2021.
Egypt). However, Turkey and Azerbaijan started promoting an alternative route—TANAP, where Azerbaijan’s SOCAR and Turkey’s TPAO would become major shareholders (alongside Malaysia’s Petronas and Iran’s NICO). In 2013, the Shah Deniz consortium decided in favour of TANAP and TAP\(^\text{32}\) against ‘Nabucco West'.\(^\text{29}\) TANAP is the biggest section of the Southern Gas Corridor, its capacity is 16 bcm/y, out of which 6 bcm/y goes to Turkey, and 10 bcm/y (via TAP) to Europe. As the Southern Gas Corridor is the first non-Russian gas pipeline set up to supply Europe in the last decade (since Algeria’s Medgaz link) its geopolitical significance and its impact for energy security of individual states in Europe are substantial.

According to Dimitar Bechev, the Southern Caucasus states are clear beneficiaries. This is obvious in the case of Azerbaijan, but Georgia also gets a strategic advantage: BTE (that runs parallel to the oil pipeline Baku-Tbilisi-Ceyhan, or BTC) is an asset for the country’s foreign policy, making Georgia a transit that contributes to Europe’s energy security.\(^\text{29}\) Greece and Bulgaria also benefit from the project, given that Greece’s DEPA and Bulgaria’s Bulgargaz have each signed a long-term contract with tShah Deniz for 1 bcm a year, which is a quarter of annual demand in Greece and a third in Bulgaria. Bulgaria’s long-term contract with Gazprom expires at the end of 2022 and Greece’s contract in 2026, so ‘the deal with Shah Deniz provides a bargaining chip’ in getting better terms with Gazprom.\(^\text{29}\) Currently, the two states are building the ICGB interconnector pipeline to link TAP to the Bulgarian grid and are cooperating on an LNG terminal next to Alexandroupolis. Romania, Hungary, and Austria, the states that would have benefited from the cancelled alternative Nabucco project, are considered to be losers as a result of the decision to prioritize TAP over Nabucco. Italy will receive around 8 bcm/y from TANAP—which is ‘not a gamechanger’ against the 74 bcm/y, consumed in the country each year; moreover, it won’t affect the long-standing strategic partnership of ENI with Gazprom and Rosneft (e.g., ENI’s participation in large-scale gas projects in the Eastern Mediterranean, such as the Zohr field in Egypt, and in the Blue Stream gas pipeline). Overall, as Bechev put it, the South Gas Corridor is bringing change to regional energy markets, but it ‘won’t end Russia’s dominance overnight’.

Indeed, Russia accounts for 34% of Europe’s gas imports and is on target to raise its exports to 183 bcm/y in 2021 (including Turkey) from 179 bcm/y in 2020\(^\text{33}\), despite the widespread misconception that the recent gas supply crisis has been caused by a decrease in supplies from Russia. At present, Russia supplies gas to Turkey via both the Blue Stream and the new TurkStream pipelines (that replaced the South Stream), which pass under the Black Sea. Blue Stream with a capacity of 16 bcm/y was constructed by the joint venture of Gazprom and Eni. It started operation in 2003, and in 2020, it transported 15.5 bcm/y, 11 bcm/y out of which went to Turkey. TurkStream was launched by Russia and Turkey in January 2020. The pipeline allows Moscow to bypass Ukraine as a transit route to Europe: Gas first reaches Turkey, then goes to Europe—to Serbia and Bosnia through Bulgaria’s grid. Three more European states receive Russian gas: Greece, North Macedonia and Romania. TurkStream has two parallel lines (just one line is in operation at the moment of writing) with a total annual capacity of 31.5 bcm (with half of it destined for Turkey and the same amount for Europe). The first gas to Serbia and Bosnia was delivered in January 2021.\(^\text{34}\) Some analysts believe that this pipeline ‘triggered an unprecedented reshuffle in the way Russian gas reaches southeast Europe’: although TurkStream has ultimately been a lower profile project, certainly compared with Nord
Stream 2, its impact has been no less significant, switching the supply route almost completely for six countries. As such, TurkStream changed the direction in which gas flows: Bulgaria, Greece, North Macedonia, Serbia, and Bosnia and Herzegovina receive Russian gas mainly via TurkStream rather than through Ukraine and the Trans-Balkan line, as before. Overall, with a total capacity of 47.5 bcm/year for the two Black Sea pipelines, Russia has at least 16 bcm/y of spare capacity that could be used to expand gas supplies to Southern Europe.

Other Caspian states (i.e., Azerbaijan and Turkmenistan) can also expand gas export capacity to Europe, in case of the construction of the Trans-Caspian Pipeline (TCP) that could potentially connect Turkmenistan’s gas fields to the Southern Gas Corridor. In 2015, Turkmenistan built the East-West pipeline to connect the Galkynysh field to the Caspian coast—this pipeline is located where Turkmenistan can link to the proposed TCP. The development of a trans-Caspian pipeline system might lead to a reorientation of Turkmenistan towards Turkey and the West and away from Iran, China and even Russia. Moreover, it will give the possibility to expand the capacities of TANAP and TAPs—to 31 bcm/y and 20 bcm/y, respectively. In case the TAP doubles its capacity (to 20 bcm/y), Western Balkans will be potential winners. Albania is already part of the SGC and this might become an incentive to improve its distribution network. Also, Albania, Montenegro, Croatia, and Bosnia and Herzegovina have been pushing the so-called Ionian Adriatic Pipeline (IAP). So, TAP can potentially be connected to Montenegro and Kosovo. However, such a significant capacity increase is unlikely until the TCP is built to connect Turkmenistan to the project.

There are some uncertainties regarding the construction of the TCP due to controversies over the status of the Caspian Sea. Before 1991, the Caspian Sea had only two coastal States—the Soviet Union and Iran. Since the dissolution of the Soviet Union, the legal status and the division of the Caspian resources between its five coastal states (Azerbaijan, Iran, Kazakhstan, the Russian Federation, and Turkmenistan) had remained unresolved until August 2018, when they finally signed a Convention on delimitation of the maritime and seabed boundaries, but the Convention did not address the thorniest issue—the demarcation of the hydrocarbon resources beneath the seabed. Such demarcation is left to bilateral or multilateral agreements. Therefore, the realization of the TCP is highly improbable due to several factors: 1) the loopholes in the text of the 2018 Caspian Legal Convention; 2) Russia and Iran’s claims of ecological reasons to oppose to any trans-Caspian pipelines; 3) Gazprom’s recent resumption of gas imports from Turkmenistan, which is viewed by some as an attempt to discourage Ashgabat from pushing forward with the TCP; 4) the disputes between Ashgabat and Baku over offshore fields. However, there are some positive signs that these disputes could be resolved in the near future—in 2021, Turkmenistan and Azerbaijan signed an agreement over the Dostlug (‘Friendship’) oil and gas field on the seabed. Also, there is a possibility that Azerbaijan’s military victory in Karabakh in 2020 increased its regional influence and ability to reach agreements with its neighbours. For Russia, the SGC can only become a potential danger in case of its full expansion. Alternatively, there have been some talks about the potential transportation of Russian gas via the TANAP, which is technically possible and Gazprom expressed interest in using the Corridor in 2017, although it goes against the EU goal of reducing dependence on Russia.
Eastbound pipelines

Turkmenistan is the main eastbound gas supplier in the region—the leading exporter to other Central Asian countries, Russia, China, and Iran. Most of Turkmen gas exports flow to China via the Central Asia-China Pipeline (CACP, also known as Turkmenistan–China pipeline). It has got three parallel operating lines (A, B, and C), with a total capacity of 55 bcm/y. The CACP started its full operation in 2009, transporting almost all gas to China. Before diverting its gas flows to China, Turkmenistan used to export 50 bcm/y to Russia, but Russia suspended its contract for several years, and resumed it only in 2019. Highly dependent on Russia and China, Turkmenistan is desperate to diversify its export routes, given its projected excess production capacity. Turkmenistan is expected to have surplus production, as Galkynysh gas output is expected to rise from the current 30 bcm/y to 70 bcm per year by 2025, plus 20 bcm/y from the Caspian offshore fields. Therefore, ‘looking at difference between production and consumption, and subtracting the 50 bcm/year exports to China, Turkmenistan’s surplus gas production can be expected to rise to at least 40 bcm/y’. One of the alternative export routes for Turkmenistan is to Iran. Turkmenistan used to export gas to Iran via the Korpezhe–Kurt Kui since 1997, and Ashgabat and Tehran agreed to increase the volume from 6 bcm/y to 14 bcm/y. However, later these plans were suspended and TurkmenGaza stopped supplies to Iran due to court disputes over Tehran’s alleged unwillingness to cover its $1.8 billion debt for the gas received between 2007 and 2008. Iran’s post-JCPOA foreign policy has been formulated as the ‘Look East’ policy, according to which Central Asia is considered as an important strategic ‘bridge region’ between Iran and the East. However, this disagreement over Tehran’s bill to Ashgabat is a serious obstacle for closer cooperation between the two former partners—Turkmenistan remains the only state in Central Asia that has not received a high-ranking delegation from Iran since 2014, and not even in 2021, when Iran’s close contacts with other Central Asian states have been substantially intensified. Another alternative route is the Turkmenistan–Afghanistan–Pakistan–India Pipeline (known as TAPI, or Trans-Afghanistan) that connects Turkmenistan (the Galkynysh field) to Northern India, with a capacity of 33 bcm/y. However, the pipeline requires a massive investment (est. $8 billion) and faces ‘significant security and political hurdles’. Given the difficulties with southbound routes, Turkmenistan has little alternative but to increase its gas supplies either to the East (to China, India) or to Russia, therefore, the country is likely to remain highly dependent on Russia and China, unless the construction of the Westbound Trans-Caspian Pipeline becomes possible. Keeping this in mind, Turkmenistan has begun the expansion of China—Turkmenistan (Line D) that will go directly, bypassing Kazakhstan. Line D will expand the Central Asia—China corridor (Lines A, B, and C) from 55 bcm/y to 85 bcm/y.

The expansion of gas exports to China is a more viable option for Turkmenistan compared to the construction of the Trans-Caspian pipeline. However, it faces competition from Russia and with LNG producers over the export markets. While Russia’s gas connections to Europe face increasing resistance, Gazprom began gas exports to China via the Power of Siberia-1 pipeline in December 2019 (Gazprom and CNPC signed the 30 years Sales and Purchase Agreement in 2014). The Power of Siberia has a capacity of 38 bcm/y. It delivers gas from the Chayandinskoye field to Russia’s Far East and to China. According to Gazprom, in late 2022, the Power of Siberia will start receiving gas from one
more field—Kovyktinskoye (the Irkutsk gas production centre). Russia plans to construct another pipeline to China—The Power of Siberia-2 pipeline with a capacity of 50 bcm/y. It is a completely different route from the Power of Siberia-1, the pipeline will run via Mongolia (the part that runs via Mongolia is called Soyuz Vostok) and will connect the Yamal region with China. The new Power of Siberia-2 pipeline to China means a lot to Russia, as the resource base for the gas is the Yamal Peninsula, which is currently the source of gas for Europe via Nord Stream 1 (from the Bovanenkovo field). Gazprom expects that increasing production at Bovanenkovo and adding new deposits (e.g., Kharasavey and Kruzenshtern gas fields) will increase gas production in Yamal to 360 bcm/y, which is similar to the current annual gas imports of the EU. According to the head of Gazprom A. Miller, ‘altogether, this makes it possible to talk about the export of pipeline gas to China in the foreseeable future in the amount of over 130 bcm/y’. Apart from Russia’s pipeline projects, China is already the leading foreign investor in Russian Arctic LNG projects implemented by international consortiums headed by Novatek (Yamal LNG and Arctic LNG-2). Overall, LNG producers are competing for China’s gas market, covering almost 68% of China’s natural gas import in 2020 (only 32% of gas was supplied by pipelines from Russia, Central Asia, and Myanmar).

A puzzle: carbon neutrality versus gas market expansion

Previous passages on the Westbound and the Eastbound gas pipelines demonstrated that gas transportation projects from Central Asia and the South Caucasus face fierce competition from other regional gas producers, such as Russia and Iran, as well as with the expanding LNG market. However, this is only part of the problem. Another no less significant constraint might come from within the major sales markets in the West and in the East—i.e., Europe and China. As previously mentioned, the EU began an active elaboration of the 2050 climate and energy policy framework, and adopted a series of documents, including the Long-Term Low Greenhouse Gas Emission Development Strategy to make the EU ‘climate-neutral’ before 2050. Meanwhile, Xi Jinping announced China’s goal to achieve carbon neutrality by 2060. These strategic goals are in line with China’s and the EU’s international commitment to ‘global climate action’ under the 2016 Paris Accord. So, what do the net-zero strategies mean for Eurasia? Is there any sense in building new pipelines if the main consumers aim at becoming carbon neutral? (Figure 1) How viable are the plans for carbon neutrality, given the current dynamic of the global energy markets, the remaining scepticism and the reluctance of some major public and private players to decarbonize their economies?

Firstly, some of these efforts are quite viable, as there are some political and economic advancements, as the efforts to decarbonize are supported by international institutions. For instance, the International Energy Agency (IEA) launched the ‘Cancel Fossil Fuels’ movement to stop investment in oil and gas exploration, the World Bank Group (i.e., the International Bank for Reconstruction and Development and International Development Association) adopted a new Climate Change Action Plan to deliver record levels of climate finance (i.e., 35% of it is the WB’s financial flows, up from 26%) to the states ‘most in need of support’ to reduce carbon emissions’. Over the past 5 years, the World Bank Group has invested $83 billion in climate finance, and plans to improve climate risk management, and to ‘align all new financial operations with the needs of the Paris
Even military organizations, such as NATO, revised their security agenda by making the Emerging Security Challenges Division responsible for ‘maintaining a thorough understanding of how energy and security interact’. In Europe, there are some business initiatives with the participation of major financial institutions, such as Barclays, Citi Group, Credit Suisse, Goldman Sachs, HSBC, JPMorgan, Nationwide, Nomura, Santander, etc., insurance companies, and business corporations. There are some viable examples. For instance, Nissan is planning to invest £1 billion to build new-generation all-electric model car plant across Europe, including a recently announced £423 million project in Sunderland, UK, as sales of new cars and vans powered solely by diesel or petrol will be outlawed in the UK. As for the green hydrogen projects for electrifying industry and heavy transport, the largest one in Europe at the moment of writing is possibly Iberdola’s decarbonization strategy for the development of the industrial fertilizer manufacturing process by Basque companies Elecnor and Consonni at their plant in Fertiberia, Spain.

At first glance, these decarbonization projects go in stark contrast with active investment in LNG terminals all across Europe: according to Bloomberg, terminals under construction total €2.6 billion ($3.1 billion), and in the pre-construction phase—€13 billion. However, some LNG terminals are planning to redesign to produce green hydrogen (e.g., by using power from offshore windfarms). Therefore, there is a growing uncertainty over ‘the viability of new LNG projects’ and expectations that European gas use will ‘wane over the next two decades as ever-cheaper, greener energy sources take hold’. For instance, Germany’s Uniper SE acknowledged ‘waning investor appetite for new LNG capacity when it decided last month to turn a planned terminal into a hydrogen hub’, as ‘companies seek to improve their ESG metrics, improve valuation and avoid
stranded asset’. As such, ‘with hydrogen technology still in its infancy and facing headwinds in its cost and complexity, not all LNG terminal projects in Europe are likely to be scrapped’\textsuperscript{51}. Despite the claims by market experts, such as by David Rabley, a managing director at Accenture Strategy, that the role of gas as a transition fuel will be ‘increasingly scrutinized’, the role of gas in the European energy market will remain considerable in the foreseeable future. Most experts ‘do not believe that a complete global decarbonization can be realistically achieved in the 21st century’, as it ‘entails several challenges and the interdependencies between the secondary energy carriers and end-use energy sectors should not be underestimated’.\textsuperscript{57} The most painful challenges are: 1. huge costs of the establishment of new infrastructures amid growing public indebtedness, taking into account that ‘besides climate change, governments must solve various issues associated with health insurance, payment of pensions, education improvements, etc.’; 2. growing competition for the decarbonization options among various energy sectors and inconsistency in the environmental policies; 3. lobbying efforts, populism and corruption and 4. slow transformation of people’s mindset regarding their behaviour and lifestyles.\textsuperscript{52}

More scepticism over a smooth transition to carbon neutrality comes from energy-intensive industries, such as steel production. Fiona Wild, a Vice President of BHP in Australia, points out that her company’s ‘climate plan’ to cut emissions by 30% and achieve net zero by 2050 is too ambitious. According to Ms Wild, reducing emissions from transport or power generation is relatively easy because, technologically, switching to renewables in their facilities is not that expensive. In contrast, decarbonizing the steel industry is technologically hard and financially costly: steemaking furnaces operate on coal, their depreciation period is very long, and it is ‘hard to convince a steelmaker that a mill that works just fine needs to be replaced, at huge cost to them, just so that BHP can reduce carbon emissions’.\textsuperscript{58} Moreover, technical problems and ‘pretty high’ costs of hydrogen will remain the main obstacles for replacing coal with hydrogen in steelmaking in the following decades.

**Concluding remarks: a 180° turn in the New ‘Great Game’?**

It looks like the New Great Game is turning 180°—the trend in recent years has seen a shift in the balance of power from producers to consumers, however, it remains to be seen how long decarbonization and the transition to green energy will take, and whether the recent global gas supply crunch causing a sharp increase in gas prices is a short term phenomenon or marks a fundamental reversal of this trend. At the same time, despite the expected decline in gas demand after 2050 due to decarbonization, it is too early to play the funeral march for the gas industry: natural gas consumption will be substantial enough for pipeline-operating companies to cover all expenses and maintain profitability of existing pipelines that run across Central Asia and the South Caucasus to Europe, and possibly, to return a profit on pipelines that are in the initial stages of construction, such as the CAC’s Line D, with an estimated investment of $6.7 billion, or approaching completion, such as Nord Stream 2 ($9.5 billion). As for infant grand projects with high geopolitical risks (the Trans-Caspian Pipeline), or high costs (the Power of Siberia 2), the puzzle remains: is there sense in financing these new pipelines, given projected
carbon neutrality in Europe and China? The prospects for the Trans-Caspian pipeline are the most uncertain, given the environmental risks, huge capital spending, and strong opposition from Russia and Iran. From the point of view of European (and Asian) investors, TCP looks less appealing than the expansion of LNG infrastructure. It is more likely that the EU will increase gas imports from the US, rather than promote the construction of TCP, given intensive lobbying efforts by American LNG producers, reliant on LNG exports to absorb their growing output, to invest in projects in Europe and in Asia. In 2020, US LNG exports surged to 67 bcm/y, up from less than only 1 bcm/y in 2015, rapidly catching up with pipeline exports to Canada and Mexico. Between 2016 and 2020, annual exports to Asia increased by 22 bcm/y, to Europe—by 20 bcm/y. Securing access to export markets has become a top priority for the US gas industry. That said, OFAC’s pressure on Germany to leave the Nord Stream-2 uncompleted has been mainly motivated by the need to create new markets for US LNG exports, and only tangibly by any other traditional security concerns.

As for the expansion of the capacity of the Southern Gas Corridor (TANAP and TAP) from the Caspian, Azerbaijan and Russia are competing for the same share of the Southern and Central European market. Also, it will require a considerable increase in gas production in the Caspian, which is only possible in case of the connection of Baku-Tbilisi-Erzurum with Turkmenistan via the Trans-Caspian pipeline, a costly option in both geopolitical and environmental terms. Russia with its existing two massive pipelines that run across the Black Sea will remain a competitive solution: for now, the total contracted capacity of the SGC (16 bcm/y) is relatively small compared to what Gazprom supplies to Europe. Also, and most importantly, the individual markets in South-eastern Europe are quite limited for many reasons, and decarbonization is not the dominant one among them. The main question is whether Southern Europe will be able to prepare its pipeline infrastructure for the expansion of gas supplies in due time. For most of the states in the Balkans, a switch to gas pipeline transition is a target easier said than done, given the infrastructure bottlenecks, market fragmentation, lack of investment, and regulatory shortfalls that hang over the energy sector. Despite the EU’s push for energy market reform and infrastructure development, the process is quite slow in practice, given other socio-economic and financial hurdles, intensified by the global health crisis in 2020–2021. As for Western and Northern Europe, despite a massive US sanctions campaign against Nord Stream-2, and the desire to reduce dependence on Russia, pipeline gas import is more commercially justifiable than a costly expansion of LNG terminals. Moreover, recently declared plans by some LNG operators to redesign to produce green hydrogen, will make it even more problematic. As such, Russian gas will remain competitive given its low-cost production base—in the next 30 years Russia’s market share in Europe is expected to remain above 30%, peaking to around 150 bcm/y, or 40%, in the 2040s. Also, some businesses are very sceptical about the European Commission’s goal to double ‘the share of renewables’. Private businesses estimated that Germany alone would have to invest €2.3 trillion by 2050 to achieve climate neutrality, and as the BDI President Dieter Kempf stated: ‘you can work out who of the other 26 countries can afford to do this. The level of ambition not only differs greatly within the EU, but also globally’. The situation with China is even more controversial.
Figure 2. Who’s financing new coal-fired plants? %.

Source: Quartz. Schulz F. German industry sceptical of the EU’s new 2030 climate goals. Euractiv. https://www.euractiv.com/section/energy/news/german-industry-sceptical-of-eus-new-2030-climate-goals/. Published 2020. Accessed 13 July 2021.

China is the largest gas importer, the third-biggest global gas consumer, and the country’s demand increases every couple of years at the rate of the capacity of the Power of Siberia pipeline (around 35–40 bcm/y). Nevertheless, President Xi Jinping commitment to China’s carbon neutrality by 2060 means that the reduction in the consumption of all fossil fuels, including natural gas, should be expected. The question is Will this reduction jeopardize profitability of the new pipeline projects—the Power of Siberia-2 and Turkmen’s Line D? Well, in 40 years, maybe, but it seems that the road map by China’s climate scientists, according to which the country will reduce its oil consumption by 65% and gas consumption by 75% by 2060, is way too optimistic, as the most immanent and expensive target is to decrease its reliance on coal. This will be done by using natural gas as the most ecologically friendly fossil, at least for a transition period. But how long will this transition period last for? Nobody will give a clear answer at this point, as there are lots of uncertainties, not only in the world energy market but in the global political economy overall.

What is striking is that at present, China increases, not decreases, its investment in power plants, already the highest in the world (see Figure 2). Also, as skilfully mentioned by energy market analysts, ‘stable pipeline deliveries are less nerve-wracking than purchases on LNG markets’, with its geopolitical risks, such as ‘black swans’ (i.e., blockades of straits, trade wars) and natural disasters. Given that the word ‘stability’ is one of President Xi Jinping’s most used words, and China’s new ‘Six Stabilities Programme’, designed to reduce the impact of COVID-19, considers energy security as one of its top priorities, Russia and Turkmenistan ‘can use this to their advantage and pitch their overland pipelines as a secure and stable source of relatively ‘green’ energy that is independent from geopolitical turmoil’. Once again, is there any sense in building pipelines if China (and Europe) will reduce gas consumption in 40 years? There is ground to believe that some projects that are nearing completion are in a better position than the infant ones, as timing will be crucial not only to obtain profitability but also to secure market share by signing long-term contracts, as in the foreseeable future Russia, Azerbaijan and Turkmenistan will continue facing rising competition over sales markets, among themselves and with LNG producers.
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