

The New Gas-for-Electricity Barter Deal Between Iran and Armenia

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Iran and Armenia have enhanced their energy cooperation. On the sidelines of the official visit of Armenian Prime Minister Nikol Pashinyan to Iran on 1 November 2022, the two countries agreed to upgrade their existing gas-for-electricity barter deal, whereby Iran exports natural gas to Armenia in return for electricity supplied by Armenia. A new Memorandum of Understanding (MoU) on cooperation in the field of natural gas was signed by Majid Chegeni, Iran's Deputy Minister of Petroleum and CEO of the National Iranian Gas Company (NIGC), and Gnel Sanosyan, Armenia's Minister of Territorial Administration and Infrastructures. This MoU committed the two allies to double the barter volumes and extend the gas-for-electricity trade agreement to 2030.

Iran's Gas Supplies to Armenia

Iran has been supplying natural gas to Armenia since 1957, with Armenia receiving Iranian gas through a network of pipelines that passed through Azerbaijan. Until 1972, Iran was the only source of natural gas for Armenia, which was later joined by Turkmenistan. In 1983, the Northern Caucasus-Trans-Caucasus main gas pipeline (also known as the Mozdok-Tbilisi Pipeline) began to be built, later enabling Armenia to import Russian and Turkmen gas through Georgia. The project was completed in 1993. The collapse of the Soviet Union in 1991 and the Armenian occupation of the former Nagorno-Karabakh Autonomous Oblast (NKAO) and seven surrounding areas of Azerbaijan during the First Karabakh War put an end to natural gas imports from/through Azerbaijan, thus making the northern link through Georgia the only source of gas supplies for Armenia. In these circumstances, Armenia became interested in establishing a direct gas link with Iran. In 1992, the two states signed an agreement to build a \$200 million natural gas pipeline. Its construction, however, only began 12 years later due to various commercial, technical, and political factors. The first deliveries of gas via the Iran-Armenia pipeline began in 2009. The project's annual capacity is 2.3 billion cubic meters (bcm).

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According to a gas-for-electricity barter deal signed by Yerevan and Tehran in 2004, Armenia receives one cubic meter of gas from Iran in exchange for three kilowatt hours of electricity produced by Armenian power plants (including through its Soviet-era nuclear power plant, Metsamor). Currently, Iran exports 1 million cubic meter (mcm) of gas to Armenia daily, thus totaling 365 mcm per year. In return, Armenia exports around 1 billion kilowatt-hours (kWh) of power to Iran annually. The deal runs until 2026. The MoU signed on 1 November 2022 upgrades the current gas-for-electricity barter deal by increasing Iranian gas supplies to Armenia to up to 600 mcm per year and extending the deal's term to 2030.

The expansion of the gas-for-electricity barter deal became possible due to Armenia's increased power generation capacity provided by the completion of the Yerevan-2 combined-cycle power plant in November 2021. The facility, developed jointly by Italian Renco and German Siemens, was initially launched in 2017 by President Serzh Sarkisian, but was later frozen by the next government, headed by Prime Minister Nikol Pashinyan. The new administration found the project commercially unfavorable and renegotiated the deal. A revised deal, signed in November 2018, cut electricity tariffs by 5 percent, thus saving Armenia \$160 million in energy expenses over the next 25 years. Besides providing additional power generation capacity for doubling the gas-for-electricity barter volumes with Iran, the new Yerevan-2 plant helps to replace the ageing Hrazdan plant, which will be reportedly shut down soon.

Armenia's Interests

A deepening energy partnership between the two allies might help Yerevan to improve its position in gas pricing talks with Moscow. The latter is the major provider of gas to Armenia, covering 80-85 percent of the country's 2.6 bcm demand in natural gas. The remaining 15-20 percent is currently coming from Iran. While Russian gas is still the cheapest for Armenia, its price has steadily increased. Currently, Armenia pays Gazprom \$165 per thousand cubic meters of gas. By comparison, the market-based gas price for Germany and other European Union member states currently stands at \$1,200 per thousand cubic meters. In the retail market, which is also controlled by Gazprom's subsidiary, Gazprom Armenia, the average price of gas for Armenian households is \$290.

Relations between Armenia and Russia have relatively soured over the past several years. Pashinyan has heightened ties with the West; this has been suspiciously perceived by the Kremlin. Relations between Yerevan and Moscow hit a new low in November 2018, when Armenia's tax authorities launched an investigation into Gazprom Armenia, based on allegations of tax evasion and corruption. One month later, Gazprom announced its intention to raise the wholesale price of gas for Armenia from \$150 to the current \$165 per thousand cubic meters. The consequent deterioration of relations between the two, coupled with Yerevan's desire to improve its position in

gas pricing negotiations with Moscow, pushed Armenia into exploring the possibility of additional supply deliveries from neighboring Iran. This ultimately culminated in the signing of the 1 November 2022 MoU between the two allied countries.

Besides improving Yerevan's position in energy price negotiations vis-à-vis Moscow, the gas-for-electricity barter deal helps Armenia to save hard currency. While Yerevan pays the cheapest price for gas sold by Gazprom, paying for Iranian gas in electricity is an even better deal for Armenia. For every imported cubic meter of gas from Iran, Armenian thermal plants produce 4-4.5 (kWh) of electricity, of which 3 (kWh) are exported to Iran, thus leaving Yerevan with a surplus of 1-1.5 kilowatt-hours of electricity. Larger gas imports, therefore, mean larger surpluses for Armenia. With the inauguration of the 254-megawatt Yerevan-2 combined-cycle power plant in November 2021, Armenia's surplus capacity for exports to Iran has further increased.

Finally, a deepening energy partnership between Yerevan and Tehran might be part of Armenia's long term-strategy to diversify away from dependence on Russia more generally. A peace agreement between Armenia and Azerbaijan could imperil the case for renewing the mandate of the Russian peacekeepers in a part of Karabakh (as per Article 4 of the 10 November 2020 tripartite statement that ended the Second Karabakh War). This, in turn, could further weaken the case for Yerevan's political and economic dependency on Moscow as well as the Russian military presence in Armenia. And this, in turn, could potentially push Yerevan to drift further away from Russia to the West. Iran can thus be seen as a regional force allowing Armenia to compensate (to a certain extent) for Russia's diminishing presence in the South Caucasus and balance the growing role of Azerbaijan and Türkiye in the region.

Iran's Interests

Due to a huge subsidy, Iran has one of the cheapest electricity prices in the world, which disincentives power saving and promotes overconsumption. The country also suffers from lack of infrastructure investments to meet its growing electricity consumption needs. Moreover, severe droughts, a decline in Iran's water resources, and a new wave of illegal cryptocurrency mining across the country have dramatically worsened the situation with respect to the supply of electricity. Iran's power plants are currently able to generate only 54,000 megawatts (MW) of electricity, which is nearly 12,000 MW less than the domestic power demand. To offset the surge in domestic demand, Iran is trying to import more electricity from abroad. According to Iranian Energy Ministry's Spokesman for Electricity Industry Mostafa Rajabi Mashhadi, up to 650 MW of electricity is currently imported from Turkmenistan, Azerbaijan, and Armenia. Tehran is interested in buying more power, but due to a combination of infrastructure limitations and domestic demands, the aforementioned countries are not able to supply the Islamic Republic with more electricity.

The new Tehran-Yerevan gas-for-electricity barter deal allows Iran to cover some demand in electricity in the country's northwestern provinces without having to build a new power plant. In addition, this deal lets the Islamic Republic save hard currency and pay Armenia with natural gas. Notwithstanding the fact that Iran is the world's third-largest natural gas producer (after the United States and Russia), the Islamic Republic is facing a gas shortage problem due to overconsumption, underinvestment, and international sanctions. However, Iran's electricity problem is more acute, so Tehran trades gas for electricity with Yerevan. Iran produces around 232 bcm of natural gas annually, so the country's current exports of 350 mcm (0.35 bcm) to Armenia account for just 0.15 percent of the Islamic Republic's total gas output. The proposed 600 mcm (0.6 bcm) of gas exports, according to the terms of the latest MoU, would increase the number to 0.25 percent.

Currently, Armenia supplies electricity to Iran through two power lines. With the completion of a third high-voltage line, currently scheduled to the end of 2023, Iran claims it will be able to import up to 15,000 megawatt-hours of electricity (MWh) daily—potentially in exchange for more gas exports to the Armenian market. However, Armenia's installed power generation capacity is much lower, and the country will unlikely be able to produce such amount of electricity soon: currently, Armenia's total electricity output stands at 7.7 terawatt-hours per year, which is around 21 000 MWh per day.

Iran also regards Armenia as a gateway to the Georgian and European energy markets, and an expansion of the energy corridor to Armenia potentially paves the way for greater gas exports in the Western direction. The Islamic Republic has long planned to export gas to European markets. However, ongoing UN and Western sanctions regimes as well as underinvestment in infrastructure (the two factors are obviously related) have prevented Tehran from expanding its natural gas export base. In fact, Iran barely manages to meet its domestic demand. According to Iran's Oil Minister Javad Owji, the country will face a 200 mcm daily shortage of natural gas in the 2022-2023 winter. Moreover, Iran's gas production is gradually decreasing, as natural pressure in its South Pars fields is dropping: Tehran needs significant financial resources and technological help from Western energy companies to maintain production—let alone increase it.

Finally, Iran's interests in expanding cooperation with Armenia, including in the energy sector, is part of Tehran's ambitions to deepen relations with Yerevan in order to balance the growing role of Azerbaijan and Türkiye in the region. After Azerbaijan's victory in the Second Karabakh War, the de facto alliance between Tehran and Yerevan has only intensified. One of the most recent developments in their bilateral relationship—aside from the updated gas-for-electricity barter deal—was the Islamic Republic's decision to open a consulate in the Armenia city of Kapan in October 2022. In return, Armenian Foreign Minister Ararat Mirzoyan confirmed Yerevan's readiness to establish a consulate in Tabriz, which is a majority ethnic-Azerbaijani

city located in Iran's East Azerbaijan province. During a recent meeting in Tehran on 1 November 2022, Pashinyan and Iranian President Ibrahim Raisi noted that the trade between the two countries had increased 43 percent in 2022 over the previous year, and that the two sides are seeking to increase total annual trade to \$3 billion in the near future.

The Elephant (or Bear) in the Room

While the potential for bilateral cooperation is high, a significant expansion of energy ties between Yerevan and Tehran would likely be challenged by Moscow. With Armenia's annual gas consumption standing at around 2.6 bcm, the country is a small energy export market for Russia. It is also a non-lucrative one, due to low domestic tariffs. Russia's interest in the Armenian energy market is thus primarily of geopolitical nature. In particular, Moscow wants to hinder a possible route for Iranian or Turkmen gas via Armenia to Georgia, Ukraine, and, potentially, European Union territory, where such gas could compete with Gazprom's.

To exclude a potential expansion of Tehran's role in the Armenian energy market and the possibility of transiting Iranian gas in the western direction via Armenia, Russia has taken major precautionary measures. One such measure was Moscow's demand to reduce the Armenia-Iran project's diameter from 1,420 millimeters (56 inches) to just 700 millimeters (28 inches), which was ultimately accepted by Yerevan. The current 700-millimeter pipeline, which has an annual capacity of 2.3 bcm, can only meet the needs of Armenia's domestic market. If the pipeline had been built at the initial diameter, it would have allowed Iran, and potentially Turkmenistan, to export to markets in Europe, therefore setting up competition with Russia's own natural gas industry. For comparison, the Trans Anatolian Natural Gas Pipeline (TANAP) in Türkiye—the central part of the Southern Gas Corridor connecting the giant Shah Deniz gas field in Azerbaijan to Europe—has diameter of 1,420 millimeters and can transport up to 31 bcm of gas annually.

Additionally, in exchange for cheaper gas supplies from Russia, back in 2006 Armenian President Robert Kocharyan ceded control of the still under construction pipeline's section on Armenian territory to Russia's Gazprom. Moreover, Moscow steadily took over control of Armenia's gas distribution system ArmGazProm (subsequently renamed Armrosgazprom), which was established as a Russian-Armenian joint-venture in 1997. The remaining 10 percent was given to ITERA, which was subsequently acquired by Gazprom. Gazprom's share in the Armenian gas network increased to a commanding 80 percent in 2006 as a result of a complex deal that kept Russian gas relatively cheap for Armenia and committed the Russians to making large-scale investments in the country's energy sector. In 2014, Gazprom raised its interest in the Armrosgazprom to 100 percent and renamed the company to Gazprom Armenia.

Central Takeaway

The strategic energy partnership between Armenia and Iran continues to grow, as epitomized by the new gas-for-electricity barter deal struck between the two allies on 1 November 2022.

Both Tehran and Tbilisi understand this burgeoning relationship to be in their respective national interests: domestic considerations aside, each also sees it as a hedge against the growing strength of the Azerbaijan-Türkiye alliance. To borrow a Chinese expression: it's a win-win.

However, a significant expansion of energy ties in the future seems to be limited by the Russian factor, which has taken various effective countermeasures. It remains to be seen whether Armenia and Iran will find a way to overcome these—and also whether their respective foreign policy postures will shift sufficiently to enable each of them to reach a stable *modus vivendi* with both Azerbaijan and Türkiye.