

1. Investment in sustainable infrastructure in Armenia

This chapter describes sustainable infrastructure planning in Armenia and presents current trends in investment in large-scale infrastructure projects. It compares Armenia's infrastructure plans in the energy, transport, industry and water sectors against its international commitments under the Paris Agreement on climate change and the Sustainable Development Goals (SDGs). The chapter also explores Armenia's strategic documents for long-term economic development, sectoral development and the environment, including those related to climate change mitigation and adaptation. It identifies misalignments between stated goals and observed investment flows and provides recommendations to improve strategic planning for sustainable infrastructure.

State of play: economy, investment and climate change in Armenia

Economy and trade

Table 1.1. Key indicators on Armenia's economy

Population (2019)	2 957 731
Urbanisation rate (2018)	63.1%
Annual population growth (2018)	0.2%
Surface area	29 740 km ²
GDP (USD, current price, 2019)	13 673 million
GDP per capita (USD, current price, 2019)	4 732
Real GDP growth (year-on-year change, 2019)	4.8%, -4.5%
Inflation (average consumer price, y-o-y change, 2017)	1.4%
Exports of goods and services (% of GDP, 2018)	37.8%
Imports of goods and services (% of GDP, 2018)	53.5%
FDI, net inflows (% of GDP, 2018)	2.0%
General government net lending/borrowing (% of GDP, 2019, 2020)	-1%, -5.1%
Unemployment (% of total labour force, 2019)	17.7%

Source: World Bank (2021^[1]), *World Development Indicators (database)*, World Bank, <https://datacatalog.worldbank.org/dataset/world-development-indicators>; IMF (2020^[2]), *World Economic Outlook: October 2020*, International Monetary Fund https://www.imf.org/external/datamapper/GGXCNL_NGDP@WEO/OEMDC/ADVEC/WEO_WORLD

Economy and demographics

Armenia is an upper-middle income country in the Caucasus. It is the least populous country in the South Caucasus, with a population of around 3 million. Its population fell by 18% from a peak of 3.5 million in 1990 prior to independence until its low point in 2010 (2.87 million), but has since experienced modest growth.

Armenia's GDP followed a similar but more dramatic downward trend, shrinking to less than half of its pre-independence size of USD 6.4 billion in constant 2010 dollars to USD 2.9 billion in 1993. Since then the country's economy has enjoyed a period of near-uninterrupted economic growth, reaching more than double its previous pre-independence peak (USD 13.7 billion by 2019).

Armenia's diaspora has played an influential role in Armenia's economic development following independence in 1991. For instance, between 1994 and 2004, 69% of Armenia's foreign investors had ties to the diaspora (World Bank, 2017^[3]). Although it is difficult to establish the exact size of the Armenian diaspora, government estimates put the number at about twice that of the national population, with between 1.2 and 2 million in Russia alone (Gevorkyan, 2017^[4]).

Remittances sent by Armenian migrant workers in Russia have historically been an important source of capital but their volume fluctuates depending on the economic situation in Russia. Between 2010 and 2014 remittances were equal to between 17% and 20% of GDP, but following the contraction of the Russian economy in 2015 remittances have dropped considerably (13.3% of GDP in 2017, 11.2% in 2019 and are currently in line with other countries of the Eastern Partnership (EaP)¹ (Georgia, 11.6%; Ukraine, 11.2%) (World Bank, 2021^[1]).

In 2019, services accounted for 54.2% of Armenia's GDP, making the country more service sector-oriented than neighbouring Azerbaijan (37.4%) but less so than Georgia (60.5%). Armenia's economy is the most reliant on manufacturing in the South Caucasus region, with the sector accounting for 11.8% of GDP (compared to 8.8% in Georgia and 5.0% in Azerbaijan) (World Bank, 2021^[1]).

COVID-19 pandemic's impact on Armenia has been substantial and far-reaching. As of February 2021, Armenia had the second most confirmed COVID-19 cases per capita among EaP countries after Georgia. Since the beginning of the pandemic, Armenia has diagnosed about 56.6 cases per thousand inhabitants compared to 22.8 in Azerbaijan, 27 in Belarus, 65.4 in Georgia, 40.5 in Moldova and 29.3 in Ukraine. Armenia's death rate is the highest in the region: 1 049 deaths per million inhabitants compared to 311 in Azerbaijan, 187 in Belarus, 817 in Georgia, 921 in Moldova and 562 in Ukraine (Roser et al., 2020^[5]).²

Armenia imposed strict measures to contain the spread of the coronavirus, closing schools and non-essential businesses and restricting travel and public gatherings (OECD, 2020^[6]). Armenia's GDP contracted by 3% in 2020, a smaller drop than in many EaP countries, but a significant deviation from its pre-crisis growth rates (7.5% in 2017, 5.2% in 2018). The government's economic stimulus plans (e.g. USD 305 million economic support package) are modest in size, equal to about 2.2% of GDP, compared to 8-10% in developed countries. Some targeted measures could have a positive environmental impact, such as reforestation programmes to create seasonal employment opportunities, but post-crisis development strategies closely resemble the pre-crisis status quo (i.e. focus on metallurgy and manufacturing) (OECD, 2021^[7]).

The International Monetary Fund (IMF) approved a 3-year Stand-By Arrangement (SBA) in 2019, prior to the onset of the COVID-19 pandemic. The USD 248 million SBA was augmented in 2020 to USD 443 million. The SBA, which the government initially indicated would be treated as precautionary, aimed to support Armenia's efforts to improve economic fundamentals, aid in the implementation of structural reforms and provide space for spending on infrastructure development and a cushion against shocks. Twin shocks struck Armenia's economy in 2020 in the form of the COVID-19 pandemic and an armed conflict with Azerbaijan, which severely impacted Armenia's economy. As of December 2020, the IMF judged Armenia's performance under the SBA to be satisfactory despite the sizeable challenges it faces (IMF, 2019^[8]; IMF, 2020^[9]).

Trade

Armenia has been a member of the World Trade Organisation since 2003. Unique among the countries of the South Caucasus, Armenia is a member of the Eurasian Economic Union along with Belarus, Kazakhstan, Kyrgyzstan and the Russian Federation. Unlike the other members, Armenia does not share a border with any members of the bloc. It joined the Customs Union in 2013 and the Eurasian Economic Union's single market in 2015. Similar to the European Union, the Eurasian Economic Union guarantees the 'four freedoms': free movement of goods, services, capital and persons.

Armenia had previously begun negotiations with the European Union on an Association Agreement, like those in force in Georgia (since 2016), Moldova (since 2016) and Ukraine (since 2017), but these were suspended following Armenia's accession to the Eurasian Economic Union in 2015. Armenia and the European Union signed a Comprehensive and Enhanced Partnership Agreement in 2017 that takes into account Armenia's commitments as a member of the Eurasian Economic Union. When it enters into force, the agreement will replace the Partnership and Cooperation Agreement (in force since 1999); it has been provisionally applied since 2018.

The European Union's Eastern Partnership (EaP) is a key initiative for continued cooperation between the EU, its member states, Armenia and the give other EaP countries. It aims to strengthen ties and encourage reform on a number of policy areas, including on governance, connectivity, economic development and environmental protection.

Armenia has been an Observer of the European Union's Energy Community since 2011. Armenia joined the Eurasian Economic Union in 2015, therefore choosing a policy orientation that does not completely comply with the *acquis communautaires* of the European Union. However, there is broad agreement that energy policy reform following the basic principles of the legal framework upon which the European Union and the Energy Community Contracting Parties have successfully reformed their energy sectors would be

beneficial also for Armenia. Although its Observer status does not entail any rights or obligations, the Energy Community's Secretariat provides policy guidance on reforming Armenia's energy sector.

Armenia's geographic situation complicates the country's integration into regional trade and transport networks. Unlike neighbouring Georgia and Azerbaijan, Armenia is landlocked and exposed to significant trade routes limitations. These are linked to the border restrictions to the west with Turkey and to the east with Azerbaijan due to the unresolved dispute over the Artsakh/Nagorno-Karabakh region as well as from international sanctions on the Russian Federation (its main trading partner) and Iran (its neighbour to the South). Armenia has no formal diplomatic relations with Azerbaijan or Turkey, and all border crossings are closed.

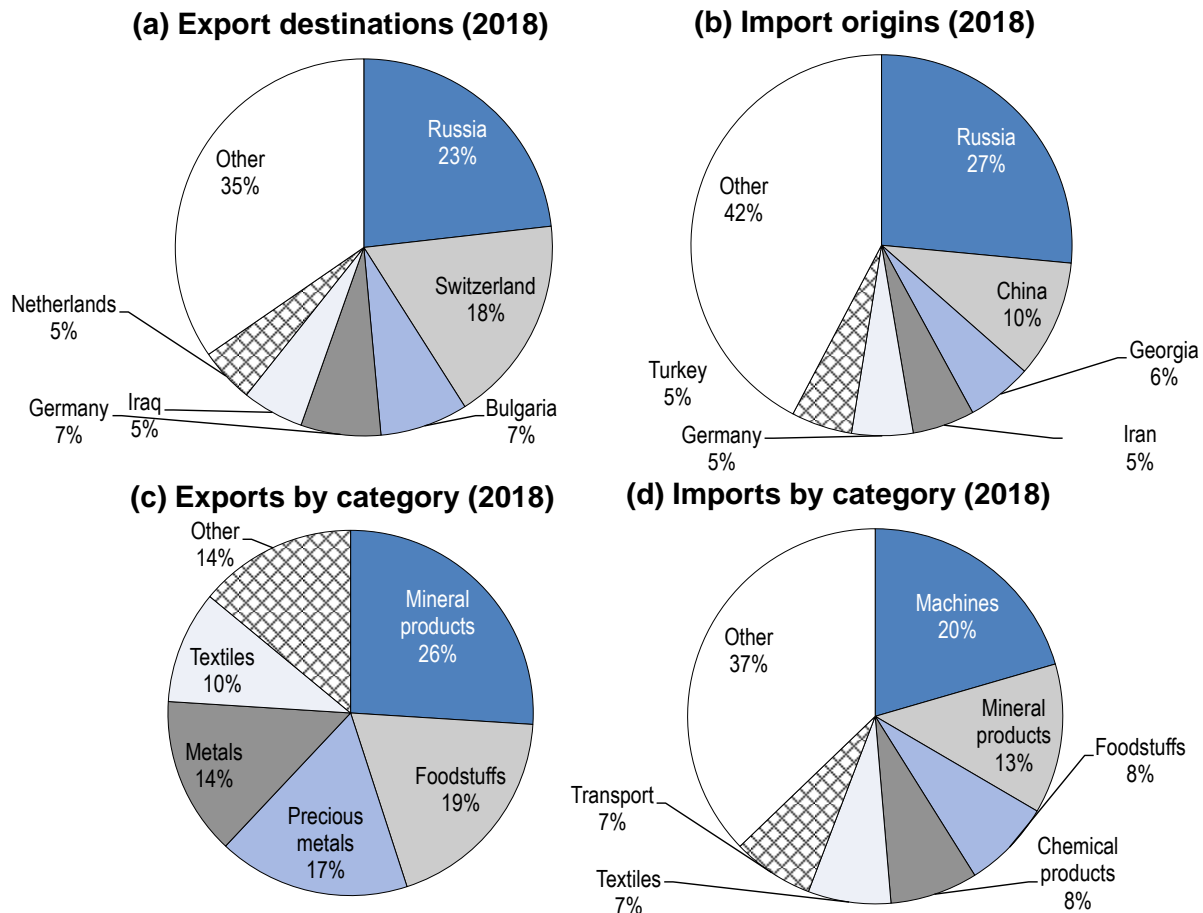
Georgia and Iran provide Armenia's only land borders to external markets, and both come with their own challenges. Armenia's border with Georgia is of particular importance, since international sanctions limit trade opportunities with Iran and Armenia's trade with Russia, its main trading partner, transits through Georgia. Seasonal weather conditions impede overland transport through the Verkhniy Lars border crossing between Georgia and Russia, while unreliable ferry services from Georgia's Black Sea ports hinder the access of Armenian goods to external markets (UNCTAD, 2019^[10]).

Despite Armenia's membership in the Eurasian Economic Union, it has been allowed to maintain its 1995 free trade agreement with Georgia. The Eurasian Economic Union's founding treaty permits bilateral trade agreements signed before 2015 and, since all Eurasian Economic Union members had pre-existing free trade agreements with Georgia prior to joining, trade flows to and from Georgia have been largely unhindered by Armenia's membership. As Georgia establishes deeper ties with the European Union (notably via its Deep and Comprehensive Free Trade Agreement and Association Agreement) and Armenia continues to transpose legislation in accordance with the Eurasian Economic Union, there is a risk that barriers to trade between the two countries will emerge (GET Georgia, 2016^[11]).

Armenia's most important trade partner is Russia, which accounts for 23% of Armenia's exports and 27% of imports (Figure 1.1 (a) and (b)). Armenia's trade relationships with other members of the Eurasian Economic Union, however, are much less consequential; Belarus, Armenia's second most important trade partner in the Eurasian Economic Union, accounts for less than 1% of exports and imports. The European Union, on the other hand, is a very important trade partner, especially for exports. Since joining the Eurasian Economic Union, however, exports to other Eurasian Economic Union countries have doubled, while the European Union's share of Armenia's exports is in decline. About 29% of Armenia's exports go to the European Union, with the most important export markets being Bulgaria (7%), Germany (7%) and the Netherlands (5%). 21% of Armenia's imports come from the EU; Germany (4.5%), Italy (3%) and France (2%) were the main import origins. Beyond the two trading blocs, China (10% of imports), Georgia (6% of imports), Iran (5% of imports) and Switzerland (18% of exports) are major partners.

Armenia's mining industry is responsible for the majority of its exports. Mineral products (26% - mostly copper ore, 24% of exports), precious metals (17% - mostly gold, 12% of exports) and metals (14%) account for over half of the country's exports, with the remainder coming from Armenia's textiles and foodstuffs industries. The country's main exports in the latter category are rolled tobacco (9% of exports) and hard liquor (7%). Armenia's imports are less concentrated in particular industries; machines (20%) and mineral products (13% - particularly petroleum gas, 7%, and refined petroleum, 5%) are the largest categories.

Figure 1.1. Trade of Armenia



Source: Observatory of Economic Complexity (2020_[12]), *Armenia: Exports, Imports and Trade Partners*, Observatory of Economic Complexity, <https://oec.world/en/profile/country/arm>

Investment climate

Since independence, Armenia has carried out numerous regulatory reforms that have improved its overall investment and business climate. Although Armenia is home to over 140 state-owned enterprises, liberal foreign investment legislation and a series of privatisations following independence have fostered a large private sector accounting for about three-quarters of the country's national activity (UNCTAD, 2019_[10]). Investors have expressed concerns about weak competition policies, high levels of operational business risk, cronyism and vested interests (World Bank, 2017_[3]), and the government that came to power following the 2018 Armenian Revolution, also known as the Velvet Revolution, has consequently made eliminating corruption a priority. Corruption, however, remains a significant problem (Mejlumyan, 2020_[13]).

The Armenia Development Strategy for 2014-2025 sets the objective for Armenia to become one of the top twenty countries in the World Bank's annual Doing Business rankings by 2017 and reach the top fifteen by 2025. Armenia did not achieve its goal in 2017; it ranked 38th, lower than Georgia (16th) but higher than Azerbaijan (65th) (World Bank, 2017_[14]). Armenia has made consistent progress on most of the Doing Business indicators, but due to faster reforms elsewhere, it has often slipped in the rankings. For instance, it reduced the time required to open a business (18 days in 2004 compared to 4 days in 2020) and the complexity of the tax system (54 payments requiring over 570 hours on average per year until 2012

compared to 15 payments requiring approximately 260 hours per year in 2020). However, despite some improvements on most metrics, Armenia still ranked 47th in the 2020 edition (World Bank, 2020^[15]).

In the wake of the 2018 Armenian Revolution, the electorate voted out several parliamentarians with consequential business interests and influence, and the newly elected government began a sweeping anti-corruption campaign to eliminate systemic corruption (US Department of State, 2019^[16]). According to Transparency International's Corruption Perceptions Index, perceptions of corruption in Armenia have already improved markedly. In 2018, Armenia ranked 105 out of 198 countries surveyed, but by 2019 it ranked 77th. However, conflicts of interest, a lack of transparency and accountability in public operations combined with low trust in the judiciary and law enforcement continue to hinder the government's anti-corruption efforts (Transparency International, 2019^[17]). Armenia has a regional strategic advantage in the high-tech and information technology sectors thanks to its highly educated population, particularly in science, technology, engineering and mathematics. Given Armenia's unfettered access to the markets of the Eurasian Economic Union, international companies have set up branches and subsidiaries in the country. However, businesses face several challenges in Armenia due to its relatively small domestic market, its closed borders and the resulting poor access to export markets and weak observance of the rule of law (US Department of State, 2019^[16]).

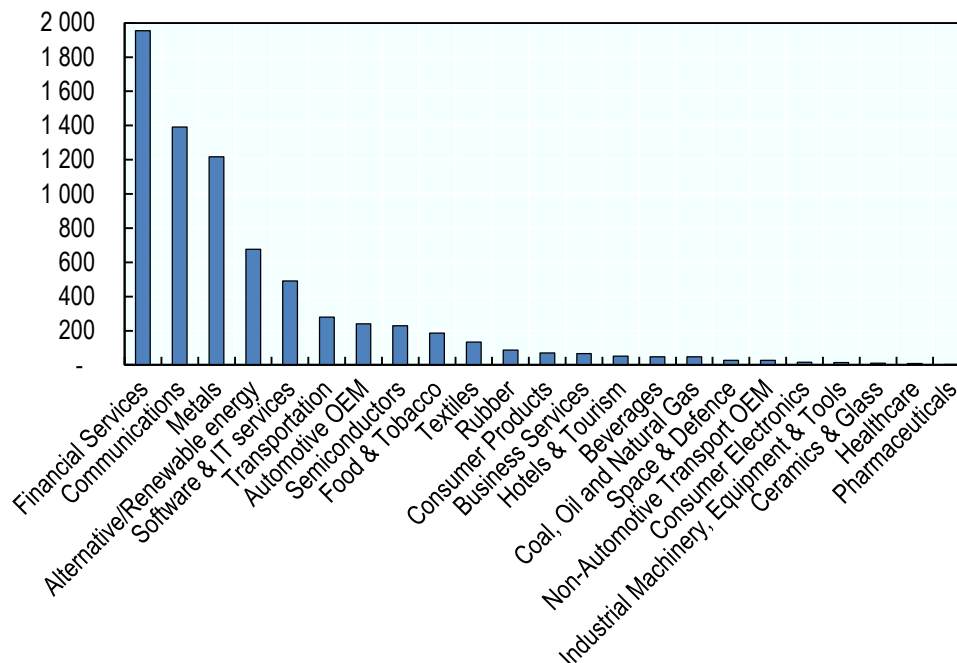
Despite certain distinct advantages, Armenia underperforms compared to regional competitors in attracting foreign direct investment (FDI). In Armenia, average per capita FDI inflows dropped from USD 193 between 2009 and 2013 to USD 98 between 2014 and 2018, whereas its neighbours experienced the opposite trend: Azerbaijan increased from USD 154 to USD 357 and Georgia increased from USD 225 to USD 414. Investor caution explains much of the decline in FDI since 2008, as investors hesitate to return to Armenia following recent political upheavals (UNCTAD, 2019^[10]).

In an effort to streamline state institutions, the government disbanded Business Armenia (previously known as the Development Foundation of Armenia), the country's investment promotion agency (IPA), and transferred its responsibilities to the Ministry of Economy (Office of the President of the Republic of Armenia and UNCTAD, 2020^[18]). In 2020, Armenia established the Investment Support Centre under the Ministry of Economy to act as the country's IPA (OECD, 2020^[19]).

Between 2003 and 2017, Armenia attracted USD 7.3 billion of FDI to greenfield projects, mostly to the financial services sector (27%), communications (19%) and metals (16%) (Figure 1.2). Infrastructure-related investments, particularly in alternative/renewable energy sources (9%) and the transportation sector (4%), also attracted considerable FDI inflows.

Figure 1.2. Greenfield FDI in Armenia by economic activity, 2003-2017

Cumulated greenfield FDI capital between January 2003 and September 2017 in USD million



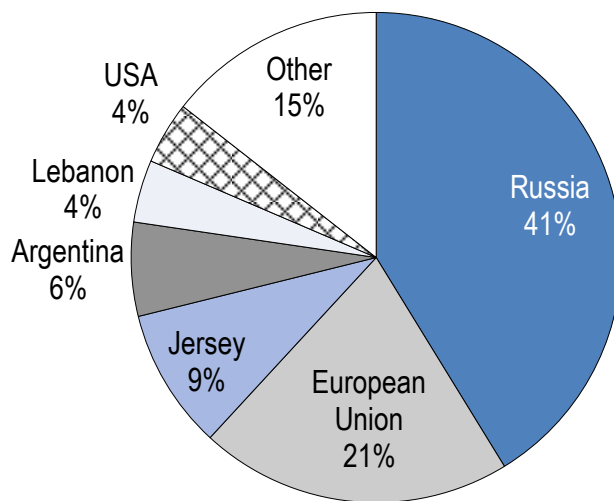
Source: OECD based on fDi Markets (2019^[20]), fDi Markets: the in-depth crossborder investment monitor (database), fDi Markets, <https://www.fdimarkets.com/>

Russia, Armenia's most important trade partner, remains the largest foreign investor, accounting for 41% of the country's FDI stock in 2017 (Figure 1.3), down from almost 60% in 2008. Since then, Russian FDI has shifted towards gas and telecommunications from its earlier focus on real estate and mining. As a bloc, the European Union (21%) is Armenia's second largest investor with a relatively stable share over the past decade. France (5%), Germany (4%) and Cyprus (4%) are the EU member states that invest the most. France focuses on the beverage industry and water supply and sanitation services while Germany concentrates on manufacturing and the extraction of basic metals. The large share (9%) of FDI derived from Jersey can be explained by the registration of Lydian International Limited, a gold mining corporation that fully owns the large-scale Amulsar Gold Project in Armenia. Other major investors include Argentina (6%, wine and airports), the United States (4%, IT and electricity) and Lebanon (4%, telecommunications, food and waste disposal) (UNCTAD, 2019^[10]).

A prominent Armenian diaspora is a common feature of many of Armenia's important FDI source countries, including Russia (41%), Argentina (6%), France (5%), Cyprus (4%), the United States (4%) and Lebanon (4%).³ The diaspora has played an important role in Armenia's development through FDI, humanitarian aid and other transfers since its independence. Between 1994 and 2004, approximately 68% of companies benefiting from FDI were linked to the diaspora (World Bank, 2017^[3]).

The majority (76% in 2018) of Armenia's public debt is denominated in foreign currencies, but this figure has been steadily declining. Armenia aims to reduce its relatively high ratio of public and publicly guaranteed debt to GDP (56% in 2018) and projections predict it will reach 50% by 2023. Although the government has improved fiscal and macroeconomic stability and begun to reduce the public debt, Armenia remains vulnerable to external shocks, particularly from global trade tensions and the economic situation in Russia (IMF, 2019^[21]).

Figure 1.3. Armenia's FDI stock by country of origin, 2017



Note: Jersey is a Crown dependency of the United Kingdom

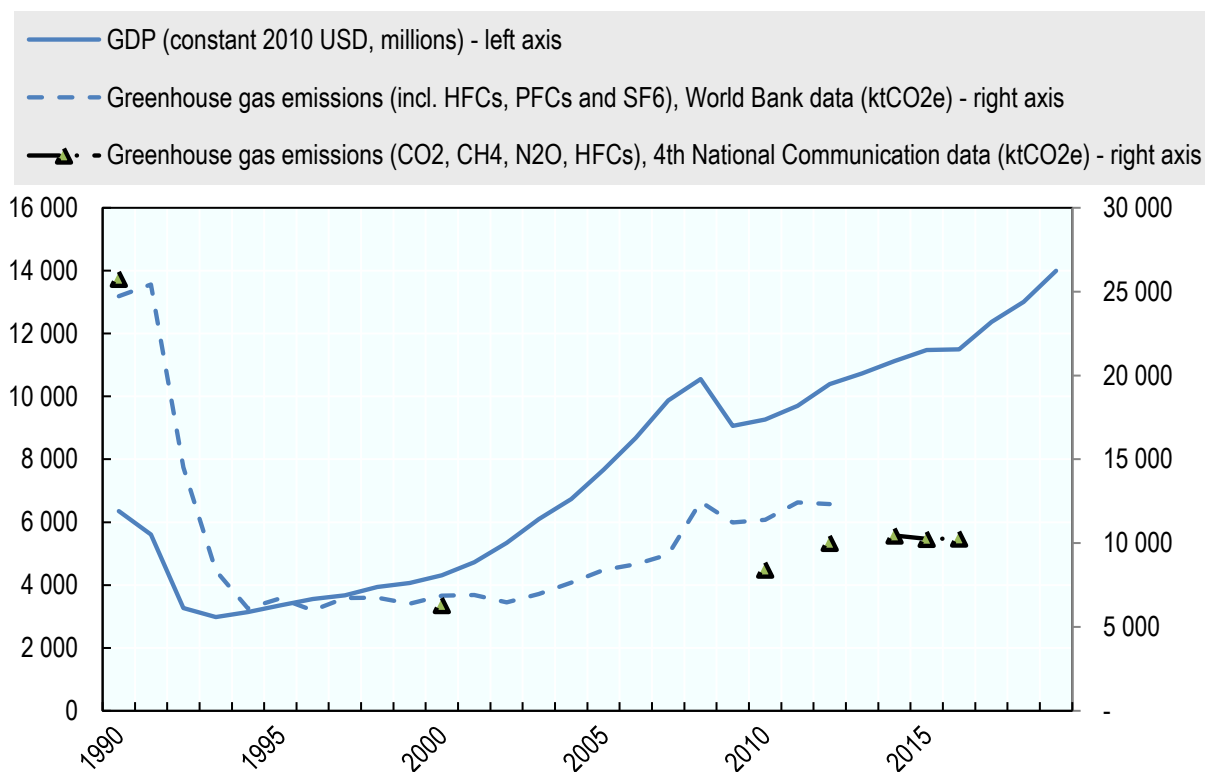
Source: UNCTAD (2019^[10]), *Investment Policy Review: Armenia*, United Nations Conference for Trade and Development, Geneva, https://unctad.org/en/PublicationsLibrary/diaepcb2019d3_en.pdf

Climate change

Given the country's small size, Armenia's emissions account for only 0.02% of global greenhouse gas (GHG) emissions. Armenia's GHG emissions shrank dramatically in the early 1990s as the constituent republics of the Soviet Union achieved independence. After peaking at 26 MtCO_{2e} in 1990, Armenia's GHG emissions reduced more than fourfold to 6 MtCO_{2e} in 1996. Since then, Armenia's emissions have steadily increased, reaching between 12 MtCO_{2e} in 2012 (according to World Bank data) or 10 MtCO_{2e} in the mid-2010s (according to Armenia's 4th National Communication) (Figure 1.4). The post-independence drop in emissions reflects the contraction of Armenia's economy in the early 1990s; GDP halved between 1990 and 1993. Economic growth has since decoupled from GHG emissions resulting in decreased GHG intensity (0.89 kgCO_{2e} per USD in 2016 compared to 4 kgCO_{2e} per USD in 1990). Despite this improvement, Armenia's economy remains significantly more emissions-intensive than the OECD average (0.35 kgCO_{2e} per USD in 2012). Armenia's per capita emissions have dropped from 7.3 tCO_{2e} in 1990 to 3.4 tCO_{2e} in 2016 (World Bank, 2021^[11]).

Armenia's stated GHG emissions targets are among the most ambitious in the former Soviet Union. In its first Nationally Determined Contribution (NDC), Armenia committed to achieving ecosystem neutral GHG emissions by 2050, conditional on international support. Its per capita target is to achieve 2.07 tCO_{2e} (Government of Armenia, 2015^[22]).

Figure 1.4. GHG emissions and GDP of Armenia, 1990-2019



Source: World Bank (2021^[1]), World Development Indicators (database), World Bank, <https://data.worldbank.org/indicator/EN.ATM.GHGT.ZG>; Ministry of Environment of the Republic of Armenia (2020^[23]), *Armenia's Fourth National Communication on Climate Change under the United Nations Framework Convention on Climate Change*, https://unfccc.int/sites/default/files/resource/NC4_Armenia_.pdf

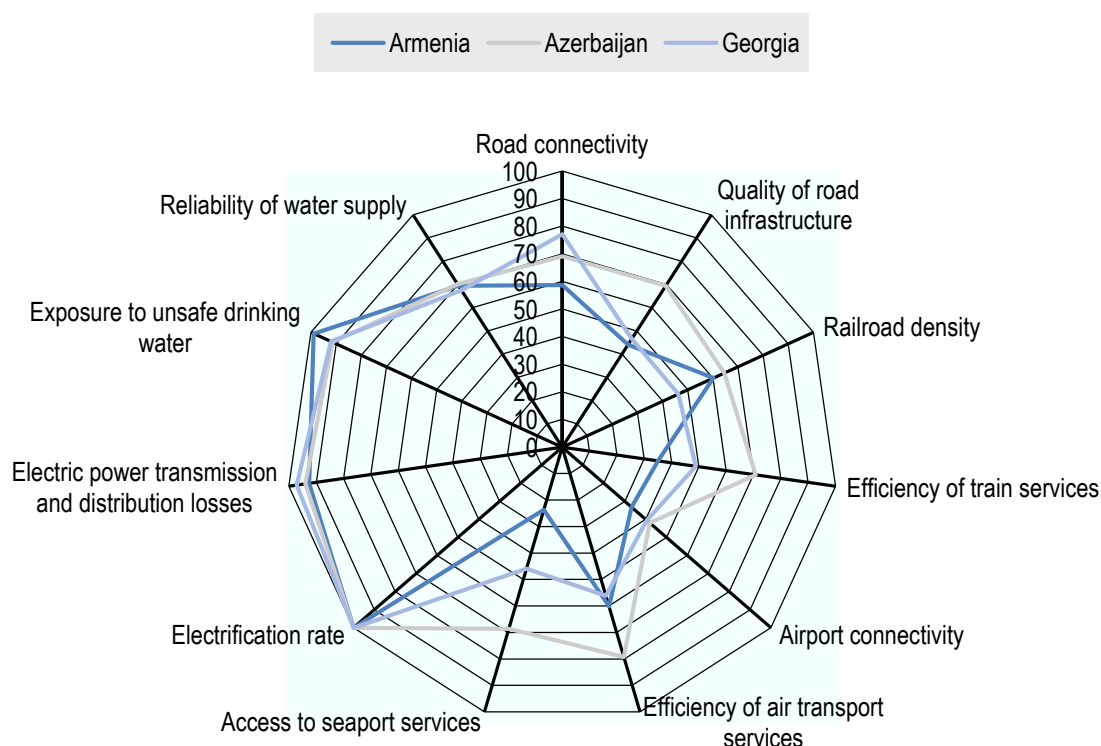
Energy (including fuel combustion from transport) has accounted for the majority of Armenia's GHG emissions since independence, but the share has decreased over time, from 88% in 1990 to 68% in 2000 and 64% in 2016. Conversely, agriculture's share of emissions has grown from 8% in 1990 to 21% in 2000 and 22% in 2016. Industrial processes and products use (2% in 1990, 8% in 2016) and waste (2% in 1990, 6% in 2016) make up the remainder of Armenia's GHG emissions. In absolute terms, energy-related emissions remain far below their pre-independence levels (22.7 MtCO_{2e} in 1990 to 6.6 MtCO_{2e} in 2016), but emissions from all other sources have grown (e.g. 2.0 MtCO_{2e} of agriculture-related emissions in 1990 compared to 2.3 MtCO_{2e} in 2016) (Ministry of Environment of the Republic of Armenia, 2020^[23]).

Armenia has already begun to experience some of the effects of climate change. The annual mean temperature in Armenia increased by 1.23°C on average (1929-2016), average precipitation has decreased by 9% (1935-2016) and the frequency and intensity of natural disasters and floods have increased. These trends are expected to continue if global emission rates remain on their current course (Ministry of Environment of the Republic of Armenia, 2020^[23]). Armenia's agricultural sector is particularly vulnerable as precipitation decreases and water stress intensifies. Extreme weather events led to AMD 72.71 billion (approximately USD 182 million) in damage to crops between 2009 and 2013 (World Bank, 2017^[3]). In the future, climate scenarios predict declines in crop yields (8-14% by 2030), the productivity of irrigated land (24%) and overall pasture area and productivity (4-10% by 2030). Rising temperatures will also negatively impact Armenia's ecosystems; models predict that fragile mountain ecosystems will shift vertically by 250-300m, erosion and desertification will increase and aquatic ecosystems, including the Caucasus's largest freshwater body Lake Sevan, will suffer from eutrophication and decreased water quality (Ministry of Environment of the Republic of Armenia, 2020^[23]).

Armenia's infrastructure needs and current plans

The overall quality of Armenia's infrastructure is relatively adequate, however its transport metrics are poor compared to its neighbours (Figure 1.5). Armenia faces infrastructure bottlenecks, some beyond its direct control, such as its few operating international border crossings. Its outdated transport infrastructure and, in particular, the low capacity of its border crossings with Iran and, crucially, the border crossing between Georgia and Russia that provides Armenia's only land access to the Russian market are major barriers to Armenia's competitiveness and integration into global value chains (World Bank, 2017^[3]). Armenia ranked 92nd in the World Bank's Logistics Performance Index in 2018, up from 141st place in 2016 (World Bank, 2019^[24]).

Figure 1.5. Quality of infrastructure in Armenia



Source: World Economic Forum (2019^[25]), *The Global Competitiveness Report 2019*, World Economic Forum, http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf

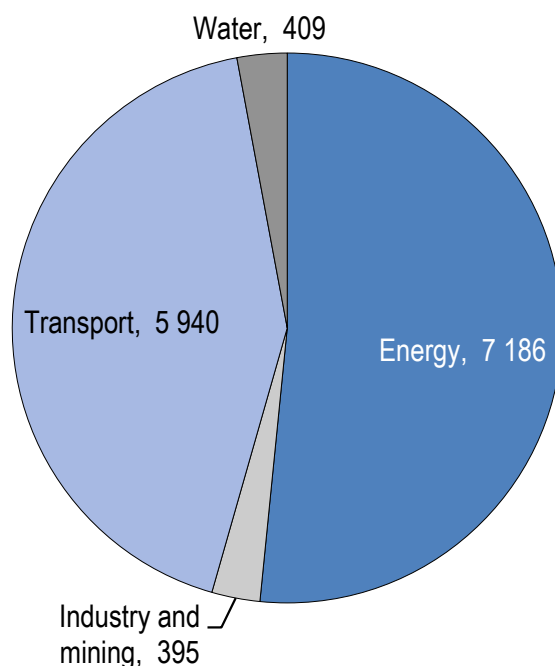
Armenia needs to invest USD 450-600 million annually into economic infrastructure, including energy, transportation, water supply and sanitation and telecommunications (World Bank, 2017^[26]). In its *Strategic Programme of Prospective Development (2014-2025)*, the government set annual infrastructure investment targets by sector: 1.4-1.5% of GDP in transport (85% of which would be dedicated to the road network, and 15% to other projects), 0.3% of GDP in energy, 0.3% of GDP in irrigation and 0.4% of GDP in drinking water systems (Government of Armenia, 2014^[27]). Jointly, these targets amount to about USD 340-350 million per year, below the estimated annual needs. Between 2014 and 2016, Armenia invested

EUR 88 million annually on transport infrastructure (ITF, 2020^[28]), which amounts to less than 1% of the country's GDP, significantly below the government's set target.

The OECD's database tracks 34 major infrastructure projects planned and under construction in Armenia with a cumulative value of USD 13.9 billion. By value, energy projects account for the largest share (51%, USD 7.2 billion), closely followed by the transport sector (43%, USD 5.9 billion) (Figure 1.6). By comparison, industry and mining projects (USD 395 million) and water projects (USD 409 million) represent much smaller shares of total investment in Armenia's infrastructure (3% each).

Figure 1.6. Investment projects in Armenia, by sector

Planned and under construction, in USD million



Source: OECD analysis based on accessed databases as of June 2020.

Transport

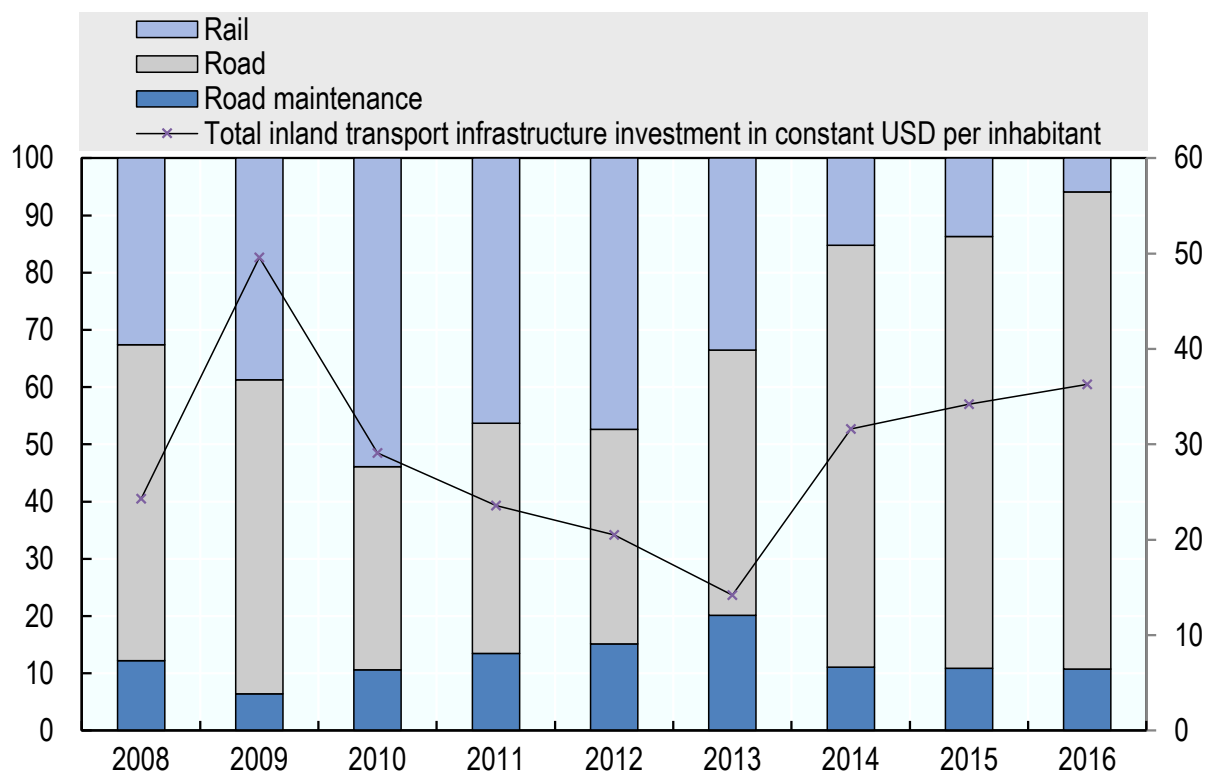
High trade costs caused in part by transport infrastructure and poor connectivity hinder the Armenia's continued development. Armenia could benefit from reforms in the areas of formalities, governance and impartiality, information availability, involvement of trade community, advance rulings and fees and charges (OECD, 2020^[29]). Although the government has consistently maintained transport infrastructure as a priority the quality of its domestic transport network has deteriorated due to a lack of investment in maintenance. Only 500 km of the country's 1 329 km of railways are in working condition, and even the operational sections are in need of maintenance and modernisation. Armenia's road network is also in poor condition, contributing to a persistent problem with road safety (ADB, 2019^[30]).

These shortcomings in quality and performance stem from underinvestment in transport infrastructure. Over the past decade, Armenia's per capita investments in infrastructure have fluctuated, never exceeding USD 50 per capita between 2008 and 2016 (Figure 1.7). In comparison, over the same period, per capita investments in transport infrastructure were about USD 126 on average annually in Azerbaijan and USD 101 on average annually in Georgia (ITF, 2019^[31]). Armenia's investment in inland transport has focused

on its road network rather than rail transport. In recent years, rail's share in total investments has decreased markedly.

Figure 1.7. Inland transport infrastructure investment in Armenia (2008-2016)

Modal share (%) of total inland infrastructure investment (left axis) and total inland transport infrastructure investment in current USD per capita (right axis)



Source: ITF (2019_[31]), *Transport performance indicators*, International Transport Forum, <https://doi.org/10.1787/trsprt-data-en>

Armenia's rail network does not extend to the south of the country, since the line that prior to the breakup of the Soviet Union connected Meghri (near the border with Iran) to the capital Yerevan ran through what is now the Autonomous Republic of Nakhchivan, an exclave of Azerbaijan. As such, Armenia has no rail connections with the Iranian rail network, and its pre-independence connections to Azerbaijan and Turkey are closed due to long-standing political conflicts. Armenia's only international rail connection is to Georgia but, due to the Georgian-Abkhazian conflict, Georgia lacks a direct rail connection to Russia, relying instead on its Black Sea ports of Batumi and Poti for shipments to the Russian port of Novorossiysk.

Although rail is among the most efficient and lowest emitting modes of transport, accounting for 8% of the world's passenger turnover and 7% of freight turnover while emitting only 2% of the transport sector's energy-related emissions (IEA, 2019_[32]). However, the development of rail projects faces major constraints due to the Armenian rail system's lack of cross-border connectivity and the current condition of the network. Moreover, the government's limited fiscal space means the necessary spending is not forthcoming. For this reason, the government has opted for a greater focus on road infrastructure development, to which it plans to dedicate 85% of the state's transport-related investments (Government of Armenia, 2014_[27]). These investment patterns will further lock Armenia's transport system into a high-emission development pathway that could run counter to the government's 2050 emissions reduction targets expressed in its

NDC, but the focus on secondary roads and domestic connectivity in the road network contributes to regional development and reduction of urban-rural disparities.

Unique among EaP countries, Armenia relies heavily on natural gas for its transport sector. Compressed natural gas (CNG) accounts for 70% of fuels in Armenia due to its lower price (2.5 times cheaper than gasoline) and its promotion as a cleaner fuel by the government, notably in public transport development. A heavy excise tax applied to diesel but it was exempt from VAT until 2018, when the VAT exemption was lifted but the excise tax was reduced. Natural gas remains exempt from excise tax. CNG also benefited from an excise tax exemption until its phase-out in 2016 (OECD, 2018^[33]).

Due to connectivity problems and insufficiently maintained infrastructure, rail's modal share for both passenger and cargo services is limited. Rail only accounted for 0.2% of passenger trips in 2018, and its share for cargo is in decline (about 10% in 2018 compared to 24% in 2012). The vast majority of exports are transported via road, but the rail system remains useful for the transportation of mining products. Armenia's road network faces mounting pressure from rapidly increasing freight volumes, which tripled between 2015 and 2018 following Armenia's accession to the Eurasian Economic Union (EBRD, 2019^[34]).

Armenia's government has made domestic and international connectivity one of its key priorities. One of the government's main objectives expressed in its Strategic Programme 2014-2025 is to ensure reliable road links between isolated settlements and regional centres (i.e. administrative centres of each region, or *marz* in Armenian). Only 30% of such settlements had suitable road connections in 2014, and the government aim to provide 90% of settlements with good-quality road links by 2025. Armenia also plans to boost the quality of its road network in general, achieving 'good' conditions on 65% of all roads in the country's network (100% of international, 60% of national and 45% of local roads) by 2025 (Government of Armenia, 2014^[27]). Improving domestic connectivity, especially to smaller settlements, is an essential step in reducing poverty, since 70% of Armenia's poor live outside of the capital, particularly in rural areas (World Bank, 2017^[3]). Since 2014, Armenia's road network has expanded marginally (7 568 km of general purpose motor roads in 2019 compared to 7 792 km in 2014), and local road development has accounted for most of the increase (3 895 km in 2019 compared to 3 801 km in 2014) (Statistical Committee of the Republic of Armenia, 2020^[35]).

Another key objective for Armenia is to develop the north-south corridor linking the country's two open international borders with Georgia and Iran. This will include an extension to the national rail network, establishing international connections with Iranian rail lines and reconnecting Armenia's currently operating network with the country's southern districts (Government of Armenia, 2014^[27]). Armenia and Iran have discussed establishing a rail link for over a decade, but the project has encountered difficulty attracting investors. Most recently, one of the project's backers opened an international lawsuit against the government of Armenia in 2018 and, as a result, the project's status is unclear (Gabrielian, 2018^[36]). The Armenian government has also expressed interest in normalising relations with Turkey and, in the medium term, reopening border crossings between the two countries (Government of Armenia, 2017^[37]). However, the 2020 Nagorno-Karabakh war with Azerbaijan, supported by Turkey, casts doubt on any speedy normalisation of relations.

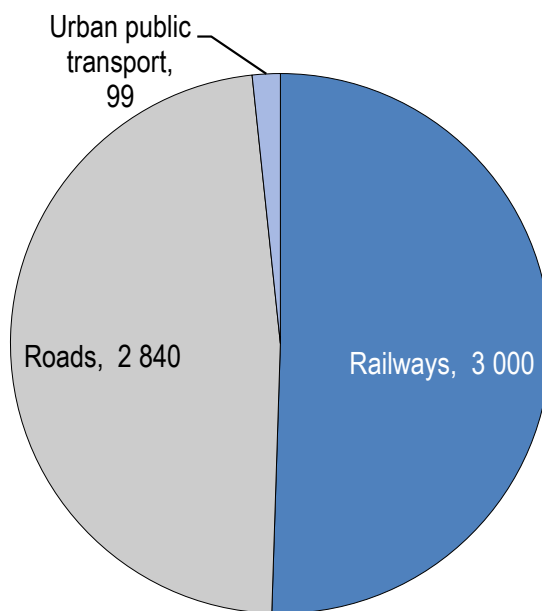
Armenia's planned and current transport infrastructure projects account for around USD 5.9 billion, split between railways (50% or USD 3 billion) and road (48% or USD 2.8 billion) (Figure 1.8). Urban public transport projects (2% or USD 99 million) in Yerevan, make up the remainder. A single large-scale rail project, the Iran-Armenia Rail Link, accounts for the entirety of rail's share in Armenia's investments. Given the current state of Armenia's domestic rail network, the project, if completed, could face major obstacles to functioning at its full design capacity. Road investments tracked in the OECD database are more varied, focusing on improving the capacity and reliability of international roads and improving domestic connectivity for isolated settlements.

The hotspot projects identified in the OECD's database of infrastructure projects planned and under construction in Armenia echo the country's vision for developing the transport sector outlined in the

Strategic Programme 2014-2025 (Figure 1.8). Plans to improve the quality of roads and domestic connectivity feature prominently among the projects under construction. However, more ambitious and expensive projects, such as improvements to the country's rail network and primary trade corridor, remain stalled at the planning phase.

Figure 1.8. Transport projects in Armenia, by sub-sector

Planned and under construction in USD millions



Source: OECD analysis based on accessed databases as of June 2020.

Table 1.2. Hotspot projects in the transport sector in Armenia

(a) Under construction					
Name	Sub-sector	Description	Project value (USD million)	Source	Type of investment
Armenia M6 Interstate Road	Road	The project will rehabilitate and modernise 90 km of road between Vanadzor (central Armenia) and Bagratashen (on the border with Georgia).	110	EIB	Brownfield
Lifeline Road Network Improvement Project	Road	The project will rehabilitate local roads and improve access to services for 60 000 people.	75	IBRD, Government of Armenia	Brownfield
Border Crossing and Infrastructure Improvements	Road	The project improves 7 km of roads and modernises 3 border crossings with Georgia.	67	EIB	Brownfield
(b) Planned					
Name	Sub-sector	Description	Project value (USD million)	Source	Type of investment
Iran-Armenia Rail Link	Rail	The railway will provide the shortest route from Georgia's Black Sea ports to the Persian Gulf by connecting Armenia's rail network with Iran's.	3 000	Government of Armenia, Russian Railways	Greenfield
North-South Corridor Investment Programme	Road	The project aims to modernise 93 km of road between Agarak and Bavra via Yerevan as well as customs infrastructure and related facilities.	1 440	ADB, NIP, EIB, EDB, Government of Armenia	Brownfield
Sustainable Urban Development Investment Programme	Road	The project develops the transport sector in 12 major and secondary cities, including road improvements in Yerevan.	575	ADB, Government of Armenia	Brownfield

Note: Refer to the Reader's guide for the present report's definition of 'hotspot' and other information on how the projects above were selected and prioritised. ADB = Asian Development Bank; EDB = Eurasian Development Bank; EIB = European Investment Bank; IBRD = International Bank for Reconstruction and Development; NIP = Neighbourhood Investment Platform.

Source: OECD database as of June 2020.

Energy

Like other former Soviet Union countries, Armenia has achieved universal electricity access. While increased investment in the energy sector is important to support Armenia's continued development, the energy affordability for households must remain central to policy making. Households spend on average 12.4% of their budgets on energy and 6% on electricity alone. 11.2% of households are classified as 'electricity poor', while 52.5% are 'energy poor'.⁴ As increased investments apply upward pressure on electricity tariffs, regulators face the challenge of tackling energy poverty for lower-income households (World Bank, 2017^[3]). Following the collapse of the Soviet Union and the energy crisis in the early 1990s, the district heating system in Armenia completely broke down. There was minimal uptake of the roll-out of 'autonomous heating', in which small gas-fired boilers heat a building or group of buildings, and Armenians have instead turned to inefficient, individual wall-hung natural gas boilers (OECD, 2018^[33]).

Armenia has abolished most subsidies related to the energy system inherited from the Soviet period, but subsidies remain in the form of targeted support for low-income households and foregone government revenue due to tax exemptions for diesel⁵ and natural gas (exempt from excise taxes). As the government continues reforming energy subsidies, there is scope to redirect support to encourage the development of

power generation from renewable sources and improve energy efficiency. Clear communication, awareness-raising and targeted support for low-income households are essential to ensure the social acceptability of subsidy and pricing reform measures (OECD, 2018^[33]).

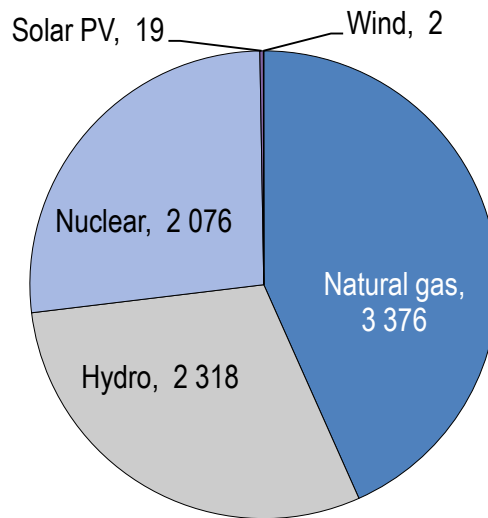
At present, Armenia's electricity infrastructure underperforms compared to the infrastructure in neighbouring countries. Armenia's electricity transmission and distribution systems lead to losses 11.1% of the electricity they transport, whereas the loss rates are lower in Azerbaijan (9.8%) and Georgia (6.8%) (World Economic Forum, 2019^[25]). Armenia's power sector also suffers from reliability problems, with 34% of firms experiencing electricity outages, more than in Azerbaijan (16%) and less than in Georgia (54%) (World Bank, n.d.^[38]). Age and lack of maintenance are major contributors to the underperformance of Armenia's electricity infrastructure. On average, electrical substations are about 35 years old, and most have not undergone any major upgrades or refurbishments after construction (World Bank, 2017^[3]). Unlike Georgia, Moldova and Ukraine, Armenia is not a Contracting Party of the EU's Energy Community, but it has been an Observer since 2011 (Energy Community, 2019^[39]). Although this status grants Armenia no legal rights or obligations, the Energy Community Secretariat regularly publishes recommendations to reform the country's energy sector. The Secretariat's most recent recommendations highlighted the benefits of energy market liberalisation, which would improve the sector's efficiency and help Armenia meet its obligations under the Eurasian Economic Union to establish a wholesale electricity market (Energy Community, 2017^[40]).

Armenia is a net energy importer. In 2018, Armenia's domestic energy production covered just over a quarter (0.82 Mtoe) of its total primary energy supply, with the shortfall made up via imports (2.27 Mtoe). Armenia is, however, a net exporter of electricity, exporting electricity to Iran (140 ktoe) (IEA, 2019^[41]). Armenia has no proven oil reserves and very limited local natural gas reserves which remain unexploited. As a result, Armenia fully relies on imports for natural gas, its primary energy source, and oil (IAEA, 2018^[42]). The vast majority of Armenia's gas imports come from Russia (2 billion cubic metres per year, or about 80%) with a smaller share imported from Iran (500 million cubic metres annually, or 20%). Although Armenia and Iran have both expressed interest in ramping up cross-border gas trade, Armenia faces the challenge of balancing energy security concerns from diversifying its gas supply with the risk of contravening US-imposed sanctions on Iran (Harutyunyan, 2019^[43]).

Armenia generates electricity almost exclusively from three sources. Natural gas accounts for 43% of Armenia's electricity generation, while nuclear (27%), which also relies on imported fuel, and hydroelectric power plants (30%) make up the remainder (Figure 1.9). Power generation from other renewables sources is extremely limited: 19 GWh from solar PV and 2 GWh from wind in 2018.

Figure 1.9. Electricity generation by source

GWh, 2018



Source: IEA (2021^[44]), *Electricity Information 2020*, International Energy Agency, <https://www.iea.org/data-and-statistics>

Armenia has made energy security one of its primary objectives in the energy sector. A major challenge that Armenia faces in this regard is its reliance on old power plants that have reached or surpassed their operational life. Most notably, the Metsamor nuclear power plant – the only nuclear power plant not only in Armenia but in all of the South Caucasus – was scheduled for decommissioning in 2016, but due to insufficient replacement capacity, its service life was extended to 2026 (OECD, 2018^[33]). Therefore, Armenia’s need to ramp up energy infrastructure investment stems not only from increasing energy demand but also a pressing need to replace outdated generation capacity.

One way in which Armenia plans to improve energy security is through the development of renewable energy. Armenia aims to derive 21% of its power generation from renewable energy sources by 2020 and 26% by 2025. These renewable targets included source-specific objectives: 377 MW of installed hydroelectric generation capacity by 2020, 397 MW by 2025; 50 MW of wind and geothermal respectively by 2020, 100 MW by 2025; and 40 MW of solar photovoltaic by 2020, 80 MW by 2025 (IEA, 2016^[45]). Armenia introduced tax breaks for households that generate electricity from small-scale solar and wind facilities for their own consumption and distribution through the national grid (Bertelsmann Stiftung, 2020^[46]).

To bolster its energy independence, Armenia has focused on further developing its hydroelectric potential and diversifying its power sector through the deployment of renewables, particularly solar and geothermal. Armenia enjoys considerable hydroelectric potential thanks to the large number of rivers that run through its territory, but the intensive development of hydroelectric stations that often neglect legal requirements and standards has depleted river flow (Bertelsmann Stiftung, 2020^[46]). The most recent available statistics on power generation⁶ indicate that non-hydro renewables account for a miniscule share of Armenia’s electricity: 0.6%. Generation in the first half of 2020 indicate that Armenia will miss its 2020 renewable electricity generation targets by a wide margin. Armenia aimed to generate 117 GWh and 88 GWh of wind and solar energy respectively in 2020 but only produced 1.4 GWh of wind and 8.7 of solar in the first half of the year. Although Armenia had planned to generate 373 GWh of geothermal energy by 2020, there are

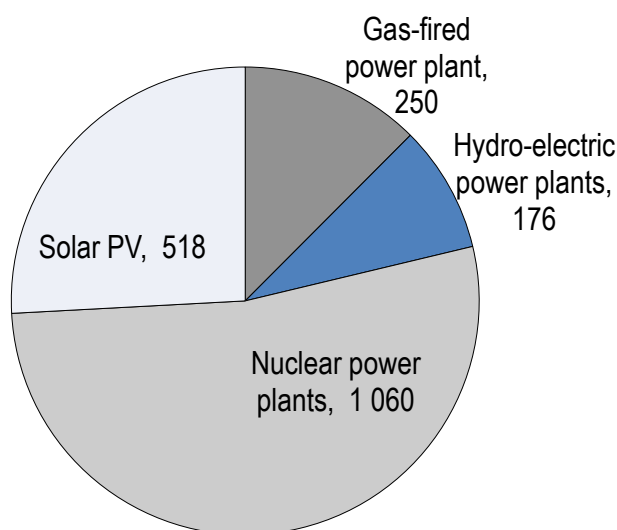
still no geothermal power stations integrated into the Armenian electric network (Statistical Committee of the Republic of Armenia, 2020^[47]).

Armenia's Strategic Programme 2014-2025 highlights several large-scale projects designed to meet the country's energy security and diversification goals. Armenia plans to improve its power network's connections to the Georgian and Iranian electricity systems through the construction of new transmission lines and substations as well as refurbishment of existing infrastructure. Armenia aims to dedicate 0.3% of its annual budget to improving energy efficiency and the country's transmission and distribution system. In terms of generation, Armenia's Strategic Programme singles out the rehabilitation of the Vorotan hydroelectric power plant, preliminary work towards exploiting the country's geothermal potential (Government of Armenia, 2014^[27]).

Despite how prominently geothermal and wind feature in Armenia's objectives for the development of renewables in the country's power generation system, there are no projects planned or under construction using either technology in the country's pipeline, which is largely dominated by nuclear and solar projects (Figure 1.10). The further development of nuclear energy, through the construction of a third unit of the Metsamor nuclear power plant, dwarfs the proposed power generation capacity from other sources. Increased nuclear electricity generation is a key component of Armenia's strategy to reduce reliance on natural gas imports and as a potential way to increase electricity exports to neighbouring countries. While there is a broad consensus that constructing replacement capacity for the existing Metsamor unit is necessary, the focus on a new nuclear unit as opposed to other alternatives (i.e. rapid scale-up of renewables) has received shakier support. Prominent cabinet ministers have proposed studying other alternatives more seriously (Schneider et al., 2018^[48]). This nuclear project as well as electricity transmission refurbishments to improve cross-border connections with Georgia and Iran are among the hotspot energy infrastructure projects identified in the OECD's database (Table 1.3). Solar photovoltaic projects make up a quarter of new power generation.

Figure 1.10. New electricity generation capacity in Armenia, by energy source

In MW



Source: OECD analysis based on accessed databases as of June 2020.

Table 1.3. Hotspot projects in the energy sector in Armenia

a) Under construction						
Name	Sub-sector	Description	Project value (USD million)	New capacity (MW)	Source	Type of investment
Tatev, Shamb & Spandaryan Hydroelectric Portfolio Acquisition and Rehabilitation	Hydroelectricity plants	The project will install new turbines, generators, transformers and auxiliary electrical and mechanical equipment are planned to replace outdated components of the Tatev, Shamb and Spandaryan hydroelectric power plants. This refurbishment aims to extend the life cycle of the plants and improve reliability and safety of their operations.	195	N/A	IFC, FMO, DEG	Brownfield
Shnogh Hydroelectric Power Plant	Hydroelectricity plants	The project will construct a new power plant on the Debed river near Shnogh, a village 20 km south of the Georgian border.	150	76	Debed Hydro LLC, The Robbins Company, Government of Armenia, Investors Club of Armenia	Greenfield
Electricity Supply Reliability Project	Electricity transmission and distribution	This project will replace a 230 km section of transmission line between the Hrazdan thermal power plant and Shinuhayr substation as well as several 220kV transmission lines currently in poor condition.	102	N/A	IBRD, Government of Armenia	Brownfield
Tatev, Shamb & Spandaryan Hydroelectric Portfolio Acquisition and Rehabilitation	Hydroelectricity plants	The project will install new turbines, generators, transformers and auxiliary electrical and mechanical equipment are planned to replace outdated components of the Tatev, Shamb and Spandaryan hydroelectric power plants. This refurbishment aims to extend the life cycle of the plants and improve reliability and safety of their operations.	195	N/A	IFC, FMO, DEG	Brownfield
b) Planned						
Armenian Nuclear Power Plant 3	Nuclear power plant	Metzamorenatom, a Russian-Armenian joint stock company, will build an AES-92 unit (with a VVER-1000 model V-392 reactor) with a service life of 60 years at Metsamor.	5 000	1 060	Government of Russia, Government of Armenia	Greenfield
Yerevan-2 Armpower Greenfield Combined-Cycle Power Plant	Gas-fired power plant	The project is expected to create 1 200 jobs during construction and up to 230 jobs during operations.	473	250	IFC, MIGA, World Bank, ADB	Greenfield
Meghri Hydroelectric Power Plant	Hydroelectric power plant	The project will construct a hydroelectric power plant on the Aras river near the Armenia–Iran border.	400	100	Government of Armenia, Government of Iran	Greenfield

Note: Refer to the Reader's guide for the present report's definition of 'hotspot' and other information on how the projects above were selected and prioritised. ADB = Asian Development Bank; DEG = German Investment Corporation (*Deutsche Investitions- und Entwicklungsgesellschaft*), a subsidiary of KfW; FMO = *Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden*, a Dutch development bank; IBRD = International Bank for Reconstruction and Development; IFC = International Finance Corporation; MIGA = Multilateral Investment Guarantee Agency.

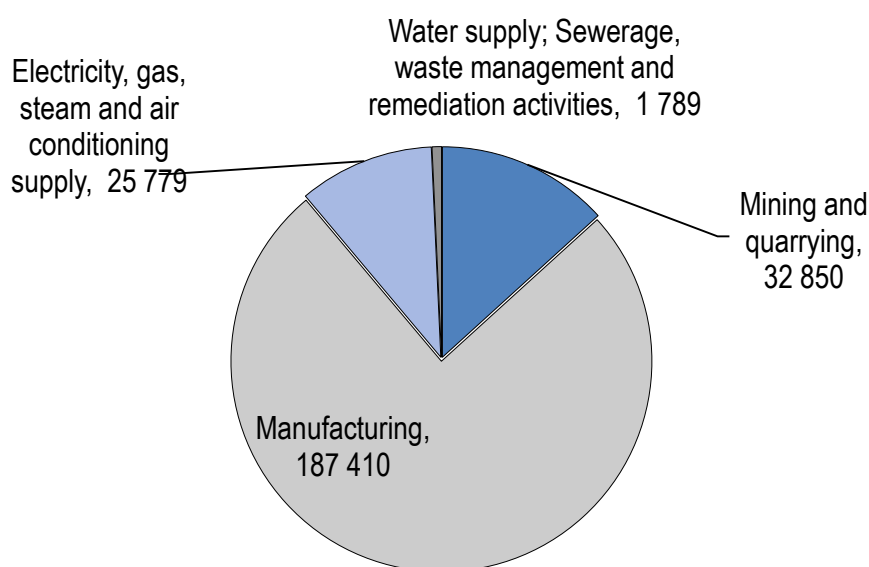
Source: OECD database as of June 2020.

Industry, mining and water

Following independence, the focus of Armenia's economy shifted from industry towards agriculture and trade. However, the mining sector continued to develop even as manufacturing and other industries remained stable or declined. Mining and quarrying account for approximately 2% of Armenia's GDP and the majority of the country's exports. The sector is also a top performer in attracting foreign investment and generates employment opportunities, particularly in rural areas (World Bank, 2016^[49]). Despite these changes, Armenia's manufacturing sector remains large (76% of industrial output by value) and is concentrated primarily in the production of foodstuffs, beverages (including wine and spirits) and tobacco goods (Figure 1.11). Although mining and quarrying only accounted for 13% of industrial output in 2019, its year-on-year growth (24%) is considerably higher than the manufacturing sector's (4%) (Statistical Committee of the Republic of Armenia, 2020^[47]).

Figure 1.11. Industrial output by NACE subsection

2019, in million AMD



Note: AMD = Armenian dram; NACE = Nomenclature statistique des activités économiques dans la Communauté européenne [Statistical Classification of Economic Activities in the European Community]

Source: Statistical Committee of the Republic of Armenia (Statistical Committee of the Republic of Armenia, 2020^[47]), "1.2. Производство (услуги) 1.2.1. Промышленность" [1.2. Production (services) 1.2.1. Industry], *Socioeconomic Situation of the Republic of Armenia, January-December 2019*, <https://www.armstat.am/en/?nid=81&id=2236>

The mining sector also plays an outsized role in environmental deterioration, particularly in the region of Eastern Europe, the Caucasus and Central Asia (EECCA) as highlighted by recent OECD analysis (OECD, 2019^[50]). In Armenia, the enforcement of national legislation and international standards in the mining sector is weak, and the proposed expansion of existing mines and the establishment of new ones have triggered strong civil society responses calling for improved environmental stewardship (Bertelsmann Stiftung, 2020^[46]). Poorly managed mines pollute both air and waterways during their operation and, following the closure of mining sites, they remain environmental liabilities that require careful planning and regulation to rehabilitate the land. Both the government and the mining industry are responsible for ensuring that mining companies minimise the impact of their activities on the environment (World Bank, 2016^[49]). In 2017, Armenia joined the Extractive Industries Transparency Initiative. Most recently,

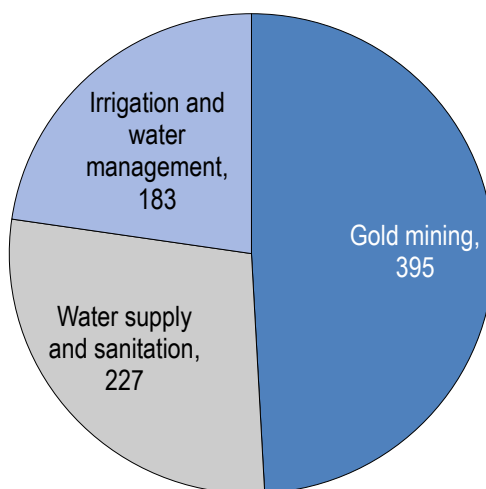
alongside efforts to improve the overall investment climate, support to new mining development experience considerable public resistance.

In this context, the OECD's database of large-scale infrastructure projects tracks one major mining project in Armenia, the Amulsar Mine, owned by Lydian International, a multinational gold mining concern registered in the British Crown dependency of Jersey. The mining site will be the largest in Armenia, with an estimated 142 million tonnes of mineral resources, including 2.6 million tonnes of contained gold ounces (Benton, 2020^[51]). Development of the mine halted in 2018 in response to environmental protests and blockades but is slated to restart shortly. Mining operations in Armenia have lacked sufficient oversight of tailing ponds, which has led to contamination of soil, groundwater and surface water with toxic chemicals (OECD, 2019^[50]). Questions have been raised about irregularities in the studies conducted about the mine's impact on the environment, and the government has promoted legislation that would weaken Armenia's freedom of environmental information law, which environmentalists view as benefiting mining concerns over local communities (Mejlumyan, 2020^[52]). Expansion of the mine without improvement of tailing pond management and transparent access to credible environmental information could translate into increased pollution and negative impacts on human health.

The database also tracks several smaller-scale water infrastructure projects, in irrigation and water supply and sanitation, but no industry projects (Figure 1.12).

Figure 1.12. Industry, mining and water infrastructure projects in Armenia, by sub-sector

Planned and under construction in million USD



Source: OECD analysis based on accessed databases as of June 2020.

On certain metrics, Armenia's water supply and sanitation infrastructure performs better than in neighbouring countries. Only 3.1% of Armenia's population is exposed to unsafe drinking water, whereas in Azerbaijan and Georgia the figure is significantly higher (10.3% and 9.8% respectively) (World Economic Forum, 2019^[25]). Armenia's sanitation services, however, are inadequate, particularly in rural areas where over half of the population rely on unimproved facilities. The continued use of such facilities has direct negative impacts on the environment and public health. Preliminary estimates indicate that the necessary investments in Armenian sanitation infrastructure are sizeable: approximately EUR 2.6 billion over 7-10 years (OECD, 2017^[53]). In its Strategic Programme 2014-2025 Armenia plans to dedicate 0.4% of GDP to water supply and sanitation and 0.3% to irrigation. Its primary objective in water infrastructure development is to minimise territorial disparities in access to clean and safe water supply and sanitation (Government

of Armenia, 2014^[27]). Armenia's large-scale water investments in the OECD database align well with this objective as the vast majority focus on improving water supply and sanitation as well as irrigation in rural areas and secondary cities.

Strengths and weaknesses of existing institutional set-up for sustainable infrastructure planning

Strategic planning and links between long-term goals, infrastructure plans and environmental considerations

Armenia has developed an adequate legal framework for strategic planning, policy development and co-ordination, but it lacks comprehensive support from the centre of government (e.g. the Prime Minister's Office) in the form of guidelines and guidance. Since 2018, Armenia has implemented a number of reforms in its planning procedures, including a shift from annual towards multiyear government programmes. The updated system will enhance strategic planning, centralise the assessments of strategies' impacts and take better account of comments received during public consultations.

Armenia's strategic planning documents would however benefit from more clearly defined objectives and cost estimates as well as fewer, better focused outcome-level indicators as well as better alignment between them. The government does not publicly report on progress in the implementation of the strategic programme on a regular basis (OECD, 2019^[54]). Vertical co-ordination between planning authorities and implementation-level bodies is often weak: In water management, for instance, the planning of irrigation, water supply, and hydropower investment programs, which are all managed at the central level, are insufficiently linked to existing river basin management plans (OECD, 2018^[55]).

Before these reforms, Armenia adopted its *Strategic Programme for the Future Development of the Republic of Armenia 2014-2025*, but the country still lacks a clear, long-term development vision and lower-order strategic documents (e.g. short-term government programmes, sector-specific development programmes) do not align with the country's overarching strategic development programme. Armenia needs a clear long-term vision for its economic and infrastructural development accounting for the transition towards lower greenhouse gas emissions and improved resilience to the effects of climate change. Armenia should consider adopting a longer-term strategic vision to 2050 following the good practices of its peers (e.g. Kazakhstan 2050 Strategy, Ukraine's 2050 Low-Emission Development Strategy). A clear vision extending beyond relatively short business and political cycles will allow Armenia to begin planning now for the transformational changes necessary to meet long-term goals like those set out in the Paris Agreement. The government is in the process of developing a strategy to 2050, the Armenia Transformation Strategy 2050, which will and define 16 overarching goals mostly corresponding to the SDGs with dedicated targets, indicators, tasks and solutions.

Armenia has been a party to the UNECE Convention on Environmental Impact Assessment in a Transboundary Context since 1997 and the related Protocol on Strategic Environmental Assessment since 2011. Armenia's 2014 law 'On environmental impact assessment and expertise' covers both EIA and SEA requirements, but the SEA provisions in particular are not fully aligned with the Protocol. The EU-funded programme EaP GREEN and its successor programme EU4Environment, implemented jointly by the OECD, UNECE, UNEP, UNIDO and the World Bank, have been helping Armenia improve its environmental assessment processes.

Although Armenia has adopted a raft of climate-relevant environmental legislation, many of the country's existing climate-relevant laws and policies lack a focus on climate change. Responding to this problem, the government has opted to develop national action plans for all climate-sensitive sectors, and recent strategies (e.g. the 2017 National Strategy on Disaster Risk Management) have begun to integrate climate

change concerns. Armenia is also in the process of updating its NDC with support from the EU-funded EU4Climate programme (EU4Climate, 2020^[56]).

Institutional set-up and decision-making processes

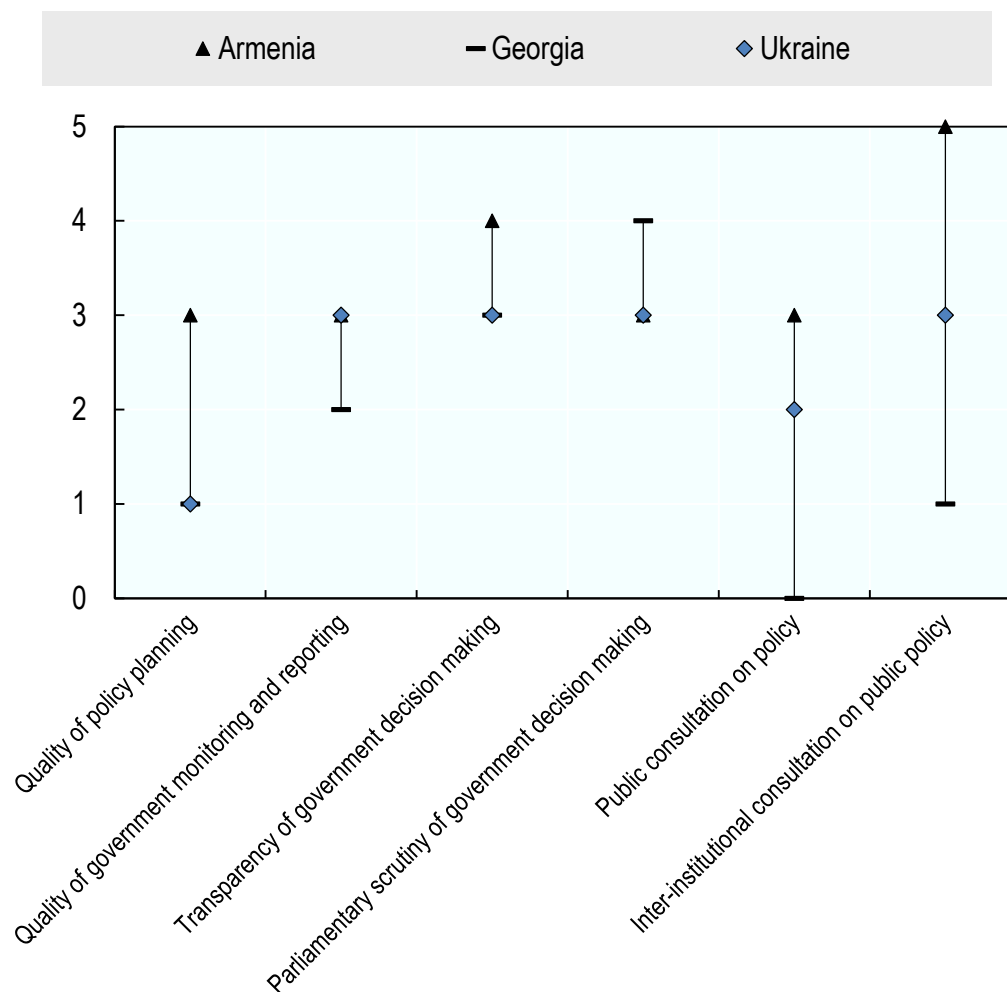
Armenia restructured its government in 2019, reducing the number of ministries from 17 to 12. The Ministry of Economic Development and Investments combined with the Ministry of Agriculture to form the Ministry of Economy, while the Ministry of Energy Infrastructures and Natural Resources and the Ministry of Territorial Administration and Development merged to create the Ministry of Territorial Administration and Infrastructure. The latter also houses transport-related functions that the Ministry of High-Technology Industries formerly managed. The changes raised concerns from opposition politicians about overloaded mandates for the ministries and the risk of inefficient policy development and implementation (Avetisyan, 2019^[57]). One advantage of the restructuring is the combination of energy-, transport- and territorial management-related functions into a single infrastructure ministry, which could encourage more integrated infrastructure planning across key, carbon-intensive sectors.

With the support of the Swiss Agency for Development and Co-operation, the International Bank for Reconstruction and Development, USAID and the Asian Development Bank, Armenia established the Armenian Territorial Development Fund to help implement the *Strategic Programme for the Future Development of the Republic of Armenia 2014-2025*. Its focus, similar to that of its predecessor the Armenian Social Investment Fund, is on rural development programmes.

Armenia performs better than its peers on several indicators of the quality of its policy development and co-ordination processes (Figure 1.13). The state's decision-making processes, for instance, are more transparent and open to public and inter-institutional consultation than in Georgia and Ukraine, but on most metrics there is still room for improvement to align with best practices.

Figure 1.13. Policy development and co-ordination indicators

Armenia (2019), Georgia (2018) and Ukraine (2018)



Source: OECD (2019^[54]), *The Principles of Public Administration: Baseline Measurement Report: Armenia*, SIGMA, OECD Publishing, Paris, <http://www.sigmaweb.org/publications/Baseline-Measurement-Armenia-2019.pdf>; OECD (2018^[58]), *The Principles of Public Administration: Baseline Measurement Report: Georgia*, SIGMA, OECD Publishing, Paris, <http://www.sigmaweb.org/publications/Baseline-Measurement-Report-2018-Georgia.pdf>; OECD (2018^[59]), *The Principles of Public Administration: Baseline Measurement Report: Ukraine*, SIGMA, OECD Publishing, Paris, <http://www.sigmaweb.org/publications/Baseline-Measurement-Report-2018-Ukraine.pdf>

Armenia ranked 47th globally in 2020 on the World Bank Group's Ease of Doing Business Index, which measures protection of property rights and investors and the quality of business regulations, below its previous rankings (41st in 2019 and 38th in 2017) (World Bank, 2020^[15]). Its neighbours, Georgia in particular, have outpaced Armenia's, but despite its drop in rankings, Armenia has made significant progress on improving investor protections and simplifying business operations. Armenia continues to make progress on rooting out corruption. In public procurement for infrastructure projects, Armenia should continue to introduce systematic centralised monitoring procedures and facilities to ensure impartial and technically adequate requirements and terms of reference (OECD, 2018^[55]).

To analyse risks effectively and develop, screen and implement infrastructure projects, the institutional capacity of government bodies in infrastructure development need to be strengthened (World Bank, 2018_[60]). In 2017 Armenia established the Centre for Strategic Initiatives, tasked with helping to shape the country's strategic development vision, attracting FDI, fostering public-private partnerships and bringing the developmental goals of line ministries and investors into alignment. Centre for Strategic Initiatives was, however, short-lived, as the government abolished it in late 2018. Its successor in strategic development planning and fostering investment is unclear.

List of relevant strategic documents

Table 1.4. Main strategic documents in force

	Status	Time Horizon	Sectoral Coverage	Main objectives
First Nationally Determined Contribution (NDC)	Submitted in 2017	2015-30	Economy-wide	<ul style="list-style-type: none"> • Conditional target: Limit total aggregate emissions between 2015 and 2050 to 633 million tCO_{2e} • Main sectors targeted for emission reduction: energy, transport, urban development, industrial processes, waste management, land use and forestry • Main adaptation tool: 'ecosystem approach' to climate change adaptation
Strategic Programme of Prospective Development (2014-2025)	Adopted in 2014	2014-25	Economy-wide	<ul style="list-style-type: none"> • Focus on job creation, development of human capital, improvement of the social protection system and modernisation of public administration and governance
Programme of the Government of the Republic of Armenia 2017-2022	Adopted in 2017	2017-22	Economy-wide	<ul style="list-style-type: none"> • Adopt new Law on Energy by 2020 • Develop long-term development programme for power system

Table 1.5. Other relevant documents

	Status	Time Horizon	Sectoral Coverage
National Strategy and Action Programme to Combat Desertification	Adopted in 2014	2015-20	Land use
Strategy and State Programme of Conservation and Use of Specially Protected Nature Areas	Adopted in 2014	2014-20	Ecosystems, biodiversity
Territorial Development Strategy	Adopted in 2016	2016-25	Economy-wide
Marz Development Strategies	Adopted in 2017	2017-25	Economy-wide
Territorial Development Operation Programme	Adopted in 2018	2018-20	Economy-wide
Household Waste Management Development Strategy	Adopted in 2017	2017-36	Waste

References

- ADB (2019), *Technical Assistance: Transport and Trade Facilitation Strategy, 2020-2040 (Armenia)*, Asian Development Bank, Manila. [30]
- Avetisyan, A. (2019), *Armenia cuts five ministries in government 'optimisation'*, OC Media, <https://oc-media.org/armenia-cuts-five-ministries-in-government-optimisation/> (accessed on 12 August 2020). [57]
- Benton, D. (2020), *Amulsar, the largest gold mine in Armenia, moves closer to production*, Mining Global, <https://www.miningglobal.com/mining-sites/amulsar-largest-gold-mine-armenia-moves-closer-production> (accessed on 12 August 2020). [51]
- Bertelsmann Stiftung (2020), *BTI 2020 Country Report Armenia*, Bertelsmann Stiftung, https://www.ecoi.net/en/file/local/2029509/country_report_2020_ARM.pdf (accessed on 10 August 2020). [46]
- EBRD (2019), *Armenia Diagnostic*, European Bank for Reconstruction and Development (EBRD), London, <https://www.ebrd.com/publications/country-diagnostics>. [34]
- Energy Community (2019), *2019 Implementation Report*, <https://www.energy-community.org/implementation/IR2019.html> (accessed on 26 November 2019). [39]
- Energy Community (2017), *Secretariat issues policy recommendations for Armenia*, Energy Community News, <https://energy-community.org/news/Energy-Community-News/2017/07/31.html> (accessed on 10 September 2020). [40]
- EU4Climate (2020), *Armenia Country Profile*, <https://eu4climate.eu/wp-content/uploads/countries/EU4Climate-ARMENIA.pdf> (accessed on 26 February 2021). [56]
- fDi Markets (2019), *fDi Markets: the in-depth crossborder investment monitor (database)*, <https://www.fdimarkets.com/>. [20]
- Gabrielian, S. (2018), "Investment Firm Sues Armenia Over Railway Deal", *Radio Liberty*, <https://www.azatutyun.am/a/29472531.html> (accessed on 28 July 2020). [36]
- GET Georgia (2016), *Trade between Georgia and Armenia: Business as usual?*, Georgian Economic Team Georgia (GET Georgia), Berlin, <http://www.get-georgia.de> (accessed on 16 July 2020). [11]
- Gevorgyan, A. (2017), *Развитие и многообразие: «старая» и «новая» армянские диаспоры на современном этапе [Development and diversity: the contemporary state of the "old" and "new" Armenian diasporas]*, Caucasus Institute, Yerevan, <http://www.migrationpolicy.org/article/development-through-diversity-engaging-armenias-new-and-old-diaspora> (accessed on 25 June 2020). [4]
- Government of Armenia (2017), *Program of the Government of the Republic of Armenia 2017-2022*, Government of the Republic of Armenia, Yerevan, <https://www.gov.am/files/docs/2219.pdf> (accessed on 28 July 2020). [37]
- Government of Armenia (2015), *Nationally Determined Contributions of the Republic of Armenia under the UN Framework Convention on Climate Change*, Ministry of Nature Protection of the Republic of Armenia, Yerevan. [22]

- Government of Armenia (2014), ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅԱՆ 2014-2025 ԹԹ. ՀԵՌԱՆԿԱՐԱՅԻՆ ՉԱՐԳԱՑՄԱՆ ՈԱՉՄԱԿԱՐԱԿԱՆ ԾՐԱԳԻՐ [Strategic Programme for the Future Development of the Republic of Armenia 2014-2025], Government of the Republic of Armenia, Yerevan, <https://www.gov.am/files/docs/1322.pdf> (accessed on 28 July 2020). [27]
- Harutyunyan, S. (2019), *Iran Looks To Boost Gas Supplies To Armenia*, Radio Liberty, <https://www.azatutyun.am/a/30045968.html> (accessed on 10 August 2020). [43]
- IAEA (2018), *IAEA Country Nuclear Power Profiles: Armenia, 2018 Edition*, International Atomic Energy Agency, Vienna, <https://www-pub.iaea.org/MTCD/Publications/PDF/cnpp2018/countryprofiles/Armenia/Armenia.htm> (accessed on 7 August 2020). [42]
- IEA (2021), *Electricity Information 2020*, <https://www.iea.org/data-and-statistics> (accessed on 10 August 2020). [44]
- IEA (2019), *The Future of Rail: Opportunities for energy and the environment*, International Energy Agency, Paris, <https://dx.doi.org/10.1787/9789264312821-en>. [32]
- IEA (2019), *World Energy Balances 2019*, International Energy Agency, Paris, <https://doi.org/10.1787/3a876031-en> (accessed on 10 August 2020). [41]
- IEA (2016), *Scaling Up Renewable Energy Program for Armenia (SREP Armenia)*, IEA/IRENA Renewables Policies Database, <https://www.iea.org/policies/5674-scaling-up-renewable-energy-program-for-armenia-srep-armenia?country=Armenia&q=armenia> (accessed on 30 July 2020). [45]
- IMF (2020), *IMF Executive Board Completes Third Review Under the Stand-By Arrangement for the Republic of Armenia and Approves US\$36.9 Million Disbursement*, <https://www.imf.org/en/News/Articles/2020/12/11/pr20371-armenia-imf-execboard-completes-3rd-review-under-sba-and-approves-us-36-9m-disbursement> (accessed on 19 February 2021). [9]
- IMF (2020), *World Economic Outlook: October 2020*, https://www.imf.org/external/datamapper/GGXCNL_NGDP@WEO/OEMDC/ADVEC/WEOWORLD. [2]
- IMF (2019), *2019 Article IV Consultation and Request for a Stand-by Arrangement: Press Releases; Staff Report; and Statement by the Executive Director for the Republic of Armenia*, International Monetary Fund, Washington, D.C. [21]
- IMF (2019), *IMF Executive Board Approves US\$248.2 Million Stand-By Arrangement for Armenia*, <https://www.imf.org/en/News/Articles/2019/05/17/pr19173-armenia-imf-executive-board-approves-stand-by-arrangement> (accessed on 19 February 2021). [8]
- ITF (2020), *Transport infrastructure investment and maintenance spending*, ITF Statistics: Transport: Transport Infrastructure, https://stats.oecd.org/Index.aspx?DataSetCode=ITF_INV-MTN_DATA (accessed on 26 February 2021). [28]
- ITF (2019), *Transport Performance Indicators*, https://www.oecd-ilibrary.org/transport/data/itf-transport-statistics/transport-performance-indicators_2122fa17-en. [31]

- Mejlumyan, A. (2020), "Armenia seeks to weaken environmental information law", *Eurasianet*, [52]
<https://eurasianet.org/armenia-seeks-to-weaken-environmental-information-law> (accessed on 19 February 2021).
- Mejlumyan, A. (2020), "Armenia's new anti-corruption law draws skepticism", *Eurasianet*, [13]
<https://eurasianet.org/armenias-new-anti-corruption-law-draws-skepticism> (accessed on 19 February 2021).
- Ministry of Environment of the Republic of Armenia (2020), *Armenia's Fourth National Communication on Climate Change under the United Nations Framework Convention on Climate Change*, Ministry of Environment of the Republic of Armenia, Yerevan, [23]
https://unfccc.int/sites/default/files/resource/NC4_Armenia_.pdf (accessed on 23 July 2020).
- Observatory of Economic Complexity (2020), *Armenia: Exports, Imports, and Trade Partners*, [12]
<https://oec.world/en/profile/country/arm> (accessed on 16 July 2020).
- OECD (2021), *COVID-19 and greening the economies of Eastern Europe, the Caucasus and Central Asia*, <http://www.oecd.org/coronavirus/policy-responses/covid-19-and-greening-the-economies-of-eastern-europe-the-caucasus-and-central-asia-40f4d34f/> (accessed on 10 March 2021). [7]
- OECD (2020), *COVID-19 crisis response in Eastern Partner countries*, OECD, Paris, [6]
<https://www.oecd.org/coronavirus/policy-responses/covid-19-crisis-response-in-eu-eastern-partner-countries-7759afa3/> (accessed on 9 September 2020).
- OECD (2020), *Investment Promotion in Eurasia: A Mapping of Investment Promotion Agencies*, [19]
 OECD Publishing, Paris, <http://www.oecd.org/eurasia/competitiveness-programme/Investment-Promotion-in-Eurasia-A-Mapping-of-Investment-Promotion-Agencies-ENG.pdf> (accessed on 11 February 2021).
- OECD (2020), *Trade Facilitation Index*, <https://www.oecd.org/trade/topics/trade-facilitation/> [29]
 (accessed on 9 September 2020).
- OECD (2019), *Baseline Measurement Report: The Principles of Public Administration: Armenia*, [54]
 OECD Publishing, Paris, <http://www.sigmaweb.org/publications/Baseline-Measurement-Armenia-2019.pdf> (accessed on 12 August 2020).
- OECD (2019), *Mining and Green Growth in the EECCA Region*, OECD Green Growth Studies, [50]
 OECD Publishing, Paris, <https://dx.doi.org/10.1787/1926a45a-en>.
- OECD (2018), *Anti-corruption reforms in Armenia: 4th round of monitoring of the Istanbul Anti-Corruption Action Plan*, OECD Publishing, Paris, <https://www.oecd.org/corruption/acn/OECD-ACN-Armenia-4th-Round-Monitoring-Report-July-2018-ENG.pdf> (accessed on 12 August 2020). [55]
- OECD (2018), *Inventory of Energy Subsidies in the EU's Eastern Partnership Countries*, Green [33]
 Finance and Investment, OECD Publishing, Paris,
<https://dx.doi.org/10.1787/9789264284319-en>.
- OECD (2018), *The Principles of Public Administration Policy Development and Co-ordination: Baseline Measurement Report: Georgia*, OECD Publishing, Paris, [58]
<http://www.sigmaweb.org/publications/Baseline-Measurement-Report-2018-Georgia.pdf>
 (accessed on 13 August 2020).

- OECD (2018), *The Principles of Public Administration: Baseline Measurement Report: Ukraine*, OECD Publishing, Paris, <http://www.sigmaweb.org/publications/Baseline-Measurement-Report-2018-Ukraine.pdf> (accessed on 13 August 2020). [59]
- OECD (2017), *Reforming Sanitation in Armenia: Towards a National Strategy*, OECD Studies on Water, OECD Publishing, Paris, <https://dx.doi.org/10.1787/9789264268982-en>. [53]
- Office of the President of the Republic of Armenia and UNCTAD (2020), *Armenia Investment Promotion Strategy in Times of the Global Crisis and Beyond*, Office of the President of the Republic of Armenia & United Nations Conference for Trade and Development. [18]
- Roser, M. et al. (2020), *Coronavirus Pandemic (COVID-19)*, OurWorldInData.Org, <https://ourworldindata.org/coronavirus> (accessed on 9 September 2020). [5]
- Schneider, M. et al. (2018), *The World Nuclear Industry Status Report 2018*, <https://www.worldnuclearreport.org/The-World-Nuclear-Industry-Status-Report-2018-HTML.html> (accessed on 19 February 2021). [48]
- State Commission for the Protection of Economic Competition of the Republic of Armenia (2018), *Response of RA Competition Authority to Armenian Revolutionary Federation - Dashnaksutyun: there are no abuses in fuel market*, http://www.competition.am/index.php?page=news_cases&menu=&newsID=1489&lng=2 (accessed on 19 February 2021). [61]
- Statistical Committee of the Republic of Armenia (2020), *1.2. Производство (услуги): 1.2.1. Промышленность [1.2. Production (services): 1.2.1. Industry]*, https://www.armstat.am/file/article/sv_06_20r_121.pdf (accessed on 10 August 2020). [47]
- Statistical Committee of the Republic of Armenia (2020), *General purpose motor roads by indicators and years*, 4. Transport and tourism: 4.1 Transport, https://armstatbank.am/pxweb/en/ArmStatBank/ArmStatBank_4%20Transport%20and%20Tourism_41%20Transport/TT-tr-15-2019.px/table/tableViewLayout2/?rxid=0b6965b2-7577-4b02-b9f3-be0a75ad66e2 (accessed on 26 February 2021). [35]
- Transparency International (2019), *CPI 2019: Eastern Europe & Central Asia*, <https://www.transparency.org/en/news/cpi-2019-eastern-europe-central-asia> (accessed on 20 July 2020). [17]
- UNCTAD (2019), *Investment Policy Review: Armenia*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/en/PublicationsLibrary/diaepcb2019d3_en.pdf. [10]
- US Department of State (2019), *2019 Investment Climate Statements: Armenia*, <https://www.state.gov/reports/2019-investment-climate-statements/armenia/> (accessed on 20 July 2020). [16]
- World Bank (2021), *World Development Indicators (database)*, <https://datacatalog.worldbank.org/dataset/world-development-indicators>. [1]
- World Bank (2020), *Doing Business 2020*, World Bank Group, Washington, DC, <https://dx.doi.org/10.1596/978-1-4648-1440-2>. [15]
- World Bank (2019), *Country Score Card: Logistics Performance Index*, <https://lpi.worldbank.org/international/scorecard/> (accessed on 27 July 2020). [24]

- World Bank (2018), *Georgia from Reformer to Performer*, World Bank, Washington DC, [60]
<http://documents.worldbank.org/curated/en/496731525097717444/pdf/GEO-SCD-04-24-04272018.pdf>.
- World Bank (2017), *Doing Business 2017: Equal Opportunity for All Doing Business*, World Bank, Washington, D.C., <http://dx.doi.org/10.1596/978-1-4648-0948-4>. [14]
- World Bank (2017), *Future Armenia: Systematic Country Diagnostic*, [3]
<https://elibrary.worldbank.org/doi/abs/10.1596/29791> (accessed on 22 July 2020).
- World Bank (2017), *Policy Note: Infrastructure Finance in Armenia*, World Bank Group, [26]
 Washington, D.C.
- World Bank (2016), *Armenia: Strategic Mineral Sector Sustainability Assessment*, World Bank. [49]
- World Bank (n.d.), *Enterprise Surveys: Infrastructure*, [38]
<https://www.enterprisesurveys.org/en/data/exploretopics/infrastructure> (accessed on 29 July 2020).
- World Economic Forum (2019), *The Global Competitiveness Report 2019*, World Economic Forum, Geneva, [25]
http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf (accessed on 23 July 2020).

Notes

¹ The EU Eastern Partnership (EaP) is a joint initiative for strengthening the relationships between the European Union, its member states and six countries (hereafter the EaP countries): Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine.

² Confirmed case and death figures are underestimates of actual case and death numbers. Methodology and testing rates vary widely, and international comparisons are necessarily flawed.

³ Estimates of the size of the Armenian diaspora in these countries are as follows: Russia, 1.2-2 million; France, 400-600 thousand (Gevorkyan, 2017^[4]); the United States, 0.5-2 million; Lebanon, 4% of the population – or approximately 270 thousand. Cyprus officially recognises Armenian as a minority language.

⁴ In this instance, ‘electricity poor’ and ‘energy poor’ households are those that spend more than 10% of their overall budget on electricity or energy.

⁵ Diesel was exempt from VAT until 2018, when its excise tax was lowered from AMD 35 thousand per tonne to AMD 13 thousand per tonne (State Commission for the Protection of Economic Competition of the Republic of Armenia, 2018^[61]).

⁶ January to June 2020.



From:
**Sustainable Infrastructure for Low-carbon
Development in the EU Eastern Partnership**
Hotspot Analysis and Needs Assessment

Access the complete publication at:

<https://doi.org/10.1787/c1b2b68d-en>

Please cite this chapter as:

OECD (2021), "Investment in sustainable infrastructure in Armenia", in *Sustainable Infrastructure for Low-carbon Development in the EU Eastern Partnership: Hotspot Analysis and Needs Assessment*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/50079b68-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document, as well as any data and map included herein, are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. Extracts from publications may be subject to additional disclaimers, which are set out in the complete version of the publication, available at the link provided.

The use of this work, whether digital or print, is governed by the Terms and Conditions to be found at <http://www.oecd.org/termsandconditions>.