

## THE SOUTHERN ARMENIA RAILWAY PROJECT DESCRIPTION

The Southern railway construction project in Armenia will create opportunity to restore Armenia's role as a transit country located on the Silk Road in the important part of the overland supply corridor leading to Europe. A 3,000 kilometer-long Silk Road is an ancient transport corridor, which passed through China, Central and West Asia, Iran, Turkey, Armenia and some European countries, providing commercial ties between them.



Length of railway lines	304.71 km
Estimated speed	80 km per hour for passenger trains
Minimum curve radius	500 m for ordinary cases, 300 m for complicated ones
Maximum curvature	30%
Traction type	Electric
Cargo traction	2100 tons
Estimated width of the arrival-departure lines	550 and 850 m

The project supposes:

- Construction of 84 bridges with a total length of 19618 m;
- Construction of 60 tunnels with a total length of 102360 m;
- Construction of 27 stations, including 13 intermediate stations and the reconstruction of Gagarin station;
- Construction of edaphic posters of 152,73 km for the entire line.

## The purpose of the Southern Railway construction

- The project creates a connection with the railway network in the South Caucasus region, passes through the mountainous regions of the central and southern parts of Armenia, and crossing the border between Armenia and Iran, becomes a structural link with the existing railway network of the South Caucasus region and Iran.
- It becomes the shortest transport route between the Persian Gulf and the Black Sea ports, Central and East Asia, including China and Europe, significantly saving transportation costs and time.
- The project will significantly contribute to the implementation of the passenger and cargo transportation to EU member countries, obviously reducing the distance of oil products transportation to the European countries from Iran and regional countries.

## The importance of the Southern Railway construction

- In case of project implementation, as a key element for the international overland transportation between the Persian Gulf and Black Sea ports, it will become the most suitable corridor for overland transportation from the Persian Gulf to Europe and as well as from the perspective of cargo and passenger transportation from the Persian Gulf to the Southeast Asia. It will especially become irreplaceable as a result of reducing oil transportation distance from Iran to Europe.
- Being concluded, the project will entirely contribute to the expansion and strengthening of social and economic development. It is beneficial not only in terms of the production and export of color and polymetallic resources in the southern mountainous regions of Armenia, but it can also promote and strengthen economic ties between the Black Sea and the Persian Gulf, Central and East Asia countries, including China.
- Systematically connects the railway network of the South Caucasus region and Iran, that uses not only the existing railway network volume between the two countries, but also comes up with a historic step to restore direct railway link between the two countries and the region.
- Due to the project, as a key part of the functioning North-South international transport corridor between the Central, Western Asia and Europe, significant infrastructures will be created that will greatly promote the economic development of the region.
- Cooperation

- On July 28, 2012 the Government of the Republic of Armenia signed a concession agreement on the construction of the Southern Armenia railway with “Russia FZE” company, founded in the United Arab Emirates.



- “Russia FZE” signed a contract on the project’s implementation study with “China’s Communicating Company” (CCC), which resulted a feasibility study of a new construction project, as well suggested a new alignment. The presentation of the preliminary alignment and the feasibility study of the Southern Armenia railway construction took place on February 19, 2014.
- On January 20, 2016 a memorandum of understanding was signed between the Ministry of Transport and Communication of the Republic of Armenia and the Ministry of Transportation and Urban Development of the Islamic Republic of Iran regarding the railway networks connection between the two countries, according which the construction of the railway in the territory of Iran will start after the completion of the 30 % of railway construction in the territory of Armenia.
- Negotiations were held with the interested companies of different countries regarding the participation in the project implementation process.
- The Government of Georgia expressed its satisfaction regarding the project crucial for the region, hoping that the project will also have its positive impact on the development of the Georgian economy.

#### The main provisions of the project’s feasibility study

The economic calculations were made based on the following estimated annual cargo volumes:

- initial short-term (up to 2025): 15.4 million tons per year;
- long-term (up to 2035): 18.3 million tons per year.

As a result, taking into account the upward and downward directions, annual cargo volumes will be around 25 million tons.

According to the preliminary estimates, the required investment amount for the project is around 3.2 billion dollars, which does not include:

- the costs necessary for the implementation of the technical inspection and control;

- electricity costs;
- environmental and land acquisition costs;
- duties, taxes, as well as project expertise and control costs;
- other costs for construction permits, formulation of the final act.

The calculated internal profit rate of the project is 5.5%. It is estimated that even in case of 3% internal profit, the current profit will be around 1.18 billion dollars.

The project's self-cost recovery process is calculated for 24 years. In case of failing the cost recovery period, the Government of RA is ready to discuss the possibility of the concession period extension for extra 20 years.

The main projections

- **Domestic** cargo volumes forecast

It is predicted that on average about 3.52 million tons of domestic cargo will be transported through new railway.

- Transit cargo volumes forecast

Currently European importers are importing oil from Iran mainly through the strait of Hormuz, the marine transportation. According to the preliminary estimates, in 2011, Iran exported about 20.57 million tons of oil to Europe. After the construction of the new railway, a part of oil can be exported from Iran to European Union countries firstly overland to the Black sea and then through marine transportation up to the destination point. This will significantly reduce transportation costs compared with marine transportation. Thus, it is projected, that after the launch of the new railway, the transit transportation volume (mainly oil and oil products) will amount to 7.9 million, 8.7 million and 10.12 million tons, respectively on an initial, short-term and long-term basis.

- Transit passenger volume forecast

Taking into account, that the railway is the most convenient overland transport corridor between the countries of the Persian Gulf and the Black Sea regions, exploring other transportation indicators, it is expected that the volume of transit passengers (mainly tourism) in upward direction amounts to 270,000, 340,000, 510,000 persons per year, respectively on an initial, short-term and long-term basis, in downward direction and 310,000, 390,000 and 590,000 persons per year, respectively on an initial, short-term and long-term basis.

Expected accomplishments/ outcomes

- The new railway that will connect the Persian Gulf to Europe is the key element missing of the North-South transport corridor. Its construction creates a strong bridge, improving trade and passenger transportation between Central and Southeast Asia, including China.
- After being concluded, the new railway will provide the most convenient and speedy overland transport corridor between the Southwest and Central Asia, particularly the Persian Gulf and the Black sea, as well as between the neighbouring European countries. The time for cargo transportation from Middle East to Europe time will be reduced up to 1.5 months.
- After being concluded, the new railway will reach the following transportation oriented results: facilitate trade between North and South of Armenia, cargo and passenger transportation, extraction of mineral resources and export to Europe, oil export from the Persian Gulf to Europe, Central and West Asia, carrying out trade, barter and cargo transportation.
  - Southern Armenia Railway, located on the ancient Silk Road and being a missing link of overland transport corridor leading to Europe, after its construction, will promote the economic development of the **Persian Gulf's** oil producing countries, providing comfortable, convenient and rapid transit corridor for Southwestern and Central Asia, China and Europe. It will provide real economic benefit for all participating countries.