ΠΡΕΣΒΕΙΑ ΤΗΣ ΕΛΛΑΔΟΣ
ΣΤΟ ΕΡΕΒΑΝ
ΓΡΑΦΕΙΟ
ΟΙΚΟΝΟΜΙΚΩΝ ΚΑΙ
ΕΜΠΟΡΙΚΩΝ ΥΠΟΘΕΣΕΩΝ

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ΚΑΝΟΝΙΚΟ

Α.Π. **:** Φ.15400 / ΑΣ 225
Ερεβάν, 13 Ιανουαρίου 2017

ΠΡΟΣ : - ΠΙΝΑΚΑΣ ΑΠΟΔΕΚΤΩΝ

ΚΟΙΝ. : - Διπλ.Γρ. ΑΝΥΠΕΞ κ. Κατρούγκαλου
- Γραφείο κ. Γενικού Γραμματέα
- Γραφ. κ. Γ.Γ. ΔΟΣ & ΑΣ
- Γραφ. κ. Β΄ Γεν. Δ/ντή
- Β2, Β8 Δ/νσεις.

Ε.Δ. : - κα. Πρέσβη

ΘΕΜΑ : Προκήρυξη εκδήλωσης ενδιαφέροντος για συμμετοχή σε Διεθνείς Δημοπρασίες (International Tender), υλοποίησης έργων Εθνικής Κλίμακας στην Αρμενία.

Το Υπουργείο Εξωτερικών της Αρμενίας με Ρ. Δ. No:1110 / 00111 από 11.01.2017, ενημερώνει για την πραγματοποίηση με φορέα υλοποίησης το Υπουργείο Μεταφορών, Επικοινωνιών και Πληροφορικής, τριών (3) έργων Εθνικής Κλίμακας :

1). North-South Road Corridor Investment Program.
470 χιλ. Meghri-Yerevan-Bavra Highway.
2). Data Safe Program
3). Armenia-Iran Railway Construction Program
304,7 χιλ., 84 γέφυρες, 60 σήραγγες, , Προϋπολογισμός 3,2 δις. $ Η.Π.Α., χρόνος περάτωσης έργου 6 χρόνια.

Οι ενδιαφερόμενοι μπορούν να αναζητήσουν περισσότερες πληροφορίες : 1). στο agora.gr 2).στο Υπουργείο Εξωτερικών της Αρμενίας και 3). στο Γραφείο Ο.Ε.Υ.

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Σας διαβιβάζουμε το σχετικό e-mail, του Υπουργείου Εξωτερικών που περιλαμβάνει χρήσιμα στοιχεία για τα έργα που θα δημοπρατηθούν.

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Ο Προϊστάμενος

Κωνσταντίνος Γκούλιος
Σύμβουλος ΟΕΥ Β΄

(unofficial translation)

Ministry of Foreign Affairs
of the Republic of Armenia

No 1110/00111

The Ministry of Foreign Affairs of the Republic of Armenia presents its compliments to the Embassies and Representations of International Organisations accredited to the Republic of Armenia and has the honour to present the attached information package received from the Ministry of Transport, Communications and Information Technologies of the Republic of Armenia “North-South Road Corridor Investment Program”, “Armenia-Iran Railway Construction Project” and “Data Safe Project” in order to forward to the interested structures.

The Ministry of Foreign Affairs of the Republic of Armenia avails itself of this opportunity to renew to the Embassies and Representations of International Organisations accredited to the Republic of Armenia the assurances of its highest consideration.

Attached: 36 pages /in electronic form/

Yerevan, 11th January, 2017

Embassies and Representations
of International Organisations
accredited to the Republic of Armenia
YEREVAN

PUBLIC-PRIVATE PARTNERSHIP OPPORTUNITIES AND FINANCIAL RESOURCES NECESSARY FOR THE CONSTRUCTION OF THE SOUTHERN ARMENIA RAILWAY PROJECT

North-South Road Corridor Investment Program

CONTENTS

Project description and necessity of implementation

Southern Armenia Railway Project is the most important component of the international overland route between the Persian Gulf and Black Sea ports. After the completion of the project the most suitable and the fastest international overland corridor from North to South will be created between the Persian Gulf and European countries which will by play a key role in the goods and passenger transportation between Persian Gulf and European Union countries. It shall play especially an indispensable role in the significant reduction of oil export route distance from Iran to Europe. Firstly, the trade of goods and materials and transportation between the Persian Gulf and European Union countries mainly depend on maritime transportation implemented through the Strait of Hormuz. After the construction of the railway the major North-South transport corridor will be formed, which will become the shortest overland route between the Persian Gulf and Europe. Currently, the sea route for oil export to the main oil importing countries from Iran to Europe is as follows: Persian Gulf - Arabian Sea - Red Sea - Suez Canal - Mediterranean Sea - Strait of Gibraltar - Atlantic Ocean - English Channel. However, as the big ships cannot pass through the Suez Canal, alternative route from the Persian Gulf is the Indian Ocean – Cape of Good Hope - Atlantic Ocean - English Channel. According to the preliminary analyses the distance of the above routes of the maritime transportation from the Persian Gulf to the major European countries is 8,200 km, accordingly (up to France), 11,500 km (up to Germany) and 10, 500 km (up to UK). After completion of the project, the railway system of the South Caucasus region will be directly connected to the railway system of Iran, in favor of overland transportation by eliminating considerably the need for maritime transportation for oil export from Persian Gulf countries to Europe. As the most convenient and fastest overland corridor for the main oil-producing countries of Persian Gulf (especially oil export from Iran to Europe) its overland transportation route is as follows: Iranian Railway –Southern Armenia Railway - the existing railway of South Caucasus region-sea transportation through Black Sea (about 1,000 kilometers) - European Railway - major oil-importing countries. The length of the railway route from Iran to European largest countries will be 4,500 km, respectively (up to France), 3,800 km (up to Germany), 5,100 km (up to UK) and 3,000 km (up to Poland). Thus, this project is the most convenient and fastest overland transit corridor between the Persian Gulf and Europe which reduces the transportation time and distance for these two regions.

Project opportunities

Southern Armenia Railway construction project will enable to restore the role of Armenia as a transit country, important sector of overland transport corridor on the Silk Road leading to Europe and Russia. The project can not only contribute to the economic development of the oil-producing countries of the Persian Gulf, but also create an overland transportation corridor for cargo and passenger transportation between the countries of Central and Eastern Asia, China, and Europe, as well as significantly reduce the transport costs of manufacturers, exporters and importers of Armenia. In case of construction of Iran-Armenia railway not only the direct railway connection of Iran and other countries of the Persian Gulf with the Black Sea and European countries but also the transport connection of the latter with the other countries of the Silk Road will become quite realistic.

The project envisages that the railway shall pass through the mountainous regions of central and southern parts of Armenia and by crossing the border between Armenia and Iran shall establish structural links with the current railway networks of Iran and South Caucasus region. The project starts from Gagarin station which is equipped with operating railway lines and is located in the lower central part of Armenia – in

north-western part of Lake Sevan and extends up to Agarak- a small border town located in the southern part of Armenia, and passes through Gegharkunik, Vayots Dzor and Syunik marzes.

The project connects the existing railway networks of Iran and Southern Caucasus region accordingly on its southern and northern sections. At the northern section the project joins the existing intrastate network of Armenia which is of significant importance in Southern Caucasus region. At present, the length of the existing railway traffic in the territory of Armenia is 850 km, the 2.6% of which is two-lane. The length of the railway operating in South Caucasus region mostly consists of four lines: Ayrum-Sadakhlo railway in Georgia, Akhuryan-Doghecap railway in Turkey, Yeraskh-Velidagh railway and Ijevan-Barkhudar railway in Azerbaijan. After the construction of the railway it will become the vital part of the general railway network in the South Caucasus region.

Justifications

The project implementation justifies the expansion and improvement of Armenia's national railway network, the necessity for the railway construction, promotion of regional economic development, expansion and railway networks system connection in South Caucasus and Iran.

The project is financially feasible with the capacity to resist the risks of changes in transportation volumes in Armenia.

In terms of functional orientation, in connection with the annual transportation the project includes starting period, short-term and long-term proposals.

Annual transportation volumes, according to the proposals, the sent /received cargo volumes according to starting period (2023), short-term (2028) and long-term (2038) projects/ taking into account the upward and downward directions/ shall amount to 12, 18 and 25 million tonnes, accordingly.

Legal acts and agreements reached

On July 28, 2012 the RA Government signed a concession agreement of the construction of Southern Armenia Railway with "Rasia FZE" company of the United Arab Emirates with the aim of improving the RA transport system. We invite the interested investor(s) to become the party to the tripartite agreement with the "Rasia FZE" and the Republic of Armenia.

According to the RA Government protocol decree No. 33-26 as of August 7, 2014, the RA Government approved the initial project for the construction of Southern Armenia Railway as per which the list of the

activities necessary for the construction of Southern Armenia Railway and the project management principles were developed.

Within the scope of concession agreement of the Southern Armenia Railway the regulation procedure of the implementation of the Parties liabilities envisaged by the concession agreement continues with the concessionaire.

On January, 20, 2016 a Memorandum of understanding "On the connection of two countries railway networks" was signed in Tehran between the RA Ministry of Transport and Communications and Ministry of Roads and Urban Development of the Islamic Republic of Iran.

PRC expressed its interest towards the Armenia-Iran railway construction process and given the regional strategic importance of the project for our country, meetings were held with Chinese companies, during which the issues on possibility of their participation in the project implementation were discussed.

During the 3rd consultation of the working team developing proposals on integrated projects of transport and infrastructures within the scope of Eurasian economic integration and Silk Road economic zone held in Moscow, Russia on May, 20, 2016 the preferable plans to be included in the "Road Map" were discussed where the Iran-Armenia railway construction project was included in the road map for further collaboration with China. During the investment meeting devoted to Armenia which was held on October 10-11, 2016 in New York the Iran-Armenia railway construction project was also submitted.

General Information

The railway length will be 304.71km including the reconstruction line with 33km length.

The construction of 84 bridges are planned with total length of 19618 linear meters, 60 tunnels with total length of 102360 linear meters, 27 stations will be constructed along the line including 13 intermediate stations and the reconstruction of Gagarin Station.

The constructed railway is a single-line railway of the second category.

Estimated speed - 80 km/h for passenger trains.

The minimum radius of curves - 500 m in normal and 350 m in difficult conditions.

Maximum gradient - 30‰ pusher

Traction type- electric.

Cargo traction- 2100 t.

Construction deadlines

The total duration of the construction is estimated about 6 years.

Required investments

Investment with the total amount of USD 3,207,249,400 is required for the project, i.e, USD 10,525,600 for each kilometer of the line.

The costs of fixed investments and rolling stock purchase make up USD 3,012 billion. Fixed investment index of 1 km of the line is USD 9.8837 million. Interest of credit calculated during the construction is USD 192 million and total costs for rolling stock purchase – USD 112 million.

Estimates do not include the amounts required for land acquisition and demolition, customs duties, VAT and other similar charges, reserve capital for the increase of the project cost, the costs required for the RA Government separate requirements.

Method of financing

During the construction phase the cost of the sustainable investments and rolling stock purchase required for the project make up USD 3,012,000,000. Currently it is expected that the private investor (initially) will provide annual loans with 3.5% percent with the amount of approximately 60% of the project cost the remaining 40% financing will be implemented through the loans of the regional governments and international financial institutions.

Expected investments and financing

Expected investments

Line	2018	2019	2020	2021	2022	2023	Total
Annual sustainable investments	289.96	434.94	724.90	724.90	434.94	289.96	2899.60
Private investments	246.47	369.70	616.16	616.16	369.70	246.47	2464.66
Other loans	43.50	65.25	108.74	108.74	65.25	43.50	434.98
Cost of the rolling stock purchase						112.10	112.10
Private investments						67.26	67.26
Private investments						44.84	44.84

Financing

Currently it is planned that the financing of 40% of the cost of rolling stock purchase and sustainable investments required in the construction phase will be financed through the loan provided by regional governments and international financial institutions. Within the scope of this study it is envisaged that 60% of the financing will be through the loan received from the private investment with annual 3.5% and the remaining 40% with annaul 6.55% - from the loan of regional governments and international financing organizations.

Key indicators and own cash flow analysis

Key Indicators

As a result of the investment cash flow analysis it is shown that the cash inflows are bidgger than the outflows in the first year of operation. Before taxable profit of the financial internal rate of return of the project the financial net current value and the investment repayment terms make up 5.50%, USD 1,186,964,516 and 23.75 years, accordingly.

Own cash flow analyses

Being carried out on the basis of other loans from the regional governments and international financial institutions, this analysis takes into consideration the loan principal amounts and the back payment of the interest charged towards them in order to estimate the rate of return. Within the scope of this project financial internal rate of return of these funds, current financial net value make up 0.04% and USD 378,338,710, respectively.

As a result of the analyses it becomes clear that the project 5.50% internal financial rate of return is more than the minimum 3% attractive rate of return, which is an indicator for good profit.

Table indicating the results (%) of financial rates of return

The speed of variation Factor	-20%	-10%	0%	+10%	+20%
Transportation tariff	3.24%	4.42%	5.50%	6.48%	7.40%
Transportation volume	3.85%	4.70%	5.50%	6.24%	6.94%
Investment	7.16%	6.27%	5.50%	4.82%	4.21%
Operation costs	6.17%	5.84%	5.50%	5.15%	4.80%

The table above shows that the project's financial internal rate of return is the most sensitive towards the factors such as variation in transportation tariffs and transportation volumes. If the transportation tariff or volumes are reduced by 20%, the investments financial internal rate of return will amount to 3.0% before taxation which means that the project has great potential to resist the risks.

Cargo transportation volume forecast

Domestic shipment volume forecast

From the tree countries of South Caucasus, Armenia has the smallest scale of economy, but the highest level of economic development. Armenia is rich in copper, molybdenum and polymetallic mines and sulfur, marble and colored travertine mines. However, petroleum and coal reserves are lacking in Armenia and in terms of transportation, electricity generation and heating it depends on the imported petroleum product, despite the progress in the field of hydropower.

At present, certain part of nonferrous metal ores extracted from the southern mountainous regions of Armenia is melted beforehand into semi-finished product or is exported directly to Europe through motor vehicles. After the project establishment certain part of nonferrous metal ores extracted from the southern mountainous regions of Armenia will be exported to Europe via railway transport. As a result, based on the study carried out on-site and the analysis of materials it can be forecasted that 3.52 million tons of local cargo will be transported - after construction and operation – at the starting date, from which 2.85 million tons will be sent and 0.67 million tons will be received. Short-term local cargo volume will amount to 4,378 million tons, from which 3.57 million tons will be sent and 0.808 million tons will be received, the volume of long-term local transportation will be 5,34 million tons, from which 4.345 million tons will be sent and 0.995 million tons will be received.

Cargo volumes sent/received in different stations

Intermediate stations	Cargo volumes sent/received in different stations of the line (10,000 t/t)								
	2023 (starting date)			2028 (short-term)			2038 (long-term)		
	Sending	Receiving	Total	Sending	Receiving	Total	Sending	Receiving	Total
Gagarin	6	2	9	7	2.5	9.5	8.5	3	11.5
Gavar	18	3	23	22	3.6	25.6	27	4.5	31.5
Martuni	35	15	40	42	18	60	51	22.5	73.5
Qaraglukh	10	2	12	12	2.5	14.5	14	3	17
Karmrashen	18	2	20	22	2.5	24.5	27	3	30
Jermuk	25	4	29	30	5	35	36	6	42
Tsghuk	30	3	36	36	3.5	39.5	44	4.5	48.5
Sisian	26	2	30	32	2.5	34.5	39	3	42
Tatev	40	5	50	49	6	55	60	7.5	67.5
Kapan	70	26	96	85	31	116	104	38	142
Meghri	12	2	15	14	2.5	16.5	17	3	20
Agarak	5	1	7	6	1.2	7.2	7	1.5	8.5
Total	**285**	**67**	**352**	**357**	**80.8**	**437.8**	**434.5**	**99.5**	**534**

Transit cargo transportation volume forecast

At present Europen importers of oil products import oil from Iran mainly through Strait of Hormuz by ocean transports. Oil volume exported from Iran to Europe in 2011 amounted to 18% of the total export volumes in Iran. According to preliminary estimates, about 20.57 million tons of oil was exported from Iran to Europe in 2011. After the construction of the project, most of the oil can be exported from Iran to EU through the plan- firstly through overland to the Black Sea and then through marine transportation to the destination (to the European major oil importers). This will significantly reduce transportation costs compared with full marine transportation which is a mutually beneficial outcome for both oil importers and for Iran. The study examined and evaluated several ways of transportation and predicts that after the construction of the project, it will take 30% (conservative estimate) of transportation of the exported oil from Iran to Europe. Thus, it is anticipated that after the launch of the project, the volume of transit transportation (mainly oil and oil products) will make up 7.9 million tons, 8.7 million tons and 10.12 million tons in upwards direction respectively on initial, short-term and long-term basis (mainly imported from Europe to Iran) and transit transportation volume in downwards direction will make up 1.8 million tons, 2.15 million tons and 2.9 million tons to respectively on initial, short-term and long-term basis.

Passenger transportation volume forecast

Domestic passenger transportation volume forecast

As a major international North-South transport corridor exporting oil and refined oil products to Europe, the line also provides the citizens living along the line with the passenger transportation for Persian Gulf, in particular for Iran.

Intermediate station	The maximum total number of passengers (man/day)		
	2023 (starting date)	2028 (short-term)	2038 (long-term)
Gagarin	20	28	45
Gavar	214	300	486
Martuni	351	491	795
Qaraglukh	144	202	327
Karmrashen	180	252	408
Jermuk	81	113	183
Tsghuk	84	118	191
Sisian	206	288	466
Tatev	54	76	123
Kapan	380	532	862
Meghri	112	157	254
Agarak	40	56	91

Transit passenger transportation volumes forecast

Given that the railway line is the most suitable overland corridor for the passenger transportation between the countries of the Persian Gulf and the Black Sea region, after considering the indicators of other transport means of regional passneger transportation it is expected that the transit passengers transportation volume (mainly tourism) shall make up 270 000 man/year, 340,000 man / year and 510.000 man/ year in upwards direction, respectively on initial, short-term and long-term basis and 310,000 man/ year, 390,000 man/ year and 590,000 man / year in downwards direction, respectively on initial, short-term and long-term basis.

Evaluation conclusions

Within the scope of the project, financial internal rate of return is 5.50% (FIRR) which means that the project is viable and ensures good economic feasibility. Current net financial cost makes up USD 1,186,964,516 in case of the minimum 3% of attractive rate of return. The project is financially viable. The project cost-covering will take approximately 24 years.

National Economic Assessment

National economic internal rate of return (EIRR) for the project total investment amounts to 11.06% with exclusive economic effectiveness, which shows that the project is highly feasible in Armenia. The Expected Net Present Value (ENPV) with 8% social reduction is equal to 1,003 billion US dollars. Variability analysis indicates that the project is highly economically feasible with the opportunities to resist the risks of variations in transportation volumes in Armenia volumes.

DATA SAFE

Contents

Project overview

- The first ever Tier3 carrier neutral data center in the country
- Data to be close to the end user – better performance/less losses
- Data to be computed and stored with the higher efficiency
- Science and Education Development – integration into The EU Framework Program for Research and Innovation/Armenia as an associated member
- Regional Traffic Exchange facility – gateway from/to neighboring developing markets
- Regional IT market support and development

Company Overview

- Group of investors with success stories in telecommunications (wireless and fiber-optic), and currently holding stake in the leading broadband operator GNC-Alfa
- Successful startup management team with more than 15 years of experience in ICT («investment» to «market value» ratio)
- International experience and project management
- Preferential access to the fiber backbone infrastructure of GNC-Alfa

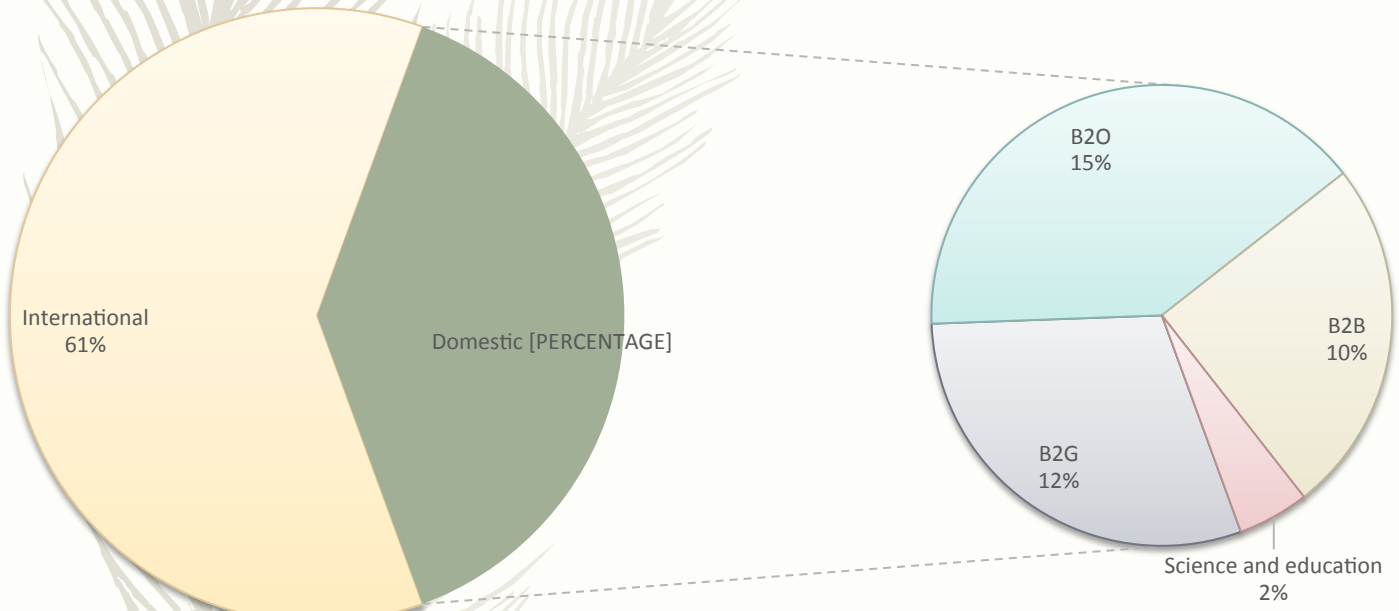
Why in Armenia?

- Geopolitical position as a core argument for successful development
- Gateway for multinationals for cloud services for Iran and Middle East and countries of Eurasian Economic Union
- Multiple path fiber–optic backbone connectivity with Georgia and Iran and ultimately the shortest terrestrial route connecting Europe with Asia
- Existence of a Nuclear energy as well as fast growing alternative energy sector (solar) with the possibilities of cheaper and green energy
- Liberal data storing laws
- A country with highly qualified ICT professionals

Technology & Services

- Cooperation with market leading solution vendors with the long term engineering experience (Juniper/Cisco/ZTE/)
- Partnership with market leaders in cloud solutions for business and the state (Microsoft, Oracle, SAP, IBM etc).
- Services from A to Z, including colocations, clouds, IT security, caching of data content (Google, Akamai etc)
- Ideal place for redundancy for the Governmental authorities
- High level of security certified by international auditors (TIA-942/TIER III)
- Carrier neutral with multiple FO peering with all telco operators

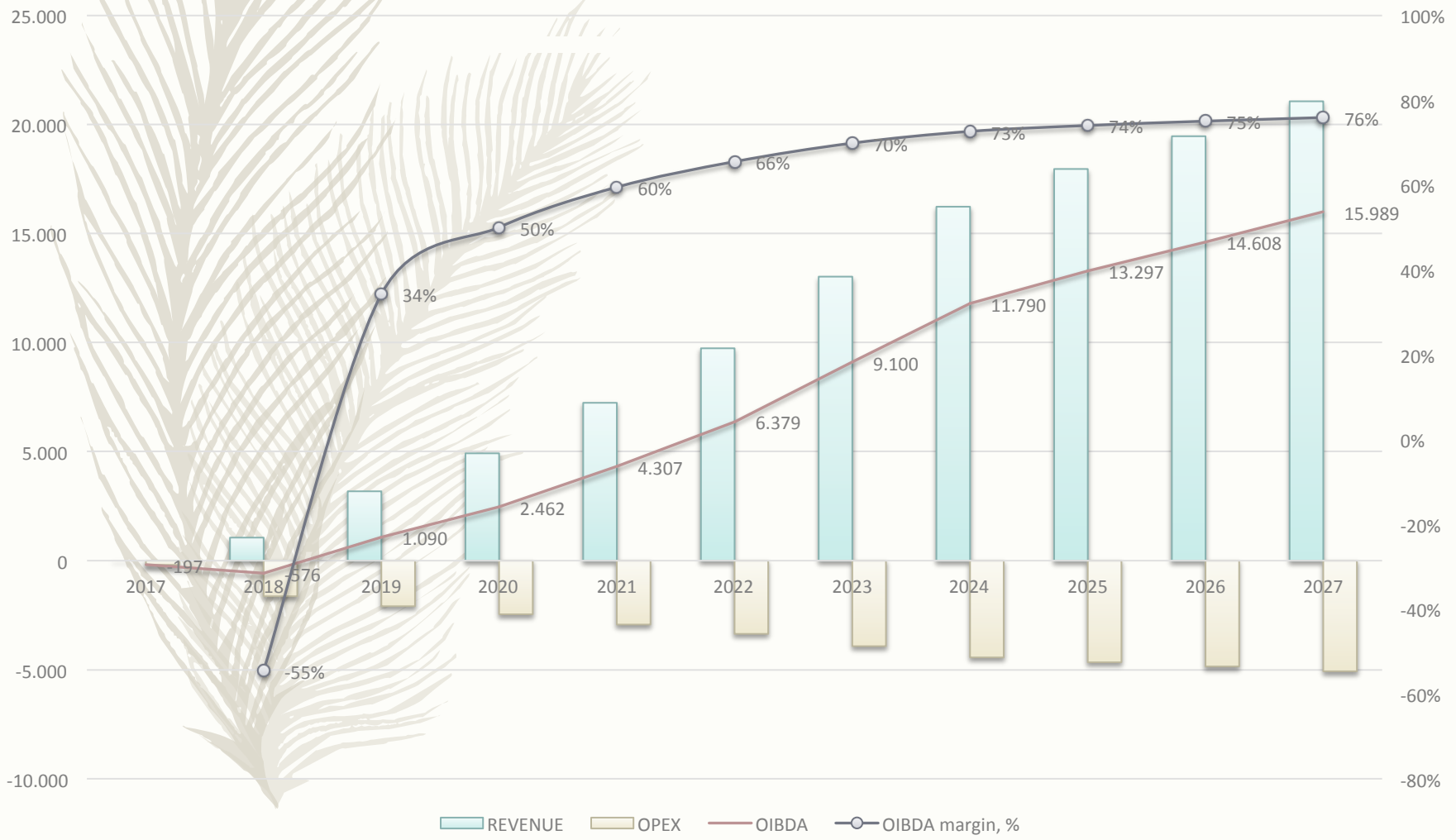
Target markets



- Targeted markets (startup period – Y1-2-3)
  - International (65%)
  - Domestic (35%)
- Targeted markets (startup period – Y4-5-6)
  - International (30%)
  - Domestic (70%), out of which
    - *B2G - 30%*
    - *B2O - 40%*
    - *B2B - 25%*
    - *Science and Education - 5%*

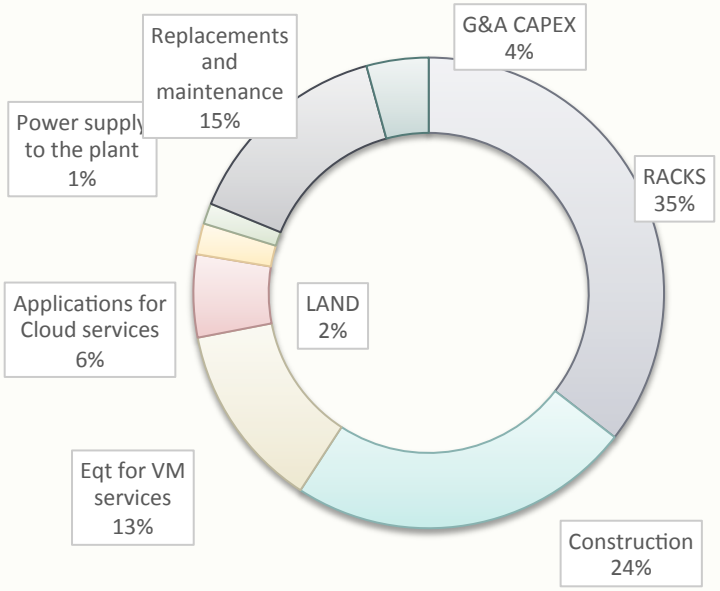
The significant increase in the share of international business is due to exponential increase of data traffic used by the neighboring Iran during the forthcoming years .

Operational results



- Commercial launch in Y2
- High rate of operating income due to:
  - Significant revenue growth during whole duration of the project (average growth equals 50% per year)
  - Low level of operating expenses during the lifecycle of the project

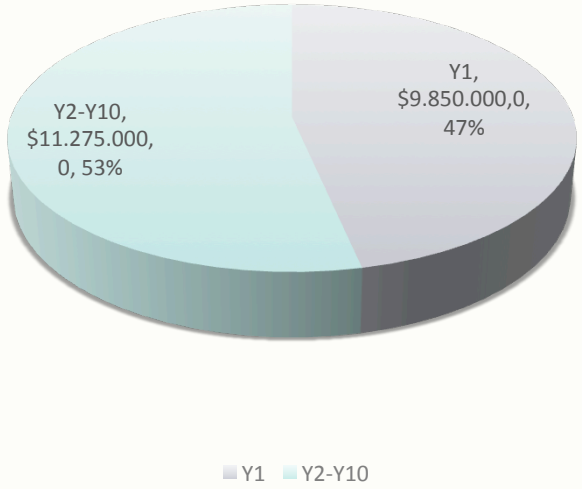
CAPEX

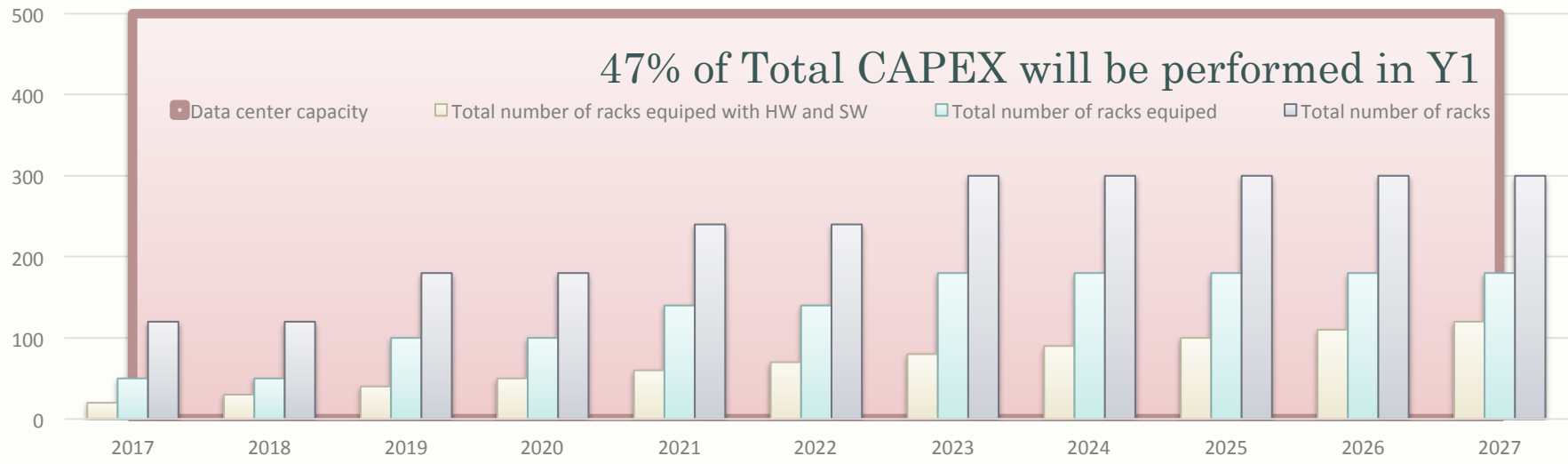


A scalable project with a capacity of 500 Racks
The initial investment in infrastructure will imply scalability only by adding HW and SW

300 Racks to be built during Phase 1 (Y1-Y10) out of which:

- 180 to be equipped with Hardware for virtual services provision,
- 120 to be equipped with both Hardware and Software for cloud services provision.





Project sensitivity analysis

The sensitivity was analyzed for the following factors:

- Decrease of average revenue from 1 Rack
- Increase of Racks to be built by 20%
- Increase of CAPEX for 10%

Sensitivity analysis reveals a Discounted PB period of 8.2 – 9.5 years for the scenarios analyzed.

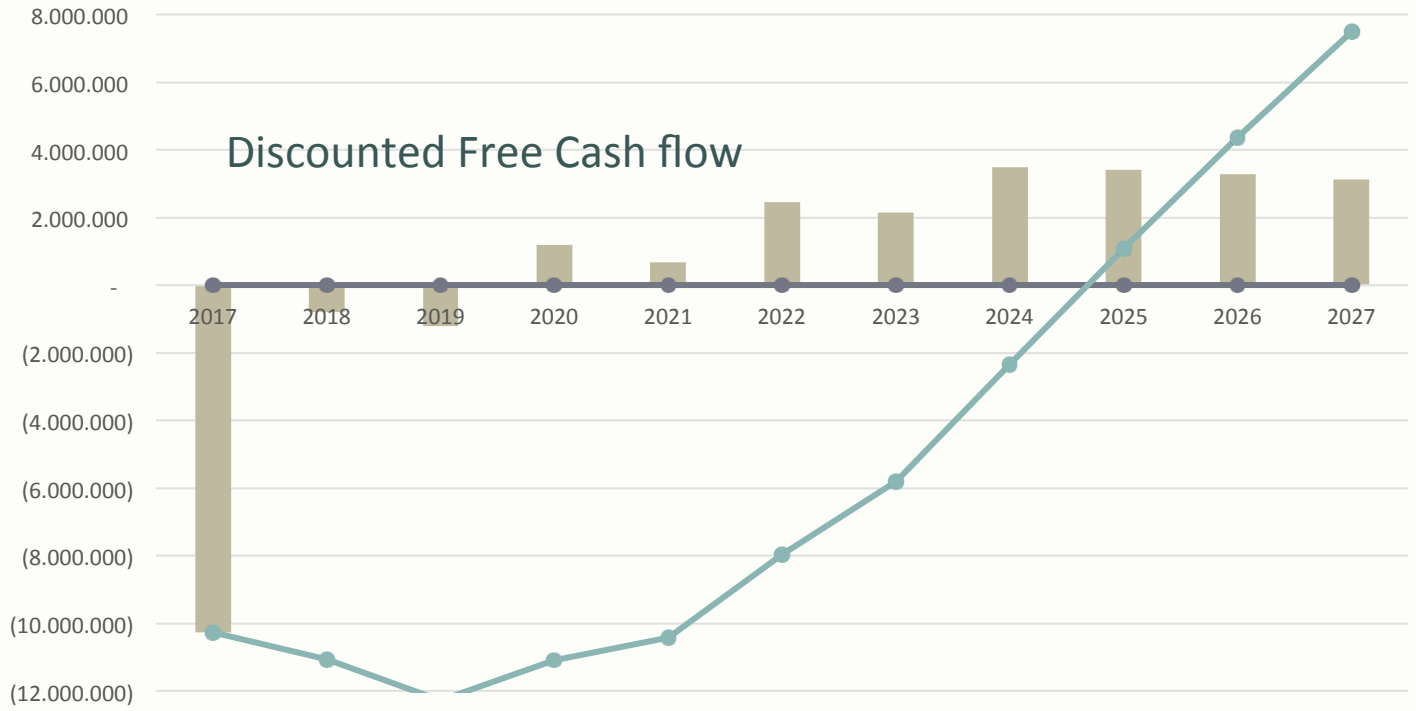
Indicator	Basic scenario	Sensitivity analysis		
		Decrease of revenue by 10%	Number of racks + 20%	Increase of CAPEX by 10%
Number of Racks utilized	300	300	360	300
CAPEX for 1 rack	USD 70,417	USD 70,417	USD 66,722	USD 77,492
CAPEX	USD 21,125,000	USD 21,125,000	USD 24,020,000	USD 23,247,500
NPV	USD 7,484,943	USD 4,088,007	USD 11,280,741	USD 5,965,056
IRR	23%	20%	26%	21%
PB Years	7.0	7.4	6.6	7.2
PB Years - Discounted	8.7	9.5	8.2	9.1
EBITDA Margin (average)	68%	65%	70%	68%

Investor attractiveness

- 15% initial Investment by the Initiative group
- IFI (World Bank) and donors (EU) for educational and research projects
- Government support due to the scale and importance of the project
- VAT payment deferral (VAT payable at the State border)

WACC	15.0%
Post-valuation growth rate	2%
Valuation date	11/08/2016

PB Years	7.0
PB Years – Discounted	8.7
NPV, USD	7,484,943
IRR	24%



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ԳՈՐԾԵՐԻ ՆԱԽԱՐԱՐՈՒԹՅՈՒՆ
MINISTRY OF FOREIGN AFFAIRS
OF THE REPUBLIC OF ARMENIA

1110/ 00111

Հայաստանի Հանրապետության արտաքին գործերի նախարարությունն իր հարգանքն է հավաստում Հայաստանի Հանրապետությունում հավատարմագրված դեսպանություններին և միջազգային կազմակերպությունների ներկայացուցչություններին և պատիվ ունի կից ներկայացնելու ՀՀ տրանսպորտի, կապի և տեղեկատվական տեխնոլոգիաների նախարարությունից ստացված տեղեկատվական փաթեթը՝ «Հայաստանի Հյուսիս-Հարավ ճանապարհային միջանցքի ներդրումային ծրագրի», «Հայաստան-Իրան երկաթուղու կառուցման ծրագրի» և «Տվյալների պահոց ծրագրի» վերաբերյալ՝ շահագրգիռ կառույցներին փոխանցելու նպատակով:

Հայաստանի Հանրապետության արտաքին գործերի նախարարությունն, օգտվելով առիթից, վերստին իր հարգանքն է հավաստում Հայաստանի Հանրապետությունում հավատարմագրված դեսպանություններին և միջազգային կազմակերպությունների ներկայացուցչություններին:

Առդիր՝ 36 էջ /էլեկտրոնային տարբերակով/:

Երևան, 11 հունվարի, 2017թ.

ՀԱՅԱՍՏԱՆԻ ՀԱՆՐԱՊԵՏՈՒԹՅՈՒՆՈՒՄ
ՀԱՎԱՏԱՐՄԱԳՐՎԱԾ ԴԵՍՊԱՆՈՒԹՅՈՒՆՆԵՐԻՆ
ԵՎ ՄԻՋԱԶԳԱՅԻՆ ԿԱԶՄԱԿԵՐՊՈՒԹՅՈՒՆՆԵՐԻ
ՆԵՐԿԱՅԱՑՈՒՑՉՈՒԹՅՈՒՆՆԵՐԻՆ
Երևան

Public-Private Partnership Opportunities and Financial Resources Necessary for the Construction of Sisian-Kajaran Section, Tranche 4, of North-South Road Corridor Investment Program

North-South Road Corridor Investment Program

CONTENTS

General description of the program

"North-South Road Corridor Investment Program" is a major infrastructure project which aims at connecting the Southern border of the country with its Northern point by means of 556 km-long Meghri-Yerevan - Bavra highway of high international standards, reducing it up to about 90 km and upgrading it up to 470km. As a result, reconstruction of current 2nd category 560km-long highway with the average speed of 60 km/ h will upgrade it up to the 1st category 470 km-long highway with the speed of 100-110km / h, due to which the crossing of the mentioned section will decrease from the current 9-9.5 hours up to 4.5 hours and will increase the comfort and safety by ensuring also the fulfilment of the goal of becoming a transit carriageway for vehicle and cargo transportation from the East to the West.

The construction of this road of strategic importance will ensure easy traffic from the southern border of Armenia to Georgian border, and then to the Black Sea ports. It will enable to carry out passenger and cargo transportation in compliance with European standards and will provide considerable development opportunities for the whole population of the South to North of Armenia.

Implementation of the program is considered in the context of the RA Government projects-"Gyumri Techno-City Reconstruction", "Tatev Tourism Center", "Jermuk Development" and "Zvartnots Free Economic Zone". The implementation of the North-South Road program will contribute significantly to the effectiveness of these projects and the achievement of the goals.

The program is implemented through multi-tranche financing. It is divided into separate tranches, under which separate loan agreements are signed.

Signed contracts

Contracts were signed with Asian Development Bank (ADB), European Investment Bank (EIB), Anti-crisis Fund of the Eurasian Development Bank for the program implementation according to which the target dates of the program completion are 2017, 2018 and 2019, accordingly.

Expected to have

As a result of project implementation it is expected to have, particularly:

- Improved road corridor which meets the international

standards,

- 1st category four-lane carriageway on Yerevan-Gyumri and Yerevan-Ararat sections,
- Improvements which meet the international standards on the other sections of the corridor – with the further possibility of upgrading up to four-lane,
- Organization of effective and safe traffic of the road corridor.

Also, the North-South corridor:

- Provides access to the Black sea and then to the European countries through the territories of Armenia, Georgia ,
- By crossing the territory of Armenia from the South to North (Meghri-Yerevan-Gyumri-Bavra) the corridor connects to the Georgian road from the South which leads to the ports of Poti and Batumi ,
- Asa result of the program implementation Europe- Caucasus- Asia road communication is improved on the crossing point of Western Asia and Eastern Europe.

Program objectives

The program objectives are: facilitation of communication with neighboring countries; extension and facilitation of the access opportunities to foreign markets by the communications of Central Asia, Europe, development of the key sectors of the economy and export expansion (industry, agriculture, mining, construction, tourism); intensification of the internal movement of population and etc.

Program main issues

The main issues of the program are increasing the traffic safety and comfortability, reducing time and financial costs, integrating possible necessary telecommunications and other infrastructures.

Program according to tranches

Tranche 1 (Yerevan-Artashat, Yerevan-Ashtarak, about 31 km, Asian Development Bank).

Contractor - Corsan Corviam Construccion S.A., Spanish company.

Project Management Consultant / Engineer (Project Management and Technical Supervision of the construction), Safege S.A. and Eptisa" French JV.

The road sections for dual carriageway were opened on 29.12.2015. Main works are completed and the handover-acceptance act was signed on 16.06.2016. A timetable was defined for the elimination of deviations identified in Contract specification, which serves as a guide for the Contractor and the Engineer.

Tranche 2 (Ashtarak-Talin, about 42 km, Asian Development Bank)

Contractor, Corsan Corviam Construccion S.A., Spanish company.

Project Management Consultant / Engineer (Project Management and Technical Supervision of the construction), Safege S.A. and Eptisa" French JV.

Earth works, in particular, excavation, embankment and preparation of the road-bed are carried out. Also, concrete works of left side section were launched on September 30, 2016.

Tranche 3 (Talin-Lanjik, about 18,7 km, Asian Development Bank)

Contractor, "Sinohydro Corporation" Chinese Company.

Technical supervision of the construction works is carried out by the Italian "Spea Ingegneria S.p.A. and IRD Engineering S.r.L." JV.

Earth works, road underground and above-ground infrastructure works are carried out.

Tranche 3 (Lanjik-Gyumri, about 27,5 km, European Investment Bank)

Contractor, "Sinohydro Corporation" Chinese Company.

Technical supervision of the construction works is

carried out by the Italian “Spea Ingegneria S.p.A. and IRD Engineering S.r.L.” JV.

Earth works, road underground and above-ground infrastructure works are carried out.

Tranche 4 (Artashat-Kajaran section, about 304 km, Asian Development Bank).

The design company is the Italian “Spea Ingegneria S.p.A. and IRD Engineering S.r.L.” JV.

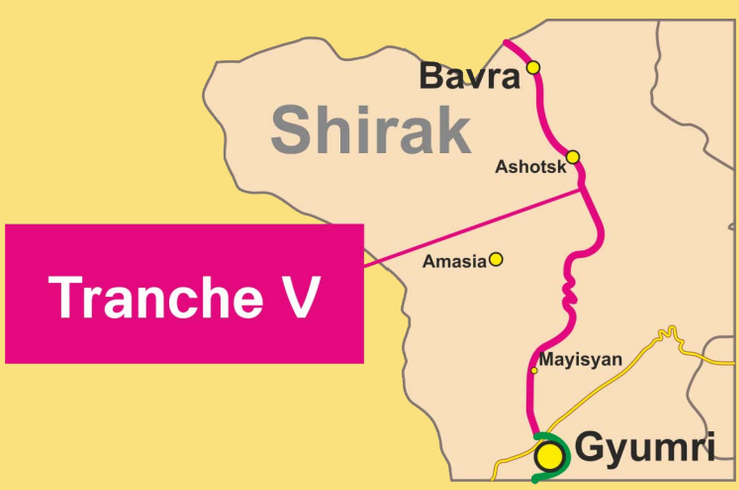
Design works are carried out.

Tranche 4 (Kajaran-Agarak section, about 42 km, the Eurasian Fund for Stabilization and Development, Eurasian Development Bank).

The design company is the Italian “Spea Ingegneria S.p.A. and IRD Engineering S.r.L.” JV.

Design works are carried out.

Տրանշ 5 (Գյումրի շրջանցիկ-Գյումրի-Բավրա հատված՝ շուրջ 60կմ, Եվրոպական ներդրումային բանկ)



The design company is the Italian Lotti Ingegneria S.P.A.

Design works are carried out.

Public-private partnership opportunities and financial resources necessary for the construction of Sisian-Kajaran section, Tranche 4

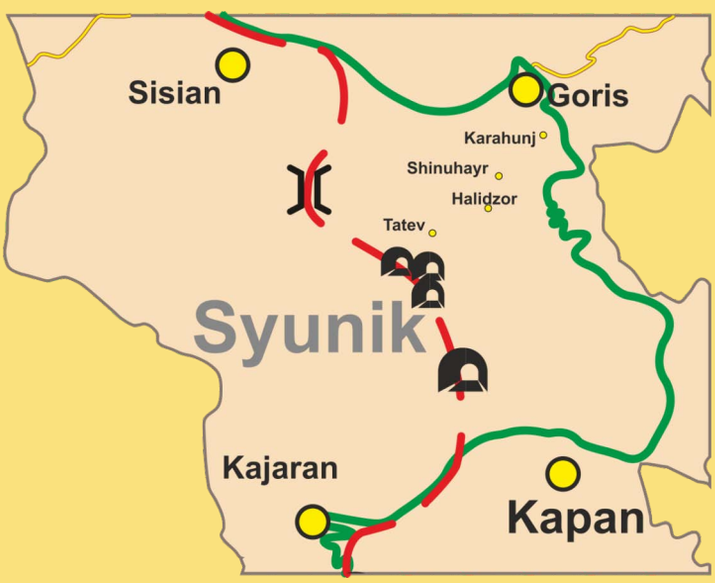
General data

Total length of the existing road is about 148 km.

The driving duration on the existing road section is about 4 hours.

The number of traffic participants makes about 2500 vehicles per day.

Expected results



The length of the constructed road will be about 74 km. The length of the road section will be reduced by approximately two times.

The driving duration on the existing road section will be about 1 hour.

The driving duration will be reduced by about 3 hours.

The increase of traffic participants is expected - about 5,000 vehicles per day (in 2037), which can be increased up to 10,000.

According to the World Bank HDMI the (EIRR) Economic internal rate of return is about 15%.

Required investments

The amount of the required investments makes about USD 1,040.00 million (including the VAT and Land acquisition) from which:

- State financing will be about USD 200 million.
- Private investments will be about USD 840 million.

At the same time the construction of 32km-long road section of Agarak (border of Iran) Kajaran tunnel with the amount of about USD 200 million (including VAT and land acquisition) is carried out by the state co-financing. It means that more than 30% of investments will be implemented by State co-financing.

Public-private partnership possible options:

- Build – Own – Operate - Transfer
- Build - Operate - Transfer
- Build – Transfer - Operate
- Build - Own - Operate
- Buy – Build - Operate

The mentioned options are subject to discussion and the preference will be given merely to the interested organizations who submitted properly developed and well-justified economic / technical / legal proposal.

The relevant legislative or contractual regulation shall set up a State commitment towards the return /compensation of the possible negative difference of net invested funds (without the expected profit) in connection with the planned activities prior to the end of operation.

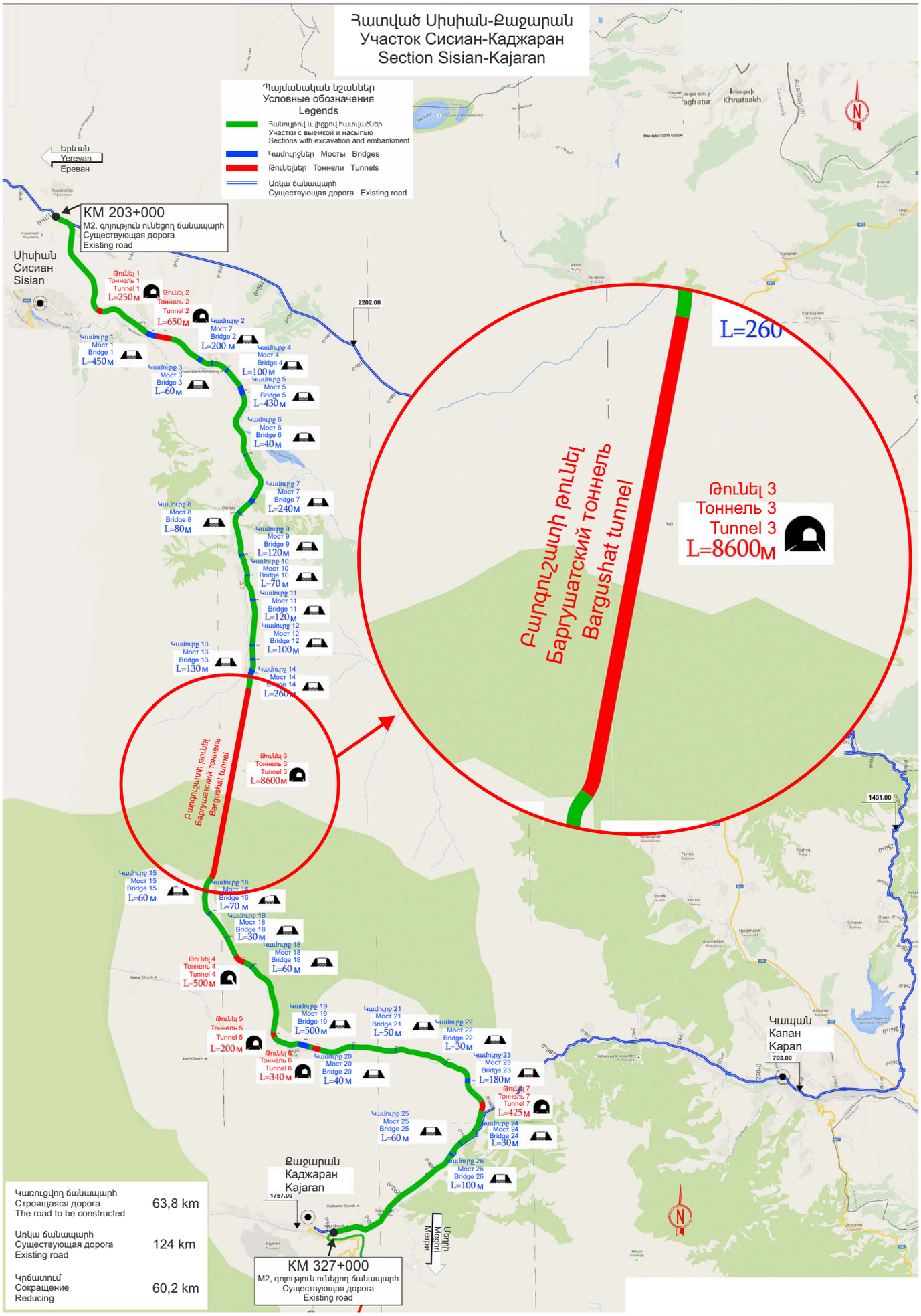
Works to be carried out through private investments

Sisian-Kajaran constructed road section of about USD 840 million and with total length of 74 km divides into the following sub-sections:

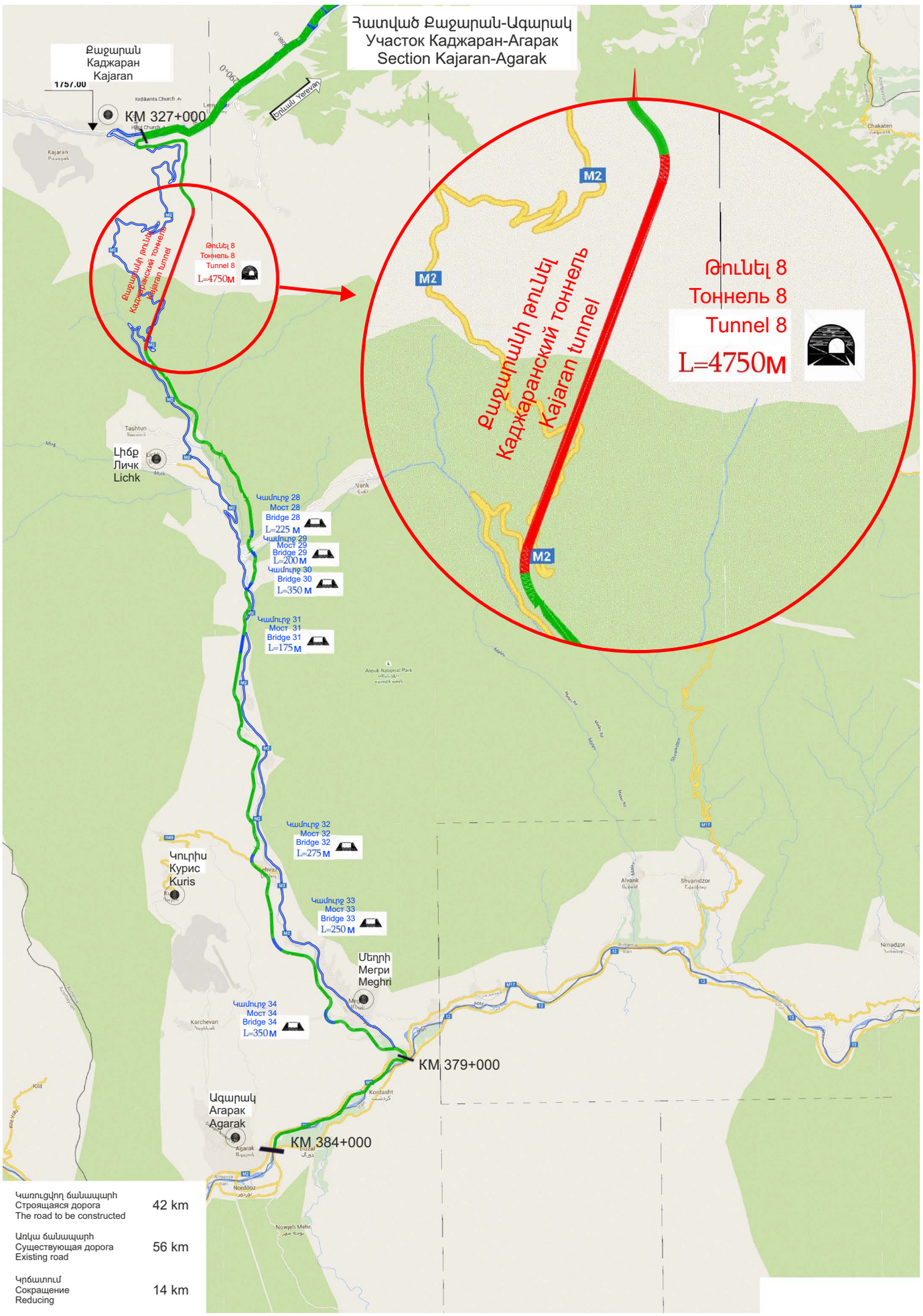
- The cost of only the section with total length of 58km of the roads (48km), bridges (4km), as well as available small tunnels (with length of 0.1-0.7km, 6 in total and with total length of 2.4 km) and their access roads (12 X 0.3km = 3.6km) is about USD 490 million.
- The cost of section with total length of 10km of Bargushat tunnel (8.6km) and the access roads (1.4km) is about 220 million USD.

The cost of section with total length of 6km of Kajaran tunnel (4.8km) and the access roads (1.2km) is about 130 million USD.

Bargushat tunnel

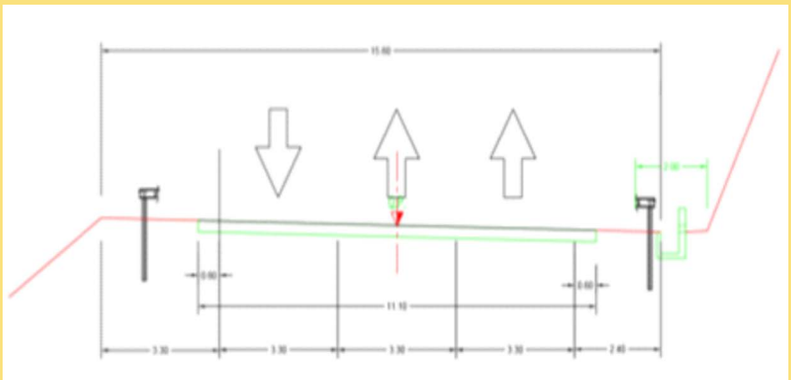


Kajaran tunnel

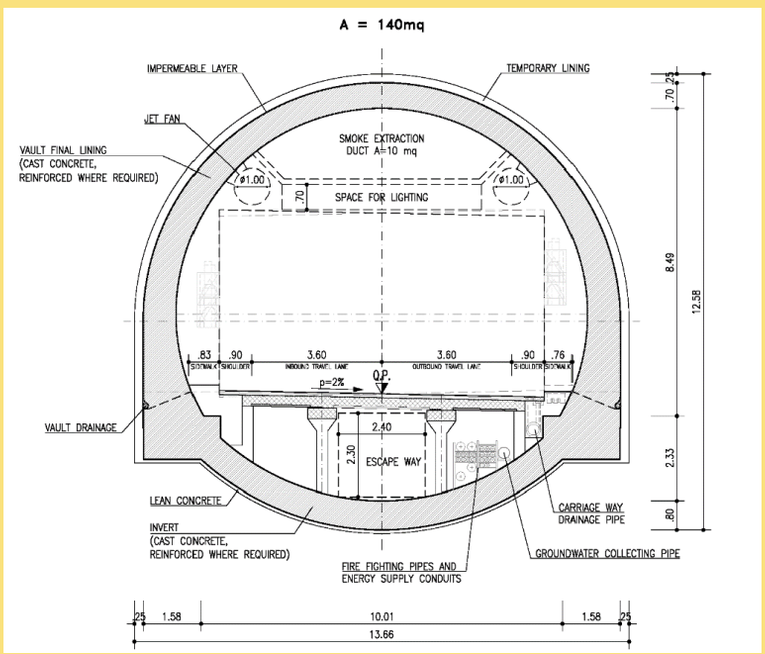


Technical data on tunnels and roads

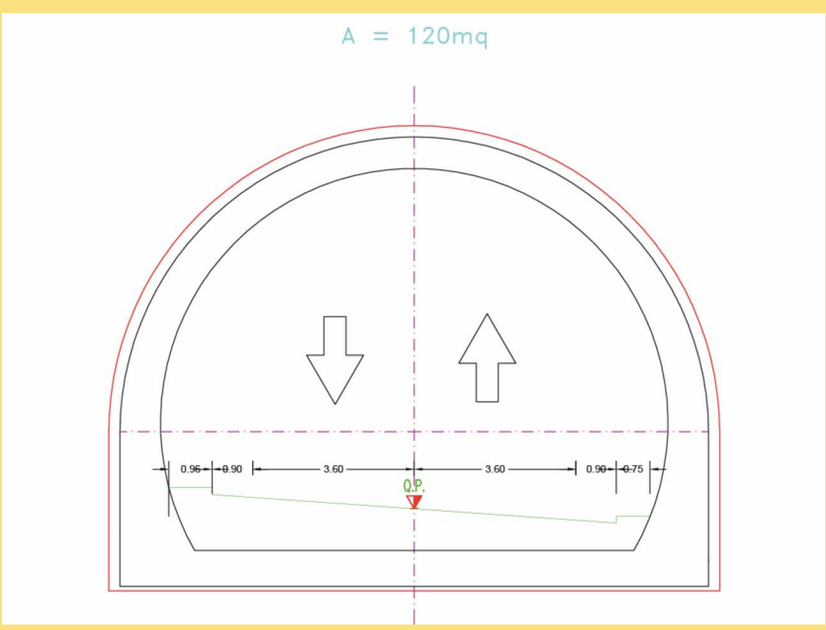
A typical longitudinal section of a two-lane carriageway section, and overtaking lane, where necessary. Alignment and all the necessary technical indicators of the 1st category, with the possibility of reaching up to 4 lane in future.



A longitudinal section of tunnel with the length of more than 1km.



A longitudinal section of tunnel with the length shorter than 1km.



Terms and options for returning the investments

In case of the selection of any method of public-private partnership returning the invested financial means in the shortest period is considered to be a priority for the investor. In particular, the most realistic and short way of returning the financial means invested in the construction is imposing payments for tunnel traffic for the transport as well as providing various services to the traffic participants in adjacent road sections (gas stations, fueling, technical service, etc.)

Calculation of economic justification of private investments

Calculation of economic justification of private investments in the context of possible public-private partnership in Sisian-Kajaran section is presented below.

The expected volume of public-private joint investment is about USD 850 million without taxes, which includes the cost of the construction of new road and tunnels, as well as land acquisition costs necessary for the implementation of the latter.

Transportation intensity forecast, car / day	2016 end of the year	The average annual growth rate	Forecast for 2040
Passenger cars	500	CAGR - 6%	1,741
Buses	50	CAGR - 6%	177
Trucks	1,000	CAGR - 12%	12,253
Total	**1,550**		**14,171**
Payment	USD	The average annual growth rate	Forecast for 2040
Passenger cars	0.60	CAGR - 2%	0.89
Buses	10.00	CAGR - 2%	14.86
Trucks	60.00	CAGR - 2%	89.16

The calculations are based on the following assumptions:

The basis for payment determination is the calculation of the saving of the cars regular depreciation and the spent fuel for the mountain road bypassing about 75 km.

The expected duration of the construction is 3 years, operation start - the beginning of the 4th year.

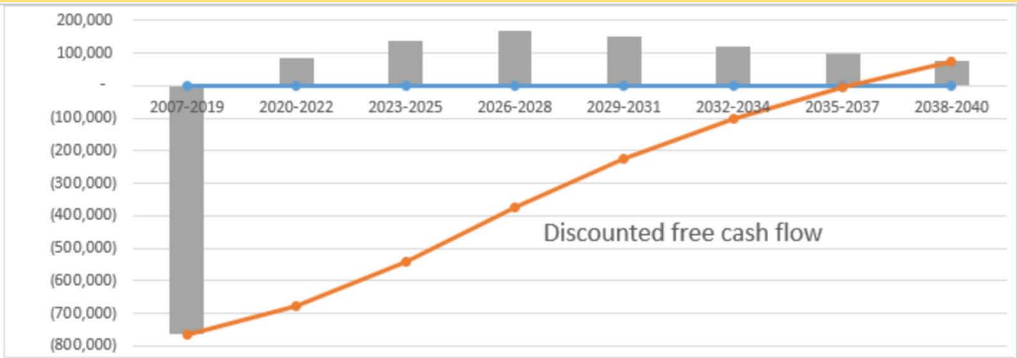
In case of new infrastructure availability transportation intensity increase is expected for annual average 6% passenger cars and buses and for 12% trucks. At the same time the average rate of the payment annual growth shall be 2%.

Taking into consideration the above a business plan has been prepared based on the DFCF methodological grounds in the conditions of 12% discount factor with multi-factor sensitivity analysis of 24-year planning horizon.

The main financial and economic indicators of the baseline scenario are shown below:

Main financial indicators

Average capital cost	12.0%
Percentage of post-evaluation growth	2%
Evaluation date	01/12/16
End of the year	31/12/17
Program commencement	01/01/17
PB Years	11.4
PB Years - Discounted	21.2
Net income, USD	71,605
Internal rate of return	12.9%



000'USD		2007-2019	2020-2022	2023-2025	2026-2028	2029-2031	2032-2034	2035-2037	2038-2040	
Income		-	151,532	370,389	633,060	800,901	910,556	1,025,427	1,154,784	5,046,650
	%increase	*0%*	*100%*	*244%*	*171%*	*127%*	*114%*	*113%*	*113%*	
Operating costs		(2,400)	(2,648)	(3,066)	(3,549)	(4,108)	(4,756)	(5,505)	(6,373)	(32,404)
	%increase	*0%*	*100%*	*116%*	*116%*	*116%*	*116%*	*116%*	*116%*	
Operating income before depreciation of the fixed assets and amortization		(2,400)	148,884	367,324	629,511	796,793	905,800	1,019,922	1,148,411	5,014,246
	Operating income before depreciation of the fixed assets and amortization,%		*98%*	*99%*	*99%*	*99%*	*99%*	*99%*	*99%*	99.4%
- Depreciation		(42,500)	(85,000)	(85,000)	(85,000)	(85,000)	(85,000)	(85,000)	(85,000)	(637,500)
Profit before tax		(44,900)	63,884	282,324	544,511	711,793	820,800	934,922	1,063,411	4,376,746
-Taxes		-	(12,777)	(56,465)	(108,902)	(142,359)	(164,160)	(186,984)	(212,682)	(884,329)
Net profit		(44,900)	51,107	225,859	435,609	569,435	656,640	747,938	850,729	3,492,417
+ Depreciation		42,500	85,000	85,000	85,000	85,000	85,000	85,000	85,000	637,500
- Capital expenditure		(850,000)	-	-	-	-	-	-	-	(850,000)
										-
Free Cash Flow		(852,400)	136,107	310,859	520,609	654,435	741,640	832,938	935,729	3,279,917
Discount factor		0.90	0.62	0.45	0.32	0.23	0.16	0.12	0.08	
PV Free Cash Flow (DFCF)			(764,333)	84,792	138,769	166,883	150,076	121,142	96,841	77,435
DFCF Cumulative Free Cash Flow		(764,333)	(679,542)	(540,773)	(373,890)	(223,814)	(102,671)	(5,830)	71,605	71,605

Economic efficiency indicators

In other equal conditions in case of the baseline scenario the project expenses are covered in the 21 year of the implementation providing an NPV of USD 71.6 million and the internal rate of return of 13%.

A multi-factor sensitivity analysis was performed for the evaluation of sensitivity towards various factors of the Project. Sensitivity towards the following factors has been evaluated:

1. The price reduction scenario - in other equivalent conditions, the project costs are covered up to the payment reduction by 8.3%.
2. The price increase scenario – in other equivalent conditions, in case of increasing the payments

by 17% the repurchase period shall be 18 years and the internal rate of return - 14.4%.

3. Traffic flow reduction scenario–in other equivalent conditions, the project costs are covered in case of 8.5% decrease of forecasted flows.

4. Transportation flow increasing scenario- in other equivalent conditions, in case of 10% increase in flow intensity the repurchase period will be 19 years, the internal rate of return -13.8%.

Capital expenditures + USD 50 million - if the project actual capital costs will exceed the expected value by USD 50 million, the repurchase period will be 23 years, providing USD 28.8 million in NPV.

Indicator	Preliminary scenario	Sensitivity analysis				
		Traffic fee reduction	Traffic fee increase	Traffic intensity decrease by 8%	Traffic intensity increase by 10%	Capital expenses + USD 50 million
Traffic fee for light vehicles, USD	0.6	0.5	0.7	0.6	0.6	0.6
Traffic fee for buses, USD	10.0	9.0	12.0	10.0	10.0	10.0
Traffic fee for trucks, USD	60.0	55.0	70.0	60.0	60.0	60.0
Daily average traffic intensity (light vehicles)	1,229	1,229	1,229	1,130	1,353	1,229
Daily average traffic intensity (buses)	121	121	121	110	132	121
Daily average traffic intensity (trucks)	7,588	7,588	7,588	6,980	8,348	7,588
Total capital investments	850,000	850,000	850,000	850,000	850,000	900,000
Operating income before depreciation of the fixed assets and amortization (average during the whole program)	99%	99%	99%	99%	99%	99%
Net profit. USD	71,605	4,164	206,255	6,855	152,465	28,780
Internal rate of return	12.9%	12.1%	14.4%	12.1%	13.8%	12.3%
PB Years	11.4	11.8	10.8	11.8	11.0	11.6
PB Years - Discounted	21.2	23.8	17.9	23.7	19.0	22.8