

Business plan investment project: **Unitsky String Transport Strategy in UGRA** **(Khanty-Mansiysk Autonomous Okrug)**

Two-line city STU track in Khanty-Mansiysk

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Unitsky String Transport (STU) Strategy in Ugra Region

Stage 1

**Khanty-Mansiysk – Surgut
High-speed two-line two-rail
STU track**

**1st order: local STU track
Surgut – Belyi Yar**

**2nd order: itnercity STU track
Khanty-Mansiysk - Surgut**

**Two-line city STU track
in Khanty-Mansiysk
(mono-STU or bi-STU)**

**1st order: STU track
Ugra University – Campus**

**2nd order: STU track
Airport – River Port**

Stage 2

High-speed two-line two-rail STU tracks Surgut – Nizhnevartovsk and Khanty-Mansiysk – Njaganj; cargo STU track in the Urals

Stage 3

Creating the system of STU tracks in Khanty-Mansiysk region connecting it with Ural federal region, Industrial Urals, Yamal and other regions

Two-way city medium mono-STU track in Khanty-Mansiysk: Airport – River port

General characteristics of the project

Length 9800 m

1st order of the track:

Ugra University - University campus, 2300 m

2nd order of the track:

Ugra University – River port, 5000 m

University campus – Airport, 2500 m

Passenger module speed

60 kmph

Duration from River port to Airport, inclusive of all stops

25 min

Initial capacity

8000 passengers per day

Project city STU track in Khanty-Mansiysk

Mechanisms of realization

Public and private partnership

Government investment sources:

- UGRA budget
- development institutions (venture and investment funds)
- land, machinery, premises
- tax advantages, subsidies
- state guarantees, credits, etc.

Private investment sources:

- intellectual property rights of STU Ltd
- investments of large private companies (Khanty-Mansiysky private pension fund, Bank etc.)
- equity capital
- credits, leasing etc

Social, economic and budget effectiveness:

- GDP growth as a result of availability of additional oil products for processing
- availability of additional budget resources (transport subsidies)
- tax inflow from STU operator and adjacent industries
 - reduction of negative ecological impact
- reduction of losses occurring due to road accidents, etc

Commercial effectiveness of the project as a whole and each of its participants:

- investment pay-off
- generation of profits, etc.

**Potential participants
in STU technology development, design, technological support of
construction, manufacturing elements of track and vehicles:**

Participating regions:

UGRA (Khanty-Mansiysk, Surgut, Nyaganj, Nizhnevartovsk, etc.)

**Ural Federal Region (Tyumenj, Ekaterinburg,
Tobolsk, etc.)**

**Siberian Federal Region (Omsk, Novosibirsk, Tomsk, Novokuznezsk,
Kemerovo)**

**Potential participants
in STU technology development, design, technological support of construction,
manufacturing elements of track and vehicles:**

Unitsky String Transport (STU) Ltd., Moscow

ROPAT (Russian Patented Technology, Novosibirsk (hydraulic pile hammer)

**Surgut State University, Ugra State University, YUNIIT and other scientific organisations
(organisational and economic back-up, technical and geographical design, personnel)**

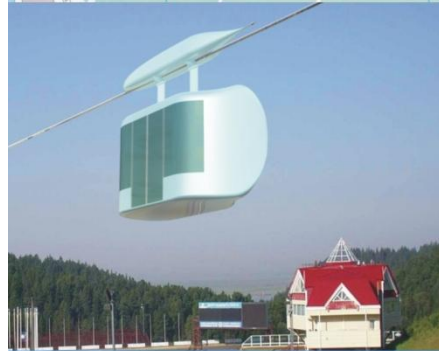
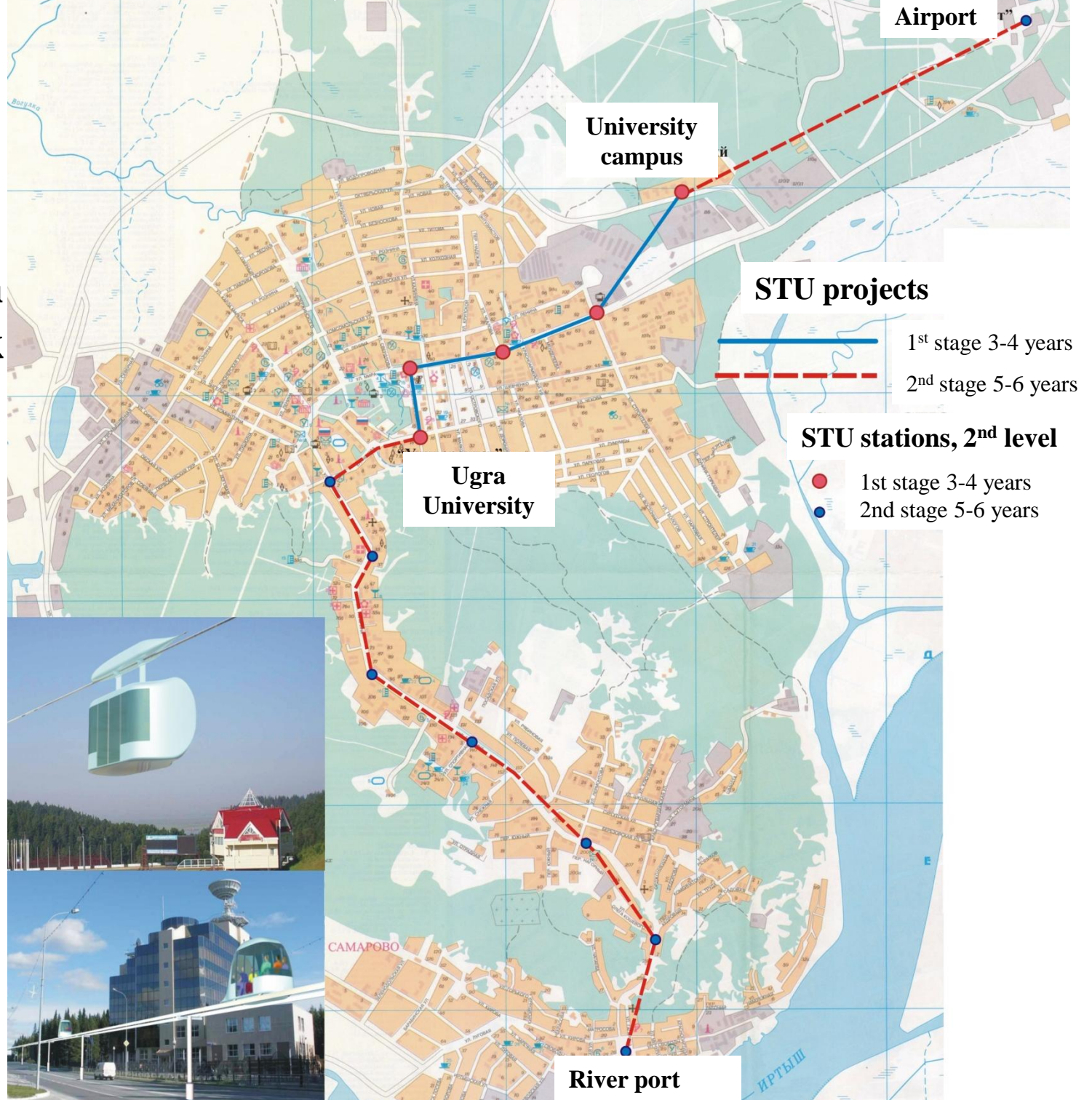
Baranov Plant, Ltd., Omsk (gas turbine equipment generating electric energy)

**Supercomposit Concern, Moscow
(construction materials made of unique super-composites designed by M. Krasnov)**

Irtysh and Polyot, Omsk (completion parts for vehicles and infrastructure)

**Tobolskneftehim, Tomskneftehim (oil chemistry plants, producing plastics) etc, including
foreign companies**

City STU track in Khanty-Mansiysk



Transportation volume and tariff for city passenger STU track in Khanty-Mansiysk

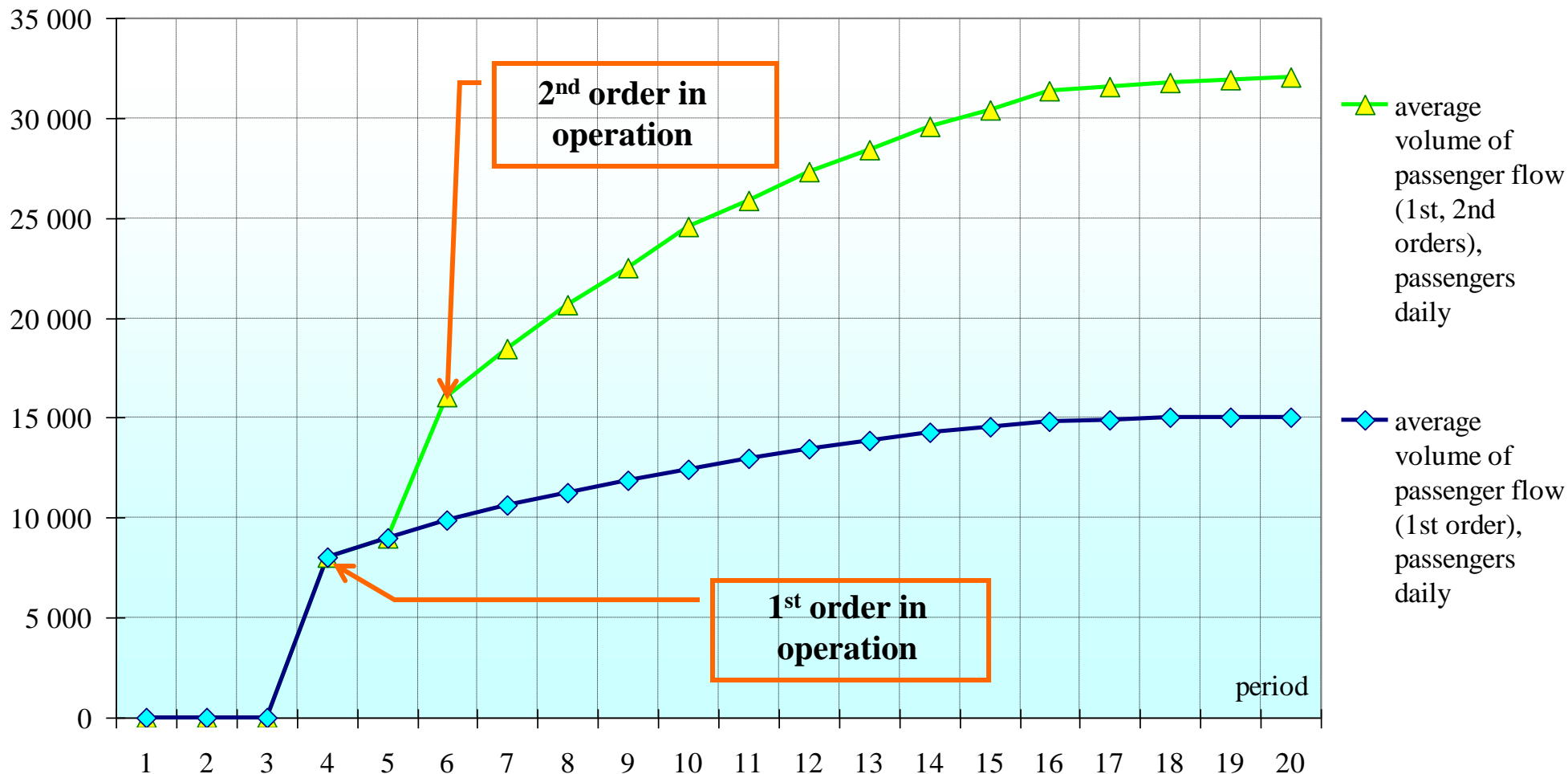
STU track indicators	
Passenger tariff, rubles per passenger*	10.0
Average daily passenger flow in the 1 st year of operation, passengers	8 000

* in prices as of Q4 2007

Dynamics of passenger flow on the city STU track in Khanty-Mansiysk by years of operation

Passenger flow, passengers per day / Year	4	9	14	19
Ugra University – campus (1 st order in operation)	8.0	11.8	14.3	15.0
River port – Airport (1 st and 2 nd order)	8.0	22.5	29.5	32.0

passenger flow, passengers



Two-way city mono-STU track in Khanty-Mansiysk on the route Ugra University – campus (1st order)

Length 2300m

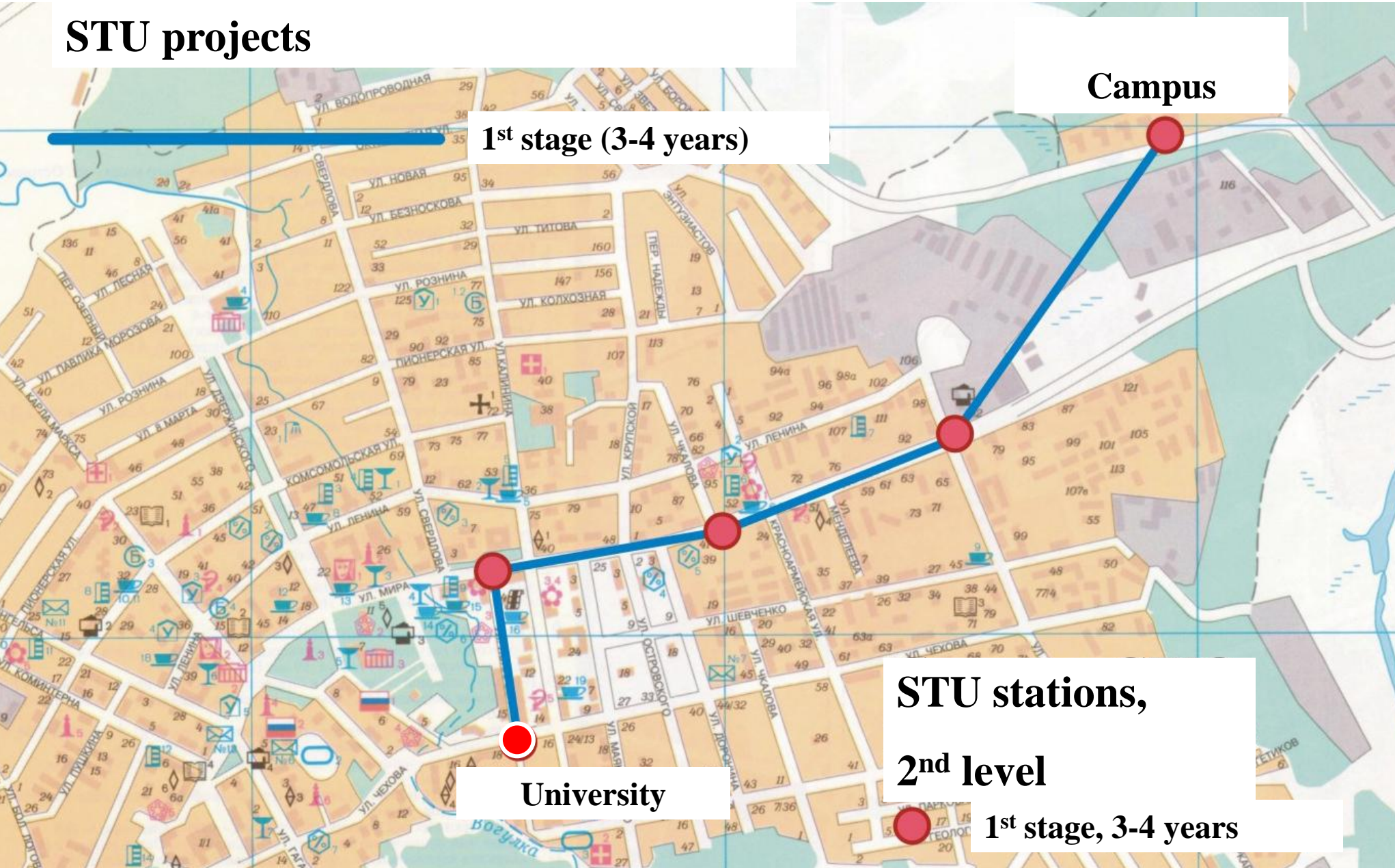
**The track is equipped with 5 stations:
2 terminals and 3 in between**

**Duration, including all stops:
9 min**



City STU track in Khanty-Mansiysk

STU projects



1st stage (3-4 years)

Campus

University

STU stations,

2nd level

1st stage, 3-4 years

Cost of city two-way monoSTU track and vehicles in Khanty-Mansiysk on the Ugra University - campus route (1st order)

Cost components	Cost*, mln rubles	Cost of 1 km*, mln rubles
Design and development (track structure, infrastructure, unibus)	150	65
Track structure (string rail, intermediate and anchor piles)	62	27
Infrastructure (stations, servicing parks and garages)	75	33
Vehicles (unibuses)**	70	30
Total	358	156

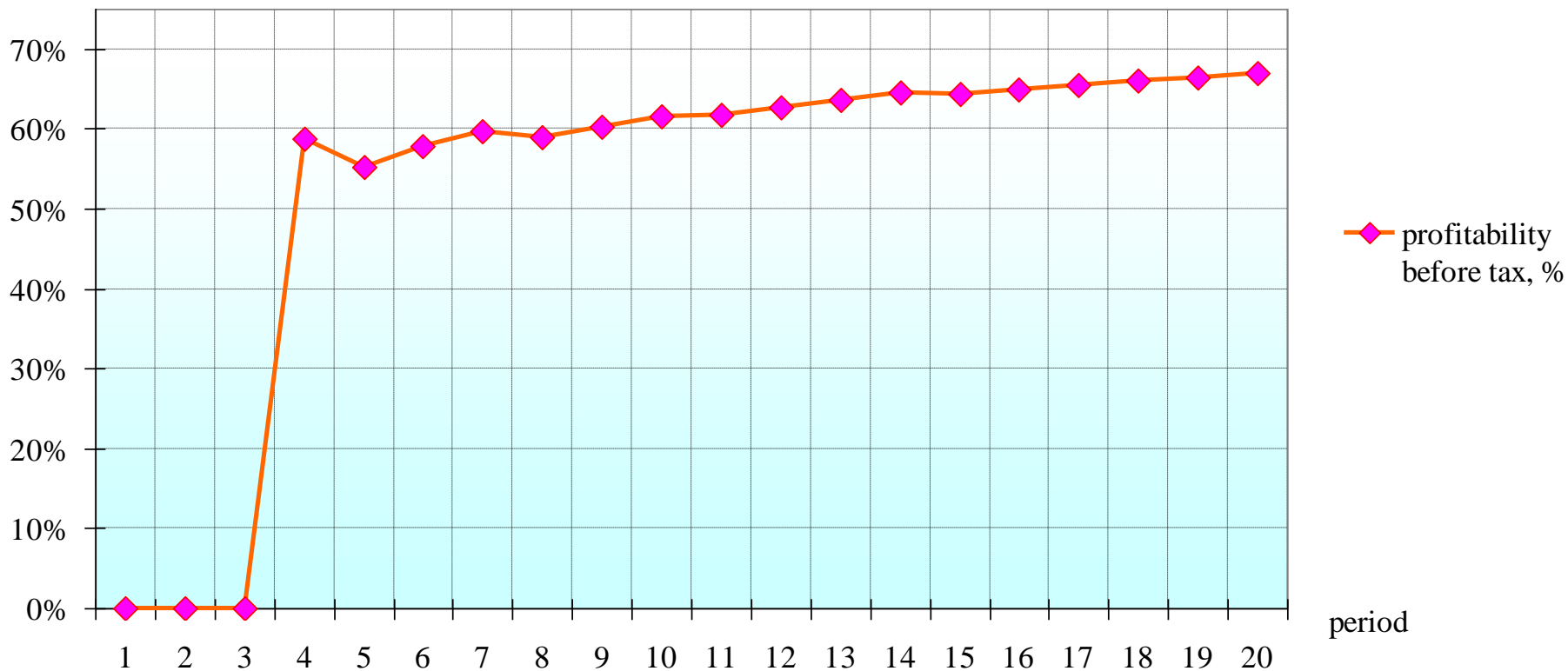
* costs as of Q4 2007 prices

** costs of vehicles considering the demand of the first year of operation (1st order)

Financial results of current activity of the city mono-STU track project on the Ugra University - campus route

Indicator, thousands of rubles / Period	1 ... 5	6 ... 10	11 ... 15	16 ... 20	ИТОГО
Inflows (income from transportation without VAT)	145	536	807	1 089	2 577
Current expenses	49	158	202	241	650
Profit before tax	96	378	604	849	1 927
Profit tax	23	91	145	204	463
Net profit / Loss	72	287	459	645	1 464
Profitability before tax, %	55%	62%	64%	67%	

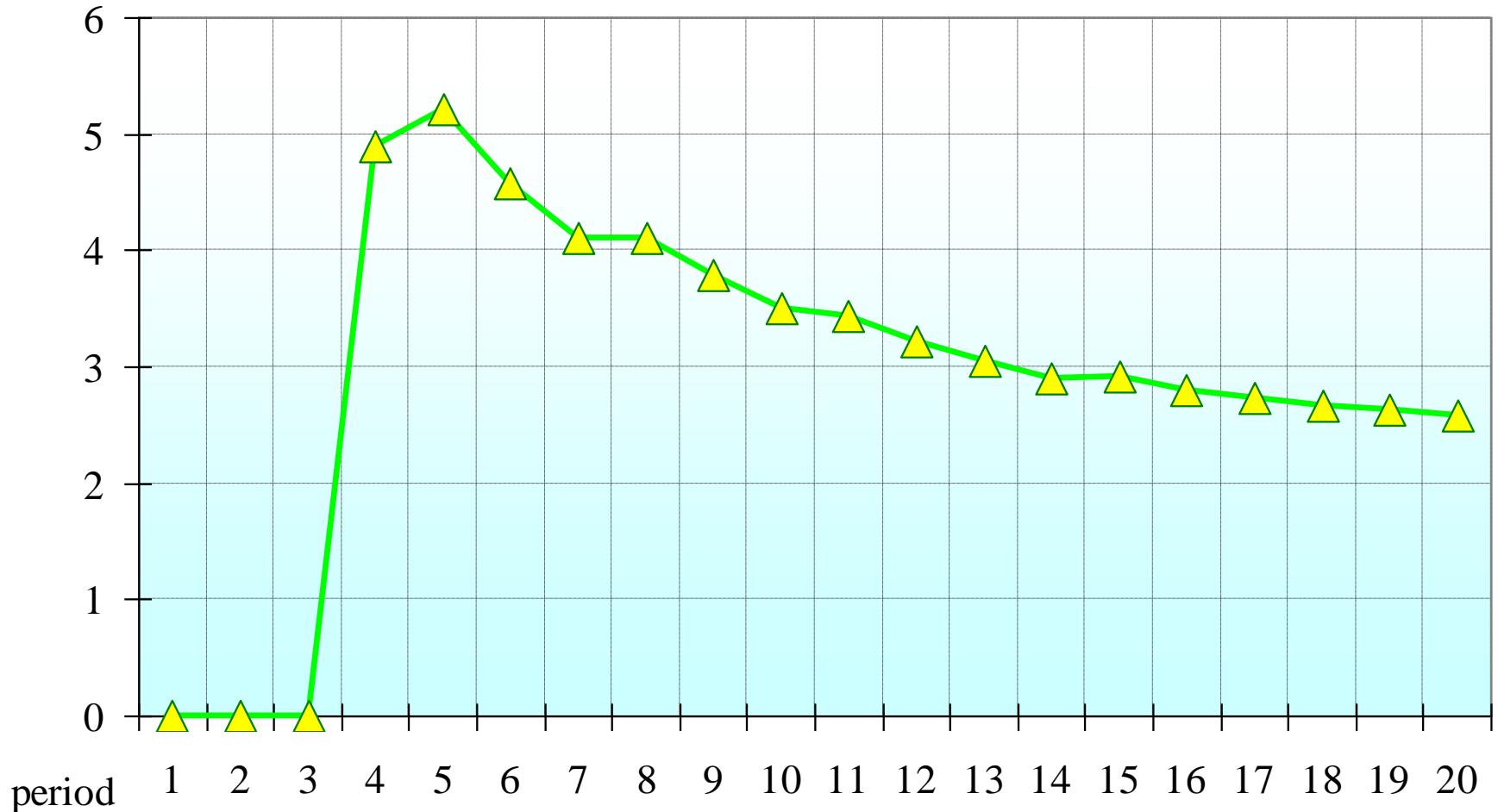
profitability, %



Dynamics of transportation costs on the city mono-STU track in fixed prices (prices of the first year of operation)

Indicator / Year	5	10	15	20
Passenger trip cost on the route (fixed prices), rubles per passenger	5.2	3.5	2.9	2.6
Passenger trip cost (fixed prices), rub per passenger per 100 km	227	152	127	112

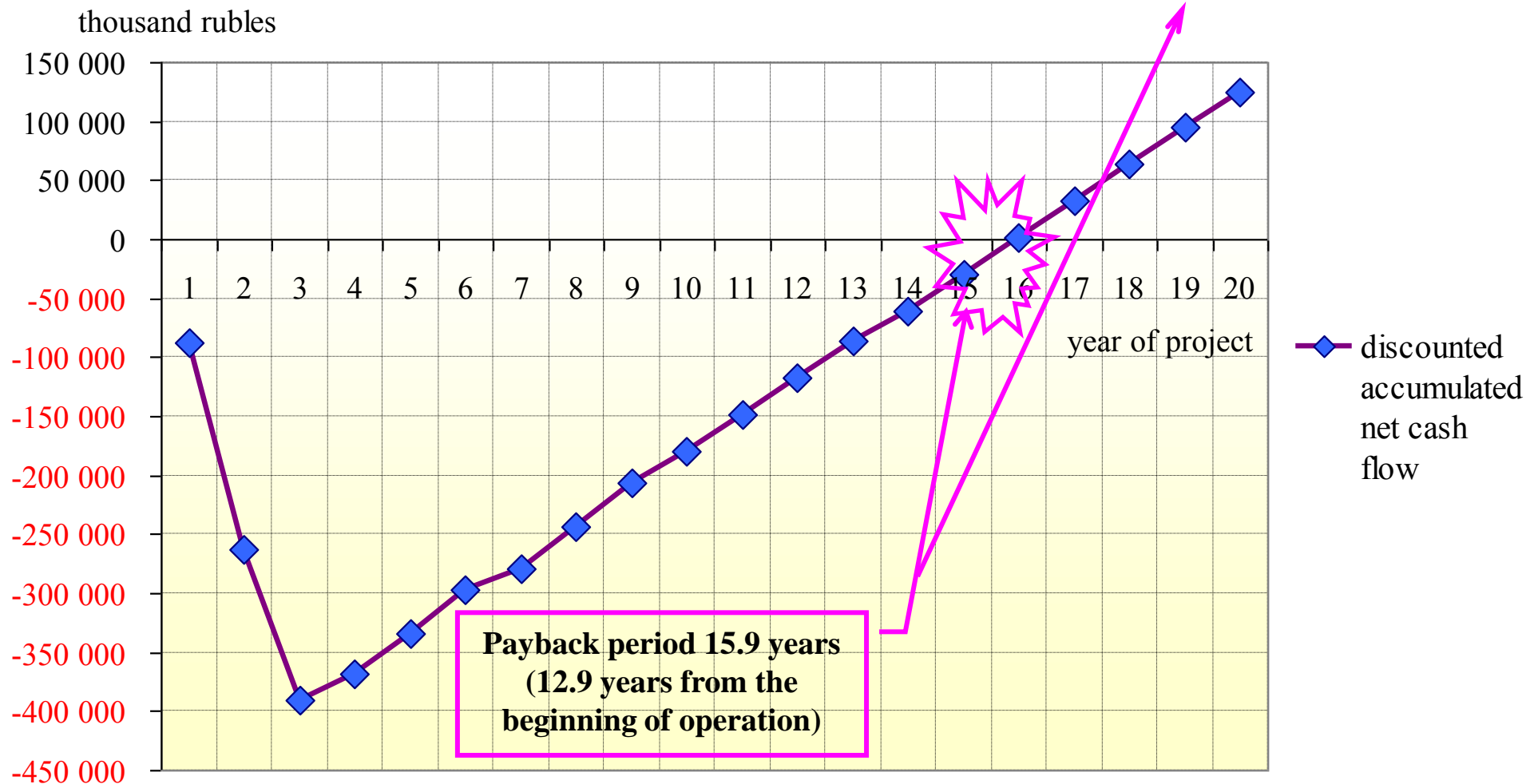
rubles per passenger



—▲— passenger transportation cost (fixed prices), rubles per passenger

Formation of cash flows for the city mono-STU track project on the Ugra University - campus route

Indicator, 1000 rubles per year	1	...	10	11	...	15	16	...	20	Total:
Net cash flow	-88	...	69	86	...	117	126	...	155	1 161
Net cash flow, accumulated	-88	...	-26	60	...	460	586	...	1 161	
Net cash flow (discounted)	-88	...	27	31	...	32	32	...	30	125
Net cash flow, accumulated (discounted)	-88	...	-180	-149	...	-30	2	...	125	



Integral indicators of commercial effectiveness of the city mono-STU track project on the Ugra University – campus route project

Net present value, NPV	mln rubles	125
Internal rate of return, IRR	%	13.28%
Discounted payback period, DPP	years	15.9
Discounted payback period from the moment of operation	years	12.9
Discounted investment profitability index, DIPI		1.29

**Effectiveness of participation in the city mono-STU track project on
the Ugra University – campus route:
investment and income of the main participants**

Indicator, mln. rubles	STU Ltd	Government (Ugra, etc)
Investment in equity capital	112,5	450,0
Net present value	26,3	98,7
Dividends	18,6	69,7
Commercial effect for the participant as the investor	44,9	168,4

Integral indicators of effectiveness depending on the volume of passenger flow of the city mono-STU track project on the Ugra University – campus route

Sensitivity analysis

Parameter/ Project scenario	1 - adverse		2 - base		3 - favourable	
	value	deviation from the base, %	value	deviation from the base, %	value	deviation from the base, %
Volume of transportation, mln passengers annually*	2.0	-33%	3.0	0%	3.7	23%
NPV, mln rubles	25	-80%	125	0%	240	92%
IRR, %	10.72%	-19%	13.28%	0%	15.64%	18%
DIPI	1.06	-18%	1.29	0%	1.52	18%
DPP, years	18.8	45%	12.9	0%	8.9	-31%

* - in the first year of operation

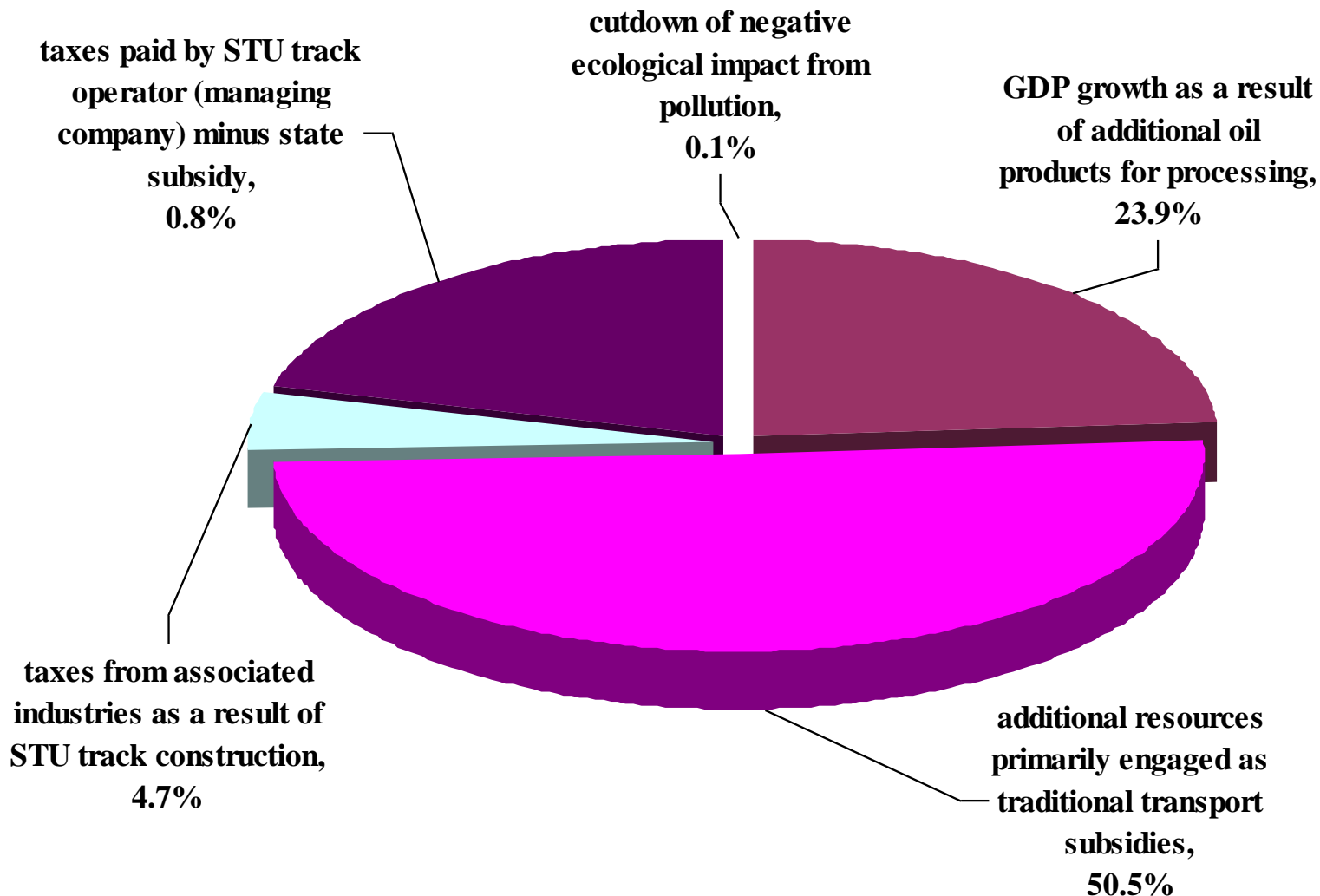
Externalized (social and economic and budget) effect of the city mono-STU track project on the Ugra University - campus route

Integral social and economic effect of the project

757 mln rubles

Budget effect of the project for Ugra

481 mln rubles



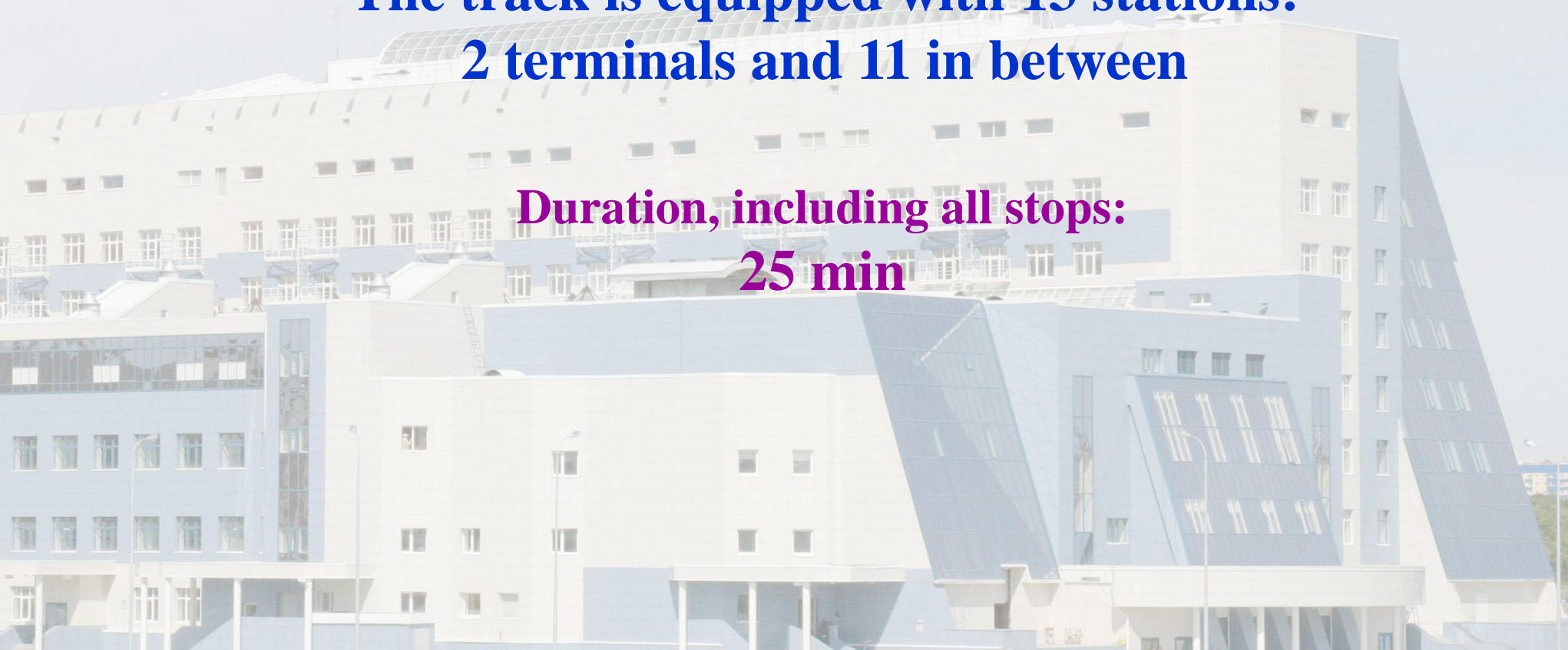
* within 20 years of implementation

Two-way city mono-STU track in Khanty-Mansiysk on the route Airport – River port (1st and 2nd order)

Length 9800 m

**The track is equipped with 13 stations:
2 terminals and 11 in between**

**Duration, including all stops:
25 min**



Cost of the two-way city mono-STU track in Khanty-Mansiysk on the route Airport – River port (1st and 2nd order)

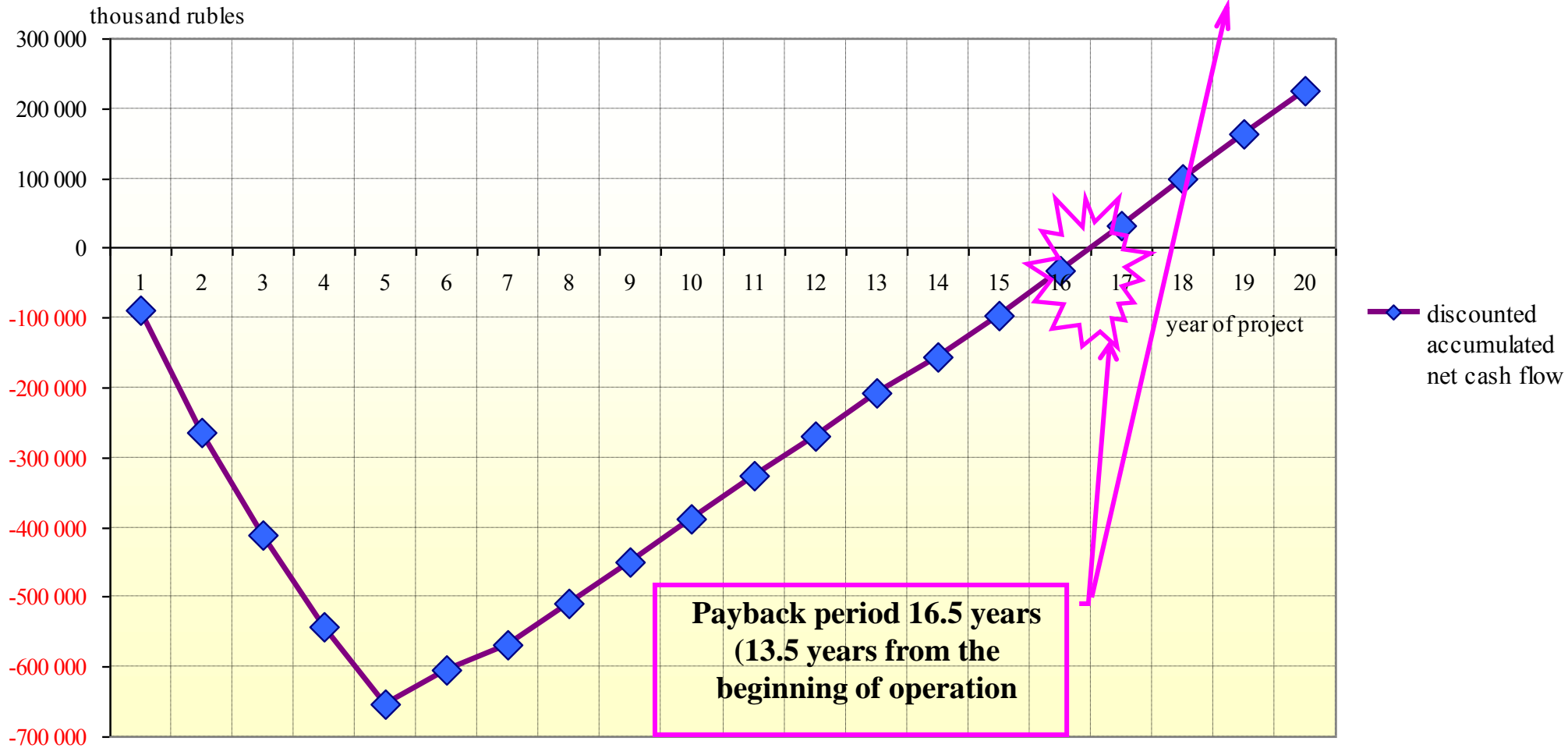
Cost components	Cost*, mln rubles	Cost of 1 km*, mln rubles
Design and development (track structure, infrastructure, unibus)	170	17
Track structure (string rail, intermediate and anchor piles)	219	22
Infrastructure (stations, platforms, terminals, servicing parks and garages)	162	17
Vehicles (unibuses)**	140	14
Total	691	71

* costs as of Q4 2007 prices

** costs of vehicles considering the demand of the first year of operation (1st and 2nd order)

Formation of cash flow of city mono-STU track in Khanty-Mansiysk on the route Airport – River port (1st and 2nd order)

Indicator, mln rubles per year	1	...	11	12	...	16	17	...	20	Total
Net cash flow	-88	...	173	168	...	261	276	...	325	2 161
Net cash flow, accumulated	-88	...	-72	96	...	958	1234	...	2 161	
Net cash flow (discounted)	-88	...	62	56	...	66	65	...	64	226
Net cash flow, accumulated (discounted)	-88	...	-326	-270	...	-32	33	...	226	



Integral indicators of commercial effectiveness of city mono-STU track on the route Airport – River port

Net present value, NPV	mln rubles	226
Internal rate of return, IRR	%	12.99%
Discounted payback period, DPP	years	16.5
Discounted payback period from the moment of operation	years	13.5
Discounted investment profitability index, DIPI		1.27

**Effectiveness of participation in the city mono-STU track project on
the route Airport – River port:
investment and income of the main participants**

Indicator, mln. rubles	STU Ltd	Government (Ugra, etc)	Large private investors – founders (Khanty-Mansiysk private pension fund, Bank etc.)	Other investors (stockholders, development institutions)
Investment in equity capital	230,5	450,0	350,0	50,0
Net present value	47,5	95,0	72,4	11,3
Dividends	136,7	267,5	208,0	29,7
Commercial effect for the participant as the investor	184,2	362,5	280,4	41,0

Integral indicators of effectiveness depending on the volume of passenger flow of the city monoSTU track project on the route Airport – River port Sensitivity analysis

Parameter/ Project scenario	1 - adverse		2 - base		3 - favourable	
	value	deviation from the base, %	value	deviation from the base, %	value	deviation from the base, %
Volume of transportation, mln passengers annually*	2.0	-33%	3.0	0%	3.7	23%
NPV, mln rubles	31	-86%	226	0%	420	85%
IRR, %	10.17%	-22%	12.99%	0%	15.21%	17%
DIPI	1.04	-18%	1.27	0%	1.46	15%
DPP years	19.3	43%	13.5	0%	9.9	-27%

* - in the first year of operation

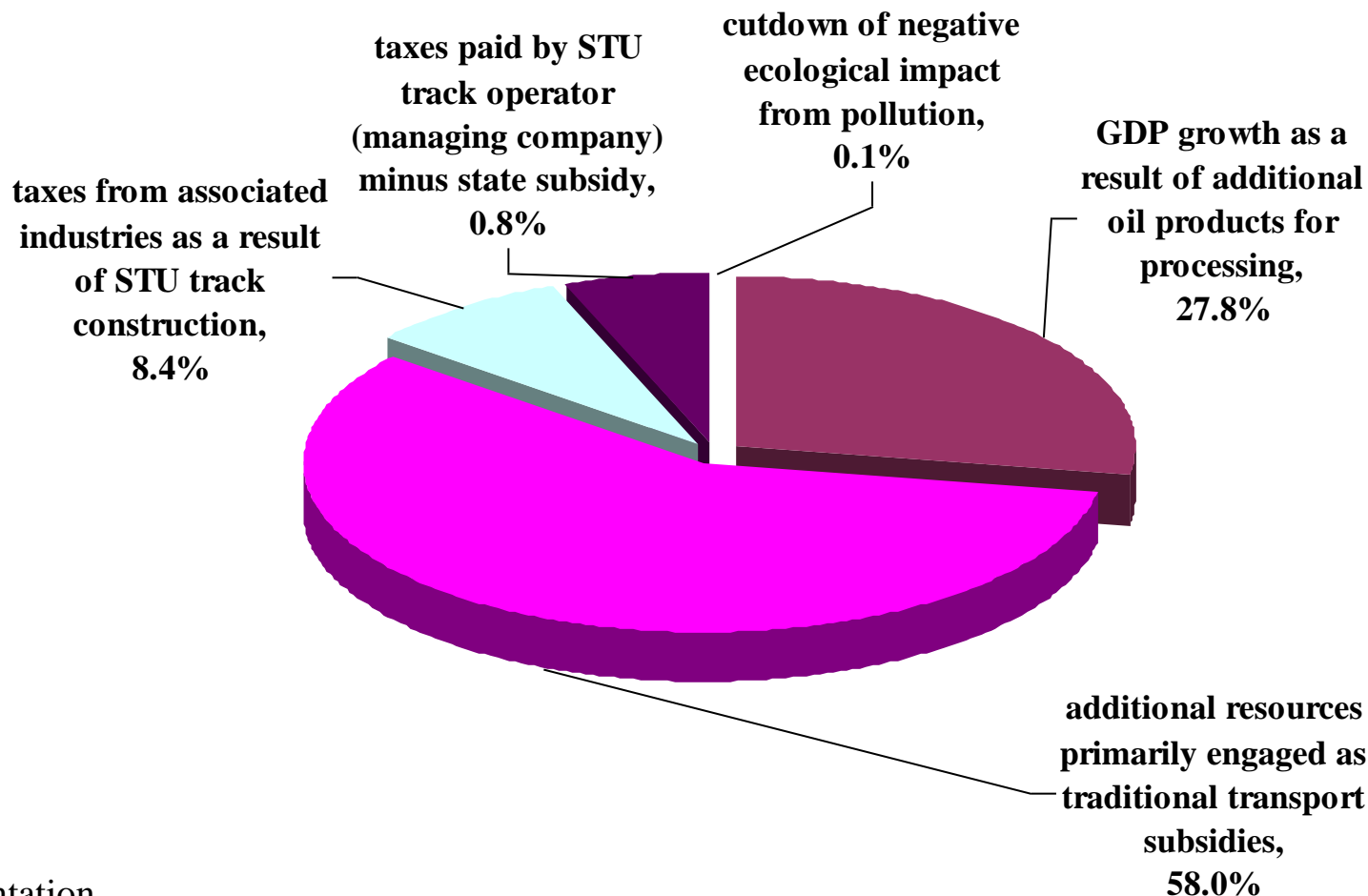
Externalized (social and economic and budget effects of the city mono-STU project on the route Airport – River port*

Integral social and economic effect of the project

1 988 mln rubles

Budget effect of the project for Ugra

981 mln rubles



* within 20 years of implementation

City two-way two-rail STU (bi-STU) track in Khanty-Mansiysk on the route Airport – River port (1st and 2nd order)

Length 9800 m

**The track is equipped with 13 stations:
2 terminals and 11 in between**

**Duration, including all stops:
25 min**



Cost of a city two-way two-rail STU track and vehicles in Khanty-Mansiysk on the route Airport – River port (1st and 2nd order)

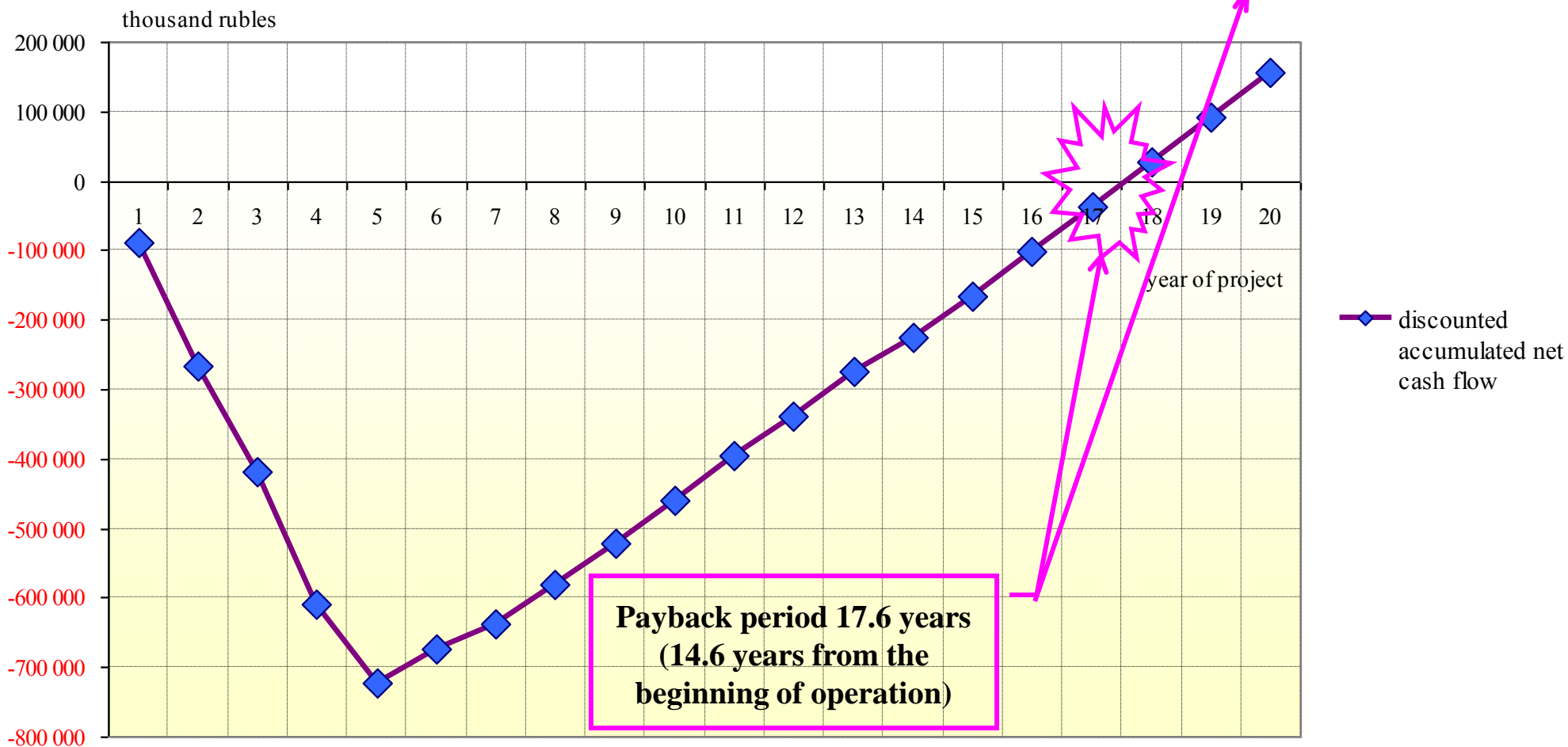
Cost components	Cost*, mln rubles	Cost of 1 km*, mln rubles
Design and development (track structure, infrastructure, unibus)	170	17
Track structure (string rail, intermediate and anchor piles)	282	29
Infrastructure (stations, platforms, terminals, servicing parks and garages)	162	17
Vehicles (unibuses)**	140	14
Total	754	77

* costs as of Q4 2007 prices

** costs of vehicles considering the demand of the first year of operation (1st and 2nd order)

Formation of cash flow of the city two-rail STU track project on the route Airport – River port (1st and 2nd order)

Indicator, mln rubles per year	1	...	11	12	...	17	18	...	20	Total
Net cash flow	-88	...	178	174	...	275	291	...	324	2 057
Net cash flow, accumulated	-88	...	-168	6	...	1136	1427	...	2 057	
Net cash flow (discounted)	-88	...	64	58	...	64	64	...	64	155
Net cash flow, accumulated (discounted)	-88	...	-396	-338	...	-37	28	...	155	



Integral indicators of commercial effectiveness of the city two-rail STU track project on the route Airport – River port

Net present value, NPV	mln rubles	155
Internal rate of return, IRR	%	11.80%
Discounted payback period, DPP	years	17.6
Discounted payback period from the moment of operation	years	14.6
Discounted investment profitability index, DIPI		1.17

**Effectiveness of participation in the city two-rail STU track project on
the route Airport – River port:
Investment and income of the main participants**

Indicator, mln. rubles	STU Ltd	Government (Ugra, etc)	Large private investors – founders (Khanty-Mansiysk private pension fund, Bank etc.)	Other investors (stockholders, development institutions)
Investment in equity capital	230,5	450,0	350,0	50,0
Net present value	32,6	65,3	49,7	7,7
Dividends	90,4	176,9	137,6	19,7
Commercial effect for the participant as the investor	123,0	242,2	187,3	27,4

Integral indicators of effectiveness

Depending on the volume of passenger flow of the city two-rail STU track Airport – River port

Sensitivity analysis

Parameter / Project scenario	1 - adverse		2 - base		3 - favorable	
	value	deviation from the base, %	value	deviation from the base, %	value	deviation from the base, %
Volume of transportation, mln passengers annually*	2.0	-33%	3.0	0%	3.7	23%
NPV, mln rubles	-46	-130%	155	0%	355	128%
IRR, %	8.86%	-25%	11.80%	0%	14.09%	19%
DIPI	0.94	-20%	1.17	0%	1.36	16%
DPP years	21.0	44%	14.6	0%	12.6	-14%

* - in the first year of operation

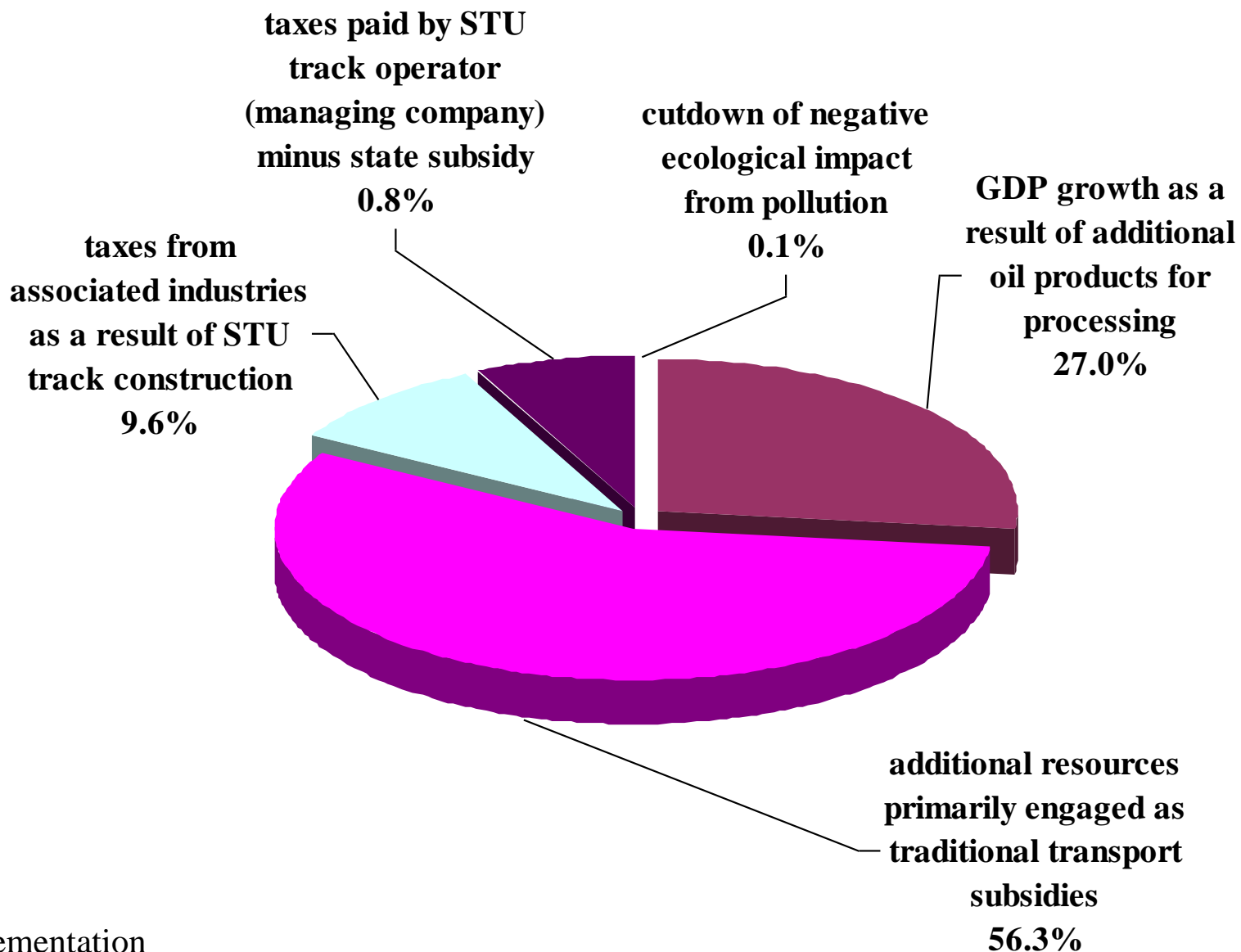
Externalized (socioeconomic and budget) effect of the project of the city two-rail STU track on the route Airport – River port*

Integral social and economic effect of the project

1 985 mln rubles

Budget effect of the project for Ugra

998 mln rubles



* Within 20 years of implementation

Integral indicators of commercial and socioeconomic effectiveness of STU Airport – River port project (basic scenario)

Indicator	Mono-STU Ugra University – campus (1 st order)	Mono-STU Airport – River port (1 st and 2 nd order)	Bi-STU Airport – River port (1 st and 2 nd order)
NPV, mln rubles	125	226	155
IRR, %	13.3	13,0	11.8
Discounted payback period, DPP	15.9	16.5	17.6
Discounted payback period from the moment of operation	12.9	13.5	14.6
Discounted investment profitability index, DIPI	1.29	1.27	1.17
Discounted socioeconomic effect, mln rubles	8.6	414	421
Integral discounted effect, mln rubles.	134	641	576