

Implementation of
the investment project
**"GEOLOGICAL STUDY AND INDUSTRIAL
DEVELOPMENT OF THE WEST ANABAR
OIL FIELD"**

(Pre-investment phase)

Project initiator: «Tuymada-Neft» Oil Company JSC

The experience of the project team:

**Geological study and industrial development of the Biryuksky and
the Mukhtinsky area (Olekminsk district, Republic of Sakha
(Yakutia)) – implementation started in 2012**



ТУЙМААДА•НЕФТЬ

INFORMATION ABOUT COMPANY



Export-oriented projects:
Talakan – "Surgutneftegaz"
Srednebotubinskoye – "ROSNEFT"
Chavandinskoye – "GAZPROM"

The limited liability company "Anabarneftegas" was established in accordance with the decision of the sole founder – JSC Oil Company "Tuymaada-Neft" from March 11, 2012. The company is a licensee of the Yak 15399 HP for the right for geological study, exploration and production of hydrocarbons within the West Anabar licensed site of the Republic of Sakha (Yakutia). The expiry date of license – 14.04.2033

JSC Oil Company "Tuymaada-Neft"

The amount of the authorized capital 95 590 130 RUB

Indicators		2012	2013	2014	2015
Revenue	thousand RUB	5 045 057	4 175 518	6 015 661	5 827 996
Volume of realization	tn.	147 555	114 070	141 187	120 323
Net profit (RAS)	thousand RUB	79 353	15 210	125 155	120 441

JSC Oil Company "Tuymada-Neft" for the needs of the consumers in the Republic of Sakha (Yakutia) provides an annual delivery of more than 140 thousand tons of petroleum products. The company has its own tank farm with the capacity of 50 thousand tons in Nizhniy Bestyakh Village, 35 gas stations on the territory of the Republic. The average number of employees as of July 01, 2016 amounted to 320 people

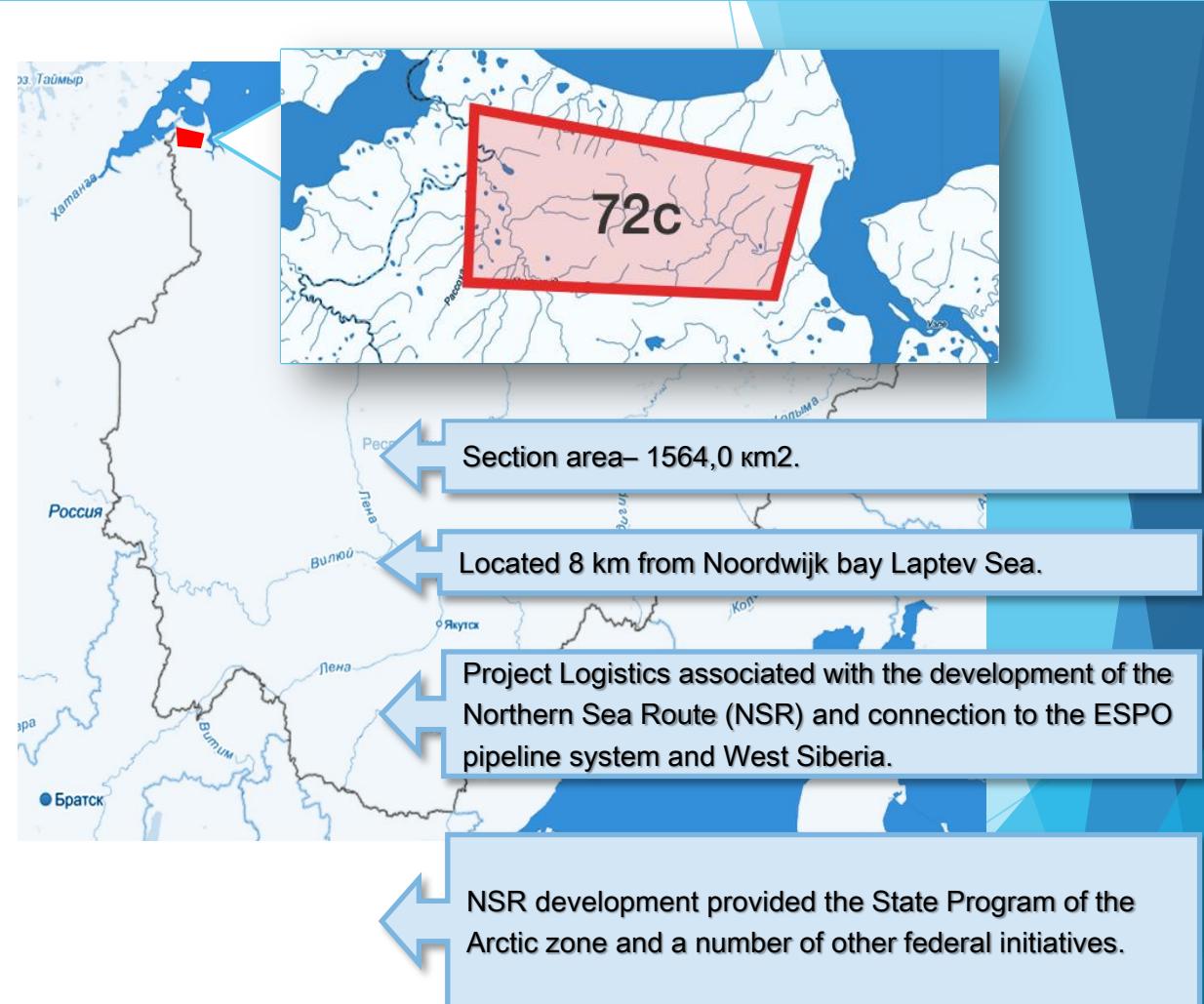
As part of the diversification directions starting from 2008 the company is a subsoil user for geological study and production of oil and gas. Currently carrying out geological exploration in 5 licensed areas of mineral resources: West Anabar, Biryuk, Mukhtinsk, Kyederginsk and Khoptolokh with total expected resources of hydrocarbons in oil equivalent 800-850 million tons.

OBJECTIVE, GOALS AND GEOGRAPHY OF WORK

The major objective of Anabarneftegas LLC is an economically efficient commercial development of West Anabarsky licensed section in the Republic of Sakha (Yakutia).

Goals:

- oil and gas exploration in West Anabarsky Licensed Section;
- production drilling, field facilities conduction, supply pipeline conduction, oil loading terminal conduction, LNG plant construction;
- production of oil, natural gas and gas condensate;
- commercial export of oil and gas to the Europe and Asia Pacific Region and cross-border regions of the Russian Federation;
- Oil and gas supply for the housing and utilities complex and the population of the Anabarsky district.



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LICENSE CONDITIONS. CARRIED OUT WORKS.



License ЯКУ 15399 HP for the right of the geological study, License ЯКУ 15399 HP use subsurface mineral resources for the purposes of geological study, exploration and production of hydrocarbons in the territory of the licensed section. Updated November 16, 2015. License expiry – 04.14.2033, with an option to renew. State registration № 6325/ЯКУ15399HP august 1, 2012.

Area – 1564,0 km².

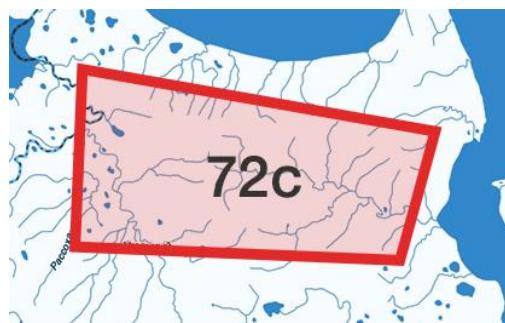
License terms and conditions of the use of subsurface resources:

- CDP-2D (МОГТ-2D) seismic survey no less than 548 linear km until 2020;
- No less than 3 exploration wells drilling until 2022.

110 linear kilometers of CDP-2D seismic survey was carried out by State Scientific Center "Yuzhmorgeologiya" in 2011-2012.

200 linear kilometers of CDP-2D seismic survey was carried out by FGUP VNII Geofizika in March-April, 2013.

121 linear kilometers of CDP-2D seismic survey was carried out by FGUP VNII Geofizika in January, 2014.



Approved estimation, 2002		Stocks increase Прирост запасов at the rate of Siberian oil and gas Research and development , 2011		
Gas, bcm	Oil (recoverable), mln tons	Gas, bcm	Oil (recoverable), mln ton	Total, thousands ton
D2	D2	C1	C1	C1
31,7	18,6	495,3	256,3	751,6



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State Scientific Center "Uzhmorgeologiya"**In 2012**

- The main geological fault is defined on Yuzhno-Tigyanskaya upfold.
- The second dome it was defined on the east side of Chayandinskaya anticline, which had been unknown before.
- As for structures with oil and gas potential, the following conclusions were made:
 - according to currently available actual data to prospect hydrocarbon accumulations in Paleozoic and Upper Proterozoic complexes it is need to take into account the anticlinal traps.
 - the anticlinal traps associate with the western and eastern archs of Chayandinskaya and Yuzhno-Tigyanskaya upfolds.
 - It is defined the underthrust trap in Riphean-Lower-Middle Paleozoic carbonate complex of Chayandinskaya structure. This type of the trap is new in this region and requires a comprehensive study.



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FGUP «VNIIGEOFIZIKA»

In 2013 - 2014

- Generally the preliminary results of carried out works indicate high prospects of West Anabarsky Licensed Section for the detection of hydrocarbon traps in the commercially available depths.
- In the area of interest the preliminary estimation of the total sedimentary cover thickness is 9.0-10.0 km, of which the "share" of the Permian-Cenozoic section accounts for about 4.5-5.5 km.
- On the boundary of Middle Mesozoic and Mesozoic sediments are surfaced (expected) the sites of trappean formations.
- In the Middle Paleozoic complex with a high probability can be predicted various forms of salt tectonics (diapirs, rollover structures, salt domes), and associated reef structure.
- In the Mesozoic-Cenozoic section of the cover was identified the system of anticlinal swell-like structures, in some cases, perhaps domed structures. Part of them is continued in the Middle Paleozoic sediments. Can not be excluded the presence of salt diapirs and (or) stock magmatic formations. Discovered tectonic structures and sites of lapout and pinch-out of sediments are of main interest for drilling wells with the depths from 1.5 km and less to 2.5-3.5 km.



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- In 2014 Research Center All-Russia Petroleum Research Exploration Institute "Neftegas" on order JSC Anabarneftegas complete estimation of hydrocarbon reserves of Uzhno-Tyaginskiy field of West Anabarsky licensed section
- Estimation of reserves based on the interpreted seismic data, conducted in 2012-2014, and the test data of well №102 on Uzhno-Tiganskoy side of West Anabarskiy section.

As a result of calculation of reserves discovered oil shows within West Anabarskiy licensed section with the following reserves:

- (geological) – 27 922 thousands tons C₁ category, 52 427 thousand tons C₂ category
- (recoverable) – 5 584 thousands tons C₁ category, 10 485 thousand tons C₂ category

Total by C₁+C₂ categories oil reserves:

- (geological) – 80 349 thousands tons
- (recoverable) – 16 070 thousands tons

The estimation of prospective oil resources of C₃ category of the Permian deposits of Uzhmo-Tyaginsky, Chaydakhskaya and Gurimsky structures, in volume 90 mln tons (recoverable) on state balance of Russian Federation.

Prospective recourses D1+D2:

- Oil – 256,3 mln tons (recoverable);
- Gas – 495,3 bln cum



HYDROCARBONS DISTRIBUTION OF ZAPADNO-ANABARSKY SECTION

HYDROCARBONS ALLOCATION OF ZAPADNO-ANABARSKY LICENSED SECTION **ACCORDING TO SPE-PRMS CLASSIFICATION** (SIBERIAN RESEARCH AND DEVELOPMENT CENTER ESTIMATION, 2011)

НКГ	TOTAL PETROLEUM INITIALLY-IN-PLACE (PRMS)							
	Undiscovered			Discovered				
				Sub-Commercial	Commercial			
	Unrecoverable resources	Prospective resources	Unrecoverable resources	Reserves			Production	
				Proved	Probable	Possible		
	Oil, mln tonnes	Oil, mln tonnes	Gas, bcm	Oil, mln tonnes				
Upper Paleozoic	175,56	43,89		20,92	0,48	3,853	0,897	0,00164
Lower-Middle Paleozoic	413,77	212,4	495,3					
TOTAL	589,33	256,3	495,3	20,92	0,48	3,853	0,897	0,00164



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WEST ANABARSKY SECTION PRIORITIES IN 2016 – 2022

- Development and approval of geological study project;
- Completion of seismic survey, total volume 979 linear kilometers (or 548 linear kilometers in consideration of completed seismic survey);
- Drilling of exploration wells;
- C1+C2 category reserves estimation;
- Commencement of 3D seismic survey and exploration drilling;
- Development of technical and economic proposals of the oil and gas field commercial development.

Goal - oil, gas and condensate field discovery , start of exploration phase



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According to the Siberian Research and Development Center of Oil and Gas estimation, forecasted annual production could reach:

- Oil – 12 million tonnes;
- Natural gas – 10 billion cubic meters;
- Gas condensate – 114 thousand tonnes.

Oil and gas condensate sales geography:

1. The main passage of the Russia in the Arctic – by the Northern Sea Route to Europe and the Asia-Pacific Region. It is required construction of the supply pipeline and the terminal on Kozhevnikov or Anabar Bay (about 10 km).
2. By the ESPO pipeline system, which plans to connect to the Rosneft, Lukoil, Rostec for the purpose of development of the northern license areas in the Arctic zone of the Krasnoyarsk Territory and the Republic of Sakha (Yakutia). West Anabarsky field directly adjacent to the Khatanga area of Rosneft.
3. On the domestic market – as a boiler fuel for the housing and utilities complex of the Anabarsky (Dolgan-Evenk) national district.

Natural Gas sales geography:

Liquefied natural gas - by the Northern Sea Route to Europe and the Asia-Pacific Region. It is required the construction of the supply pipeline and LNG plant with the capacity of 7 - 7.5 Mt per year of LNG near the terminal on the coast of the Kozhevnikov or Anabar Bay.



West-Anabarsky licensed section, including exploration phase (oil)

Economic-geological evaluation parameters of calculation period (45 years)	Сумма
initial recoverable reserves of oil, Mt	256,340
Exploration cost, million RUB	
- Exploration stage	3 580,85
- Appraisal stage	3 512,60
- Total	7 093,45
Maximum annual oil production, Mtpa	12,021
Cumulative oil production, Mt	178,119
Placing of new wells on production, pcs	207
Capital expenditures, million RUB	
- in oil production	292 595,51
- in oil delivery and transfer	64 961,00
- total	357 556,51
Operating expenditures, million RUB	
- in oil production	237 746,95
- in oil delivery and transfer	475 727,74
- total	713 474,69
Total revenue, million RUB	4 245 302,12
Net value, million RUB	
- after tax	684 482,63
- budget	2 414 003,50
Net present value, million RUB	
- after tax	132 169,84
- budget	487 577,11
Discounted payback period, years	11
Profitability index	1,69
IRR, %	24,35%
Demand for additional financing, million RUB	140 520,28

Calculations made in 2015

The geological and economic evaluation calculations of West Anabarsky Licensed Section exploration indicate the high economical efficiency.

The development of West Anabarsky Licensed Section have a high probability of implementation and cost-effectiveness, also has a high tolerance to the geological and economic uncertainties.

Comprehensive analysis of the uncertainties and risks suggests that the project of geological exploration and subsequent development of West Anabarsky Licensed Section is cost-effective and stable to the negative changes in external conditions and presuppositions.



- Project Implementation Schedule:
 - Geology study (under license obligations) – 2016 – 2022 including:
 - 2D seismic exploration work – 548 lin km.
 - Drilling exploration wells – 3 wells
 - Geological works – 2020 – 2023
 - Exploration drilling
 - Seismic survey 3D
 - Estimation of oil and gas reserves
 - Exploration drilling and commercial arrangement – 2023 – 2025 Achieving of designed capacity is planned by 2025.
- The amount of required investments : *364,7 bln rub, including на search and evaluation stage : 7,1 bln rub*
- Net Present Value of the project (NPV): *132,2 bln rub.*
- Project's internal rate of return (IRR): *24,35%*
- Payback period : *11 years*
- Revenue forecast until 2050 : *4 245,3 bln rub.*



No	Restrictions and Risks	Probability
1.	Possibility of not discovering an oilfield	None
2.	Level of uncertainty at all stages of the project	Minimal
3.	Probability of losses	Minimal

The project based on attracting a strategic investor on the terms of entry in the authorized capital of JSC Anabarneftegas and organization of financing geological studies and industrial development of West Anabar oilfield.



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