



PRIMORSKY TERRITORY GOVEMENT

PERSPECTIVE OF DEVELOPMENT OF PROCESSING AND EXPORT OF OIL AND GAS IN PRIMORSKY KRAY

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BASES OF DEVELOPMENT AND OIL REFINING AND GAS IN PRIMORSKY KRAY

- The concept of long-term social and economic development of the Russian Federation for the period till 2020
- Power strategy of development of Russia for the period till 2030
- The general scheme of development of gas industry of the Russian Federation for the period till 2030
- The development plan gas and oil chemistry of Russia for the period till 2030.
- The program of creation in Eastern Siberia and in the Far East of uniform system of production, transportation of gas and gas supply taking into account possible gas export on the markets of China and other countries of the Pacific Rim (East Gas Program) (it is approved as the Order of the Minister of Energy of the Russian Federation of September 3, 2007 No. 340)
- Strategy of social and economic development of the Far East and the Baikal region till 2025 (it is approved as the Order of the Government of the Russian Federation of December 29, 2009 No. 2094-r)

PROSPECT OF DEVELOPMENT AND OIL REFINING AND GAS IN PRIMORSKY KRAY

In the near-term and medium-term outlook, according to "Power strategy of development of Russia" for the period till 2030, the main attention will be paid to development of export of products with deep extent of processing. Strategy provided diversification of commodity structure of export of energy carriers, by increase in a share of power products with a high value added in export:

- oil products
- production of gas chemistry and oil chemistry
- gas motor fuel
- liquefied natural gas

Realization of these tasks will help Russia to change nature of the presence in the energy markets, to diversify an orientation and commodity structures of export of the country.

This condition will allow to increase Russian export of energy carriers to the countries of Europe and Asia-Pacific region, will increase profitability and efficiency of foreign economic activity of the fuel and energy companies of Russia without considerable accumulation of volumes of production and export of primary energy carriers.

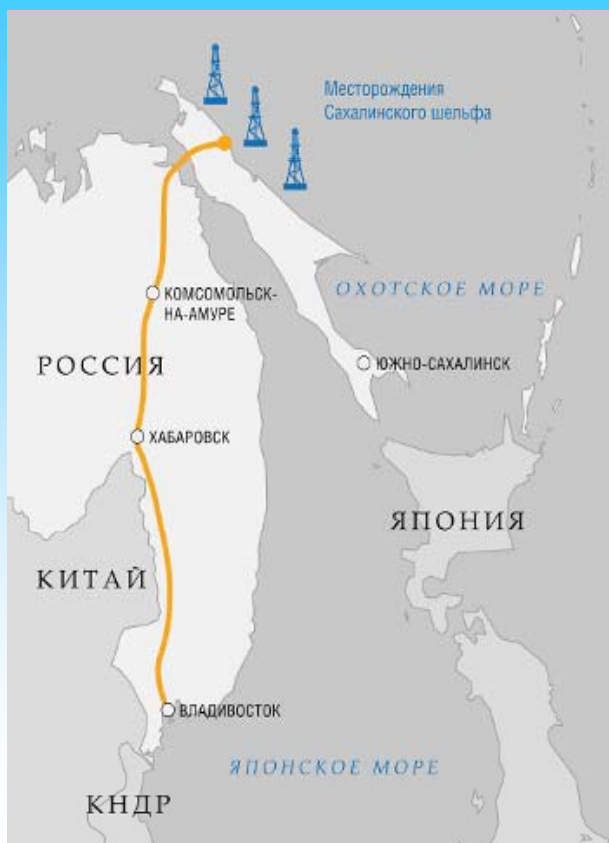
PRIMORSKY KRAY – GATE TO ASIA



The countries of the Asia-Pacific region - 1000 km from Vladivostok:

- population – more than 414 million people;
- the annual volume of gross regional product – 6,6 trillion US dollars;
- 9,5% of a world gross product;
- the Asia-Pacific region markets form 40% of the world consumption of chemical production

“SAKHALIN-KHABAROVSK-VLADIVOSTOK” GAS PIPELINE



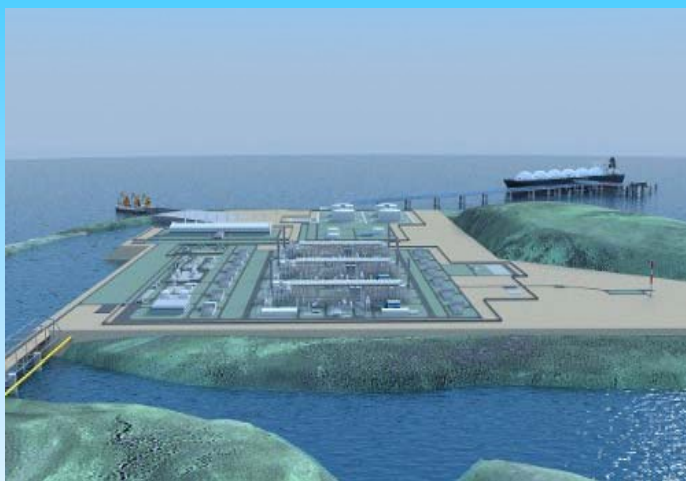
Project purpose:

Creation of new productions in the field of gas processing and gas chemistry, gasification of the enterprises and settlements of Primorsky Krai. Providing economy with natural gas. Possibility of transportation of gas on the markets of the countries of the Asia-Pacific region.

Description of the project:

- Extent – 1837 km
- Working pressure – 9,8 MPas
- Diameter – 1220 mm
- Compressor station– 14 pieces.
- Transportation on the first start-up complex: 6,5 billion m³ per year.
- Prospect: transportation about 30 billion cubic meters.

“LNG-VLADIVOSTOK” PLANT ON LIQUEFACTION OF NATURAL GAS



Project purpose:	Export of LNG by sea to any country of the World
Capacity:	10-15 bln.m ³ of gas per year
Location:	Bezverhovo , Khasan municipal district
Investor:	OJSC “Gazprom”
Cost:	about 685 bln. Rbl.
Time:	2013-2024

Stage:	The I stage – preparation of the territory for construction The II stage – Objects of the sea port terminal and the accompanying engineering infrastructure The III stage – Objects of LNG plant
In present	Project’s documentation is considered in specialized departments of PJSC Gazprom Project’s documentation is planned for transfer for the Main state examination in the 1 st quarter 2016.

NAKHODKA's CHEMICAL FERTILIZERS PLANT



Project purpose: To increase gross regional product of Primorsky region by production of gas chemical products for domestic and international supply

Capacity: About 8 bln.m3 of gas per year

Location: Nahodka

Investor: CJSC “National Chemical Group”

Cost: about 436 bln. Rbl.

Time: 2013-2021



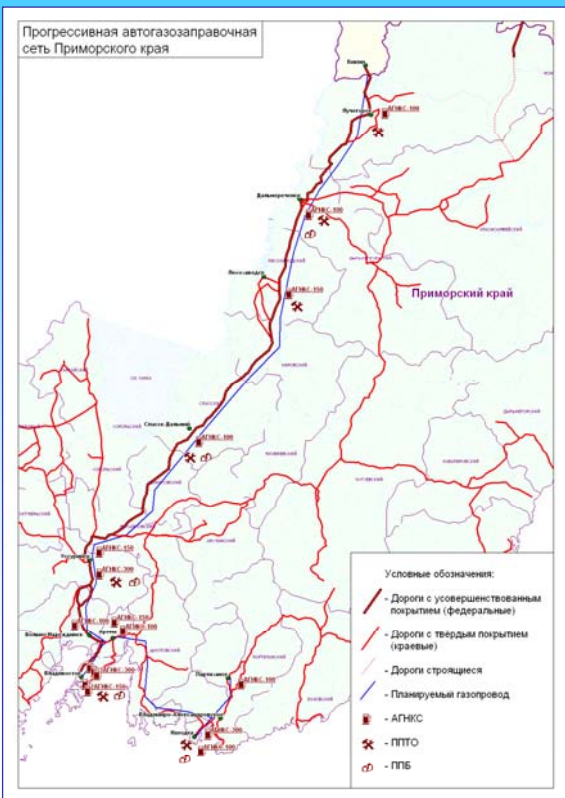
Participants:

- ThyssenKrupp Uhde
- Mitsubishi Heavy Ind.
- Maire Tecnimont Group
- Saipem
- Toyo Engineering
- Hyundai
- ChiYoda
- Technip
- Kawasaki Heavy Ind.
- LG International
- Samsung
- CNCEC



- The construction project of the “Nakhodka’s chemical fertilizers “ which realizes JSC “NCG”, provides creation of a complex on processing of natural gas in mineral fertilizers and chemical products with a high value added, including in ammonia, a carbamide and methanol. The project is one of the world's largest mineral fertilizers on production and is of great importance for development of the Far East and chemical branch of Russia.
- Construction of a complex is divided into three production phases
- Start of the first phase is planned for 2019.
- Capacity:
 - ammonia – 2.1 million tons/year
 - carbamide – 2.0 million tons/year
 - methanol – 1.0 one million tons/year
- In 2012 - 2013 NHG together with Toyo Engineering Corporation developed the feasibility study.
- On September 4, 2015 in Vladivostok, within East economic forum, JSC Gazprom Mezhregiongaz and JSC National Chemical Group signed the contract on supply of natural gas.
- Supply of gas will begin in 2019. Since 2021 it will be 3.15 billion m3 per year.
- Period of validity of the contract — 20 years.

DEVELOPMENT OF THE MARKET OF GAS MOTOR FUEL



"Programs for the translation of the motor transport and agricultural equipment on gas motor fuel" are developed for the Sakhalin region, the Khabarovsk, Kamchatka and Primorsky regions.

Main objectives of this program:

- development of a network of the automobile gas-filling complete station;
- creation of new workplaces;
- reduction of harmful emissions;
- increase of efficiency of public transport and housing and communal services;

DEVELOPMENT OF THE NETWORK OF GAS STATIONS



Prospects of development of a filling network for 2015 - 2030.

- automobile gas-filling complete station – 12 pc.
- module for the compiled natural gas – 5 pc.

Gas sale - 75,22 million m³/year

The maximum quantity of the served transport - 8 850 pc.

ALTERNATIVE GAS SUPPLY



For gasification of municipalities of Primorsky Krai with a difficult geo-relief building of mobile installations (mini-plants) on liquefaction of natural gas connected to the main gas pipeline is planned.

- Source of gas supply of LNG in 4 areas (Dalnegorsk, Terneysky, Kavalerovsky, Olginsky) – Kavalerovo's gas distributive station.
- The number of the installed gas settlements – 29.
- Population – 39 800 persons.
- The number of the installed gas apartments (households) – 15 545.
- The total amount of consumption - 73,37 million m³/year, including the population – 43,37 million m³/year

GAS SUPPLY BY THE LIQUEFIED HYDROCARBONIC GAS



- Level of gasification with the liquefied hydrocarbonic gas (LHG) – 8,5%
- In rural areas – 29,5%
- The number of the installed gas apartments (households) of LHG – 117 090.
- In rural areas – 60 900.
- The volume of realization of the liquefied hydrocarbonic gas – 11 150 tons

JSC “Primorsky gaz” is the main gas supplying and gas-selling organization in the territory of Primorsky Kray.

Society is entered in the register of regional monopolists, and borrows:

- 95% of the market of gas supply in general
- 100% of the market of housing-and-municipal services in the sphere of gas supply of the population
- 100% of the market of seasonings with gas motor fuel of the motor transport



- JSC “Primorsky gaz” consists from : the head-office in Vladivostok and branches in the cities: Arsenyev, Nakhodka and Ussuriysk.
- Gas-filling stations are in Ussuriysk (UGNS) and in Arsenyev.



LOGISTIC CENTER OF PROCESSING OF HELIUM

Realization of JSC “Gazenergoset Helium” of the project on creation in the Territory of Social Economic Development (TSED) "Nadezhdinskaya" of “Logistic Center of Helium”



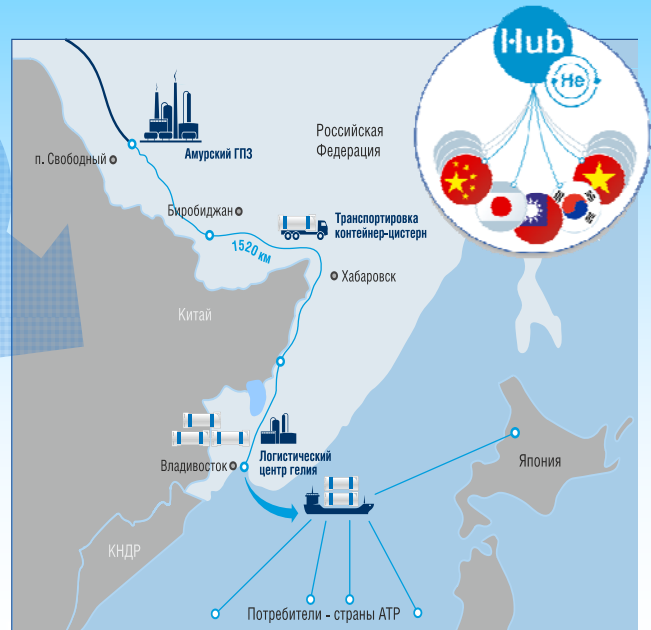
«SILA SIBIRY» (Power of Siberia)



“Logistic Center of Helium” is an integral part of the “Amur Gas-processing Plant” project regarding providing continuous and reliable transport logistics of an export sales channel of commodity helium to export’s ports.

Purposes of the Logistic center:

- To provide a continuity and reliability of export supply of liquid helium of the “Amur gas overworking plant”
- To increase in range of delivery of liquid helium to consumers
- to satisfact of needs of domestic market for liquid and gaseous helium.



OBJECTS OF "LOGISTIC CENTER OF HELIUM"



The implementation of the project is carried out synchronously with commissioning of capacities "Amur gas-processing plant"

COGENERATION TECHNOLOGY



Modernization with cogeneration technologies and usage a local fuel will guarantee:

- Reliability and security of energy supply;
- Reducing of transmission loss;
- Decreasing of imported fuel usage;
- Raising of fuel utilization efficiency;
- Increasing of joint efficiency factor till 80%.



MAIN OIL PIPELINE "EASTERN SIBERIA-PACIFIC OCEAN"



Construction purpose

Supply of oil from areas of production to consumers of Primorsky Krai and on the market of Asia-Pacific countries

Description of the project: The route of pipeline ESPO-II system is laid along a route of the oil pumping station "Skovorodino" - the sea terminal in Kozmino's bay;

Investor of the project: JSC "Transneft"

Cost: 103 000 million rubles;

Main indicators of efficiency of the investment's project:

- Oil pipeline productivity at the first stage – 30 million tons/year
- Oil pipeline productivity on full development – 50 million tons/year
- Pipeline extent – 2048,8 km.

Project purpose:

- Creation of the uniform petrowire system allowing to carry out expeditious redistribution of streams of oil both in western and in east the directions.
- The organization of effective supply of energy resources from areas of production on the oil processing enterprises of Primorsky Krai and export.
- Creation of a basis for placement in Primorsky Krai oil processing and petrochemical productions with a high value added

CONSTRUCTION OF OIL REFINERY COMPLEX OF EASTERN OIL CHEMICAL COMPANY



Project purpose:

Production and sales of oil chemical products to domestic market and market of Asia Pacific region countries.

Planned location: Partizanskiy administrative region

Capacity: up to 30 mln. ton of raw material per year

Construction terms:

Full capacity– 2013-2028

Investor: OJSC “Rosneft”

Cost: 1 313 bln. Rbl.

Project of JSC “Rosneft” – “Vostochnaya neftekhimicheskaya kompaniya”

Project purposes

- Solution of the problem of local deficiency and the high prices of motor fuels in the Far East federal district;
- Creation of a basis for development of a petrochemical cluster in the region.
- Development of infrastructure and the accompanying productions in the Far East federal district
- Replacement of export of raw materials with production with a high value added.
- Receiving additional profit due to sale of new types of production on the markets of Asia-Pacific countries.
- Creation of new workplaces in the region.

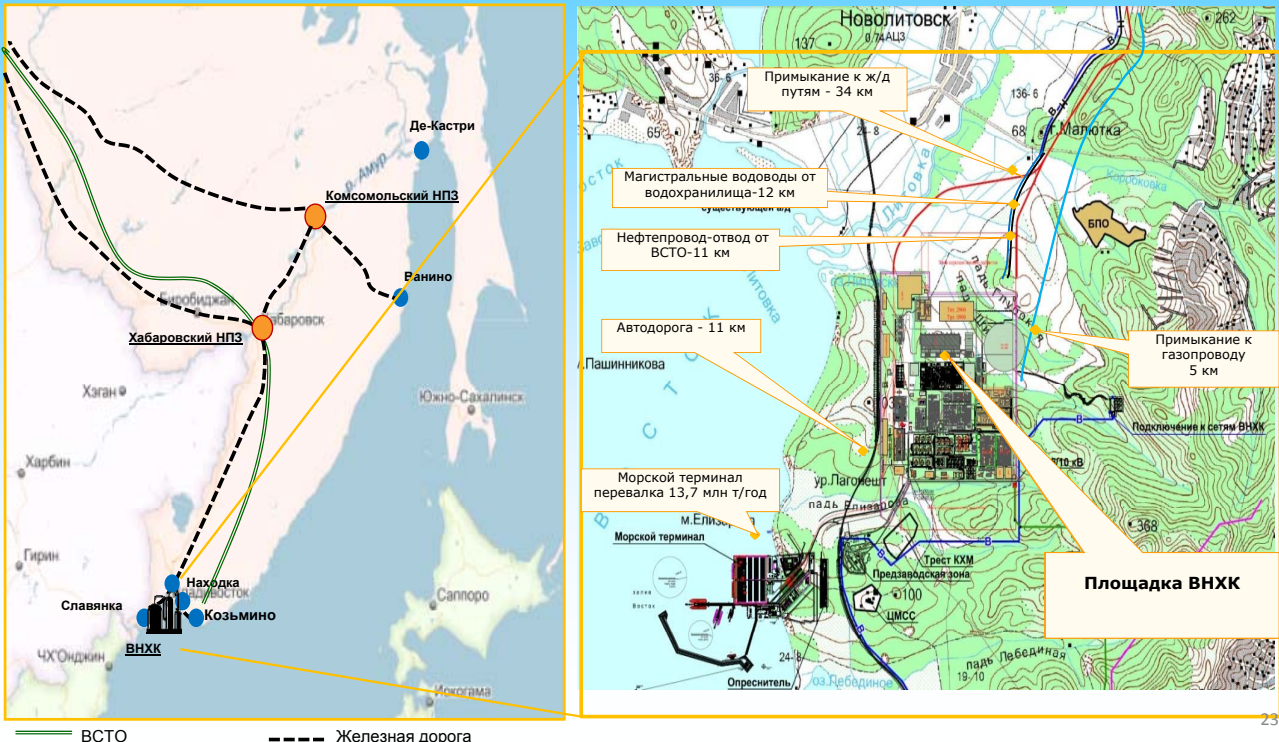
Main parameters of the project

Oil refinery power: 12 million tons per year
Petrochemical plant power: 3,4 million tons on hydrocarbonic raw materials

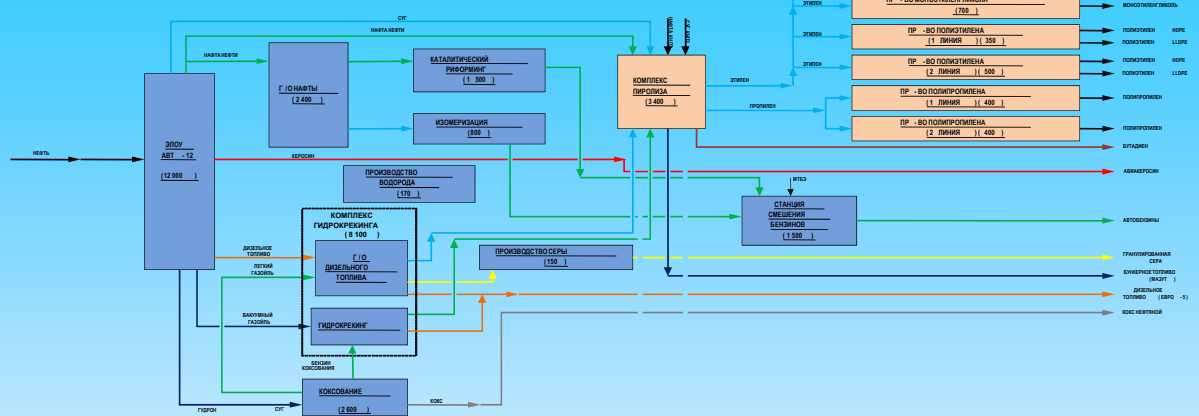
Possible sources of financing:

- Own means of JSC “Rosneft”;
- The means of the Federal budget of the Russian Federation planned for implementation of programs of development of regions of the Far East;
- Investment programs of development of natural monopolies of the Russian Federation (Gazprom, RZhD, Transneft, FGC);
- Means of the strategic partner and organization of a project financing.

- The planned platform of construction of the plant is located in the territory of Partizanskiy administrative region of Primorsky Krai to the south of the item Novolitovsk in 4 km from Nakhodka, in the area fall Yelizarova
- The convenient geographical arrangement, proximity of the ESPO oil pipeline and direct outlet to the seaside, define the South of Primorsky Krai as the most optimum platform for placement of the plant



Process flow diagram



Technological installation	Capacity (thousand tons/year)	
Primary processing of crude oil	12 000	-
Hydrocracking of diesel fuel and hydrotreating	8 100	-
catalytic reforming	1 500	-
Naphtha hydrotreating	2 400	-
gasoline blending plant	1 500	-
isomerization	800	-
hydrogen production	170	-
delayed coking	2 600	-
sulphur production	150	-
Pyrolysis complex	-	3 400
polyethylene	-	850
polypropylene	-	800
Monoethylene glycol	-	700
Alpha olefins	-	50

Стадия проекта	2014				2015				2016				2017				2018				2019				2020				2021				2022			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Оформление земельных участков																																				
Выполнение комплексных инженерных изысканий																																				
Получение ТУ на подключение к внешней инфраструктуре																																				
Подготовка документации для государственного финансирования																																				
Разработка ПД:																																				
Инфраструктурные объекты																																				
НПЗ																																				
Нефтехимия																																				
Прохождение экологических экспертиз (в т.ч. обществ. обсуждения)																																				
НПЗ																																				
Нефтехимия																																				
Прохождение главной государственной экспертизы, получение РНС:																																				
Инфраструктурные объекты																																				
НПЗ																																				
Нефтехимия																																				
Корпоративное решение о реализации следующей стадии проекта																																				
Разработка РД:																																				
Инфраструктурные объекты																																				
НПЗ																																				
Нефтехимия																																				
Контракция и поставка оборудования и материалов:																																				
НПЗ, в т.ч. инфраструктурные объекты																																				
Нефтехимия																																				
Строительно-монтажные работы:																																				
Инженерная подготовка и защита от подтопления для 1 и 2 оч.																																				
НПЗ, в т.ч. инфраструктурные объекты																																				
Нефтехимия																																				
Пуско-наладочные работы:																																				
НПЗ, в т.ч. инфраструктурные объекты																																				
Нефтехимия																																				
Ввод объектов в эксплуатацию:																																				
НПЗ, в т.ч. инфраструктурные объекты																																				
Нефтехимия																																				

1. Project's documentation according to the Resolution of the Government of the Russian Federation No. 87 is developed of 16.02.2008. As of July, 2015 project documentation is developed for 64%, engineering training of a platform of construction – for 90%, prospecting works are performed for 81%
2. The main specifications are received: on connection of VNHK to the ESPO oil pipeline, on design and construction of a railway way of uncommon use, on technological accession of a complex to electric networks and networks of water supply, on an adjunction to the highway "Artem-Nakhodka-port Vostochny".
3. Work with federal executive authorities on receiving measures of state support to the project regarding creation of objects of external infrastructure and providing tax preferences to the projects connected with oil processing and production of petrochemistry is carried out
4. Until the end of the year the approval by the Government of the Russian Federation of the Order about implementation of the VNHK project which, in turn, will be aimed at providing is expected:
 - inclusions of objects of external infrastructure of VNHK in the appropriate federal target programs and in investment programs of subjects of natural monopolies;
 - creations of the territory of the advancing social and economic development "Petrochemical" with the VNHK investment project;
 - deliveries of specifications on connection of VNHK to the gas transmission system of JSC Gazprom, receiving the guaranteed resources of natural gas
5. The realization of the VNHK project at this stage is enabled at the expense of own company funds, investments into the project for 01.05.2015 made about 26 billion rubles (with the VAT), including 13 billion rubles were directed on design (taking into account historical expenses).

Advantages of construction of VNHK in comparison with many Russian and foreign analogs:

- Full security with own raw materials
- Arrangement in close proximity to ESPO and an exit in the sea
- Proximity to the largest sales markets of production Asia-Pacific region
- Lower specific expenses in production of petrochemical production

Продукт	Целевые рынки продаж ВNHK										
	РФ (ДФО), млн.т				АТР, млн.т						
	Производство	Дефицит на рынке ДФО в 2021 г.	Доля ВNHK в покрытии дефицита ДФО	РФ ДФО	Суммарный дефицит по целевым эксп.рынкам в 2021 г.	Доля ВNHK в покрытии дефицита по целевым экспортным рынкам АТР	Китай	Япония	Индонезия	Филиппины	Прочие
Нефтепродукты, с 2021 г.											
Автобензин	1,50	1,3	100%		5	10%					
Авиакеросин	0,80	0,5	100%	✓	5	10%					
Дизельное топливо	6,00	2	100%	✓	20	25%	✓				
Продукция нефтехимии, с 2023 г.				✓			✓		✓	✓	✓
Линейный ПЭ низкой плотности LLDPE	0,40	Возможно появление рынка в случае формирования нефтехимического кластера			2,6	15%					
ПЭ высокой плотности HDPE	0,50				2,8	18%	✓				
Полипропилен	0,70				КНР - 5	14%	✓		✓		
Моноэтиленгликоль	0,70				8,4	8%	✓				
Бутадиен	0,20				КНР - 4	5%	✓		✓	✓	

- Реализация продуктов нефтепереработки в ДФО будет осуществляться через собственную сбытовую сеть

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TRANSNEFT – KOZMINO PORT



JSC "Transneft - Port Kozmino"

is a part of joint stock company on transport of oil "Transneft" and is a final point of pipeline system "Eastern Siberia-Pacific Ocean".

It is intended for reception of oil on the pipeline and the railroad and its transfers on modern sea vessels.

Commissioning of the first, and then second turn of the ESPO and port in Kozmin's bay (the coast of the Sea of Japan) allowed to export oil of a new perspective grade of ESPO (East Siberian – Pacific ocean) to the countries Asia-Pacific region



COMMISSIONING.

JSC "Transneft — Port Kozmino" it is intended for reception, storages and transfers of the oil arriving on pipeline system "Eastern Siberia-Pacific Ocean" and the railroad - the HARDWARE large-scale project of ESPO is realized according to the order of the Government of the Russian Federation according to Power strategy of development of the country. The specialized sea oil port of Kozmino is a final point of transport system which has extent nearly 5 thousand km and connects six regions of Eastern Siberia and the Far East.

CAPACITY OF SEAPORT, SHIPMENT.

- Power of port at the first stage of implementation of the project of ESPO made 15 million tons of oil per year. After expansion (commissioning of the second turn – on December 25, 2012) it increased to 30 million tons of oil per year.
- From the moment of commissioning of the port of Kozmino for export more than 86 million tons of oil of the ESPO brand are shipped. The list of the countries where from moorings of port tankers with oil leave, constantly extends. Today it: Japan, USA, China, South Korea, Thailand, Malaysia, Singapore, Philippines, Taiwan, India, Indonesia, Peru, Australia.
- For increase in goods turnover it is planned to deepen the water area at the second mooring. Planned completion of works – in December, 2015.
- Today oil to the port of Kozmino is delivered on the main oil pipeline and by rail. And loading of oil on oil vessels is made at two moorings: the petropier No. 1 accepting tankers with a deadweight of 80-150 thousand tons and No. 2 accepting vessels with a deadweight of 80-120 thousand tons.
- On March 24, 2015 the 100-million ton of oil of the ESPO brand on the Ocean Pegasus tanker is shipped

**THANK YOU FOR YOUR
ATTENTION!**