

The 500kV Cross-Border Transmission Line Project Linking the Russian Far East with the DPRK (Chongjin)



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PROBLEMS:

- The energy crisis in the DPRK is one of the reasons of a heavy economic situation in the country.
- The political, economical and humanitarian sequences of the situation have a harsh effect on all the countries of the North East Asia Region.

To facilitate the efforts of the DPRK in doing away with the energy crisis is a common goal of the countries of the NEA Region to secure stability in the region and to create the prerequisites of further development.

ALTERNATIVES:

APS



- The KEDO program has been suspended in the end of 2003
- The commissioning by the DPRK of its own APS does solve the problem (P=5 MW)

HPS



Reconstruction or equipment replacement required

TPS



Substantial funds are needed to modernize the facilities and purchase fuel

PTL

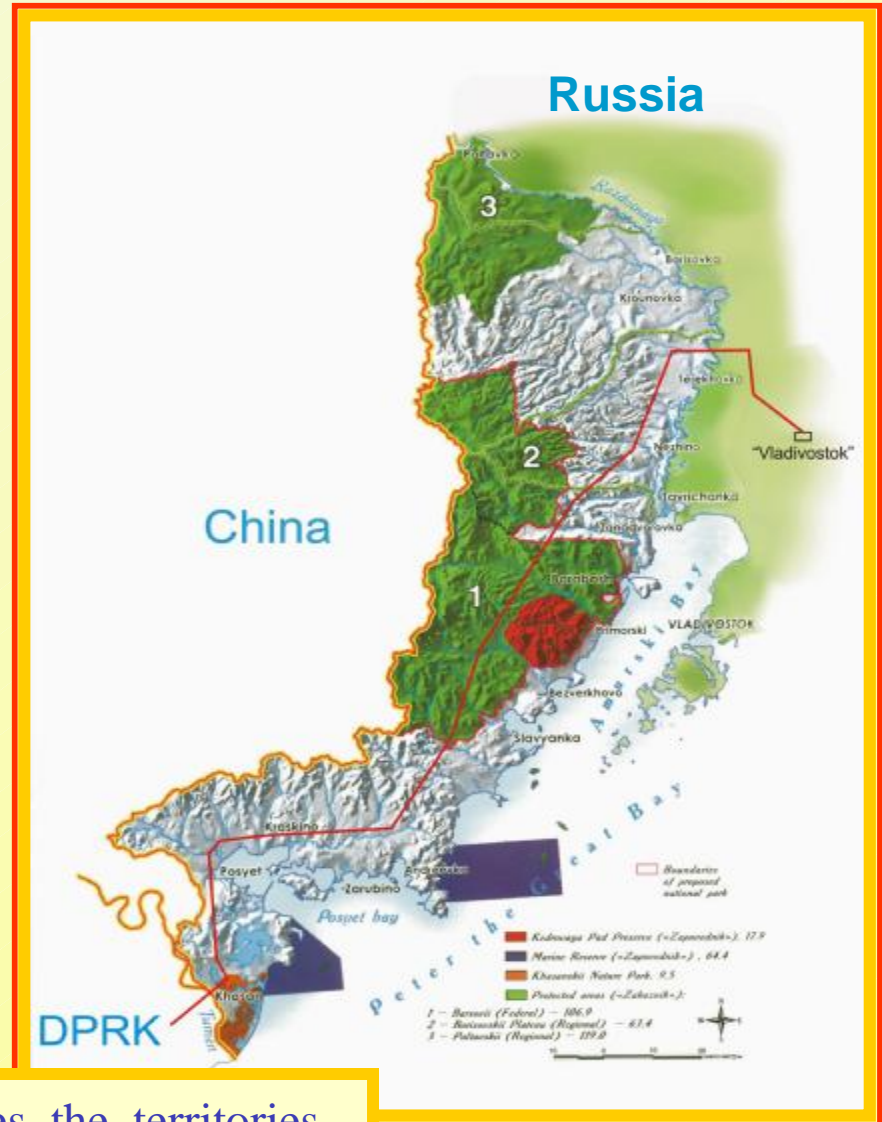


The Russia – DPRK intercountry 500 kV transmission line construction to import electric power from Russia

PROJECT PARAMETERS:

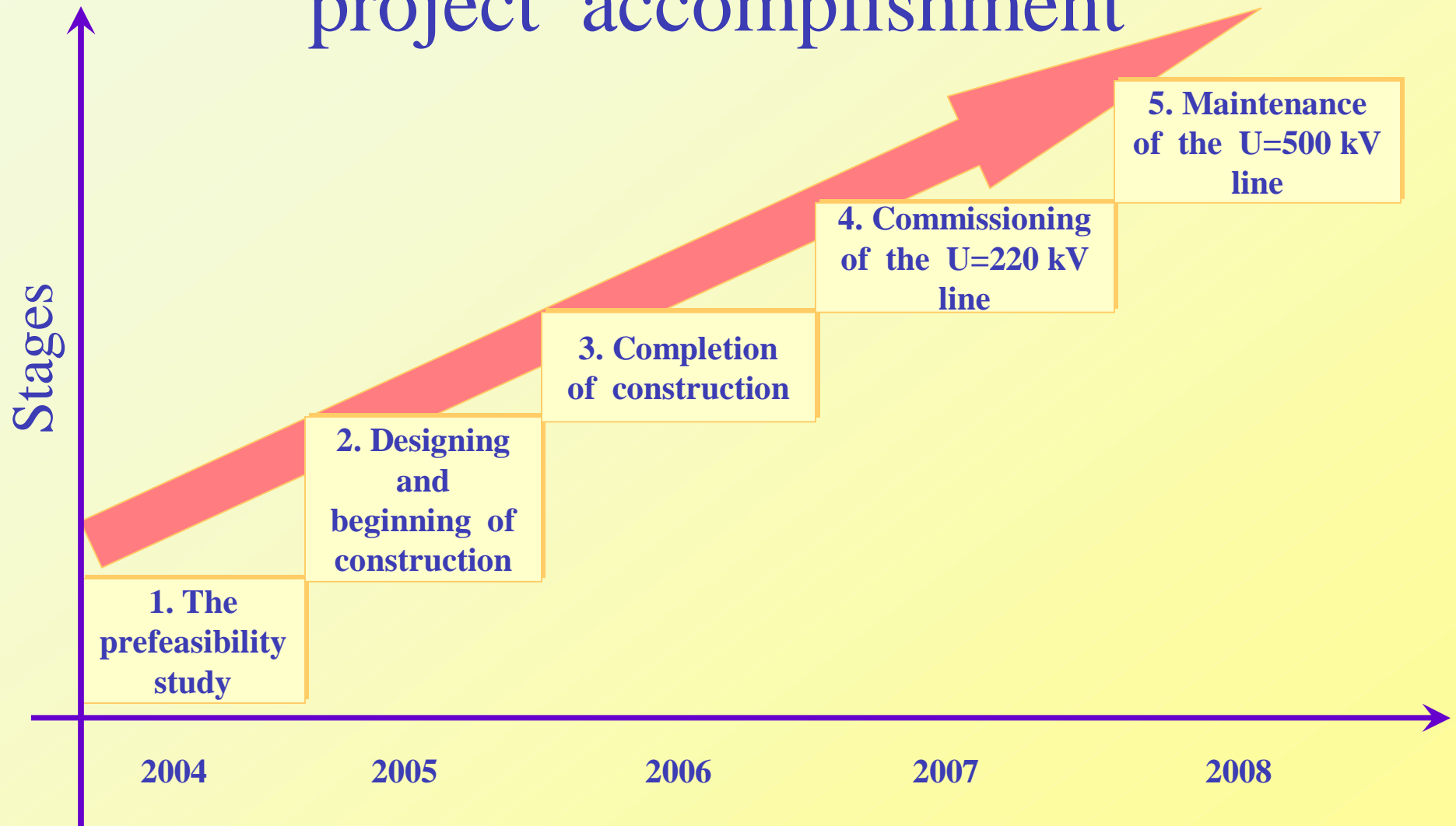
The power volume to be transmitted	(mln. kWh)	1500-2500
The load to be transmitted	(MW)	300-500
Frequency	(Hz)	50
Voltage	(kV)	220/500
The length of the Russian territory portion of the line	(km)	250
The length of the DPRK territory portion of the line	(km)	130
The cost of construction	(mln. USD)	160-180
The period of construction	(years)	3-4
The period of the investments repayment	(years)	8-10

The presumable route of the Russia – DPRK 500 kV transmission line



The 500 kV transmission line route crosses the territories of several national nature parks and reservations

The stages and the schedule of the project accomplishment



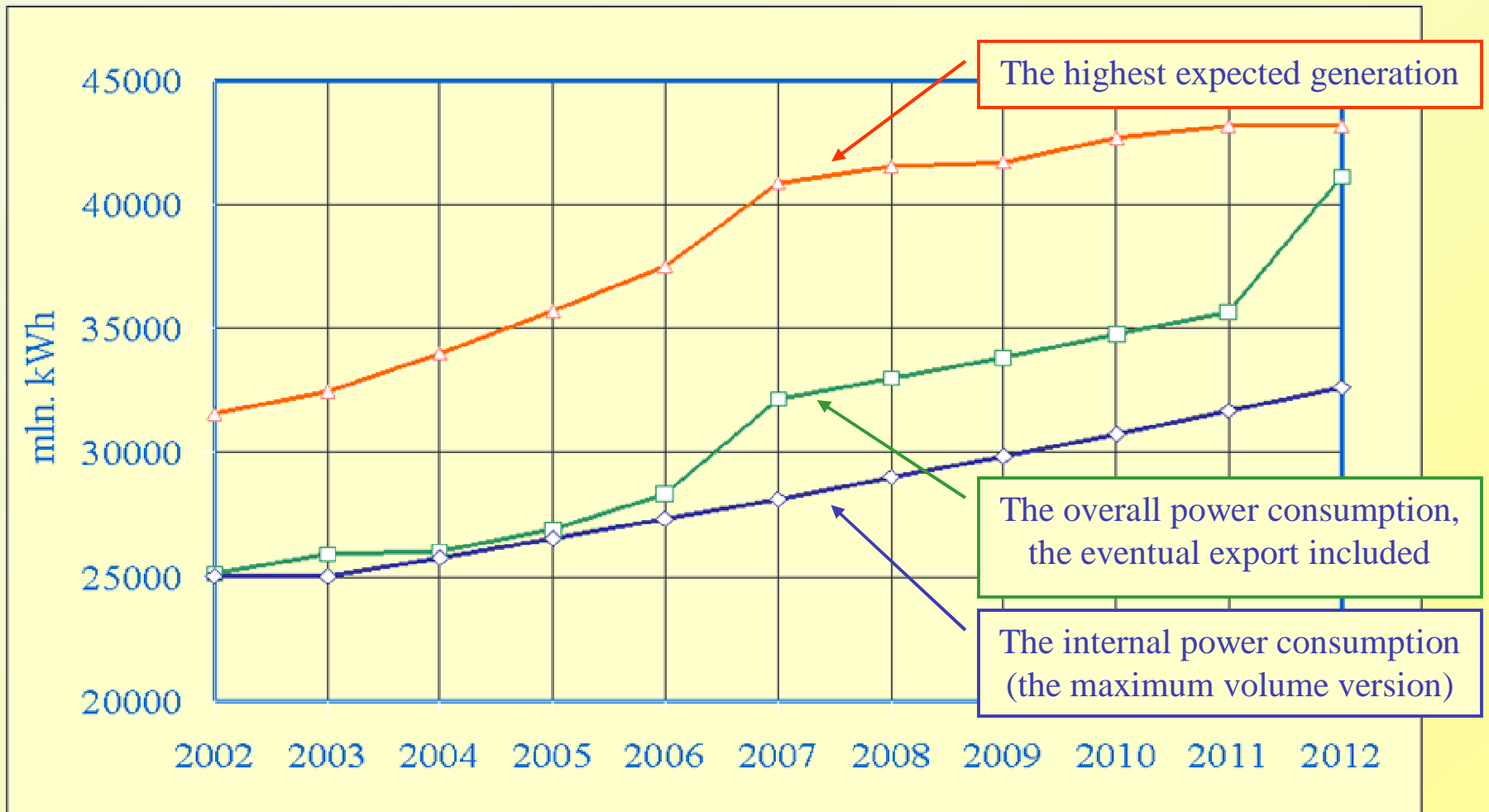
The state of things

- A research work on the efficiency of the transmission line construction has been carried out
- Preliminary negotiations have been conducted with the ministry of the electricity and coal industry of the DPRK
- Negotiations with the potential power consumers in the economic and trade zone of Rason have been begun

The Unified Energy System of the Russian Far East (basic parameters)

	Power production (mln. kWh)	Installed capacity (MW)	The length of PTL 500 kV (km)
2003 г.	26 000	7 270	1 800
2007 г. (project)	31 080	9 100	2 800

The estimate of the generation and consumption dynamics of the electric power in the Unified Energy System of the East for the 2002 – 2012



The power generation potential ensures the growth of both the internal consumption and the export deliveries until 2012

The hydro energy potential of the Russian Far East

HPS	River	Install. cap. MW	Power product. Mln kWh
Nizhne-Bureyskaya	Bureya	321	1650
Cascade of Nizhnezeiskaya HPPs	Zeya	349	2120
1. Inzhanskaya		126	700
2. Chagoyanskaya		126	720
3. Gramatukhinskaya		97	700
Urgalskaya HPP-1	Niman	600	1800
Dal'nerechenskii hydropower complex	Bolshaya Ussurka	595	1400
1 st - HPP-1		250	540
Total on south RFE		1520	6110



The project uncertainties

- The political risks
- The legal frameworks of investments in the DPRK
- The price idea

The project participants and their functions

Participants:

- The RAO «Unified Energy Systems of Russia»
- The ministry of the electricity and coal industry of the DPRK
- The specialized subsidiary companies of the RAO «UES of Russia»
- Investors and large consumers of power in the DPRK
- The project guardians – the state and political figures of Russia, the DPRK and other countries of the NEA Region

Functions:

- The project initializing and guiding
- The operator
- The sub – contractor
- The supplier (exporter)
- The power facilities investments
- The investments commercialization
- The political and administrative support

The project development perspectives

The Russia – DPRK
500 kV transmission
line construction

The transmission line
extension to the border
with the Republic of
Korea and on
(900 km, ± 500 -600 kV)



The key factors of success

- The interest of the political leadership of the DPRK
- The lower cost and shorter period of the project allow a faster achievement of the goal to compare with other versions
- The cooperation with the international organizations, their support and the participation in the project: UN ESCAP, UNDP, UN ESC, ERINA and others among them
- The development of the hydropower potential of the southern area of the Russian Far East

THANKS A LOT
for your attention



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