

1. THE PROSPECT OF ELECTRICAL ENERGY DEVELOPMENT IN D.P.R.K AND REGIONAL CO-OPERATION IN NORTH-EAST ASIA.

Dear participants!

Before my speech, I express my deep thanks to the organizers of this forum for the promotion of inter-ties project in North-East Asia.

The important problem confronted in N-E Asian countries is that of prospective solving of stable electrical energy.

We are in rich resources for the generation of electrical energy.

The estimation of possible development for hydro power is 10 million kW ^{above} the more.

Also, there is a big possibility for the usage of renewable energy such as tidal, geo-thermal, wind, solar power.

After liberation the great leader president Kim IL Sung pointed out the policy for the construction of power plants by using of rich domestic resources.

And also he taught us to combine the building of hydro power plants with thermal power plants for solution of seasonal effects.

Continuously he gave leadership to construct large and small power plants for quick electrification of the country.

Under his wise leadership we've built many power plants in the country.

But for decades there was sharp situation by unjustifiable sanctions of foreign forces in D.P.R.K.

As result, we could not maintain planed investment for energy sector, further more there was much delay in the construction of light water reactor power plant with the capacity of 2000MW by KEDO until 2003 instead of nuclear power-freezing that our scientists have developed long years ago.

At the same time abnormal climatic condition continuously gave the damage to the energy sector.

All these are unexpected problems.

In the starting point from the year 2000, hydro power occupies 54.4% and thermal power occupies 45.6% in total installed capacity.

According to the governmental prospective plan for energy development we expect rapid increasing of installed capacity in 2010, 2020.

If we ignore the inter-ties project, in this case hydro, thermal and nuclear power will take 51%, 32%, 17% in 2010 and 43%, 25%, 32% in 2020.

But if we expect the case of definite settlement of inter-ties project, there will be essential change for large increase of hydro power generation in the increasing of installed capacity.

We estimate that prospective investment rate for the construction of new power plant and H-V transmission line in DPRK would be remarkably lower than the other countries.

We have many small and medium rivers and streams nationwide and we have built lots of small, medium and mini hydro power plants with the capacity of 10,000kW, 100kW for the demands in rural areas.

For the super effectiveness of water resource, we are using the zigzag type in the construction of large power plant.

This type is consisted in several steps in the water way.

Future plan of energy development in DPRK is as follows.

Mainly, we complete the building of An Byun Youth hydro power plant, Pochun, Hui Chun hydro power plants step by step and at the same time in accordance with the water control of large power plants in upper part of rivers Tae Dong, Chong Chon, Nam, Chang Cha, we are going to build run of river power plants and stream power plants in the down part of rivers.

As well as we intend to build many small, medium and mini power plants in the top of rivers and branch streams.

We intend to build large dam for the control reservoirs in the upper part of small rivers like Pi Ryu, Rye Song, Ka Rim and Nam Dae in Kil Zu, Puk Dae in Tan Chun

So that, we can fully control water and even in winter the small power plants can generate electricity in the down part of it.

The government of D.P.R.K is now giving priority for the study and development of renewable energy.

This subject will be discussed in the meeting about the potential effectiveness of inter-ties project for the environment.

DPRK government pay preferential investment to technical modernization of outdated power plants and pay attention to the energy economizing in all fields of national economy.

Here the government minimize or convert the large energy consuming sectors into optimized ones, and reduce the electricity cost in the economical production and organize reasonable alternative production between economical sections, industrial factories and inner production procedures in the factories.

All these policies are main points of maximum economizing of electricity usage.

The great leader Com Kim Jong IL presents foreign policy for the friendship and co-operation between countries and the construction of peaceful and prosperous new world and he emphasize the significance of policy in the regional, bilateral co-operation for the stable energy of DPRK.

For the promotion of inter-ties project, DPRK experts pay attention to following subjects.

1st : For implementation of this project, the tasks and role of each country must be characterized.

Especially DPRK is located in the center of N-E Asia and this is important in geopolitics in inter-ties project.

DPRK has profitable development condition and rich hydro resource.

If we develop this resource jointly, we can control peak load of inter-ties countries according to various time and season.

DPRK has advantageous investment condition in power plant construction and the distance between power plant and consumers is very short comparatively.

As result, we can save greatly the period and fund for the construction of huge electric power transmission infrastructure and as well as the reducing of line loss will give the positive effects to the promotion of project and generation cost.

2nd : It is important that we must point out correct place of frequency convert station for inter-ties project and control the urgent electrical power building plan for this.

Puk Chang thermal power plant is the center of electrical system of DPRK and its capacity is 1,600,000kW

All the hydro power plants are connected to Puk Chang through 220kV, network.

The outgoing power from 2000MW light water reactor power plant will be connected to Puk Chang into 60Hz, 500kV duplex UHV lines the capacity of 1,000,000kW.

For the transmission of generated electricity, 500kV duplex UHV lines from nuclear plant will be connected to Puk Chang.

All the other hydropower plants which will be developed in the future are connected here, too."

Because, if we install frequency convert station in Puk Chang we can have infrastructure for easy introduction of hydro electricity into inter-ties network.

3rd : First of all, we must make correct plan for every step in this project.

The management of combined electricity system will give the benefit for real economy of output, economical and environmental in all member countries.

But there are various complex factors which must be solved first and also there is demands for time and fund.

We must begin with bilateral electricity exchange which can be carried out in small amount of fund and in short period and after it must be obliged to combined network and further we must make this system as the base of the inter-ties network.

Bilateral electricity exchange between DPRK and far east of Russia is now discussing on each side and in the future consideration of its connection to inter-ties we suggest that it is better to construct the tower for DC transmission $\pm 500\text{kV}$ (or $\pm 600\text{kV}$) for the conversion from 500kV AC transmission.

This plan is reasonable and real one because we can find investment resource for transmission line construction inside of combined network.

The final selection about transmission voltage in the inter-ties can be controlled by the study from international work team of member countries.

Electricity exchange subject discussed between North-South experts must be carried out in this principle and finally we must connect it to combined network.

Combine between far east of Russia-DPRK-Republic of Korea is the first step network for the model of inter-ties and quick completion of this combine will be the best reasonable option in the step plan.

According to estimated data, the basic investment for the first step construction will be compensated in one year.

4th : The governments of member countries must pay deep attention to this project.

Discussion is not real result.

For the promotion of this project, the experts of several countries must have rapid technical and economical analysis for composition of policy, legal, economical, financial base and for optimal option because all these analysis data will be the base of real plan of government.

This is the task of experts of member countries.

Because every country is confronted with urgent energy problem, and if project delayed, the governments of member countries will find another multilateral way for energy problem.

In accordance with this, it is better to make decision of financial support for active works of international study work team and to make real measures for the support of study activities, exchange of study method and common consideration of study plan and result.

Thank you.