

Nuclear Power in Vietnam

By Tran Huu Phat, Vietnam Atomic Energy Commission.

General Information

Vietnam is a country in the South East Asia, covering an area of 333,688 and having the population of 85 millions (2008). It is estimated that the 2008 Gross Domestic Product (GDP) per capita is more than 1000 U.S. Dollars (USD). As a member state of the United Nation Vietnam has contributed actively to the successful activities of this Organization all over the world. As a member state of IAEA Vietnam has joined almost all important conventions and treaties which ensure that the nuclear power is peacefully used only for the mankind's happiness.

Being a member state of the Association of South East Asia Nations (ASEAN), Vietnam has made great attempt to build a wealthy community without nuclear weapon.

Milestones for nuclear development in Vietnam

Since 1980 we established and implemented successfully the National Programme for Application of Nuclear Energy to Socio-Economy Sectors of Vietnam, in which the Dalat reactor was restored and upgraded under the IAEA support. The Dalat reactor is a research reactor with the power 500 Kw which is being operated rather well under the management of the VAEC. The study for nuclear power plant introduction into Vietnam has been started strongly and effectively since 1994 under the fruitful assistance of many countries, including Japan, Korea, Canada, India etc. As a consequence, we concluded that for meeting the energy demand by the year 2020 it is necessary to build nuclear power plants with the total power of about 4000MW All these above mentioned progresses lead to the



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important decisions of the Government of Vietnam:

1) On the 3rd January 2006 the Prime Minister signed launching the "Strategy for Peaceful Use of Atomic Energy up to the year 2020", which determines the objectives and road-map for atomic energy development in Vietnam on both power and non-power applications.

The Strategy determines clearly the main policies and objectives for atomic energy development:

a- Policies:

- Vietnam's consistent policy on the use of atomic energy is for peaceful purposes and socio-economic development.
- Application and development of atomic energy have to ensure absolute safety for people and environment on the basis of boosting the international cooperation in order to take advantage of knowledge, technologies and investment.
- Performing the international cooperation in the field of atomic energy aims at building the confidence of international community, implementing all the best international conventions and treaties that Vietnam has joined.

b- Objectives.

- Widely and efficiently apply radiation and radioisotopes.
- Construct and put the first nuclear power plant into commercial operation by 2020 and implement a long-term programme on nuclear power development.
- Ensure nuclear safety and security.

- Consolidate State management agencies controlling radiation protection and nuclear safety.
- Establish a national plan on emergency response.
- Build a national environmental radioactivity monitoring network.
- Develop technical infrastructure and manpower.

2) On July 23rd, 2007, the Prime Minister approved the "Master Plan for Implementation of the Strategy". The Master Plan consists of 23 projects covering all aspects necessary for ensuring sustainable atomic energy development in Vietnam. Many ministries and agencies are involved in the Master Plan.

3) On December 27th, 2007, the Prime Minister approved "National Strategy for Energy Development up to 2020, vision to 2050". The Strategy promotes nuclear power with that objective up to 2050. Nuclear power will be an important part of the total electric power generation of the country, amounting 15-20%.

4) On June 3rd, 2008, the National Assembly adopted the Atomic Energy Law, which comes into force on January 1st, 2009. The law regulates the safe, secured, and peaceful use of atomic energy, including participation in and implementation of international nuclear treaties and at the same time strengthens the international cooperation.

5) On September 3rd, 2008, the Prime Minister made decision on

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A summary of the presentation given at the panel discussion at the 16th Pacific Basin Nuclear Conference on October 17, 2008 in Aomori, Japan.

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establishing the National Committee for appraising the "Investment Project for Ninh Thuan Nuclear Power Plants".

Plan for Nuclear Power Plants.

Based on the analysis of many forecast studies related to GDP growth rates and populations, the Vietnamese policy-makers have been led to the following scenario.

In order to meet the energy demand for socio-economic development two scenarios for average electricity generation growth rates (%) are established.

The main conclusion derived from the projection on electricity generation is that it is necessary to introduce nuclear power plan into Vietnam not later than 2020 and the Vietnam Government decided to launch the nuclear power plan for the first phase:

- The selected site for building nuclear power plants is Ninh Thuan province (the districts Phuoc Ding-Ninh Phuoc and Vinh Hai – Ninh Hai).
- The total power is 4000MW.
- The first nuclear power unit is planned to be put into commercial operation by the year 2020.
- The rest of the three units will be in operation by the years 2021-2024.

The total nuclear power capacity for the second phase is planned to reach 10,000MW and 20,000MW by the years 2030 and 2040, respectively.

International Cooperation

The general foreign policy of Vietnam has been confirmed in many published documents of the Government in the international as well as regional documents. It states that Vietnam always desires to be friend of all other countries in the world because of the peaceful life and the prosperity for the people of all nations. To this end, Vietnam has always played the active role in all international and regional organizations of which Vietnam is the member state such as UN, IAEA, ASEAN. As a member of IAEA Vietnam participated in all important conventions and treaties, such as:

- Treaty on the Non-Proliferation of Nuclear Weapons (NPT) signed in 1982.
- Nuclear Safeguards Agreement signed in 1989.
- Additional Protocol signed in 2007
- Comprehensive Nuclear Test Ban treaty (CTBT) ratified in 2006
- Many other important agreements.

As a member state of ASEAN Vietnam signed the South East Asian Nuclear Weapon Free Zone Treaty in 1996.

Besides, Vietnam signed five Government-Government Agreements for peaceful use of nuclear energy with India, Korea, China, Argentina and Russia.

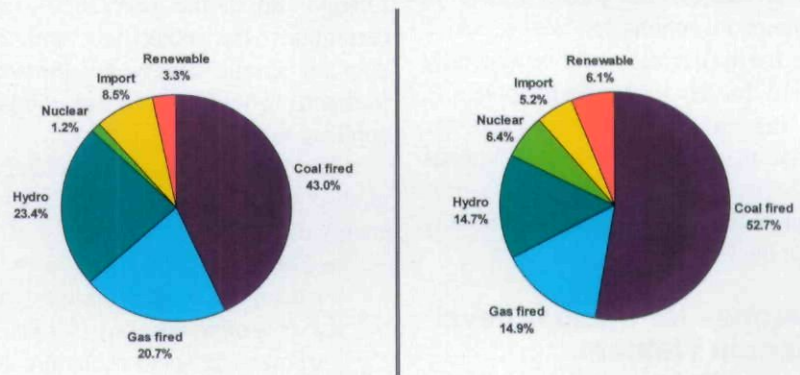
more involved when in the world the terrorism is still being the terrible haunt for present and future.

However we have had many good opportunities for the programme:

- The strong commitment of the Government.
- Positive acceptance of public-
- Favorable international conditions, due to which Vietnam has been acquiring technology transfer, financial aids and valuable consultation.

We believe that we will succeed implementing the nuclear power programme because our Government always provides the full support and, moreover, we constantly receive fruitful assistances

Share of Installed Capacities by Generation Types in the years 2020 (left) and 2030 (right)



With Japan and France Vietnam has had close cooperative relationship in nuclear power. Recently, nuclear cooperation between Vietnam and the USA has been established and developed.

Conclusion

The implementation of long-term nuclear energy programme in Vietnam opens up a lot of challenges and opportunities. First of all we like to mention the main challenges, which we face:

- The legal and technical infrastructure has to be enhanced strongly in order to meet the serious requirements of nuclear power plant introduction by the years 2020.
- Training manpower is to be the first priority for the programme to be successful.
- Nuclear safety, security and non-proliferation turn out to be more and

of IAEA and many friendly countries in the world.

Reference

[www.pbnc2008.org/documents/Publish/16PBNC_Plenary_2-3_\(9\).pdf](http://www.pbnc2008.org/documents/Publish/16PBNC_Plenary_2-3_(9).pdf). Refer to above link for information on:

1. Projection of GDP growth rates and population from 2006-2013
2. Projection on electricity generation up until 2040
3. Schedule for the first nuclear power project

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