

TERNA Expert Dialogue 2009

Technology Transfer as an Element of Market Development for Wind Energy in Developing Countries and Emerging Economies

Spreespeicher, Stralauer Str. 2a, 10245 Berlin

9 November 2009

ERAV
Electricity Regulatory
Authority of Vietnam

Market Development and Technology Transfer – Experiences in Vietnam

Mr. Nguyen Vu Quang

Deputy Director of Electricity Regulatory Authority of Vietnam

CONTENT OF PRESENTATION

I

Situation in Vietnam

II

The existing Policy Framework for Renewable Energy Development in Vietnam

III

Market Development Orientation of Power Sector and Renewable Energy/wind power

IV

Technology transfer

I. Situation in Vietnam

- Power development are gradually operated by market mechanism with orientation of Government.
- Power market is being gradually set up and developed in Vietnam.
- Vietnam has diversified primary energy sources like coal, oil and gas, hydro power and renewable energies
- The supply has not met the demand in energy sector.
- The electricity demand in VN will grow up more than 10% per year until 2020.
- The renewable energy are added in the generation capacity of the power system ~ 200MW each year.
- There are two pilot project wind power plant under construction in Binh Thuan and Ninh Thuan in Vietnam. There are a significant number of foreign investors and Vietnamese companies which are setting up wind park projects.
- There are the support mechanisms in renewable energy in hydroelectricity (legal framework, tariff and standard PPA, grid connection codes etc.). However, those support mechanism are not enough to support wind power (the tariff is insufficient to cover total costs for producing electricity by wind power).

I. Situation in Vietnam (Cont.)

Renewable energy Sources Potential

- **Geo -Thermo:** The exploitable potential is of 200 MW by 2020.
- **Solar energy:** The average solar radiation hours is of 2000 -:-2500 hours per annum with total average solar radiation about 150kCal/cm².year
- **Wind Power:**
 - + Energy density at island is about 800-1400 kWh/m².year,
 - + Energy density is 500-1000 kWh/m².year at coastal areas of Central region, High Land and Southern Region
 - + Energy density at other areas is lower than 500 kWh/m².year
- **Biomass Potential:**
 - + The potential of fuel wood, agricultural residues is about 43-46 mill TOE per annum, of which, 60% is fuel wood (26-27 mill TOE per annum), 40% is agricultural residues (17-19 mill TOE per annum),
 - + The theoretical potential of Biogas is 0.4 mill TOE per annum, exploitable potential is about 10%.
- **Uranium Potential:**

Vietnam has total potential of U3O8 ore of 218.167 tons, ranked average in the world.

II. The existing Policy Framework for Renewable Energy Development in Vietnam

- Up to now, Electricity Law stipulated to step up the exploitation and use of sources of renewable energy for electricity generation.
- Monopoly in energy sector is being eliminated to create power market competitive environment.
- Legal framework is being improved for operating the competitive generation market.
- The targeted share of RE approved in total generation is 5% in 2020, 11% in 2050.
- Planning documents for the market development of renewable energies and wind energy in particular are in preparation but rather general. Support mechanisms are not quantified and there is no clear policy for wind power yet.
- The legal document system for RE developments are being improved.
- The main barrier for wind power development is seen in the insufficient PPA tariff.
- GTZ is being supported to MOIT for Establishment of a legal framework and improvement of technical capacities for grid-connected wind power development in Viet Nam.

III. Market Development Orientation of Power Sector and renewable energy /wind power

Renewable Energy /wind power

- Energy sector development must be compliant with Socio- Economic Development Strategy and international integration must ensure going a step ahead with high growth rate and sustainability, synchronization in parallel with diversity of energy sources and energy efficiency.
- The government of VN has recognized the important role of RE especially for supplying electricity to rural off-grid areas and climate change issues.
- Step by step establish and develop competitive power market in Vietnam; priority is given to clean energy and renewable energy development.
- Develop energy system in parallel with environmental protection to ensure sustainable development

III. Market Development Orientation of Power Sector and renewable energy /wind power (Cont.)

Renewable Energy/wind power

- Renewable Energy Planning: Renewable Energy is not planned sufficiently, It needs to invest for additional survey, update the database for planning and zoning renewable energy types to invest and exploit.
- Invest for additional survey, update the database for planning and zoning renewable energy types to invest and exploit.
- Set up the organizations responsible for renewable energy survey, planning
- Propagandize and R&D on RE technologies, national wide implementation of RE technologies.
- Encourage utilization of RE in remote areas and islands. Set up suitable institutions for maintaining and developing RE based power sources in these areas.
- Integrate RE into National Programs such as rural electrification, forestation program, Poverty Alleviation Program, Rural clean water program, VAC, etc.

IV. Technology transfer

- Technical capacities are insufficient for evaluation of project documents for project licensing and financing
- Vietnam is being transferred and learned technology through out the wind power plant projects.
- GTZ is being supported to MOIT for technical assistance and capacity building as included:
 - ✓ Wind measurements and technique requirement according to international standards
 - ✓ Selection of suitable wind turbines for Vietnam and market assessment
 - ✓ Technical training for administrative bodies in charge of licensing
 - ✓ Long term Correlation of wind measurements
 - ✓ infrastructure and grid-proximity
 - ✓ other uses and possible technical conflicts



ERAV

Electricity Regulatory
Authority of Vietnam

Thank you for your attention

04/2009