

Viet Nam

Implementing a national energy efficiency programme

Activity	Implementation of Viet Nam's comprehensive national energy efficiency program targeting all sectors of the economy.
Country	Viet Nam
Sector(s) involved	All
Time frame	2006–2015
Case summary	The Vietnam Energy Efficiency Program (VNEEP) is a ten year program, which was approved in April 2006 by the Prime Minister of the Socialist Republic of Viet Nam. It is a targeted national program and the first-ever comprehensive plan to institute measures for improving energy efficiency and conservation across all sectors of the Vietnamese economy. The overall aim of the program is to make initial savings of 3–5 % during the period 2006–2010 and a further 5–8 % during the period 2011–2015. The development of VNEEP provides a good example of a comprehensive plan, involving a wide range of stakeholders across all sectors of the economy. It has high commitment and leadership from national to local level, centralised coordination, professional and technical support from both domestic and international stakeholders and a comprehensive legal system to ensure uniform implementation of the program from the national to the local level.



Workshop on Introduction of Energy Efficiency Projects in Viet Nam.

© Vu Van Quang, VNEEC

Viet Nam

Implementing a national energy efficiency programme

Background

Due to Viet Nam's rapid economic growth, energy consumption is foreseen to increase significantly in the future. Energy consumption increased by 11.6% on average per year in the period 1991–2005. The highest growth was in the electricity consumption with an average of 14% per year closely followed by oil and coal with about 11%.

The energy intensity of the industrial sector and large buildings is relatively high in Viet Nam due to energy inefficient production in enterprises and construction of buildings, as well as limited awareness of energy savings opportunities and potentials. It is, however, the intention of the Government of Viet Nam (GoV) to reduce the energy intensity through the introduction of energy efficiency and energy conservation measures.

Since the mid-nineties, the GoV has gradually strengthened the effort to promote different initiatives on energy efficiency and conservation. The development was intensified by a decree on Energy Efficiency and Conservation in 2003, followed by guidance for energy efficiency and conservation at the enterprises in 2004. The Decree specifies new governmental structures at central and local level as well as energy efficiency requirements for large enterprises and large selected buildings.

Pursuant to the Decree, two decisions were signed by the Prime Minister in 2006 regarding two national programs, one on energy efficiency and conservation (VNEEP) and one on electricity savings.

The overall aim of the VNEEP was to make efforts to secure savings of 35% during the period 2006–2010 and savings of 5–8% during the period 2011–2015 on the total energy consumption, compared with the baseline case from the 2006 forecast on energy consumption development. The VNEEP specifies six components and eleven projects to achieve these savings.

The Energy Efficiency and Conservation (EEC) Office of the Ministry of Industry and Trade (MOIT) has taken the leading role in the implementation of the VNEEP, collaborating with a number of specialised institutions in Viet Nam such as the Energy Institute, Energy Conservation Centres and universities. To effectively support specific activities within VNEEP, national technical assistance and international advisory support have supported a variety of domestic stakeholders (including local and national public and private sector actors) in implementation.

Activities

- » **Strengthening state management of energy efficiency and conservation:** Includes complete legal framework on energy efficiency and conservation in industrial production, management of construction works, living activities and energy-consumption equipment.
- » **Strengthen education and disseminate information to raise public awareness and promote EEC and environmental protection:** Disseminate information and enhance public awareness of energy efficiency and conservation. Integrate energy efficiency and conservation in to national education system and pilot the campaign on building the model for "Energy efficiency and conservation in each household".
- » **Develop and popularise high energy efficient equipment and step by step phasing out low energy efficient equipment:** Develop standards and put energy-saving label on some targeted products. Provide technical assistance to domestic manufactures who meet the standards on energy efficiency.
- » **Energy efficiency and conservation in industrial enterprises:** Establishing a controlling model of energy saving and effective use in enterprises. Also assisting industrial enterprises to upgrade, improve and rationalise line for energy efficiency and conservation
- » **Energy efficiency and conservation in buildings:** Improving capability and implementing activities of energy efficiency and conservation in designing and managing buildings. Modelling and implementing energy management and energy efficiency and conservation in buildings.

Viet Nam

Implementing a national energy efficiency programme

- » **Energy efficiency and conservation in transportation activities:** Utilising maximal capacity of means of transportation, minimising fuel consumption and reducing emissions.
- » **Further phases:** In the five years from 2011 to 2015 of the VNEEP-Phase II the programme will focus on enhancing and improving energy efficiency in industries, buildings and transportation as stipulated in the Prime Minister Decision No.1427/2012/QĐ-TTg and in line with Law on Energy Efficiency and Conservation.

Institutions involved

Ministry of Industry and Trade (MOIT); Ministry of Construction; Ministry of Transport; Ministry of Finance; Ministry of Science and Technology (MOST); Ministry of Information and Communication (MoIC); Ministry of Education and Training (MOET); Ministry of Justice (MOJ); Ministry of Investment and Planning (MPI); Vietnam Union of Science and Technology Association (VUSTA); Governmental Office; Provincial People's Committee of provinces and cities; Vietnam Television; The Voice of Vietnam; National unions and associations

Cooperation with

Danida; European Commission (EC); Government of Finland; Japan International Cooperation Agency (JICA); The German Development Bank (KfW); SDC; United Nations Development Programme (UNDP), Global Environment Facility (GEF); United Nations Industrial Development Organisation (UNIDO); World Bank (WB); International Finance Cooperation (IFC).

Management of Programme

National Programme Steering Committee

Members: Representatives of Ministries for Industry and Trade, Construction, Transportation, Finance, Education and Training, Culture, Sports and Tourism, Information and Communication, Science and Technology, Planning and Investment, Justice, and Vietnam Union of Science and Technology Associations.



Energy Efficiency Office



People Committee of Provinces and Cities under central management

- Develop local policy on energy conservation and effective uses
- Coordinate implementation of projects in local areas



Energy efficiency centers

established in selected provinces and cities



Supporting network

Testing laboratories, certified energy auditing organization



Programme structures

11 projects grouped into 6 components

Source: <http://vneec.gov.vn/en/introduction/management-of-programme-33-9397.html>

Viet Nam

Implementing a national energy efficiency programme

Finance

State budget supported the establishment and completion of the management mechanism on energy efficiency and conservation, improving capacity, investigating and implementing the energy audit, and assistance for implementation. Further support was provided by international donors, for example, ADB, Danida, EC, Finland, JICA, KfW, SDC, UNDP/GEF, UNIDO/GEF, WB, IFC. Enterprises receive credits for their investments in projects and their contributions to the organisation of implementation. Phase I (2006–2010) mobilised a total of approximately USD 7.1 million, from the state budget (USD 5.9 million), international donors (USD 0.8 million), other (USD 0.4 million)¹. Estimated finance for Phase II is USD 44 million, which is mobilised from state budget (USD 17 million), local budget (USD 14 million), international donors (USD 8.5 million), and other sources (USD 4.5 million)².

Impact of activities

- » **Wide participation:** After five years implementing the VNEEP-Phase I, the program received active participation and contribution of various Ministries, branches, socio-political organizations, localities and consultants around the country, and achieved encouraging success.
- » **Projects delivered:** As of 31 December 2010, there were more than 150 missions and projects implemented. A number of information sources on the program were disseminated, replicated and implemented all around the country. The total energy saving for the period from 2006–2010 is 4,900 ktoe, accounting for 3.4 % of the total energy consumption (approximately 56.9 TWh)³.
- » **Implementation of Law:** The biggest achievement of the VNEEP-Phase I was the adoption of Law on Energy Efficiency and Conservation and by-law documents related to the energy efficiency and conservation by the 12th National Assembly of Vietnam on 17 June 2010. In addition, the program successfully established a management model for energy efficiency and conservation so as to put into use for about 40 % major energy-consumption enterprises selected around the country; a management network for energy efficiency and conservation, which contributed to the effective implementation of the activities within the program in all localities. After Phase I of the program, public awareness of energy efficiency and conservation was significantly improved.
- » **Capacity building:** The implementation of VNEEP-Phase I also contributed to education and capacity building for more than 1,000 energy management officers of DOITs, Departments of Power, Energy Saving Centres and key enterprises, contributing to the successful organization of a number of workshops, exhibitions, fairs, etc. The program also assists the establishment of a fair and transparent system for certification of trained energy managers and consultants. It further offers training for governmental and local bodies in energy efficiency related issues, so that these authorities get an improved capacity.
- » **Poverty reduction:** The VNEEP contributes to poverty reduction by enhancing general economic development through improving the energy efficiency of industrial enterprises and through new employment opportunities related to the energy efficiency improvements on both maintenance and investments. As efficient use of energy causes less pollution, the VNEEP also contributes to the improved living conditions for people living in the vicinity of the enterprises.

¹ Report No.211/BC-CP dated 17 October 2011 of the Government on the result of the implementation of National Targeted Programs for the period 2006 -2010, deploying the 2011 plan and proposing List of National Targeted Programs for the period 2012–2015

² Decision No.1427/QĐ-TTg dated 02 October 2012 of the Prime Minister on the approval of the National Targeted Program on Energy Efficiency and Conservation for the period 2012–2015.

³ Report No.211/BC-CP dated 17 October 2011 of the Government on the result of the implementation of National Targeted Programs for the period 2006 -2010, deploying the 2011 plan and proposing List of National Targeted Programs for the period 2012–2015

Viet Nam

Implementing a national energy efficiency programme

» **Emission reductions:** Improved energy efficiency reduces the use of fuels and electricity and thereby contributes to a lower level of emissions such as CO₂, SO₂, and NO_x as well as a lower increase in the demand for investment in new power plants. The energy efficiency is a key element in the development of a low carbon economy and climate change mitigation. It is expected that the implementation of the activities within VNEEP can result in an annual GHG reduction of at least 0.2–0.4 MtCO₂e. Additional emission reductions can be expected if the program succeeds in replicating itself in other areas of the country as planned.

» **Established finance facility:** The VNEEP assists in establishing a well-functioning and reliable financial facility for energy efficiency improving investments in enterprises and commercial buildings.

» **Improved government coordination:** Through the implementation of the program, coordination between cities and provinces as well as between central and local level has been improved.

Why is it good practice

» The VNEEP is **the first-ever comprehensive plan** to provide measures for practicing and improving energy efficiency and conservation in all sectors of the economy nationwide in Viet Nam. It sets out clear and strategic steps from theory to actual actions to achieve the ultimate objective of the program. Therefore, it is transferrable as a model for new projects and can be used in different settings.

» The VNEEP involves **a wide range of stakeholders** including different key ministries, energy centres, the private sector and provincial bodies. All the stakeholders are coordinated by the project steering committee.

» Viet Nam has worked with energy efficiency issues for more than 15 years. Gradually the GoV has intensified efforts to promote energy efficiency and conservation through promulgating a range of energy-efficiency related policies and legal framework. The VNEEP was approved by the Prime Minister in April 2006, which **illustrates commitment and leadership at the highest political level**.

» The VNEEP offers **a long-term impact and sustainable development**. The development of the VNEEP involves the establishment of a comprehensive implementation plan and a uniform policy and legal framework system, which ensures the long-term effect.

» **Making use of professional and technical support from domestic and international actors** is an important element of the development of VNEEP, during which exchanges of best-practices between developing and developed countries can occur.

» Formulating and putting in place **a comprehensive legal system**: At each milestone, corresponding policies and legal and regulatory frameworks are issued to ensure a uniform implementation of the program from the national level to the local level. The policy, legal and regulatory framework is well conceived, consistent and forward looking but also ambitious. There are no major contradictions, gaps or overlaps.

Success factors

» **Political commitment at national and local level:** The VNEEP was approved by the Prime Minister who is the head of government of Vietnam and presides over the meetings of the Central Government and its implementation is kept continued since then. In 2006, it was firstly approved as a whole by the Prime Minister. Later, the VNEEP-phase II was approved by the Prime Minister in 2012. At the local level, the heads of provincial people's committee are also engaged in the program implementation from the beginning.

» **Involvement of various stakeholders from the outset:** The program has the involvement of a wide range of stakeholders from national bodies e.g. ministries, local bodies e.g. people's committees, private sector e.g. enterprises to domestic and international donors as well as Vietnamese people over the whole country. The program also engages the experts in different fields like environment, energy, finance, etc.

Viet Nam

Implementing a national energy efficiency programme

- » **International financial support:** It is the fact that the program mainly relies on state budget. However, the program is also successful in attracting international fund in its implementation. After the first phase, it is estimated the international financial support received by the program is approximately USD 0.8 million, and expected to mobilize about USD 8.5 million for the phase II of the program.
- » **Consistent implementation from the national level to local level:** the VNEEP is under the overall responsibility and coordination of MOIT; however, a national steering committee engaging representatives of other line ministries has been established to ensure uniformity in the program implementation (MOIT is the standing agency of the committee). MOIT is assigned to coordinate and collaborate with other ministries, sectors, provinces and other relevant entities to implement the VNEEP. The People's Committee in provinces (the highest governmental agency in the local level) is requested to establish policies on energy efficiency and conservation management at the provincial level and collaborate to implement the VNEEP at provinces.
- » **Accessing to different financial sources:** The program is financed by various resources where the state budget is predominant among the others.
- » **Mobilizing in-house and international technical assistance:** Apart from domestic technical support, the program also seeks and receives great international assistance and technical supports from different international organizations.
- » **Effective monitoring and evaluation:** The management, monitoring and evaluation of the implementation has been designed since the first phase. Regular reports on the implementation of the VNEEP have been submitted to the National Assembly for endorsement and evaluation.
- » **Well organised capacity building programmes and public awareness campaign:** The awareness raising and communication strategy and information package on energy efficiency at sector and provincial levels are developed as one of the major activities of the VNEECP. During the implementation a series of awareness raising events are carried out frequently such as workshops, competitions, mass communication (radio, television, internet, etc.), etc at both the national and provincial levels.

Overcoming barriers/
challenges

Capacity

What were the main barriers/challenges to delivery?

How were these barriers/challenges overcome?

Lack of technical skills regarding energy efficiency and lack of knowledge of systematic energy management in enterprises and large buildings.

Take advantage of both in-house technical assistance and international technical assistance to improve technical skills of energy efficiency officers and knowledge of systematic energy management for the enterprise owners.

Finance

Lack of grants and/or credit facilities to finance both the planning phases and the actual investment.

Exploit and make full use of financial sources from both domestic and international donors.

Reluctance of enterprises to focus investment on energy efficiency means that some of the financing instruments are not well suited to.

Set up relevant criteria for the enterprises that are eligible for VNEEP. Financing instruments need to be carefully evaluated before putting into use.

Lack of familiarity with financial planning and how to use external support.

Make a detailed plan to channel and allocate the external support and adopt good practices in financial planning.

Viet Nam

Implementing a national energy efficiency programme

Information

Low awareness among owners and managers of energy efficiency potential.

It is necessary to change the awareness of the enterprise owners with awareness campaigns such as training, workshops and direct consulting

Too few certified energy managers and energy consultants and insufficient expertise to design complex, integrated projects.

Cooperate with domestic and international universities, energy centres to organise training courses for energy managers and energy consultants.

Traditional priority lies in expansion rather than efficiency.

Improve awareness of the enterprise owners on energy efficiency.

Limited capacity of authorities to regulate and monitor (skills and recurrent budget).

Capacity building will be provided to the relevant authorities at central and local levels.

Lack of economic incentives due to low cost of energy.

Create economic incentives in parallel with reasonably increasing cost of energy in the energy consumption facilities.

No enforcement or sanctions for infringement of the Law on energy efficiency and conservation.

Promulgate and enforce the regulations on sanction for infringement of the law.

Institutional

Lessons learned

- » **Perfecting the organisation and personnel of both the National and Local Steering Boards:** It is crucial to establish a common steering board for the program implementation. The board's tasks should be clearly defined, and instruction should be provided for the cooperation between bodies in planning,, implementation of examinations, supervision, and advising relevant stakeholders on difficulties and needed adjustments.
- » **Coordination and liaison need to be enhanced and treated as decisive factor:** For the success of the programme and the involvement of various stakeholders, strong liaison between ministries and branches at national level, between departments and divisions at local level should be enhanced and decisive. Responsibility in the program implementation should be specified to each body and/or unit.
- » **Developing relevant content of the program and suitable procedure for the program verification and approval:** The implementer of the program needs to promptly propose and develop relevant contents of the program and ensure a reasonable time-frame for the program verification and approval.
- » **Finance allocation needs to be public and transparent:** This must be done by defining the establishing criteria and quotas for finance allocation as compulsory content in the verification documents.
- » **Tracking, monitoring and assessing are essential actions:** Hence, they need to be enhanced and put into the programme as a particular task.
- » **Setting targets and developing solutions for the program implementation are crucial:** The development of a program needs to define specific targets and missions that are reasonable, measureable and easily linked with implementation solutions.

How to replicate this practice

- » **Secure political commitment, finance and capacity support:** The MOIT designed the program so that it can work in other countries, especially in developing countries, with some reasonable modifications.
- » **Monitor, evaluate and encourage:** The participating enterprises to implement voluntary agreements to encourage all sectors to work towards and achieve energy efficiency targets.
- » **Reward participating enterprises:** For effective implementation of energy efficiency while reviewing and sanctioning the ones that refuse to take energy efficiency and conservation actions.

Viet Nam

Implementing a national energy efficiency programme

Contact for enquiries	» Mr. Nguyen Van Long, Deputy Director of Department of Science, Technology and Energy Saving, longngv@moit.gov.vn
Further key resources	» Decision on Approval of National Targeted Program on Energy Efficiency And Conservation Phase 2012–2015, http://vneec.gov.vn/en/documents.detail.html?id=48 » Asia-Pacific Economic cooperation (2009), Peer Review on Energy Efficiency in Vietnam, Report for the APEC Energy Working Group, www.ewg.apec.org/documents/VietnamPREEReport.pdf
Website(s)	» http://vneec.gov.vn/en/ » www.tietkiemnangluong.com.vn/en/
Case study author(s)	Dang Hong Hanh (VNEEC), Vu Van Quang (VNEEC) and Neha Pahuja (TERI) Edited by: Nicholas Harrison (Ecofys) Editorial support: Frauke Röser, Thomas Day, Daniel Lafond, Niklas Höhne and Katja Eisbrenner (Ecofys). Coordination by: Ecofys www.ecofys.com and The Energy and Resources Institute (TERI)
Case study contributor(s)	» Nguyen Van Long, Deputy Director of Department of Science, Technology and Energy Saving, MOIT, Vietnam » Dr. Nguyen Van Sua, Deputy Director of Vietnam Steel Association » Bui HuyPhung, Chairman of Science Council, Vietnam Energy Association » Ha Dang Son, Technical Director of RCEE – NIRAS JSC
References	» Decision No.79/2006/QĐ-TTg on Approval of National Target Program on Energy Efficiency and Conservation dated 14 April 2006 of the Prime Minister of the Socialist Republic of Vietnam » Report No.211/BC-CP dated 17 October 2011 of the Government on the result of the implementation of National Targeted Programs for the period 2006–2010, deploying the 2011 plan and proposing List of National Targeted Programs for the period 2012–2015. » Decision No.1427/QĐ-TTg dated 02 October 2012 of the Prime Minister on Approval of the National Targeted Program on Energy Efficiency and Conservation for the period 2012–2015. » Icon.com.vn (2013), Energy efficiency and conservation: savings meet target, Website, http://icon.com.vn/vn-s83-117075-633/Su-dung-nang-luong-tiet-kiem-va-hieu-qua-Muc-tiet-kiem-da-dat-muc-tieu.aspx . Accessed 27/02/2014. » Tietkiemnangluong.com.vn (2011), National conference on achievements of VNEEP-phase I from 2006–2010, Website, http://tietkiemnangluong.com.vn/home/tin-trong-nuoc/tong-ket-giai-doan-i-chuong-trinh-mtqg-su-dung-nang-luong-tiet-kiem-va-hieu-qua-8001-11047.html , Accessed 27/02/2014. » Vietnam.um.dk (2010), Final Project Document: Low carbon transition in the energy efficiency sector, Vietnam, Website, http://vietnam.um.dk/en/~media/Vietnam/Documents/Content%20English/Final%20project%20description%20for%20Ict%20for%20ee%20Vietnam%20311012%20English.pdf , Accessed 05/03/2014.



Empowered lives.
Resilient nations.



Australian Government



On behalf of:



Federal Ministry
for the Environment, Nature Conservation,
Building and Nuclear Safety

of the Federal Republic of Germany