

Vietnam Energy Efficiency Study Tour to China
August 20-23, 2018
ESMAP - Energy Sector Management Assistance Program
China World Bank Group Partnership Facility (CWPF)

Context

Vietnam (VN) has the highest energy intensity in Asia. Energy efficiency (EE) has a much lower cost than new generation, is the largest and cheapest solution to achieve the NDC targets, and helps enhance energy security. The Government of Vietnam (GoV) is preparing its National Energy Efficiency Program from 2019 to 2030. The Bank team, with ESMAP support, is providing advisory service and technical assistance to help GOV shift from the current voluntary approach to mandatory scheme to be more effectively achieve its EE targets outlined in the National EE Program. This is a major shift in the EE program in Vietnam and this National EE program will shape the EE agenda in VN over the next ten years.

In addition, the Bank Vietnam EE program has just started an EE credit line operation of Vietnam Energy Efficiency for Industrial Enterprises Project, and recently received GCF funding for partial risk guarantees under the Vietnam Scaling Up Energy Efficiency Project.

Under this context, the Bank team organized this study tour to China for the Vietnamese government to learn the successful EE mandatory policies and institutional framework for implementation, business models, and financial mechanisms. China's experiences are of high interest and relevance to Vietnam. Especially, GoV hopes to learn the mandatory EE policies, from setting and allocating the EE targets to implementing and monitoring, institutional frameworks, penalty and incentive programs to achieve EE targets. The VN delegation is also interested in learning the ESCO experience and EE financing mechanisms.

The Government of China has embarked on one of the most aggressive energy conservation campaigns in the world. From 1980 to 2010, China's energy consumption increased 5-fold to fuel an economy that increased 18-fold. Energy intensity per unit of GDP has declined by about 70 percent during the same time period. This indicates that energy and emission growth have been largely decoupled from economic growth. China's energy savings over the past two decades equates to about half of the energy savings worldwide. These achievements are largely thanks to the Chinese government's commitment, mandatory targets and strong financial incentives, and effective policies for energy conservation and emission reduction.

With the Bank's support and the government's policies, China's ESCO industry has grown from the initial three two decades ago to nearly 6,000 companies with nearly \$15 billion in energy performance contracts in 2016. In addition, the China Energy Efficiency Financing Program (CHEEF), an EE credit line, financed a total of \$3 billion of energy efficiency investments, and leveraged the IBRD loan more than 7 times. It achieved an annual energy savings of 4.4 million tons of coal equivalent and reduced CO₂ emissions of 10.7 million tons, equivalent to avoiding 3 GW of coal-fired power plants each year.

To support the development of EE policies in Vietnam, the World Bank has organized this EE study tour to China, co-funded by ESMAP and China World Bank Group Partnership Facility (CWPF).

Objective

The goal of the EE study tour is to support the development of EE policies to shift from voluntary approach to mandatory scheme in Vietnam by introducing Chinese experience on mandatory EE policies, ESCO business models, and EE financing mechanisms.

Participants:

35 participants from the Vietnamese delegation participated in the study tour, led by Director General and Deputy Director General from MOIT, consisting of Vice President of EVN, deputy governors of provinces, Prime Minister's office, MOF, provincial EE centers, and financial institutions in Vietnam. On the Bank team, Franz Gerner, Thi Ba Chu, Christophe de Gouvello, Celia Cui, Hoa Chau Nguyen, and Xiaodong Wang participated in the study tour.

Summary:

The Knowledge Exchange EE study tour took place on August 20 to 23, 2018 for high-level Vietnam government officials in Beijing and Chongqing for the VN delegation to learn the successful Chinese EE experience at both national and provincial level. Please see attached the detailed agenda.

The workshop was opened by Director General Ren Shuben from Energy Conservation and Environmental Protection Department of National Development and Reform Commission (NDRC), Country Director Bert Hofman, Director General Nguyen Anh Son from VN MOIT, Deputy Director General Yang Bo from National Energy Conservation Center (NECC). Experts from NDRC, NECC, Energy Research Institute (ERI) of NDRC, China National Institute of Standardization, China Energy Service Company Association, ESCOs, local government, financial institutions, IFC, and other energy conservation companies and manufacturers introduced their experiences and lessons learned in EE development in China.

The first two days of the study tour was held in Beijing, focusing on the following topics: (i) Chinese mandatory EE schemes and policies: setting and allocating targets, implementing targets, financial incentive policies, and institutional framework for monitoring and implementation; (ii) Chinese experience on EE standards and labelling, (iii) ESCO development and business models; (iv) EE financing mechanisms on EE credit lines and risk sharing; and (v) EE technologies and case studies. A field trip was organized to visit the net zero energy building at the Institute of Building Environment and Energy of China Academy of Building Research (CABR). The trip offered a unique opportunity for the participants to learn first-hand experience on how this building achieved its target of “25 kWh/m² energy consumption, zero use of fossil fuel for heating during winter, cooling energy consumption reduced by 50% during summer” by applying latest technologies, such as solar PV, medium and high-temperature solar collectors, thermal storage, solar driven absorption chiller, ground source heat pump, solar tube, heat

recovery, energy management systems, water recycling, waste management, and PM2.5 management, among others.

The second half of the study tour was organized in Chongqing during August 22 to 23 for the Vietnamese delegation to learn implementation of energy conservation policies and EE monitoring and supervision at provincial level. A field trip on August 23 was organized to 2 industrial enterprises, who successfully implemented EE projects – EE improvement of chemical production processes at Sinopec Sichuan Vinylon Works, and the 353.5 MW of waste heat and waste pressure recovery for power generation project at Chongqing Iron and Steel Company and its energy management center.

Results:

The event was well-received, and featured a dynamic exchange of knowledge between China and Vietnam participants. The Vietnamese government has decided to adopt the Bank team's recommendation for mandatory approach in the next National EE Program, which plans to allocate the national EE targets to the provincial level. The National EE Program will be submitted to the Prime Minister's office for approval.

The study tour provided a platform for decision-makers from Vietnam to learn about all aspects of EE policy-making and implementation, business models and financing mechanisms from their peers from China. Participants from Vietnam especially appreciated the opportunity to learn about Chinese experience at the implementation level. This included allocating the national mandatory EE targets to the provincial level, institutional framework for monitoring and enforcement, penalty and incentive policies, ESCO development, latest EE technologies, financing mechanisms and implementation schemes. Participants also benefited from the networking opportunity with their peers.

China's EE development experiences and lessons learned was successfully disseminated through the study tour. WB has been working closely with the Chinese government, banks, ESCOs, in implementing multiple EE projects. The experiences gained from active and completed WB/GEF financed EE projects in China, such as the China Energy Efficiency Financing Project, China Energy Conservation II Project, IFC's CHUEE Project, and the ongoing lessons from the P4R program on Innovative Financing for Air Pollution Control in Jing-Jin-Ji, were shared by our partners.

For Bank staff, the workshop provided an opportunity to advance country engagement agendas with the VN clients.

Next Step:

The Bank team agreed with GOV during the study tour that the Bank team will support MOIT to develop methodology and indicators and allocate national EE targets to provincial level, and improve EE policies and measurement and verification systems to achieve the target in the National EE Program. As requested by MOIT, the Bank team is also planning another study tour

to India to learn the Indian EE experience on mandatory EE policies of PAT scheme and visit super-ESCO EESL.

Acknowledgement

The World Bank team was led by Xiaodong Wang. Special thanks go to Franz Gerner, Thi Ba Chu, Hoa Chau Nguyen, Na Han, Shanshan Ye, Celia Rong Cui, and Yun Wu for engaging the clients and arranging travel logistics for the participants and speakers, as well as Christophe de Gouvello for his support and participation, with co-funding from the CWPF TF on *Sharing China's Clean Energy Experiences*. We are grateful for Bert Hofman, Country Director of China, Mongolia, and Korea, to open the workshop. The team would also like to thank the NECC team, who is our organization partner and provided valuable support to invite speakers, arrange site visits, and organizing the travel logistics in China for this high-level visit.