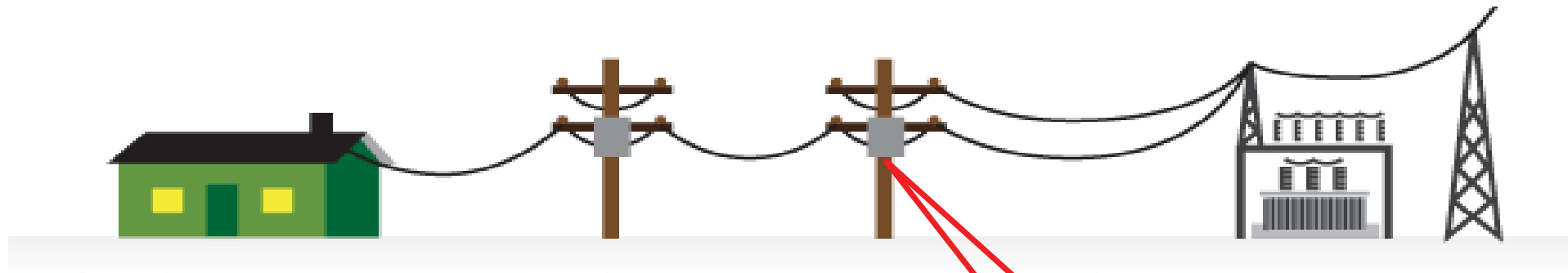


**Success stories from energy projects contributing
to low carbon/decarbonizing society in Asia
-the case of amorphous transformer projects-**

Makoto Kato
Principal Researcher
Overseas Environmental
Cooperation Center, Japan

High efficiency amorphous transformers project under the Joint Crediting Mechanism

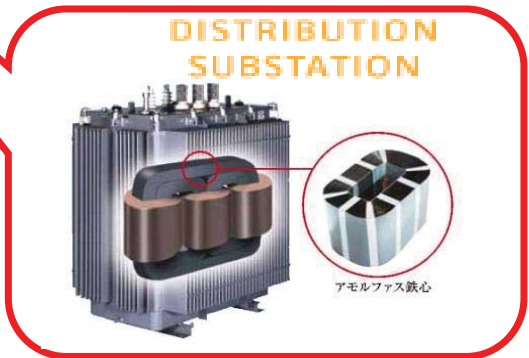
The purpose of this project is to reduce CO2 emission by introducing amorphous high efficiency transformers in power grid systems, which allows avoiding distribution loss of electricity



HOME

TRANSFORMERS

DISTRIBUTION SUBSTATION



Gradual expansion of the projects

2014

- EVN SPC (total 1,618units)
- CO2 ER : **610**tCO₂/y

2015

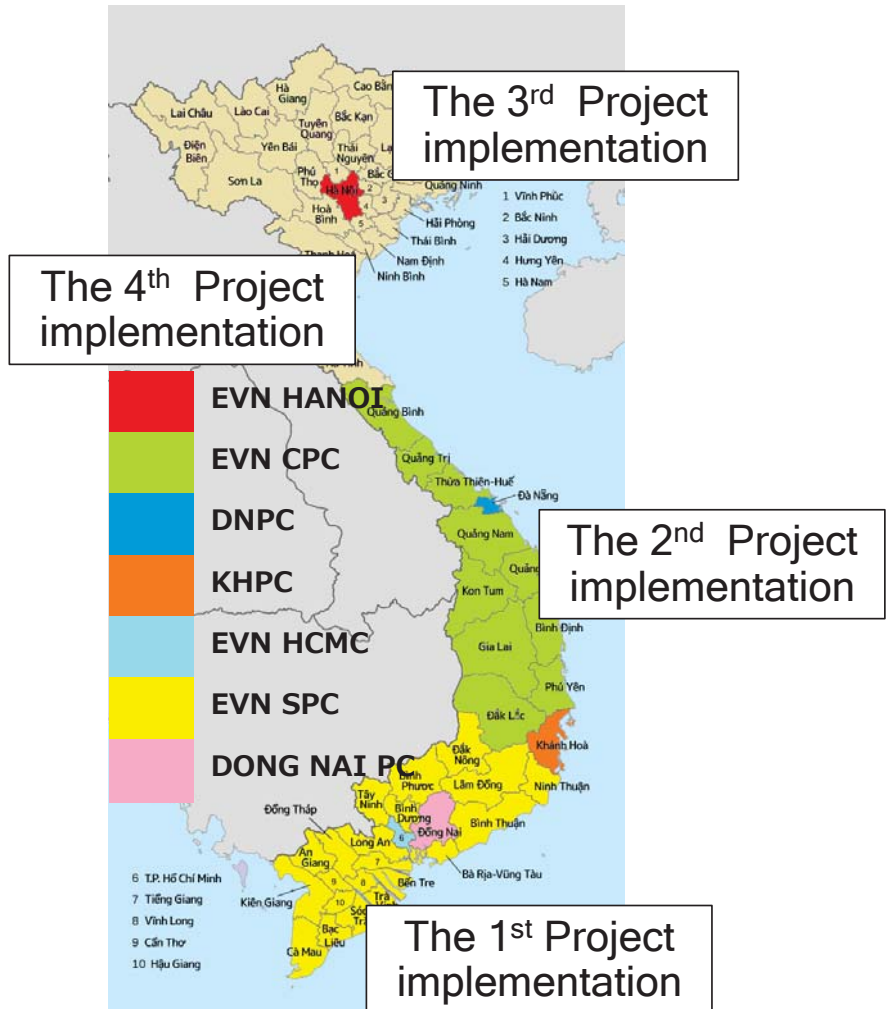
- EVN SPC/EVN HCMC/EVN CPC/Danang PC (total 4,843units)
- CO2 ER : **4,404**tCO₂/y

2016

- EVN SPC/EVN Hanoi/Khanh Hoa PC/ Dong Nai PC (Total 3,856units)
- CO2 ER : **2,169**tCO₂/y

2017

- Khanh Hoa PC/Dong Nai PC (Total 2,145 units)
- CO2 ER : **1,449**tCO₂/y



Success story and hints from the expansion in Viet Nam

Background

- Power companies' need for increasing EE in power transmission system
- Meeting needs for fundamental infrastructure of the power sector

Benefits of Projects

- Reduction of power loss
- Increased stability of power supply
- Improved economic activity
- Reduced malfunction

Emerging outcomes

- Penetration of the technology/adoption of higher standard (procurement change)
- Self sustained business by local manufacturers

Success story and hints from the expansion to Lao PDR

Local company partner

- Électricité du Laos (EDL)

Implementation period

- Sept 2017~March 2019

Unit for introduction

- 1,395units

capacity

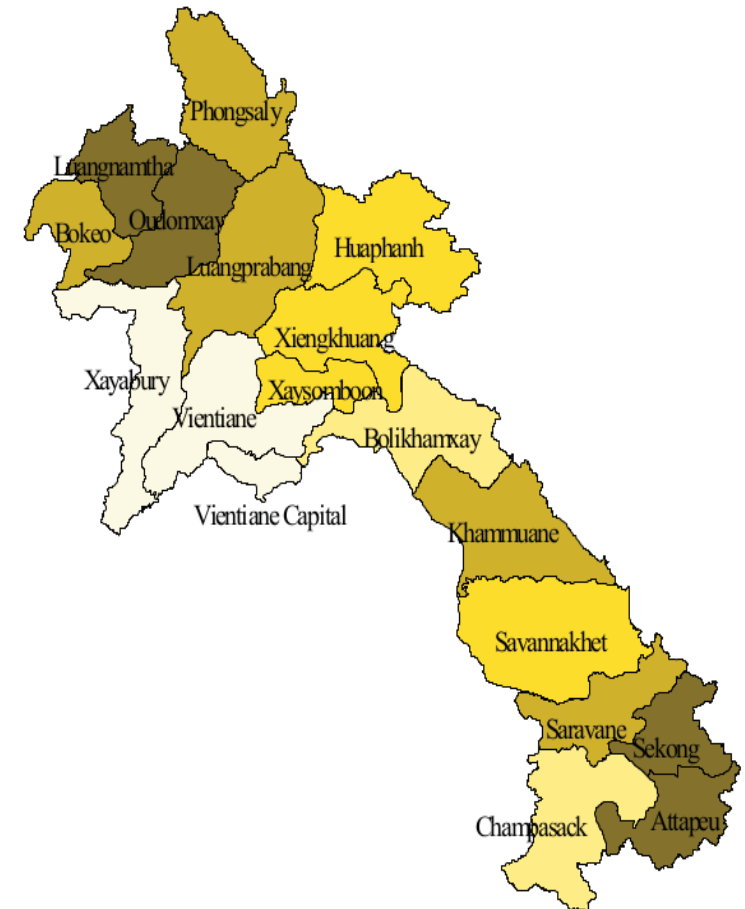
- 182MVA

CO2 emission reduction

- 2,099tCO₂/y

Energy loss reduction

- 3,642MWh/y



Success story and hints from the expansion to Lao PDR

Background

- Power companies' need for increasing EE in power transmission system
- Meeting needs for fundamental infrastructure of the power sector

Benefits of Projects

- Reduction of power loss
- Increased stability of power supply
- Improved economic activity
- Better life condition by reduced malfunction

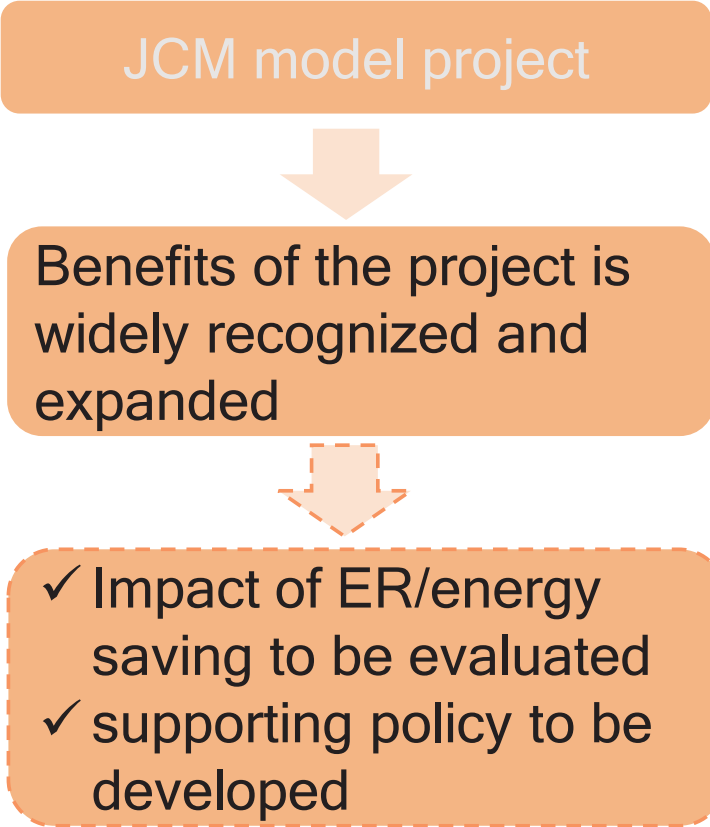
Emerging outcomes

- Increased expectation for advanced low carbon technologies by the local company

Conclusion

- A series of the JCM projects on amorphous transformer in Viet Nam successfully demonstrated the benefits of EE, both at financial return and stability of operation for the power transmission companies (spread over from 1 company to the other 7 companies).
- From the experience of the project, some company already restructured their procurement standard (from simple initial cost competition to life cycle cost).
- The Lao case was only possible after the 4 projects were operating in Viet Nam, in terms of having a good showcase next door.

Story of scaling up the energy project in the case of amorphous transformers



- Success of first project.
- Reviewing impact.
- Support self-reliant growth of the technology.

