

Introduction of Amorphous High Efficiency Transformers in Power Distribution Systems

Yuko-Keiso Co., Ltd.

www.yukokeiso.com

Agenda

1. About Us
2. Project Outline
3. Advantages and Challenges

1-1. About Yuko-Keiso

Company name	Yuko-Keiso Co., Ltd.
Established	December, 1963
Head office	Tokyo
Office & Subsidiaries	Japan: Tokyo, Yokohama, Saitama, Tochigi Vietnam: Hanoi
Employees	160
Capital	100 million JPY
Annual sales	3.52 billion JPY (Fiscal year ended May 31, 2018)



1-2. Yuko-Keiso's Business

Central monitoring system



Security system



Air-conditioning control system



Sales of instruments and automatic control equipment

Engineering service for instrumentations and automatic control systems



Design and installation of equipment, air-conditioning systems, security systems and disaster prevention equipment, and facilities

Maintenance and management of equipment and facilities

1-3. About Yuko Vietnam

Name	Yuko Vietnam Co., Ltd.
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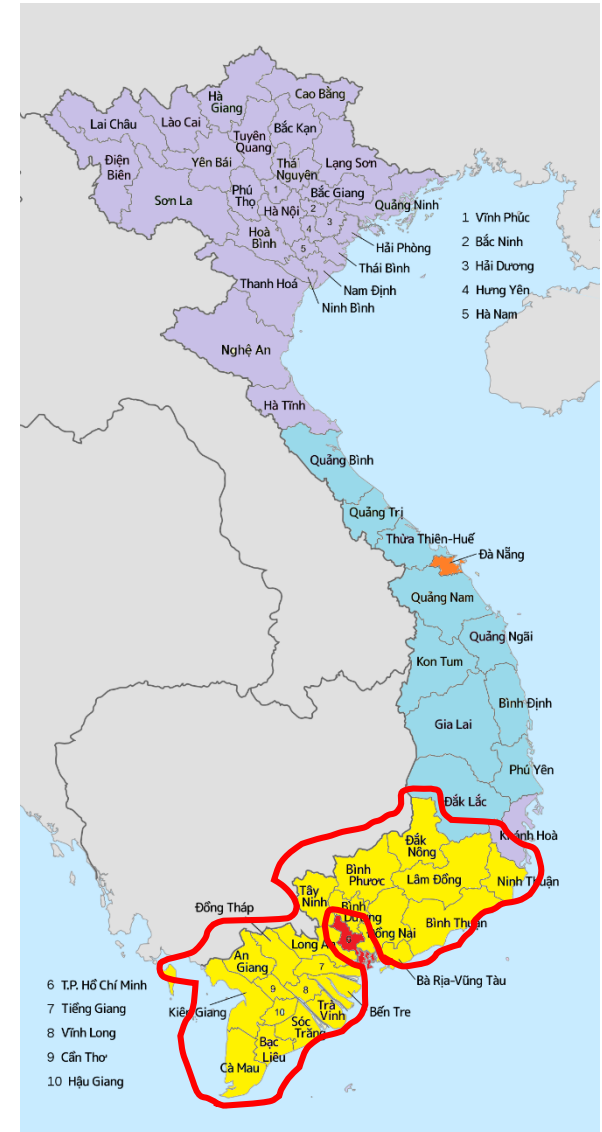
Established	July, 2012
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Location	No.32 Pham Huy Thong Str., Ba Dinh District, Hanoi, Vietnam
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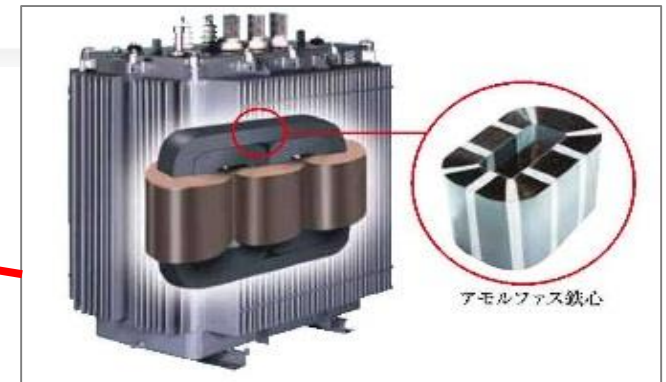
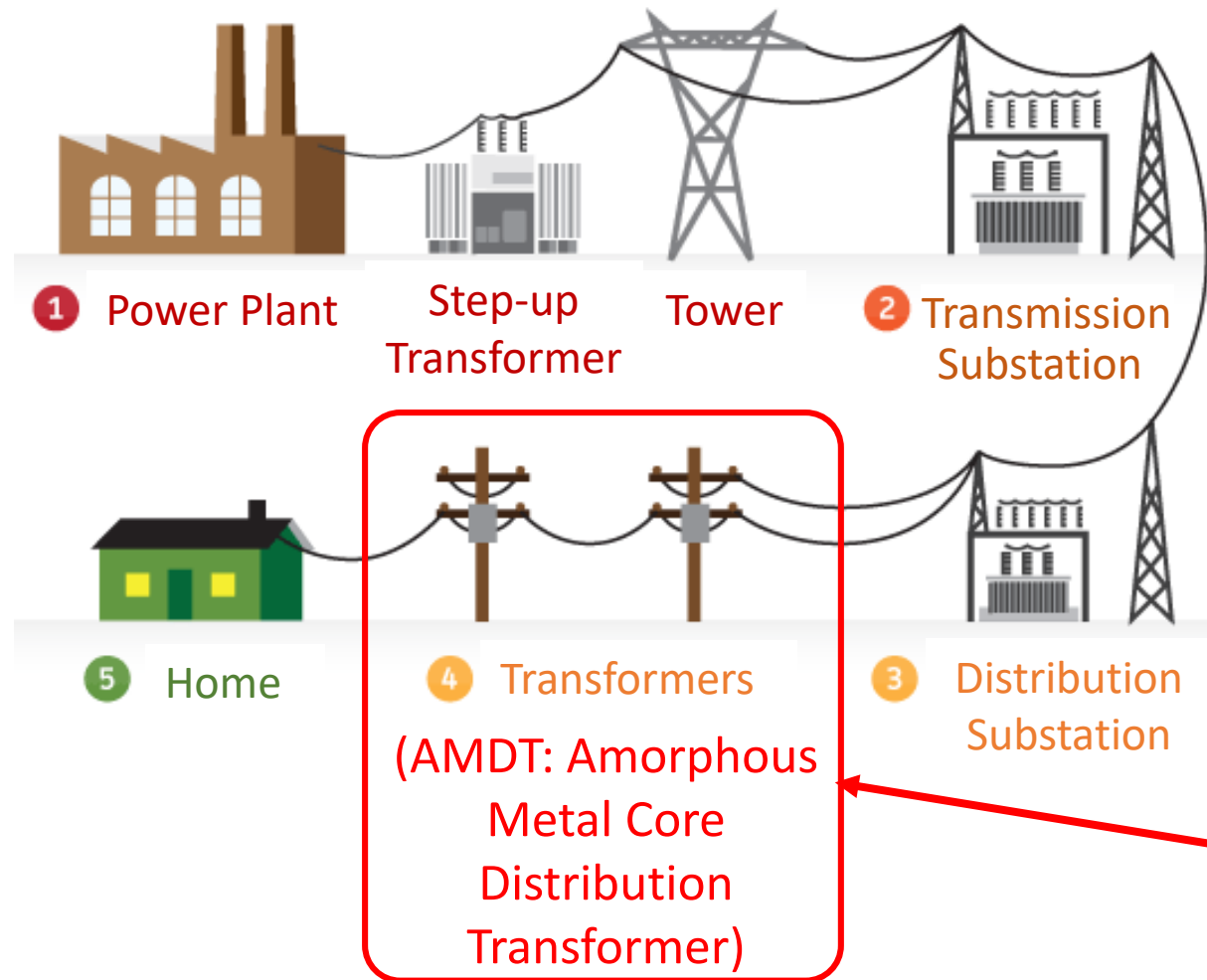
Lines of business	<ol style="list-style-type: none">1. Designs, construction and maintenance of instrument and automatic control systems2. Support for feasibility study(FS) and Measurement, Report and Verification3. Support for JCM
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2-1. General Information

Project Name	Introduction of Amorphous High Efficiency Transformer in Power Grids
Project Participants	Yuko-Keiso & EVN SPC
Total equipment cost	Approximately 400 million JPY
Implementation Period	25/02/2015~10/02/2016
Technology	Pole-mounted transformers with amorphous alloy core
Expected GHG Reductions	623 tCO ₂ /year



2-2. Installed Equipment



2-3. Project Process

Meeting about installation place



Checking delivered AMDTs at PC



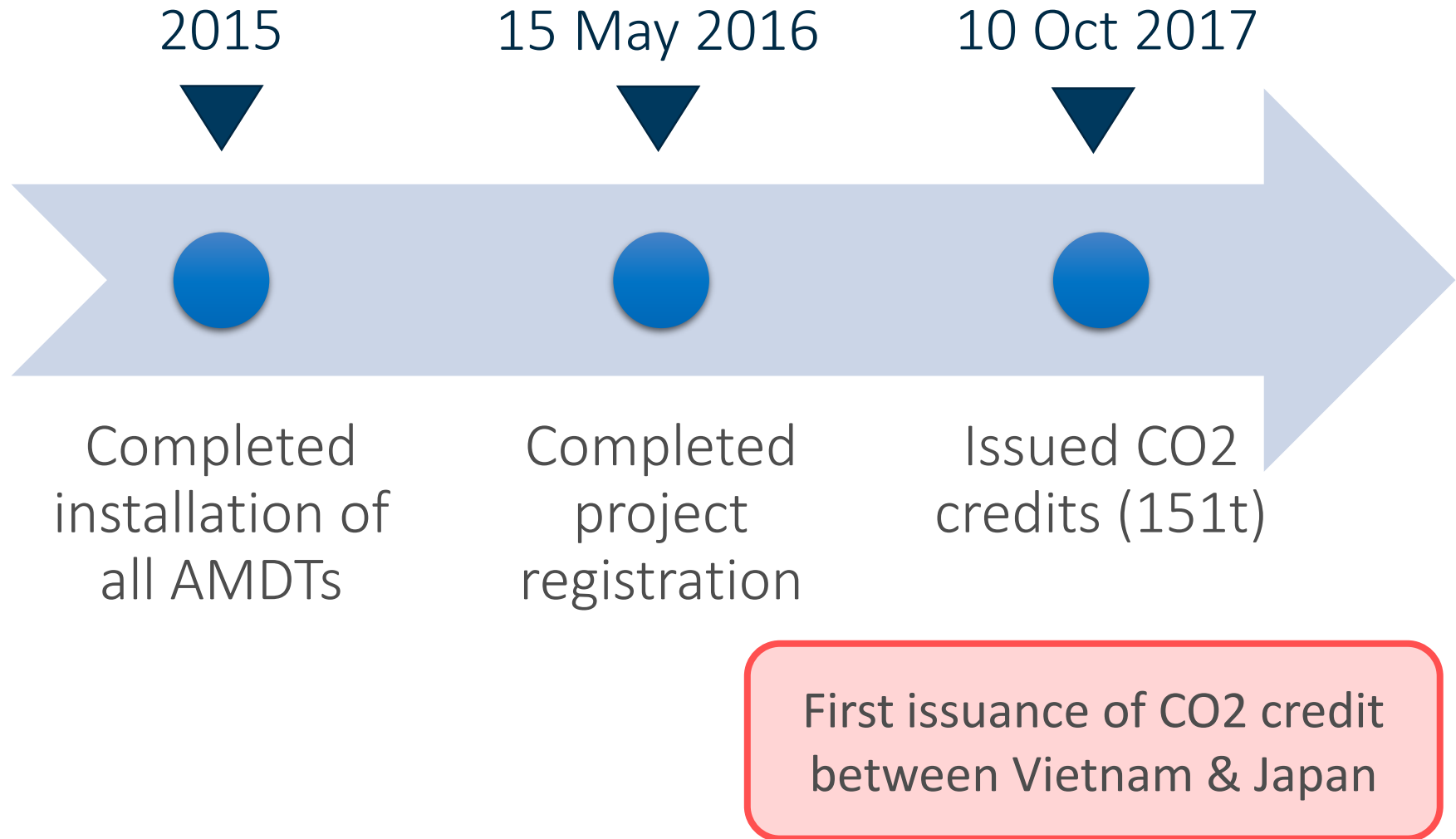
Interview for Verification with TPE



Checking installed AMDTs



2-4. Current Status



2-5. Domestic Expansion

2014

- EVN SPC (1,618 units)
- CO₂ reduction: 610tCO₂/year

2015

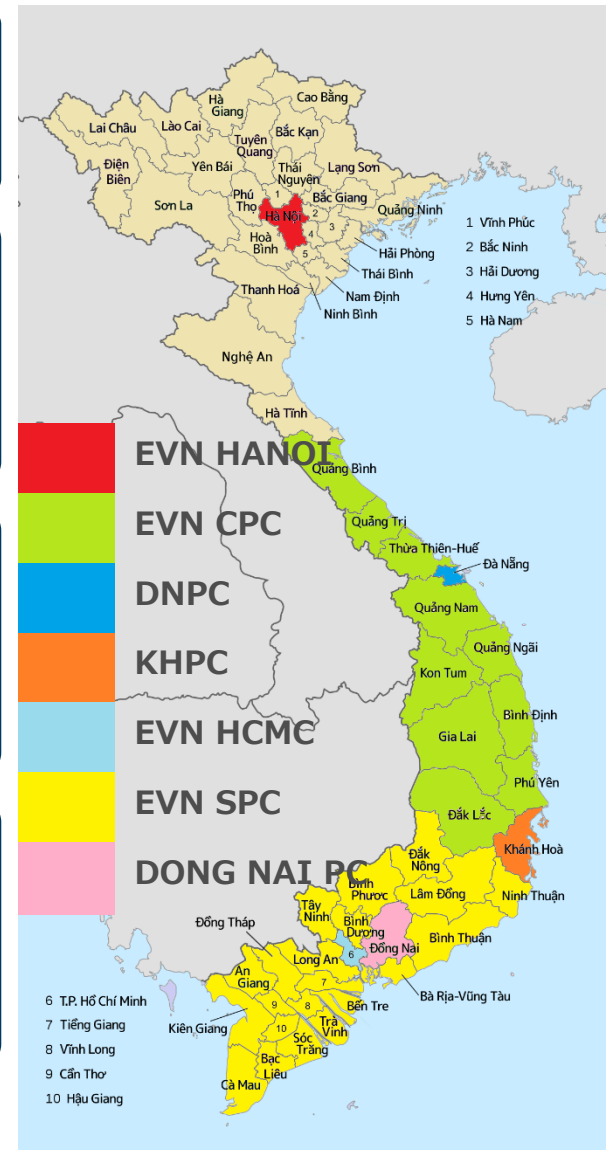
- EVN SPC, EVN HCMC, EVN CPC, Danang PC (4,843 units)
- CO₂ reduction: 4,404tCO₂/year

2016

- EVN SPC, EVN Hanoi, Khanh Hoa PC, Dong Nai PC (3,856 units)
- CO₂ reduction: 2,169tCO₂/year

2017

- Khanh Hoa PC, Dong Nai PC (2,145 units)
- CO₂ reduction: 1,449tCO₂/year



2-6. Overseas Expansion

The project expanded to Laos in 2017.

Project Name	Introduction of Amorphous High Efficiency Transformers in Power Grid
Project Participants	Yuko-Keiso & ELECTRICITE DU LAOS
Period	Sep/2017～Mar/2020
Technology	Pole-mounted transformers with amorphous alloy core
Number	1,395 units



3-1. Advantages

| Subsidy for 50% of total equipment cost

EVN SPC introduced more AMDTs than initial planned.

| Solid installation plan by EVN SPC

We could implement the project smoothly.

| Contribution to capacity building

Hitachi Metal transferred technology to THIBIDI effectively.
It enabled THIBIDI to manufacture AMDTs in Vietnam.

3-2. Challenges

| Long monitoring period

We need to monitor the operation status until 2035.

| Long property management period

We need to manage AMDTs for 18 years. (Japanese legal durable years)



Close contact with each other & Information sharing
are important!

Thank you for your kind attention!



<http://www.yukokeiso.com/english/>



<http://www.yukovietnam.com/>