



Processes and Key points for forming JCM projects

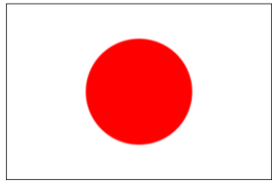


Masayoshi FUTAMI
Principal Researcher
Overseas Environmental Cooperation Center, Japan

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1. The role of OECC roles on the JCM
2. Key points for forming JCM projects
3. Good practices of JCM projects
4. Success factors for forming JCM projects

1. The role of OECC on the JCM



Based on local needs in Ukraine

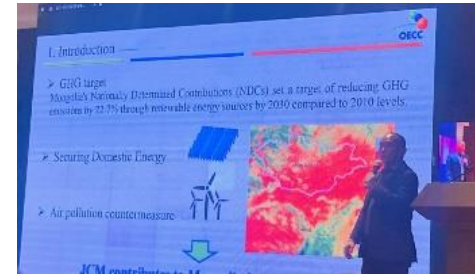


- Identify local needs, potentials and environmental issues through local dialogue

- Technology study
- GHG reduction methodology development

- Support for creating business flows
- Clarifying issues and resolving issues for JCM application

Application to JCM model project finance
- Support preparation application forms



1. The role of OECC on the JCM

Information dissemination on the JCM

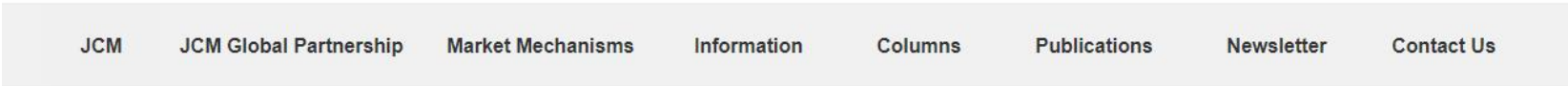


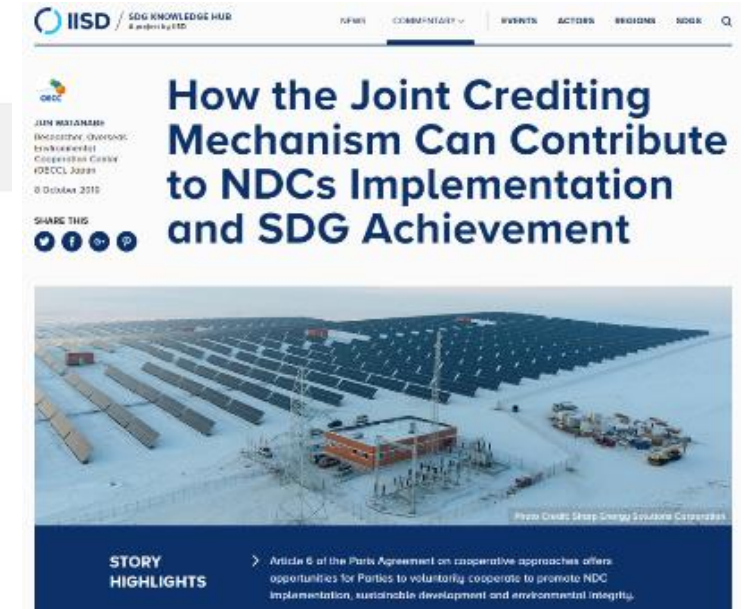
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Sharing of various JCM basic information



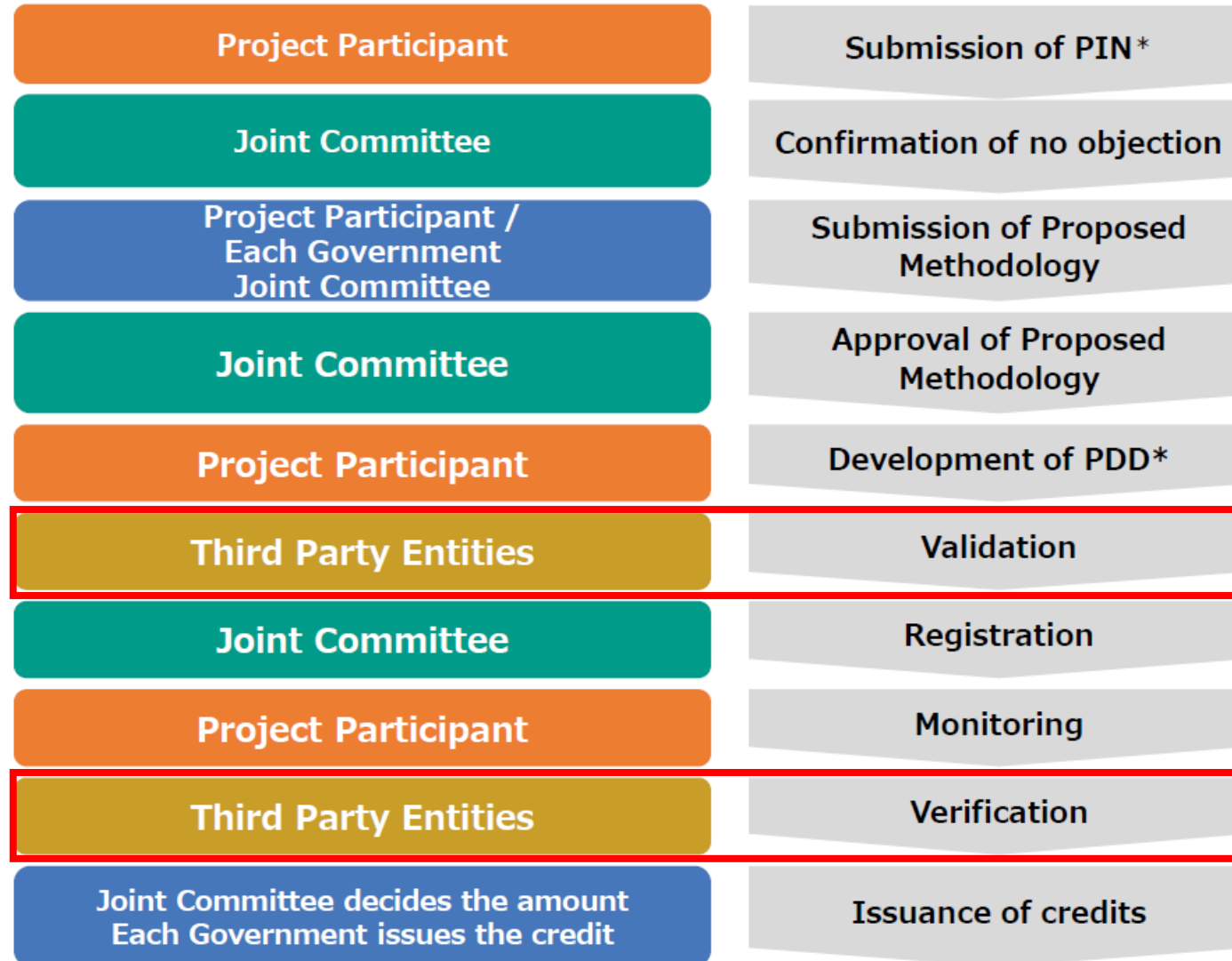
<http://carbon-markets.env.go.jp/eng/index.html>



Video production for good practices of the JCM

1. The role of OECC on the JCM

Support for Validation and Verification of JCM projects



2. Key Points for forming JCM projects

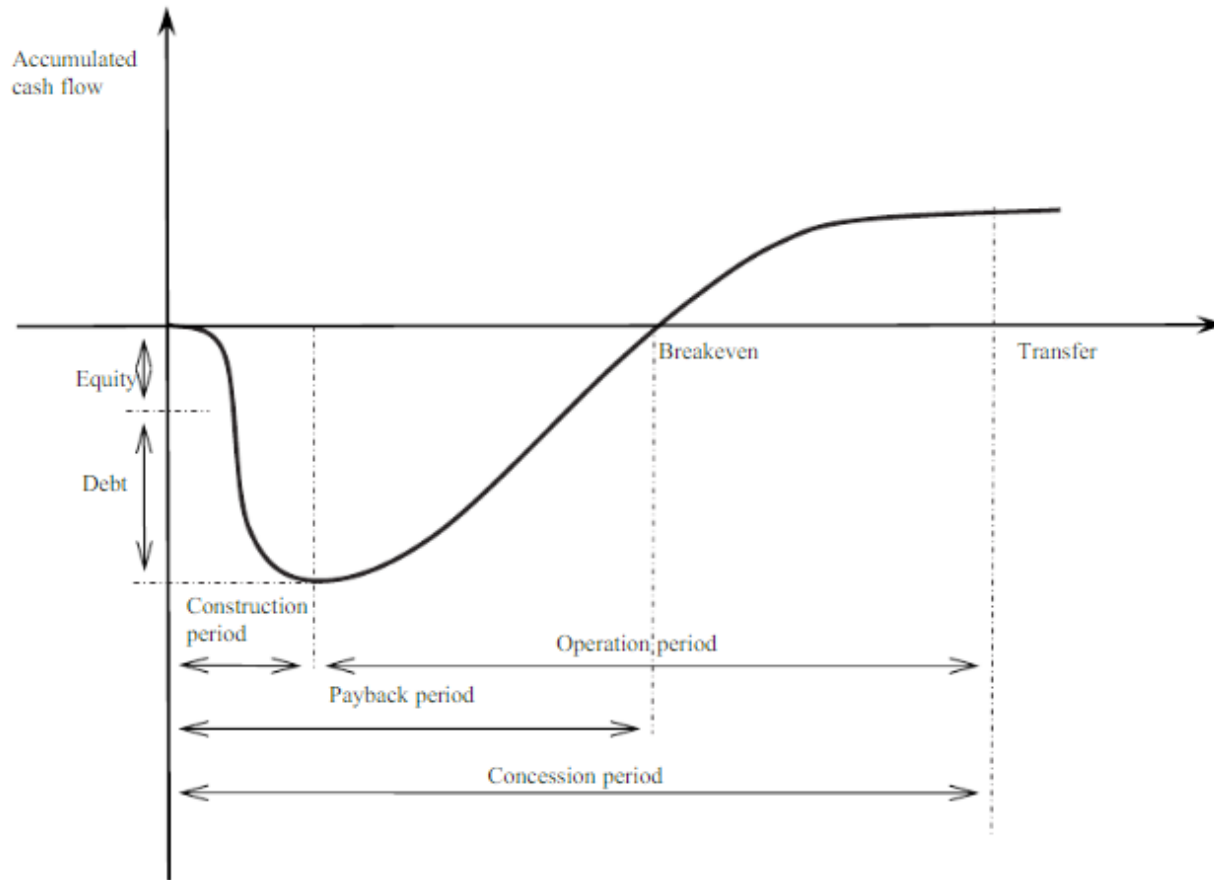
Priority technologies of the JCM

- | | |
|---|---|
| <ul style="list-style-type: none">➤ Solar power generation➤ Wind power generation➤ Geothermal power generation➤ Hydro power generation➤ Waste to energy | <ul style="list-style-type: none">➤ Storage battery & Electric grid system➤ Energy-saving infrastructure➤ Hydrogen technology➤ Carbon Capture and Storage➤ Ammonia fuel |
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2. Key Points for forming JCM projects

Is it profitable as a business? (Business feasibility / sustainability)



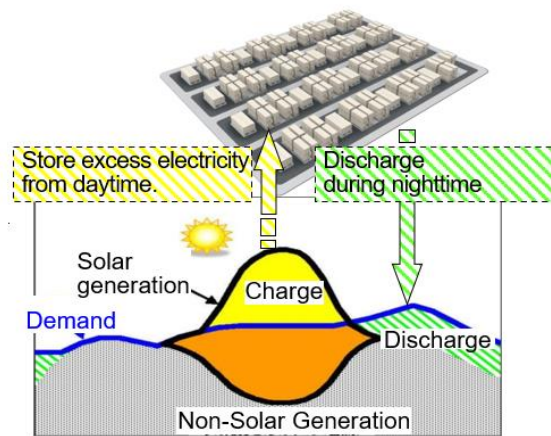
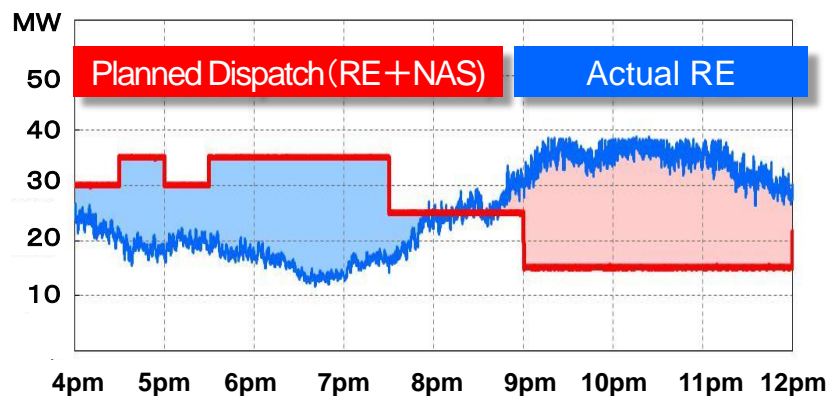
- ✓ Establishment of an environmental business model including securing all necessary licenses and permissions
- ✓ Robustness of business return on investment while securing revenue source such as Power Purchase Agreement (PPA)
- ✓ Financial arrangement including loan with appropriate interest rates

2. Key Points for forming JCM projects

Utilization of advanced technologies toward decarbonization society

The JCM recommends the introduction of advanced technologies

Storage Battery



NGK INSULATORS, LTD.

Digital power mitigation



NIES supercomputer

Green hydrogen

Pollutants emission = 0
CO₂ emission = 0

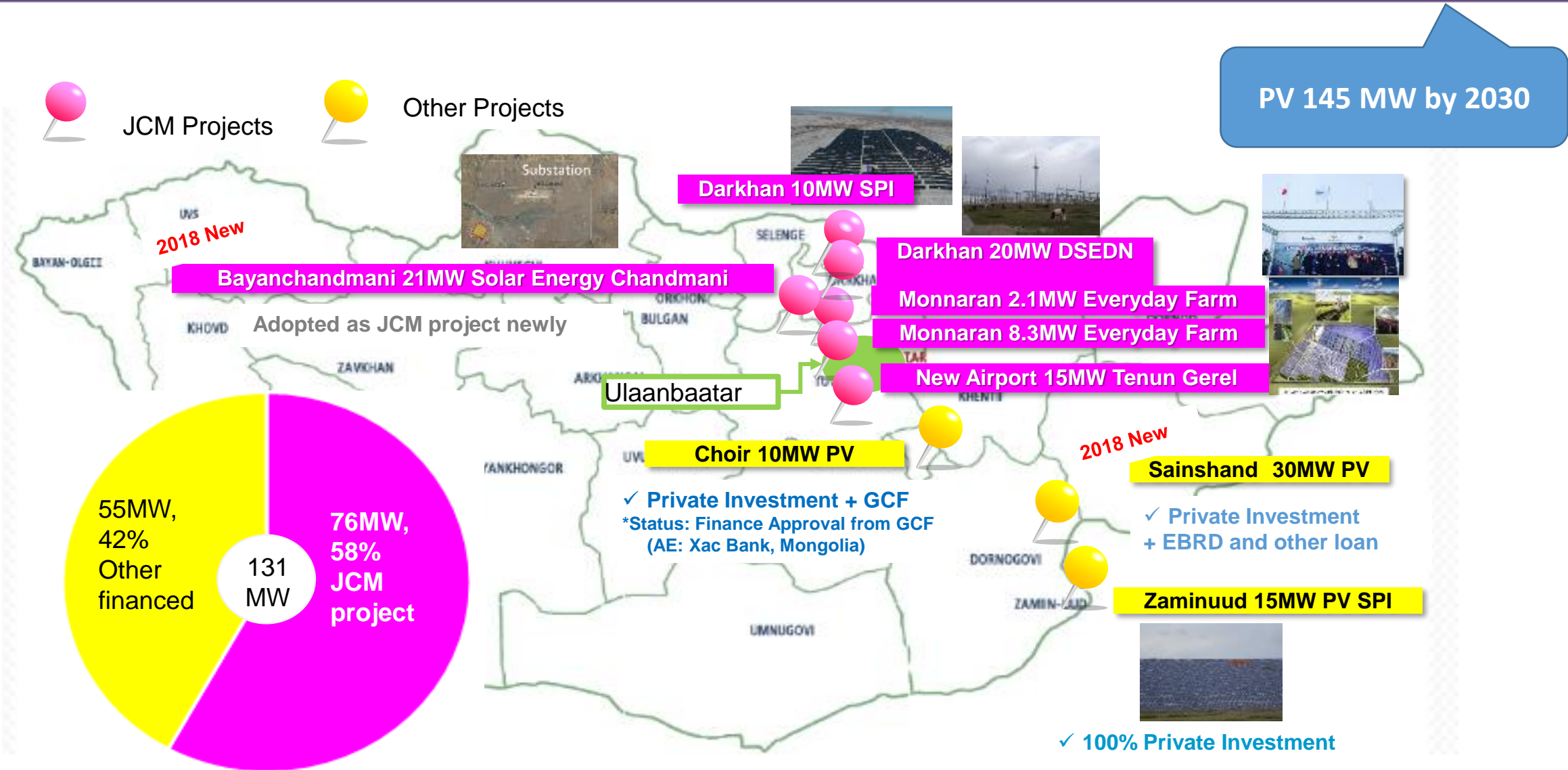


3. Good practices of JCM projects

OECC has been successfully supported the project development for 26 projects

Year	Partner country	Technology introduced and project boundary	GHG reduction (tCO2/year)
2020	Myanmar	7.3MW Solar PV in Mandalay International Airport and Yangon City	3,276
2020	The Philippines	2MW Solar PV at Shopping Mall (JCM Eco Lease Scheme)	1,476
2020	Case3 Vietnam	2MW Solar PV for Pellet Factory	1,024
2019	The Philippines	Biogas Power Generation and Fuel Conversion Project in Pineapple Canneries	52,156
2019	Mongolia	Fuel Conversion by Introduction of LPG Boilers to Beverage Factory	5,781
2018	Mongolia	21MW Solar PV in Bayanchandmani	27,008
2017	Case1 Mongolia	20MW Solar PV in Darkhan City	22,927
2017	Mongolia	15MW Solar PV in New Airport Suburb	18,438
2017	Indonesia	Absorption Chiller at Chemical Factory	1,084
2017	The Philippines	1.2MW Solar PV at Refrigerating Warehouse	838
2017	The Philippines	1.53MW Solar PV at Auto Parts Factories	1,124
2017	Case2 Laos	Amorphous Transformers in Nationwide Power Grids	2,099
2017	Viet Nam	Amorphous Transformers in Southern and Central Power Grids II (phase 4)	1,469
2016	Thailand	1.5MW Solar PV and EMS at Paint Factory	1,344
2016	Cambodia	800kW Solar PV project at International School	772
2016	Case2 Mongolia	8.3MW Solar PV at Farm in Ulaanbaatar Suburb	10,580
2016	Viet Nam	Amorphous Transformers in Northern, Central and Southern Power Grids (phase 3)	2,098
2015	Mongolia	10MW Solar PV in Darkhan City	14,746
2015	Mongolia	2.1MW Solar PV at Farm in Ulaanbaatar Suburb	2,707
2015	Bangladesh	High Efficiency Loom at Weaving Factory	1,518
2015	Case2 Bangladesh	340kW PV-diesel Hybrid System at Fastening Manufacturing Plant	265
2015	Viet Nam	Amorphous Transformers in Southern and Central Power Grids (phase 2)	3,564
2014	Viet Nam	Amorphous Transformers in Southern Power Grids (phase 1)	610

Case I: Increasing solar power generation for NDC

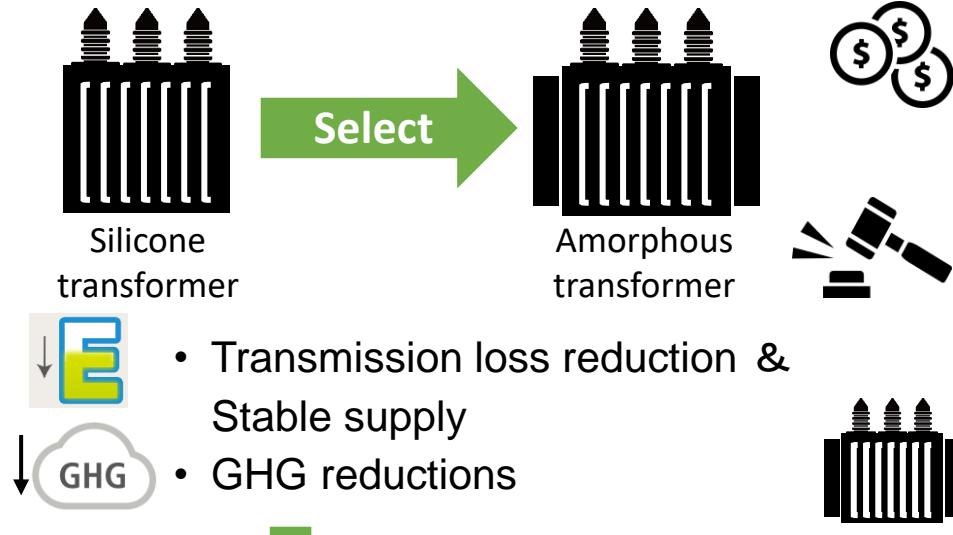


*JCM related Contribution for NDC in Mongolia: 76 MW

*Private Investment PV Project by the trigger of successful JCM projects: 55MW

Case2: Transferring & replicating low-carbon technologies

In the 2015-2019 period, electricity loss was cut by about 29.7 billion kWh compared to 2010 and helped reduce emissions by 26.5 million tCO₂ (NDC 2020).



- More expensive than conventional product

JCM: Reducing initial investment cost

- Environmental performance is not sufficiently considered in procurement process

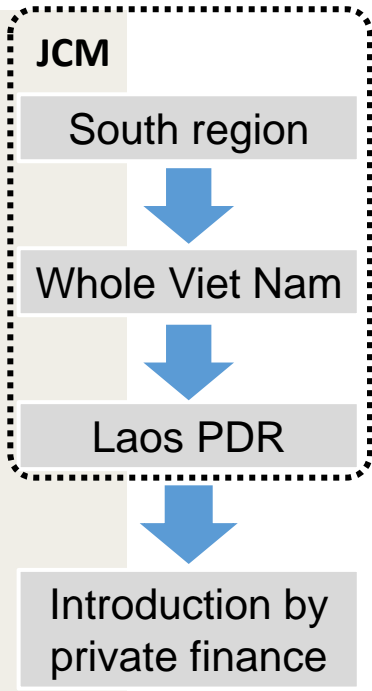
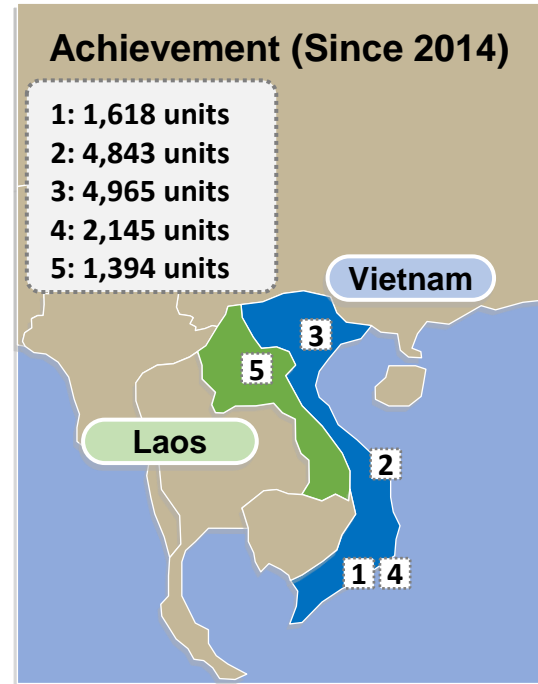
Local Power Authorities : Revising Procurement process

- Challenges for introducing new technology

Cooperation between Japan (amorphous supply) & Viet Nam (Transformer production)

Power loss in Viet Nam Electricity's systems has reduced from 7.24% in 2017 to **6.83% in 2018** and achieved the loss rate target of 7.2%. *EVN news

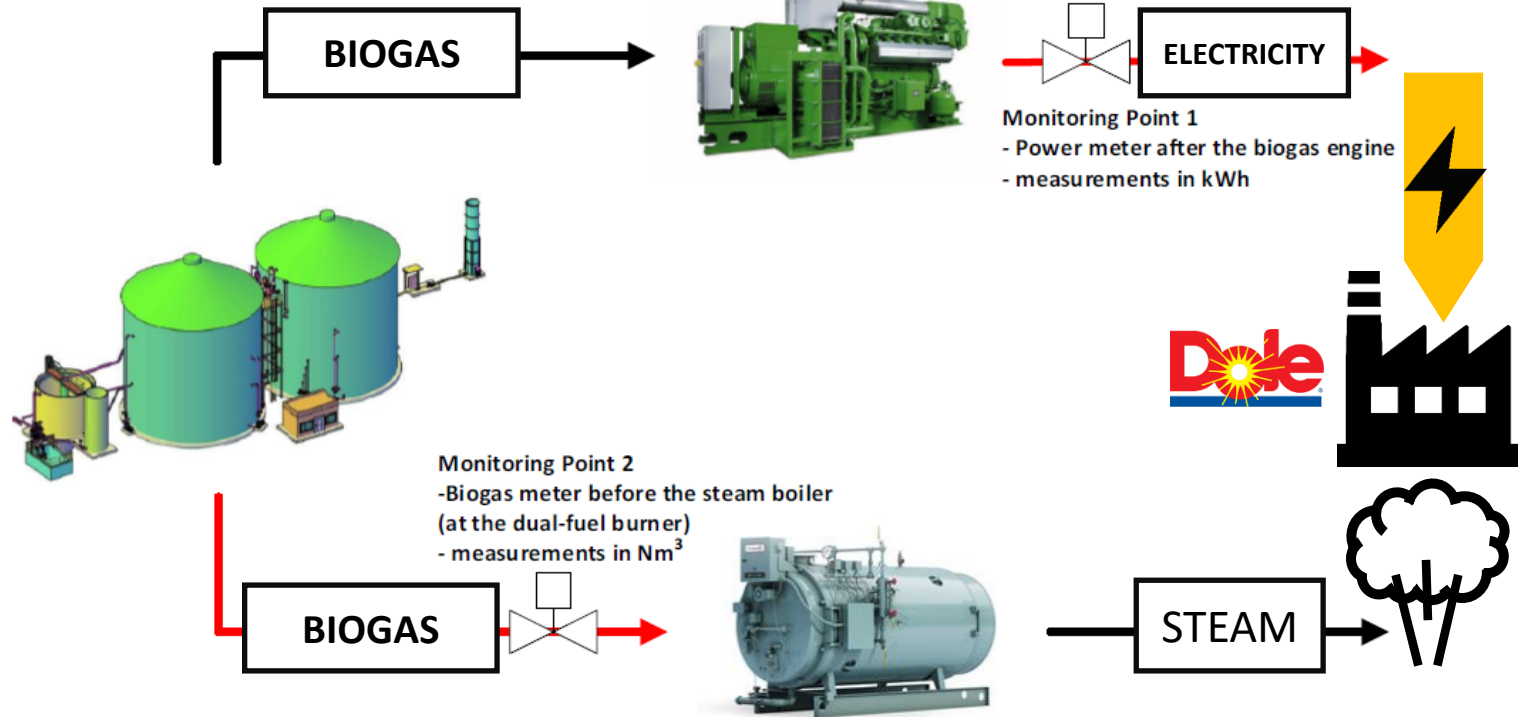
- OECC formed a scheme where only iron cores were exported from Japan and transformers were manufactured locally, which led to local competition and price reduction, thus taking away subsidies.
- As a top runner technology, Amorphous transformers became a procurement criterion for EVNs (VIETNAM ELECTRICITY).



Case3: Promoting large-scale GHG emissions reduction by Biogas Generation



Pineapple fruit waste



GHG reduction: 52,156 tCO₂/year

- By Power Generation: 11,881 t-CO₂ reduction / year
- By Boilers: 40,275 t-CO₂ reduction/ year

***INDC aims to reduce 70% GHG emissions by 2030 through improved power supply and proper disposal of waste.**

Lowering electricity cost for the operation in Dole Philippines

4. Success factors for forming JCM projects

- ✓ Robustness of payback strategies of decarbonization project
- ✓ To close alignment with eager project participants both local and Japanese side
- ✓ To simplify the methodology to calculate GHG emission reduction and synchronize the operation parameter

Thank you for your attention!



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