

3-2. 6th Energy Efficiency Policy Workshop

APERC Workshop

The 64th Meeting of APEC Energy Working Group (EWG64)
31 October 2022 (GMT+8)

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Workshop Topic & Agenda

- **Topic**

- Energy Efficiency Project Financing

- **Agenda**

09:00-09:05	<p>Opening Remarks by Moderator Barbara Tyran, Director of the Macro Grid Initiative, American Council on Renewable Energy (ACORE)</p> <p>Welcome Remarks by APERC Munehisa Yamashiro, Vice President</p>
Session 1	Project Financing: Expanding Investment in Energy Efficiency (Moderated Discussion)
09:05-10:00	<ul style="list-style-type: none"> • Vijeta Jangra, Managing Consultant, Guidehouse’s Energy, Sustainability, and Infrastructure Practice “Financing Options for EV Charging Infrastructure - A US Case Study” • Akin Olumoroti, Manager, Research and Analysis, Alliance to Save Energy “Energy Efficiency and Digital Technologies” • Elrika Hamdi, Energy Finance Analyst, Institute for Energy Economics and Financial Analysis “Energy Efficiency in the Midst of Energy Crisis”
10:00-10:30	Discussion and Q & A

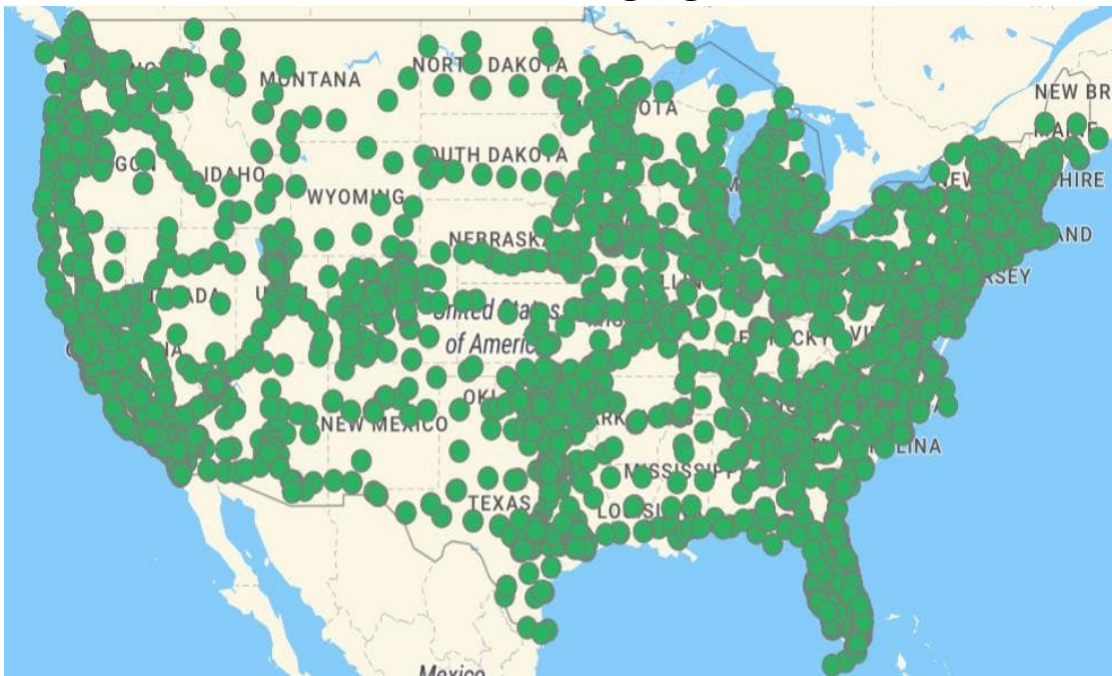
Session 2	Financing Models for Energy Efficiency Projects
10:30-11:20	<ul style="list-style-type: none"> • Muhammad Ery Wijaya, Senior Analyst, Climate Policy Initiative (CPI) “Innovative Energy Efficiency Financing Scheme for Industrial and Commercial Sector in Indonesia” • Juheon Seok, Research Fellow, Korea Energy Economics Institute (KEEI) “Analysis of Financing Model for ESCO Business in Korea” • Johnny Kam, Senior Strategic Planner and Tony Chan, Senior Account Manager, CLP Power Hong Kong Limited “Funding Scheme for Supporting Energy Efficiency Projects in Hong Kong”
11:20-11:50	Discussion and Q&A
11:50-12:00	<p>Summary by moderator</p> <p>Closing Remarks by Host Economy Pengcheng Li, Secretary of the Energy Conservation Secretariat China National Institute of Standardization (CNIS)</p>

1-①. “Financing Options for EV Charging Infrastructure – A US Case study”

- EV charging infrastructure is critical in U.S.
 - Federal government has a goal of 500,000 public chargers by 2030.

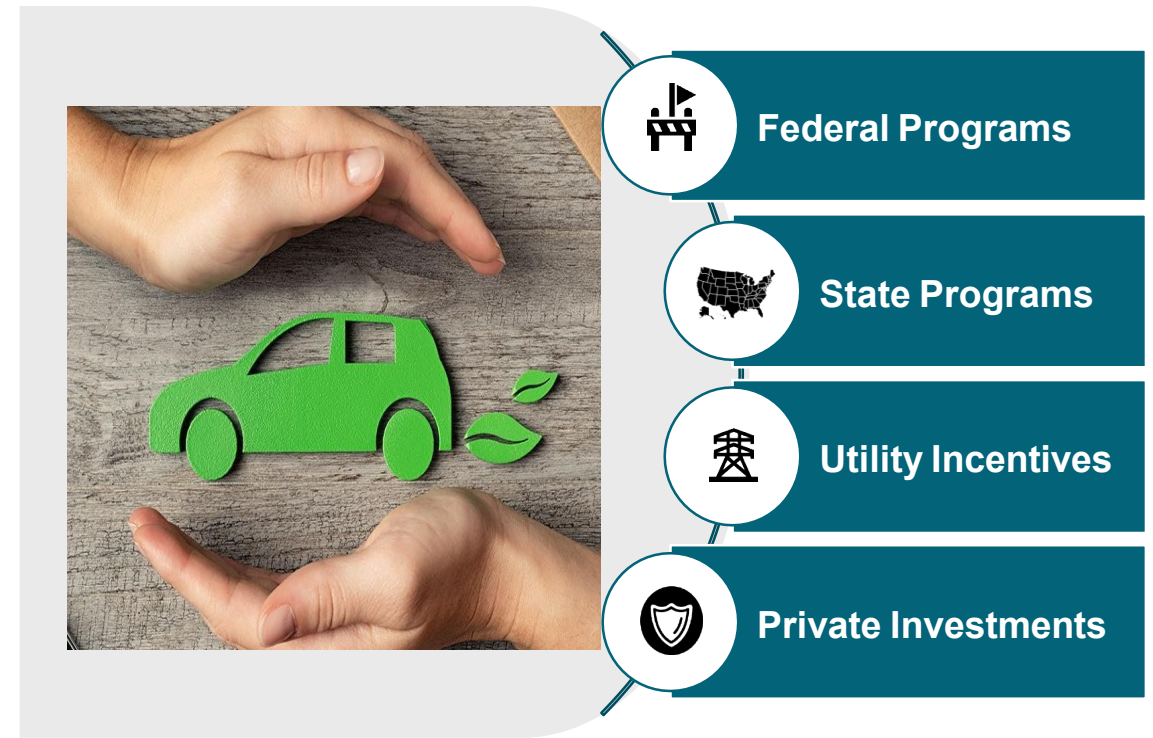
- Four financing options can be grouped for EV Charging Infrastructure.

Public Electric Vehicle Charging Stations in U.S.



Sources: U.S. Department of Energy's Alternative Fuel Data Center, March 2022

Categorizing financing options in U.S.



Sources: Guidehouse Inc.

1- ①. “Financing Options for EV Charging Infrastructure – A US Case study”

• Virginia's Pilot Program

- In 2020, Guidehouse and Dominion Energy develop a new Smart Charging Infrastructure Pilot (“SCIP”) Program under the approval of Virginia state Corporation Commission.
- Program offers rebates to incent EV charging stations for multi-family communities, workplaces, transit bus depots and fast-charging locations.
- End-to-end program stood up within 5 months and rebates paid within 8 months.



• Pilot Program Highlights

- IT platform was to manage end-to-end customer journey. (e.g., application, rebate processing, data collection and analytics)
- Marketing & Outreach campaign drove program interest.
- DC fast chargers and multi-family rebate segments fully subscribed (as of March 2021).

1-②. “Energy Efficiency and Digital Technologies”

- Using less energy by behavior improvement is not enough.
- Digitization can improve energy efficiency by relying on data gathering and analysis.

Data gathering



- Sensors
- Meters
- Interfaces



Data analysis



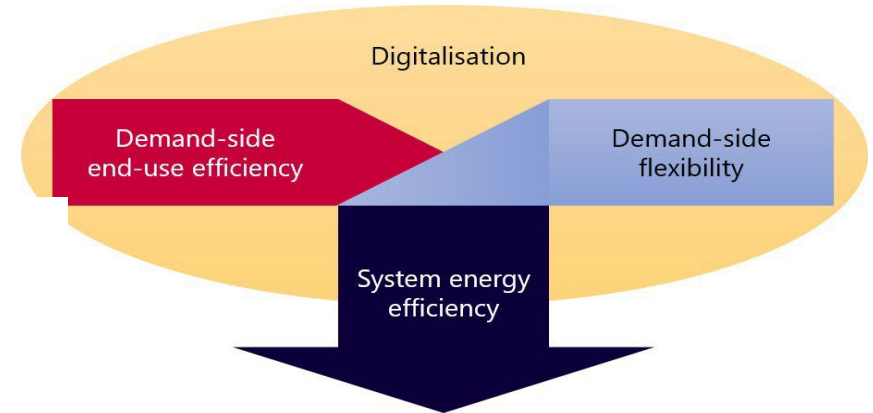
- Algorithms
- Artificial intelligence
- Digital simulations



Action



- Automation
- Controls
- 3D printing
- Interfaces



- Industry leaders, NGOs, and public sectors can work to accelerate the active efficiency based on the use of technologies.

EXAMPLE Alliance to Save Energy (NGO) and its member (a restaurant chain) using sensor devices

→ In 34 months, 11.4 GWh of reduction, US\$1.2 million savings, a 308% return on investment

EXAMPLE The U.S. military campus at Parris Island using an energy technology provider

→ Energy demand 75% ↓, annual emissions of 37,000 MTCO₂e ↓, US\$6.9 million savings annually

1-③. “Energy Efficiency in the Midst of Energy Crisis”

- Global energy supply crunch has made 2022 the year of ‘high & volatile’ energy prices.

- According to the IEA, the global investment trend in energy efficiency still needs to triple by 2030, compared to the level of 2021.

IEA ministerial communique 2022

“We reaffirm energy efficiency as the “first fuel” and a critical component of our net zero strategies as it still represents the cleanest and, in many cases, the most cost-effective way to meet our energy needs.”

Sources: IEA

- However, there are barriers on funding for energy efficiency investment.
 - Lack of similar projects for comparing expected savings
 - Unclear metrics for analyzing performance
 - Unattractive small-sized projects
 - Lack of understanding in energy efficiency project risks
 - No real policy incentives (skewed policy preferences)

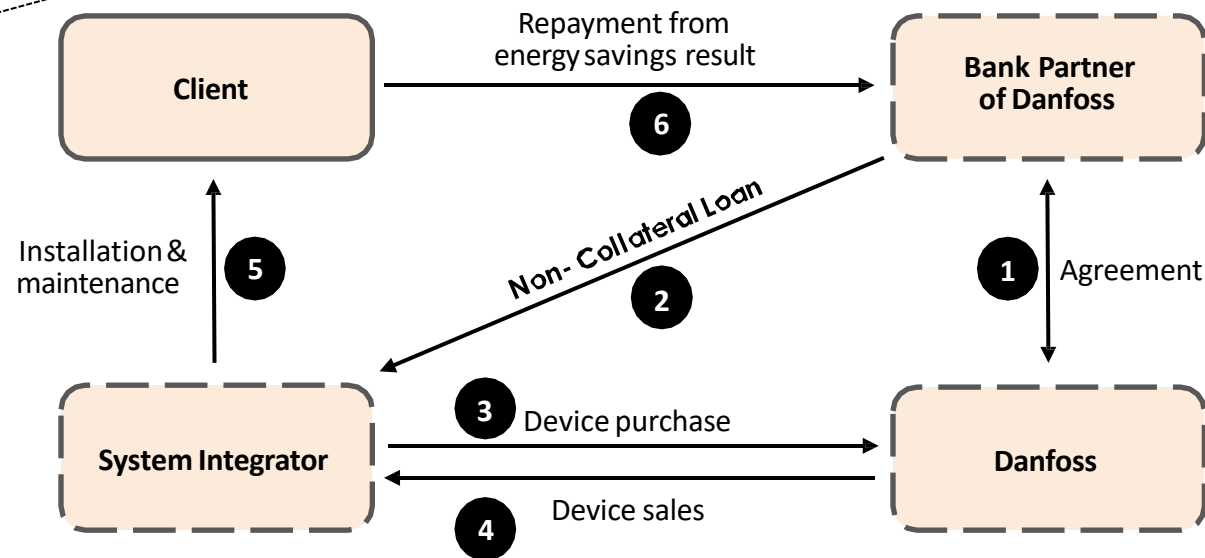
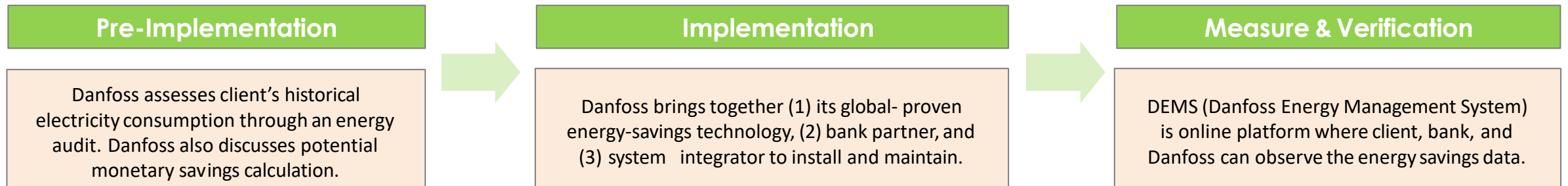
1-③. “Energy Efficiency in the Midst of Energy Crisis”

- A number of new promising EE policies:
 - EU “Fit for 55” new EE Directive
 - Italy ‘Super Ecobonus’ scheme for home renovations – 110% tax credit incentives
 - India’s Energy Efficiency Services Ltd ‘Super-efficient Air Conditioning’ programme
- Yet, it could start from as simple as changing a design logic :
 - Walmart’s energy savings from changing its operation design logic improved its energy efficiency by 40%.



2-①. “Innovative Energy Efficiency Financing Scheme for Industrial and Commercial Sector in Indonesia”

- Danfoss* has successfully launched its business model at a hotel in Jakarta.
 - * One of the companies that supplies energy efficiency technology



2-②. “Analysis of Financing Model for ESCO Business in Korea”

- Energy service companies (ESCOs) deliver energy efficiency projects that are financed on the basis of energy savings.
- In Korea, two methods have been mainly used for ESCOs to finance their business.

	Policy loan Fund	Factoring of ESCO’s receivables
Concept	Government provides loans with low interest rate to ESCOs according to the domestic law.	Financial institution buys the receivables of ESCOs.
Advantage	It is a long-term loan supported by the government.	The credit limit of ESCOs does not decrease.
Limit	If ESCOs take out loans over its credit capacity, they cannot get more loans for business.	Banks avoid factoring because of the lack of awareness and the volatility of energy savings.

2-③. “Funding Scheme for Supporting Energy Efficiency Projects in Hong Kong”

- CLP Power, a power utility company in Asia-Pacific, set up ‘Eco Building Fund’ to enhance the energy efficiency performance of buildings.
 - This includes lighting system replacement, automatic control of air temperature setting etc.
 - Priority will be given to (1) Projects with higher energy saving, (2) Ageing buildings, or (3) New technology demo project.

Application process



Thoughts & Workshop Report

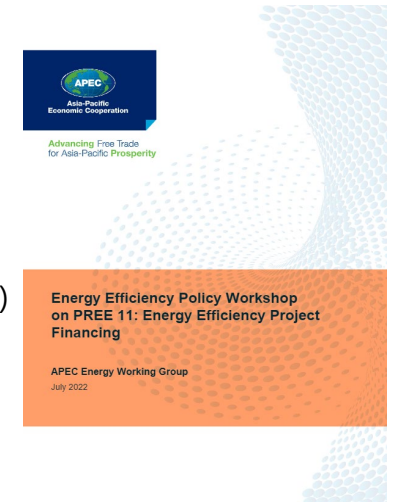
- **Concluding thoughts**

- It is necessary to establish competitive financial models that address cost reduction incentives, risk management, and technology issues under public and private cooperation.
- Stakeholder awareness of energy efficiency projects must continue to improve.
- Measurement and verification of energy efficiency projects remains a significant concern for many stakeholders.

- **Workshop report**

- A full summary of the workshop is available on the APEC website.

(<https://www.apec.org/publications/2022/07/energy-efficiency-policy-workshop-on-pree-11-energy-efficiency-project-financing>)



Thank you.

<https://aperc.or.jp>

