

The 5th Government-Private Forum
on the Cleaner Energy Future Initiative for ASEAN (CEFIA)

CEFIA

RENKEI Control Flagship Project

Presenters

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Content

- Introductory Video for RENKEI Control
- What is RENKEI Control?
- RENKEI Control Flagship Project
 - Summary For FY2020~2022
 - Activity For FY2023
- Visualization of RENKEI contribution from 2020 to 2022
- Standardization of FEMS



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Introductory Video for RENKEI Control

Introductory Video for RENKEI Control

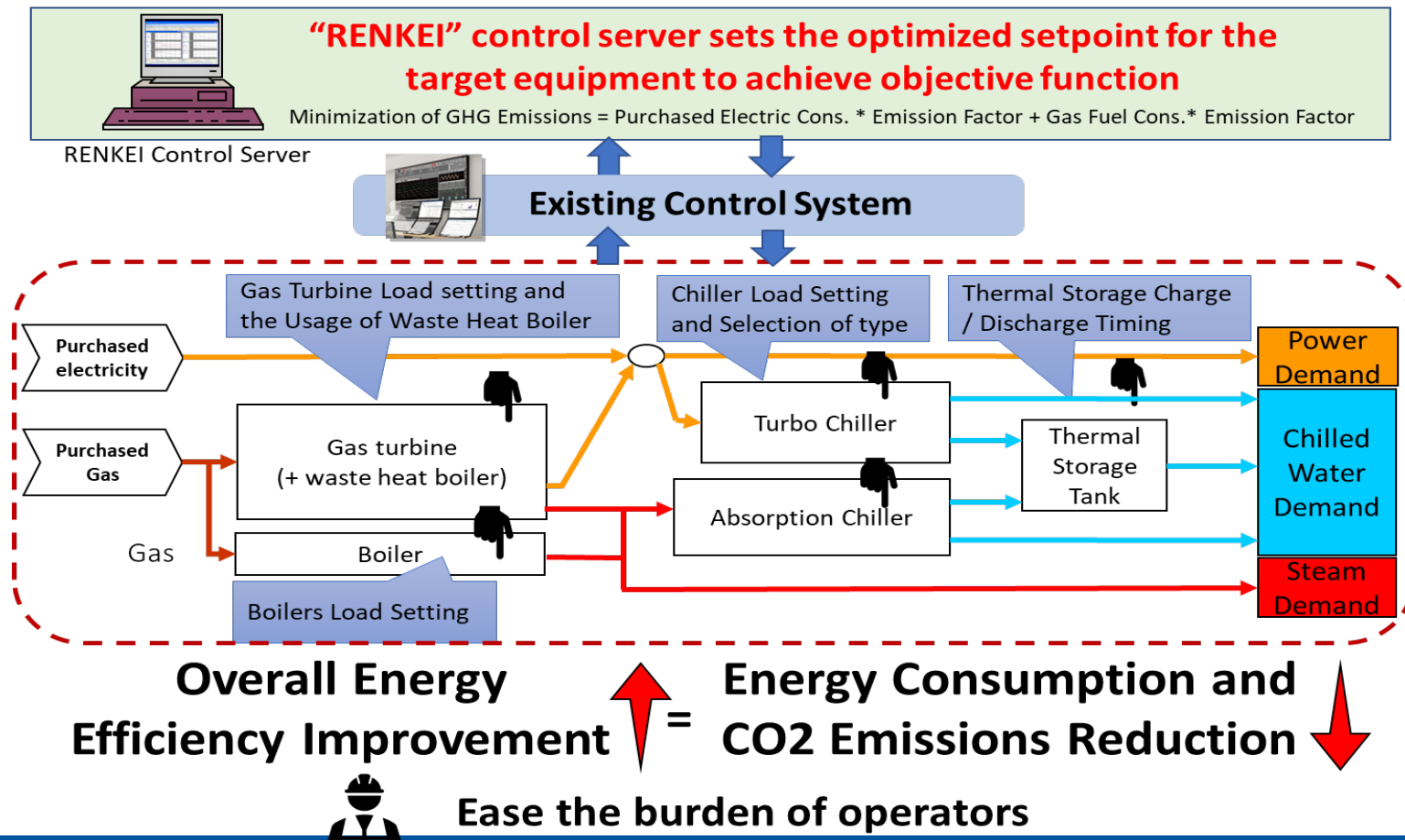


What is RENKEI Control?

RENKEI Control

The Purpose of RENKEI Control...

- to solve customer management issues (environmental problems) as well as energy saving (cost saving)
- to provides energy users with opportunities to achieve energy performance improvement without having to go through a major renewal or significant changes in existing facilities



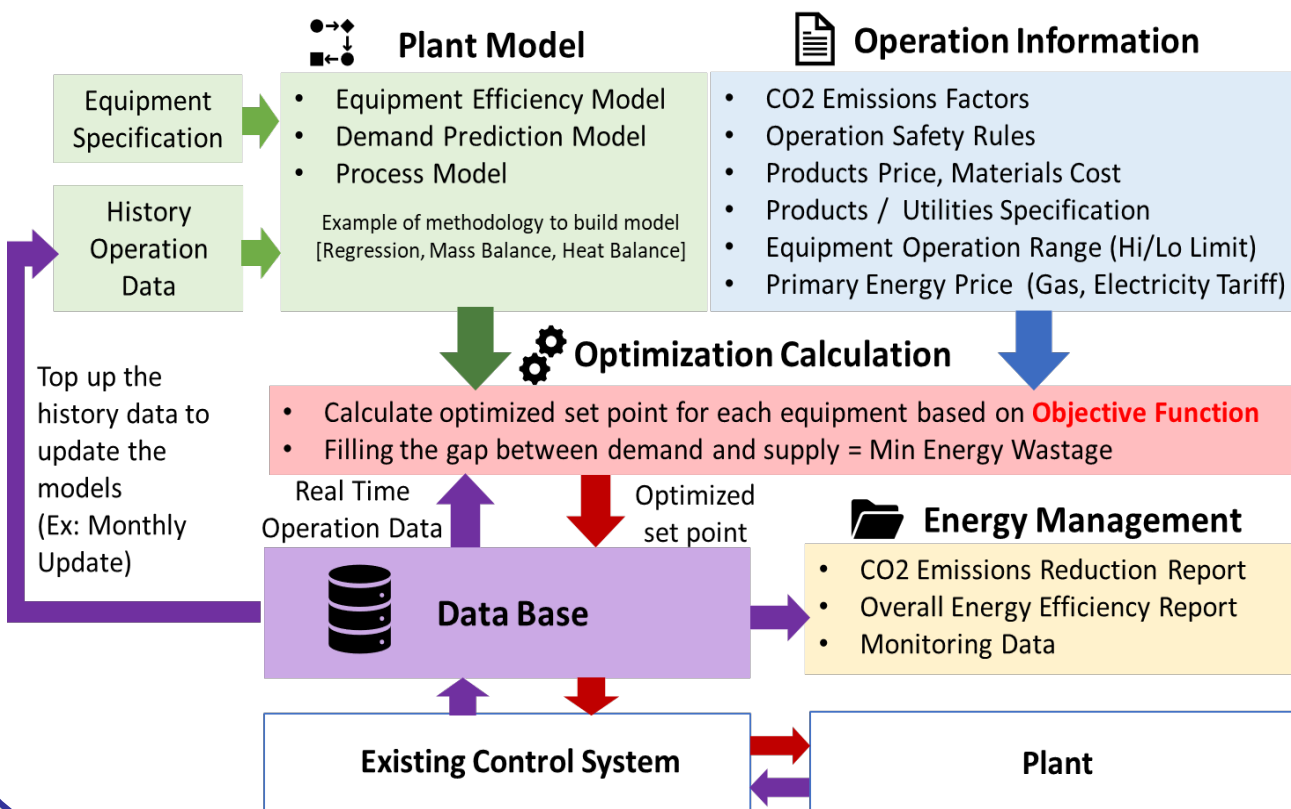
Realization of RENKEI Control



RENKEI Control Server

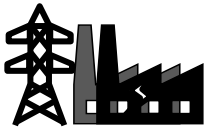
Each Measurements and Control Vendors have own technology/optimizer to realize RENKEI Control for target system.

Continuous Improvement Cycle in RENKEI Control Server



Applicable Optimization by RENKEI Control

	Category	Applicable Optimization by RENKEI Control
1	Utility Plant	<ul style="list-style-type: none"> • Boiler Plant Optimization • Turbine Plant Optimization • Boiler Turbine Plant Optimization • Co-Generation Plant Optimization • Chilled Water Plant Optimization • Air Compressor Plant Optimization
2	Utility Plant and Demand Side	<ul style="list-style-type: none"> • District Cooling Plant Optimization with Demand Prediction for Building Side • Utility Plant and Manufacturing Plant Total Optimization • Smart City (Power and Heat) Total Optimization



Utility Plants in many kind of industry.
(Steam, Hot Water, Chilled Water, Electricity, Cogeneration)



District Cooling Plant for Buildings



Smart City

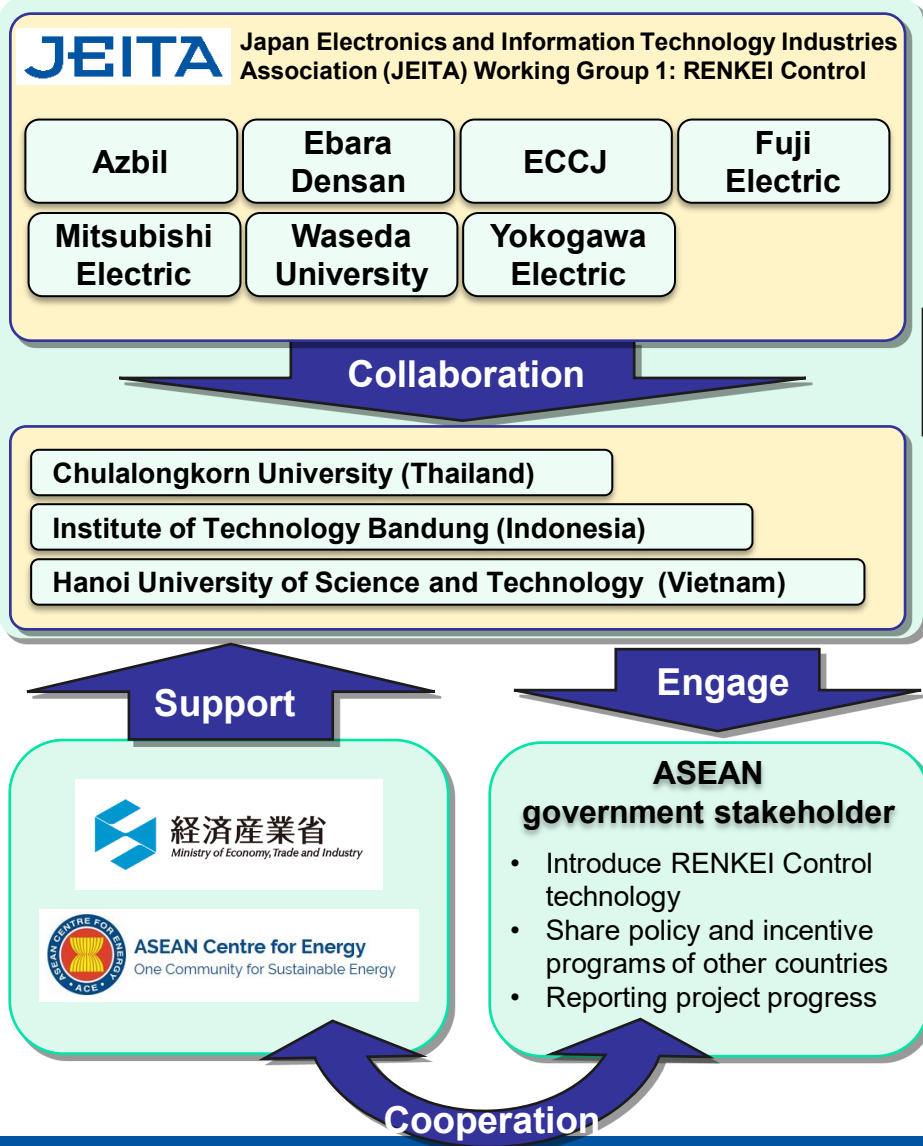
Energy Supplier Energy Consumers



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RENKEI Control Flagship Project Summary for FY2020~2022

RENKEI Control Flagship Project Summary FY2020~2022



3 Years Main Activity Output with University and Industrial Sector

Potential Survey

- Estimated **5 million tons of CO2 Reduction Potential** IF RENKEI Control was applied to target industrial sectors in ASEAN

Capacity Building for University

- Conducted RENKEI Control Webinar for ASEAN University, around **200 students** from Thailand, Vietnam and Indonesia attended
- Launched E-learning course for RENKEI Control in Chulalongkorn University

Dissemination Activity

- Accumulative of **500 audiences** through RENKEI Control Webinar held by JEITA
- Conducted Feasibility Study, results as follow:

Target Facility	CO2 Reduction Potential
Boiler Plant in Indonesia Fertilizer Co.	10,000 ton-CO2/year
Air Compressor System in Thailand Food Manufacturing Co.	500 ton-CO2/year
Chilled Water System in Thailand Food Manufacturing Co.	450 ton-CO2/year

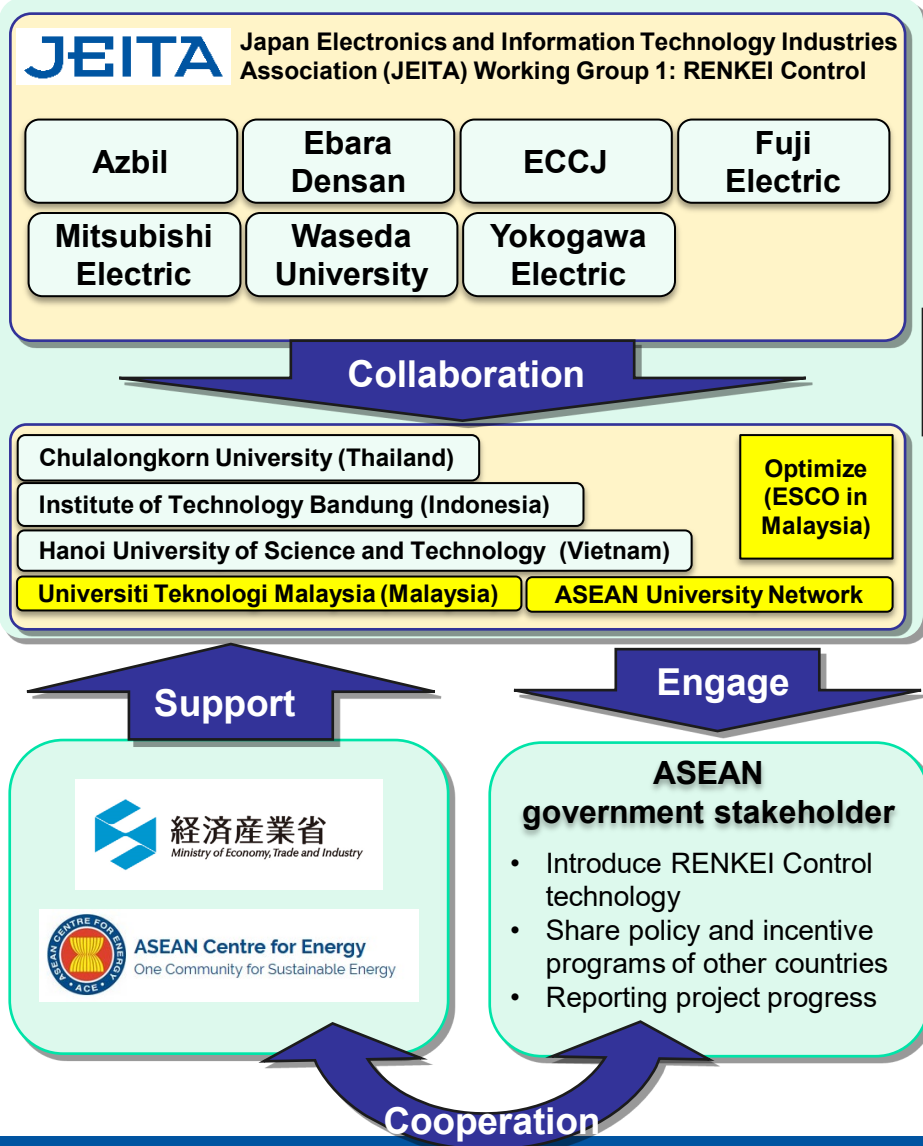
15th JEITA PRESIDENT AWARD



第15回JEITA会長賞受賞者 | JEITA電子情報技術産業協会

RENKEI Control Flagship Project Activity For FY2023

RENKEI Control Flagship Project Activity for FY2023



FY2023 Main Activity with University and Industrial Sector

Capacity Building for University and ESCO

- ❑ Continue RENKEI Control webinar for ASEAN university which **expand through ASEAN University Network**.
- ❑ Continue the RENKEI Control E-learning course by CU and **expanding RENKEI Control E-learning establishment to ITB and UTM**
- ❑ **Capacity building program for ESCO**

Dissemination Activity

- ❑ Continue to connect with target customer for FS last year to **push for Demonstration Project through RENKEI Control Proposal**.
- ❑ On top of that, **provide FS for new target facility and country (Malaysia District Cooling Plant)**
- ❑ Provide **Face to Face Seminar for Thailand and Malaysia industrial sector stakeholders** instead of usual online webinar style
- ❑ **Establish online touch points for further enquiries of target customer**
 - ❑ **Digital Content of RENKEI Control**
 - ❑ **Self Assessment Tool**



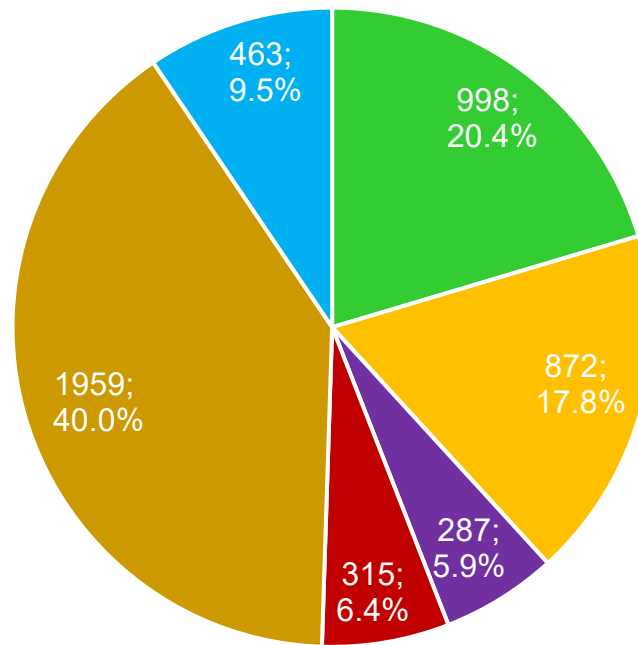
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Visualization of RENKEI Control contribution

Potential Contribution of RENKEI Control for ASEAN

Estimation of potential CO2 emissions reduction if RENKEI Control was applied to the target industrial sectors in ASEAN countries is **About 5 million tons CO2/year....**

CO2 emissions reduction potential (kton-CO2)
by RENKEI Control



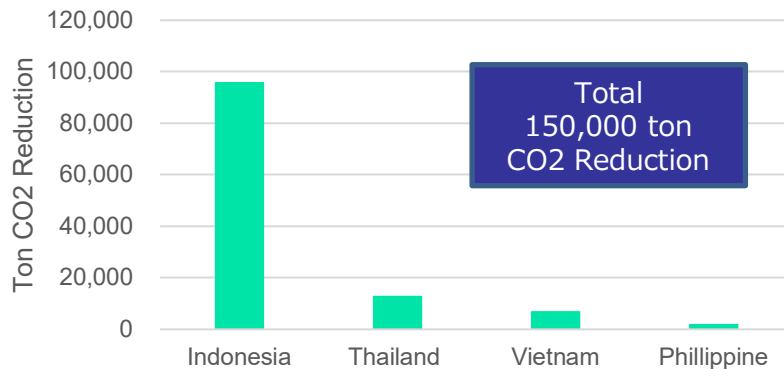
■ Thailand ■ Malaysia ■ Philippines ■ Singapore ■ Indonesia ■ Vietnam

*The industrial sector energy consumption data used for estimation of CO2 emissions for each country is obtained from International Energy Agency.

RENKEI Control Contribution from 2020 to 2022

CO2 Reduction through RENKEI Control by JEITA RENKEI Control WG Member:

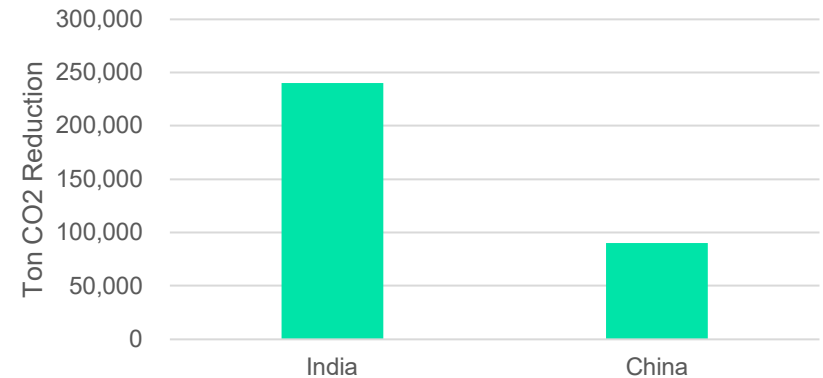
CO2 reduction from 2020 to 2022
for JCM countries



Industries:

Indonesia-HVAC, Chiller, Boiler System
Thailand-HVAC, Chiller, Air Compressor
Vietnam-HVAC, Chiller
Phillipine-HVAC, Chiller

CO2 reduction from 2020 to 2022
for Non-JCM countries



Industries:

India – Steel Company
China – Textile, Aluminum

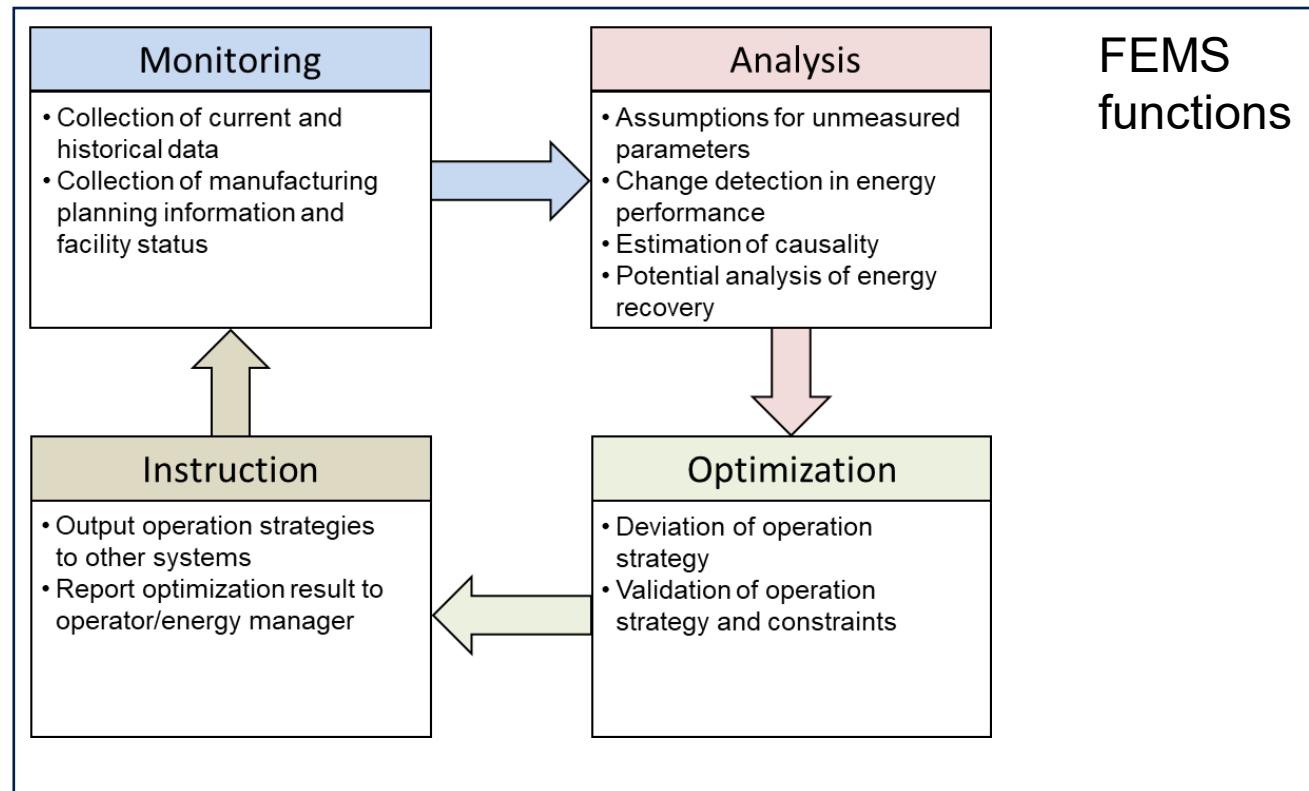


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FEMS IEC Standardization (IEC 63376)

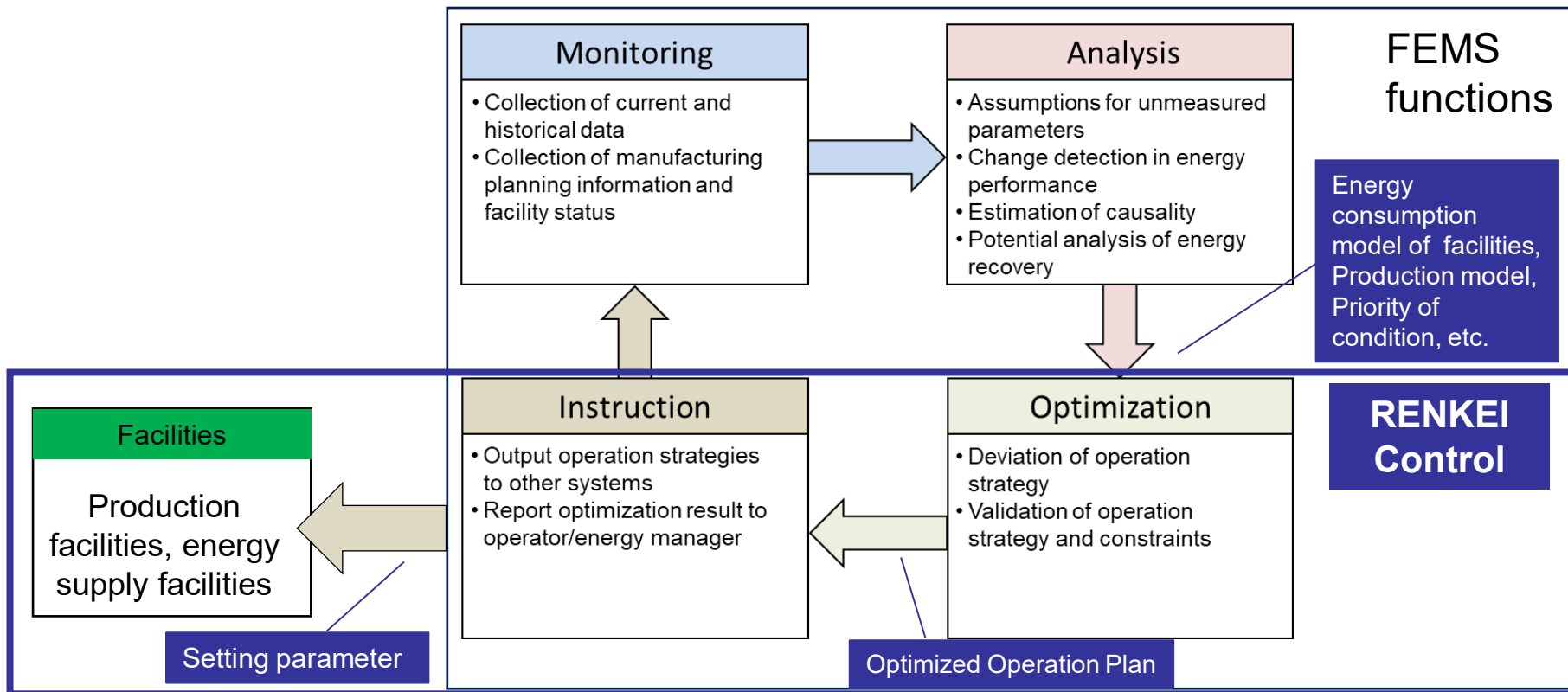
IEC standard for FEMS which include RENKEI Control

The Industrial Facility Energy Management System (FEMS) IEC standard (IEC 63376) has **published in August 2023**
FEMS standardization can accelerate the application of RENKEI Control.



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Thank You For Your Attention!
ご清聴ありがとうございました。

For further enquiries...

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