Reference: APT-ER-24AS-0082

Decarbonization Solutions for Factory

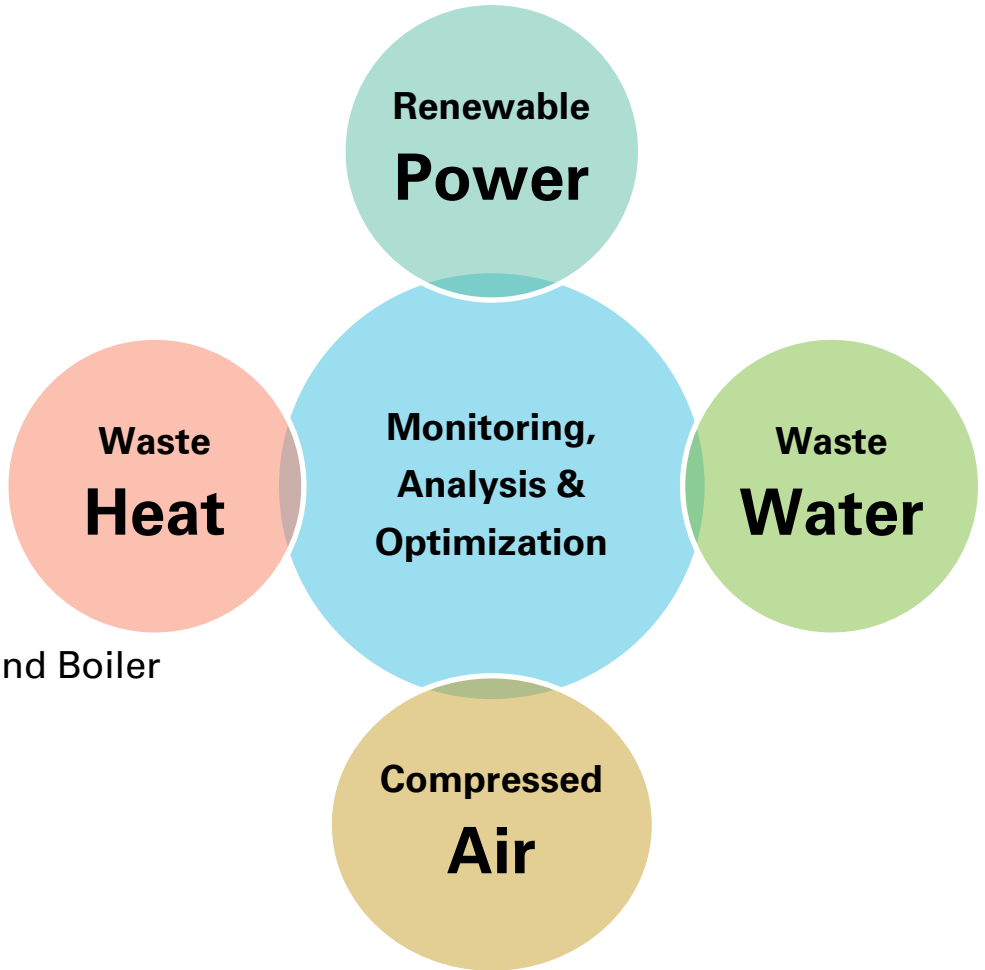
7 January 2025

IHI ASIA PACIFIC (Thailand) Co., Ltd.
Asia Solution Center Department

Energy Audit Services

IHI

- Energy Audit for the Entire Factory
- Energy Audit for the Air Compressor System
- Energy Management System for the Factory
- Equipment Monitoring System for Compressor and Boiler



Copyright © 2025 IHI ASIA PACIFIC (Thailand) Co., Ltd. All Rights Reserved.

Energy Audit for the Air Compressor System

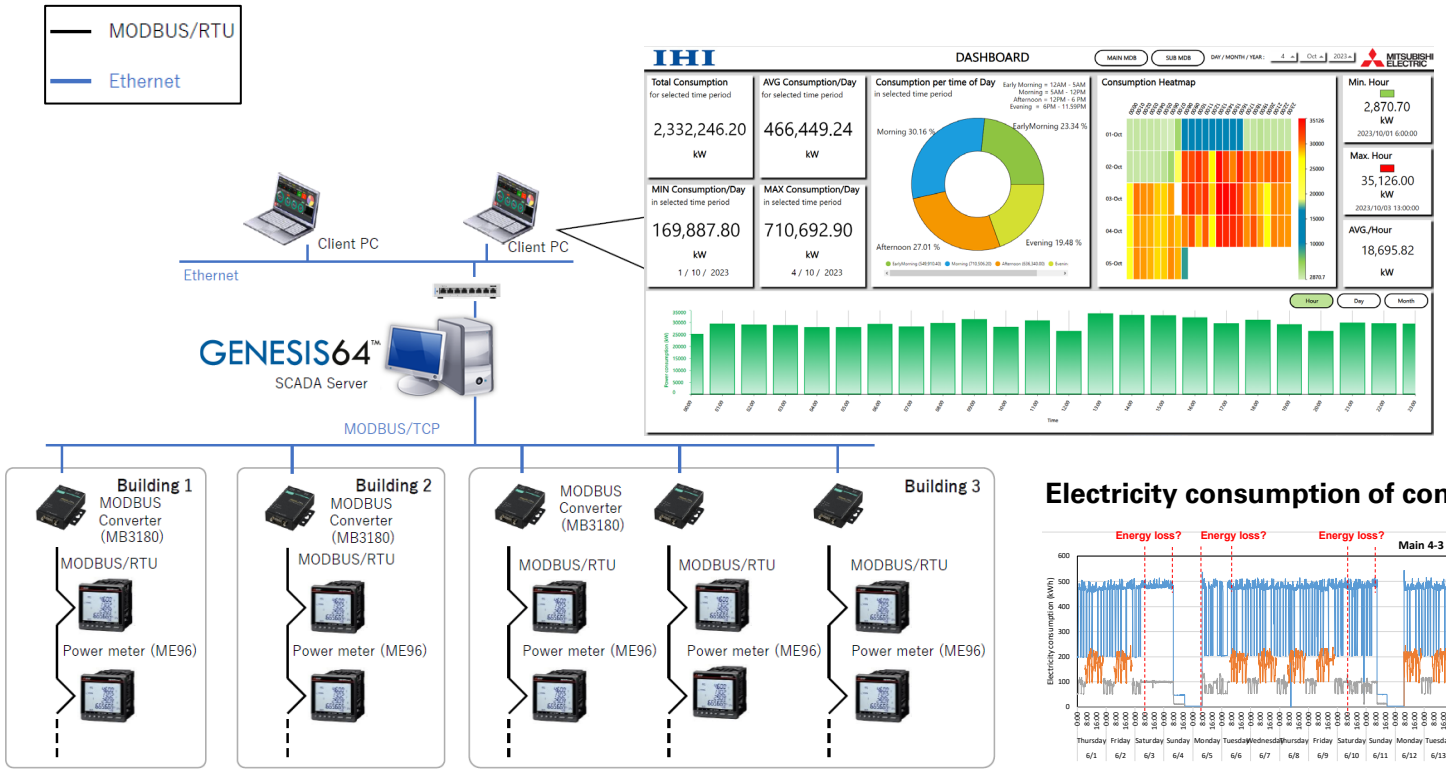
IHI

	Audit Menu 1	Audit Menu 2	Audit Menu 3	Audit Menu 4 ※
Name	**Simple Proposal**	**Optimizing Compressor Operation (with customer data)**	**Optimizing Compressor Operation (with measurement data)**	**Audit for All Equipment**
Overview	・ A simple audit without data measurement or analysis. ・ IHI collect the info such as existing compressor and make a replacement proposal.	・ Analyzing customer's hourly data of compressor power consumption. ・ Based on actual operating conditions.	・ IHI conducts measurement and data analysis by using logger. ・ Based on actual operating conditions.	A total equipment audit that aims to improve not only the compressor area (compressor performance, control, operating status, etc.), but also the ancillary equipment (piping, equipment, environment, etc.).
Recommended points	・ Recommended for initial planning	・ Eliminate the hassle and time of measuring data. ・ Make optimal proposals throughout the year, including busy and mid-season periods.	・ Accurate proposals can be made based on actual operating conditions. ・ IHI can make trend graph so that customer can understand the load status of each compressor.	・ Effective when supply conditions such as air amount and pressure have changed significantly. ・ You can expect an additional energy saving effect, by checking all the equipment as a whole system.
Proposal lead time	About 1 week after the first meeting	About 2~3 weeks after data acquisition	About 2~3 weeks after obtain measurement data	Case by case (up to 1 month)

※ Production facilities other than the compressor body and auxiliary equipment are outside our jurisdiction.

Copyright © 2025 IHI ASIA PACIFIC (Thailand) Co., Ltd. All Rights Reserved.

Energy Management System for the Factory



The following services are provided:

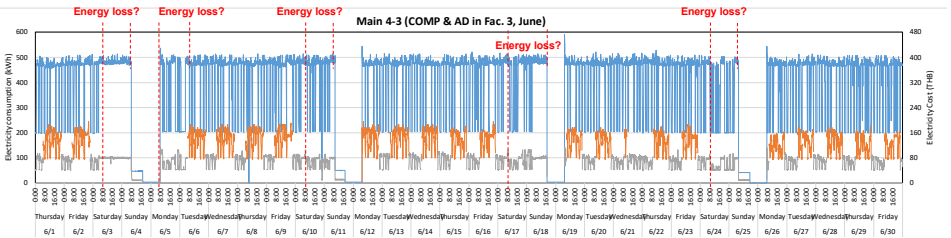
(1) On-site engineering, power meter installation, wiring work, etc.)

(2) Building a dashboard

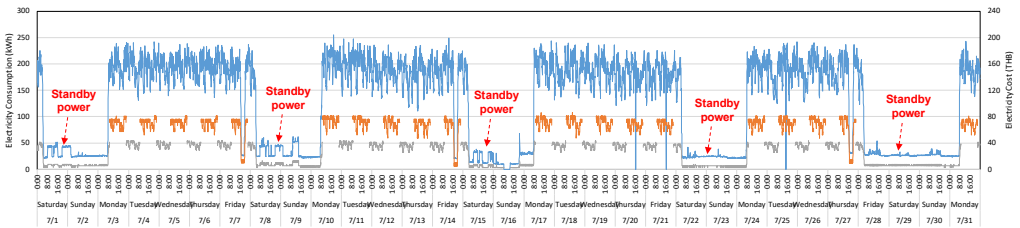
(3) Monitoring data analysis

(4) Energy saving proposal

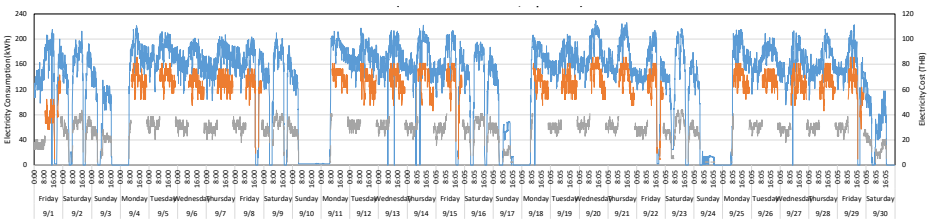
Electricity consumption of compressor



Electricity consumption of production line



Electricity consumption of air conditioner



Copyright © 2025 IHI ASIA PACIFIC (Thailand) Co., Ltd. All Rights Reserved.

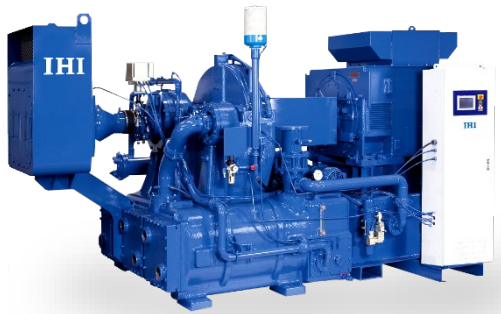
Decarbonization Solutions for Factory

1. Renewable Power

1.1 Power-to-Gas (H_2 / CH_4 / NH_3)

1.2 Power-to-Heat

1.3 EMS for Combination of Power Generation and Consumption



2. Compressed Air

2.1 High-efficiency Turbo Compressor

2.2 Compressed Air Leak Investigation

2.3 Multi-unit Control for Compressors

2.4 Waste Heat Recovery for Compressor

2.5 Steam Turbine Assisted Compressor

3. Heat & Waste

3.1 Vacuum Heat Treatment Furnace

3.2 Waste Heat Recovery Solutions

3.3 Carbon Capture & Utilization

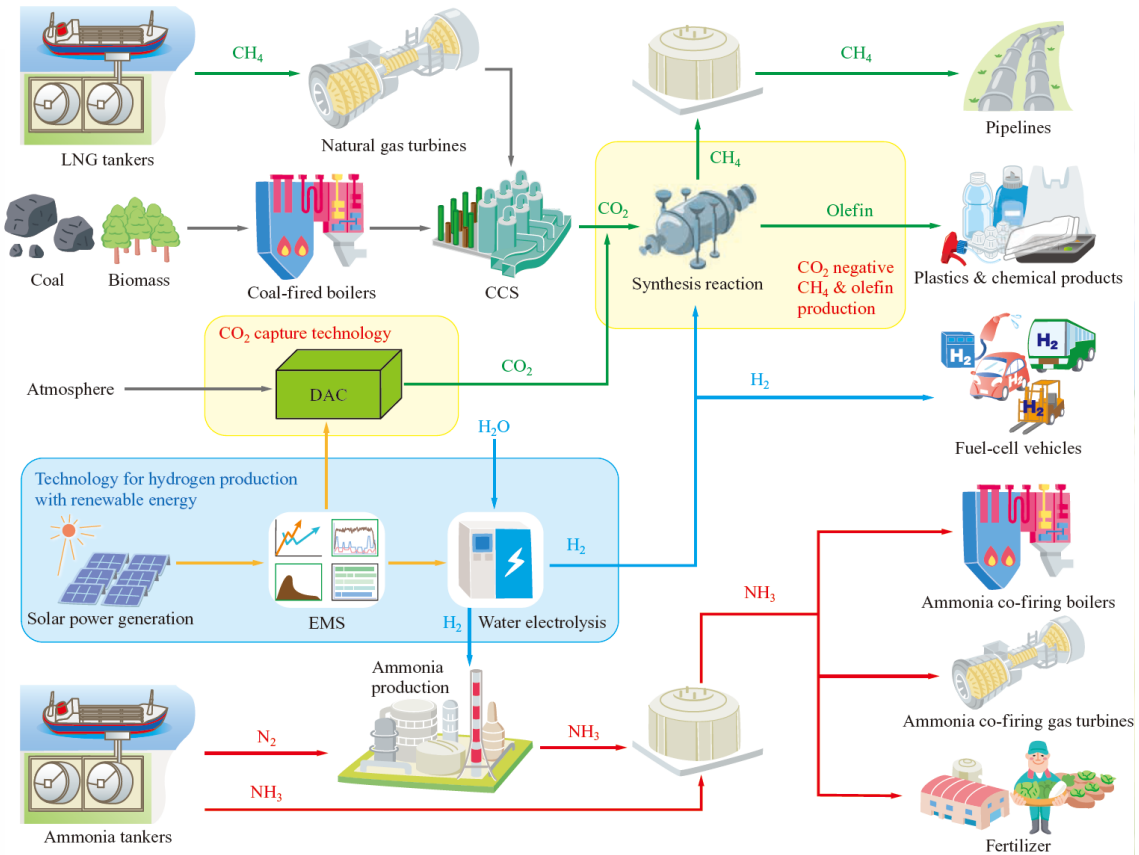
3.4 Biogas Utilization Solutions

3.5 Sludge Treatment & Utilization

Copyright © 2025 IHI ASIA PACIFIC (Thailand) Co., Ltd. All Rights Reserved.

Power-to-Gas (H_2 / CH_4 / NH_3)

IHI

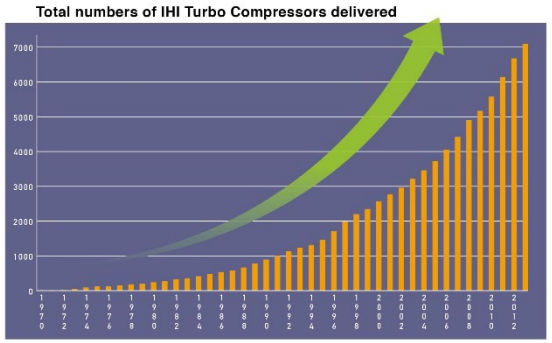


Modules of CO_2 Capture & Methanation

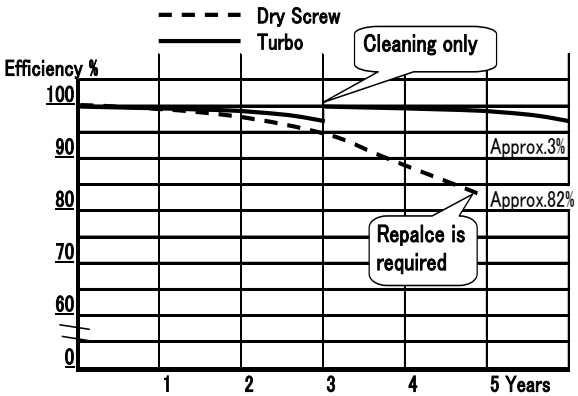
IHI Power-to-Gas technologies for efficiently storing and utilizing renewable energy

Copyright © 2025 IHI ASIA PACIFIC (Thailand) Co., Ltd. All Rights Reserved.

High-efficiency Turbo Compressor



Installation record of IHI Turbo compressor: above 15,000 units

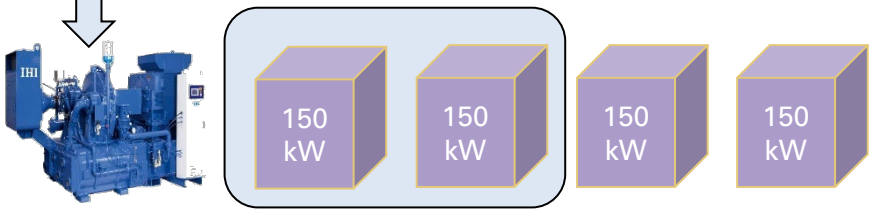


Efficiency deterioration over time

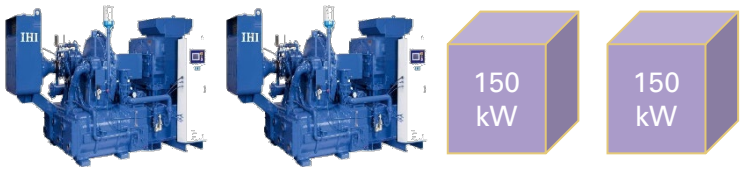
The benefits of aggregation by using **Turbo Compressors**

Base case: 6 screw compressors (150 kW)

Replace 2 screw compressors with1 turbo compressor (300 kW).
-> ***Save energy by about 8%**



Replace 4 screw compressors with 2 turbo compressors (300 kW).
-> ***Save energy by about 16%**

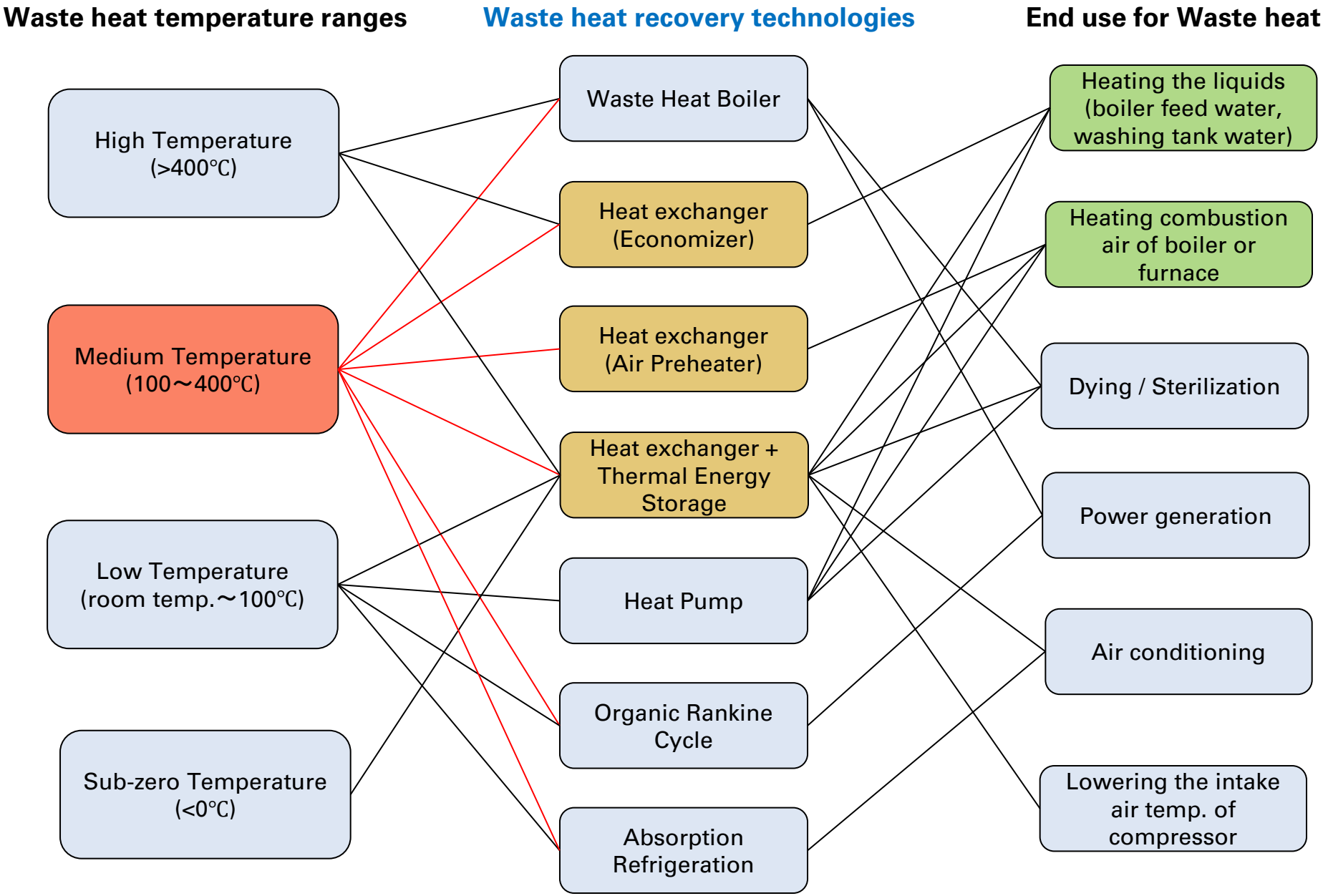


*The energy reduction rate differs depending on the installation and operating conditions.

Copyright © 2025 IHI ASIA PACIFIC (Thailand) Co., Ltd. All Rights Reserved.

Waste Heat Recovery Solutions

IHI



Copyright © 2025 IHI ASIA PACIFIC (Thailand) Co., Ltd. All Rights Reserved.

IHI

Realize your dreams