

Thorough Energy Conservation Reform for Realization of Carbon Neutrality in Cosmetics Manufacturing Factory

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Shiseido Company, Limited

The Shiseido logo, featuring a stylized white 'S' symbol followed by the word 'SHISEIDO' in a bold, white, sans-serif font, set against a dark red background.

Self introduction



Name

Tomoya Onuki

Department

**Facility Management Group,
Manufacturing Department, Kakegawa Factory
Shiseido Company, Limited**

Career

**Chubu Electric Power Co., Inc. from Apr. 2012 to Jul. 2018
(Engaged in construction, maintenance/conservation and
operation of extra-high-voltage transmission lines and
transmission towers)
Shiseido Company, Limited, Aug. 2018 up to present
(Engaged in introduction and maintenance of the facilities, motive
power and manufacturing equipment, and energy management of
Kakegawa Factory)**

**Future
dream**

**To optimize energies consumed in commerce and
municipalities as well as in the manufacturing industry to
reduce the global environmental load without overdoing
and putting up with it, thereby realizing a world where
many people feel happy.**

Shiseido Corporate Overview

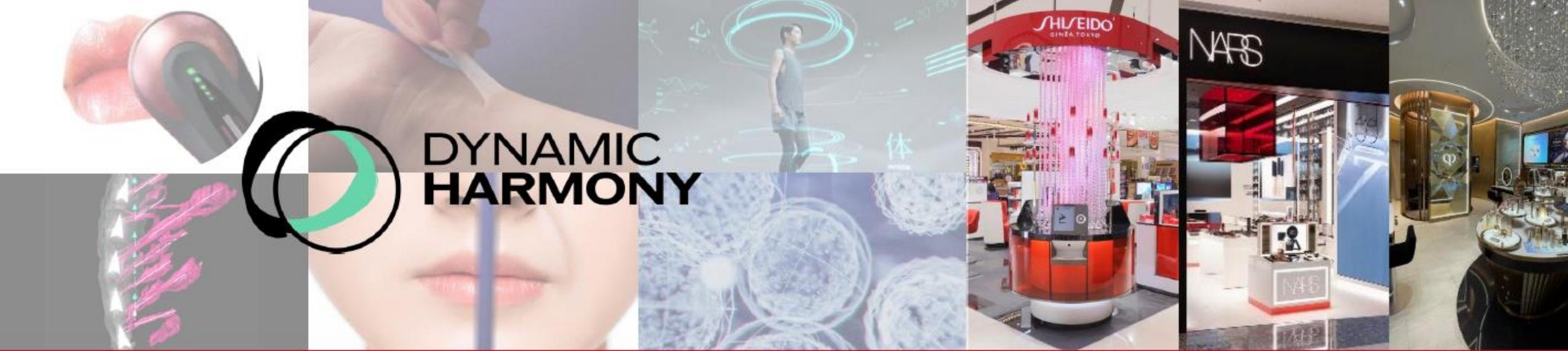
ESTABLISHED 1872	COUNTRIES AND REGIONS SERVED Approx. 120	EMPLOYEES*1 Approx. 39,000	NATIONALITIES EMPLOYED*2 Approx. 100
NET SALES 1,067.4 BILLION YEN	CORE OPM 4.8%	POSITION AMONG JAPAN AND ASIA COSMETICS MANUFACTURERS*3 NO.1	PRODUCTION SITES 12

*1 The number of employees includes full-time employees and temporary employees. Temporary employees include part-time workers. Dispatched employees are excluded. As of the end of December 2022.

*2 As of the end of December 2021.

*3 WWD Beauty Inc Top 100 Global Beauty Manufacturers 2021

Source:



**DYNAMIC
HARMONY**

BEAUTY INNOVATIONS FOR A BETTER WORLD



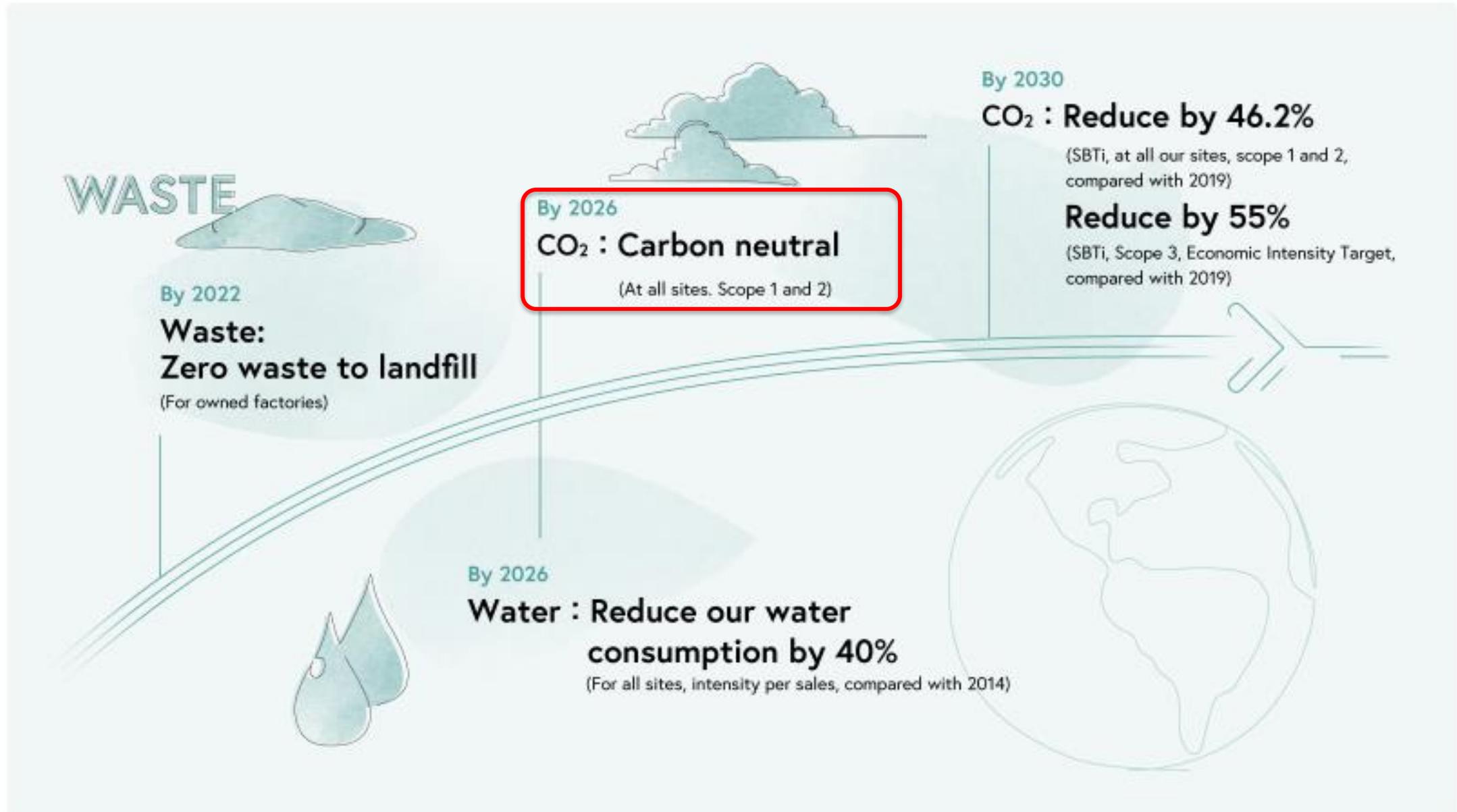
Material Issues and Strategic Action

Shiseido has established six strategic actions based on different material issues, three each in the areas of environment and society.

Environment

Material Issues	Strategic Action	Corresponding SDGs
<ul style="list-style-type: none"> Climate change Development of eco-friendly formulas Sustainable packaging Deforestation Responsible procurement Waste reduction Water usage 	1. Reducing our environmental footprint	
	2. Developing sustainable products	
	3. Promoting sustainable and responsible procurement	
<ul style="list-style-type: none"> Diversity and inclusion Quality of life Professional development Occupational health and safety Respect for human rights 	4. Advancing Gender Equality	
	5. Empowering people through the power of beauty	
	6. Promoting respect for human rights	

What are the environmental goals of Shiseido?



Background of the Project

[Background]

- **Shiseido ESG management.** Published **realization of carbon neutrality by 2026**
- **Increased energy consumption** along with a higher production volume **after 2018**

[Issues]

- **Unable to evaluate/determine quantitatively** when advancing energy conservation activities
- **Awareness** that **only one good energy conservation measure** is **renewal of facilities**
- Inclined to the activities of fixed members because of **lack of interest in them**

[Measures]

- Installed **electricity meters** at **430 positions** (* Capable of measuring water, steam and air as of **Nov. 1, 2022**)
- Mechanism to **allow anyone to freely acquire/analyze** data **anytime**
- **A facilitator himself/herself reports** energy conservation improvement items **directly to management**
- **Fulfilled an improvement activity system (incentive system)** for energy conservation improvement

[Results]

- **Built a field-based all-hands energy conservation system**
- **Implementation of additional energy conservation measures utilizing data**
- **Realized 9.5% reduction (735 kL/year) than before** in crude oil equivalent

Shiseido Kakegawa Factory Overview

Shiseido Company, Limited (Established on Sep. 17, 1872)

[Scope of business] **Manufacture and marketing of cosmetics, makeup tools, etc.**

[Domestic factories] **Kakegawa, Nasu, Osaka, Osaka Ibaraki, Fukuoka Kurume**

Kakegawa Factory (Kakegawa, Shizuoka) (As of end of Jan. 2023)

[Operation started in] **1975**

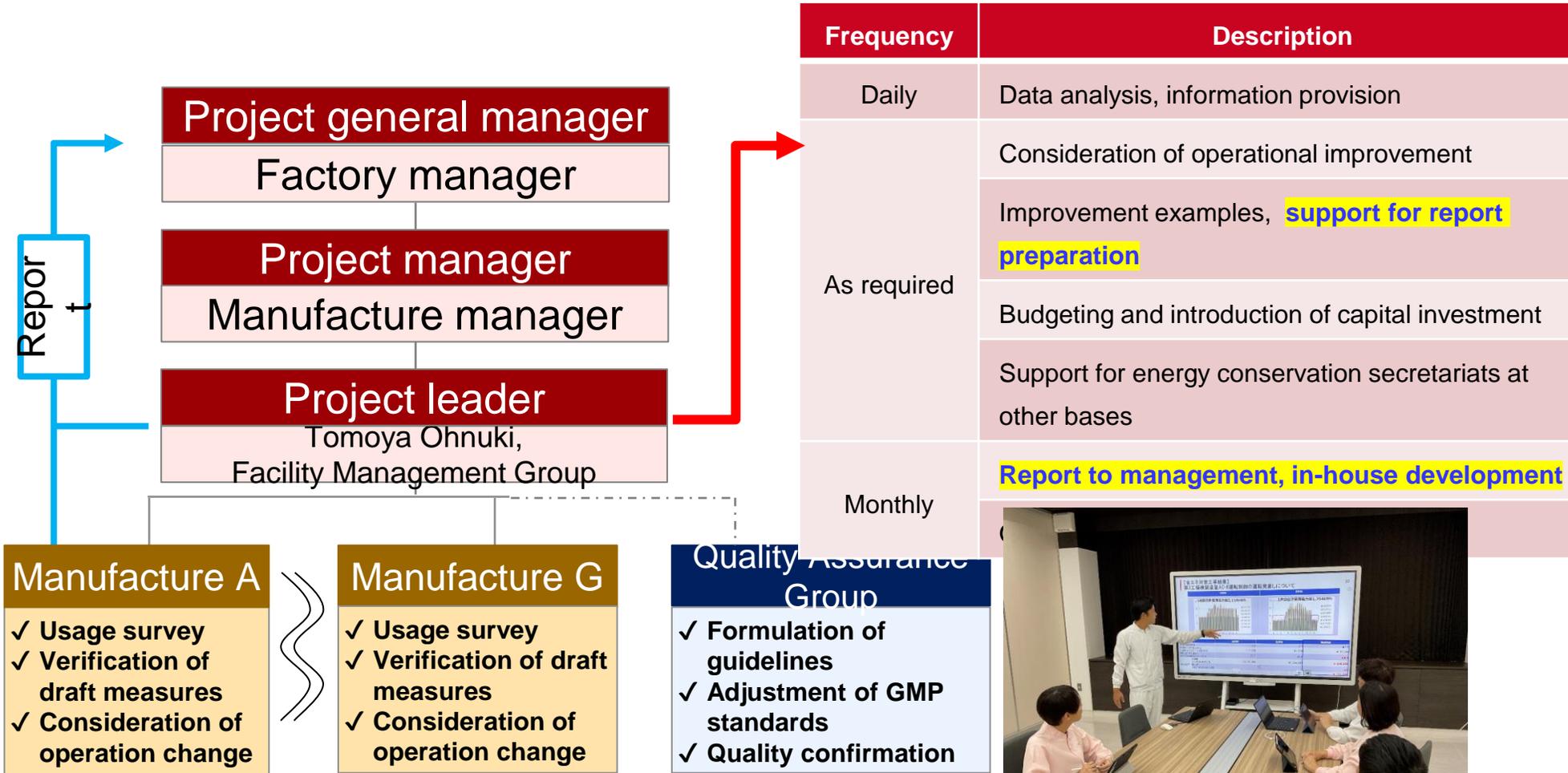
[No. of employees] **901 (Contract employees and temporary workers included)**

[Designated category] **Type 1 designated energy management factory (Crude oil equivalent of 7,691.24 kL, 2020)**

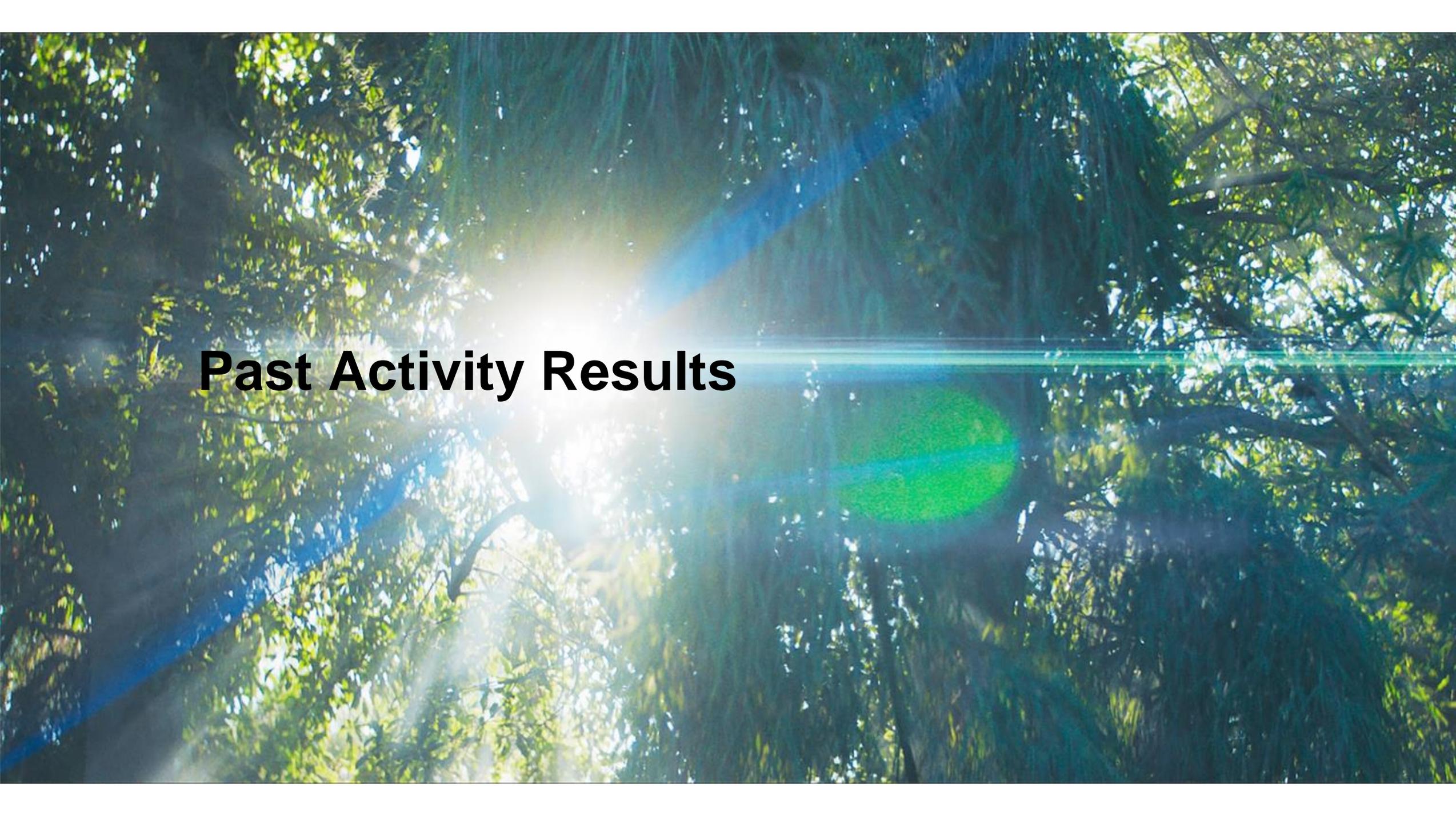


General factory to manufacture makeup and skin care products

What kind of organizational structure was designed in order to promote field-based energy conservation?



Understand the quality risks and build the all-hands energy conservation structure.

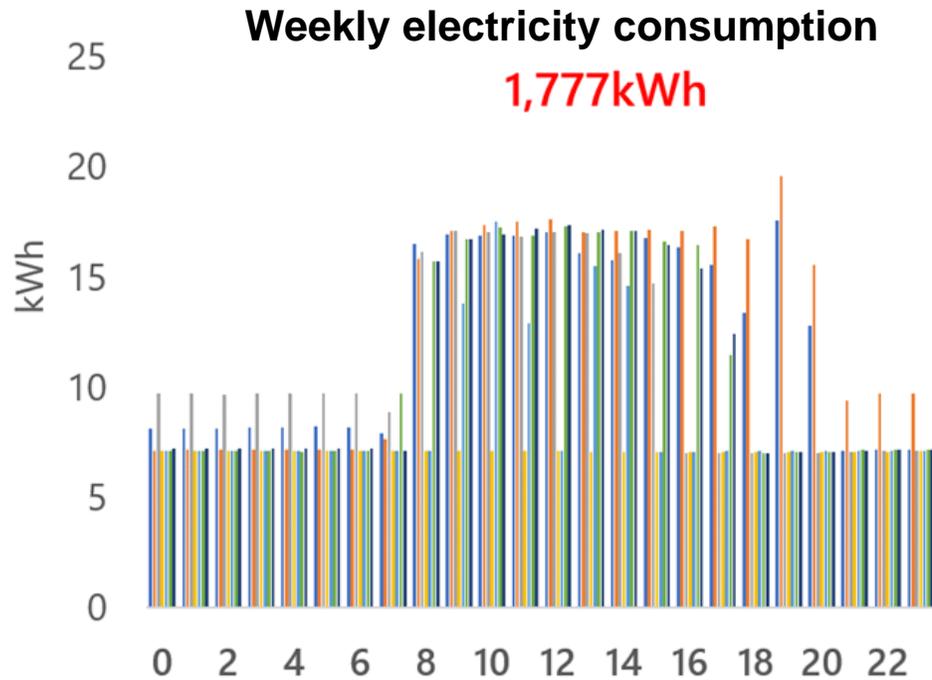
A photograph of a dense forest with sunlight filtering through the leaves, creating a bright, hazy atmosphere. The text "Past Activity Results" is overlaid in the center.

Past Activity Results

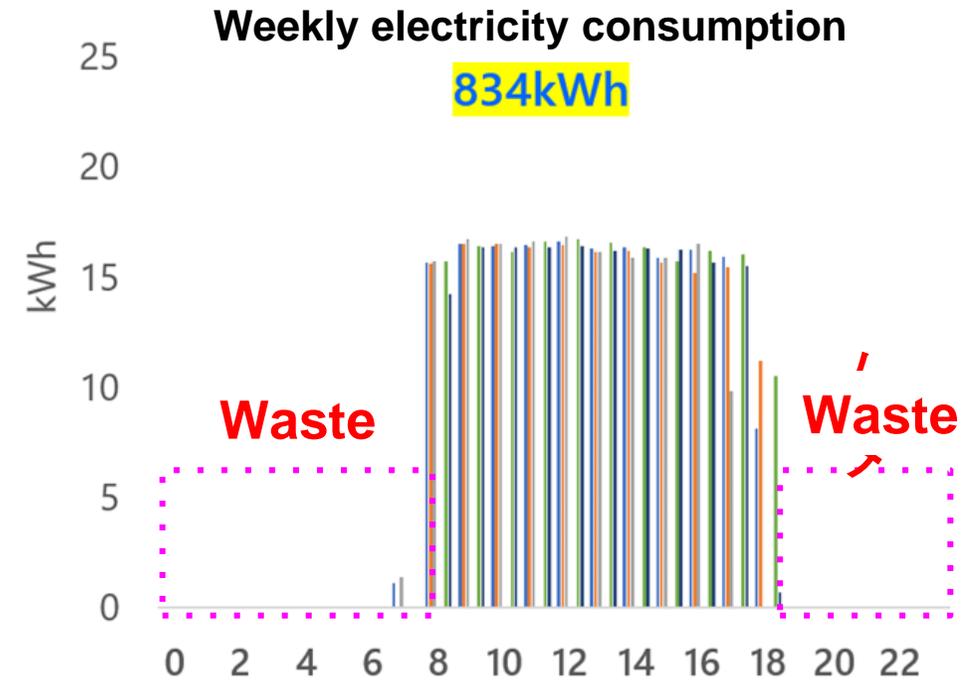
How do you use data to reduce energy?

Example of dust collector

[Before improvement]



[After improvement]



Time

CO₂ emissions

23.9 t less a year

Crude oil equivalent

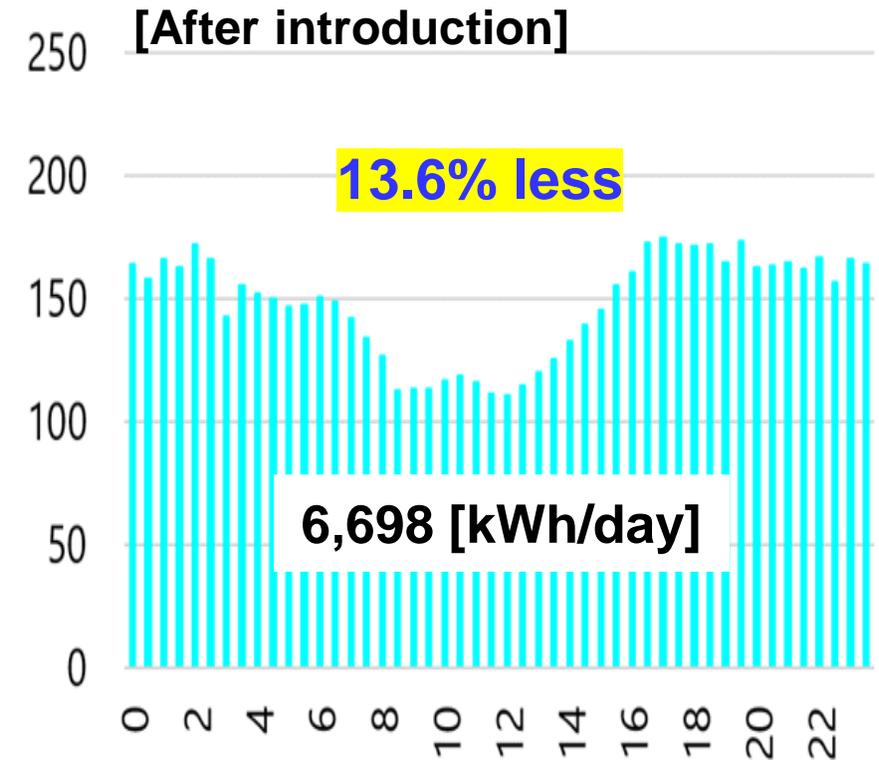
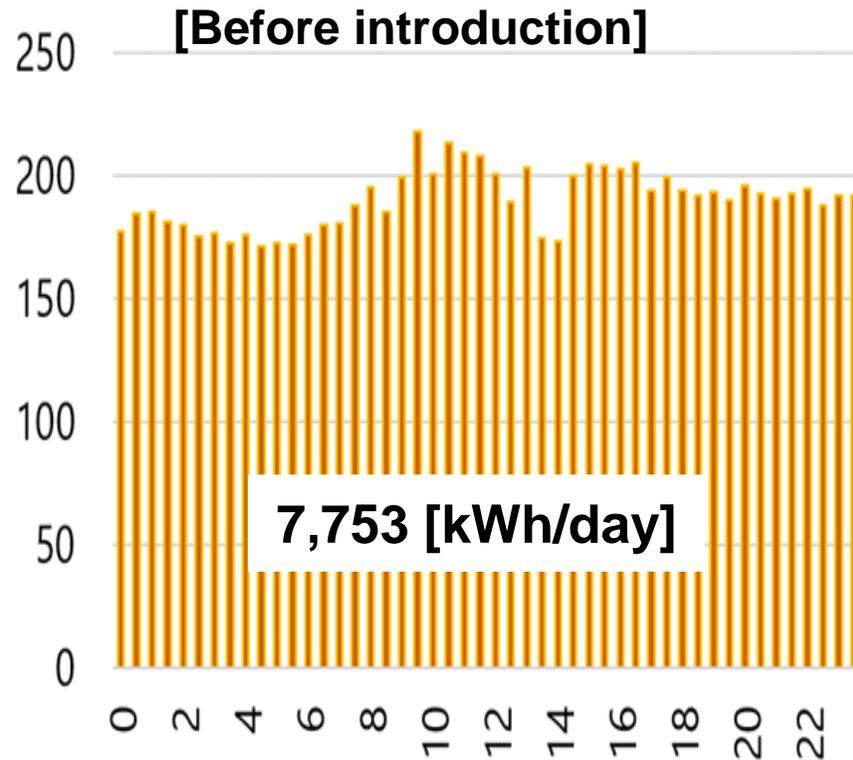
12.5 kL less a year

Tangible activities visualized by data

Time

How do you make effective capital investments for energy conservation?

Example of renewing an aeration blower for wastewater treatment plant

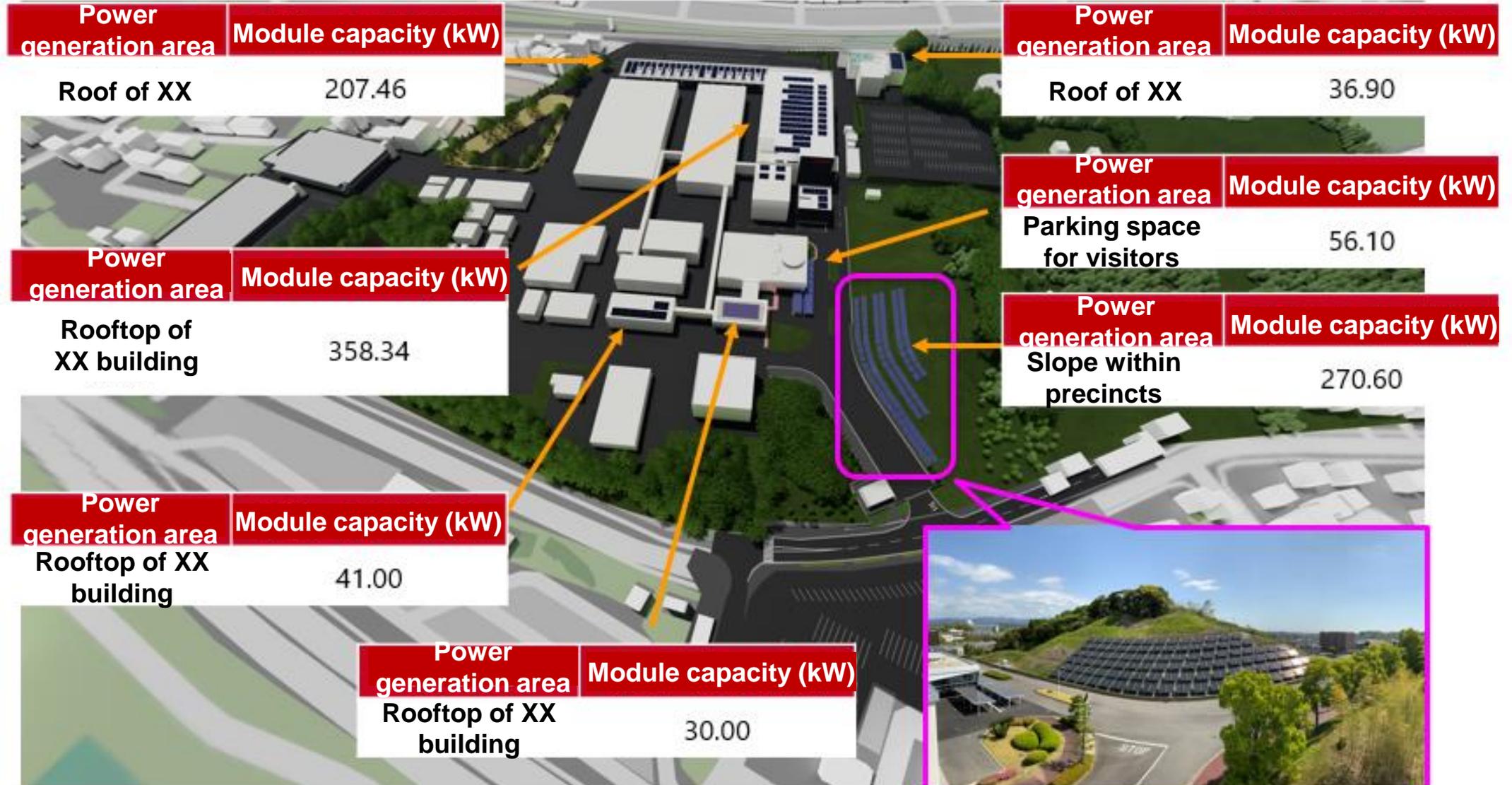


CO₂ emissions 187.9 t less a year

Crude oil equivalent 98.6 kL less a year

Available as reference information when introducing similar equipment by organizing an energy increase/decrease before and after introduction of equipment.

Why did we place the solar power panels in a prominent location?



The **corporate level of commitment** to reduction of environmental load is conveyed, **fostering awareness of energy conservation**.

How to sustain energy-saving activities in factory?

Topic	Date of improvement															
Non-operation of air conditioning of the office building (AC-2 system)	Oct. 13, 2021															
Proposal category 1: <input type="checkbox"/> Changed <input type="checkbox"/> Prepared <input checked="" type="checkbox"/> Discontinued <input type="checkbox"/> Others																
Before improvement [What problem occurred where?]	After improvement [Enter viewpoints, improvement points and efforts for improvement]															
<p>According to the EMS, it was assumed that the 6M-1 of the office building had been subjected to a constant load (waveform) throughout the year and used for air conditioning in light of a load curve.</p> <p>However, manpower was required to understand the target air conditioning equipment. Accordingly, we asked Mr. Oba of VEGLIA Laboratories for cooperation, finding out that the air conditioning equipment corresponding to the 6M-1 was the AC-2 system of the office building.</p> <p>Next, as a result of clarifying actual operation and problems of the AC-2 system, it was found out that it was running from 6:30 a.m. to 5:30 p.m. at setting temperature of 23°C on weekdays throughout the year.</p> <p>In addition, as a result of resurveying the air outlets of the AC-2, individual air conditioning has been actually provided in almost all areas, finding it unnecessary to run the AC-2.</p>	<p>As a result of resurveying the air outlets, it was found out that main areas (server room included) were now provided with individual air conditioning.</p> <p>For the server room, air conditioning has been suspended on Saturdays and Sundays throughout the year from the beginning. The equipment has never broken down due to a temperature rise in the room so far.</p> <p>Based on the above-mentioned, it was clarified that even if the AC-2 was fully stopped, including the server room, with the consent of Mr. XX of the Planning Management Group, there was no impact on operations and an indoor environment. Accordingly, it was decided to fully stop operation of the AC-2 at 10:00 a.m. on Oct. 13. (Main circuit breaker turned off)</p> <p>The following describes annual reduction effects by this non-operation.</p> <p>* See an attached material for details.</p> <p>Max. demand: 27.20 kW less Power consumption: 41,134 kWh less/year CO₂ emissions: 20.07 t less/year Electric bill: ¥845,884 less/year (fixed cost ¥270,000 + variable cost ¥575,884)</p>															
<p>[Power saving] Non-operation of air conditioning (AC-2 system) of the office building (Facilitator: XX)</p> <p>[Current]</p> <ul style="list-style-type: none"> According to the EMS, the 6M-1 of the office building had been subjected to almost a constant load (waveform) throughout the year. It was assumed that it was used for air conditioning in light of a load curve, but it was unknown which was the target equipment. It was found out that the air conditioning equipment corresponding to the 6M-1 was the AC-2 system of the office building. The AC-2 system was running from 6:30 a.m. to 5:30 p.m. at setting temperature of 23°C on weekdays throughout the year. As a result of resurveying the air outlets of the AC-2, individual air conditioning has been actually provided, finding it unnecessary to run the AC-2. <p>[Measures]</p> <ul style="list-style-type: none"> As shown in the right figures, the AC-2 originally played a role of air conditioning equipment for different areas of the office building. Currently, individual air conditioning is provided in main areas. The said equipment covers the server room, but since it has been suspended on Saturdays and Sundays from the beginning and individual air conditioning is provided, it was clarified even if the AC-2 was fully stopped, with the consent of Mr. XX of the Planning Management Group, there was no impact. Accordingly, it was decided to fully stop operation of the AC-2 at 10:00 a.m. on Oct. 13. (Main circuit breaker turned off) <p>[AC-2 air outlet areas (drawing at introduction time)]</p> <p>[AC-2 air outlet areas (current layout)]</p> <p>[Example of actual situation]</p> <p>[EMS data (Before improvement)] 6M-1 of office building No. 3</p> <p>[EMS data (After improvement)] 6M-1 of office building No. 3</p> <p>Stopped at 10:00 a.m. on Oct. 13</p> <p>[Effects of non-operation]</p> <table border="1"> <thead> <tr> <th>Result</th> <th>Max. demand (kW)</th> <th>Annual power consumption (kWh)</th> <th>Annual electric bill (yen)</th> <th>Annual CO₂ emissions (t)</th> </tr> </thead> <tbody> <tr> <td>2020/6/1~2021/5/31</td> <td>27.20</td> <td>41,134.56</td> <td>575,884</td> <td>20.07</td> </tr> <tr> <td>After improvement</td> <td>▲27.20</td> <td>▲41,134.56</td> <td>▲575,884</td> <td>▲20.07</td> </tr> </tbody> </table>		Result	Max. demand (kW)	Annual power consumption (kWh)	Annual electric bill (yen)	Annual CO ₂ emissions (t)	2020/6/1~2021/5/31	27.20	41,134.56	575,884	20.07	After improvement	▲27.20	▲41,134.56	▲575,884	▲20.07
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To report the improvement results, it is necessary to

list much information

Troublesome because of much time and effort required Not continued

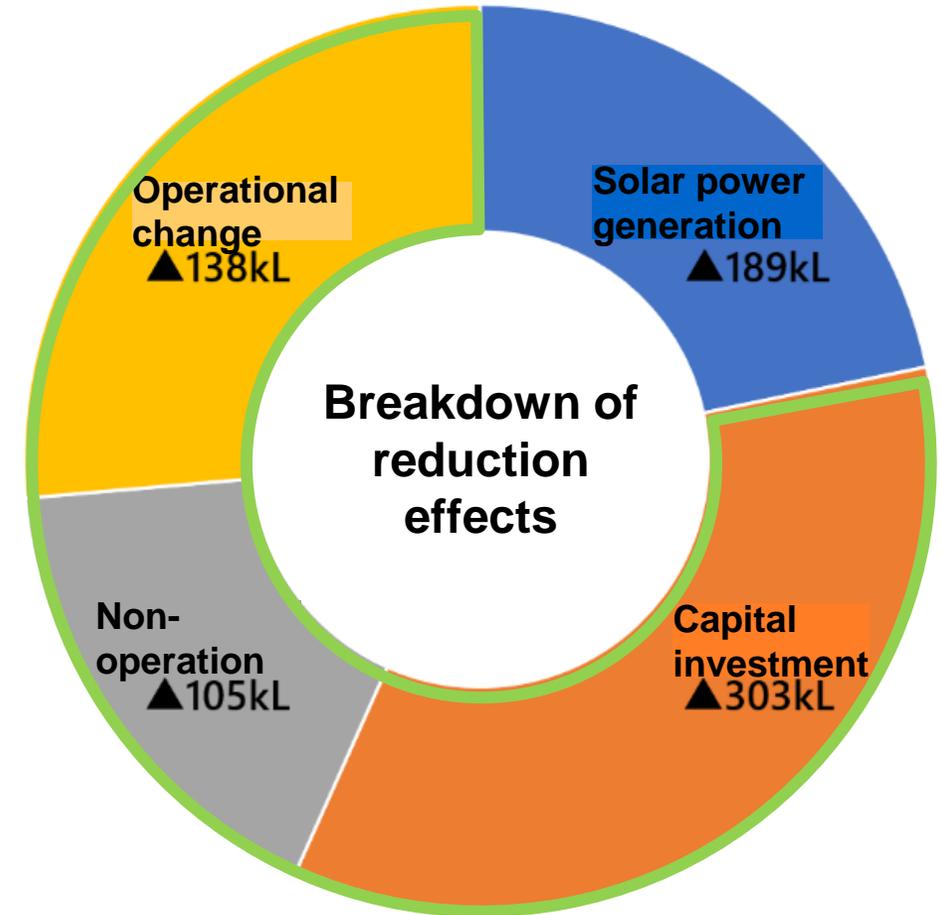
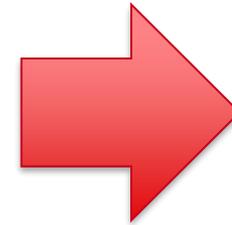
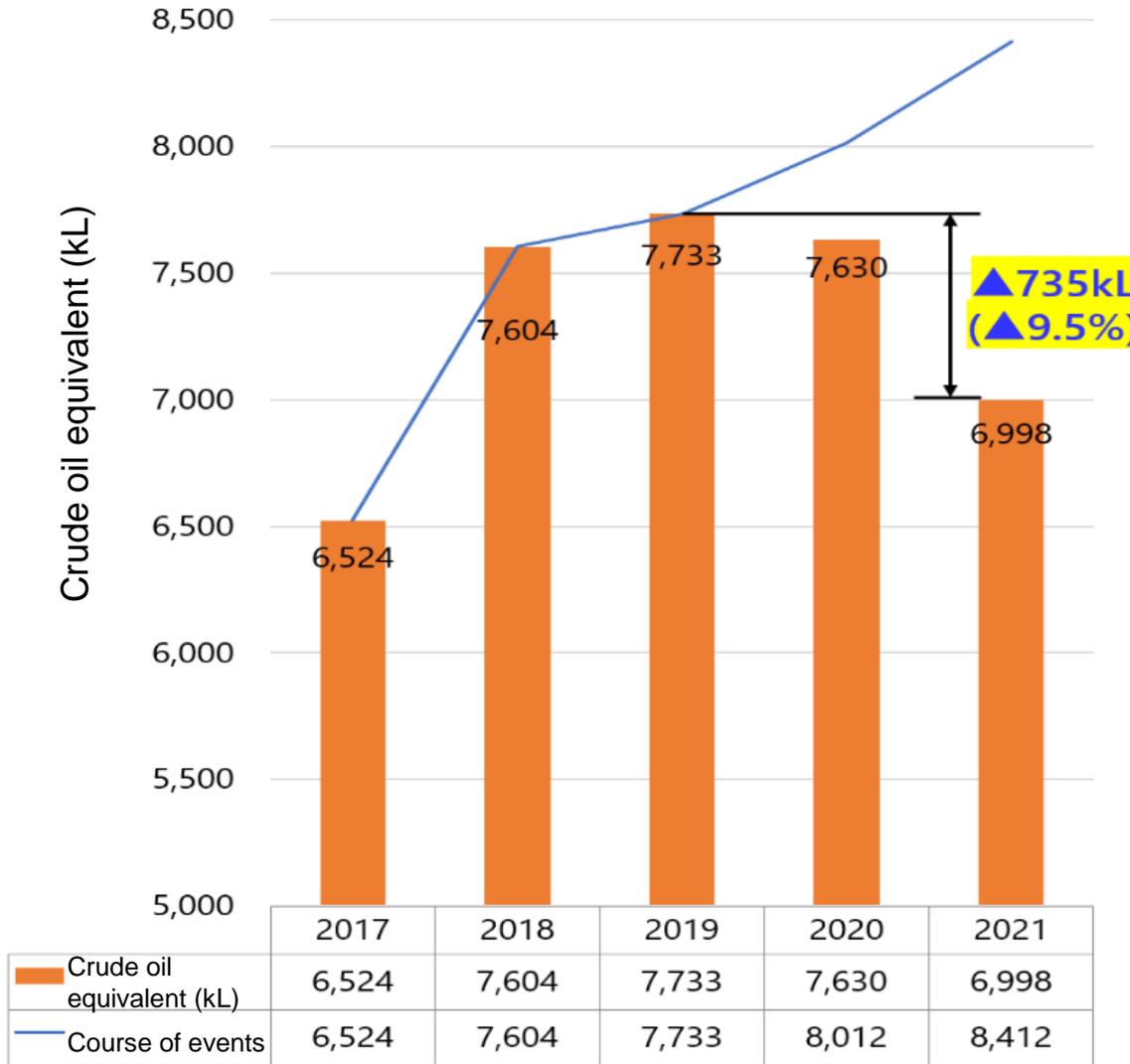
Support preparation of reports

[Results of improvement activities]

	2020	2021	2022
No. of improvement cases	15	30	24
CO ₂ emissions (t/year)	350 less	400 less	190 less
Crude oil equivalent (kL/year)	184 less	210 less	100 less

Various energy conservation activities are **developed by a hands-on approach** through **accompanying support** from consideration to implementation and reporting.

How did 2021 change in comparison with 2019?



Improved 78% by utilizing data

Various conventions are reviewed by involving many persons, **leading to large energy reduction.**

**New approaches for reduction of
our environmental footprint
and people's abundance**



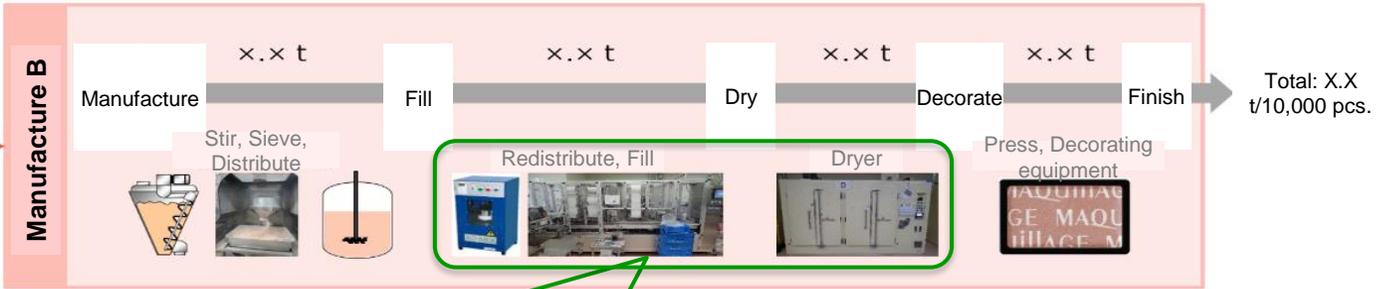
Establishing the energy-saving production method



I want to reduce energy per product, but where should I start?

Visualize energy for each process

Review operating conditions

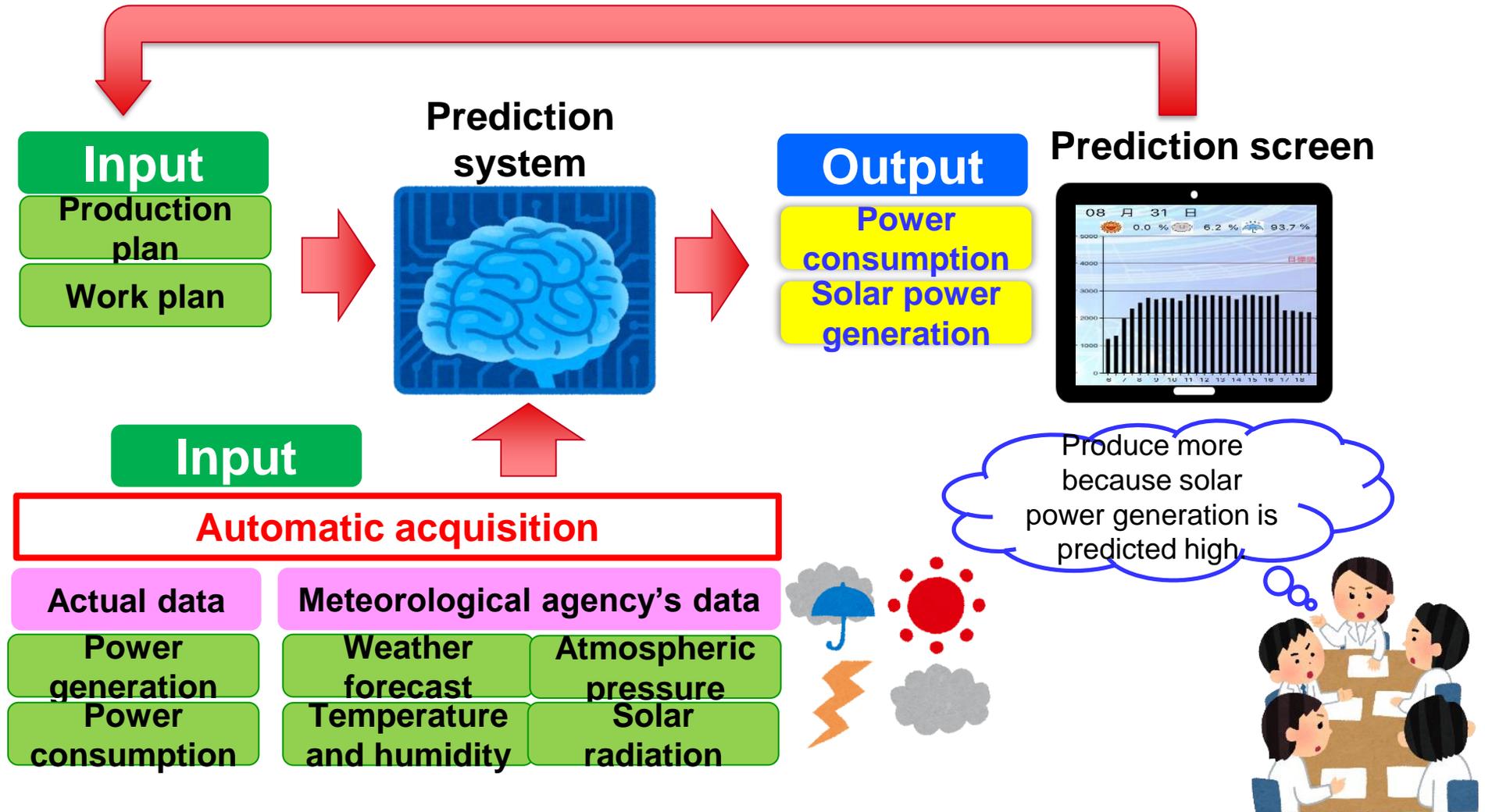


Consider alternative manufacturing method

Review manufacturing method

Review efficiency of the production line and the product manufacturing method for each process **to establish the energy-saving production method.**

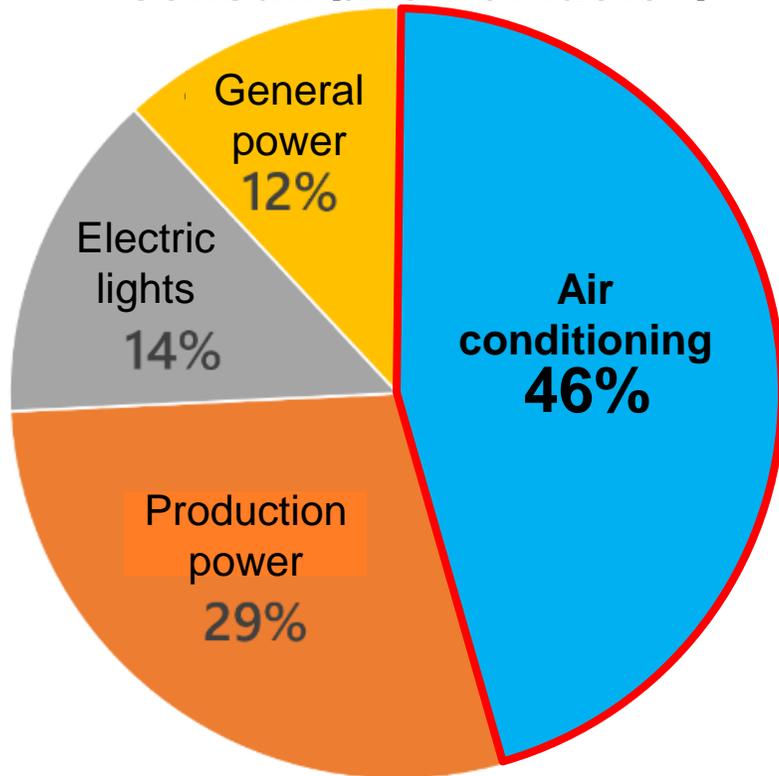
Reviewing the production plan with the power consumption prediction system



Standardize a production plan based on the weather conditions to **reduce energy consumption.**

Reducing the air conditioning load

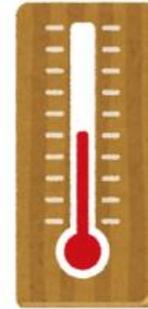
Breakdown of total power consumption of factory



Air conditioning load accounts for approx. 50%.



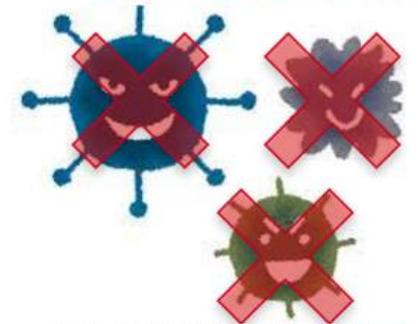
Ready-made work uniform is **stifling** because of **poor breathability**.



Lower the air conditioning setting **temperature** to cope with the situation.



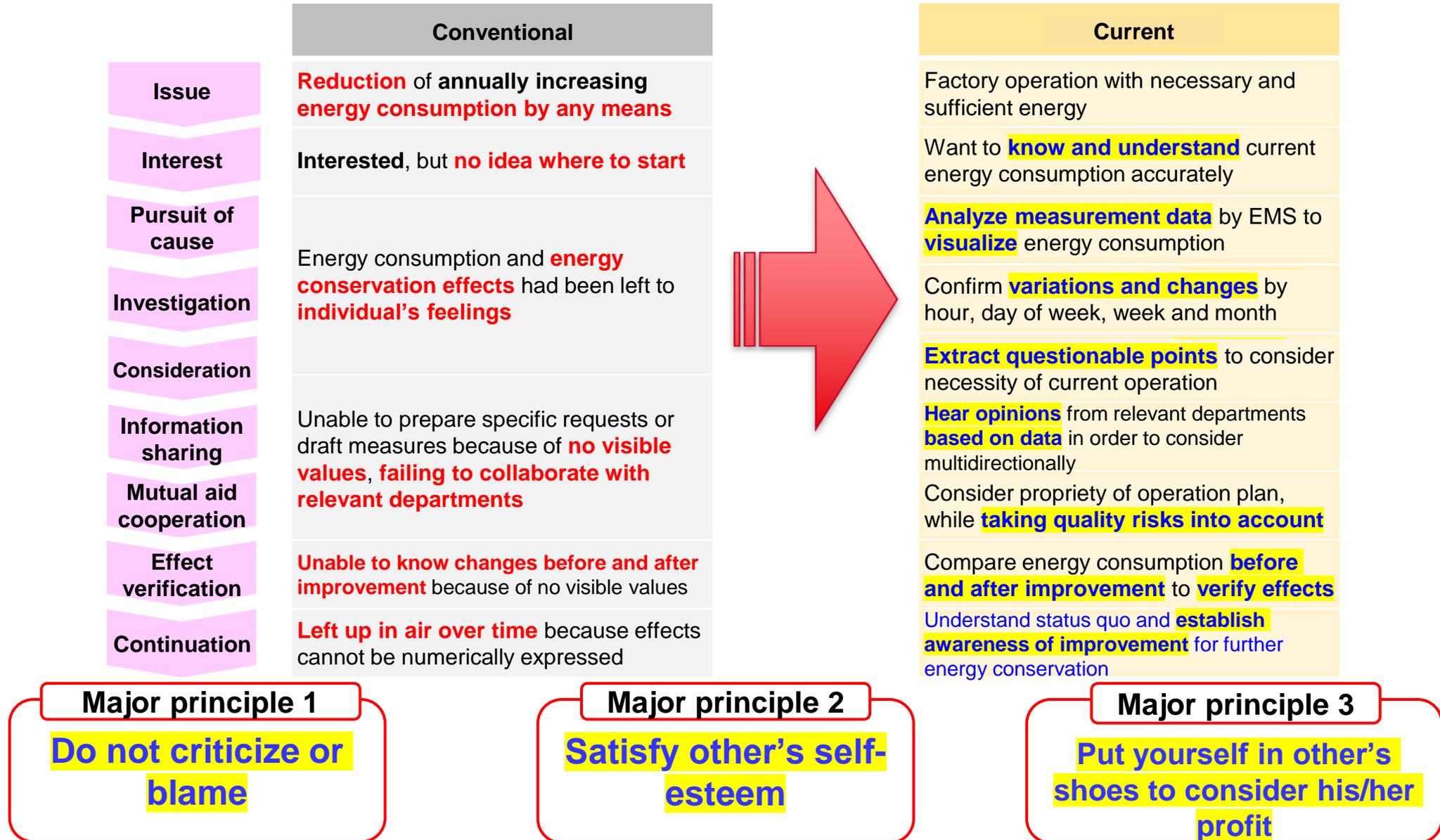
Higher air conditioning load and **higher power consumption**



Higher steam (city gas boiler) consumption for humidity control

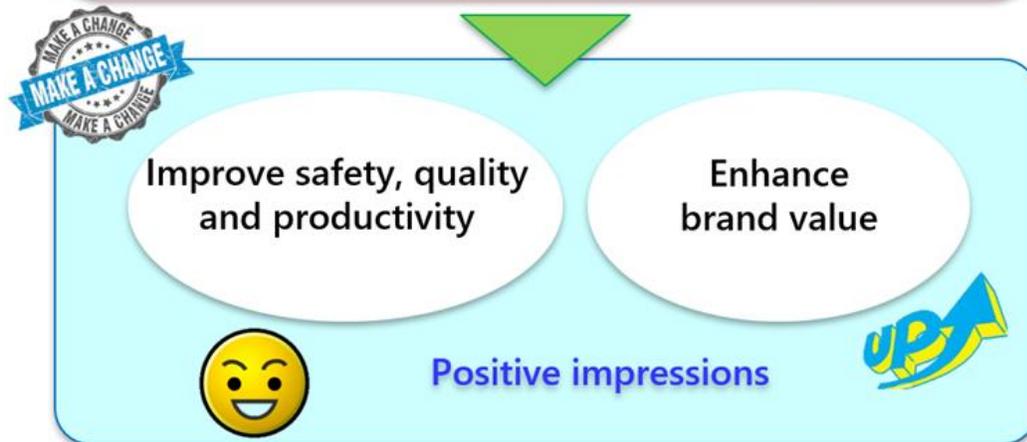
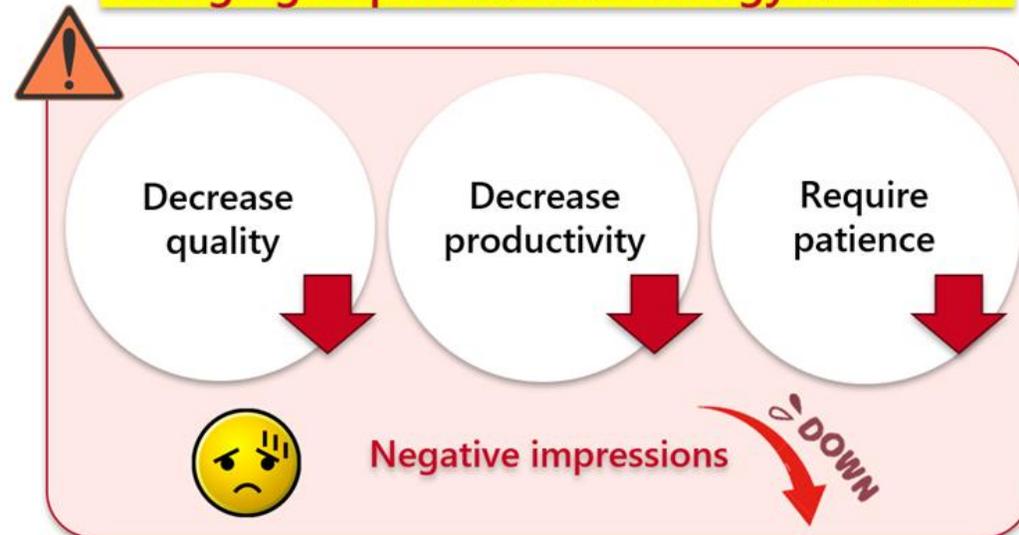
Develop a more **breathable work uniform to increase** the air conditioning setting temperature **by 3°C**.

How did visualization and attraction change the activities?



Summary

Changing Impressions on Energy Reduction



Making Energy Saving Proposals



How to advance energy conservation activities, their viewpoints, and actions of the secretariat
Capable of widely applying and developing in various fields, regardless of private sector, administrative sector and business category.

Under the Mission of BEAUTY INNOVATIONS FOR A BETTER WORLD, we will make efforts to solve various social issues such as responding to climate change and emphasize realization of a sustainable society.

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