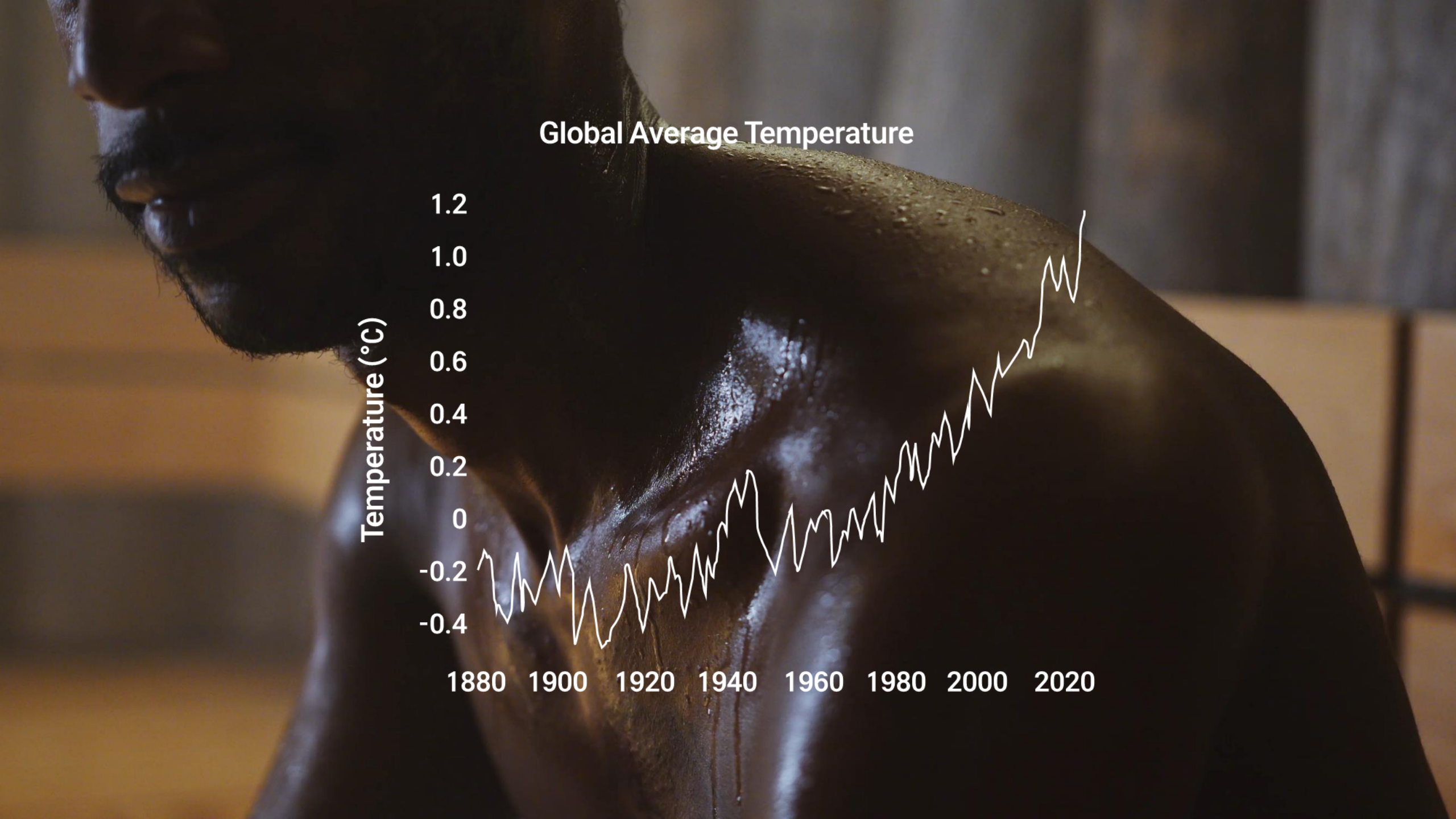
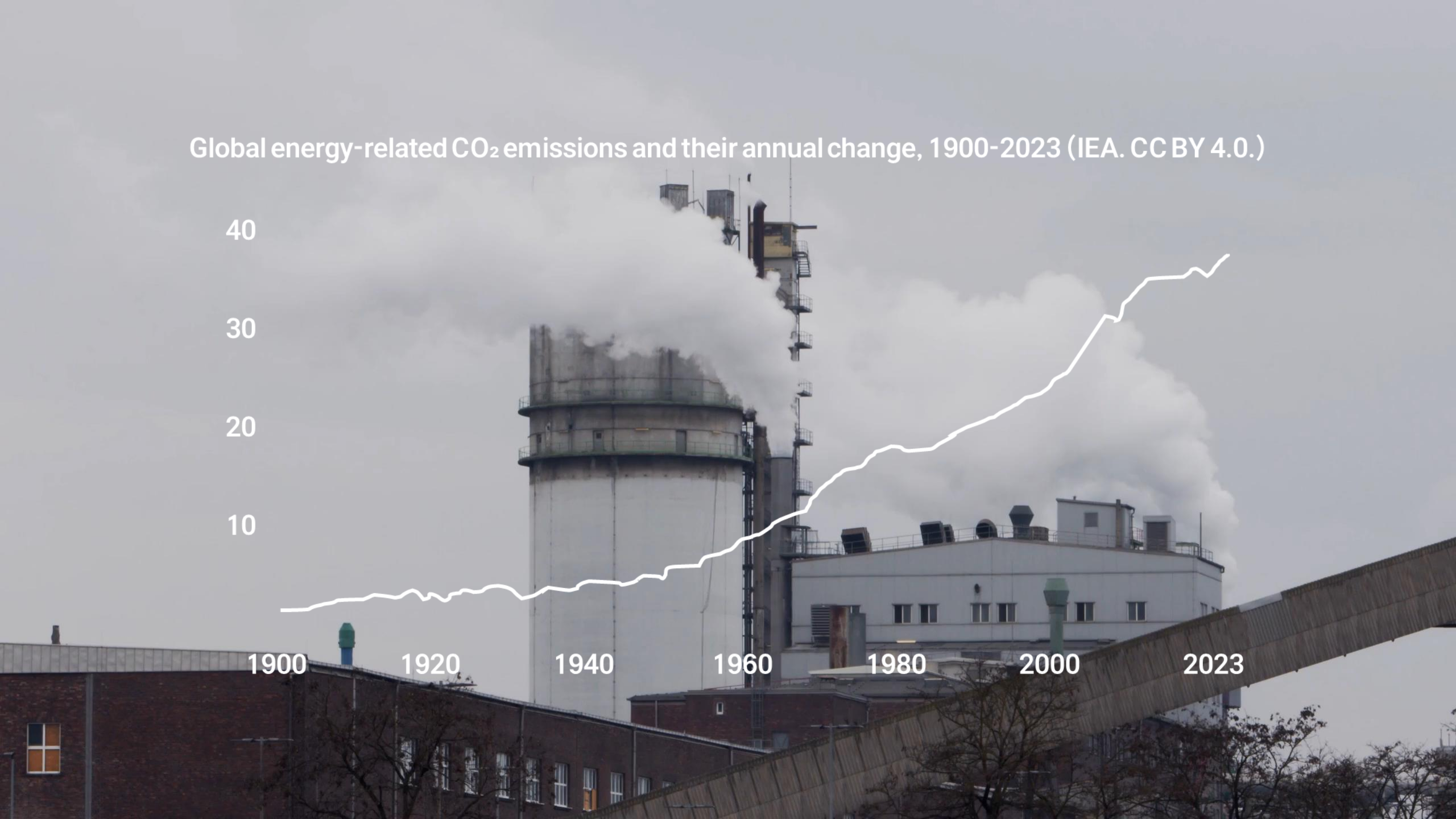
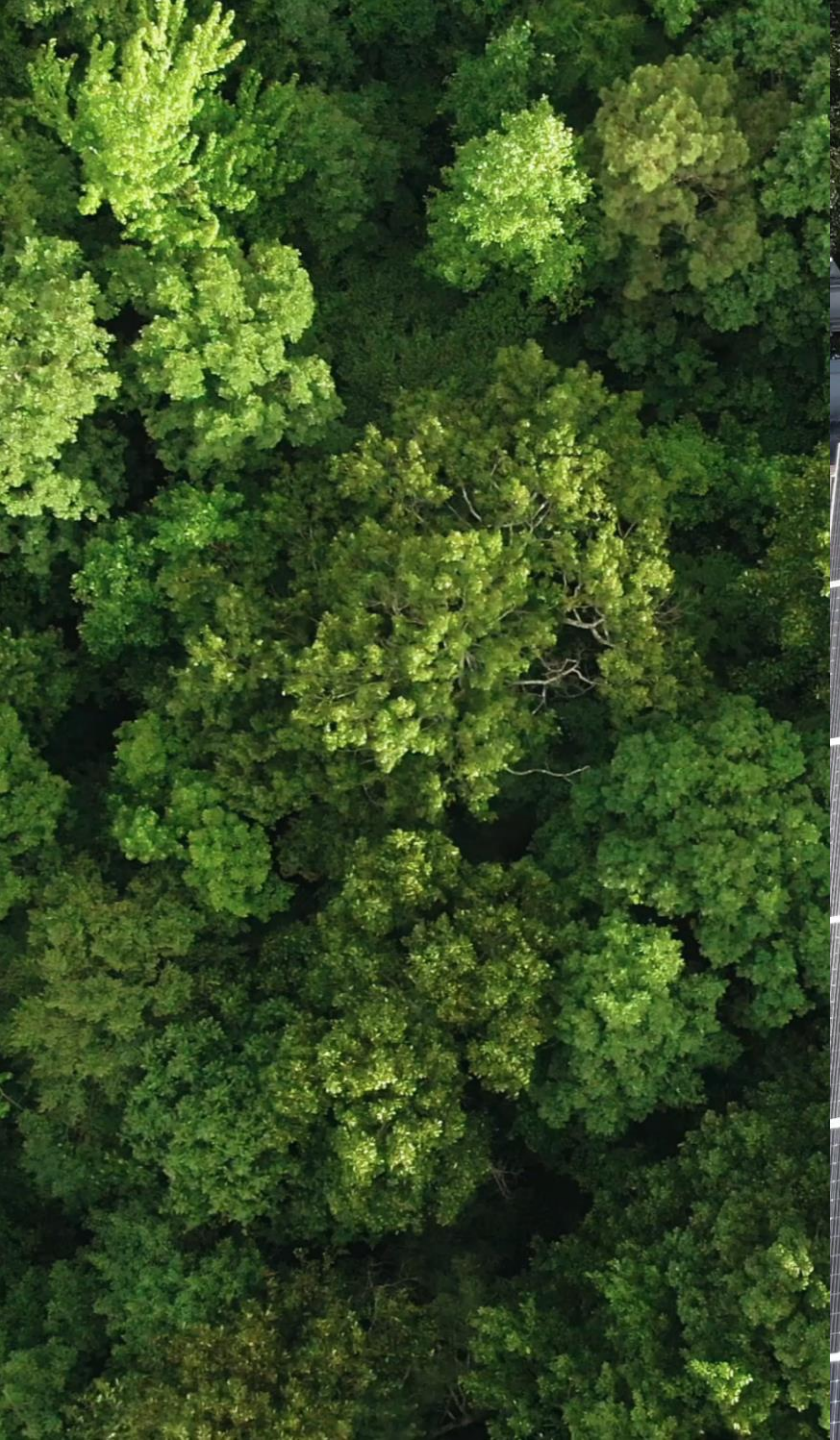

GREEN
DATA


Global Average Temperature
Temperature (°C)
1.2
1.0
0.8
0.6
0.4
0.2
0
-0.2
-0.4
1880
1900
1920
1940
1960
1980
2000
2020

Global energy-related CO_2 emissions and their annual change, 1900-2023 (IEA. CC BY 4.0.)







ENERGY MANAGEMENT SYSTEMS MARKET SIZE 2023 TO 2033 (USD BILLION)



System Management | Energy Total | Energy Analysis | City Water Total | Performance Evaluation

All | Heat Source | Heat Transfer | Service Hot Water | Lighting & Electric Heat | MCC Power

Center



Use
Office
Floors
Ground 16 Floor,
Basement 5 Floor
Total Ground Area
91,093㎡

Address
Seoul

Today's Electric Power Use



Total Annual Energy Use



CLOSE

Energy Consumption Table

Classification		Energy Item
Category	Division	
Heat Source	Main Equip.	CHiller
		Boiler
	Sub Equip.	Coolant Pump
		Cooling Tower
		1st Pump
	Individual AHU	DVM
	Renewable	Solar Heat
		Geothermal
Heat Transfer	Water Transfer	2nd Pump
	Air Transfer	AHU
Hot Water	Main Equip.	Boiler
		Circulation Pump
Lighting/Electric Heat	Lighting/Electric Heat	Tower-A
		Tower-B
		Tower-C
		Common
MCC Power	Exhaust	Supply/Return Fan
	Water Pump	Supply/Return Pump
	Power	Kitchen
		ELEV
		Extra Power
etc.	etc.	etc.

Today's Energy Use[Electric]

80,310 kWh



Today's Energy Use[Gas]

5,388 Nm3



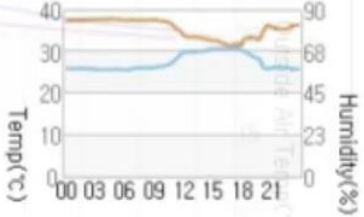
Today's Energy Use[Water]

1,208,414 ton



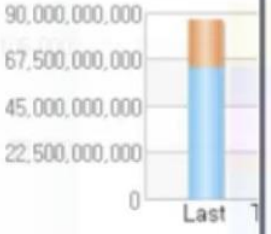
Outdoor Temperature

Temp:26.1℃, Humidity:82.0%



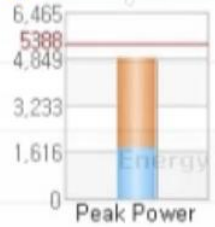
Annual Energy Use

1,129 Gcal



Monitoring Peak-Load

4,940 kW





Current	1,802
Today	4,940
Annual	5,388

Max.	Min.	Avg.
4,940	1,649	3,383

Energy Use for Each Building

Building Name	Lighting & Electric Heat
Tower A	4,235 kWh
Tower B	2,754 kWh
Tower C	3,453 kWh
Common Area	1,212 kWh
Summary	11,654 kWh

Annual CO2 Emission

24 tCO2



Integrated View
Dashboard
Power usage by space
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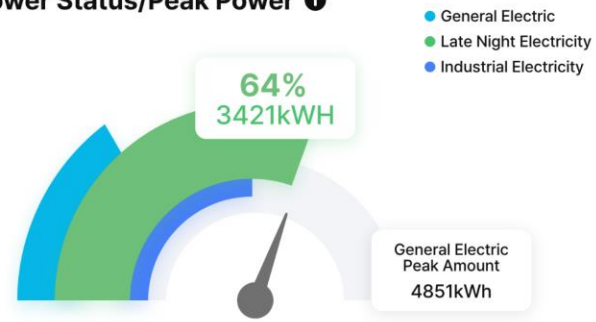
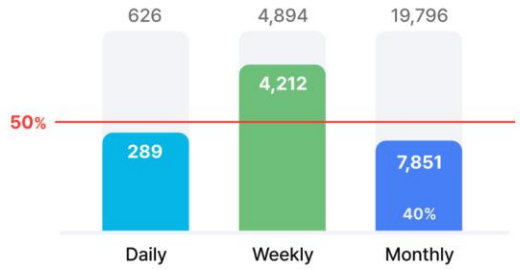
Power Status/Peak Power



Compare electricity usage

Unit : kWh



Calorie breakdown by space

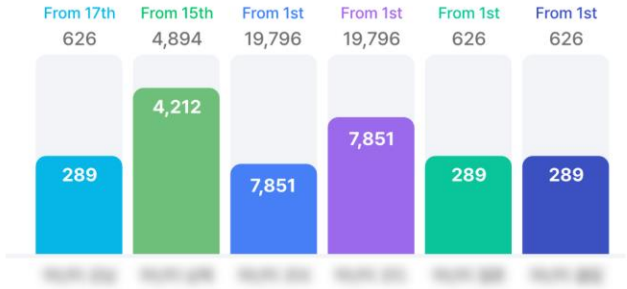
Rank	Space	Calorie
1	Place 1	66,271.4
2	Place 2	14,788.7
3	Place 3	13,092.8
4	Place 4	12,176.9
5	Place 5	11,372.9

Usage by workplace

Rank	Workplace	Total usage	Usage fees
1	Workplace1	80,056	4,321.3
2	Workplace2	68,456	3221.5
3	Workplace3	54,534	2443.7
4	Workplace4	43,123	2111.7
5	Workplace5	43,123	2111.7

Power usage by workplace

meter reading date (unit : kWh)



Energy usage

As of this month

3,912.6kWh
Total electricity usage

10m³
Total gas usage

212Ton
Total water usage

Calorie breakdown by space



Carbon footprint

As of this week

534500 kgCO2e

electricity	gas	water
3245kgCO2e	1222kgCO2e	822kgCO2e
75%	13%	12%

Power consumption calendar

As of this week

2023 . 9

Sun	Mon	Tue	Wed	The	Fri	Sat
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	
22	23	24	25	26	2.	
29	30	31				

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Electrical energy to area

Total area	Electrical energy to area
60만㎡	321kWh
Usage(kWh)	**Last month energy**
72,123,131	211kWh

Gas energy to area

Total area	Gas energy to area
60만㎡	321㎥
Usage(㎥)	**Last month energy**
45,311	321㎥

Gas energy compared to the room

A | B | C | H | All

Total Rooms	Gas energy compared to the room
32ea	321㎥
Usage(㎥)	**Last month energy**
45,311	321㎥

Power goal metrics

This month's target usage	recommendation by target
335,639kWh	15,600kWh

Appliance recommendation patterns

usage in the last month: 3,554kWh

Recommended usage patterns	AI mode	Normal mode
	13day	17day

Estimated usage: 3,124kWh

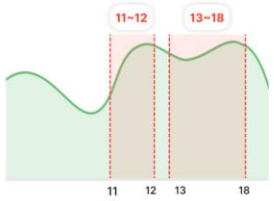
Solar energy generation and savings

Energy yield per area: 554kWh

Savings per area: 156,743KRW

Number of panels	Savings	Energy Savings
10ea	123MKRW	3,241kWh

Analyze EV charger usage



	Summer
Light Load	79.2KRW
Medium Load	105.0KRW
Full load	138.5KRW

Usage is high during peak load times. We recommend charging outside of those times.

Based on previous day's usage

Analyze solar efficiency

#1 Panel

Average production: 2,453kWh

Current production: 1,573kWh



Today's weather

Clear skies

-8.9°C

From yesterday 4°↓

Feeling -10.7°C

Humidity	Wind	precipitation
49%	북 3.5 m/s	10 mm

Ultra-fine dust	Fine dust	
23	7	3
Good	Normal	Bad

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Yesterday's line analysis (lowest)

Facilities	Uptime	Reject	performance
#1 Line	25%	2%	60%
#2 Line	33%	4%	62%
#3 Line	29%	2%	65%
#4 Line	42%	1%	67%
Overall average	50%	3%	95%

Current month anomalies

Facilities	Uptime	Power	Anomalies
#1 Line	3% ▼	10% ▲	6
#2 Line	9% ▲	5% ▲	5
#3 Line	7% ▲	5% ▲	2
#4 Line	4% ▼	5% ▼	2

Delivery plan

Number of due dates	Delivery date
80,000	23-07-14 (-18)

Daily Quota	Progress	Days remaining
5,500	10,500	D-15

Cold storage management

#1 Cold storage

Setting temp -50°C

Current temp -42°C

Power 295kWh

Storage management

#1 Storage

Power 295kWh

Setting temp COOL 25°C

Current temp 24.5°C

Setting Humidity 20%

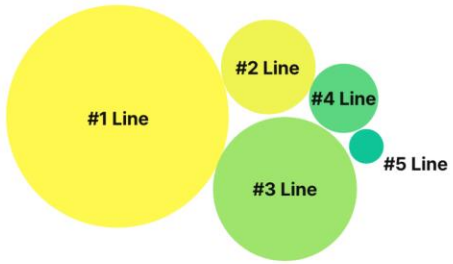
Current Humidity 24%

Production utilization

	Utilization	Availability	Uptime	Downtime
Monthly	97.81%	10,120m	9,898m	222m
Weekly	92.4%	2,300m	2,125m	175m
Daily	82.57%	460m	380m	80m

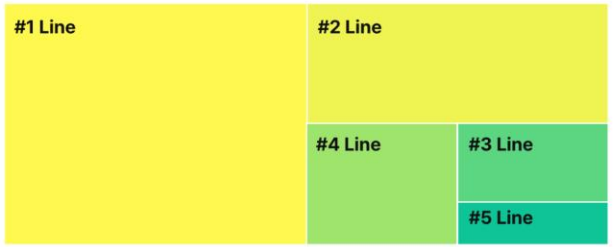
Power & Yield per Line

Power to Output Ratio MAX MIN



Power & Yield per Line

Power to Output Ratio MAX MIN



Reject rate (estimated)

	Quality	Import	Process	Shipment
Monthly	1,400PPM	380PPM	3,100PPM	720PPM
Weekly	2,187PPM	730PPM	5,250PPM	PM
Daily	1,583PPM	320PPM	4,220PPM	PPM

A prediction based on data

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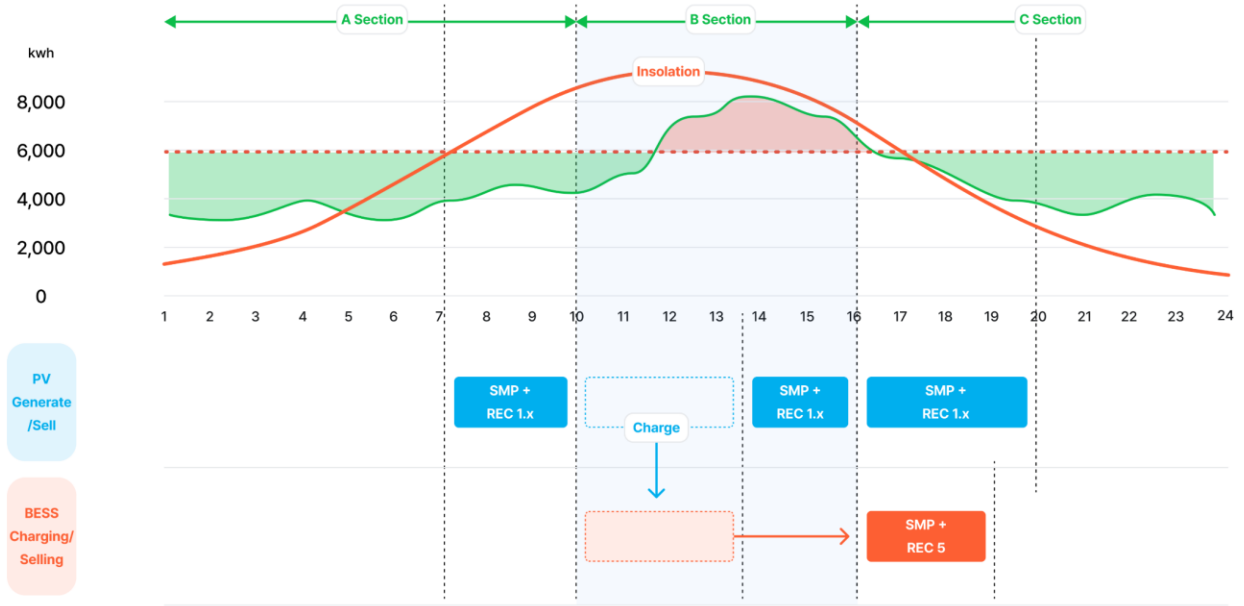
Manage load shifting

September 12, 2024

Today



Solar power generation

Unit : kWh

Current power **812.00kWh**

Today's accumulation **980.00kWh**

Previous day's consumption **982.00%**

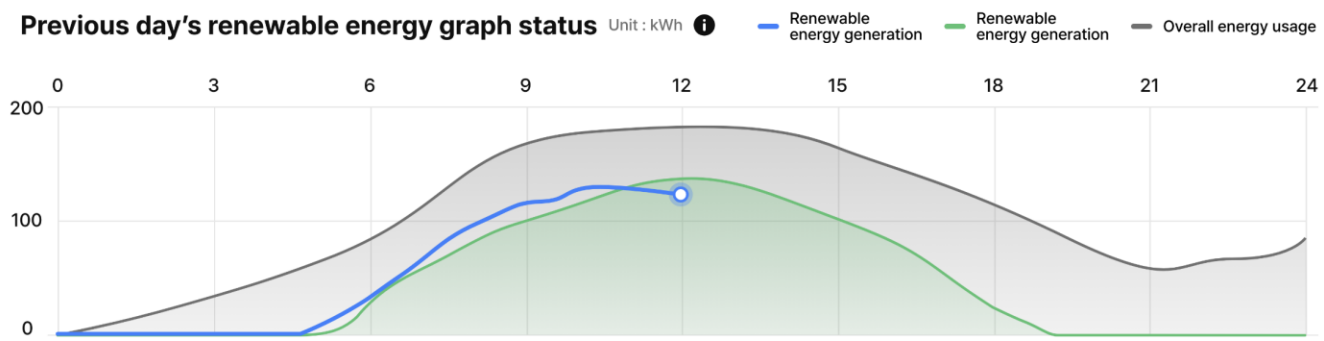
Weather forecasts

Day 15 | Day 16 | Lowest 21°C / Highest 28°C

Time	12	15	18	21	0	3	6	9	12	15	18	21
Weather temperature	28°C	28°C	28°C	28°C	28°C	28°C	28°C	28°C	28°C	28°C	28°C	28°C
Feeling temperature	27°C	27°C	27°C	27°C	27°C	27°C	27°C	27°C	27°C	27°C	27°C	27°C
Precipitation (mm)	-	21	21	21	-	-	-	21	21	21	-	-
Humidity	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%

Previous day's renewable energy graph status

Unit : kWh



ESS details

	Charge	Discharge
Current charge/discharge	812.00	0.00
Today charge/discharge	42.00	840
Previous day's charge/discharge	7,600.00	9,200.00

구분	SMP	REC	Total
Solar	75,040	135,072	210,112
ESS	0	25,200	25,200
Total	75,040	160,272	235,312

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Simulation

HVAC | Terminal | LED

HVAC Simulation

OHU | AHU | OAC

- OHU HVAC Simulation1
- OHU HVAC Simulation1
- OHU HVAC Simulation2
- OHU HVAC Simulation3
- OHU HVAC Simulation4
- OHU HVAC Simulation5

HVAC Simulation

#1 Inverter

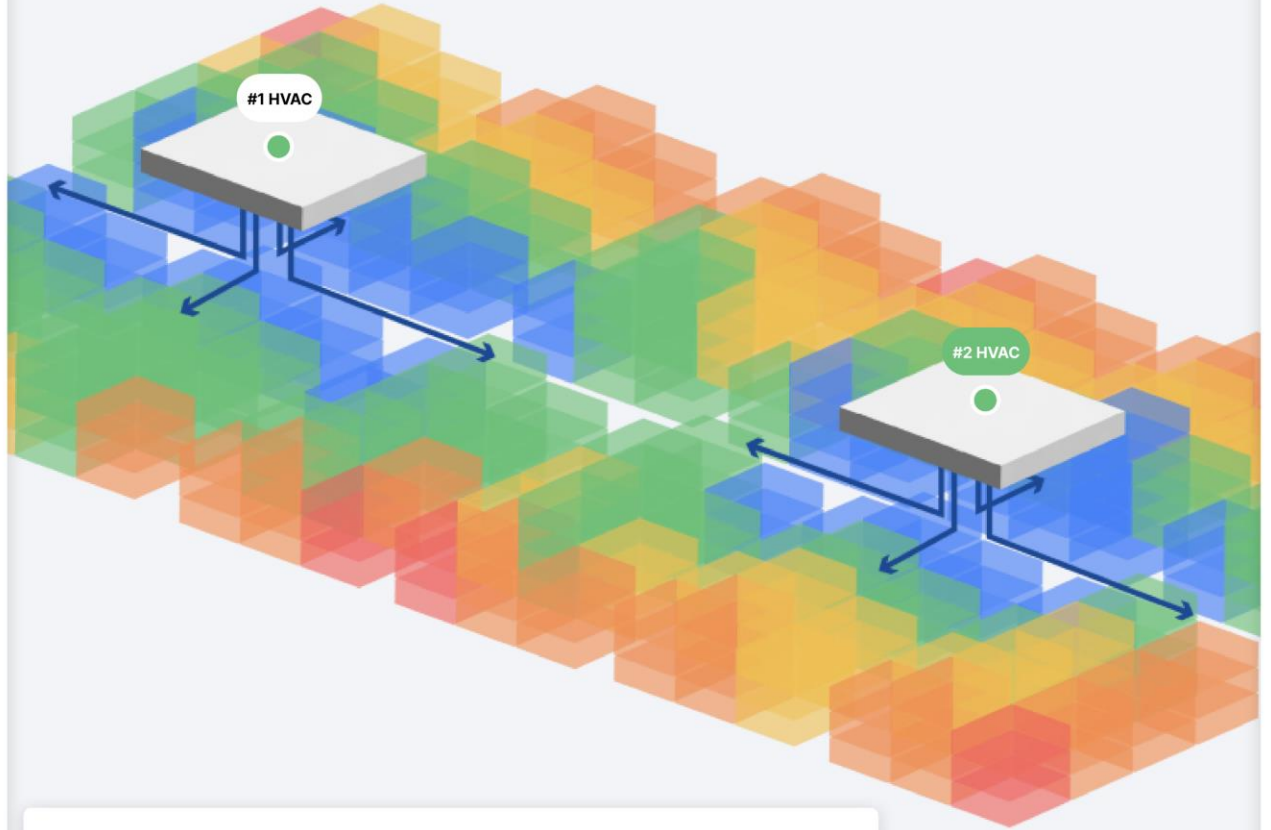
HVAC1 Consumption
153kWh

HVAC2 Consumption
153kWh

HVAC3 Consumption
153kWh

Generation efficiency	CO2 Reduction
91%	2,245,142kgco2e

Add



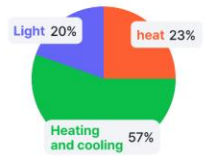
Simulation results

Comfort analysis

Optimal	Comfortable	Normal
24	32	21

Unpleasant	Worst
21	7

Power usage by purpose for the day



Reconciling capitalized equipment

HVAC | Terminal | LED

Select a space

- Workplace1
- Workplace2
- Workplace3

- #1 HVAC Delete
- #2 HVAC Delete

#2 HVAC

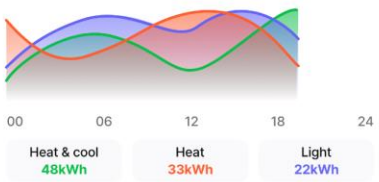
#1 Inverter

HVAC1 Consumption
153kWh

HVAC2 Consumption
153kWh

HVAC3 Consumption
153kWh

Generation efficiency	CO2 Reduction
91%	2,245,142kgco2e



Heat & cool	Heat	Light
48kWh	33kWh	22kWh

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AI Report

Viewing period 2023 check print

GREEN OS

Annual Report for 2023

Member Name: Korea Green Data Co., Ltd.
Location: Intellige 2, 24 Jeongja-dong, Bundang-gu, Seongnam-si, Gyeonggi-do
Period: 2023.01.01. ~ 2023.12.31.

General opinion

√ Annual fee changes report

- Compared to the previous year, usage increased by 8,300,86kWh and electricity bill increased by 8,412,667 KRW

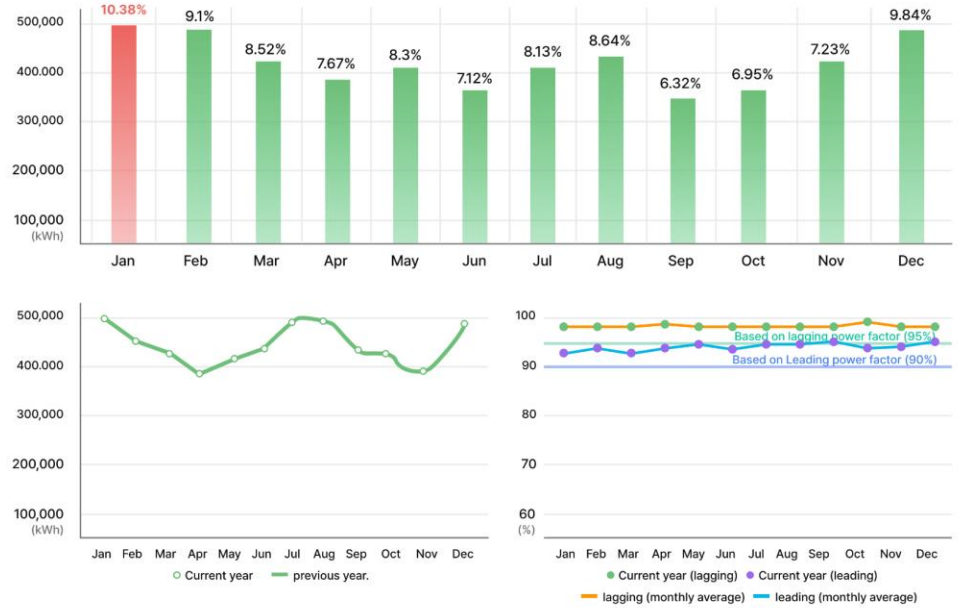
√ Rate increase factors

- From June to August, the temperature was 2°C lower than the previous year, but electricity consumption increased by 15%.
- Electricity usage on weekends and public holidays increased by 10% compared to the previous
- Electricity use during lunch hours increased by 2% compared to the previous year.
- Although the number of employees has not changed, electricity usage after 7 o'clock on weekdays has increased by 5% compared to the previous year.
- Peak power decreased by 2%, but annual usage increased by 10%.

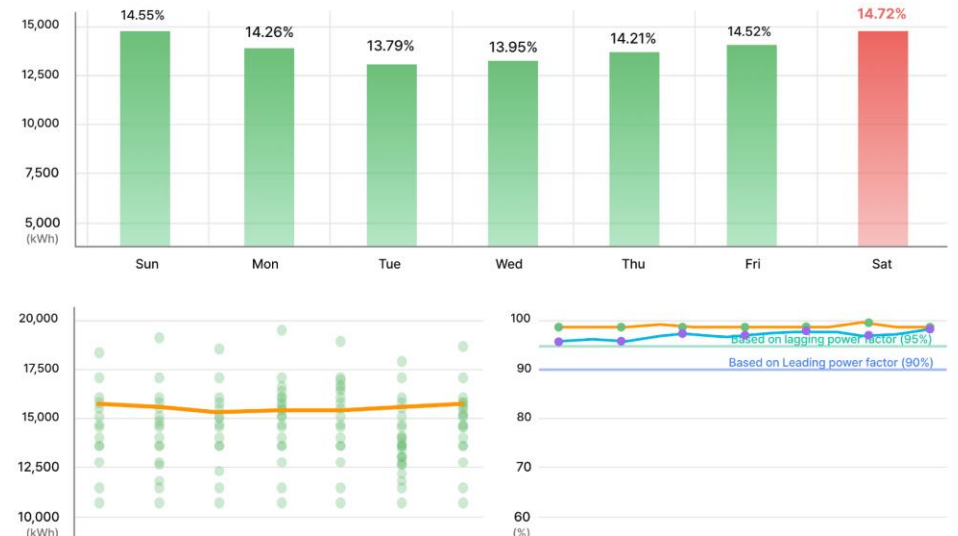
√ Fee reduction plan

- Since the increase in electricity consumption is higher compared to

Monthly



Daily





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We expect the protection of 4363 trees in this Month!

alarm

GREEN OS

Tell me about yesterday's issue

greeny

Abnormal usage status

rank	building name	Kcal
1	Building A, 1-5.	66,271.4
2	Parking lot(D)	14,788.7
3	Building B	13,092.8
4	Building C	12,176.9
5	Building A, 6-9	11,372.9

Currently, abnormal use has been detected in Building A, 1-5. Administrator confirmation is required.

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Electrical energy to area

Total area	Electrical energy to area
60만㎡	321kWh
Usage(kWh)	Last month energy
72,123,131	211kWh

Gas energy to area

Total area	Gas energy to area
60만㎡	321㎥
Usage(㎥)	Last month energy
45,311	321㎥

Gas energy compared to the room

A | B | C | H | All

Total Rooms	Gas energy compared to the room
32ea	321㎥

Power goal metrics

This month's target usage	recommendation by target
335,639kWh	15,600kWh

Appliance recommendation patterns

usage in the last month 3,554kWh

Recommended usage patterns: AI mode 13day | Normal mode 17day

Estimated usage 3,124kWh

Analyze EV charger usage



Based on previous day's usage

	Summer
Light Load	79.2KRW
Medium Load	105.0KRW
Full load	138.5KRW

Usage is high during peak load times. We recommend charging outside of those times.

Analyze solar efficiency

#1 Panel

Average production 2,453kWh

Current production 1,573kWh

Relative to average 89%

GREEN OS

Show frequently used dashboards

greeny

all right.
Please check the dashboard.

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Total Rooms

Gas energy compared to the room

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Current production 1,573kWh

Relative to average 89%

GREEN OS

Please tell me the amount of carbon emissions generated during production of each HGP-24.

greeny

The carbon emissions per HGP-24 product are 15kgco2e.

Turn the above data into a dashboard card.

greeny

This is a dashboard created based on the carbon emissions per HGP-24 product.

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Gas energy to area

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Usage(㎥)	Last month energy
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Gas energy compared to the room

A | B | C | H | All

Total Rooms

Gas energy compared to the room

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Average production 2,453kWh

Current production 1,573kWh

Relative to average 89%

GREEN OS

HGP-24 carbon emissions (units)

today's production	carbon emissions
30	119.5kgCO2e
Today's defect rate	Energy usage (per unit)
0.6%	57.25Toe

greeny

If you would like to add it to your dashboard, please click the button below.

Add a dashboard

GreenOS

Dashboard | Analysis | Device | Report

Hello. John!

27 Jan - 27 Feb 2025 | Add Widget

Energy usage status

613,123 TOE

Energy usage status

67%

This month, we're saving 13% over last month.

Energy status

4,360 kWh >	↘ 12%
436 Ton >	↘ 12%
436 m2 >	↗ 12%
12,436 tCO2 >	↗ 12%
$123,456 >	↘ 12%

Energy Rating



Your Energy Score is average

Last Check on 21 Apr

What these stats mean?

Weather

Palo Alto

20°

TIME	UV	% RAIN	AQ
11:25 AM	4	58%	22

Sunrise & Sunset



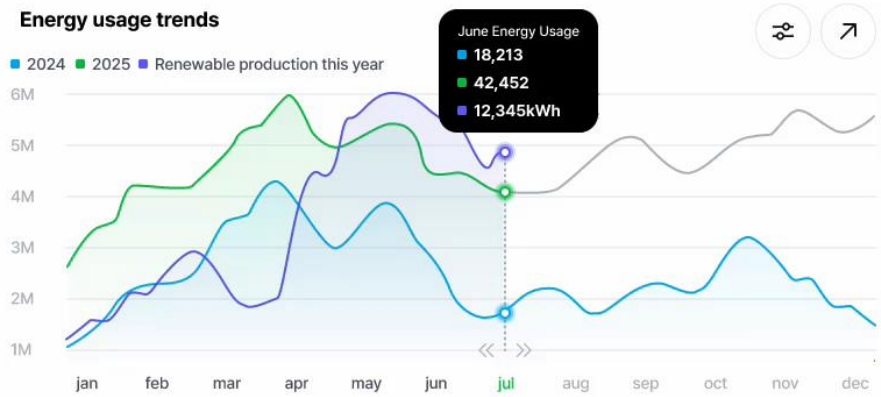
Length of day : 13H 12M Remaining daylight : 9H 22M

Energy calendar

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		1 123kWh	2 123kWh	3 123kWh	4 123kWh	5 123kWh
6 123kWh	7 123kWh	8 123kWh	9 123kWh	10 123kWh	11 123kWh	12 123kWh
13 123kWh	14 123kWh	15 123kWh	16 123kWh	17 123kWh	18	19
20	21	22	23	24		
27	28	29	30	31		

19th Energy Status
- 12kWh
- 12Ton
- 23m2
- 12,45tCO2
- $12

Energy usage trends



Average energy usage

42,452 kWh 23,802 kWh more than last year.

Average rate

1,234,567 $ 123$ more than last year.

Device Control

All Devices | 1F | 1-1F | 2F | 2-1F

Smart TV Active for 3 hours 5Kwh	Speaker Active for 3 hours 5Kwh	Router Active for 3 hours 5Kwh
Wifi Active for 3 hours 5Kwh	Heater Active for 3 hours 5Kwh	Socket Active for 3 hours 5Kwh

Energy usage costs were reduced by an average of
$ 320,539 per site per year, achieving a return on investment (ROI) of 29%



Growth Metrics

market expansion through collaboration with global home appliance and construction companies

23.12 → **24.02** → **24.06** **24.07** →

GreenOS

Lunch of GreenOS ver.2

SAMSUNG

Selected for Samsung C-lab Outside

LS ELECTRIC

Development of an AI model utilizing power
And manufacturing data

SAMSUNG

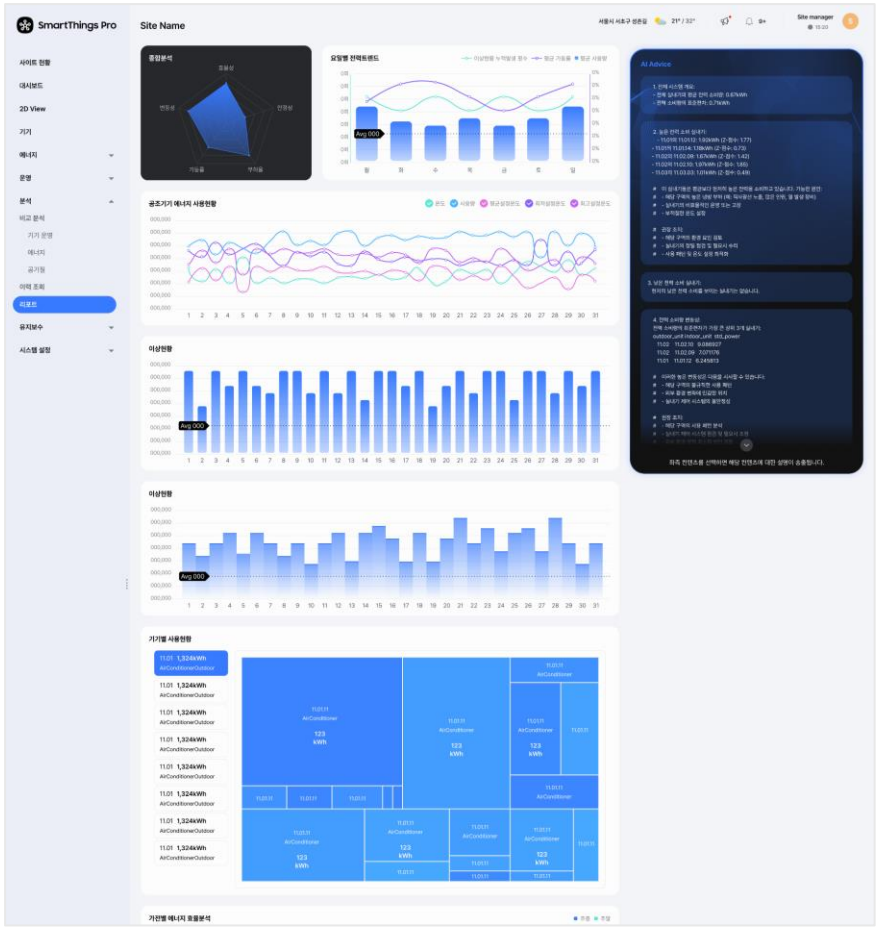
Gen-AI based Report intergration
With Samsung SmartThings Pro

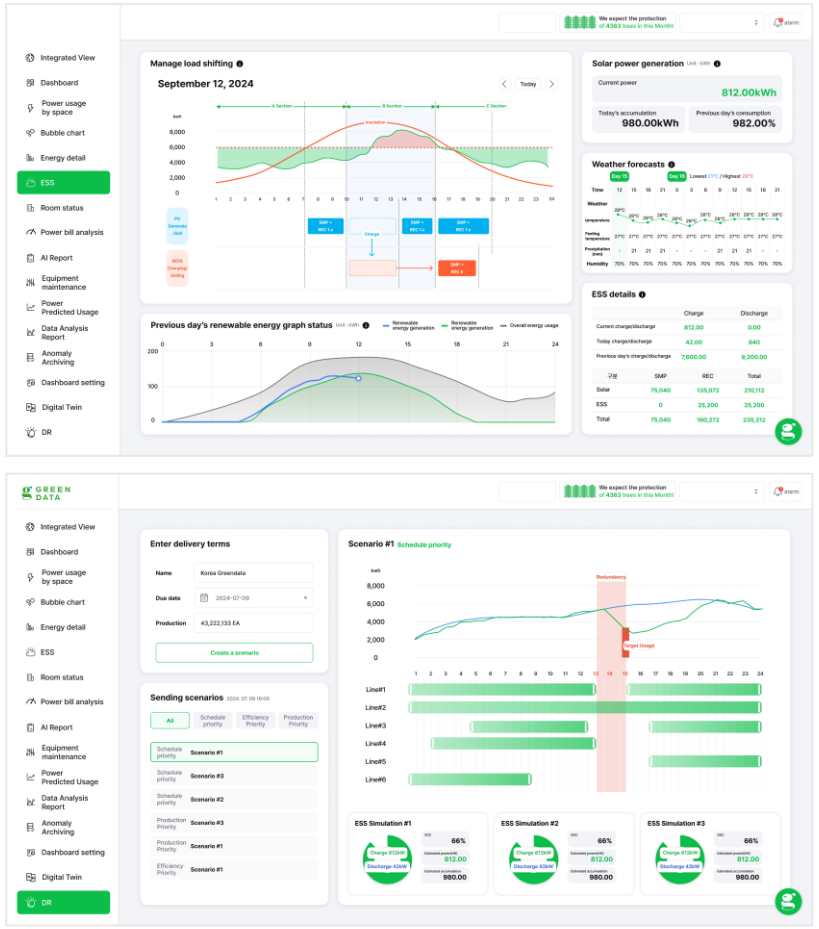
HYUNDAI ENGINEERING & CONSTRUCTION

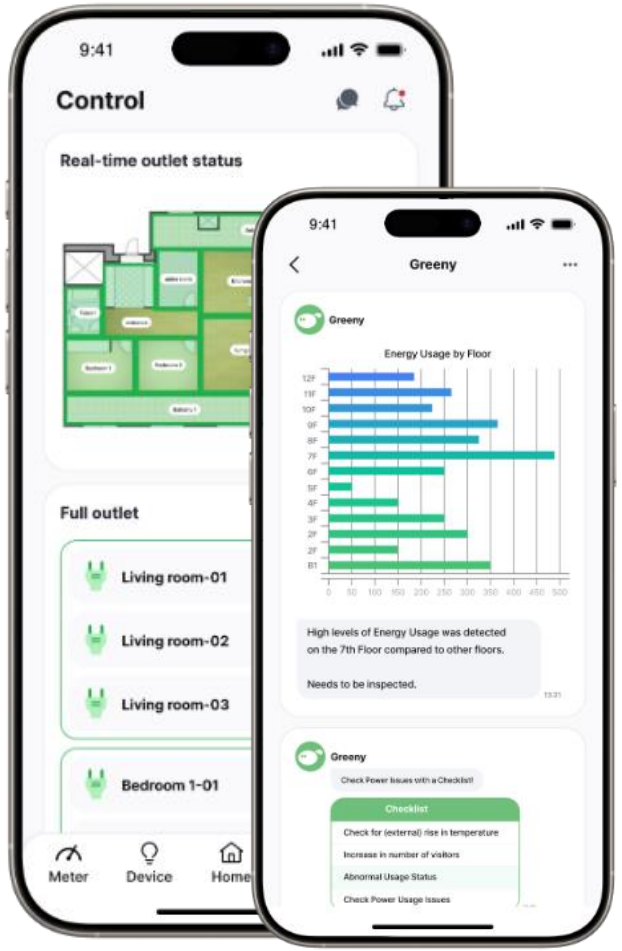
Development of an algorithm model
For a public HEMS

Technical Differentiation

Partnering with Global Top Corporations







SAMSUNG

LS ELECTRIC

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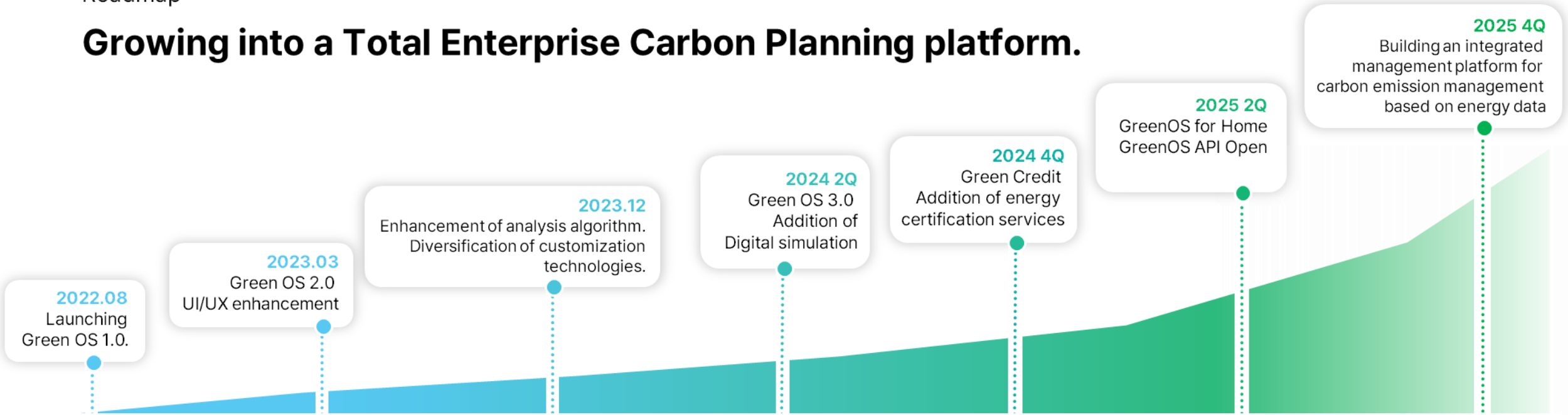
Roadmap

Growing into a Total Enterprise Carbon Planning platform.



		2023		2024		2025	
		2Q	4Q	2Q	4Q	2Q	4Q
Energy Data-Based Carbon Emission Reduction Solutions	Energy Data Analysis Model	Field Application and Verification	Energy Data Analysis Model Enhancement	industry-Specific Analysis Algorithm Enhancement	Derivation of Grid Data Analysis Models for ESS, Solar Power, and EV		Refinement of Energy Data Analysis Models
		Green OS 2.0 업그레이드	Prioritize Industry-Specific Energy Data		Continuously Upgrade Evaluation Model		
				Industry-Specific Application and Verification		Energy-Based Carbon Emission Data Integration Analysis Model Verification	
	Platform	UI/UX Enhancement	Diversify Customization Techniques	Portfolio Management System for Similar Businesses		Energy Certification and Carbon Trading Services Launch	Integrated Carbon Management Platform Release
		Platform Verification and Enhancement		Analyze Carbon Emission Sources Within Workplaces, Establish a Carbon Accounting Process Across the Organization, Derive Data-Driven Scope 1, 2, and 3 Metrics			
		Establish a Collaboration System with Partners and API Integration		Architecture Configuration	Model Creation	API Development	
Lawn Management Platform	Platform	Lawn Growth Data Collection	Lawn Management Visualization System Design	System Integration Analysis Platform Configuration		Smart Management Schedule Design and Development	Platform Enhancement and Validation
		Growth Status Analysis and Prediction System Design and Development		awn Management Decision Support Technology Development		Growth Status Analysis Model Modeling and Adjustment	IoT Control Linkage System Development


Korea
Greendata
GREEN
DATA