President and CEO

Junichi Miyakawa

What will our planet look like in 100 years?

4.6 billion years ago

3.5-4.0 billion years ago

500 million years ago

400 million years ago

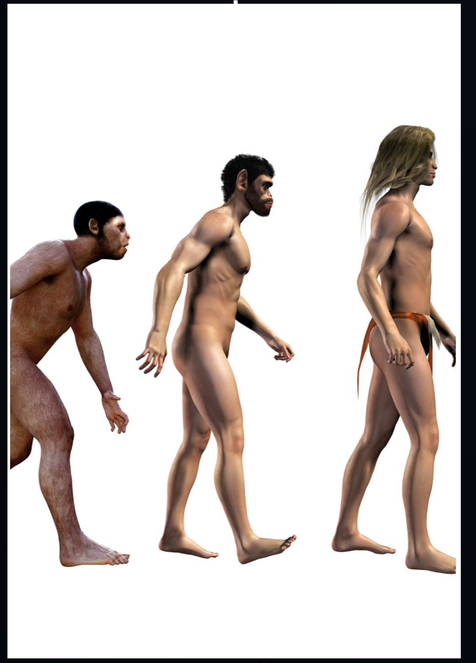
200,000 years ago

Birth of The Earth

Birth of Life

Cambrian Explosion
（Accelerated Evolution）

Birth of terrestrial organisms



Birth of Mankind
(Homo sapiens)

If we convert 4.6 billion years into one year…

January

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

December

				1	2	3
4	5	6	7	8	9	10
11	12	13	14	14	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

PM11:37

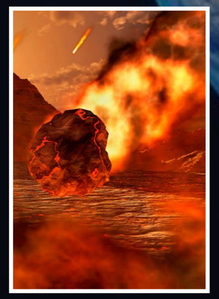
4.6 billion years ago

3.5-4.0 billion years ago

500 million years ago

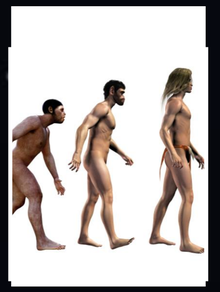
400 million years ago

200,000 years ago

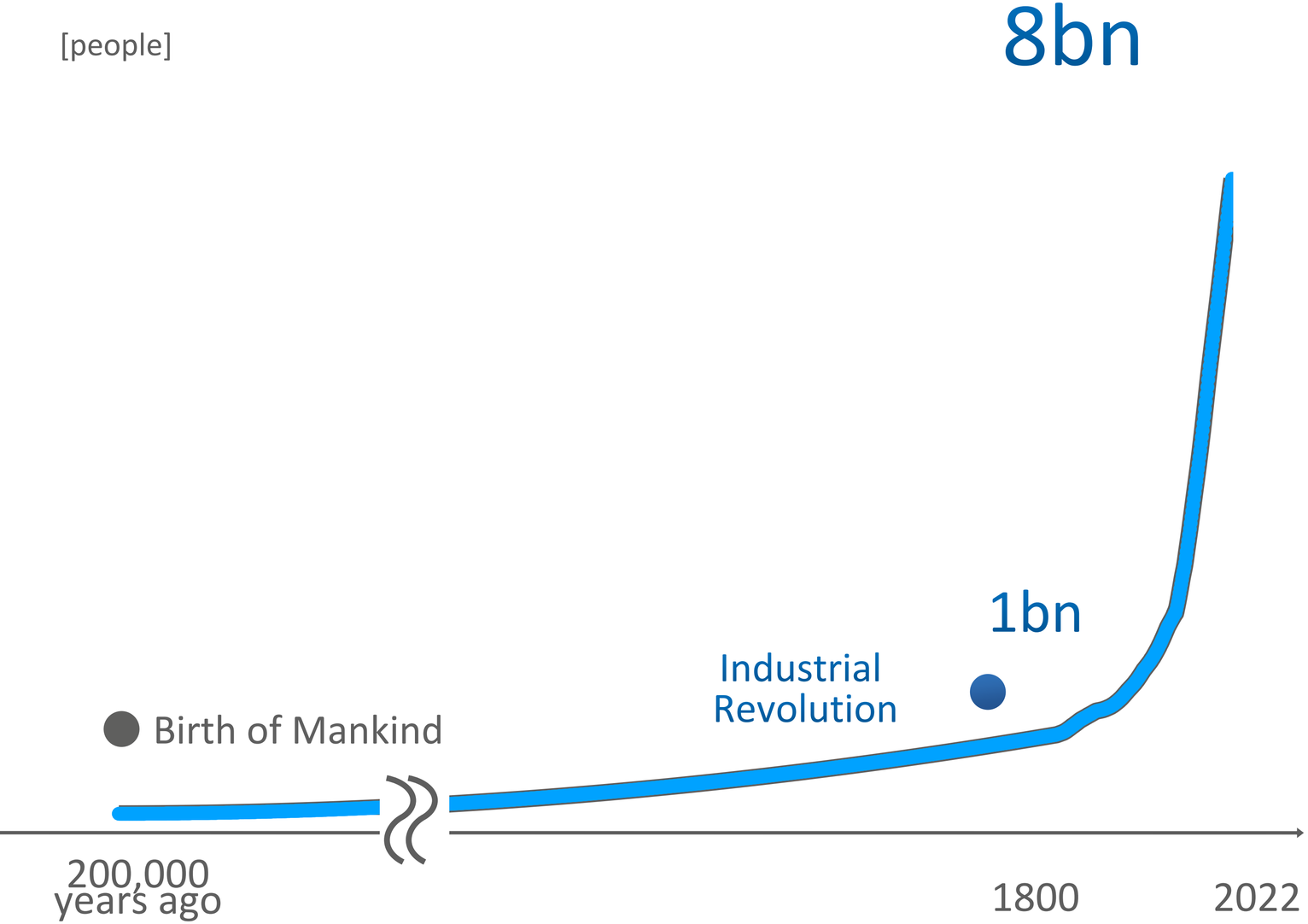


Birth of The Earth

Birth of Mankind
(Home sapiens)

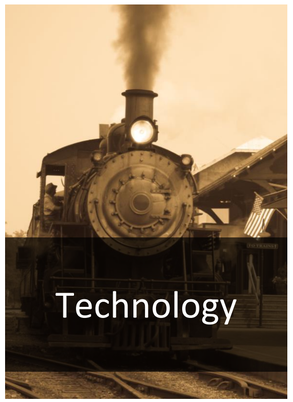


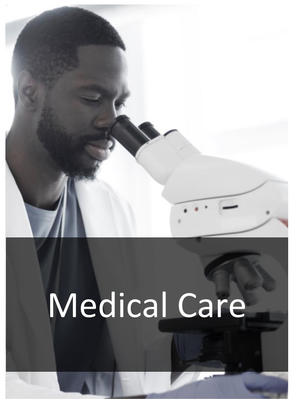
World : Population Trends

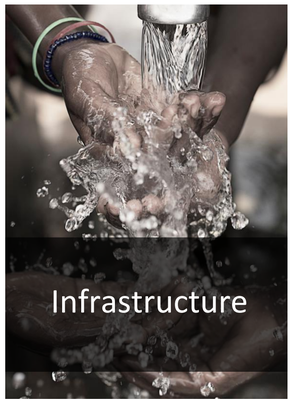


8 times

Compared to1800







Source: Prepared by SoftBank Corp. based on Our World in Data "Population, including UN projections, 1800 to 2100" and the UN "World Population Prospects 2022".

Abundance Obtained Over the Past 200 Years

World : Energy Consumption

[ton in petroleum equivalent]

13.3bn

280x

Population growth and economic development in emerging countries

Expansion of petroleum use

Expansion of coal use

Industrial Revolution

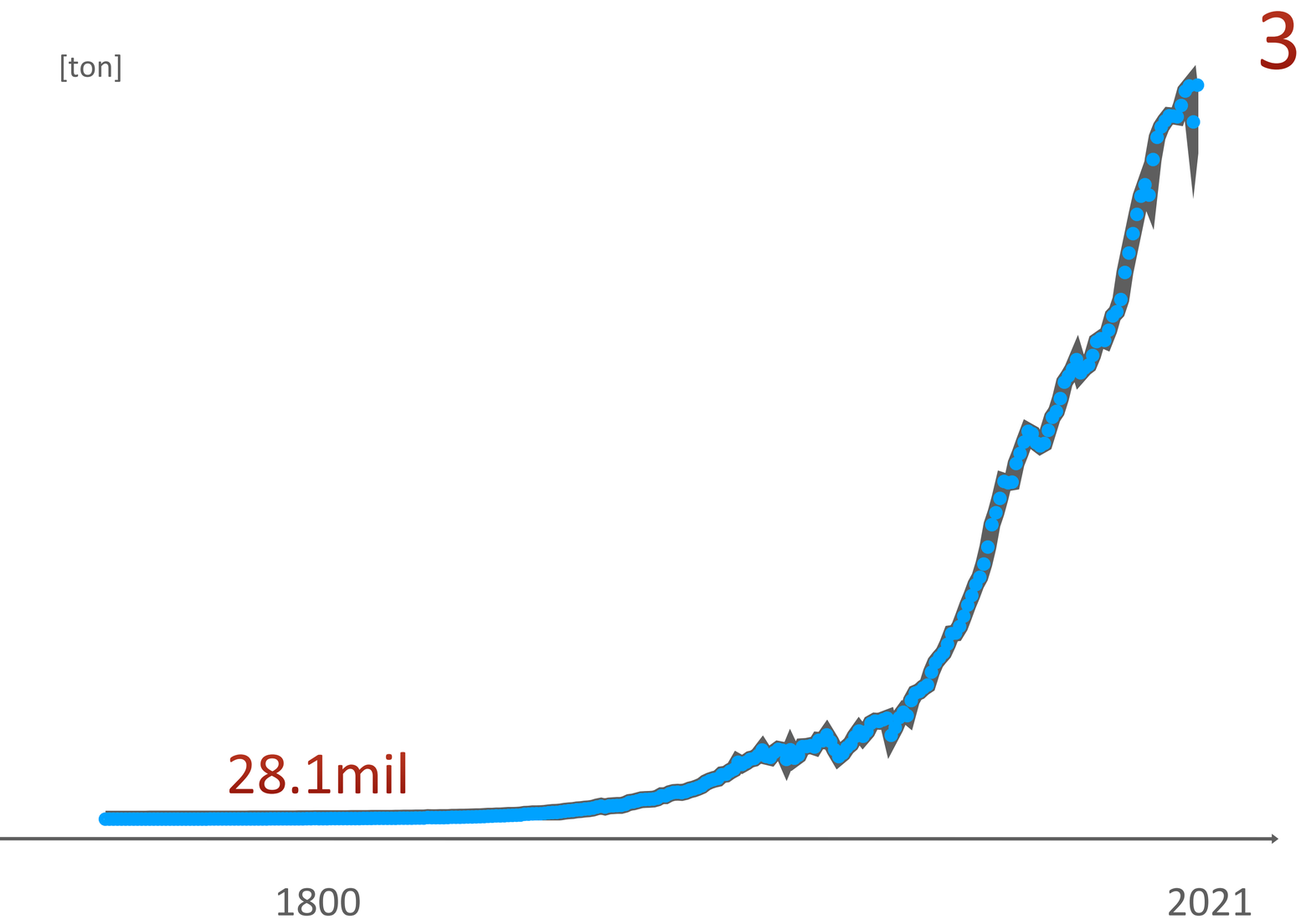
47mil

1800

2020

Source: Estimated by SoftBank Corporation based on the Agency for Natural Resources and Energy's "Energy White Paper 2013" and "Energy White Paper 2022".

World : CO_2 Emission



1,300x

Source: Prepared by SoftBank Corporation based on GCP "Global Carbon Budget 2022" and Our World in Data "CO2 emissions

1800 → 2020

World population

8x
（8bn）

Energy consumption

280x
（13.3 bn tons）

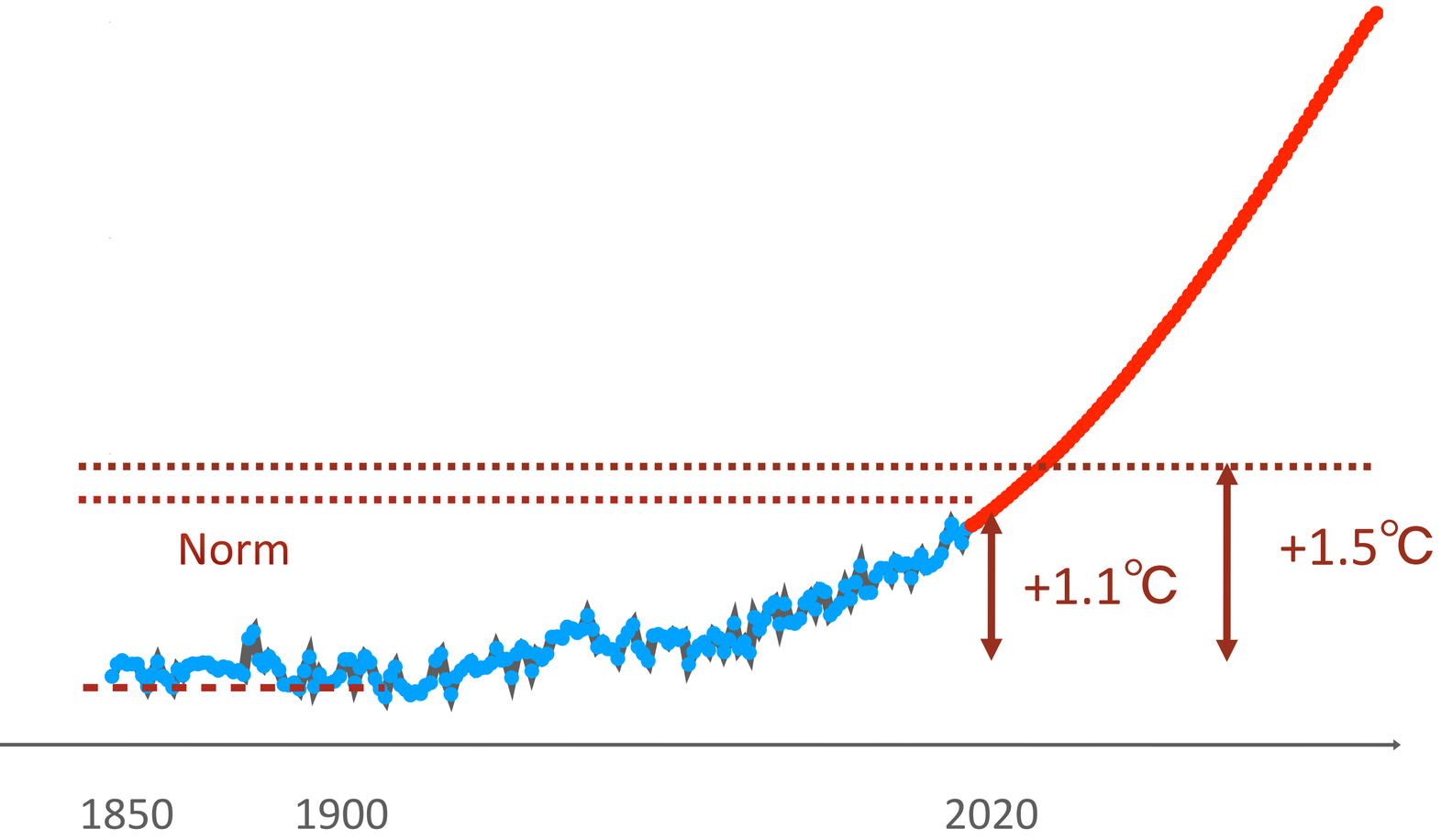
CO2 emission

1,300x
（37bn tons）

Global Warming = Man-Made Disaster

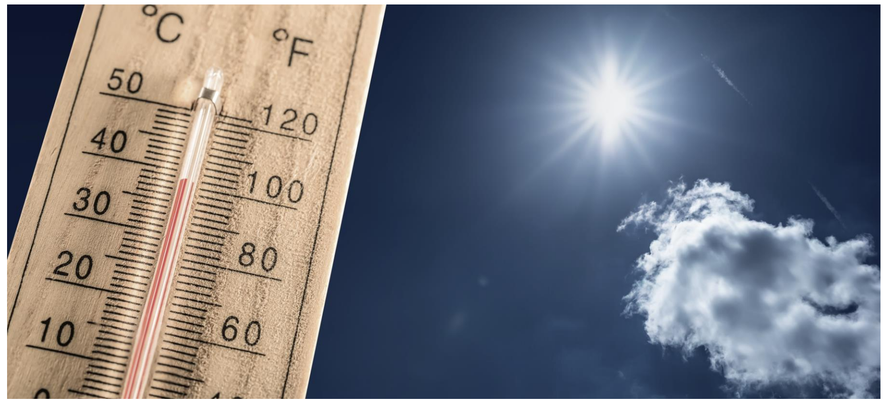
World ： Average Temperature

[℃]



+1.1℃ ※

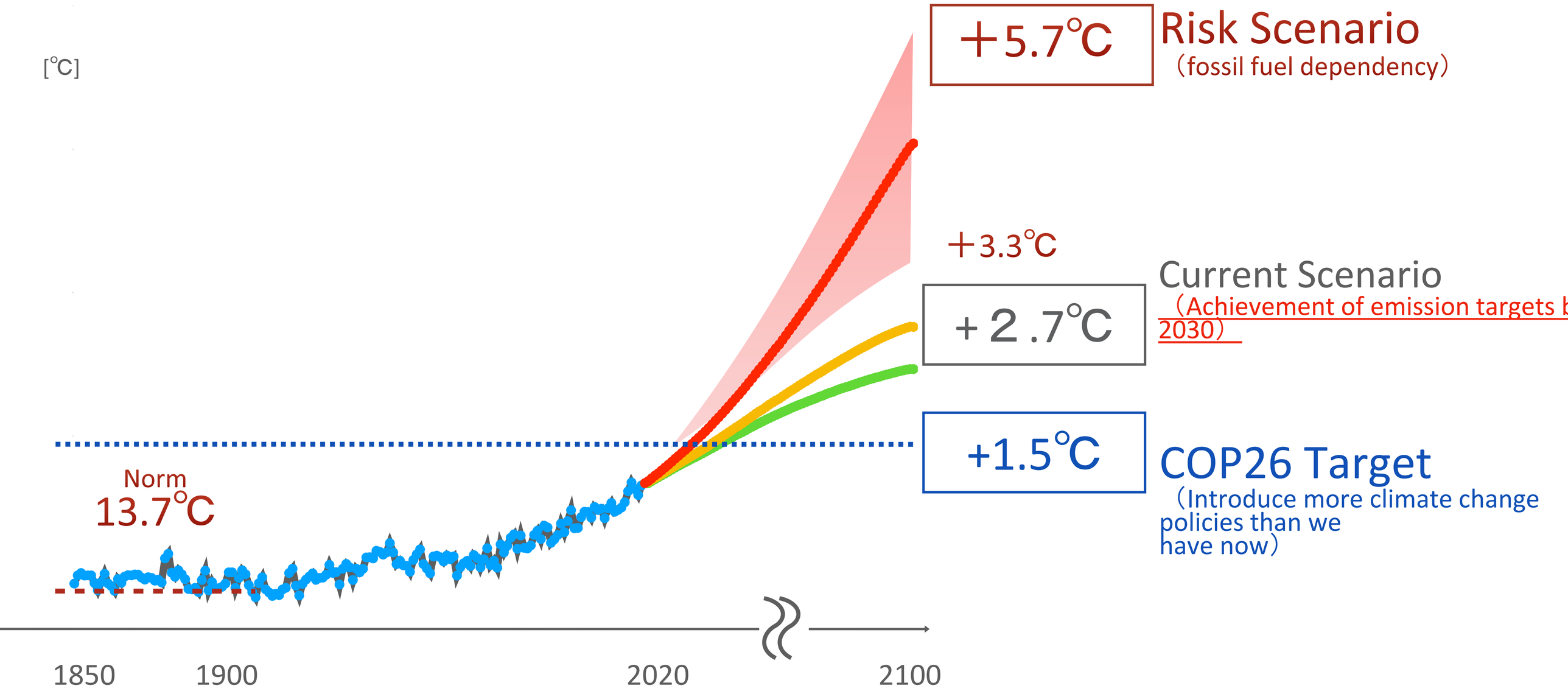
（COP21 target +1.5℃ or lower）



COP ： Conference of the Parties

※Temperature rise based on the average of 1850-1900
Source: Prepared by the Company based on the IPCC's Sixth Assessment Report

World: Average Temperature Projections



※Temperature increase based on 1850-1900 average

Source: Prepared by SoftBank Corporation based on the IPCC Sixth Assessment Report and the National Institute for Environmental Studies (NIES) News Volume 38, Editor's Postscript.

Enormous Impacts of Global Warming

	Current (2020)
Compared to 1850-1900's avg	+1.1℃
	+20cm
	1.7x
	1.3x
	2.8x

Source) Estimated by SoftBank Corporation based on the IPCC's Sixth Assessment Report
Sea level rise: Rise based on the 1850-1900 average
Drought/extreme rainfall/extreme heat wave: Rate of increase in frequency of events that occurred once every 10 years from 1850 to 1900, assuming the frequency of such events at that time was one

Impacts of Global Warming

	Current (2020)	COP Target (2100)
	+1.1℃	+1.5℃
	-	+36cm
	-	1.2x
	-	1.2x
	-	1.5x

Source) Estimated by SoftBank Corporation based on the IPCC's Sixth Assessment Report
Sea level rise: Rise based on the 2020
Drought/extreme rainfall/extreme heat wave: Rate of increase in frequency of events that occurred once every 10 years from 1850 to 1900, assuming the frequency of such events at current time(2020) was one

Impacts of Global Warming

	Current (2020)	COP Target (2100)	Current Scenario (2100)
	+1.1℃	+1.5℃	+2.7℃
	-	+36cm	+52cm
	-	1.2x	1.8x
	-	1.2x	1.6x
	-	1.5x	2.4x

Source) Estimated by SoftBank Corporation based on the IPCC's Sixth Assessment Report
Sea level rise: Rise based on the 2020
Drought/extreme rainfall/extreme heat wave: Rate of increase in frequency of events that occurred once every 10 years from 1850 to 1900, assuming the frequency of such events at current time(2020) was one

Impacts of Global Warming

	Current (2020)	COP Target (2100)	Goal achievement Scenario (2100)	Risk Scenario (2100)
	+1.1℃	+1.5℃	+2.7℃	+5.7℃
	-	+36cm	+52cm	+90cm
	-	1.2x	1.8x	3.2x
	-	1.2x	1.6x	2.7x
	-	1.5x	2.4x	4.8x

Source) Estimated by SoftBank Corporation based on the IPCC's Sixth Assessment Report
Sea level rise: Rise based on the 2020
Drought/extreme rainfall/extreme heat wave: Rate of increase in frequency of events that occurred once every 10 years from 1850 to 1900, assuming the frequency of such events at current time(2020) was one

Global Environment Lost in Return

Deforestation

420mil ha lost
（vs.1990）
= 11 times the size of Japan

Air Pollution

CO2 concentration
increased 50%
（vs. 1850）

Water Pollution

Unsanitary water causes
300,000 child deaths annually

Marine Pollution

Plastic waste weight 130 Mt

2050 projection = 800 Mt
(more than the total amount of fish on the earth)

Endangered

About 1 million species
（Plants and Animals）

Biodiversity

Vertebrate populations
down 68%
（vs.1970）

Desertification

Population whose habitat is deserted
500mil（1980～2000）

Radioactive Waste

100,000 years required for detoxification

Untreated waste
19,000 tons（Japan）

Source) Estimated by our company based on each references

Environmental Changes Experienced in a Lifetime

The Senior Generation		Children
＋1.3℃ （1960：＋0.2℃→2040：＋1.5℃）	AVG. temperature	+1.6℃ ~ +4.6℃ （Goal achievement Scenario） （Risk Scenario）
＋20cm （1960：＋8cm→2040：＋28cm）	Sea-level rise	＋52cm ~ 90cm （Goal achievement Scenario） （Risk Scenario）
Once in 100 years	Large-scale natural disasters (heat wave/unprecedented heavy rainfall)	Every year

Source: Estimated by SoftBank Corporation based on IPCC's Sixth Assessment Report and BP's Statistical Review of World Energy 2021.

Possible world events by 2100

(Risk Scenario)

Source) Estimated by our company based on each references

What is Sustainability?

A society in which the environment, society (life), and the economy develop sustainably

Coexist and Continue to Grow

Society (Life)/ Economy

Global Environment

For the Next Generation Reflecting on the Past as

"Our Own Matter"

The World’s Initiatives

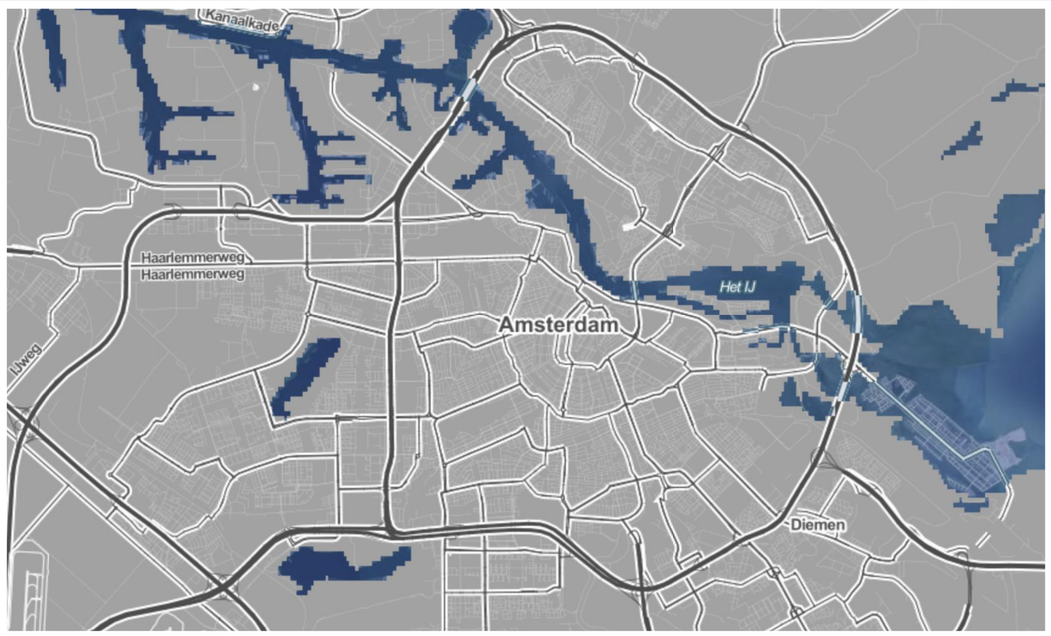
Amsterdam

（The Netherlands）

Sea Level： -2m
Canal: 100 km in length or more

Challenges Amsterdam faces

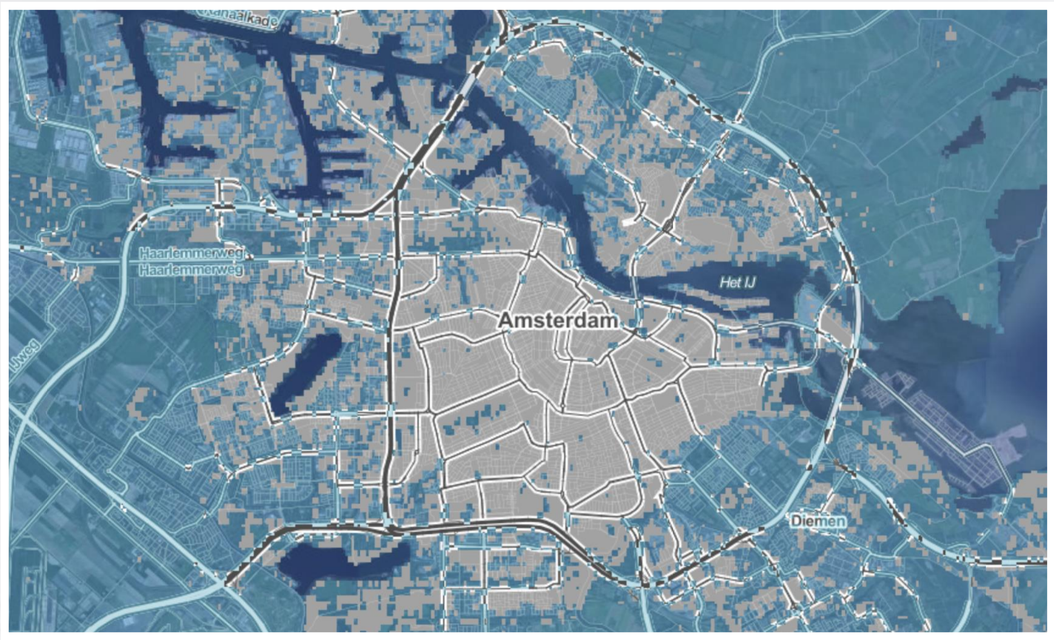
Submergence Crisis due to Rising Sea Levels Caused by Global Warming



Current

（vs.1900: +26cm）

＋40cm*



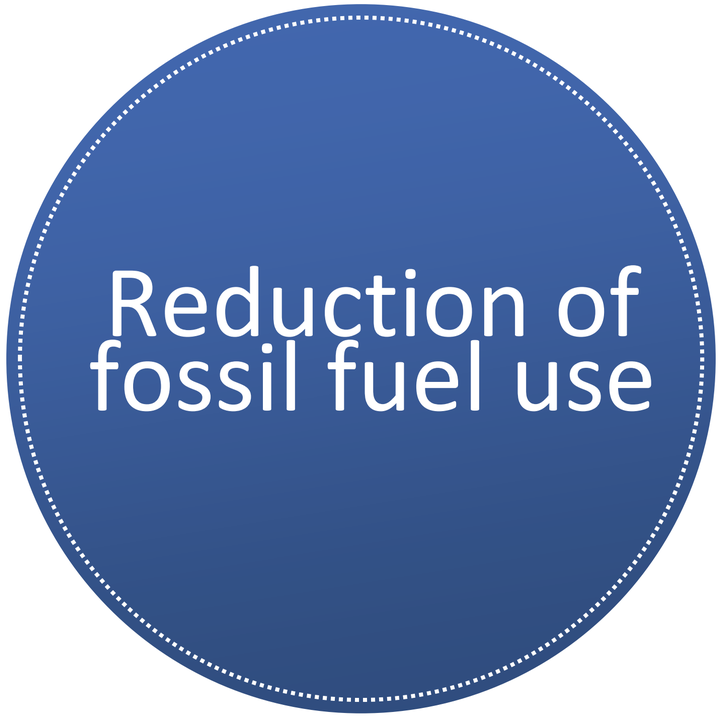
Around 2050

（Estimated as of 2014）

*Source: Royal Netherlands Meteorological Institute "Climate Dashboard (KNMI14 Scenarios)" Worst case (trend line) for SSP5-8.5 scenario)
(Map image) Climate Central "RISK ZONE MAP" +50cm case

Source: New Amsterdam Climate2008
*Reduction target at the time
(Currently, based on the European Green Deal, the target is a 55% reduction by 2030 compared to 1990 levels.)

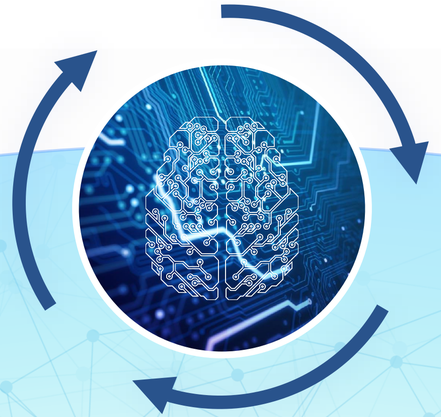
2007
Formulate Action Plan for Climate Change



CO2 emissions reduction target: 40% by 2025*

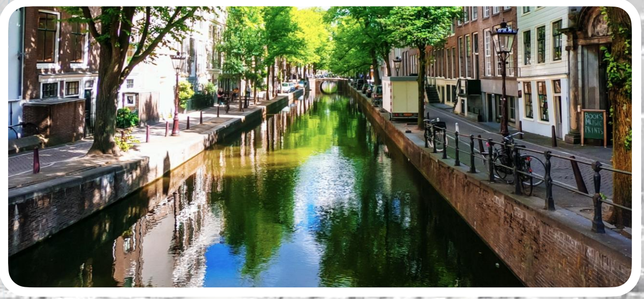
（vs.1990）

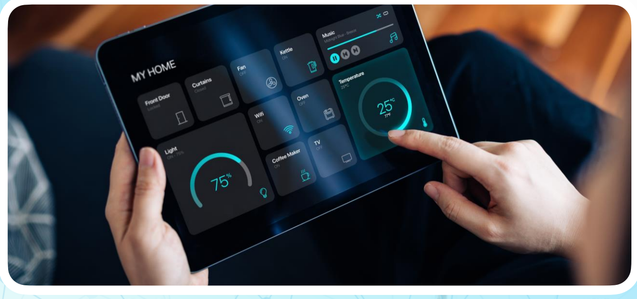
Formulation of the Action Plan ＝ Realization of Smart City



Decarbonation

Urban Resilience





Energy Conservation

Forming a consortium to realize a smart city

（Public/Private joint investment）

Open Data

Maintenance of 12,000 data held by local governments

Smart Meter

Visualization of energy consumption

Smart Parking

Linkage of vacancy information

Smart Grid

Largest energy storage system in Europe

Smart Building

*Source） EDGE Technologies

Improving energy efficiency

Civic Tech

Energy Conservation Seminars/ Ideas Sought

More than 200 projects implemented

Source: Prepared by SoftBank Corporation based on JRI Review, "Cities as Platforms for Open Innovation," Japan Research Institute, Inc.

- Project-

Smart Building

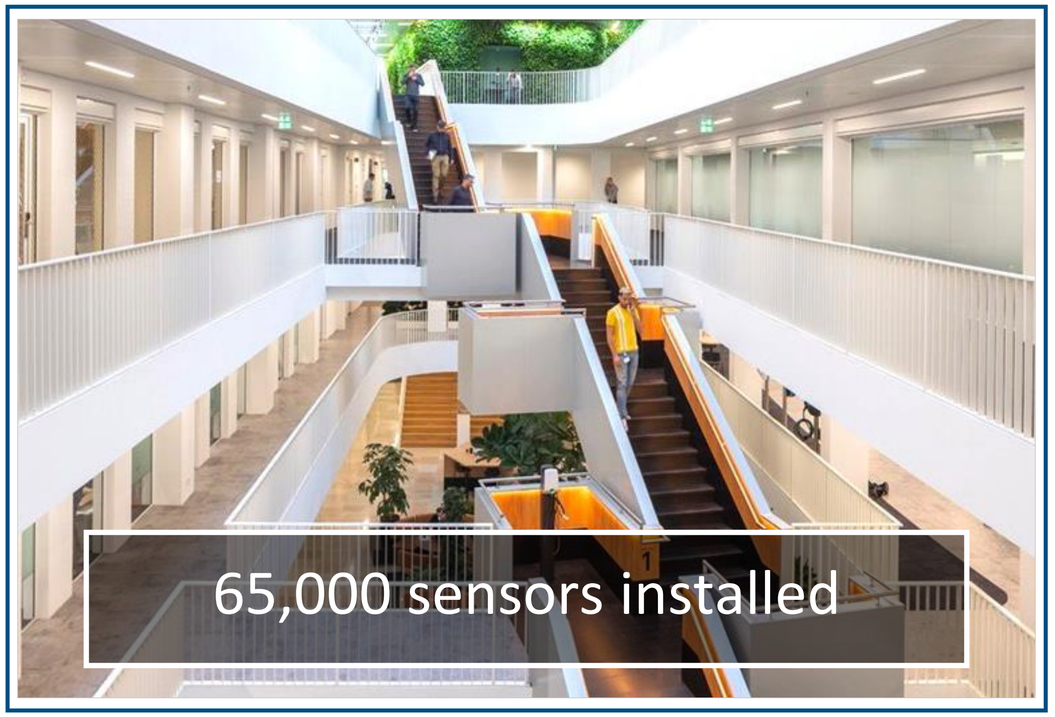
“Edge Olympic”

(Image) EDGE Technologies (This slide is prepared for illustrative purposes only）
https://theworldneedsbetterbuildings.com/

Renovation of existing building in 2018

Post Office

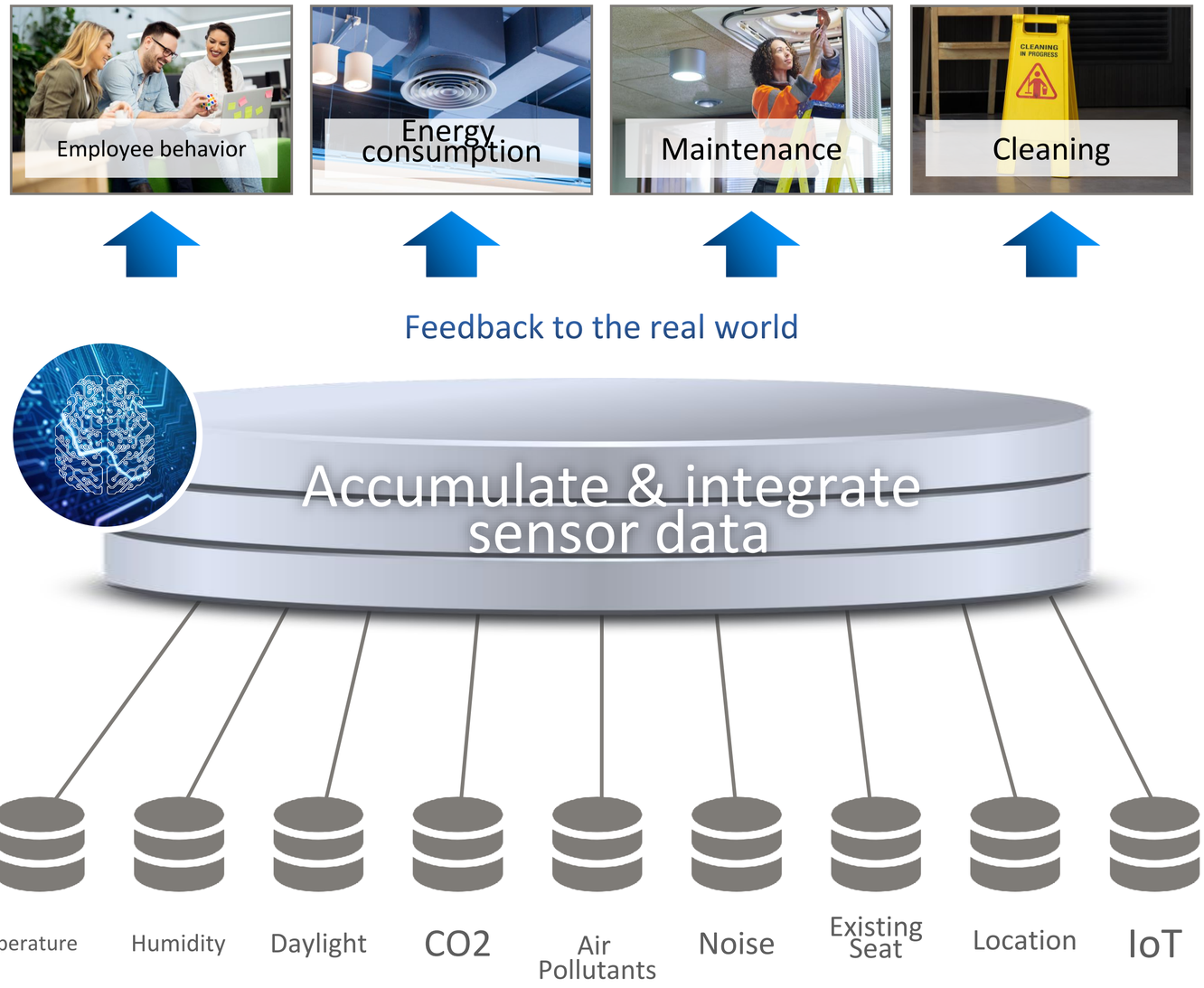
Rental Office



The Netherlands was the first country to receive the Highest Building Environment Rating*

Source: EDGE Technologies (This slide is prepared for illustrative purposes only.)
https://edge.tech/developments/edge-olympic-amsterdam
*WELL™Core & Shell Platinum Certification

Building itself Derives Optimal Solutions Based on Data



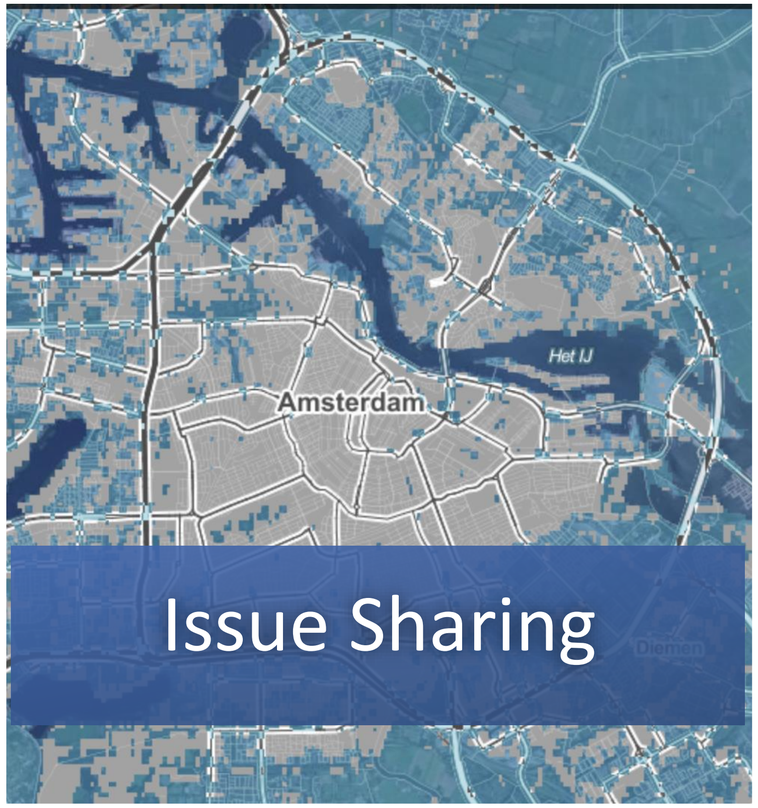
Energy consumption

70%

Reduction

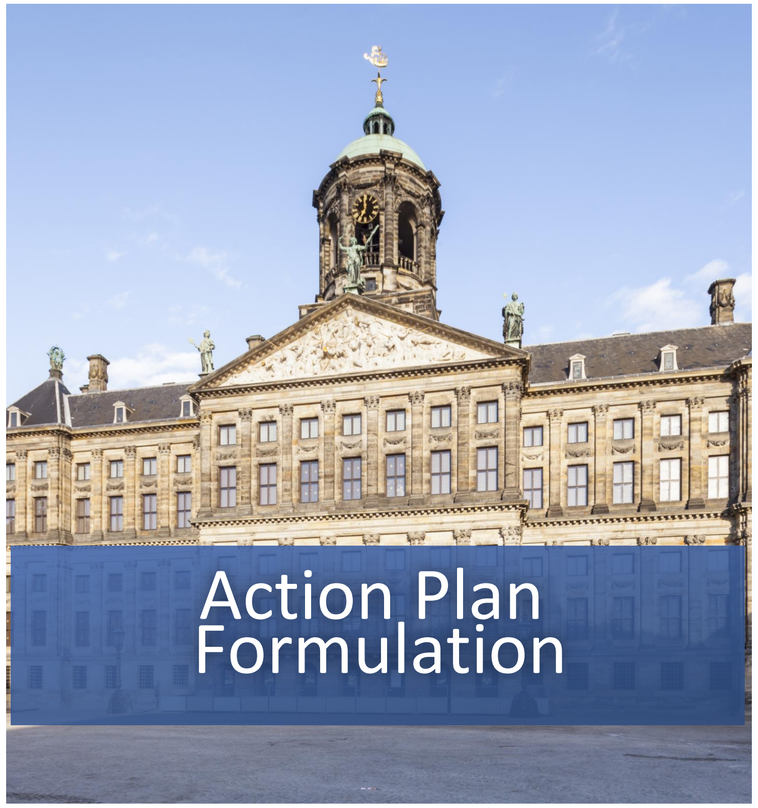
Source: Prepared by SoftBank Corporation based on EDGE Olympic Amsterdam (HP) and WORK SIGHT "Soft smart buildings for individuals"

Amsterdam Initiatives



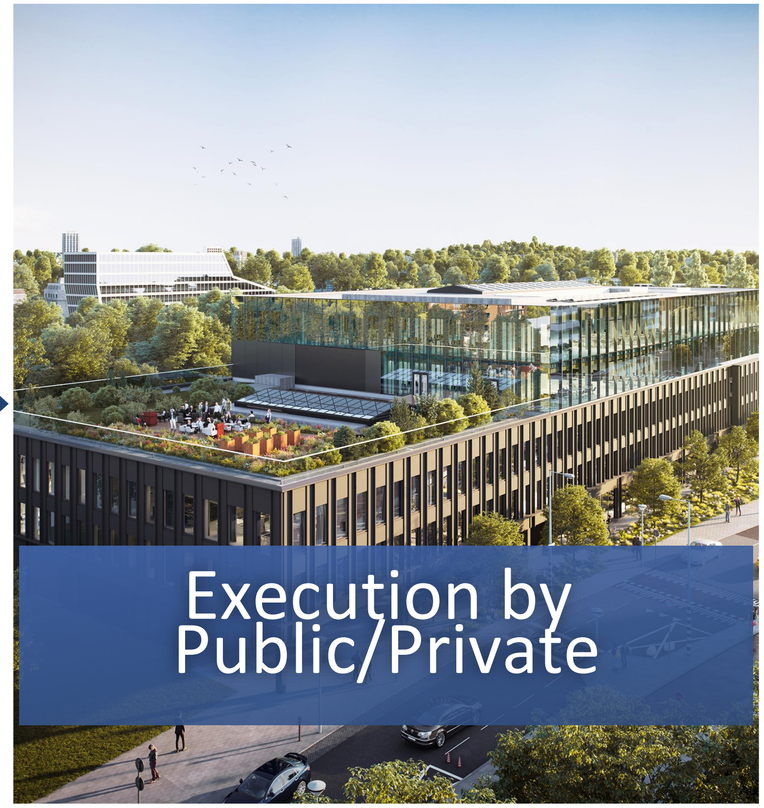
Issue Sharing

Sea level rise due to global warming



Action Plan Formulation

Utilizing ICT Realization of Smart Cities



Execution by Public/Private

Open Municipal Data

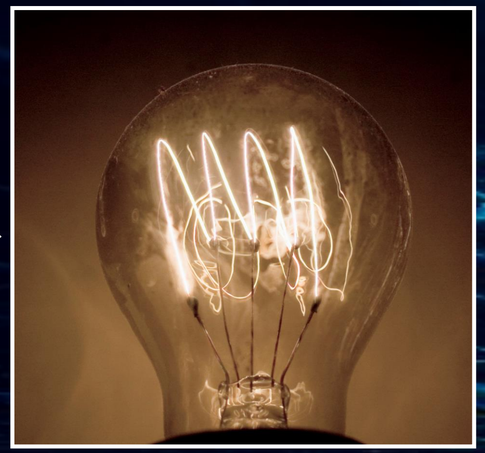
Data-driven urban optimization

Industrial Revolution

The First

Mechanization

The Second



Efficiency

The Third

Automation

The Fourth

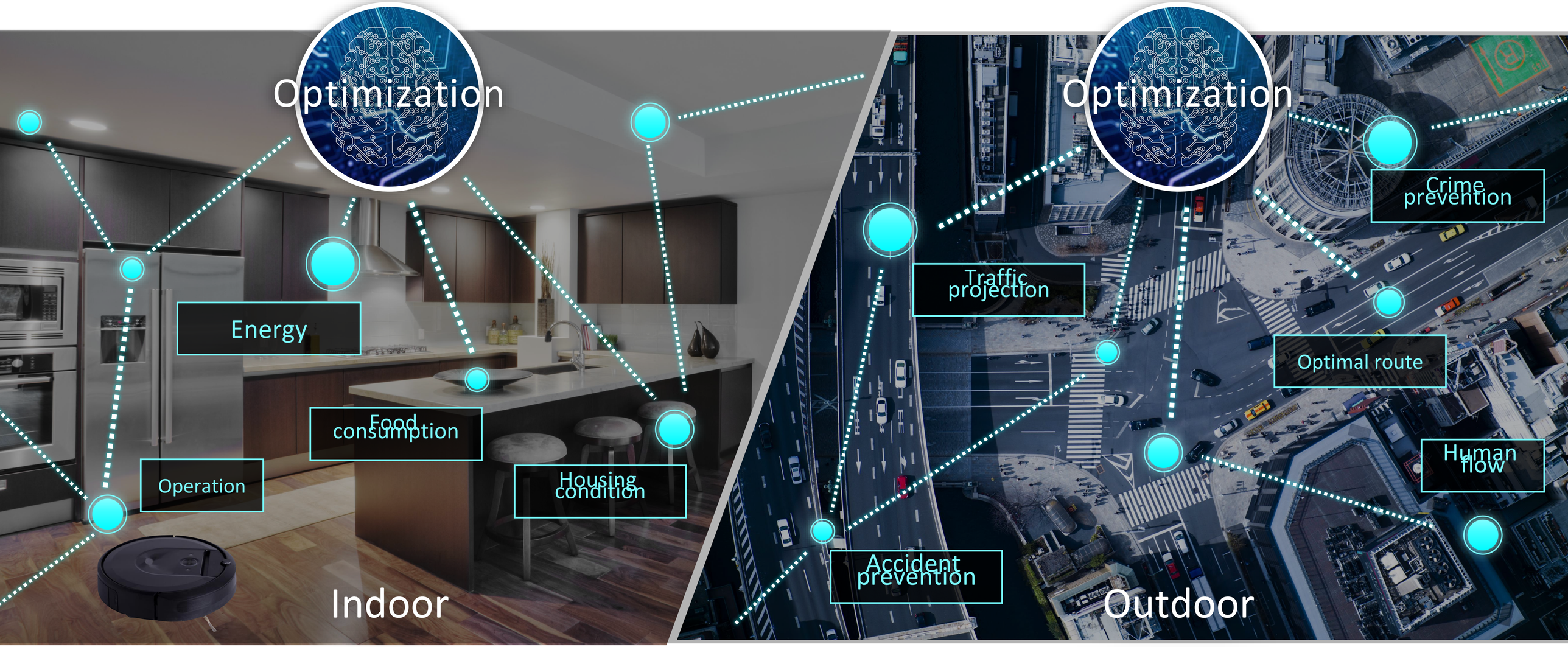
Autonomization/
Optimization

*This slide was prepared for illustrative purposes only.

	1st	2nd	3rd	4th
				
Period	1760’s～	1860’s～	1970’s～	2010’s～
Transfor-mation	Mechanization	Efficiency	Automation	Autonomization /Optimization
Technology	Steam engine	Electrical / Chemical Industry	PC / Internet	IoT / Bigdata AI / Cloud
Revolution	Mechanization of light industry (steam engines, spinning machines, etc.)	Petroleum, Electric power, Heavy chemical industry	Automation with PC and the Internet	Digital Twin Autonomous control of factories / equipment and Autonomous linkage with people
Effect	Mechanization of production and transportation	Mass production	Production automation	Autonomy and optimization of all things / industries

*This slide is for illustrative purposes only

The Fourth Industrial Revolution



l Autonomously Makes Decisions and Optimizes All Activitie

Until now

（until the third industrial revolution)

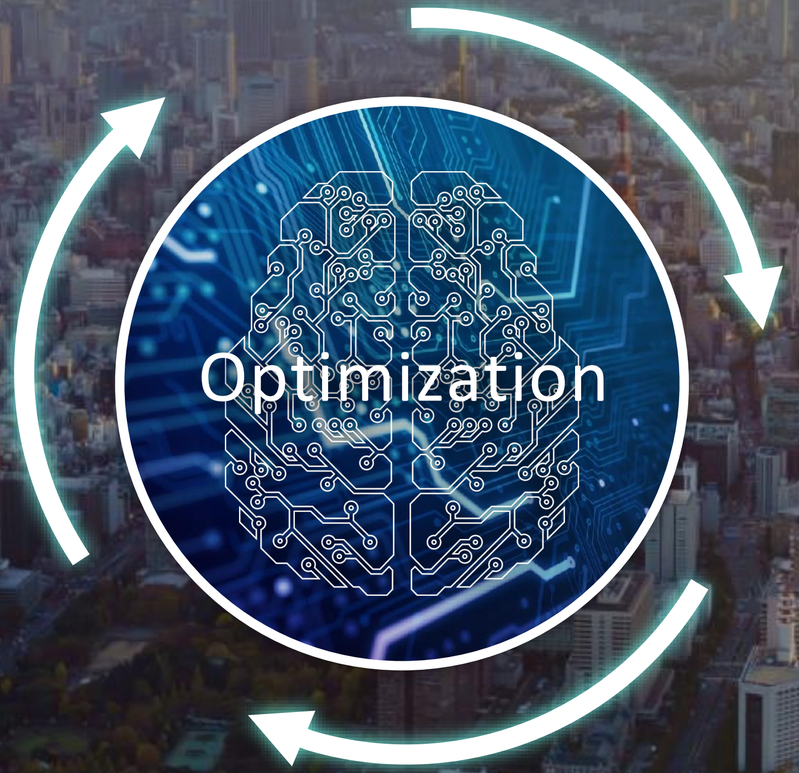
Mass production/ Mass consumption/
Waste in large quantities

From now

（The 4th Industrial Revolution）

Sustainable resource utilization
through visualization/optimization
of supply and demand

Sustainability = Overall Social Optimization



Amount of resources utilized

Quantity of goods supplied

Appropriate consumption

The 4th Industrial Revolution

zation of a Sustainable Society and Environ

Sustainability in Japan

Common Challenges in the world

Challenges in Japan

Structural Challenges Abound

SoftBank

Achieving Sustainability in Japan

SoftBank

Achieving Sustainability in Japan

Challenges in Energy

Energy sources dependence on foreign countries

Energy self-sufficiency

12%

Source: Agency for Natural Resources and Energy, Japan's Energy 2021
Ten Questions to Know About Energy Today

Decarbonation

Power source composition (power generation)

70+% thermal power

*Actual results for 2021

Source: Agency for Natural Resources and Energy
Time-series table of aggregate or estimated results (Comprehensive Energy Statistics)

Aging thermal power plants

More than 40 years in operation

Approx. 30%

*Number of unit

Source: Japan Economic Newspapers
Older Thermal Power Plants Risk to Power Grid; Frequent Outages Raise Concerns about Relieving Tightness

Action plan for Japan's unique issues

Challenges in Energy

Energy sources dependence on foreign countries

Energy self-sufficiency

12%

Source: Agency for Natural Resources and Energy, Japan's Energy 2021

Decarbonation

Power source composition (power generation)

70+% thermal power

*Actual results for 2021

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More than 40 years in operation

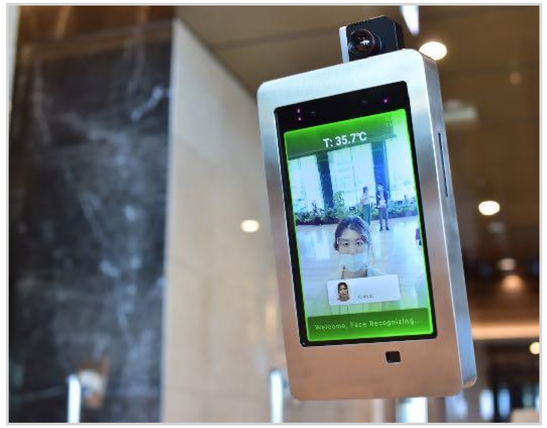
Approx. 30%

*Number of unit

Source: Japan Economic Newspapers
Older Thermal Power Plants Risk to Power Grid; Frequent

Verification of SoftBank Smart Building

(January 2021)



Smart Building with Data

Data
(in/out of bldg)

TOKYO PORTCITY TAKESHIBA

フロア来訪者情報

< 2022/06/10 (金) >

※ビル来館者の流動人数 16時時点

来館者	館内	退館者
14,414人	5,138人	9,276人

※出入口ごとの来館者人数 16時時点

	1F	2F	3F
	6,066人	1,925人	6,423人
竹芝側	799人	1,925人	267人
浜松町側	5,267人		6,156人
前日比	↑3 %	↓-14 %	↓-11 %

※ビル来館者の年代別男女比 16時時点

■男性 ■女性

2022/05/28 - 2022/06/10

※ビル来館者数の日別推移　(指定期間中の)来館者合計　190,403人

※ビル来館者数の曜日別平均

12,211	14,660	17,443	18,529	15,964	10,369	6,023

20000

Data Utilization for Tenants

Demand Projection

Data (in/out of bldg)






Workforce optimization

Sending customers to stores

Improvement of opportunity loss

Improvement of food loss

Data Utilization for Building Management

Automated Optimization

Data (in/out of bldg)

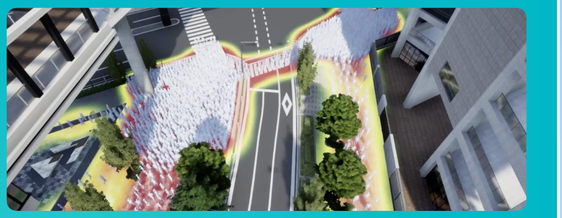





Security Guards Deployment Plan

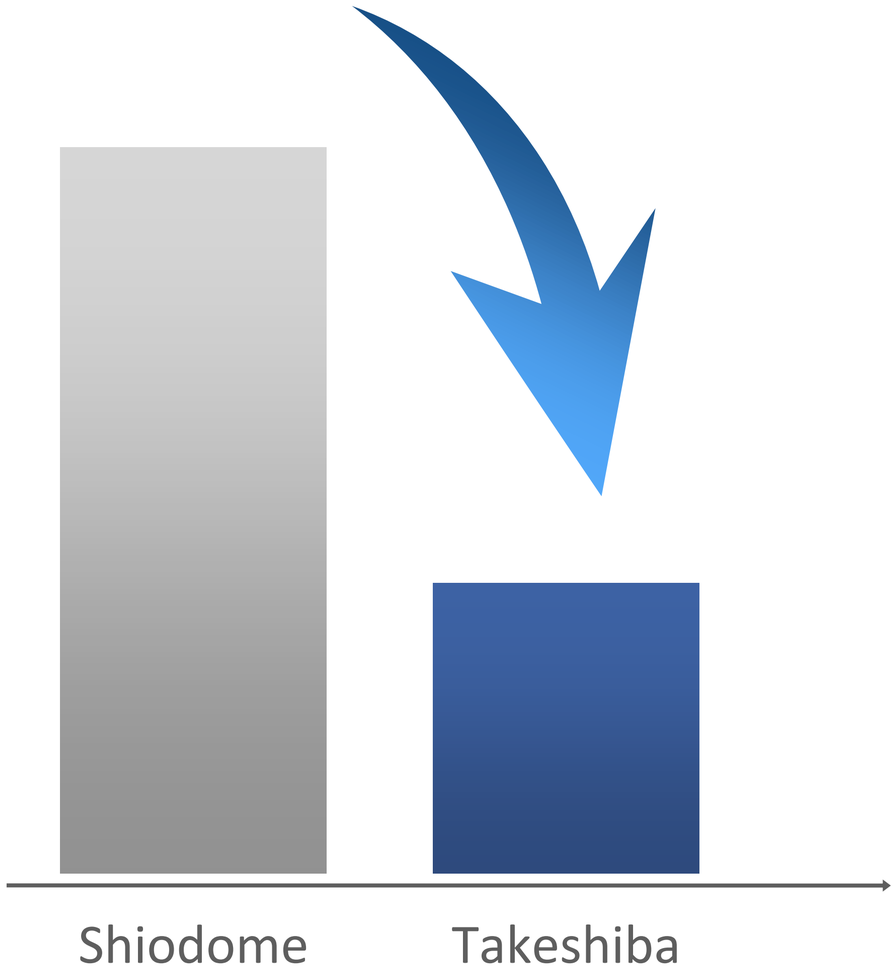
Cleaning Staff Deployment Plan

Crowd Flow Simulation



Energy Saving from Relocation

[Consumed Energy]

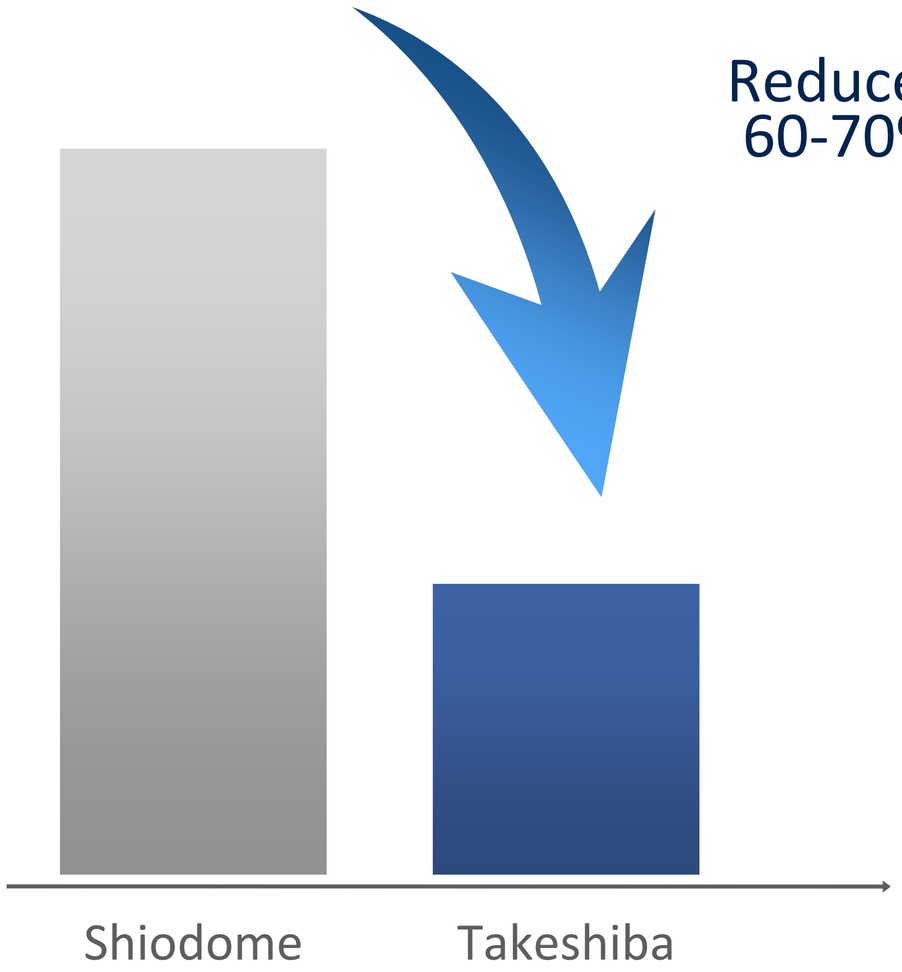


Reduced
60-70%

※Building: Office buildings in the 23 wards of Tokyo (3,000 square meters or more)
Source: Estimated by SoftBank Corporation based on "Building Energy Consumption Survey 44 (Digest Version)" by the Japan Institute of Building Energy Management and "Nationwide Office Building Survey" by the Japan Real Estate Institute

Energy Saving from Relocation

[Consumed Energy]



If expanded across the Tokyo metropolitan area

Amount reduced

5.1bn kwh/yr

（8.5 bn kwh→3.4 bn kwh）

Economic Impact (Electricity cost)

Approx.13.7mil yen

Equivalent to approx. 1.27mil households

(18% of the entire Tokyo)

※Building: Office buildings in the 23 wards of Tokyo (3,000 square meters or more)

Source: Estimated by SoftBank Corporation based on "Building Energy Consumption Survey 44 (Digest Version)" by the Japan Institute of Building Energy Management and "Nationwide Office Building Survey" by the Japan Real Estate Institute

※Image is for reference only

Collaboration among Smart Buildings

Reducing energy consumption through citywide coordination

+

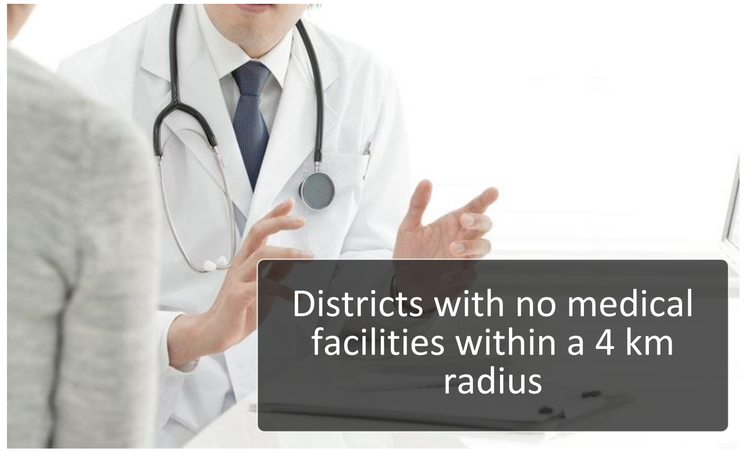
Optimize consumption activities based on data

SoftBank

Achieving Sustainability in Japan

Challenges in Local Transportation

Difficulty in going to the hospital



No-Doctor Districts

590 districts （127,000ppl）

Source: Ministry of Health, Labour and Welfare, "Survey of No-Doctor Districts, etc. in Fiscal Year 2019

Difficulty in shopping

One out of every four persons aged 65 and over

Source: National Institute of Agriculture, Forestry and Fisheries Policy - Estimated Population with Food Inaccessibility (2018)

Difficulty in Maintain business

Shared-ride buses/Local railroads

nearly 80%

Loss-making operation

Source: Ministry of Land, Infrastructure, Transport and Tourism "Order and 2021 version of the White Paper on Transport Policy

Toward Sustainable Local Transportation

Movement of People/Services

MaaS

Automated Public Transportation

Ina City (Nagano Prefecture): Mobilized Medical Service

Patient

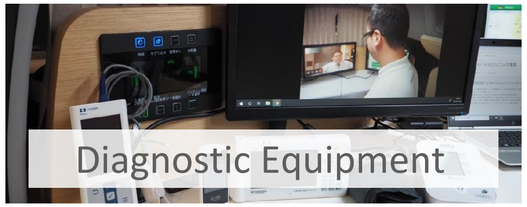
Connected on-line

Examination/treatment

Doctor

Go to the vicinity of the patient's home

+



Play time: 2 ' 18''

Please watch the video

Experience through medical services

A database that reflects the current situation is important

Solving Local Issues

Medical Services

Administration Services

On Demand Services

Cumulative service areas

53 locations *

*Number of locations Implemented = 14 , Demonstrated = 10 , Completed = 29

Toward Sustainable Local Transportation

Movement of People/Services

MaaS

Automated Public Transportation

Sakai town, Ibaraki

Haneda, Tokyo

Autonomous Bus

Kamishihoro town, Hokkaido

Nisshin city, Aichi

Public transportation to solve the shortage of workers

Play time: 1 ' 19’'

Please watch the video

Contribution to Local Economy

Expand local consumption by promoting mobility

Job Creation

Resolving human resource shortages

SoftBank

Achieving Sustainability in Japan

Challenges in Water Infrastructure

Aging infrastructure (Exceeding useful life)

Approx.19%

（approx,140,000km/730,000km）

*Statutory durability: 40 years

Source: Ministry of Health, Labor and Welfare
FY2021 National Conference of Waterworks Officials

Worsening shortage of human resources

Down39%

（vs. 1980）

Source: Ministry of Health, Labor and Welfare
FY2021 National Conference of Waterworks Officials

Financial difficulties (Below-cost operators)

Approx.40%

Source: Ministry of Health, Labor and Welfare
FY2021 National Conference of Waterworks Officials

Regional disparities in rates

Approx.9X

（per 20m³）

Source: Ministry of Internal Affairs and Communications
Current Status and Issues of Waterworks Business Management
and municipalities' websites

Solving water-related social issues

Toward next-generation water infrastructure

SoftBank

Knowledge of telecommunications technology and social infrastructure construction

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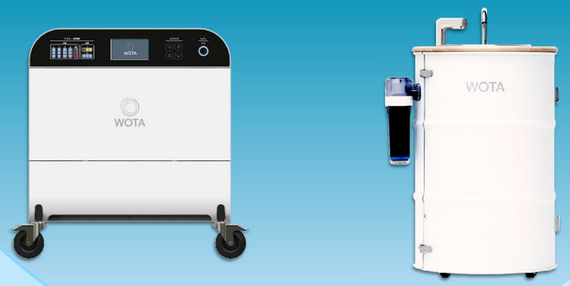
WOTA

Development of water circulation system using AI water process technology



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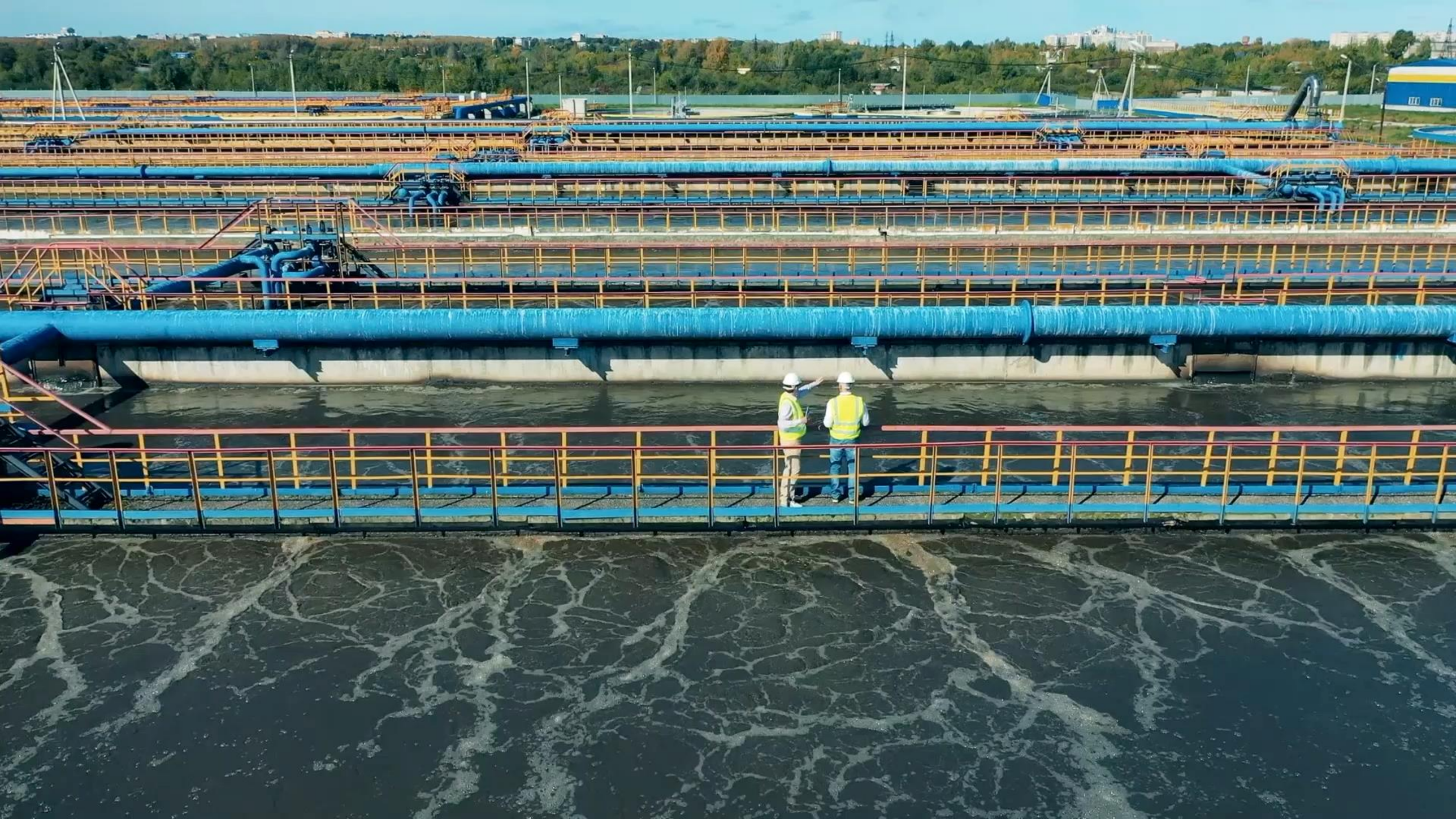


Case Study： Toshima Village, Tokyo

The people have long struggled to secure water,
and have experienced "water starvation" many times.

Even today, they face serious challenges.

Unsustainable water infrastructure and declining populati

Deep deficit financing

Cost of water supply 2,800 yen/m³
Price provided 200 yen/m³

Shortage of managing staff

Maintained by only 2 people
On the entire island

Infrastructure not provided for most of the island

Unable to secure land for housing
Unable to accept immigration

Aiming Beyond Water Problem Solving

+

Halt population decline and achieving the sustainable island

Resolving the Different Challenges of Each Region=

Achieving Sustainability in Japan

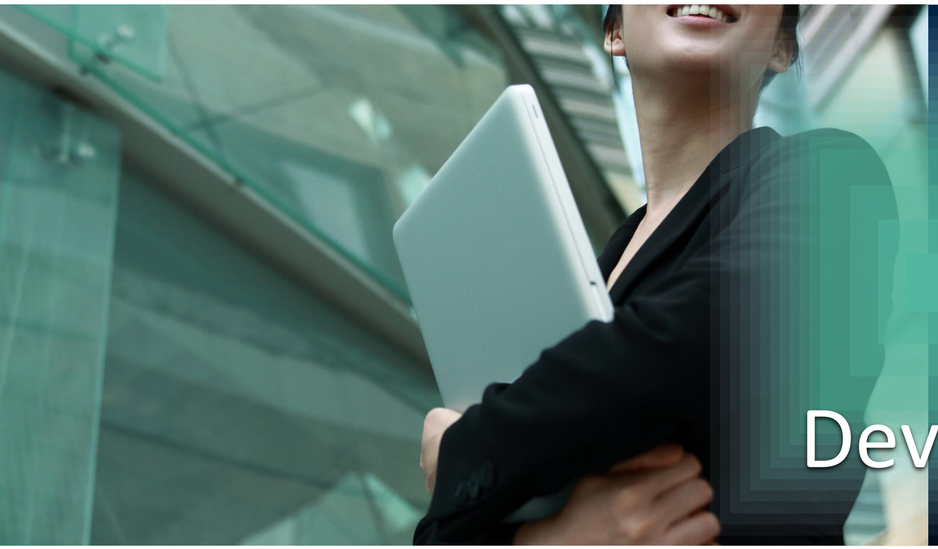
Underpopulated area

Rural area

For Realization

Roles of Government/Municipalities

Identifying Challenges and Promotional Framework



Public-
Private
Partnership

Roles of Private Sectors

Development and Implementation of Solutions

Working Together to Solve Issues One at a Time

Secure Future for Children of the Next Generation