CDP Water Security Questionnaire 2022(NEC) Excerpt version

W1. Current state

W1.2d

(W1.2d) Indicate whether water is withdrawn from areas with water stress and provide the proportion.

	Withdrawals are from areas with water stress	% withdrawn from areas with water stress	Comparison with previous reporting year	Identification tool	Please explain
Row 1	Yes	Less than 1%	About the same	WRI Aqueduct	The tool used for water risk assessment is WRI's Aqueduct "Aqueduct Global Maps 3.0 Data". We conduct a survey once a year at 26 group companies with domestic and overseas production bases. The items used for risk assessment are each risk such as flood and drought, including "comprehensive water risk". We consider that there is a risk if the risk level is judged to be "Extremely High" or "High". We consider floods to be the main water risk. A major flood occurred in Thailand in 2011, and Aqueduct now indicates that the area has a "High" water risk in river floods. The risk of drought is shown as "High" and the risk of water intake is shown as "Extremely High". However, a survey conducted in 2020 and 2021 to understand the actual situation revealed that sufficient measures were taken. In the industrial park to which this factory belongs, the government and the region cooperate to

					install embankments, BCP measures and sufficient training, and water storage tanks are installed. Although Suzhou is also shown as "High" in the Aqueduct risk assessment, Suzhou does not use water for production, so the actual water risk is not high. Going forward, the entire NEC Group will continue to conduct surveys using WRI's Aqueduct and conduct detailed interviews with local staff to understand the actual situation, strengthen water risk management, and reduce water intake.

W2. Business impacts

W2.2

(W2.2) In the reporting year, was your organization subject to any fines, enforcement orders, and/or other penalties for water-related regulatory violations?

No

W4. Risks and opportunities

W4.2

(W4.2) Provide details of identified risks in your direct operations with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Japan

Other, please specify

river basins in Japan

Type of risk & Primary risk driver

Acute physical

Cyclone, hurricane, typhoon

Primary potential impact

Disruption to sales

Company-specific description

NEC operates datacenters in Kobe, Nagoya, and other 9 locations throughout Japan. The datacenters provide “the cloud services” and “the housing services” to government organizations and companies, and are important facilities that operate numerous information systems. The operational continuity of datacenters is critically important for us to provide service to customers without disruption.
In the unlikely event that data center services are down, it could lead to serious incidents related to social infrastructure. Therefore, the normal operation of data centers is very important in NEC's business.
The sales of the Enterprise Business Unit including datacenter business is about 18% of the sales of entire NEC group.

Recently the frequency and severity of water-related natural disasters in Japan has been increased. In 2019, a typhoon with record-breaking rainfall caused landfall in a wide area of Japan. The rain caused blackouts, broken water mains, and other major damage to lifelines, and also caused rivers to flood resulting in widespread devastation. The number of disasters may rise due to abnormal weather caused by climate change, which presents potential risk to continuous operation of datacenters.
NEC's data centers are located in locations that are not easily damaged by natural disasters, and have facility configurations and building structures that reduces the risk of large-scale disasters. However, we recognize that extreme weather events such as the 2019 typhoon are more likely to cause unprecedented disasters and may pose risks to the continued operation of data centers.

Timeframe

1-3 years

Magnitude of potential impact

Medium

Likelihood

Likely

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

15,000,000,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

If climate change produces a water-related disaster of unprecedented scale that disrupts power supply to datacenters, this could damage the reputation of NEC data centers

recognized for its capability to provide safe and secure services. As a consequence, this could negatively affect assessments, reception of new orders, and customer retention, and ultimately cause sales to decline. If the current sales of the Enterprise Business Unit (574.7 billion yen/year) falls approximately 0.5 percent, that would result in a decrease in annual sales of 3 billion yen. If that continued for five years, we would lose 15 billion yen in sales.

The sales of the Enterprise Business Unit 574.7 billion yen/year X assumed impact 0.5% = 3 billion yen
The assumed annual impact 3 billion yen X 5 years = 15 billion yen in total

Primary response to risk

Amend the Business Continuity Plan

Description of response

NEC datacenters are constructed in areas that are not susceptible to flooding and tsunamis to avoid water-related damage to facilities. We continue to further improve stable operation of our datacenters even under changing climate.
We have obtained newest local hazard maps at all datacenters right after the maps are revised. The preparedness has been reassessed.
As a result of a review of disaster risk in 2012, all of our data centers have improved emergency power supply capacity. Our data centers in Nagoya and Kobe are equipped with power supply units to ensure that our information systems can continue to operate for at least 72 hours in the event of a power outage. In addition, in the same year we signed a priority fuel supply agreement with a fuel supplier to receive priority access to fuel in the event of an emergency. In addition, the emergency generators in these data centers can be powered by regular household kerosene rather than fuel oil.
In order to proactively respond to future climate change, we re-evaluate the natural disaster tolerance of all our data centers annually, and we also conduct a real failure test (start-up test of emergency generators under the assumption of an actual power outage) every year to make sure there are no problems.
In fiscal 2021/2022, we conducted failure tests at nine data centers and confirmed that even if a power outage occurs, it can be restored smoothly.

Cost of response

2,300,000,000

Explanation of cost of response

If a disaster of an unprecedented scale were to occur and we decided to increase the fuel reserves of our emergency generators from 72 hours (3 days) to 120 hours (5 days), we would need to take measures such as building more fuel storage tanks, laying more piping, and purchasing more fuel.
Implementing these changes at a large data center such as Kanagawa or Kobe would cost 900 million yen.
In a small data center, the cost would be 100 million yen. Assuming these changes are implemented at two major data centers and five small data centers, the total cost would be 2.3 billion yen.

Cost for large data center (fuel storage, piping, additional fuel) 900 million yen x 2 locations = 1.8 billion yen

Small data center (fuel storage, piping, additional fuel) 100 million yen x 5 locations = 500 million yen
1.8 billion yen + 500 million yen = 2.3 billion yen total

W4.2a

(W4.2a) Provide details of risks identified within your value chain (beyond direct operations) with the potential to have a substantive financial or strategic impact on your business, and your response to those risks.

Country/Area & River basin

Thailand
Chao Phraya

Stage of value chain

Supply chain

Type of risk & Primary risk driver

Acute physical
Flood (coastal, fluvial, pluvial, groundwater)

Primary potential impact

Reduction or disruption in production capacity

Company-specific description

Our factories were damaged by the 2011 floods in Thailand, as were the factories of our major suppliers. As a result, it became impossible to procure electronic parts such as hard disks necessary for manufacturing our products, which affected the production plan. For about half a year, we couldn't operate our own factory and couldn't procure parts from other companies, which reduced our production capacity and had a major impact on sales. In fiscal 2011, sales decreased by 20 billion yen and operating income decreased by 8 billion yen.
According to the WRI Aqueduct assessment, the region is still at high risk of flooding, and the impact of climate change is likely to increase meteorological disasters in the future, so it is likely that similar flood will occur in the future. Therefore, we are working together with the government and industrial parks to implement many flood countermeasures (such as installing large-scale water tanks and regularly reviewing BCPs).

Timeframe

4-6 years

Magnitude of potential impact

Medium

Likelihood

About as likely as not

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

7,600,000,000

Potential financial impact figure - minimum (currency)

Potential financial impact figure - maximum (currency)

Explanation of financial impact

If we can't procure the parts used for electronic devices from our suppliers, we can't operate the factory during that time.
The 2011 floods in Thailand took about 6 months to restore and operate the surrounding factory areas.
Sales of the Group company NEC Platform was about 317.5 billion yen (fiscal year ending March 2022)
is. If 2.4% of the total sales are shut down for 6 months, it will cost about 7.6 billion yen.

Primary response to risk

Upstream
Map supplier water risk

Description of response

By using the flood simulation system developed by NEC based on the lessons learned from past floods, it is possible to grasp the risk areas of floods by simulation using past rainfall data, which is effective for creating hazard maps.
In addition, since simulations can be performed every hour for up to 7 days ahead, it is possible to contribute to mitigating damage by issuing warnings to dangerous areas before a flood occurs.
In fact, we conducted a demonstration experiment to predict the inundation area by utilizing the flood simulation system in Uttaradit Province in northern Thailand from 2015 to 2016.

Cost of response

10,000,000

Explanation of cost of response

This flood simulation system has already been introduced. As a local personnel cost for updating the data of this system, 10 million yen (5 personnel x 2 million yen/person) is estimated.
In addition, since the floors have been raised and the equipment has been moved to the second floor in the past floods, physical measures have already been implemented, so they are not included in this cost.

W8. Targets

W8.1

(W8.1) Describe your approach to setting and monitoring water-related targets and/or goals.

	Levels for targets and/or goals	Monitoring at corporate level	Approach to setting and monitoring targets and/or goals
Row 1	Company-wide targets and goals Business level specific targets and/or goals Site/facility specific targets and/or goals	Targets are monitored at the corporate level Goals are monitored at the corporate level	The NEC Eco Action Plan 2025, which is being promoted by the entire NEC Group, sets quantitative and qualitative targets for water. Based on company-wide goals, each business unit and group company sets water-related goals. Based on those goals, goals for each facility are set. Each facility checks the progress every month, and the entire company checks the progress once every six months. Quantitative goals include reducing water usage and reducing BOD and COD. As a qualitative goal, we have set voluntary standard values for wastewater. We own many data centers that use large amounts of water, and sufficient water quantity and quality are essential for business continuity. Therefore, we have a water goal.

W8.1a

(W8.1a) Provide details of your water targets that are monitored at the corporate level, and the progress made.

Target reference number

Target 1

Category of target

Water withdrawals

Level

Company-wide

Primary motivation

Reduced environmental impact

Description of target

Reduction of water usage (city water, industrial water, and ground water) by 0.5% or more every year from the level in fiscal 2018. This target is applied to company-wide.

Quantitative metric

% reduction in total water withdrawals

Baseline year

2018

Start year

2019

Target year

2025

% of target achieved

100

Please explain

The NEC Group's company-wide goal is to "reduce total water intake by 0.5% or more each year compared to FY2018, and as a result, reduce it by 3.5% (0.5%*7years) or more compared to FY2018 in 2025."
Aiming to achieve this goal, we are conducting activities at each base.
This goal was achieved in FY2021 and new goals are being considered.

Target reference number

Target 2

Category of target

Water pollution reduction

Level

Company-wide

Primary motivation

Reduced environmental impact

Description of target

Reduction of BOD and COD emissions by 1% or more every year from the level in fiscal 2017.
This target is applied to company-wide.

Quantitative metric

Other, please specify

Reduction of BOD and COD emissions

Baseline year

2017

Start year

2018

Target year

2025

% of target achieved

100

Please explain

We set a target to reduce BOD and COD emissions in order to reduce environmental impact to the most minimal level possible.
The company-wide target of the NEC Group is set at "Reducing BOD and COD emissions by 1 percent or more compared with the fiscal 2017 level," and activities are being implemented at each facility.
NEC Group has achieved the target significantly.

W8.1b

(W8.1b) Provide details of your water goal(s) that are monitored at the corporate level and the progress made.

Goal

Improve wastewater quality beyond compliance requirements

Level

Company-wide

Motivation

Risk mitigation

Description of goal

Most NEC facilities in Japan set voluntary standard values for water discharges that are stricter than the standard value set by the national or local governments.
This goal is important to NEC because if discharge that exceeds discharge standards continues for a length of time, it will be necessary to stop discharge, report to authorities, find the cause, and take countermeasures, which would lead to stoppage of production lines and operation.
This goal is applied to the company-wide. In order to achieve this goal, each facility is assigned an engineer with factory control qualifications, there is a budget for maintaining the quality of discharges, and human resources are also being added.

Baseline year

2017

Start year

2018

End year

2025

Progress

Management based on voluntary standard values for wastewater concentration has already been implemented at all business sites.
The indicators used for progress are the BOD and COD density in discharge water. The threshold of success is reducing BOD or COD in discharge by 1 percent or more compared with the fiscal 2017 level, and in fiscal 2021 we achieved the goal.

Since fiscal 2018, we have been able to continuously achieve every year our goal of reducing BOD and COD emissions by 1 percent or more compared with the fiscal 2017 level.