

Press Release—for immediate release

DOCOMO and NTT to Begin the World's First Demonstration of Coordinated Control of Workload Shifting and Energy Management at Radio Base Stations

—Aiming to maximize renewable energy use, help stabilize the power grid, and maintain communications services during disasters—

News Highlights:

- DOCOMO and NTT will begin the world's first demonstration of AI-coordinated control at radio base stations, in which workload shifting—the transfer of communications-processing loads between sites—is integrated with energy management for solar power generation and battery storage.
- This demonstration will evaluate this new technology in three scenarios: normal operations, periods of tight electricity supply and demand, and power outages. It will assess the potential to maximize renewable energy use, contribute to power-grid stability, and keep communications services running longer during outages.
- The two companies aim to help build sustainable, disaster-resilient social infrastructure for the 6G/IOWN era.

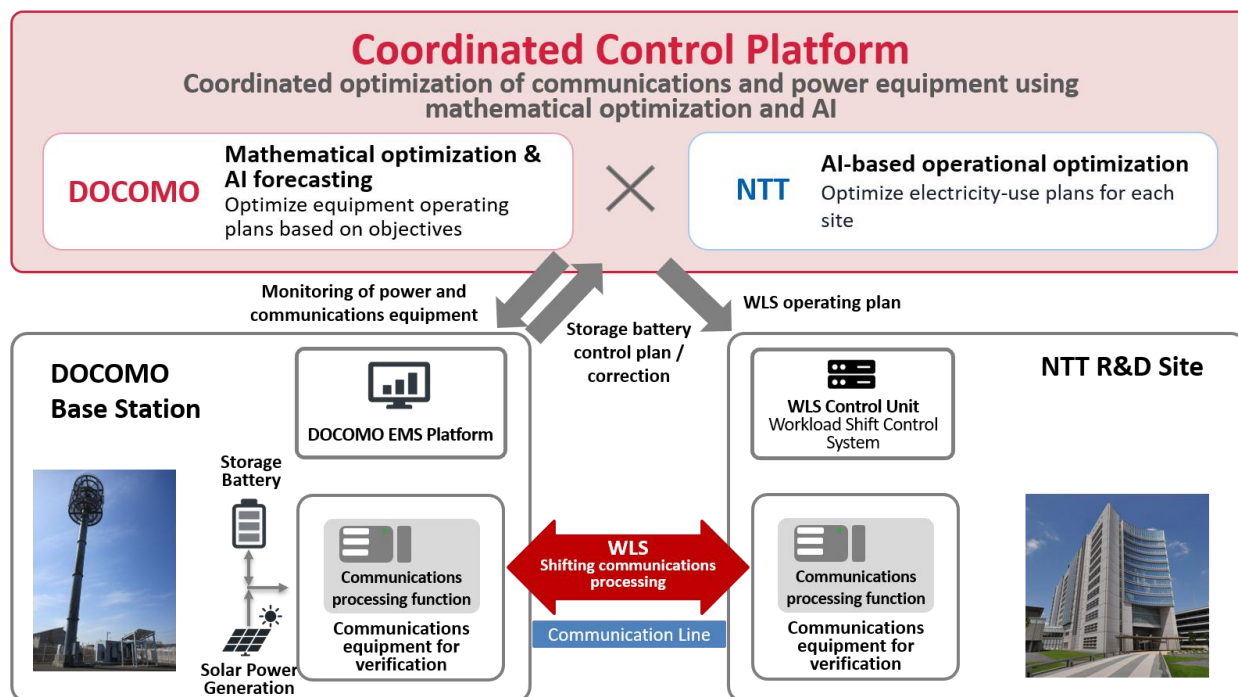
TOKYO, JAPAN, October 20, 2026 – NTT DOCOMO, INC. and NTT, Inc. announced today that they have developed a technology that uses AI to optimally coordinate and control radio base station communications-processing workloads and the operation of distributed energy resources,¹ including solar power generation and storage batteries. The two companies will jointly begin a demonstration on Tuesday, October 20, 2026, to verify this new technology's effectiveness in increasing the use of renewable energy, supporting demand response (DR)² during periods of tight electricity supply and demand, and improving communications service continuity during disasters. This is the world's first demonstration at base stations using this technology.³

In recent years, the spread of generative AI and other developments have accelerated society's digital transformation, and the electricity consumed by communications networks has been rising. At the same time, expanding the use of renewable energy to help achieve a decarbonized society and strengthening communications infrastructure to prepare for large-scale disasters are important social challenges. At conventional base stations, however, communications and power equipment have generally been controlled independently, primarily according to their respective operating conditions. As a result, it has been difficult to operate communications equipment in response to renewable energy generation under normal conditions, or to coordinate the use of limited power with the operations of communications equipment during outages caused by disasters and other events.

This demonstration will use workload shifting (WLS) technology,⁴ which moves communications-processing workloads between base stations, together with DOCOMO's energy management system (EMS) platform,⁵ which manages distributed energy resources such as solar power generation and storage batteries. Based on operating plans calculated by AI, NTT will control the communications load at each base station, while DOCOMO will control the storage batteries. This will enable the companies to coordinate and optimize communications and power equipment as an integrated system.

NTT will build a verification environment using open-source software (OSS)⁶ to simulate the communications processing performed by a virtualized radio access network (vRAN). The environment will be connected to DOCOMO's base stations. Using this setup, DOCOMO and NTT

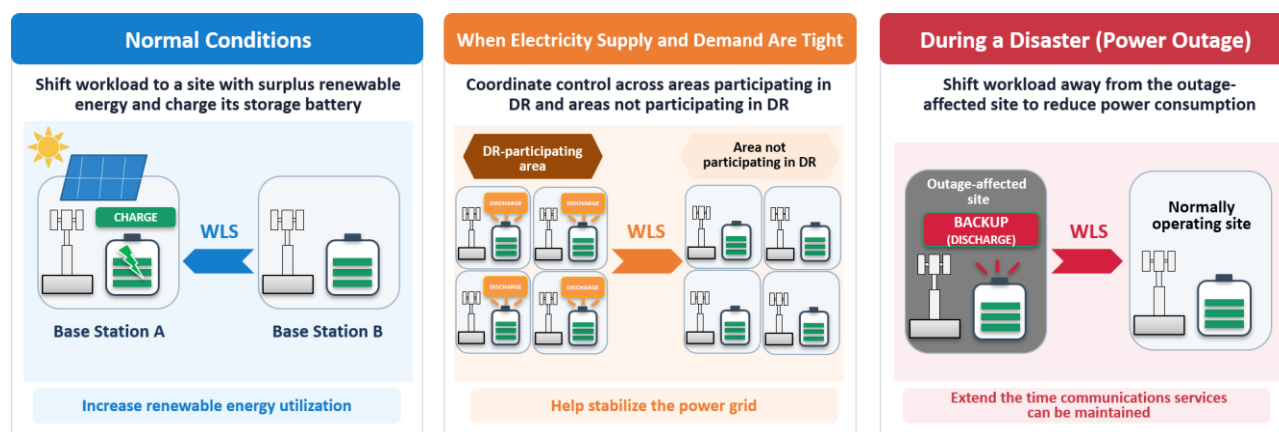
will test WLS operations that take into account the status of distributed energy resources and assess the technology's effectiveness across all three scenarios: normal operations, periods of tight electricity supply and demand, and power outages.



Configuration of the Demonstration

This technology links workload shifts between sites with the charging and discharging of storage batteries. DOCOMO and NTT aim to increase renewable energy use and help stabilize the power grid through DR when electricity supply and demand are tight. This will enable base stations that handle communications processing to be switched flexibly in response to renewable energy generation, making effective use of renewable energy that was previously underutilized.

In particular, during DR, this technology will help ease pressure on electricity supply and demand by reducing power consumption at the participating site, both by discharging storage batteries and by shifting communications-processing workloads to other sites. During power outages caused by disasters and other events, workloads can be shifted to other sites to reduce power consumption at the affected site. This can extend the backup time provided by storage batteries and help maintain communications services longer.



Conceptual Application of this new coordinated optimization technology

DOCOMO and NTT plan to complete the demonstration by the end of December 2026 and evaluate this new technology's effectiveness. Going forward, the two companies will consider linking the technology with data centers and extending it to a wider range of energy resources. They aim to help build sustainable, disaster-resilient social infrastructure for the 6G/IOWN era.

DOCOMO and NTT will have a booth showcasing this initiative at [NTT R&D FORUM 2026](#), which will be held at the NTT Musashino R&D Center on November 18 - 20 and November 24 - 25, 2026.



¹ Relatively small-scale energy resources installed in a distributed manner close to consumers, in contrast to large power plants. Examples include solar power generation and fuel cells. In this demonstration, the term covers these resources as well as storage batteries.

² A mechanism for maintaining the balance between electricity supply and demand by having users, such as businesses and households, adjust their electricity use, for example, by conserving energy, in response to supply-and-demand conditions.

³ Based on research by DOCOMO and NTT as of October 20, 2026.

⁴ A technology for moving computational workloads handled by servers and other systems distributed across multiple sites from one site to another in response to electricity supply-and-demand conditions and other factors.

⁵ A system that uses information technology to optimally control and manage energy equipment, such as solar power generation and storage batteries.

⁶ Software whose source code is publicly available and that anyone may freely modify and redistribute at no charge.

About NTT DOCOMO

NTT DOCOMO, Japan's leading mobile operator with over 91 million subscribers, is one of the global leaders in 3G, 4G and 5G mobile network technologies. Under the slogan "Bridging Worlds for Wonder & Happiness," DOCOMO is actively collaborating with global partners to expand its business scope from mobile services to comprehensive solutions, aiming to deliver unsurpassed value and drive innovation in technology and communications, ultimately to support positive change and advancement in global society.

<https://www.docomo.ne.jp/english/>

About NTT

NTT is a leading global technology innovator, providing a broad range of services to both consumers and businesses. As a mobile operator and provider of infrastructure, networks, and services, NTT is dedicated to promoting a sustainable future through cutting-edge innovations. Our portfolio includes business consulting, AI-powered solutions, application services, global networks, cybersecurity, data center and edge computing, all supported by our deep global industry expertise. Generating over \$90 billion in revenue and employing 340,000 professionals, we allocate 30% of our annual profits to fundamental research and development. With operations spanning more than 70 countries and regions, our clients include over 75% of Fortune Global 100 companies, alongside thousands of enterprises, government organizations, and millions of consumers.

For further information, please contact:

NTT, Inc.

NTT Information Network Laboratory Group

Public Relations

[Inquiry Form](#)

NTT DOCOMO, INC.

X-Tech Development Department

Email: press-xt-energy@ml.nttdocomo.com

Demonstration Overview

1. Objective

This demonstration will test an AI-based technology that coordinates the operation of communications and power equipment. It will assess the technology's ability to increase renewable energy use and support demand response (DR) during periods of tight electricity supply and demand, while helping maintain communications services during disasters.

2. Demonstration Details

The demonstration will be conducted in a test environment connecting a DOCOMO base station with an NTT R&D site. It will combine the transfer of communications-processing workloads between sites—known as workload shifting (WLS)—based on AI-generated operating plans, with the control of power equipment, including solar power systems and storage batteries, through DOCOMO's energy management system (EMS) platform.

The demonstration will evaluate the following:

- **Increasing renewable energy use:** Storage batteries will be charged when solar power generation is high, while communications-processing workloads will be shifted to sites with surplus solar power. The demonstration will assess whether this can increase the use of renewable energy.
- **Supporting demand response:** The demonstration will assess how storage batteries can help ease pressure on the power grid when electricity supply and demand are tight. It will also examine whether coordinating workload shifts with battery recharging after a demand response event can prevent a new peak in power consumption.
- **Maintaining communications service during power outages:** During an outage, communications-processing workloads will be shifted to other sites to reduce power consumption at the affected site. The demonstration will assess whether this can extend the backup time provided by storage batteries and help keep communications services running longer.

3. Existing Challenges and How this New Technology Addresses Them

Challenges with Existing Technologies: Communications and power equipment have traditionally been operated independently, according to their respective requirements.

This has made it difficult to:

- Make full use of surplus solar power, since power consumption by communications equipment cannot be adjusted flexibly.
- Avoid creating a new peak in power demand when storage batteries are recharged after a DR event.
- Maintain communications services for longer during a power outage, as communications-processing workloads cannot be shifted flexibly based on the storage battery status.
- Optimize the overall operation of communications and power equipment.

How this New Technology Works: The new technology coordinates the operation of communications and power equipment by combining three capabilities: NTT's reinforcement-learning-based model for optimizing operating plans; DOCOMO's AI- and mathematical optimization-based operational planning technology; and DOCOMO's EMS platform that controls power equipment.

This coordinated approach enables the system to:

- Shift communications-processing workloads between sites based on renewable energy generation, while charging storage batteries.
- Coordinate workload shifting with storage-battery charging and discharging during demand response events.
- Shift communications-processing workloads to other sites during a power outage, based on the storage

battery status, to reduce power consumption at the affected site.

By coordinating the operation of communications and power equipment, DOCOMO and NTT aim to increase renewable energy use, contribute to grid stability, and improve communications network resilience.

Main Equipment Used in the Demonstration

Location	Equipment/Environment	Specifications / Role
DOCOMO base station	Solar power generation system	Uses maximum power point tracking (MPPT) to automatically maximize power output from the solar panels
	Storage battery system	Supports charging, discharging, and standby modes
	EMS platform	Monitors solar power generation, remaining battery capacity, and power consumption; controls storage-battery charging and discharging
NTT R&D site	vRAN simulation environment	• Simulates changes in base station traffic loads and communications-processing workload shifts between sites. • Supports three operating modes based on the operating plan: 1. Shift workloads from the DOCOMO base station to the NTT R&D site 2. Shift workloads from the NTT R&D site to the DOCOMO base station 3. No workload shift
	WLS Control Unit (Workload Shift Control System)	Sends WLS commands

4. Demonstration Period (Planned)

October 20–December 31, 2026

5. Roles of Each Company

DOCOMO

- Develops and operates an AI model that uses outputs from NTT’s AI model to create equipment operating plans for objectives such as maximizing renewable energy use, supporting DR, and maintaining communications services during power outages caused by disasters.
- Develops and refines operating plans and controls power equipment, including solar power generation and storage batteries.

NTT

- Develops and operates an AI-based optimization model to calculate operating plans for site-level energy utilization with the aim of maximizing renewable energy use.
- Builds a test environment simulating vRAN communications processing and controls test equipment, including a WLS system.