Published June 2022. This document shares information we have as of the publication date, and it includes estimated information and projections. The information is provided as-is and may change without notice.

Microsoft datacenters in Indonesia

As more people and businesses rely upon technology to stay connected, informed, and productive, digital needs in Indonesia and around the globe are growing. And that means the need for hyperscale datacenters is growing too.

Hyperscale brings hyper efficiency. Microsoft cloud services offer customers an energy efficient and carbon neutral alternative to running their own private datacenters. Research shows that Microsoft cloud services are up to 93 percent more energy efficient than traditional enterprise datacenters.

Microsoft strives to empower the communities where our employees live, work, and operate our datacenters. With that, it's important we share information to ensure you understand why datacenters are needed, Microsoft's approach for responsible operations, and the benefits of hosting a datacenter in your community.

The cloud powers our digital world

Cloud computing is the delivery of computing services over the internet. Common daily activities are made possible through cloud computing, such as:

Email | Online banking | File storage | Streaming videos | Collaboration | Online shopping | Mobile apps

Cloud computing can provide consumers and businesses with the benefits of enhanced security, privacy, compliance protection, lower costs, easier access, higher reliability, and a lower carbon footprint.

The Microsoft Cloud is for everyone

The Microsoft Cloud serves over 1 billion customers and 20 million companies worldwide.

Organizations in Indonesia relying on the Microsoft Cloud are made up of a variety of sectors, such as large enterprises, startups, governments, hospitals, banks, schools, or other organizations that contribute to a modern society.

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When Microsoft joins a community, we bring our commitments for a better world

Support inclusive economic opportunity

Commit to a sustainable future

Earn trust

Microsoft datacenters are key to our sustainability goals

Carbon negative by 2030

Power usage effectiveness (PUE) measures cloud energy efficiency. The calculation is total power consumption divided by IT power consumption. A lower PUE score indicates more energy-efficient datacenters, with a PUE of 1.0 being the best score. Our Indonesian datacenters are under construction and not in operation. They will have a **design average PUE of 1.32.**

Globally, Microsoft datacenters use fossil fuel generators for backup power and account for **less than 1 percent of our overall emissions.** In specific regions, Microsoft is **piloting running backup generators with renewable blend, cleaner-burning fuels,** and is also **piloting the replacement of datacenter generators with long-duration batteries.**

Leadership in Energy and Environmental Design (LEED) is the world's largest green building certification program. LEED provides the framework for healthy, highly efficient, and cost-saving green buildings with lower carbon emissions. LEED certification is a globally recognized symbol of sustainability achievement and leadership. **New Microsoft datacenters being built are designed to earn LEED Gold certification.**

Microsoft operations in Indonesia **comply with applicable air quality requirements.**

Water positive by 2030

Water usage effectiveness (WUE) is another key metric relating to the efficient and sustainable operations of our datacenters and is a crucial aspect as we work towards our commitment to be water positive by 2030. WUE is calculated by dividing the number of liters of water used for humidification and cooling by the total annual amount of power (measured in kWh) needed to operate our datacenter IT equipment.

Due to high ambient temperatures and humidity, Microsoft will use water-cooled chillers for cooling. The new datacenters in Indonesia are designed for an **average WUE of 1.90 L/kWh.**

Zero waste by 2030

Microsoft has a goal to achieve 90 percent diversion of datacenter operational waste by 2030. To reach this goal, we're working closely with our waste haulers to optimize waste diversion programs across our global datacenter portfolio. We have achieved Zero Waste certifications for our San Antonio, Texas; Quincy, Washington; Boydton, Virginia; and Dublin, Ireland datacenter locations.

Globally, Microsoft datacenters reuse **78 percent of our end-of-life assets and components; the remaining 22 percent of materials are recycled.** Additionally, Microsoft is conducting research and development to improve waste diversion by determining new recycling solutions for used air filters and fiber optic cables.

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Microsoft is assisting Indonesia to achieve its target of skilling 9 million people by 2030

Microsoft is collaborating with **the Ministry of Education, Culture, Research, and Technology** to equip more than 2,500 students in one year across Indonesia with digital skills in productivity, cloud, data and AI, and education. Part of the Ministry's Kampus Merdeka initiative, this Independent Certified Study Program combines theoretical and practical lessons which aim to prepare students in filling in IT-based roles as well as receiving Microsoft certification.

Microsoft is joining hands with **Prestasi Junior Indonesia** to prepare young Indonesians in entering the world of work in the 21st century. Through this program, 10,000 annual participants in Indonesia can gain improved digital knowledge and skills delivered by business professionals via specially developed learning videos. All participants will also be equipped with the various hard and soft skills that are necessary for success within the workplace.

Microsoft is partnering with **Grab** to develop digital skilling for nearly 650,000 Grab drivers and family members in Indonesia. The program aims to improve employability and help illuminate pathways to pursue tech-enabled careers.

Microsoft datacenters create family-wage operations and construction jobs as well as positive impacts to the local economy

Microsoft datacenters represent a capital-intensive investment and long-term commitment to the community. We estimate it will require 331 construction roles and **1.35 million work hours** to build the new datacenters in Indonesia. We intend to fill **25 to 30 percent of positions with local contractors.**

Once fully operational, we anticipate **71** full-time employees will work at the Indonesian datacenters.

Construction jobs

- Electricians
- Plumbers and pipefitters
- Carpenters
- Structural iron and steel workers
- Concrete workers
- Earth movers

Datacenter operations

- Campus management
- People management
- Critical environment operations
- Learning and development
- IT operations
- Mechanical engineers
- Electrical engineers
- Security contractors
- Building maintenance