
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

SUS204

Sustainability in AWS global infrastructure

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Agenda

AWS global infrastructure

The Climate Pledge

Using less through efficiency

Reducing carbon emissions from electricity usage

Reducing emissions across our business

Community engagement

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AWS Regions & Availability Zones (AZs)



Announced Regions: **5** Regions and 15 AZs in Australia, Canada, Israel, New Zealand, and Thailand

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Further and faster, together

September 19, 2019

Amazon and Global Optimism announced The Climate Pledge, a commitment to meet the goals of the Paris Agreement 10 years early—and achieve net-zero carbon by 2040. Amazon is a co-founder and first signatory of The Climate Pledge.





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Joining The Climate Pledge



The Pledge Commitments

01 **Regular reporting**

Measure and publicly report greenhouse gas emissions on a regular basis across Scopes 1, 2, and 3.

02 **Carbon elimination**

Implement decarbonization strategies through real business changes and innovations.

03 **Credible offsets**

Take action to neutralize any remaining emissions with additional, quantifiable, real, permanent, and socially beneficial offsets to achieve net-zero annual carbon emissions by 2040.

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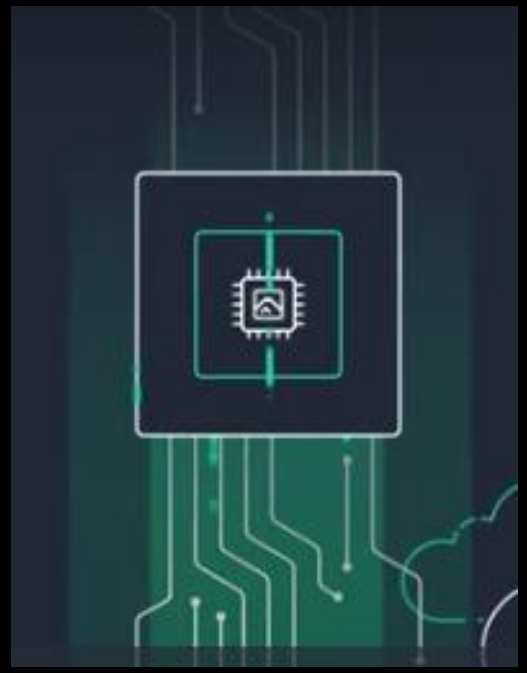
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With 375+ signatories
from around the world.
NESPRESSO.
CARBON CURE.
asos
cabify
gsk
BEST BUY
Snap Inc.
itv
Deloitte.
CLIF
Mercedes-Benz
reckitt
Weyerhaeuser
Microsoft
Unilever
jetBlue
CANARY WHARF GROUP PLC
BROOKS
hotelbeds
PROSEGUR
JLL
CBRE
MAERSK
Infosys
verizon
SIEMENS
Ingenuity for life
vmware
HRS
amazon
P&G
SAP
Uber
Klarna.
hp
Iceland
Johnson Controls
VISA
IBM
Coca-Cola EUROPEAN PARTNERS
McKinstry
For The Life Of Your Building
Alaska AIRLINES
CRANSWICK plc
Great British Taste
Telefónica
Lime
IPG
MACQUARIE
PEPSICO
BOOM
PHILIPS
Sainsbury's

Energy efficiency: The path to net-zero carbon starts by using less

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AWS Graviton and Inferentia



The latest generation of AWS-designed processors built for the cloud

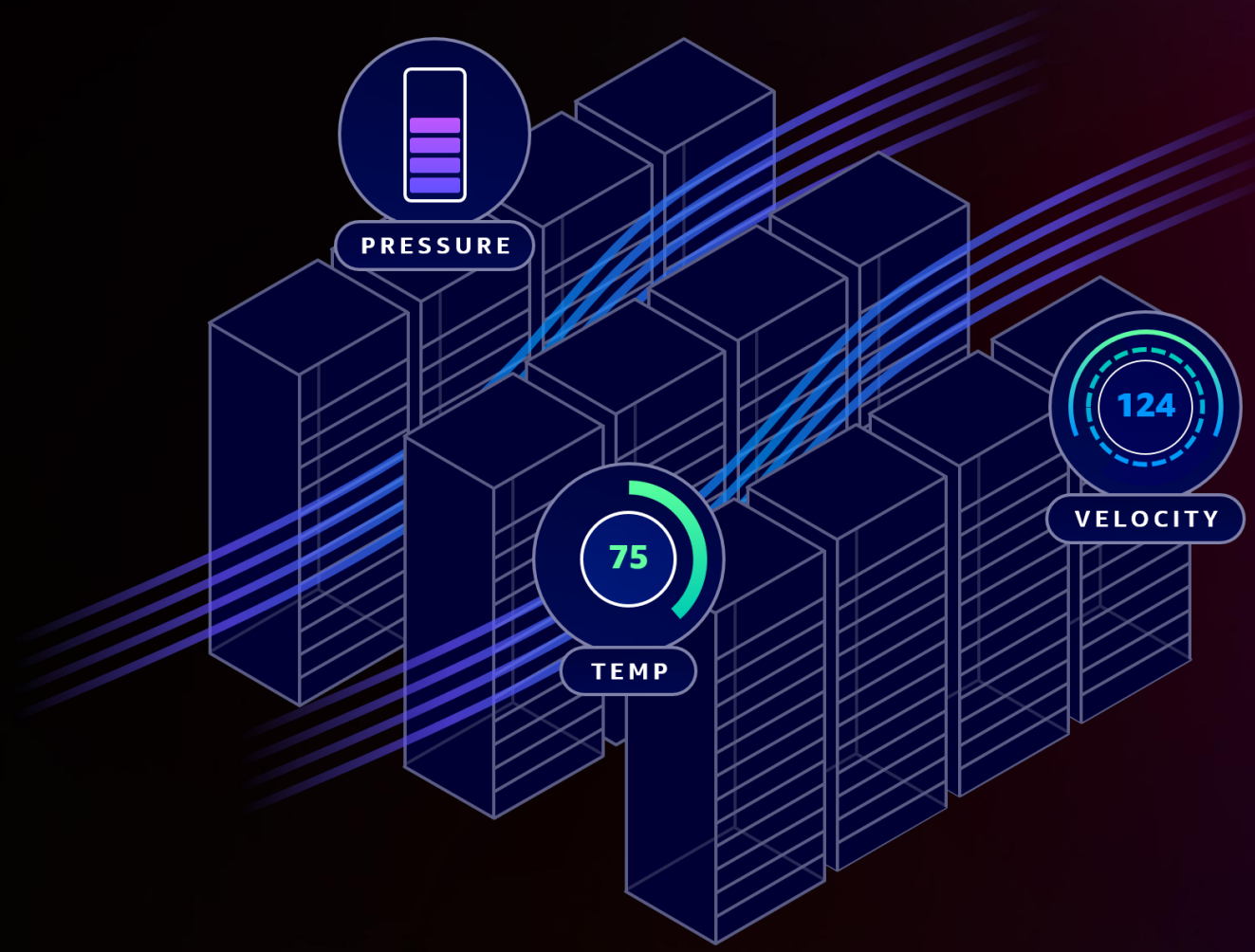
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Graviton3-based Amazon EC2 instances use up to 60% less energy for the same performance than non-Graviton EC2 instances

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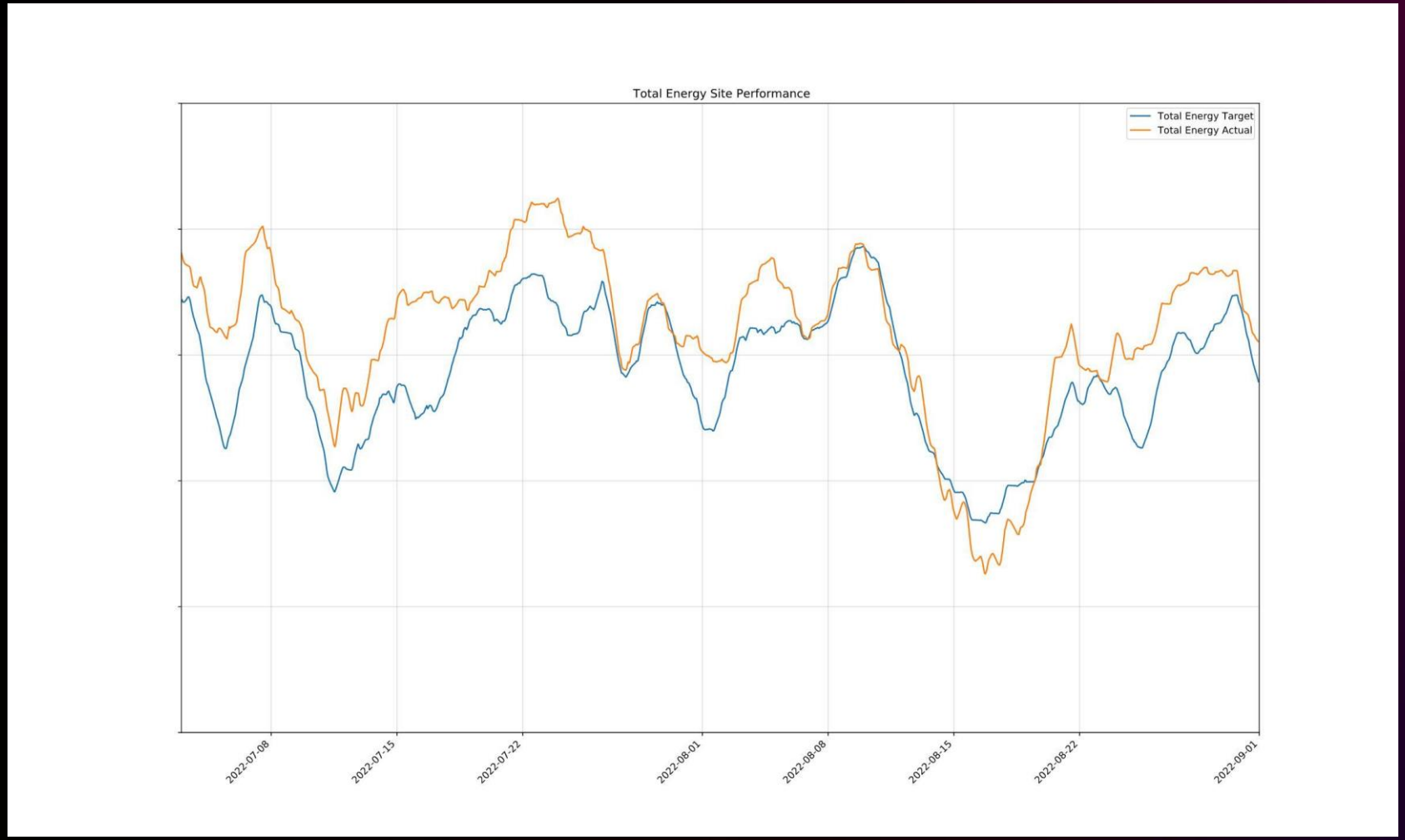
Inferentia is our most power-efficient inference processor

Predicting and tracking performance



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Predicting and tracking performance



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Carbon reduction opportunity

AWS can lower the carbon footprint of average on-premises data center workloads by nearly 80% today and up to 96% once AWS is powered with 100% renewable energy





Europe
Up to 5 times more energy efficient

US
3.6 times more energy efficient

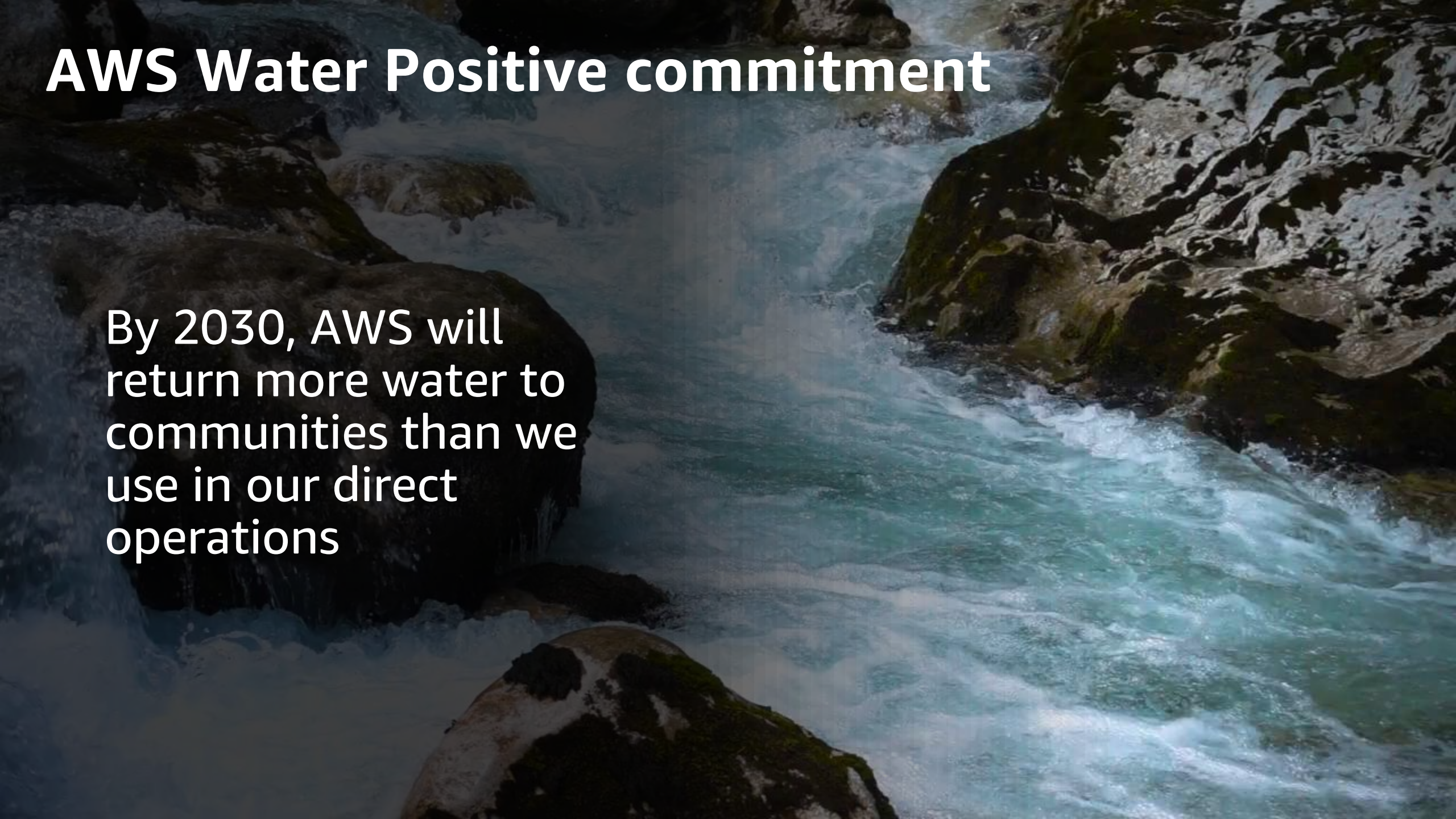


Asia Pacific
5 times more energy efficient

Find all the reports on aws.amazon.com/sustainability/resources/

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AWS Water Positive commitment



By 2030, AWS will return more water to communities than we use in our direct operations

Progress to date

Recycled water

20

data centers using recycled water

Water efficiency

0.25

liters per kilowatt-hour in 2021

Water reuse

96%

of AWS's cooling water is reused in irrigation in US West (Oregon) Region

Water replenishment

2.4 billion

liters returned to communities through replenishment projects

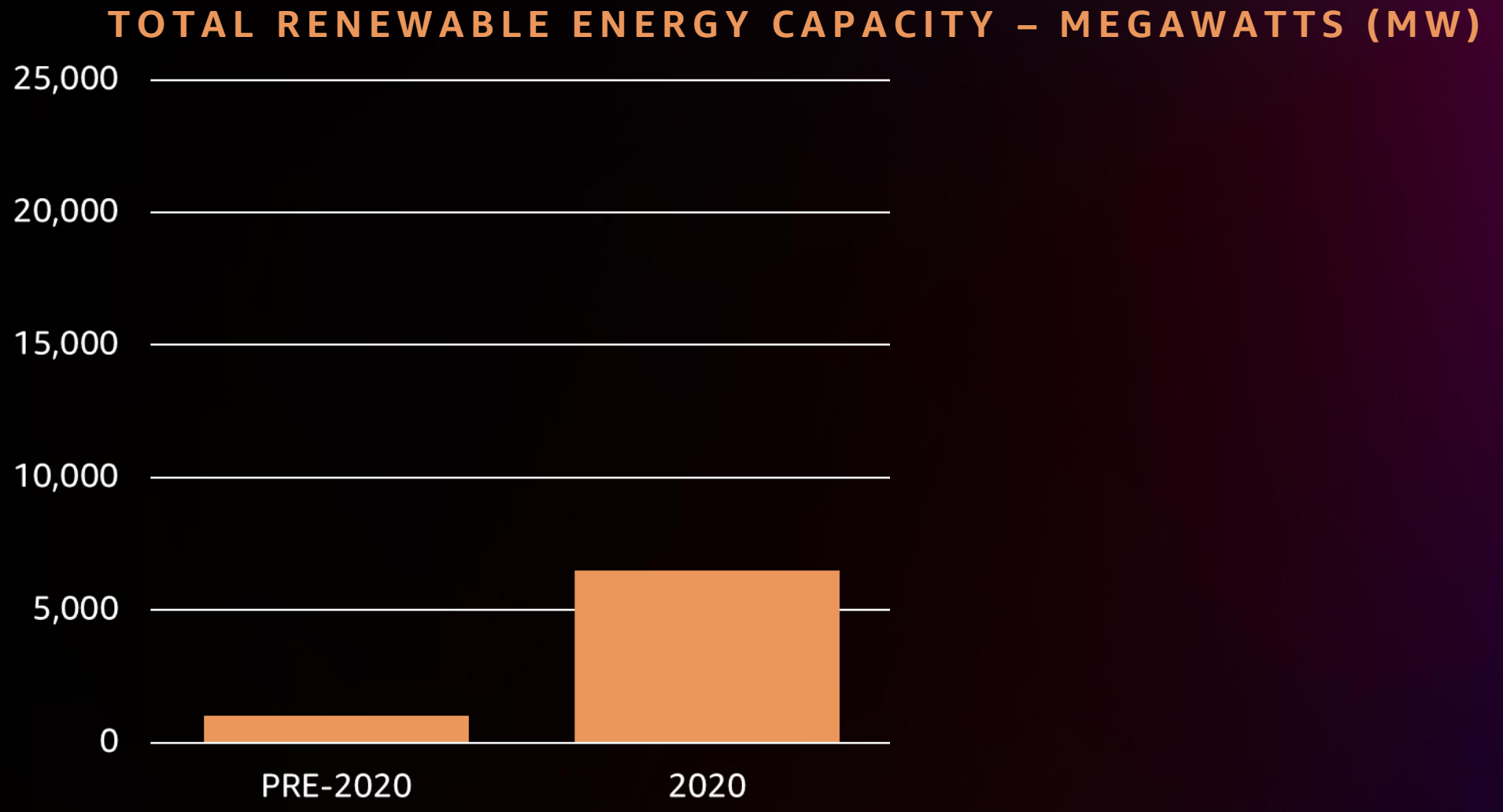
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Reducing carbon emissions from electricity usage

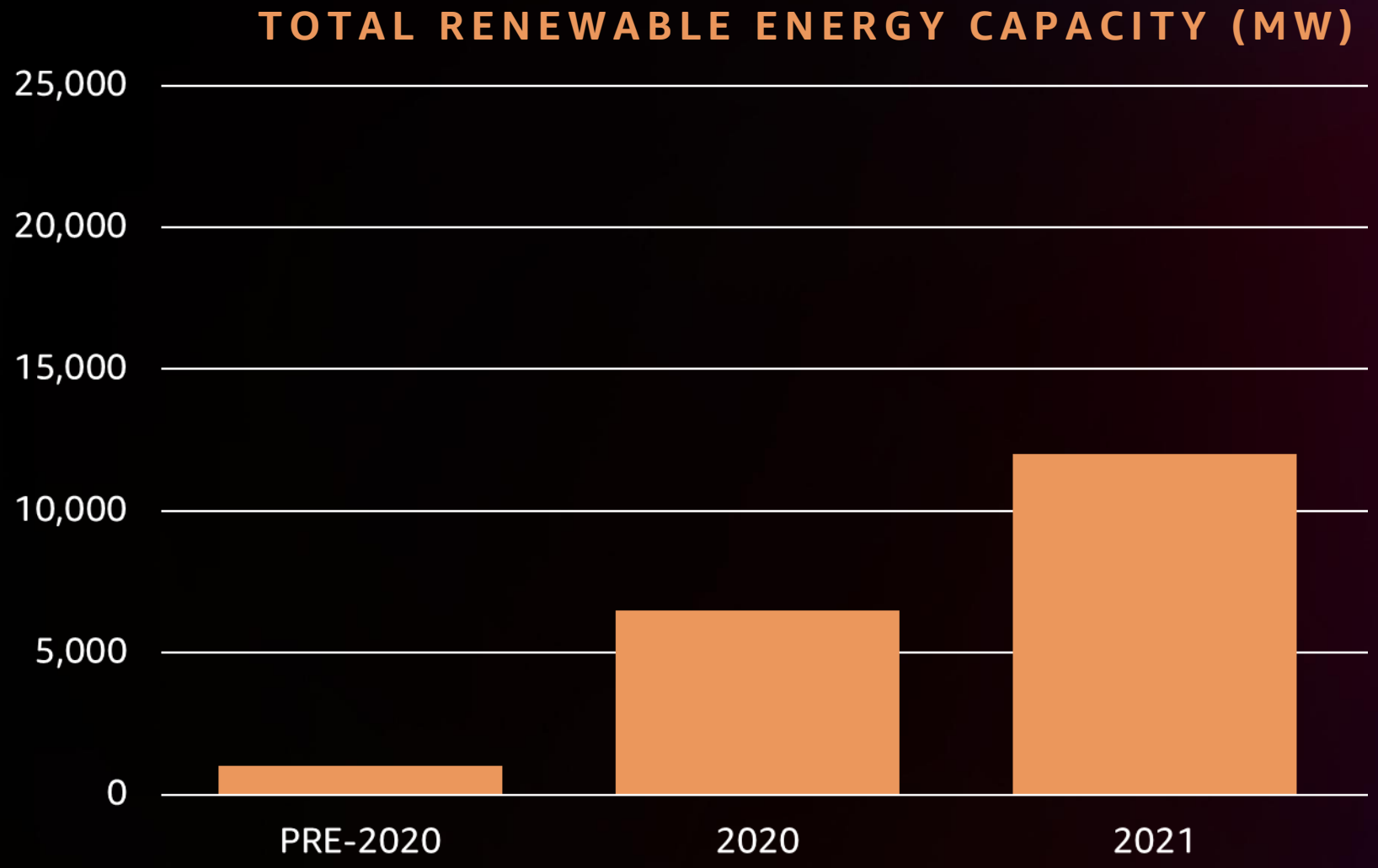
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Path to 100% renewable energy by 2025



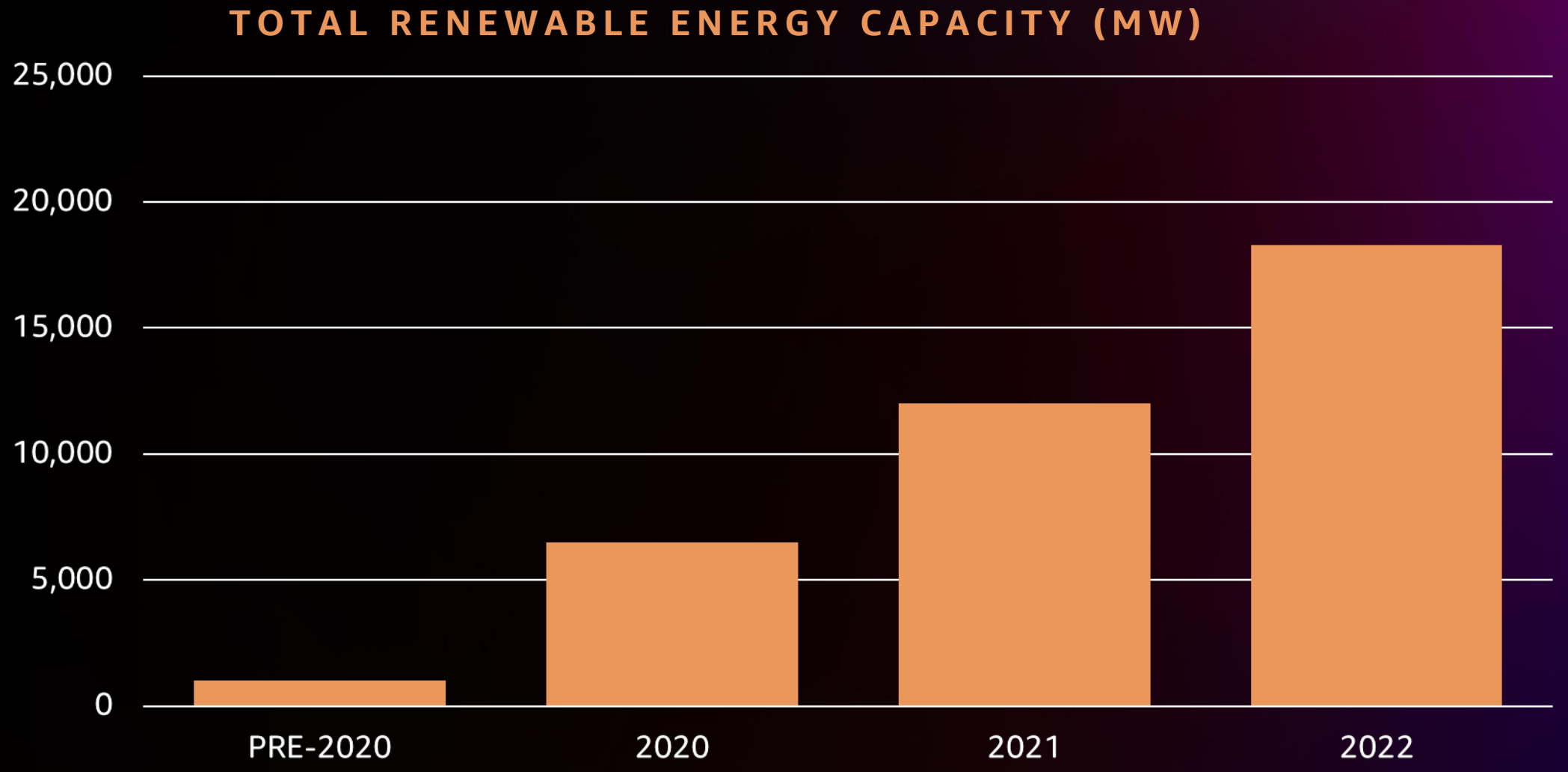
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Path to 100% renewable energy by 2025



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Path to 100% renewable energy by 2025



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Amazon is the largest corporate buyer of renewable energy globally

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More than 380 projects around the world, on the path to power operations with 100% renewable energy by 2025

Once online, enough power for more than 4.8 million U.S. homes/year

Global footprint



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Making an impact in India

Amazon previously announced 420 MW of solar projects in India

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This week, Amazon announced 300 MW across 2 hybrid wind and solar projects



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Solar energy in Canada



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Renewable energy in Singapore

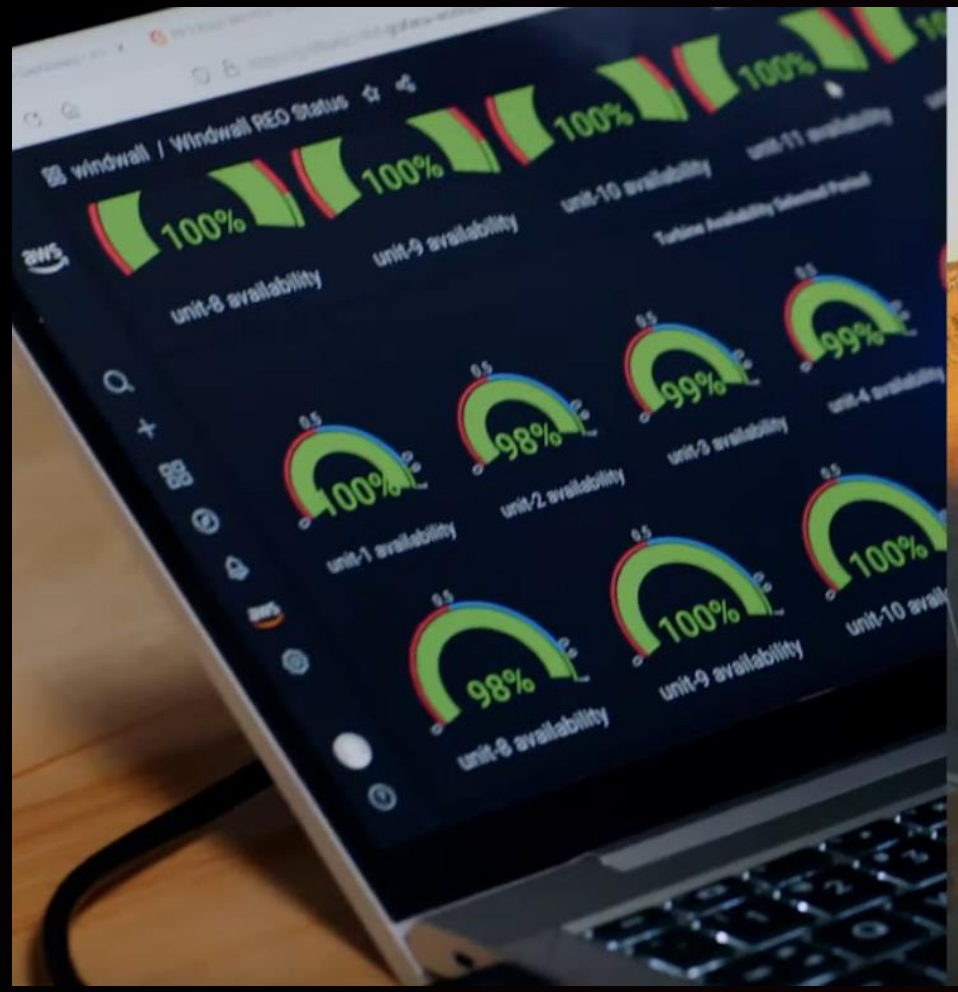


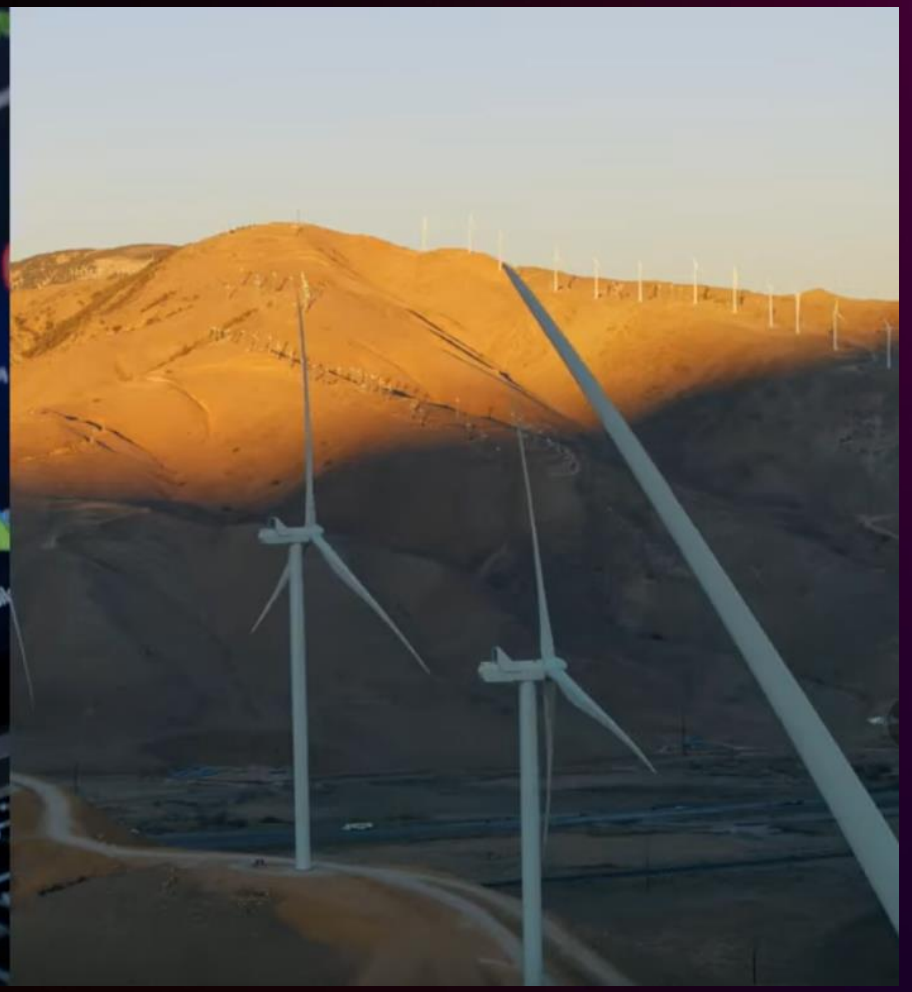
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19 million metric tons of carbon emissions will be avoided every year

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How do you manage the world’s largest corporate renewable fleet?





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Renewable energy optimization

AWS wind turbine production over 48 hours (13 turbines)

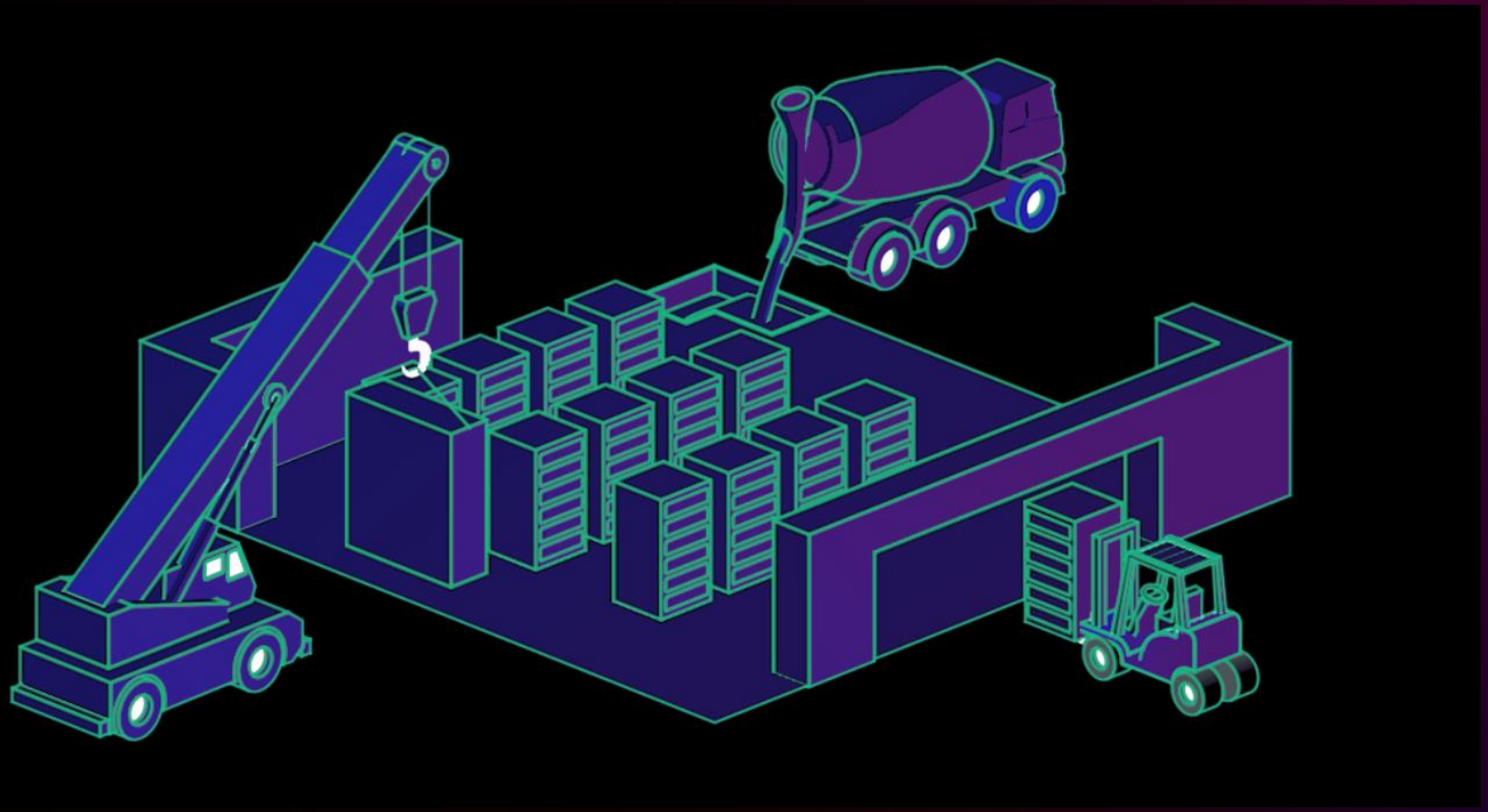


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Reducing carbon emissions across our business

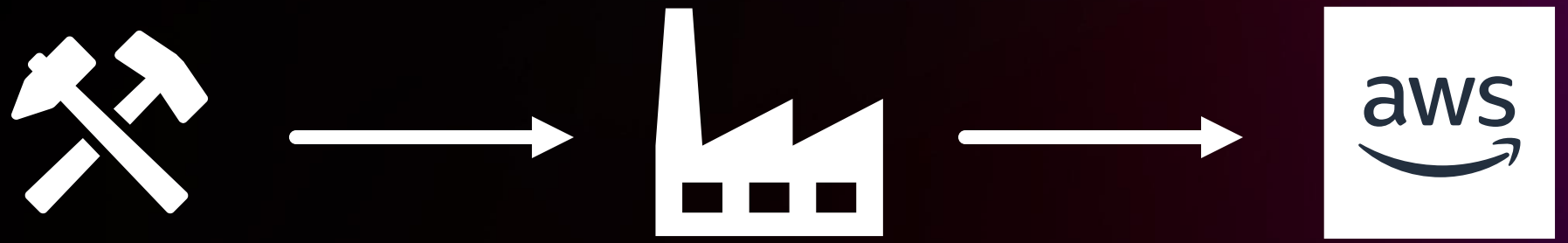
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Reducing carbon in our data centers



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The carbon footprint of hardware



Mining of raw materials

Factories

Data centers

The embodied carbon of hardware is a result of the greenhouse gasses emitted in the production process

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Sustainability and community engagement



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Community engagement

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What is the data center community?





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Scaling our impact through community engagement

STEAM education, access, and equity

Local tech upskilling

Environmental stewardship

Employee engagement



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Global Signature Programs

Think Big Spaces



Girls' Tech Day



CloudRoom



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Regional program: Coding

South Africa

Tangible Africa Coding Program



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Regional program: Affordable housing

Eastern Oregon

Stepping Stones Alliance program



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Regional program: Environmental stewardship

Hyderabad

Tree Planting Program



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Regional program: Environmental stewardship

Dublin

Waste Heat
Recovery Program



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Sustainability breakout sessions

SUS205: Architecting sustainably and reducing your AWS carbon footprint

SUS206: Sustainability and AWS Silicon

SUS208: Utilizing sustainability data at scale

SUS210: Modeling climate change impacts and risks at scale

SUS211: Water stewardship and renewable energy at scale

SUS212: Accelerating decarbonization & sustainability transformation

SUS301: Sustainable machine learning for protecting natural resources

SUS303: Delivering sustainable, high-performing architectures

SUS312: How innovators are driving more sustainable manufacturing

STP213: Scaling global carbon footprint management

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Sustainability chalk talks and workshops

SUS201: Detecting deforestation with geospatial images and Amazon SageMaker

SUS202: Using Amazon SageMaker, AutoGluon, and ASDI to predict air quality

SUS203: Carbon emissions reporting using modern data architecture on AWS

SUS207: Patterns for obtaining insights from sustainability data

SUS302: Optimizing architectures for sustainability

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