Indian companies can reduce their carbon emissions by moving to AWS Cloud

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New study by 451 Research finds migrating IT workloads to the cloud can reduce carbon emissions for Indian companies by nearly 80%

NEW DELHI – August 4, 2021 – Today, Amazon Web Services, Inc. (AWS), an Amazon.com, Inc. company, announced findings of the *Carbon Reduction Opportunity of Moving to the Cloud for APAC* report by 451 Research, a unit of S&P Global Market Intelligence. The report found that Indian companies and public sector organizations that migrated computing workloads from on-premises data centers to cloud infrastructure could expect to reduce their energy use – and associated carbon footprint – by nearly 80%.

451 Research surveyed more than 500 private and public sector organizations across Asia Pacific (APAC), spanning a variety of industries across Australia, India, Japan, Singapore, and South Korea. The report, commissioned by AWS, includes over 100 survey respondents in India, and also found that cloud service providers that tap into the local renewable energy market to run their operations in India can further boost carbon emissions savings. 451 Research estimates that if just 25% of the 1,200 largest publicly-traded businesses in India[1] put one megawatt (MW) of compute workload into the cloud[2], powered by renewable energy, it would save the equivalent of a year's worth of emissions from 160,000 Indian households.

“Customers in APAC who move compute workloads to the AWS Cloud can significantly reduce their carbon footprint, benefiting from the net effect of all our sustainability efforts,” said Ken Haig, Head of Energy Policy, Asia Pacific and Japan, AWS. “Our scale and focus on innovation allow us to improve efficiency of our data center operations faster than traditional enterprises. Apart from maximizing efficiency of our operations to reduce the amount of energy needed to power our data centers, we’re also working towards procuring 100% renewable energy for our worldwide energy needs by 2030 and are on a path to reach that milestone early by 2025. APAC energy markets remain among the most challenging in the world for businesses seeking to source 100% renewable energy, but we continue to collaborate with private and public organizations to overcome these barriers and invest in more projects in the region. At AWS, we are also working closely with customers to help them meet their own sustainability goals using cloud technology and driving innovation in low carbon solutions.”

“Cloud technology can credibly help companies in India decarbonize,” said Puneet Chandok, President Commercial Business – AWS India and South Asia, AISPL. “With India’s vibrant startup ecosystem already pioneering low carbon solutions, it is imperative that enterprises, public sector organizations, and policy makers factor in sustainability as a critical part of their cloud migration decisions. AWS’s commitment to fulfilling our net carbon neutrality goals in India includes initiatives in infrastructure efficiency, renewable energy, water sustainability, electric mobility, sustainable packaging, and building awareness through community engagement. I invite companies and organizations in India to join us in The Climate Pledge, committing to regular reporting, carbon elimination and credible offsets, on a journey to becoming net-zero carbon by 2040.”

“As data centre activity continues to surge in India, so will energy consumption, which will make energy efficiency a focal point in the market,” said Kelly Morgan, Research Director, Datacenter Infrastructure & Services at 451 Research of S&P Global Market Intelligence. “In our study, the server-level efficiencies of Indian organizations exceeded their peers in other surveyed APAC countries as a result of higher rates of virtualisation and a more aggressive stance towards workload consolidation. Indian organizations drive their systems somewhat harder, and their server infrastructure is among the youngest on average in APAC. However, much of this is offset by inefficiencies at the facility level. Cloud providers like AWS are driven to make all parts of their infrastructure work in sync to increase efficiency, from design to operations, to lower costs and provide IT services at scale. Furthermore, the lack of accessible and affordable corporate renewable energy options leaves a significant amount of carbon reduction potential on the table.”

AWS is committed to running its business in an environmentally friendly way, and its scale and infrastructure make it possible to achieve higher resource utilization and energy efficiency than the typical on-premises data center. AWS server systems are designed for power optimization and use the latest component technology. For example, custom-built AWS Graviton2 processors - offered to AWS customers - provide better performance per watt than any other Amazon Elastic Compute Cloud (EC2) processor. AWS is also innovating the design of cooling systems to reduce water use and utilizes real-time sensor data to adapt to changing weather conditions. Cooling is especially important across APAC, where more hot and humid climates result in greater energy expended on cooling.

451 Research found the energy efficiency gains of cloud data centers came from their use of the latest, most energy-efficient servers, which typically run at higher utilization rates than on-premises data centers. These two factors combined led cloud data centers to use 67.4% less energy. The average server utilization in APAC enterprises was just under 15%. By contrast, 451 Research shows that cloud operators utilize servers well above 50% to find the right balance between efficiency and application performance. The research also found that facility-level energy efficiency gains at cloud data centers, including the use of advanced power distribution systems and cooling technology, provided an additional 11.4% of energy savings. Cloud data centers perform the same workloads with five times more energy efficiency than APAC enterprises and public sector organizations.

With the broadest and deepest suite of more than 200 cloud services, AWS also empowers Indian enterprises and public sector organizations to innovate their own sustainability solutions on the cloud. According to a NITI Aayog report, by 2030, India’s water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people in the country. WEGoT Utility Solutions, based in Chennai, developed a cloud-enabled water management platform on AWS that uses IoT-based ultrasonic water sensors. The platform provides the ability to monitor water usage at a granular level, detect leaks remotely, and generate usage analytics and detailed reports to determine the optimum water consumption patterns in residential apartments and commercial buildings in India. Over the last 5 years, WEGoT Utility Solutions has scaled operations, and now processes over 12 million data ingestion points across more than 50,000 managed sensors on AWS.

“At WEGoT, our goal is to address the water crisis challenge by providing our customers data-driven insights on every aspect of their water consumption patterns to drive more accountability, sustainable water management, and reduced water loss across the usage cycle,” said Abilash Haridass, Co-Founder and Chief of Growth & Strategy, WEGoT Utility Solutions. “Our solutions have already saved 3 billion litres of water over the last 3 years for our customers. With AWS, we’ve been able to build a data lake to manage all types of data ingestion points and provision new cloud

resources dynamically as our sensor footprint increased. And with AWS Credits and cost optimization services, we've reduced our costs by 20-25% while our business grew exponentially. We're pleased to work with AWS as they focus on even more ways to build sustainable and responsible business models that reduce the environmental impact on our natural resources."

On electric mobility, Amazon India has committed to include 10,000 electric vehicles in its delivery fleet by 2025, an integral milestone on the decarbonization journey. Amazon India has been working with several Indian OEMs to build a fleet of vehicles that ensure sustainable and safe deliveries of customer orders. Amazon India Operations has also introduced several sustainable packaging efforts over the last year including India-first initiatives like Packaging-Free Shipping (PFS) and the elimination of 100% single-use plastic in packaging from fulfilment centres. In 2020, Amazon India expanded its packaging-free shipping initiative to more than 100 cities across India, and announced that the company has completely eliminated the use of single-use plastic in packaging originating from its 60-plus fulfilment centres. Buildings across Amazon India's fulfillment network are designed with state-of-the art technology and efficient building systems that minimize energy usage. Many of our large buildings are designed to be net water zero with multiple initiatives such as rainwater collection tanks, recharge wells to replenish water into aquifers and sewage treatment plants. We are further implementing ultra-low flow water fixtures for all buildings to reduce water consumption.

Amazon is committed to building a sustainable business for customers and the planet, and invites organizations to join The Climate Pledge, a commitment to becoming net-zero carbon by 2040, 10 years ahead of the Paris Agreement. Now, more than 100 organizations have signed The Climate Pledge, committing to use their scale to decarbonize the economy through real business change and innovation. Amazon is also the world's largest corporate buyer of renewable energy with 232 wind and solar projects globally.

About Amazon Web Services

For over 15 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud offering. AWS has been continually expanding its services to support virtually any cloud workload, and it now has more than 200 fully featured services for compute, storage, databases, networking, analytics, machine learning and artificial intelligence (AI), Internet of Things (IoT), mobile, security, hybrid, virtual and augmented reality (VR and AR), media, and application development, deployment, and management from 81 Availability Zones (AZs) within 25 geographic regions, with announced plans for 21 more Availability Zones and seven more AWS Regions in Australia, India, Indonesia, Israel, Spain, Switzerland and the United Arab Emirates. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—trust AWS to power their infrastructure, become more agile, and lower costs. To learn more about AWS, visit aws.amazon.com.

About Amazon

Amazon is guided by four principles: customer obsession rather than competitor focus, passion for invention, commitment to operational excellence, and long-term thinking. Amazon strives to be Earth's Most Customer-Centric Company, Earth's Best Employer, and Earth's Safest Place to Work. Customer reviews, 1-Click shopping, personalized recommendations, Prime, Fulfillment by Amazon, AWS, Kindle Direct Publishing, Kindle, Career Choice, Fire tablets, Fire TV, Amazon Echo, Alexa, Just Walk Out technology, Amazon Studios, and The Climate Pledge are some of the things pioneered by Amazon. For more information, visit amazon.com/about and follow @AmazonNews.

About Amazon Internet Services Private Limited

Amazon Internet Services Private Limited ("AISPL") undertakes the resale and marketing of AWS Cloud services in India.

[1] Source: OECD 2020 (Data for 2017)

[2] A cloud migration project of moderate size