



Cepsa and AWS Accelerate Digital Transformation in the Energy Industry

- **Multinational energy company selects AWS as its preferred cloud provider to deliver new services and develop IoT and analytics solutions that enhance decision-making and increase operational efficiency**

Today, Amazon Web Services (AWS), an Amazon.com company (NASDAQ: AMZN), announced that Cepsa, a Spanish energy and chemical company operating across five continents, has selected AWS as its preferred cloud provider. Cepsa will leverage the breadth and depth of AWS services to innovate new analytics and IoT solutions, as well as Software as a Service offerings that Cepsa will market to energy companies worldwide to help enhance operation efficiency and reduce waste and emissions by increasing automation and providing deeper insight into manufacturing and supply chains. In addition, as part of its digital transformation, Cepsa will migrate all of its servers and IT operations – which include 12 business-critical SAP HANA workloads encompassing accounting, invoicing, supply chain management, and manufacturing for its oil, utilities, and retail verticals – off of its legacy infrastructure to AWS, providing greater visibility into and agility for Cepsa’s globally distributed operations while achieving a minimum of 25 percent cost savings each year as a result of the migration.

Cepsa is using AWS’s unmatched portfolio of cloud services to automate processes, derive new insights from data, and increase the agility and efficiency of its global operations. Cepsa started by building a data lake on Amazon’s Simple Storage Service (Amazon S3) using AWS Lake Formation (for quickly ingesting, cleaning, cataloging, and securing data in a data lake), AWS Glue (for preparing and loading data for analytics), and Amazon Kinesis (for collecting, processing, and analyzing streaming data) to get valuable insights from more than 300,000 sensors located in its manufacturing, refining, and energy production facilities in Spain, Brazil, and China. The sensors run AWS IoT Core, which connects devices easily and securely to each other and the cloud, and AWS IoT Greengrass, a service that extends AWS capabilities to edge devices so they can act locally on the data they generate. By applying AWS analytics and machine learning (ML) services to the 170 million pieces of data that these sensors produce each day and storing them in the data lake, Cepsa can track operational trends, improve supply forecasting, and quickly identify inefficiencies to reduce waste and energy use while increasing the output of refined products. For example, Cepsa used AWS in its chemical plant in Huelva, Spain, so it could better monitor and optimize the production process for phenol, a raw material used to manufacture different types of polycarbonates, nylon, medicines or insulating materials. The system now provides Cepsa engineers with recommendations on how to balance raw materials, energy use, and output, resulting in increased phenol production, while carbon dioxide emissions decreased by 1,500 metric tons per year.

Moving forward, Cepsa plans to further develop its AWS-powered digital analytics platform and related digital products and market them to other energy companies worldwide. An offering such as its “Cloud Process History” solution, for example, helps companies leverage AWS ML services to extract greater value from real-time and



historical manufacturing data to identify sources of inefficiency in production processes, while Cepsa's "Customer Payment Allocation" solution uses ML to reconcile discrepancies between payments and invoices for utility customers. Cepsa will participate in the AWS Digital Innovation Program and an AWS Cloud Envisioning Workshop, international programs that help organizations adopt methodologies and technologies that increase their pace of innovation, to continue to enhance its offerings for customers.

"Digital transformation is critical for Cepsa, empowering us to innovate faster, increase our optimization efforts, and to make data-driven decisions that will enhance the customer experience and help solve industry-wide challenges," said Philippe Boisseau, CEO of Cepsa. "We chose to work with AWS because innovation is part of our DNA. At Cepsa, we believe that technology will drive the future of sustainable energy production and we look forward to leveraging AWS to create value, become more competitive, and improve the efficiency of our operations and the quality of our products."

"Cepsa is an example of how organizations today can use the power of the world's leading cloud to change the way they do business and transform their industries," said Andy Isherwood, Managing Director of Amazon Web Services EMEA. "AWS's unmatched portfolio of services is helping Cepsa innovate more quickly than ever before, drive greater insights into their business processes, and do more with their resources. We look forward to deepening our relationship with Cepsa as they increase the efficiency of their own operations and develop new cloud-based services to help the energy industry better serve customers around the world."

Amazon Web Services: For 14 years, Amazon Web Services has been the world's most comprehensive and broadly adopted cloud platform. AWS offers over 175 fully featured services for compute, storage, databases, networking, analytics, robotics, 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 76 Availability Zones (AZs) within 24 geographic regions, with announced plans for nine more Availability Zones and three more AWS Regions in Indonesia, Japan, and Spain. 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.

Amazon is guided by four principles: customer obsession rather than competitor focus, passion for invention, commitment to operational excellence, and long-term thinking. Customer reviews, 1-Click shopping, personalized recommendations, Prime, Fulfillment by Amazon, AWS, Kindle Direct Publishing, Kindle, Fire tablets, Fire TV, Amazon Echo, and Alexa are some of the products and services pioneered by Amazon. For more information, visit www.amazon.com/about and follow [@AmazonNews](https://twitter.com/AmazonNews).

Cepsa is a global energy and chemical company operating end-to-end in every stage of the oil & gas value chain. Cepsa also manufactures products from raw materials of plant origin and is active in the renewable energy sector.

Cepsa has 90 years of experience and a team of over 10,000 employees, combining technical excellence and adaptability. Cepsa's operations are present on five continents. For more information, visit: <http://www.cepsa.com>.

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