



Sustainability Transformation

DSI Conference May 10, 2023

Juraj Lišiak

jurajfox@amazon.cz

Amazon Web Services

Czech Republic & Slovakia



Sustainability areas of focus

Sustainability impacts multiple areas, and has become a strategic priority for organizations



Decarbonize

Decarbonize and
limit the effects
of the climate crisis



Water

Minimize water use
Keep it clean



Social responsibility

Responsible
employment and
supply chain practices



Circular economy

Zero landfill
Recycling



Sustainability trends are increasing

Customer demand

Government regulations

Employee demand

Impact investing

Sustainability as competitive positioning

Sustainability transformation challenges



How do I identify carbon emission hotspots?



How do I reduce energy and water usage in my operations?



How can I innovate faster to achieve sustainability transformation?



How do I collaborate with others in my value chain to reduce carbon emissions?

Amazon's sustainability journey



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.

THE
CLIMATE
PLEDGE



Joining The Climate Pledge



- 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.



With 400+ signatories
from around the world.

The Climate Pledge Fund

A corporate venture capital fund that invests in companies that can **accelerate** the path to meeting The Climate Pledge

The Climate Pledge Fund invests in companies across multiple industry sectors with an initial focus on:



Circular economy



Energy generation, storage, and utilization



Food and agriculture



Manufacturing and materials



Renewable energy technology



Transportation and logistics

The Climate Pledge Fund Investments



"The Climate Pledge Fund is another important example of how the collaborative effort of The Climate Pledge can accelerate the transition to a net-zero world."

Christiana Figueres

Former Executive Secretary of the United Nations Framework Convention on Climate Change and Founding Partner of Global Optimism





Amazon is the **largest corporate buyer of renewable energy** globally

More than 400 projects around the world, on the path to power operations with 100% renewable energy by 2025

Once online, **enough power for more** than 15.3 million European homes/year

A decorative graphic on the left side of the slide featuring numerous water droplets of various sizes. The droplets are rendered in a light blue color with a darker blue outline. Inside each droplet, there is a small, stylized orange and white logo that resembles the AWS logo. The droplets are scattered across the left half of the slide, with some appearing larger and more prominent than others.

AWS water positive commitment

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

Climate Neutral Data Centre Pact



AWS joined the data center industry in Europe to create the **Climate Neutral Data Centre Pact**, an industry commitment to proactively lead the transition to a climate neutral economy

AWS Graviton and Inferentia

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

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

Inferentia instances consume **54% less power** than G4dn instances



AWS journey highlights



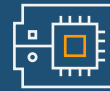
Water+ by 2030 commitment: water use efficiency and water replenishment



New data center construction incorporates use of low-carbon concrete



Launch of Well-Architected for Sustainability Pillar
Launch of AWS Customer Carbon Footprint Tool



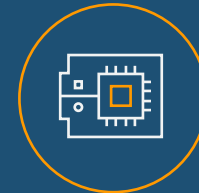
Graviton processors provide better performance per watt than any other AWS processor



Renewable energy to power data centers



Amazon Sustainability Data Initiative (ASDI) provides free access to satellite data and climate models



AWS as your sustainability partner





What sustainability problems are you trying to solve?

What are your biggest challenges related to sustainability?

How are you currently solving these issues?

What would make these projects easier?

What do you wish you could do?

Your sustainability journey and AWS



Migrate

Take advantage of the cloud
and AWS efficiency



Optimize

Optimize your workloads with
Well-Architected for sustainability



Transform

Leverage data, AWS professional services,
and digital innovation

Your sustainability journey and AWS



Migrate to AWS:

A carbon reduction opportunity

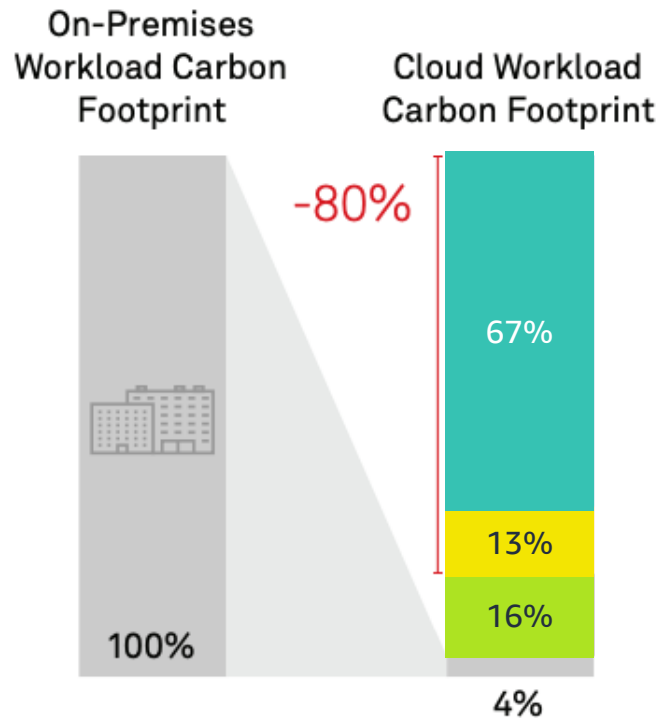
Carbon reduction opportunity

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: Carbon reduction opportunity

AWS up to 5 times more energy efficient than typical EU enterprise infrastructure



Efficiency from Chip to Grid

Source: 451 Research, a part of S&P Global Market Intelligence, Saving Energy in Europe by Using Amazon Web Services, 2021

Cloud servers are responsible for the largest energy reduction, more than 67%, due to being more energy-efficient and more highly utilized

AWS data center facilities account for another 13% reduction by using power and cooling systems that are more efficient, bringing energy savings to 80%

As AWS continues to increase its renewable energy globally, that could further reduce the carbon footprint of workloads moved to cloud by up to 16%



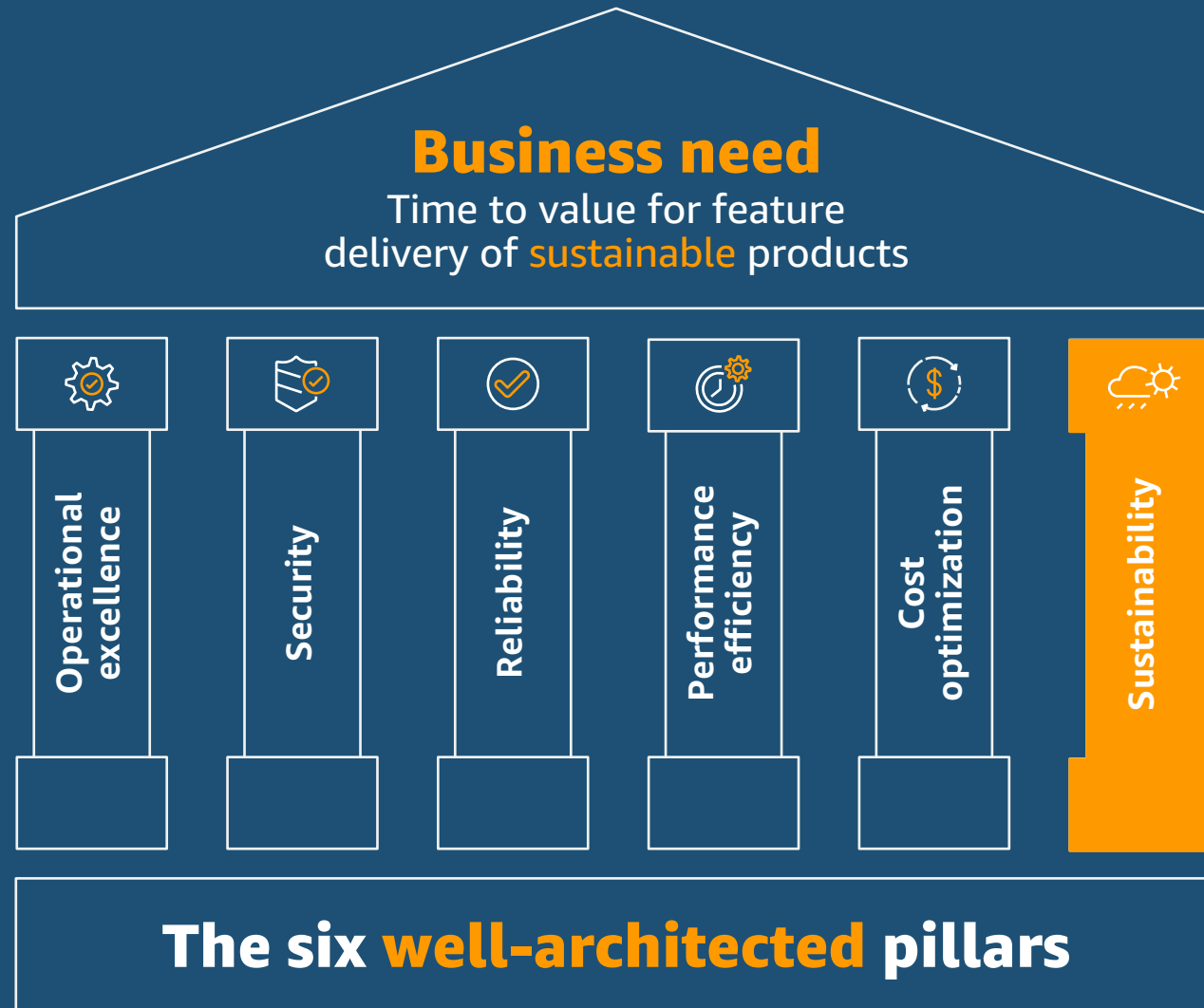
Your sustainability journey and AWS



Optimize workloads

Well-Architected for Sustainability
AWS Customer Carbon Footprint Tool

Optimize: AWS Well-architected for Sustainability



AWS Well-architected Pillar for Sustainability

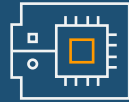


Understand environmental impacts of the services used

Quantify impacts through the entire workload lifecycle

Apply best practices to reduce these impacts

Optimize for sustainability: Pro tips



Improve **power efficiency** by switching to Graviton-based instances



Choose **serverless** when possible



Integrate **AWS Instance Scheduler** to shut down and terminate when not in use



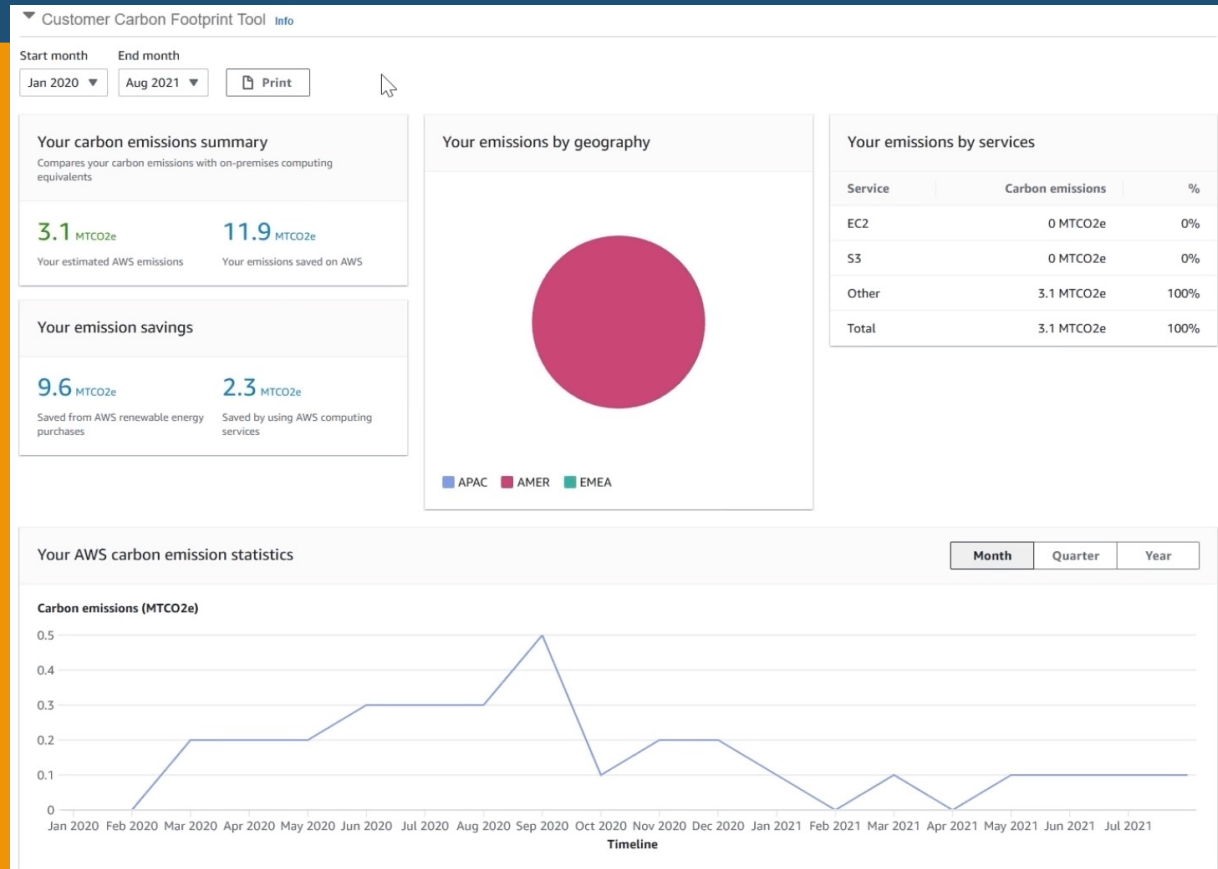
Use **AWS Cost Explorer** for right-sizing recommendations of workloads

AWS Customer Carbon Footprint Tool



Track, measure, review
and **forecast** the carbon
emissions generated
from your AWS usage

AWS Customer Carbon Footprint Tool



Calculate carbon emissions generated from your AWS workloads

Understand historical carbon footprint and review changes in emissions over time

Forecast changes as AWS moves forward on path to 100% renewable power in data centers by 2025

Your sustainability journey and AWS



Transform:

AWS enables sustainability solutions
Access and leverage sustainability data

Leverage AWS Solutions



AWS Sustainability
Specialists and Partners



AWS services

Guidance and Solutions



Carbon footprint
framework



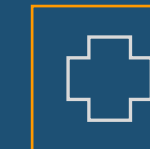
Sustainable building
management



Energy analytics and
forecasting (ML/AI)



Sustainable packaging

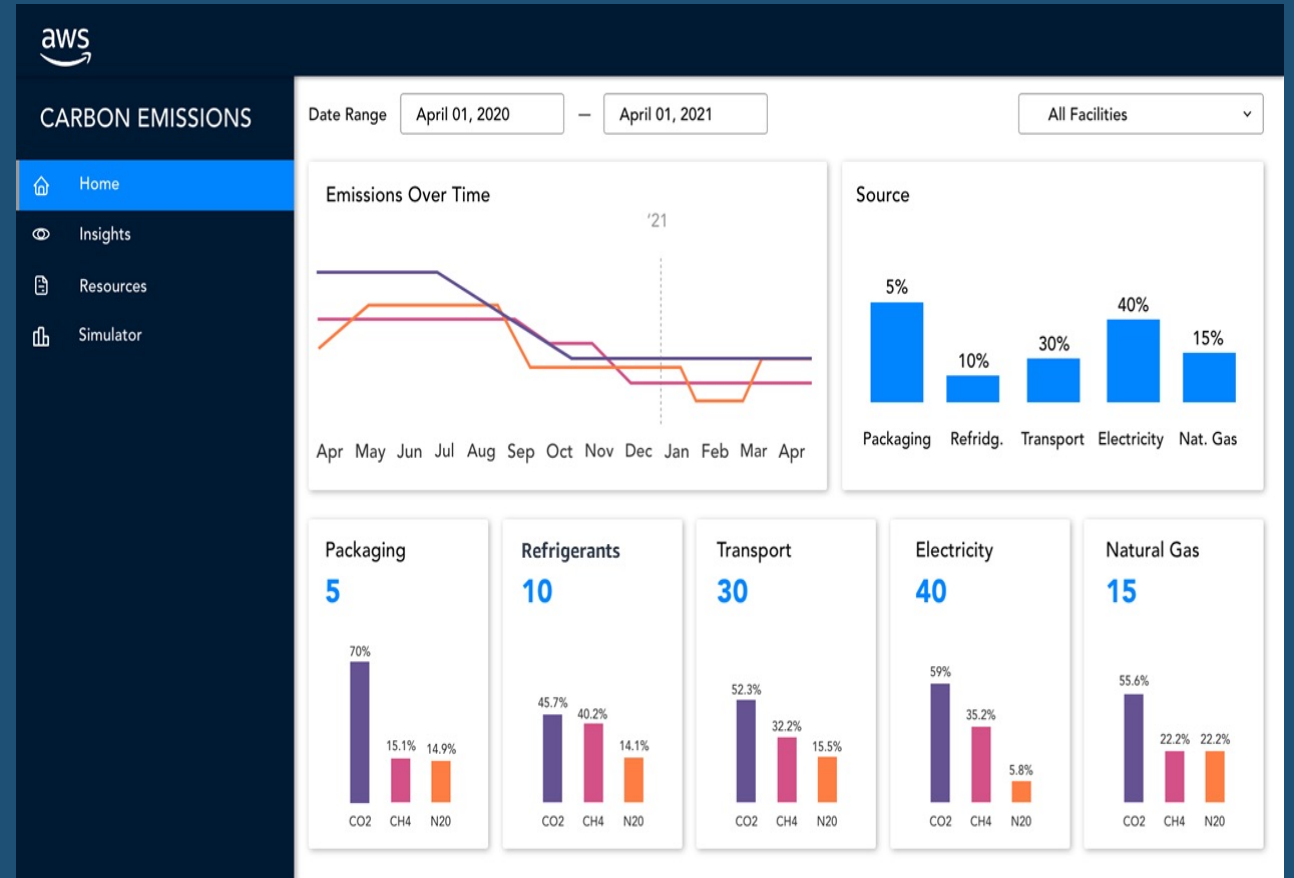


And more

Carbon footprint framework

Real time dashboards for measuring, tracking, and managing carbon footprints at product, process and entity level.

Transform activity into actionable metrics using proven science-based approaches from certification organizations.

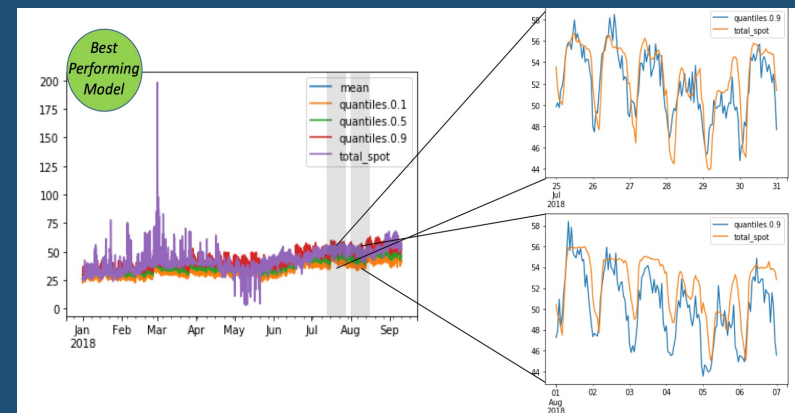
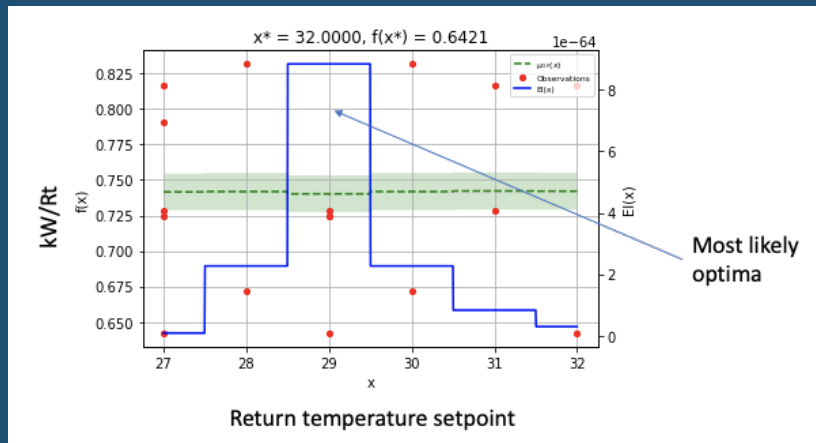


Automated data ingestion from existing systems into a centralized platform to create/manage carbon models. Real-time carbon calculations and ability to simulate changes to see effects.

Energy management on AWS

Use AI/ML and advanced analytics to solve use cases such as condition-based monitoring, optimize equipment efficiency.

Predict future energy usage demand based on various factors.



Online optimization based on ML-based Digital Twin models along with Time-series forecasting



VOLKSWAGEN
GROUP

Transforming its business to become the global leading provider of sustainable mobility and to **improve production efficiency by 30%**

Volkswagen and AWS are developing the Volkswagen Industrial Cloud

Monitor near-real-time status of machines and calculate overall equipment effectiveness (OEE) for the cylinder production line





Thank you!

For more case studies and other AWS sustainability news visit our website.

aws.amazon.com/sustainability