



FG-AI4EE

ITU Workshop on Environmental Efficiency for AI and emerging technologies

Sustainable solutions for environmental efficiency

November 28th 2022

How is AWS driving environmental efficiency?



Leadership

Our Leadership Principles describe how Amazon does business, how leaders lead, and how we keep the customer at the center of our decisions. Our unique Amazon culture, described by our Leadership Principles, helps us relentlessly pursue our mission of being Earth's most customer-centric company. While our Principles have evolved over time, they remain true to the values we've held since Day 1.

Success and Scale Bring Broad Responsibility

We started in a garage, but we're not there anymore. We are big, we impact the world, and we are far from perfect. We must be humble and thoughtful about even the secondary effects of our actions. Our local communities, planet, and future generations need us to be better every day. We must begin each day with a determination to make better, do better, and be better for our customers, our employees, our partners, and the world at large. And we must end every day knowing we can do even more tomorrow. Leaders create more than they consume and always leave things better than how they found them.

AWS and Sustainability



Sustainability **OF** the AWS Cloud



Reduce emissions by moving workloads to the AWS Cloud

AWS Customer Carbon Footprint Tool



Optimize cloud workloads to avoid wasted resources

AWS Well Architected Framework

Sustainability **THROUGH** the AWS Cloud



Leverage cloud resources and capabilities to accelerate sustainability outcomes

AWS Carbon Accounting Solution



What drives sustainability today ?



The Trends ...

- Increased Awareness (employees, consumers, communities, etc.)
- Regulatory frameworks (governments, local authorities, etc.)
- Positioning
- Image
- Etc.



Customer Demand

1



Government Regulations

4



Reputational led ESG focus

2



Employee Demand

5



Activism-led Investing

3

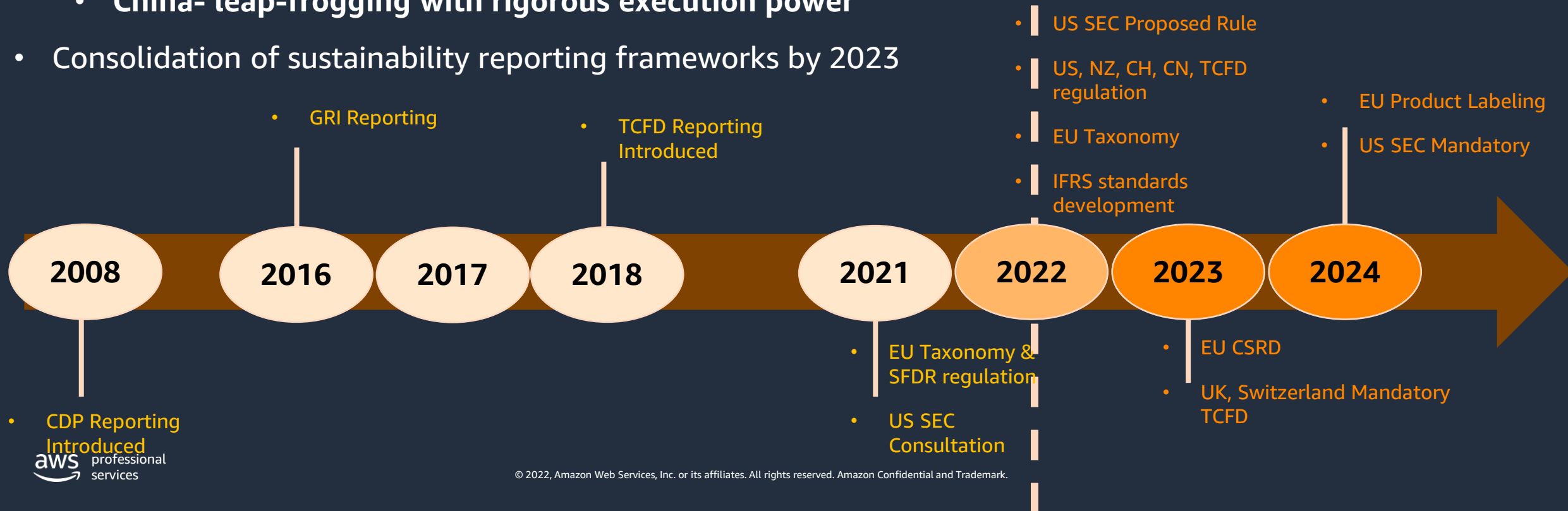


Sustainability as Competitive Positioning

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Regulators are striving for low-carbon economy, with EU being the front runner

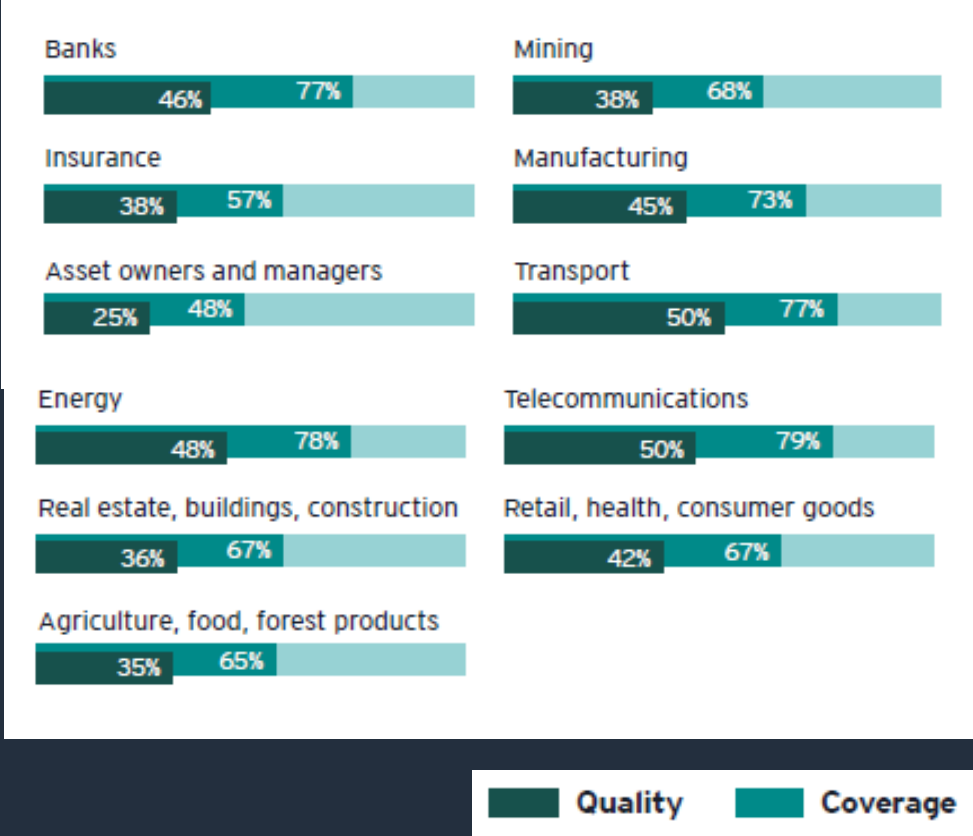
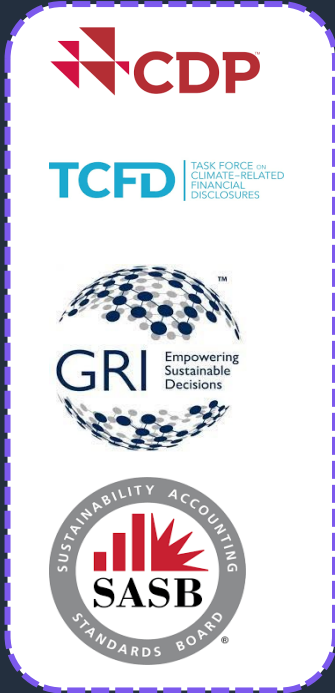
- More stringent regulations with clear time-frames for effective and transparent disclosures of climate risks and opportunities in:
 - **EU- frontrunner in enforcement mode**
 - **US- fast-follower with new political focus**
 - **China- leap-frogging with rigorous execution power**
- Consolidation of sustainability reporting frameworks by 2023



Shift from Transparency to Accountability



- 13000 companies worth 64% of global market capitalization disclosed data on climate change, water security and deforestation
- 34% increase in disclosure since 2020
- Uptick in **Financial Sector** reporting
- Relatively high disclosure coverage of listed companies but of low quality (around 40%)
- Climate disclosures are improving but decarbonization is not accelerating



Disclosure status: coverage vs quality

Common sustainability challenges

We set sustainable targets but are **not on pace** to hit our goals and commitments

Our teams are **combining multiple data sets** and **manually tracking** our emissions

We are **not sure** how to execute our sustainability goals or which frameworks we should use

We are **not convinced** sustainability can be financially rewarding

We have **multiple facilities** and **different reporting formats**

We need to ensure we are **compliant** and adhering to regulatory requirements

Where to focus?



5 Main Areas of Focus Based on Regulatory & End-user Push

1. ESG Reporting

- Automate measurement
- Flexible, auditable models & data sources
- **Sector specific** out of the box reports to meet regulatory requirements:
 - TCFD, CDP, GRI, SASB

2. Decarbonization

- Sector specific decarbonization pathway engine to achieve:
 - Operational & supply chain decarbonization
- Marginal abatement cost curves to enable target setting and prioritization

3. Resource Efficiency

- Reduce & optimize material, water, waste and energy input
- Improve circularity of materials and processes
- Optimize product design

4. Product Labelling

- Automate product life cycle assessments (LCA)
- 3rd party auditable LCA models
- Tracking product compliance (e.g. certifications)

5. Biodiversity & Nature

- Assess biodiversity risk
- Evaluate land use /deforestation risk
- Chemical pollution (air, water, soil)
- Animal welfare

And so, there is a need for changing the paradigm. Moving beyond the STATUS QUO

Sustainability is no longer just a way for companies to manage regulatory and reputational risk, but a **driver for growth across the enterprise.**



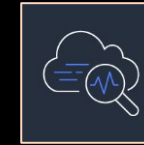
... and **AWS WWSO Sustainability** is able to help

What we do...

We take a *data-driven* approach to accelerate sustainability outcomes, for our *customers* and for our *planet*.



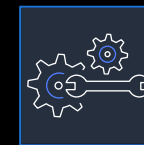
Sustainability Strategy & Implementation Offerings



Sustainability Strategy & Transformation



Carbon Footprint Solution



Sustainable Buildings & Operations



Smart Energy Management



Sustainable Packaging



Sustainable Chill Chain



Emissions Accounting

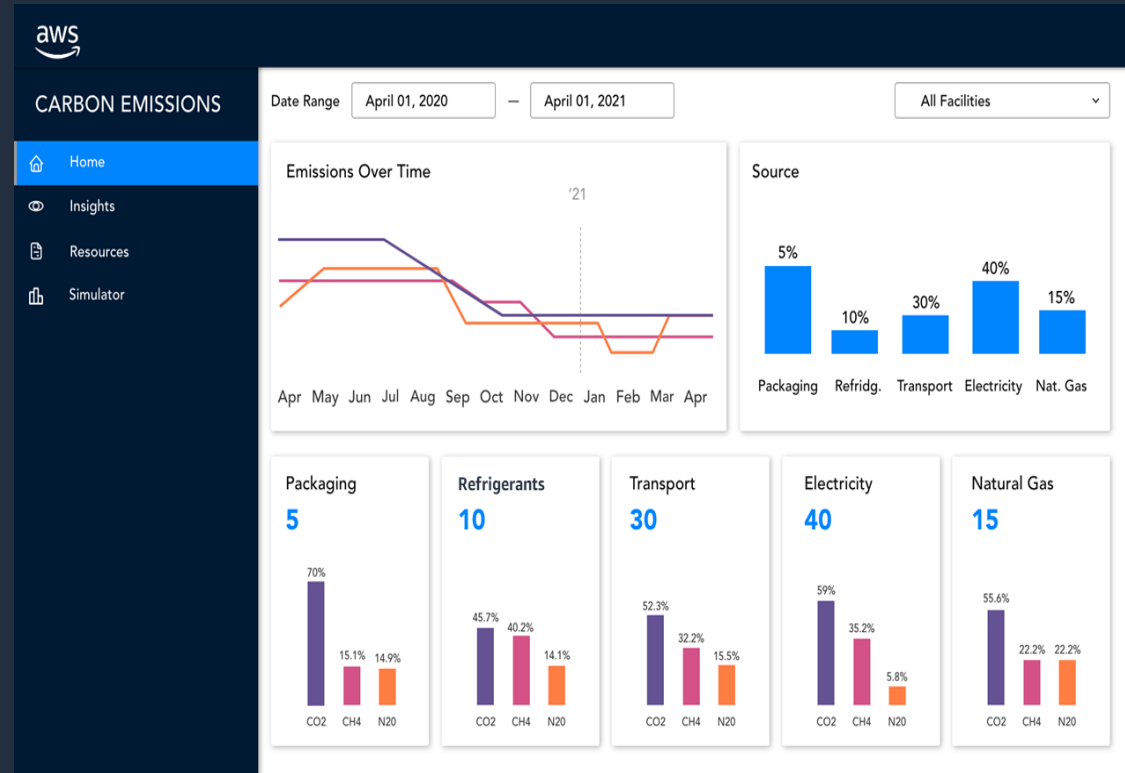
Carbon Footprint Framework (CFF)



Carbon Footprint Framework (CFF)

A framework to develop real time dashboards for measuring, tracking and managing carbon footprint on a product, process, and entity level.

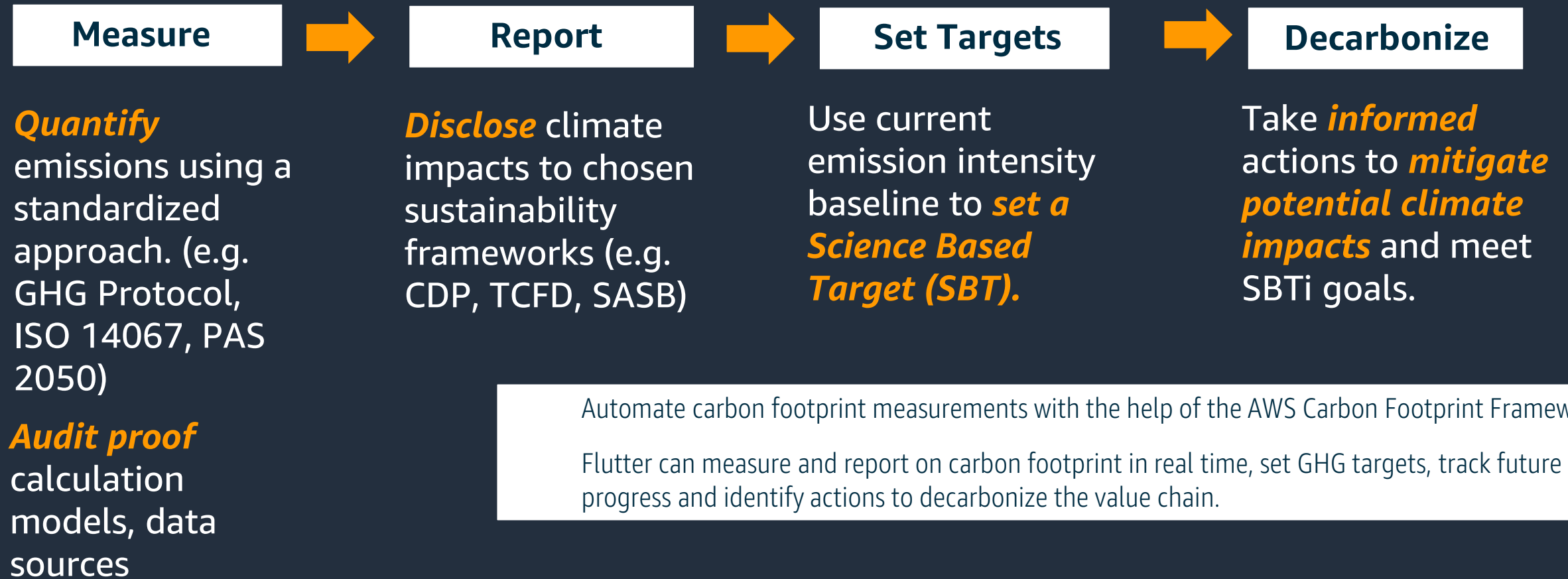
Transforms customer activity into actionable metrics using proven science-based approaches to various reporting bodies such as CDP, SASB, TCFD



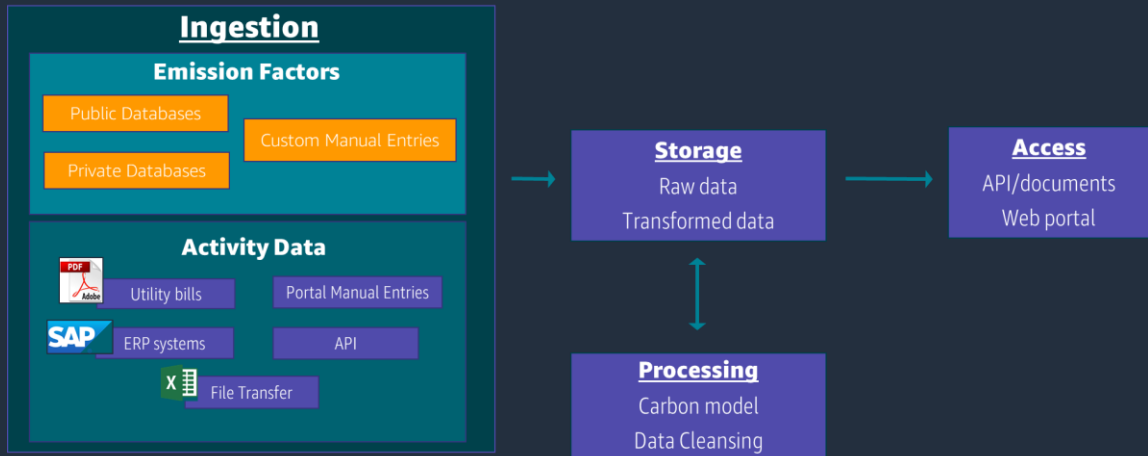
Automated data ingestion from existing systems into a centralized platform to create/manage carbon models. Real-time carbon calculations and ability to simulate changes to see effects.

What CFF means

AWS Carbon Footprint Framework (CFF) helps leverage cloud technology to...



Our approach



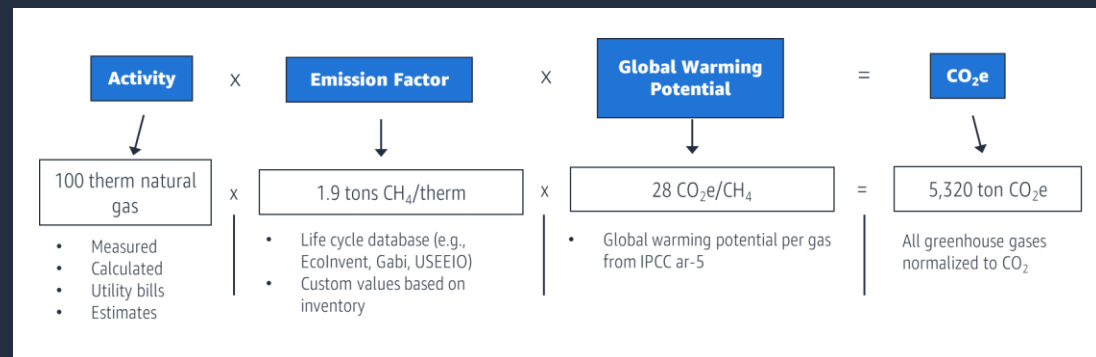
How CFF Works

CFF enables a strong data foundation that allows information to be collected, processed, managed, and analyzed in one place.

The reduction of silos and the availability of a single, centralized view of all relevant data creates the end-to-end visibility needed to understand the carbon footprint of business activities.

Calculation Methodology

- Build models, define inputs/outputs, and collect data to describe process.
- Describe the data quality and assumptions
- Convert input/output data to raw material usage with a database like Ecoinvent

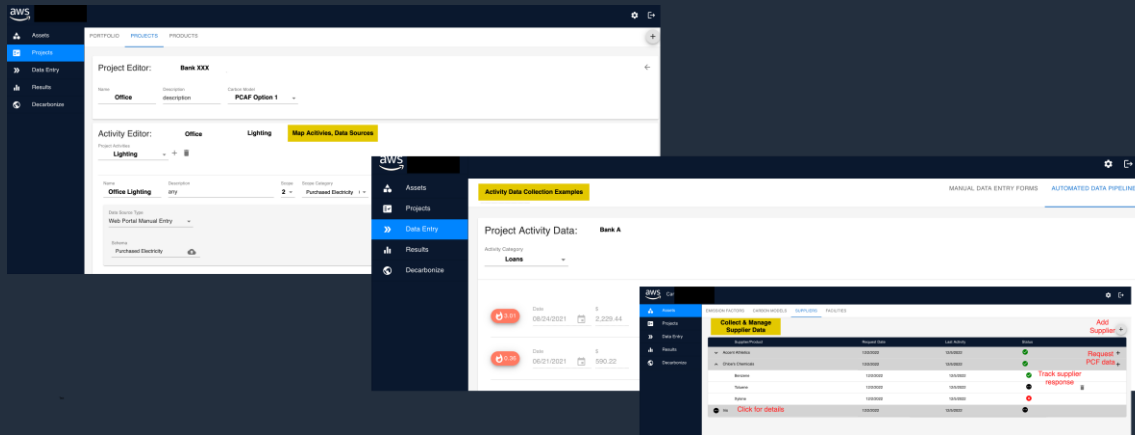


A solution that customers can integrate & tailor with ease

Measure & Monitor

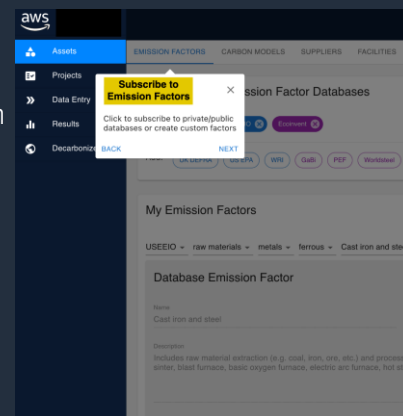
Automate activity data ingest

- Automated data pipelines- PDFs, file transfer, APIs, IoT, ERP systems
- Option to set up web-based forms for data intake
- Collect and manage supplier data



Centralize Emission Factor Management

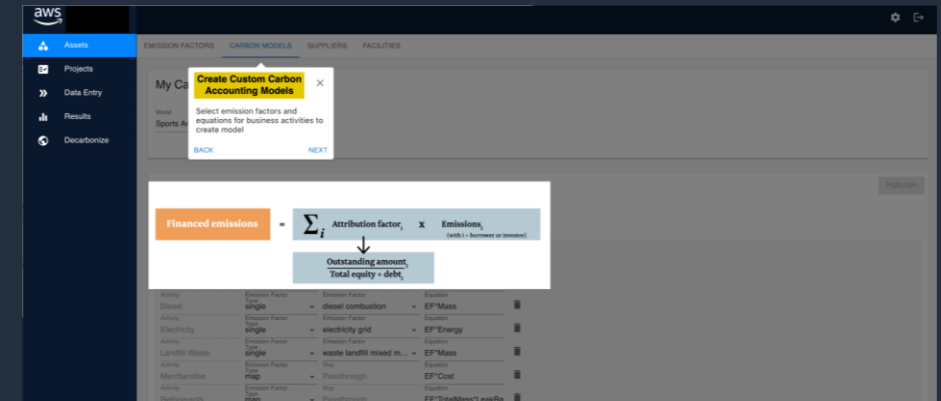
- Connect to USEEIO, UK DEFRA, US EPA emission factors
- Connect to ESG data products from AWS Data Exchange (e.g. arabesque)
- Supplier CDP data
- Other free and licensed datasets (GaBi, ecoinvent)



Customize & Visualize

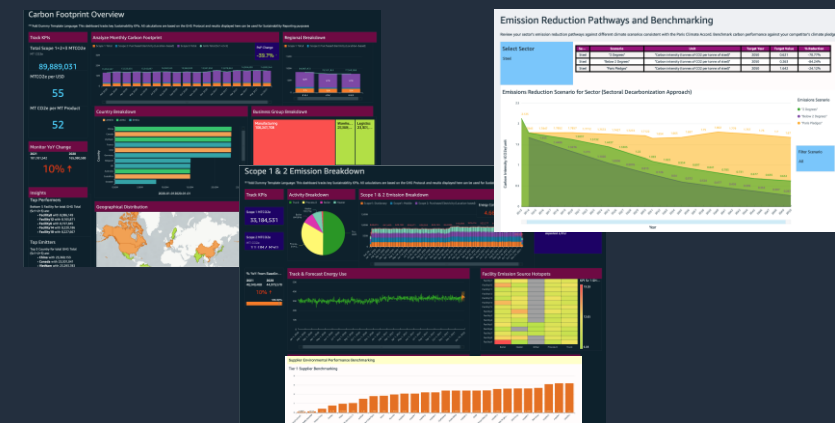
Customize Carbon Accounting Models

- Default GHG Protocol, PCAF calculation models to calculate [Scope 1, 2 & 3](#) emissions
- Customize calculation logic

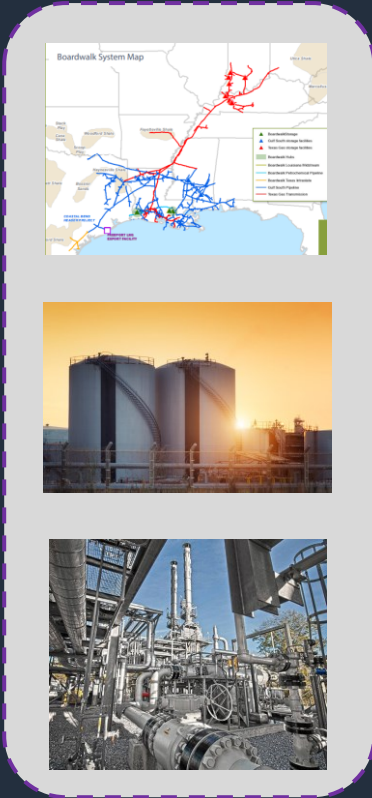


Visualize & Report

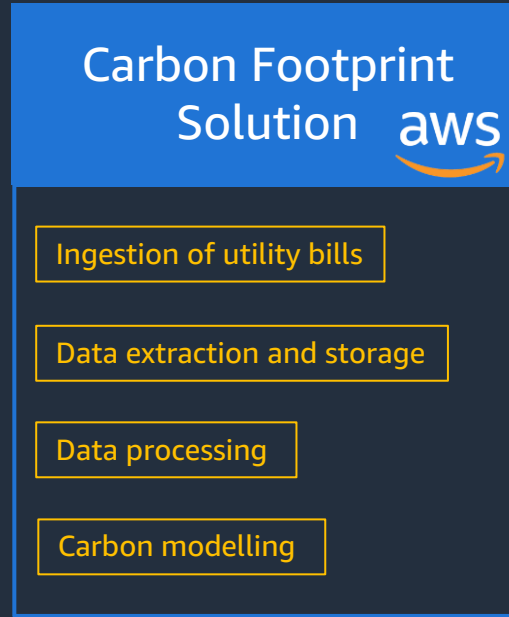
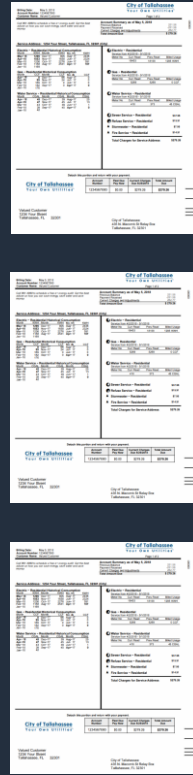
- Custom dashboard development
- Custom report generation (e.g. CDP, TCFD, SASB)
- Emissions hotspot analysis
- Set & track Science Based Targets
- Benchmark supplier performance



Operations



Energy consumption



Disclosure



Our expertise

We cover a wide range of industries with state-of-the-art techniques



- Agriculture
- Air Quality
- Biodiversity & Ecological Impact
- Buildings & Real Estate
- Carbon Credits and Offsets
- Carbon Sequestration
- Climate Modeling & Risk
- Corporate Sustainability Strategy
- Energy Use Optimization
- Environmental Engineering
- ESG Reporting Frameworks
- Finance & ESG Investing
- Food Systems
- Forestry & Timber
- Infrastructure & Construction
- Land Use & Land Use Change
- Life Cycle Assessment
- Manufacturing & Processing
- Materiality
- Natural Ecosystem Services
- Nature-based Solutions
- Oil & Gas
- Packaging, CPG, and Retail
- Partnerships & Alliances
- Social Impact and Responsibility
- Transportation & Logistics
- Smallholder Farmers
- Water Quality & Scarcity
- Value Chain Partnerships

Benefits of building sustainability solutions with us





Thank you!

email: proserve-sustainability@amazon.com