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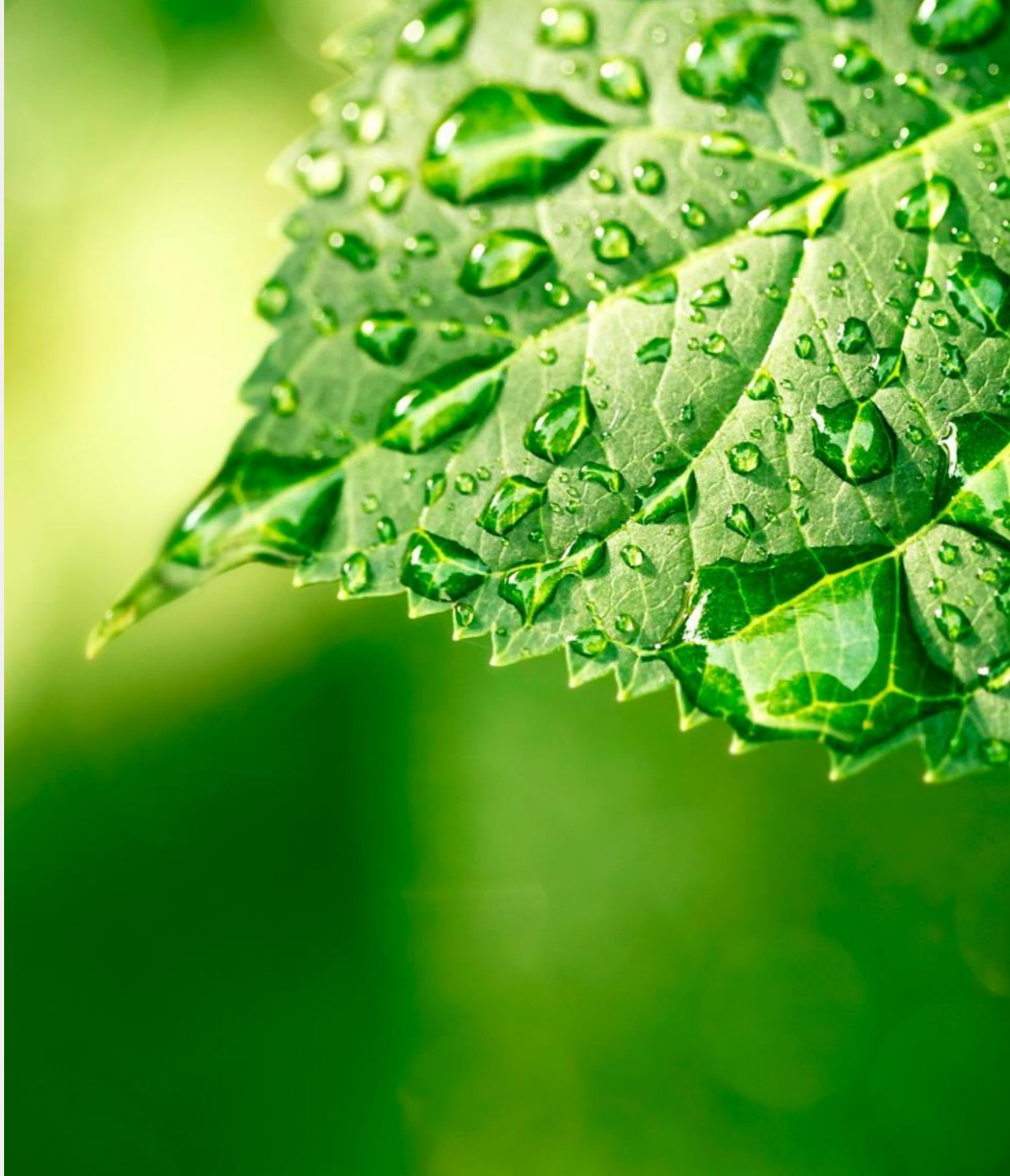
Kyndryl IT Sustainability Assessment

June 2023



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As a multi-billion-dollar technology services company with a global workforce of skilled practitioners, we design, build, manage, and modernize the mission-critical technology systems that the world depends on every day.

Known for:

- Being trusted by customers with vital systems
- Deep domain expertise:
  30+ years of IT services eminence
- Position as leader by industry analysts
- Innovating at scale with intellectual property and portfolio of 3,200+ patents
- Largest infrastructure implementation and managed services provider

Added value as Kyndryl:

- Unleashing our full potential with partners to deliver exponential outcomes for customers
- Expanding investments in skills and innovation our customers need
- Delivering in nimble and responsive ways with decision-making close to the customer

Source: Market Share Analysis: IT Services, Worldwide, 2020. Gartner. July 2021.

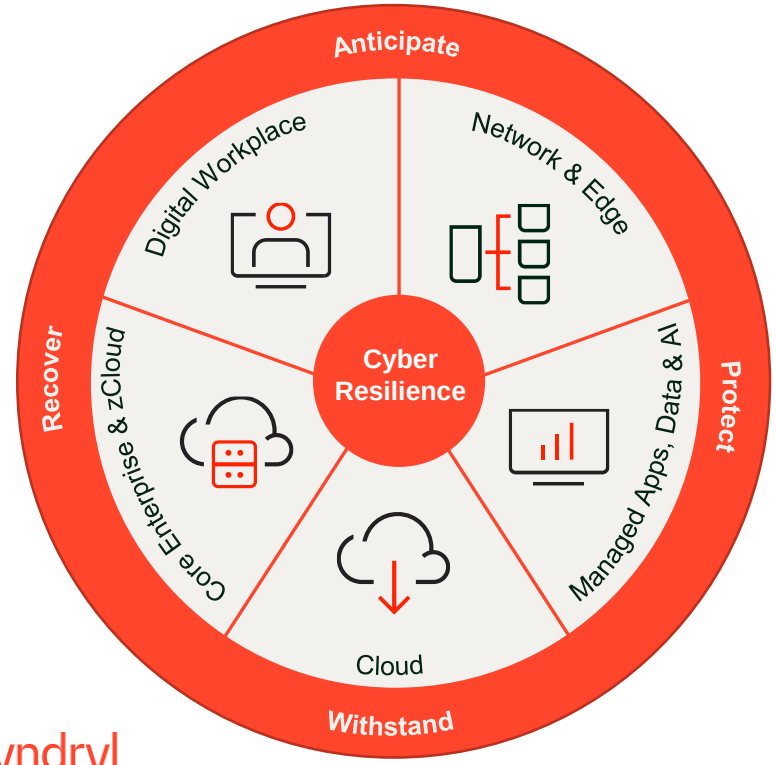
Kyndryl's Cyber Resilience framework

cyber resilience

[**sahy**-ber ri-**zil**-y*uh*ns, -**zil**-ee-*uh*ns]

noun

The ability to anticipate, protect against, withstand and recover from adverse conditions, stresses, attacks and compromises of cyber-enabled business.



Cyber Resilience Framework

Security Assurance Services

Assess and benchmark resilience maturity, gain visibility into significant threats and vulnerabilities, manage compliance

- Security, Strategy & Risk Management
- Offensive Security Testing
- Compliance Management

Zero Trust Services

Protect critical business data and applications in a security-rich infrastructure

- Identity & Access Management
- Endpoint Security
- Network Security
- Application & Workload Security
- Data Protection & Privacy
- Analytics, Automation & Orchestration

Security Operations & Response Services

Discover and respond to a detected security incident

- Advanced Threat Detection
- Incident Response and Forensics
- Vulnerability Management

Incident Recovery Services

Mitigate impact of disruption with capabilities to automatically recover critical business processes and data

- Cyber Incident Recovery
- Managed Backup Services
- Hybrid Platform Recovery
- **Data Center Services**

Anticipate → Protect → Withstand → Recover

Cybersecurity + Recovery

Deep expertise | Proven Processes | Intelligent automation

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ESG growth is fueled by external pressures as sustainability increasingly becomes a core component of how an organization is assessed by stakeholders

ESG Drivers

Investors

Investors are leveraging ESG data to drive investment and financing decisions. For organizations, the ability to attract shareholders and secure funding is tied to their ESG performance.

Regulatory

While most ESG disclosures are voluntary, the threat of mandatory reporting continues to build. In the US, no regulations are in place currently, however, the SEC has been evaluating ESG reporting requirements.

Consumers

Consumers factor trust into purchase decisions, and ESG performance is becoming an important criteria especially in younger demographics.

Partners

Increasingly, business relationships and partnerships are impacted by ESG considerations. In addition to evaluating financial and operational risks, potential partners are also evaluating ESG risk when performing due diligence on a potential vendor.

Organizations will embed sustainability into their business

2023

- **40%** of G2000 companies will have completely embedded sustainability into their operations
- ESG performance will become a standard component for third-party risk assessment with **20%** of organizations placing greater weight on these risks than security, financial, or operational risks

2024

80% of G2000 companies will capture their carbon data and report their enterprise-wide carbon footprint using quantifiable metrics compared with 50% today

2025

50% of CIOs will have performance metrics tied to the sustainability of the IT organization

2026

70% of organizations with integrated planning and execution will achieve improved operational efficiencies leading to distinctive business benefit of improved ESG and financial performance

2027

25% of G2000 companies will have assigned a chief sustainability officer responsible for meeting their organization's ESG goals and making ESG-related IT purchasing decisions

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Source: IDC Futurescape WW Sustainability/ ESFG Predictions 2023; Gartner Predicts 2023 Sustainability

Sustainable or Green IT expertise will rise in importance and can reduce environmental impact to both the business and their customers

60%

By 2025, more than 60% of organizations will require data center providers to disclose their energy usage, use of renewable energy sources, and recyclable IT equipment

60%

By 2026, circularity will become a key component of PLM and 60% of organizations will require their IT equipment vendors and partners to provide end-to-end visibility of their sustainability process

Opportunity for value creation

32.3% The sustainability-linked business services opportunity will grow globally to $158B in 2025 at a CAGR of 32.3%.

Beyond a measure driven by external pressures and regulations, ESG is increasingly seen as a business growth opportunity and a force for innovation and value creation

Awareness among Stakeholders is growing

57% of data center owners have confirmed that efficiency and sustainability will be highly important to their organizations' competitive differentiation

2.8% of EU28's energy was consumed by datacenters in 2020. Projected to grow to **3.2%** in 2030 (European Commission via RBC)

Source:
IDC's *Technology for Sustainability and Social Impact Survey*, January 2022 (n = 704);
IDC Futurescape WW Sustainability/ ESFG Predictions 2023; Company websites
IDC's ESG Business Services End-User Survey, 2021

Environmental sustainability

Kyndryl Mission and Vision

Mission:

Ensure a sustainable and inclusive culture to drive positive impact at scale, while managing our impact on climate change by reducing our environmental footprint and achieving net zero emissions.

Vision:

An empathy-based culture of caring for our people, planet, and natural resources where we strive to make a resilient and sustainable world today and for future generations.

Our Strategy

Based on 4 Building Blocks

01

Address climate risk and environmental operational efficiency

02

Manage system performance and regulatory compliance

03

Be an employer of choice and preferred customer service provider

04

Drive market differentiation leveraging business practices with partners

Address climate risk and environmental operational efficiency

Kyndryl is committed to achieving net zero emissions by **2040.**

This means reducing the company's scope 1, scope 2, and scope 3 greenhouse gas emissions to as close to zero as possible in the coming years.

By 2030 we commit to:

- 50% reduction in emissions across our enterprise
- 75% reduction of our scope 1 and 2 emissions
- 100% renewable energy

The commitment is in line with:

ipcc

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

SUSTAINABLE DEVELOPMENT GOALS

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Net Zero

Our Commitment

Sustainability is embedded in Kyndryl's DNA and people are at the heart of driving Kyndryl's progress.

Water and Waste Baseline and Goals

Kyndryl approach for IT Sustainability to achieve decarbonization starts with visibility into current GHG carbon footprint and recommendations to continuous improvement program to achieve net-zero targets

Client Challenges

- Lack of visibility into energy use and GHG emission across enterprise-wide IT landscape
- Inability to identify areas of cost optimization due to lack of holistic reporting. Inability to track progress on emission reduction against net-zero goal
- Industry pressure to demonstrate commitment to sustainability to build positive reputation and enhance brand image
- Failure to comply with regulatory standards due to lack of visibility on the enterprise wise emission data
- Need a competitive advantage to attract customers, partners, and investors who are increasingly looking for sustainable solutions

Kyndryl's Approach

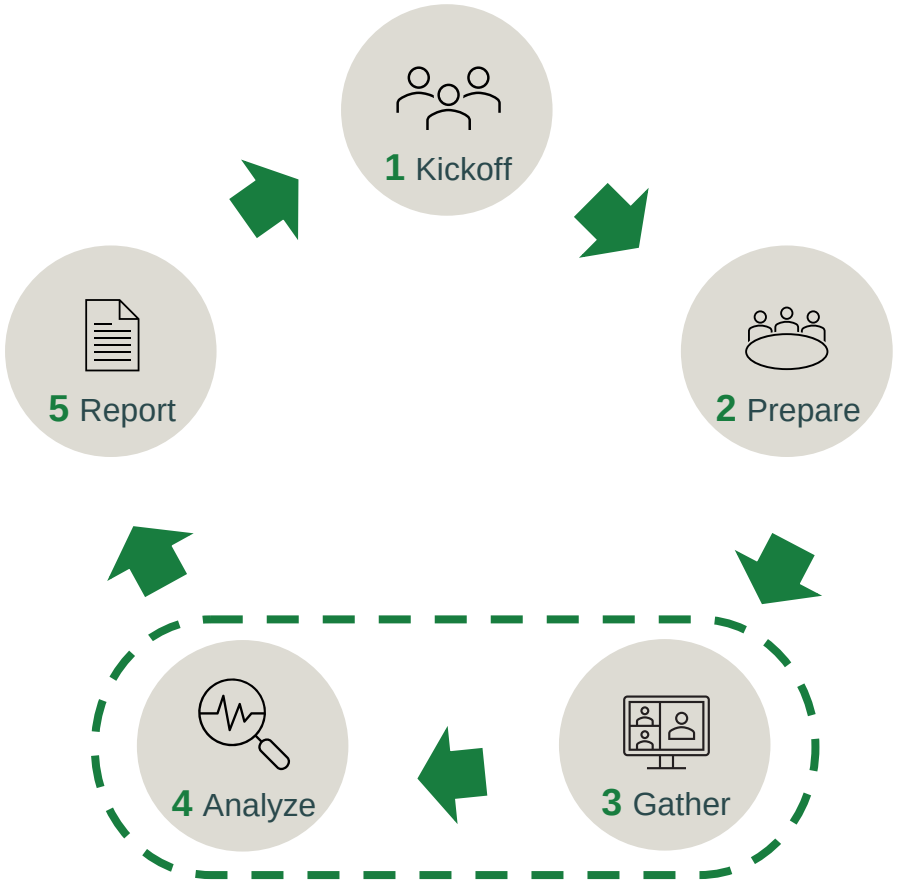
- Start with Assessment of enterprise-wide IT Landscape for hybrid multicloud IT deployment to get As-Is View. Perform Sustainability Assessment in steps.
- Leverage tool-based IT Sustainability Assessment to measure energy, GHG emission and water usage data from diverse workloads
- Use industry standard metrics for CO2 emission such as GHG Co2e, CUE, Energy Intensity and Carbon Intensity.
- Tracks emission reduction target against actual energy consumption and emission levels
- Follow up with periodic cadence using Sustainability Advisor On-line Dashboard for Optimization. Analyze the data using AI/ML to recommend areas of resource optimization
- Assist customers in continuous sustainability improvement and Green IT initiatives

Assessment

The IT Sustainability Assessment collects data via a facilitated workshop, templates and automatically through data collectors for hyperscaler(s) workloads to provide comprehensive “As-Is” view for IT Sustainability

1. Engagement kickoff and identification of client participants
2. Select key areas of focus and prepare for workshop
3. Conduct data collection workshop and run data collectors
4. Analyze findings, conclusions and recommendations
5. Create report and present results. Discuss next steps.

Engagement Process



Iterative process for ongoing assessments

Flexible Model

Configure your assessment:

Scope:
- Multiple Service Options
- One time cadence
- Periodic cadence followed by One time

Workshop Types
- In-person
- Remote

Focus
- Select the Data Center or functions of most interest for your company

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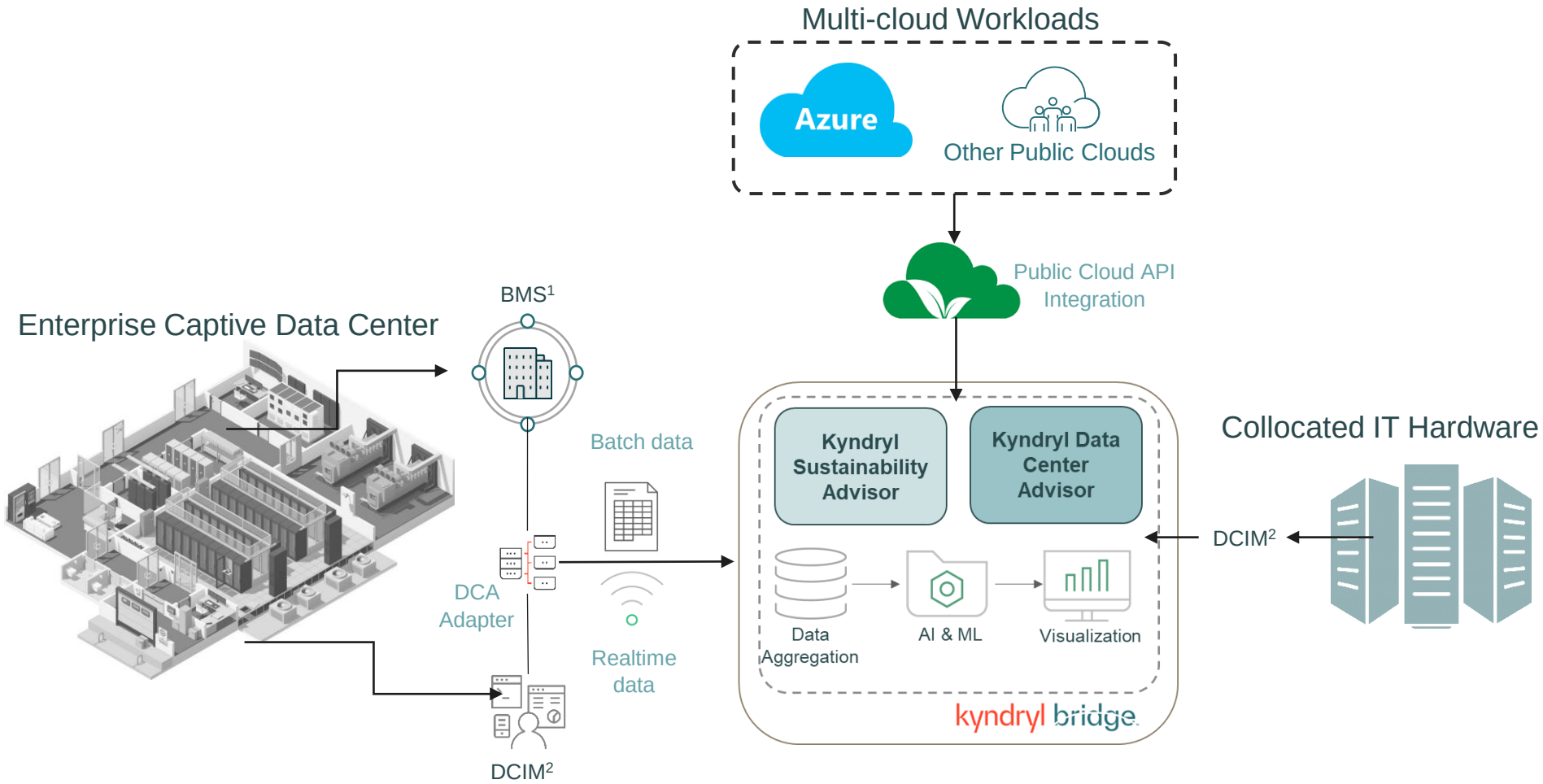
IT Sustainability Assessment

Leverages Kyndryl Sustainability tool to collect and report energy, GHG emission data and Water usage

Sustainability tool differentiators:

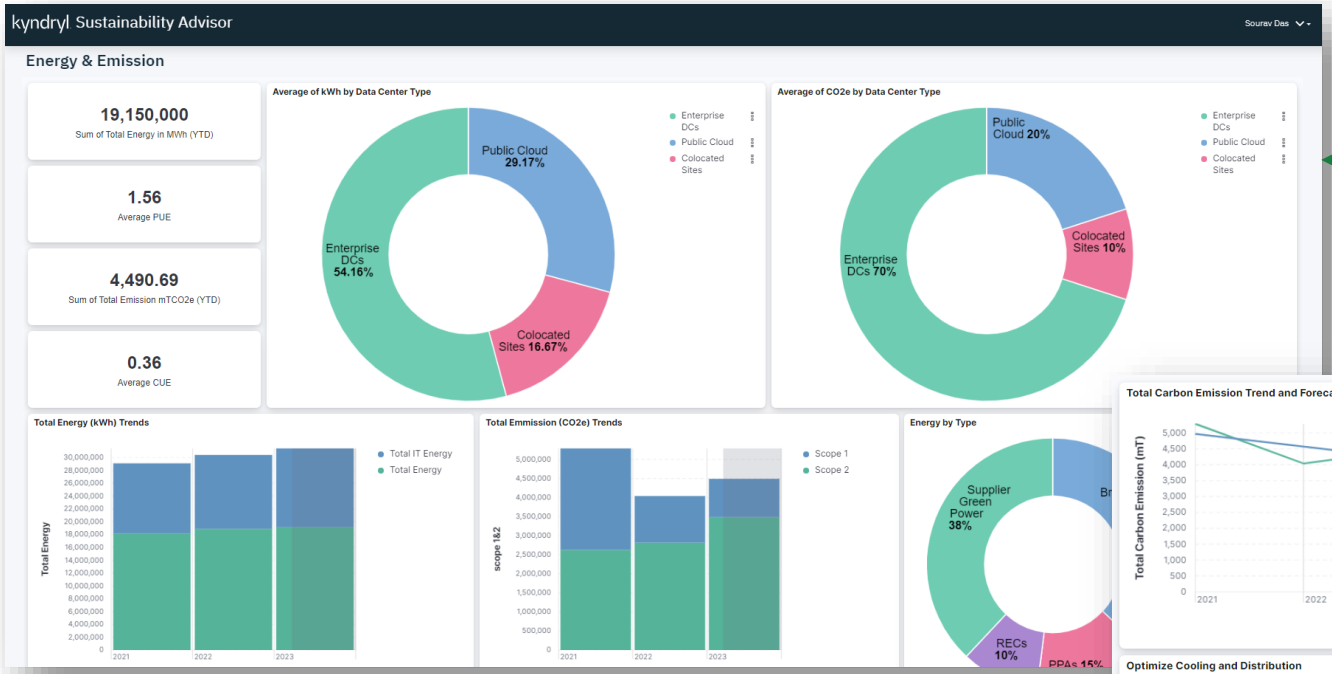
- Single-pane-of-glass view of energy use and emission levels across hybrid Multicloud IT estate
- AI/ML based advanced analytics for resource optimization
- AI based simulation technique to validate recommended changes
- Workload agnostic data collection framework
- Hardware-less metering technology to measure energy and emission data for IT hardware



1 - Building Management System
2 – Data Center Infrastructure Management

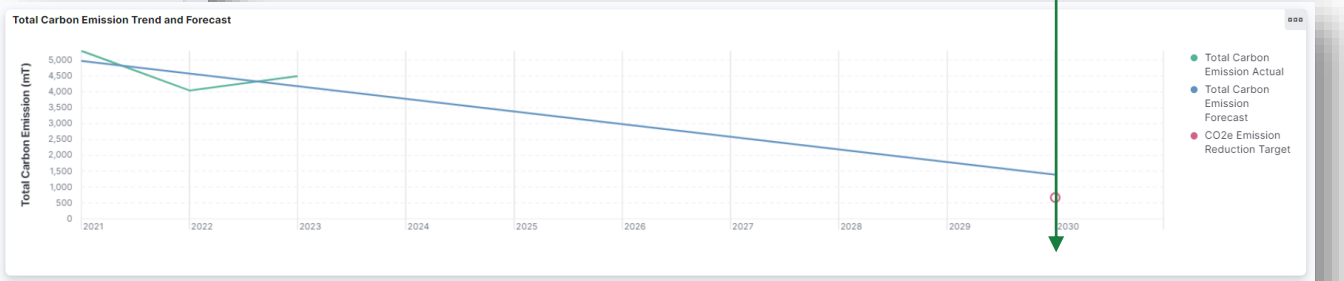
How it works

Collect → Measure → Report → Analyze → Recommend → Simulate → Optimize



- Collects energy and emission data from multiple sources in a Hybrid Multicloud environment
- Provides visualization of energy and emission data on single dashboard

- Provides forecast on energy and emission levels for coming years
- Sets emission reduction target
- Checks whether target is achievable with standard operation



Optimize Cooling and Distribution

Data Center Name	Recommended Combi	Current Combination	Current CO2e (mT)	Predicted CO2e (mT)	Current kWh	Predicted kWh	% CO2e Reduction
Poughkeepsie	Chiller 3 and Chiller 4	Chiller 2 and Chiller 3	529.458	491.962	2,941,432.75	2,733,120	7%
Belgium	6 CRAC Units	12 CRAC Units	240.309	201.874	961,234.813	807,496.813	16%

- Leverages DCA ML models to provide recommendations on resource optimization
- Helps achieving emission reduction target through optimized operation

Optimize IT

Data Center Name	Recommended Action	Server Name	Server Location	99%ile Utilization Estimated*	Average Utilization Estimated	Estimated Energy Saving (kWh) per Week	Monthly Carbon Emission Saving (mT)
Co-Located DC 2	Candidate for retirement/	ip-192-168-2-111.us-w	DC > Remote Comp Roor	0.00%	0.00%	39	0.33
Co-Located DC 2	Candidate for retirement/	ip-192-168-1-11.us-we	DC > Remote Comp Roor	0.00%	0.00%	38	0.32
Co-Located DC 2	Candidate for retirement/	ip-192-168-1-15.us-we	DC > Remote Comp Roor	0.00%	0.00%	37	0.31
Co-Located DC 2	Candidate for retirement/	Other	DC > Remote Comp Roor	0.00%	0.00%	34	0.29
Exit full screen	Candidate for retirement/	Other	DC > RM2 > RW1RM2 > I	0.00%	0.00%	31	0.26

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Kyndryl IT Sustainability Assessment

Overview

Kyndryl IT Sustainability Assessment is a tool-driven assessment to measure enterprise-wide energy and GHG emission data from multiple locations and diverse hybrid multicloud IT landscape, set baseline report on sustainability KPIs and recommend areas of resource optimization through continuous improvement program.

Capabilities

- Helps benchmark current energy consumption with peers in industry and recommend strategies
- Get clear picture of data center and cloud infrastructure data for energy, GHG footprint and water usage that helps set up achievable reduction target for Scope 1, Scope 2, and Scope 3 GHG emission.
- Benchmark using Industry standard metrics /KPIs
- Tracks emission reduction target against actual energy consumption & emission levels
- Creates roadmap for future sustainable growth, upgrades and expansion
- Gives ability to effectively budget for the upgrade in advance

Service Modules

There are five service modules for IT Sustainability Assessment to select from:

- Option 1: On-premise data centers (both IT and facilities)
- Option 2: Option 1 + Colocation IT hardware at 3rd party hosting provider
- Option 3: Option 1 + Workloads running on Public Cloud
- Option 4: Option 1 + Option 2 + Option 3
- Option 5: Any of the Option (1 to 4) and post Assessment, half yearly optimization review using online data & AI/ML model outcome

Excluded scope: Digital Workplace IT Hardware and Software

Supported Vendor Products

- Hyperscaler instance for hosting IT Sustainability Assessment tool
- Intel DCM/ALDM for IT Hardware

Data center GHG emission reduction through ‘Setpoint’ modulation

Customer

Leading MNC for IT Products and Services, US

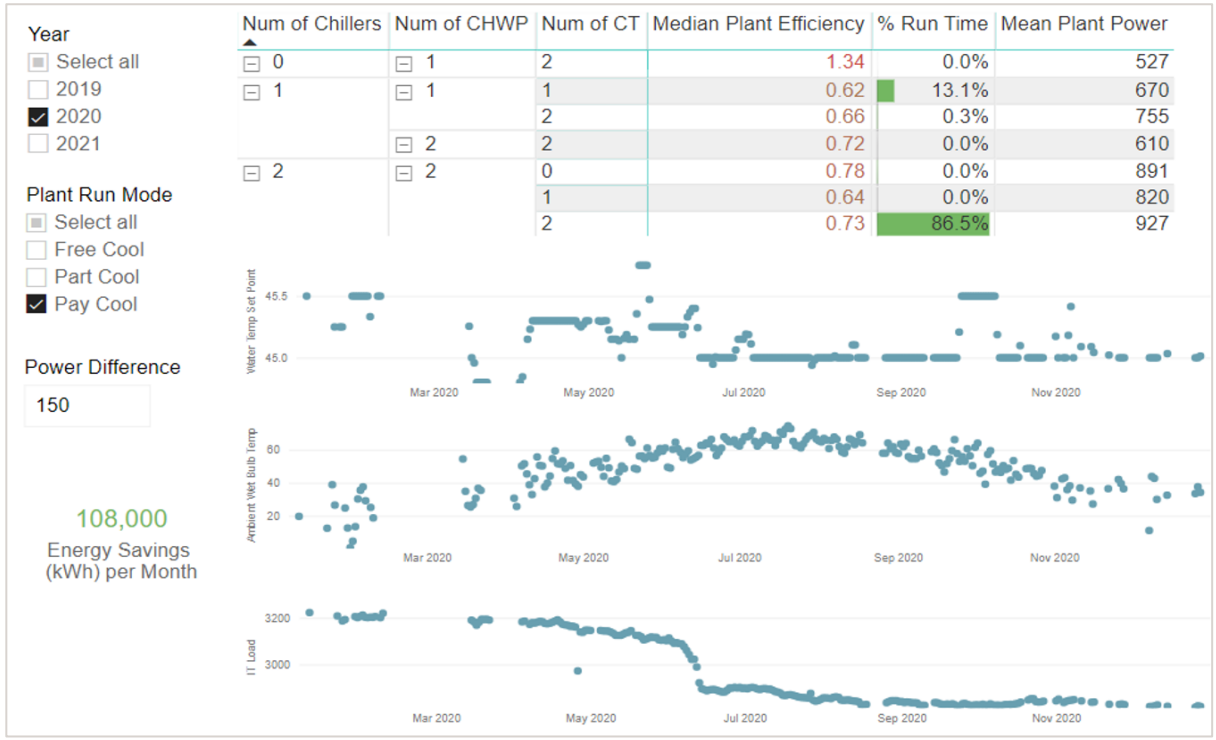
Situation

The customer was looking for AI-based insights on energy usage and reduction in energy footprint

Approach

Insights from Kyndryl Assessment Service on ‘Machine Learning’ based cooling setpoint control was demonstrated to the customer, which could potentially improve data center cooling efficiency by

25%



Results

- Machine Learning driven ‘Smart’ Setpoint Control demonstrated to the customer
- Estimated annual energy savings for the customer **1.3M kWH**
- Estimated annual CO2 emission reduction of **138 mT**

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Data center GHG emission reduction through optimized air handler operation

Customer

Kyndryl Data Center, Belgium

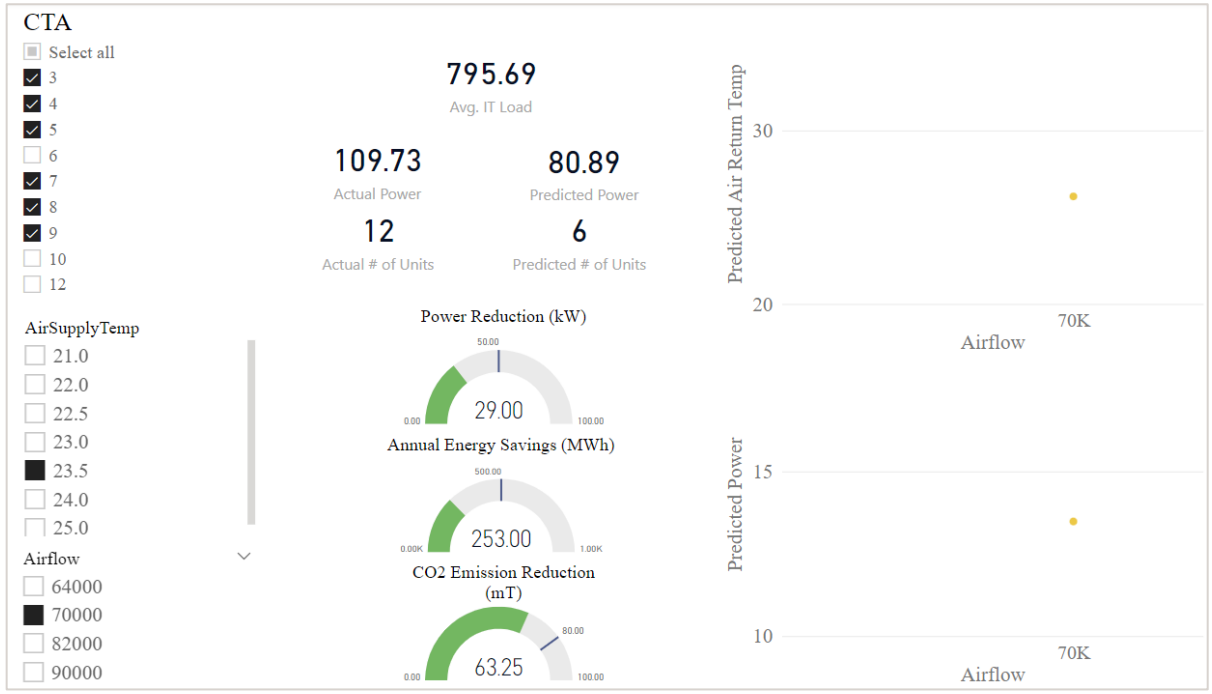
Situation

The customer was looking for AI-based insights to optimize cooling energy usage and improve PUE

Approach

Machine Learning based insights on optimized operation for **C**omputer **R**oom **A**ir **H**andlers (CRAH) showed potential reduction in cooling power consumption by

26%



Results

- Machine Learning based optimization model for CRAH operation was demonstrated to the customer
- Estimated annual energy savings for the customer **253 MWH**
- Estimated annual CO2 emission reduction of **63 mT**

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Thank You

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