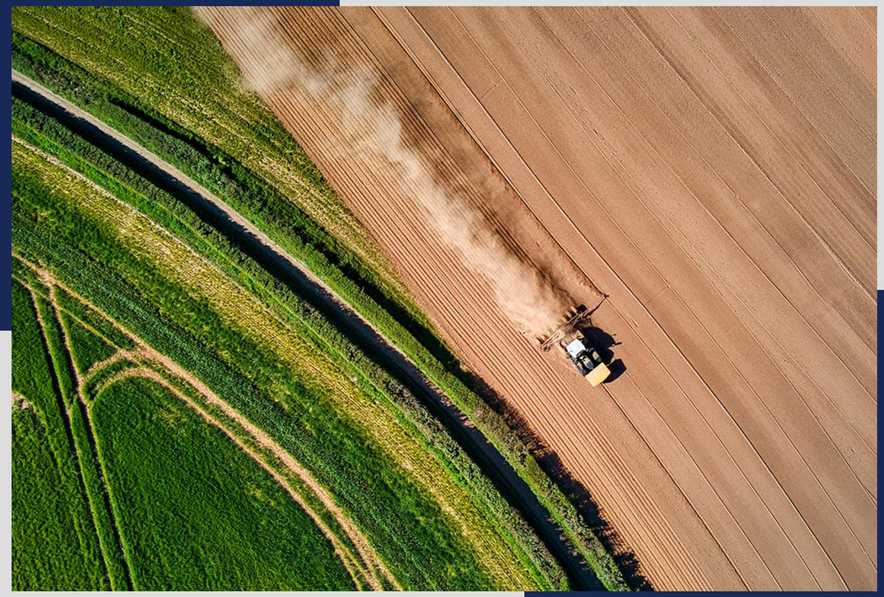
POWER DOWN

GETTING GREEN DATA CENTER RETREAT

September 12 – 14, 2023



FORGING THE PATH TO NET ZERO

SEPTEMBER 13th, 2023

PRESENTED BY :

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The Path to Net Zero

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Power Down Conference 2023

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Agenda

1. **Current Trends**
2. **Net Zero Carbon Process Overview**
   - Boundaries
   - Scope 1 and 2 emissions
   - Scope 3 Emissions
3. **The Path to Net Zero**
4. **Changes to the Net Zero Landscape**
5. **Risks and Mitigation Approaches**
6. **Discussion: Moving from Strategy to Action**

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Current data center sustainability landscape

Risks related to climate change, power availability, water scarcity, social injustice, pollution, and community health are magnifying the focus of employees, customers, regulators, governments, investors and communities on the sustainability and ESG commitments of the companies they choose to do business with

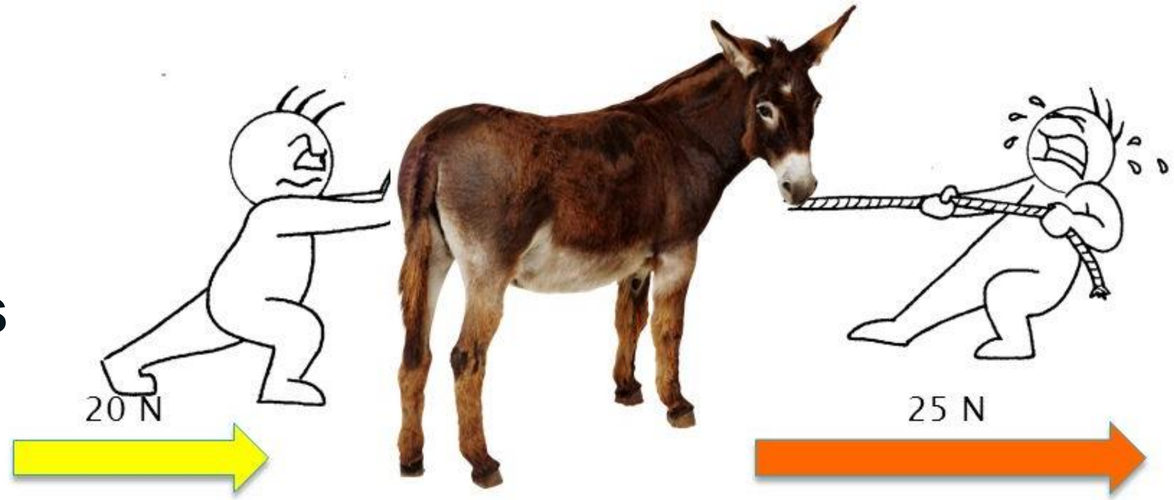
Customers

Communities

Employees

Regulators

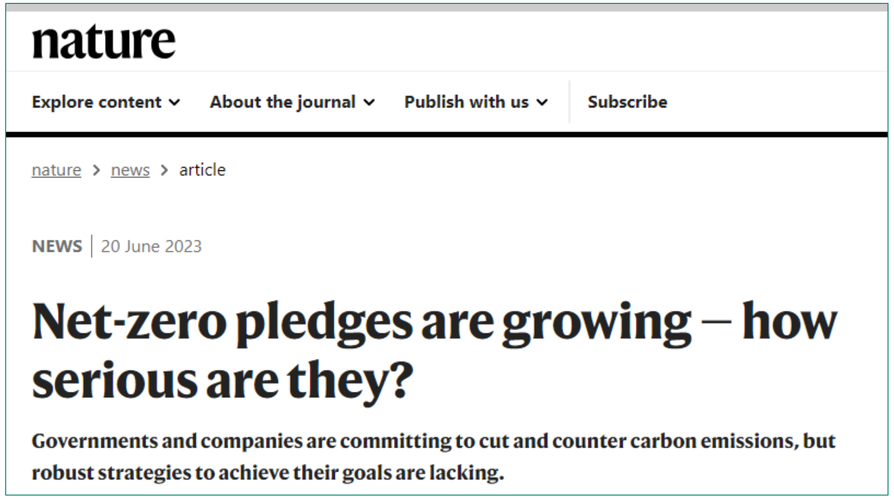
Investors



Net Force
25 N + 20 N = 45 N to the right

When forces act in the **same direction**, you **add** the forces to determine the net force. The net force will be in the same direction as the individual forces.

Increasing scrutiny of net zero claims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NEWS | 20 June 2023

Net-zero pledges are growing — how serious are they?

Governments and companies are committing to cut and counter carbon emissions, but robust strategies to achieve their goals are lacking.


'Net-zero' promises from major corporations fall short, climate groups say

An analysis of the climate pledges of 25 of the world's largest companies found that they avoid meaningful and immediate greenhouse gas emissions cuts.


Fed up with net-zero climate goals, activists call for 'real zero'

"Real-zero" goals call for the elimination of carbon emissions altogether.

By Max Zahn
July 17, 2022, 6:32 AM


More companies setting 'net-zero' climate targets, but few have credible plans, report says

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The Commitment: Net Zero by 2030

In 2021, Vantage made a public commitment to achieve net zero carbon emissions for our operations by 2030; a program has been developed to ensure that we are accurately and transparently reporting our emissions, setting goals, and creating implementation plans to drive progress

Measure impact

- Complete greenhouse gas inventory for Scopes 1 & 2
- Complete screening of scope 3 emissions and prioritize reduction strategies

Develop roadmap

- Develop net zero roadmap to identify short, medium, and long-term emission reduction strategies and targets for all scopes of emissions

Vantage is here

Set interim reduction targets

- Set interim reduction targets starting in 2026 and going out to 2050
- Purchase carbon removal offsets starting in 2030 for scope 1 and 2 emissions

Implement reduction measures

- Development and operations teams will partner with sustainability to implement emission reduction strategies globally

Monitor and report

- Continue reporting annual emissions across all three scopes
- Report on progress towards meeting reduction targets including impact of individual reduction measures

Greenhouse Gas Reporting Methodology

Greenhouse gas emissions are categorized into three groups or “scopes” by the most widely used international accounting tool, the Greenhouse Gas (GHG) Protocol. Meeting Net Zero Requirements will require both data center providers and our customers to partner together to achieve the desired results.

Scope 1
Direct emissions from owned or controlled sources. Examples include emissions from the testing and maintenance of diesel generators.

Scope 2
Indirect emissions from the generation of purchased electricity, steam, heating and cooling consumed by the reporting company. Examples include emissions from house power use (excluding customer emissions for IT equipment and cooling).

Scope 3
All other indirect emissions that occur in a company’s value chain. The reporting company does not control these emissions but can partner to encourage reductions. Examples include emissions from electricity consumed by a customer’s IT equipment and associated cooling (customer’s Scope 2 emissions).

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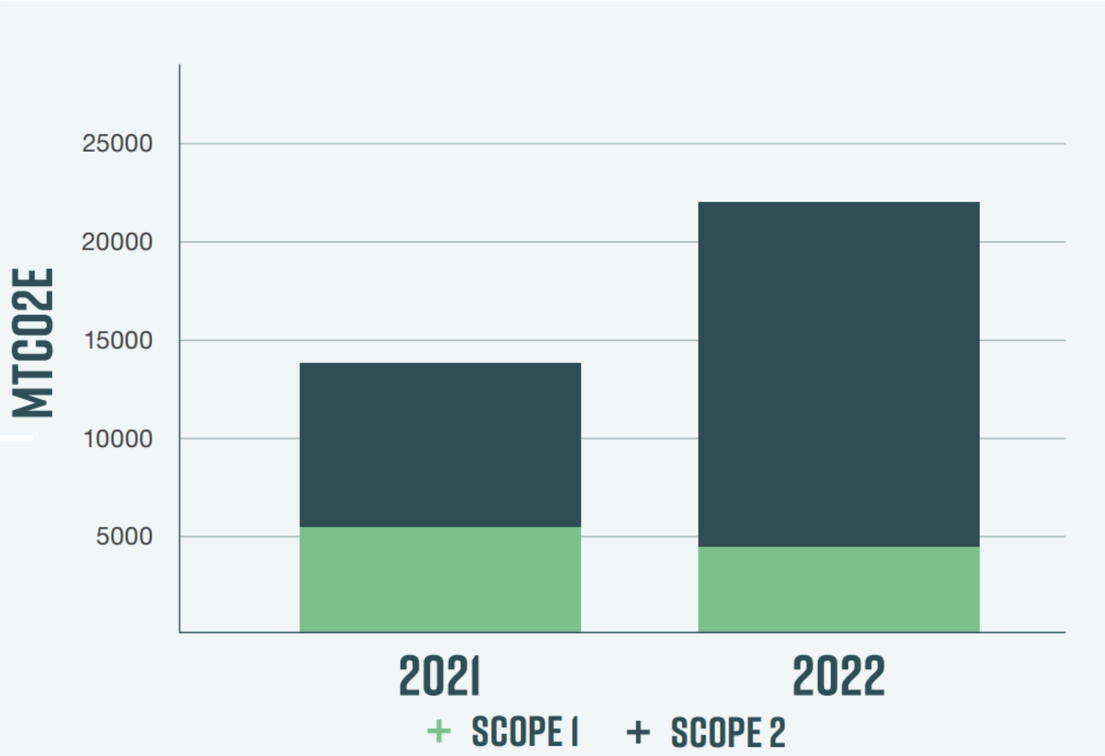
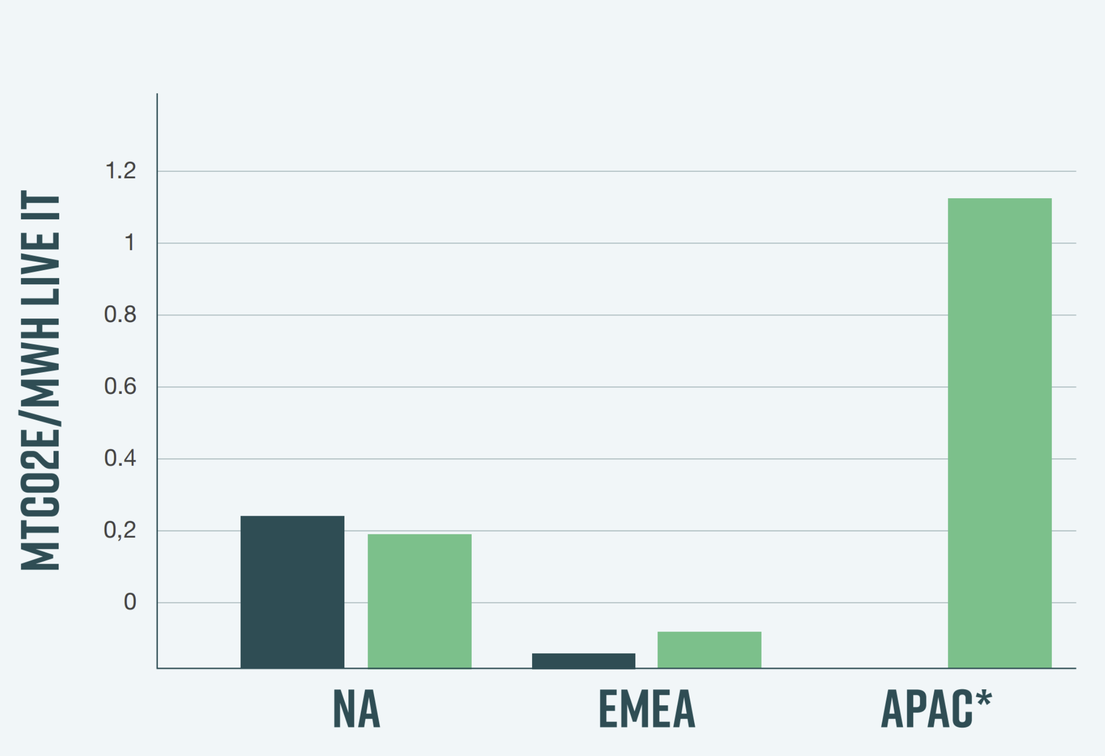
GHG Inventory Breakdown

Global, annual greenhouse gas emissions by scope for 2021 and 2022

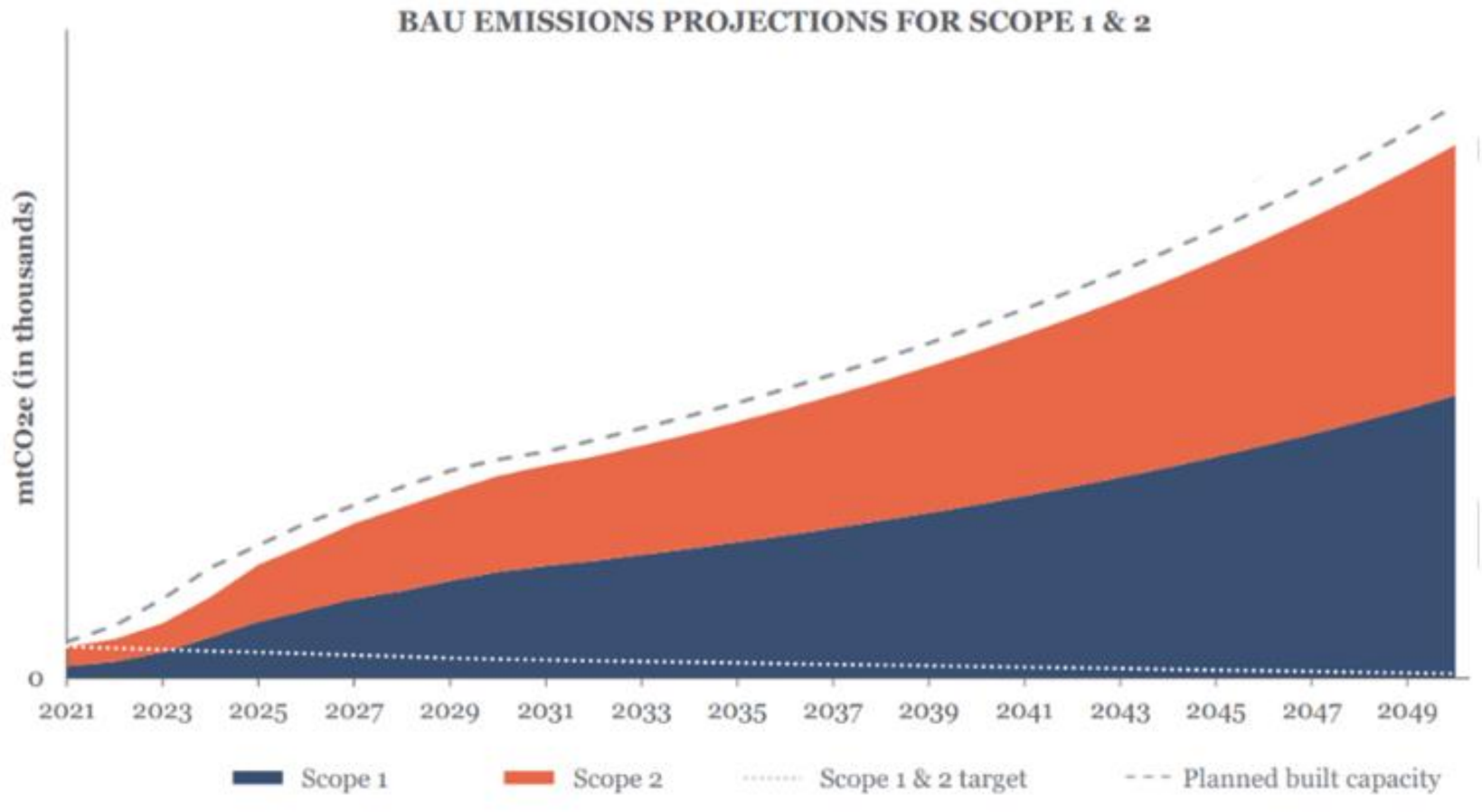


Annual carbon intensity by region in MTCO2e (Scope 1 and 2) / MWh live IT



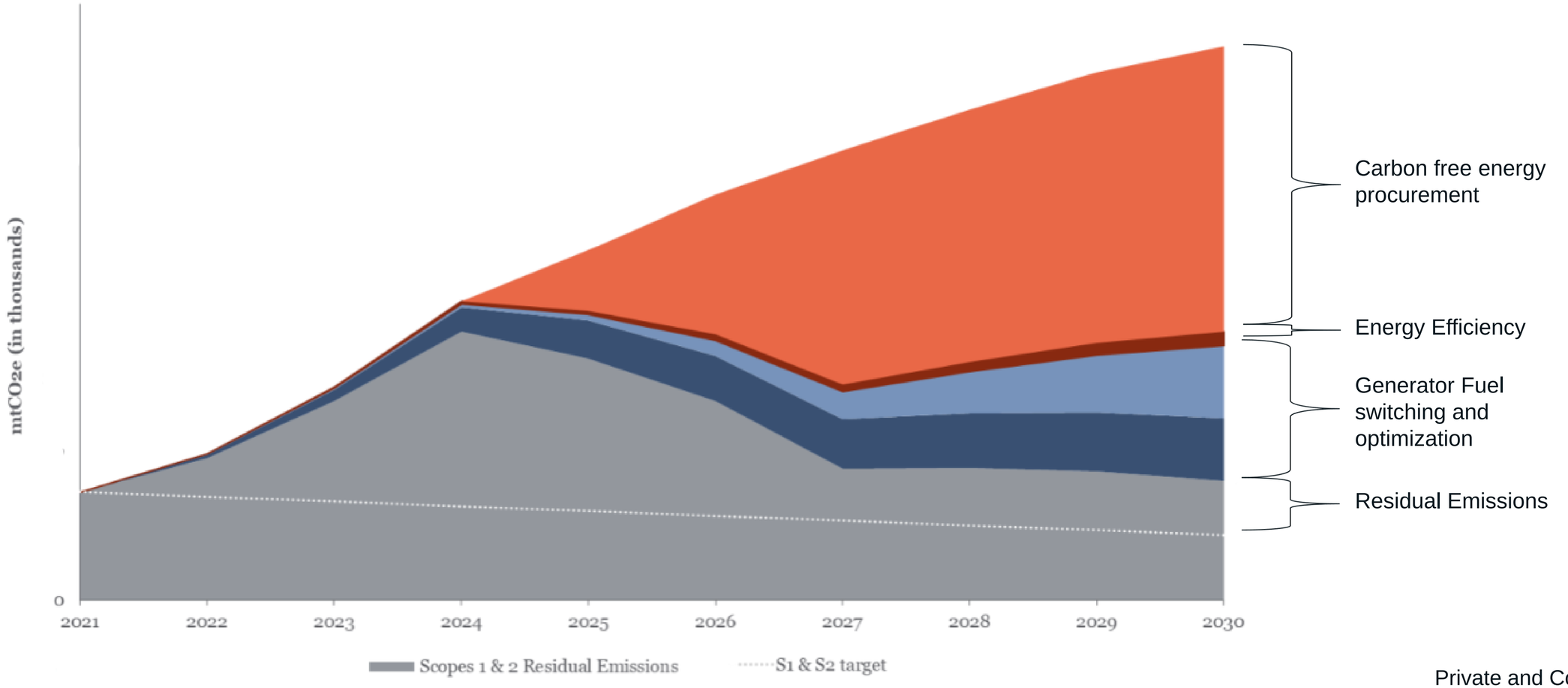
Building a Roadmap to Net Zero

In 2022, Vantage completed a net zero roadmap to identify key reduction levers and short, medium, and long term decarbonization solutions; emission projections were made using 2021 emissions as a baseline and the most up-to-date business growth projections



Net Zero by 2030

While many net zero targets are set on a 2050 timeline, Vantage's 2030 commitment required the identification of emissions reduction technologies that could be deployed today. This limits the availability of solutions that will enable decarbonization while maintaining affordability and reliability.

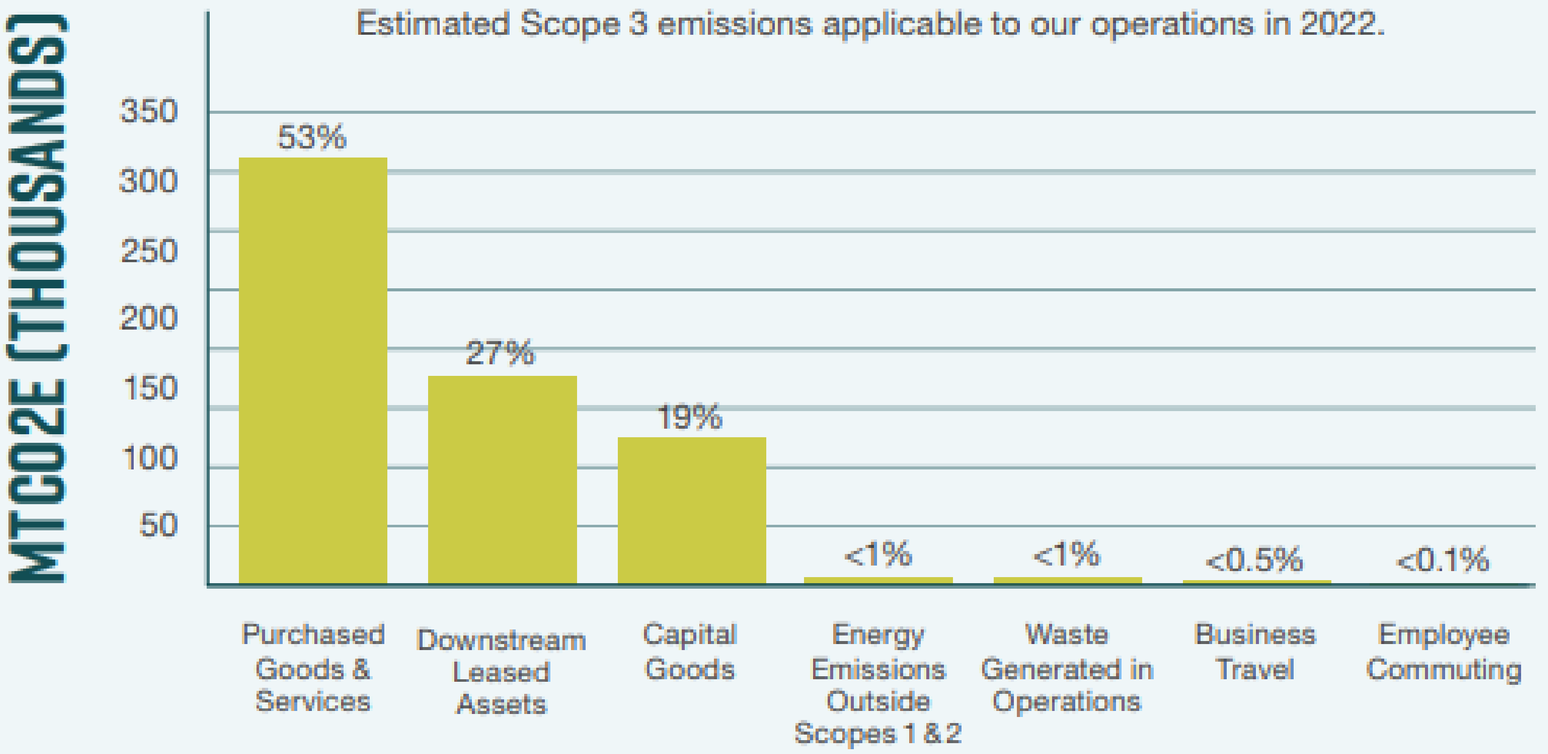


What about Scope 3?

SCOPE 3
ESTIMATED EMISSIONS BY CATEGORY

+ SCOPE 3

Figure 4: In the initial analysis, we took available spend data to discover which of the 15 categories have the largest impact. We will continue to refine data collection annually.



Changes to net zero landscape

Increased scrutiny of net zero goals and claims has led to updated guidance being released by several organizations including the International Standards Organization (ISO), Science based target initiative (SBTi), and the Intergovernmental Panel on Climate Change (IPCC)

- SBTi updated their net zero commitment requirements July 2022 stating that companies would need to reduce absolute emissions by 90-95% before carbon removal offsets could be utilized
  - SBTi guidance does not consider high-growth industries – data centers are experiencing a period of incredible demand and subsequent growth – making an absolute emissions reduction target from a baseline year, in line with SBTi, impossible to achieve with existing technologies
  - New SBTi guidance is misaligned with updated IPCC reports in that it actively discourages investment in carbon removal technologies until 2050
- The ISO released a guidance document on net zero commitments stating that absolute emission reductions should be the primary objective of companies making net zero goals but that carbon removals could be used to offset residual emissions
- The IPCC released an updated report in 2022 stating that:
  - “The deployment of carbon dioxide removal (CDR) to counterbalance hard-to-abate residual emissions is unavoidable if net zero CO2 or GHG emissions are to be achieved”
  - “Digital technologies can contribute to mitigation of climate change and the achievement of several SDGs (high confidence). For example, sensors, internet of things, robotics, and artificial intelligence can improve energy management in all sectors, increase energy efficiency, and promote the adoption of many low-emission technologies, including decentralized renewable energy, while creating economic opportunities (high confidence)”

Risks and mitigation approaches

Since making a public commitment to net zero, changing market conditions have created new challenges that may impact Vantage's ability to achieve that goal; internal teams have been created to help identify possible risks and create plans to proactively address them

Risk	Mitigation Approach
High demand is driving a period of incredible growth	Set both absolute and normalized emission reduction targets from a business-as-usual scenario and reforecast annually
Carbon intensity of new markets could increase Vantage's emissions	Develop a clean energy procurement strategy to identify renewable and carbon-free energy procurement options and set procurement targets
Energy scarcity and lack of emerging technology viability	Develop design solutions that optimize energy use and reduce emissions while maintaining reliability and affordability Track new technology development and design for future proofing
Instability of third-party net zero frameworks	Continue to monitor development and hold on commitment to third party frameworks until they have matured
Carbon removal offset market volatility	Develop a carbon removal procurement strategy and identify options for the purchase of offsets and/or investment in carbon removal projects

Leading takes courage!

Top 13 Change Management Comic Strips, Torben Rick, 2015.

Thank You