Microsoft

Building a more sustainable future, together

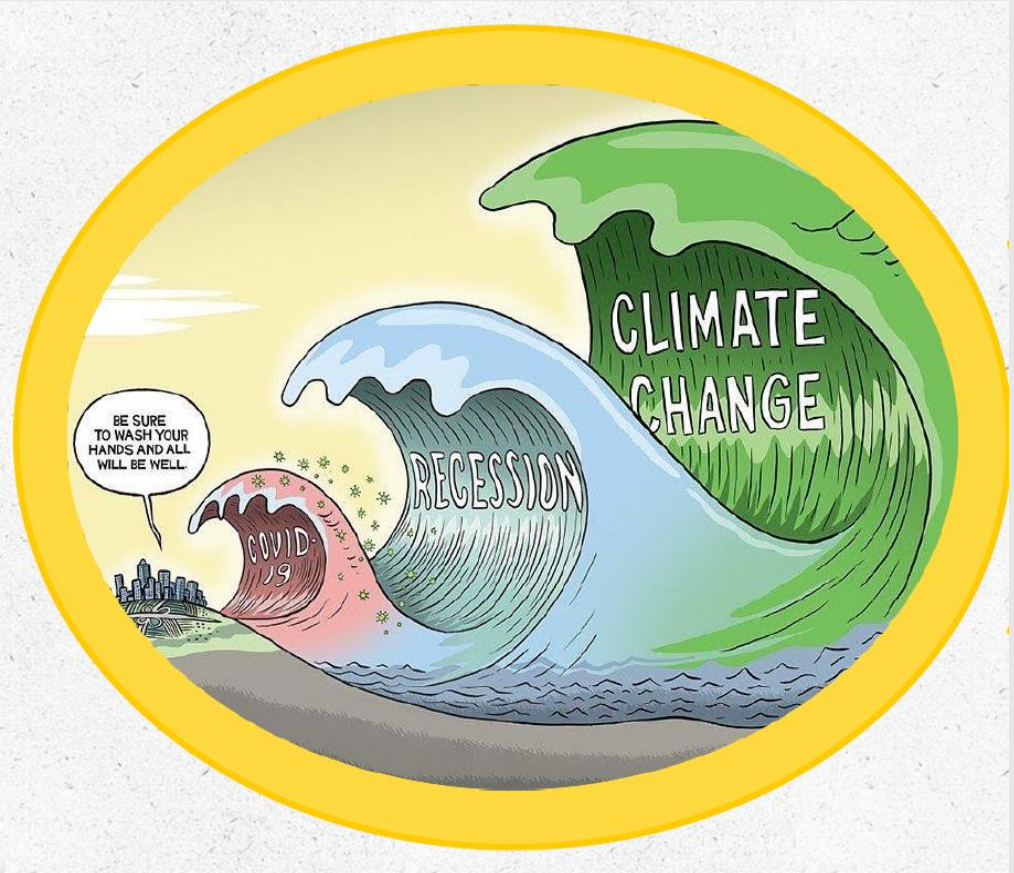
FLEXharvester by VITO/EnergyVille

Launch March 2021

José Antonio Ondiviela
WE PS Industry Executive Government
Microsoft Western Europe
joseon@microsoft.com
@JOSEONDIVIELA

Responding, Recovering and Redesigning in the face of COVID-19

New City Planning, Processes Efficiency, Project Workflows, Citizen Engagement in a Post-COVID world

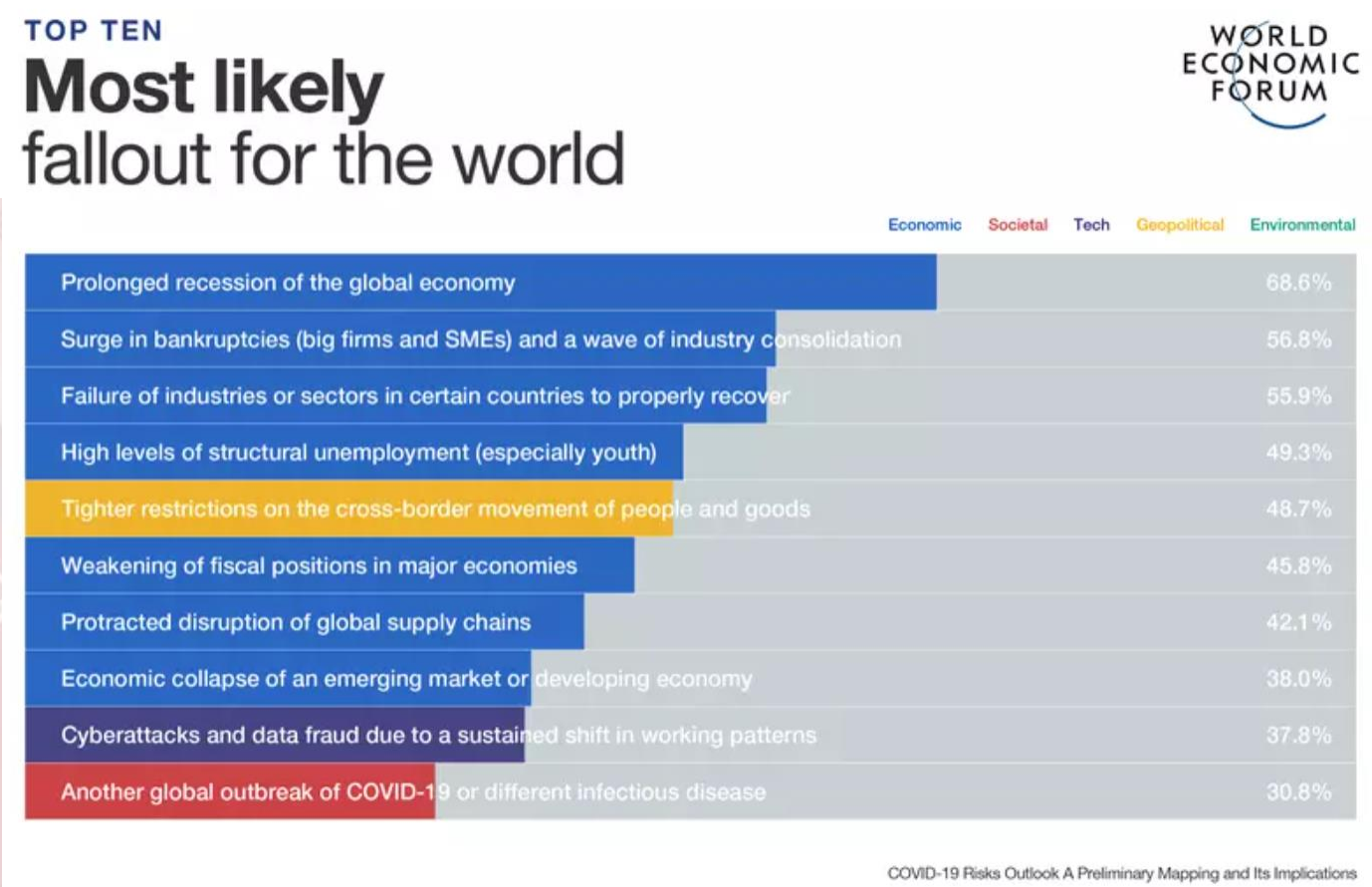


City Reboot

- ***RESET: Economic Sustainability***
- New Services Companies model
- ReCreate Sectors (Hospitality, Travel, Culture, Leisure, Social Events…)
- Food Chains
- Local Commerce
- Cashless City

- ***RESET: Social Sustainability***
- Urban Mobility
- Unfair Inequity, Inequality
- Digital Rights
- HealthCare
- Education

- ***RESET: Environmental Sustainability***
- Public Spaces
- Neighborhoods
- Green Energy, Carbon neutral



4 Main Areas to Invest the $10t Recovery funds:

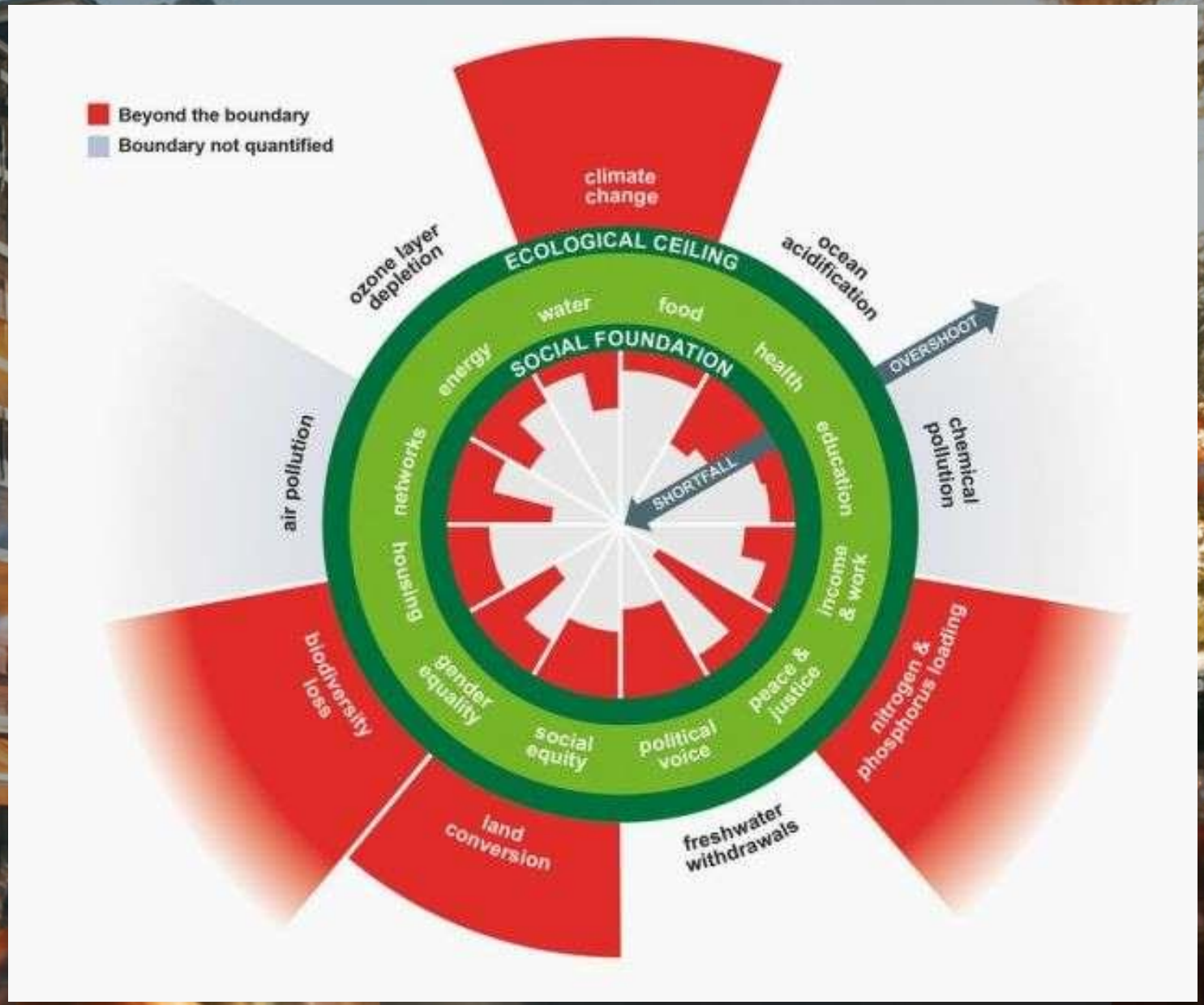
- **Green Agenda**
- **Digital Technology & Artificial Intelligence Adoption**
- **Workforce Upskilling**
- **Resilience of supply chains and security of essential goods**

https://www.weforum.org/reports/covid-19-risks-outlook-a-preliminary-mapping-and-its-implications

https://www.mckinsey.com/~/media/McKinsey/Industries/Public%20Sector/Our%20Insights/The%2010%20trillion%20dollar%20rescue%20How%20governments%20can%20deliver%20impact/The-10-trillion-dollar-rescue-How-governments-can-deliver-impact-vF.pdf

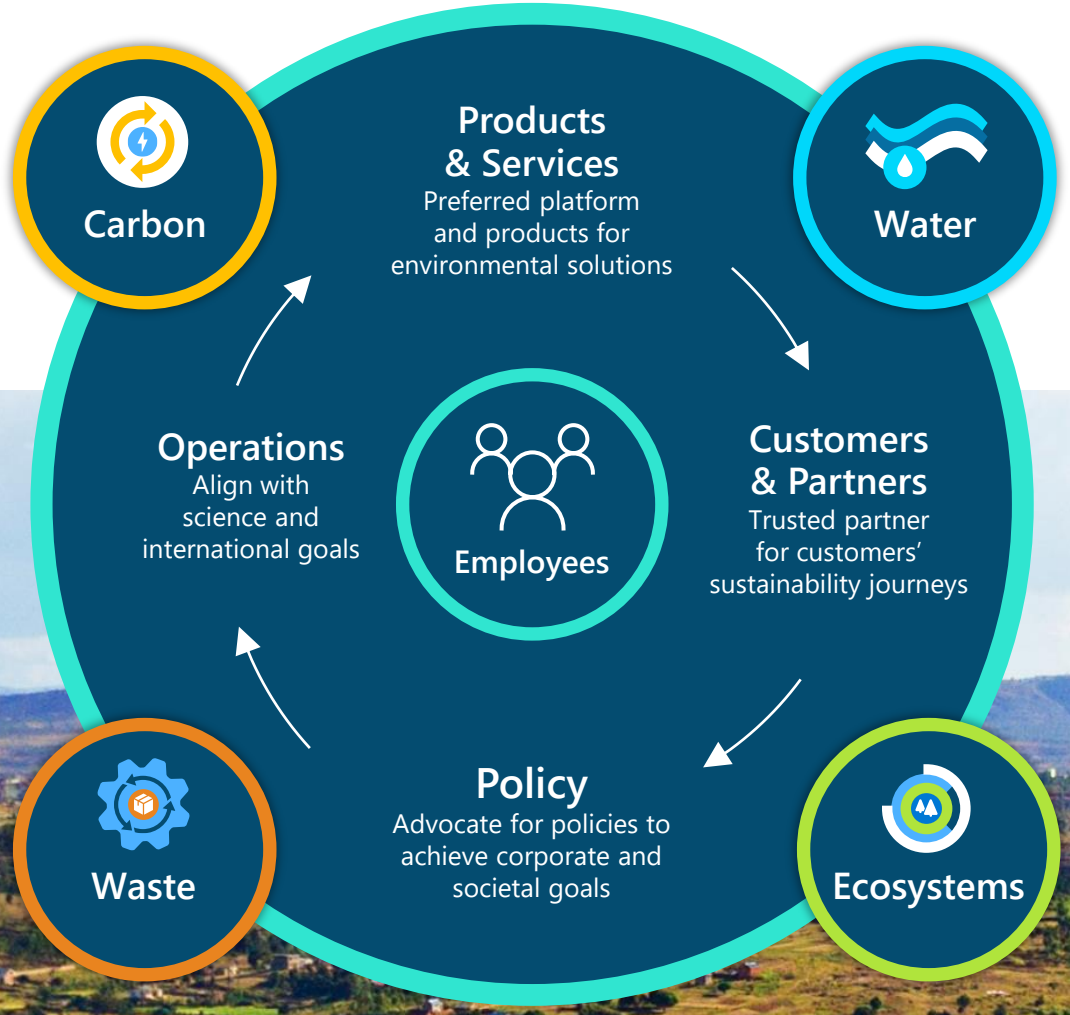
THE AMSTERDAM CITY DOUGHNUT

A TOOL FOR **TRANSFORMATIVE ACTION**



https://www.weforum.org/agenda/2020/05/doughnut-model-amsterdam-coronavirus-recovery/
https://www.kateraworth.com/wp/wp-content/uploads/2020/04/20200406-AMS-portrait-EN-Single-page-web-420x210mm.pdf

Investing to build the leading platform for technology solutions to environmental challenges



The EU Green Deal Framework

Transforming the EU's economy for a sustainable future

CLIMATE

The EU will be **climate neutral in 2050**.
The Commission will propose a European Climate Law turning the political commitment into a legal obligation and a trigger for investment.

Reaching this target will require action by all sectors of our economy:

- Extending ETS
- Climate Pact
- Climate Law
- Carbon Border Tax

Increasing the EU's climate ambition for 2030 and 2050

A zero pollution ambition for a toxic-free environment

- Strategy on the sustainable use of chemicals
- Clean Air & Water action plans

ENERGY

Decarbonise the energy sector

The production and use of energy account for more than **75%** of the EU's greenhouse gas emissio

- Review Energy legislation
- European Framework for gas
- Review Energy Taxation Directive

Supplying clean, affordable and secure energy

Preserving and restoring ecosystems and bio-diversity

Biodiversity Strategy for 2030 (by March '20)

INDUSTRY

Support industry to innovate and to become global leaders in the green economy

European industry only uses **12%** recycled materials

Circular Economy Action Plan

Mobilising industry for a clean and circular economy

From 'Farm to Fork': a fair, healthy & environmentally friendly food system

- From Farm to Fork strategy
- Vision for inclusive rural areas
- Africa Europe Agenda
- CAP reform proposal

The European Green Deal

BUILDINGS

Renovate buildings, to help people cut their energy bills and energy use

40% of our energy consumption is by buildings

Building & renovating in an energy & resource efficient way

Accelerating the shift to sustainable and smart mobility

MOBILITY

Roll out cleaner, cheaper and healthier forms of private and public transport

Transport represents **25%** of our emissions

- EIB as European Climate Bank
- Sustainable Europe Investment Plan
- Green Financing Strategy
- Mainstreaming climate transition and sustainability in the MMF

Financing the transition

Leave no one behind (Just Transition)

- Just Transition Instrument, incl. Just Transition Fund
- Mainstreaming the Just Transition into the MMF

The EU as a global leader

Sustainable Europe Investment Plan

A European Climate Pact

EU Green Deal

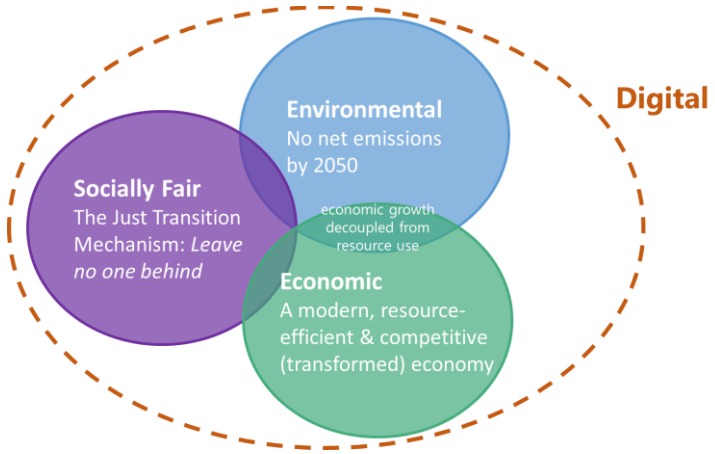
Turning an urgent challenge into a unique opportunity

Mobilize at least €1 trillion investments over the course of 10 years:

25% of all European Union funding for climate measures

30% of InvestEU to projects that fight climate change

Stimulating green investments with support from the EIB Group



Financing a green recovery

Multiannual Financial Framework 2021-2027 total allocations per heading*

	MFF	*NextGenerationEU*	*TOTAL*
1. Single market, innovation and digital	€132.8 billion	€10.6 billion	€143.4 billion
2. Cohesion, resilience and values	€377.8 billion	€721.9 billion	€1 099.7 billion
3. Natural resources and environment	€356.4 billion	€17.5 billion	€373.9 billion
4. Migration and border management	€22.7 billion	-	€22.7 billion
5. Security and defence	€13.2 billion	-	€13.2 billion
6. Neighbourhood and the world	€98.4 billion	-	€98.4 billion
7. European public administration	€73.1 billion	-	€73.1 billion
TOTAL MFF	€1 074.3 billion	€750 billion	€1 824.3 billion

Empower every person and every organization on the planet to achieve more

Microsoft's commitment to sustainability

Carbon

- Carbon negative by 2030
- Remove historical emissions by 2050
- $1 billion climate innovation fund

Water

- Water positive by 2030
- Digitize water data
- Partner with Water.org and WRC members
- Invest $10 million in water strategy fund

Waste

- Zero waste by 2030
- Increase our reuse of servers and components up to 90% by 2025
- Invest $30 million in circular economy

Ecosystems

- Build and deploy a planetary computer
- Protect more land than we use by 2025
- Speak out on policy issues

Carbon Calculator
Customer: Contoso

Months: All | Region: All | Azure service type: All

Calculations in this tool are estimated. For more information on methodology, see the FAQs.

Select the efficiency of your on-premises infrastructure: Low

Azure emissions and savings (MTCO2e)

700	MTCO2e from on-premises alternative
– 601	MTCO2e saved from Microsoft efficiencies
– 72	MTCO2e saved from Microsoft renewable energy purchases
26	**MTCO2e emissions from Azure**

MTCO2e: metric tonnes carbon dioxide-equivalent

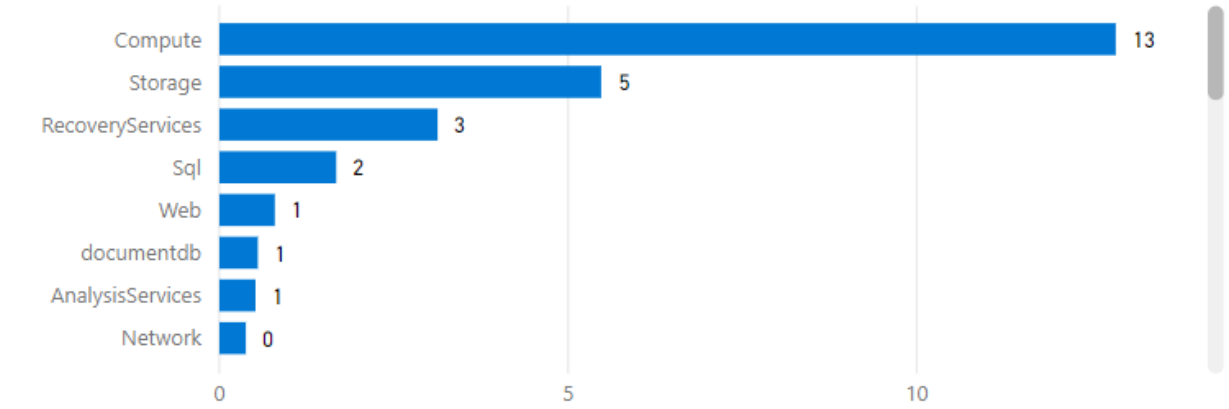
96% Reduction in MTCO2e

673 MTCO2e saved

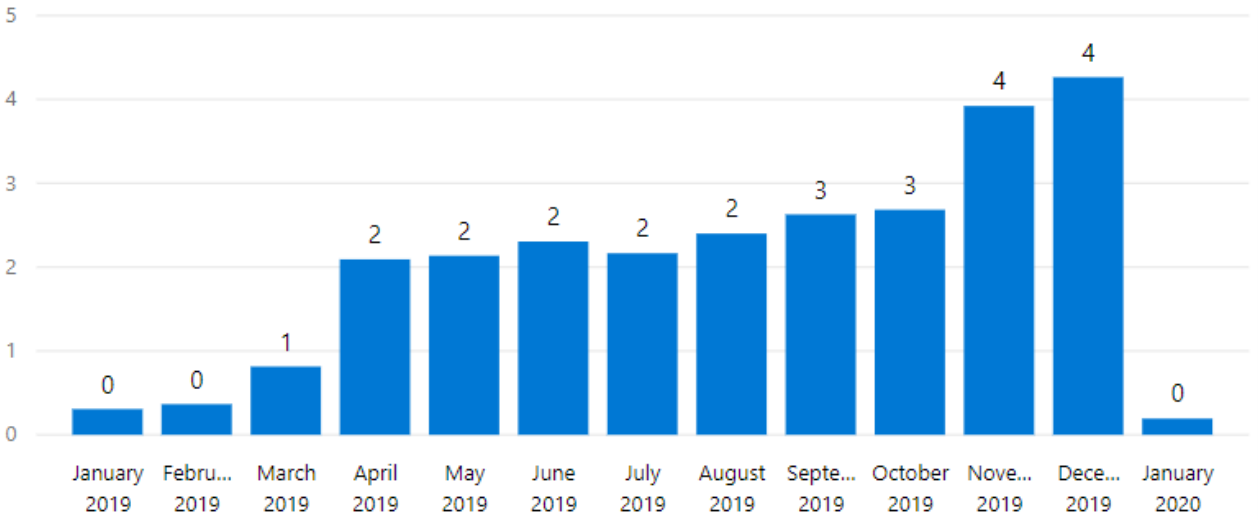
2M Equivalent reduction in vehicle miles travelled

Azure emissions by region

Emissions by Azure service (MTCO2e)



Azure emissions over time (MTCO2e)



Sustainability | WE Sustainability Partners

WATER

ENERGY

AIR POLLUTION – TRAFFIC

Sustainability | WE Sustainability Partners

WASTE MANAGEMENT

cellnex
Wellness TechGroup
fifthplay
kpn
INSPARK
indra
EY
sigma
[ui!]
ATEA
LiveTiles
minsait

SMARTBUILDINGS–IoT DIGITAL TWIN

dimension data
Schneider Electric
BOSCH
GRUNDFOS
NEC
WINVISION
accenture
avanade
ICONICS
omnimap
REALDOLMEN
SIEMENS
NORKART
dji
cyclomedia
mapwize
CARTO
SIRUS
TURKU CITY DATA
Bentley
esri
BeSense
imec
TNO innovation for life
HITACHI
MADASTER
Mott MacDonald
Steelcase
heijmans
CBRE
willow
beabloo
plain concepts
tecnalia
Johnson & Johnson

GENERIC PARTNER

ClimateView

ENERGY VILLE – GENK (BE)

AI algorithm that optimizes the temperature of heating water for an entire district.

Vision on technology for a better world. VITO is a research organization that has developed an algorithm for peak shaving for thermal networks. They call that algorithm/product the storm controller.

EnergyVille is a collaboration between the Belgian research partners KU Leuven, VITO, imec and Hasselt University for research into sustainable energy and intelligent energy systems.

EnergyVille develops the technologies and knowledge to support public and private stakeholders in their transition to an energy-efficient, decarbonized and sustainable urban environment.

Energy Ville

vito

imec

The journey to become Carbon Neutral

District heating with combined heat and power (CHPDH) is the cheapest method of cutting carbon emissions, and has one of the lowest carbon footprints of all fossil generation plants

"Carbon footprints of various sources of heat – biomass combustion and CHPDH comes out lowest " – William Orchard.

FEBRUARY 7, 2009 / DAVE ANDREWS / BIOMASS, BIOMETHANE/BIOGAS, CARBON, CHP, POLICY, RENEWABLES, SUSTAINABILITY / 8 COMMENTS

Tp The Transition **Project**

Transitionproject.org is an open data initiative by ClimateView

500,000 tons of CO2 reduced per year by 2025

District Heating Main examples: Copenhagen

- Ambition: City of Copenhagen aims to become the world´s first carbon-neutral capital by 2025
- District heating as main pillar for that challenge
- District heating covers 98% of the heating demand in Copenhagen.

- They have replaced the last section of the steam-based district heating network with more energy-efficient, water-based district heating. (started by 1990s and expect to complete by 2021.

- We are also reducing the energy and water loss in the district heating grid using tinted water to detect leaks faster, and we advise companies and individuals on energy savings.

- About 30% of the annual district heating demand is covered with surplus heat from waste incineration, and the remaining production of district heating is based on geothermal energy and fuels as wood pellets, straw, straw pellets, natural gas, oil and coal.

- About 80% of the CO2 emissions in Copenhagen result from the consumption of heat and electricity

Copenhagen Municipality

Helsinki

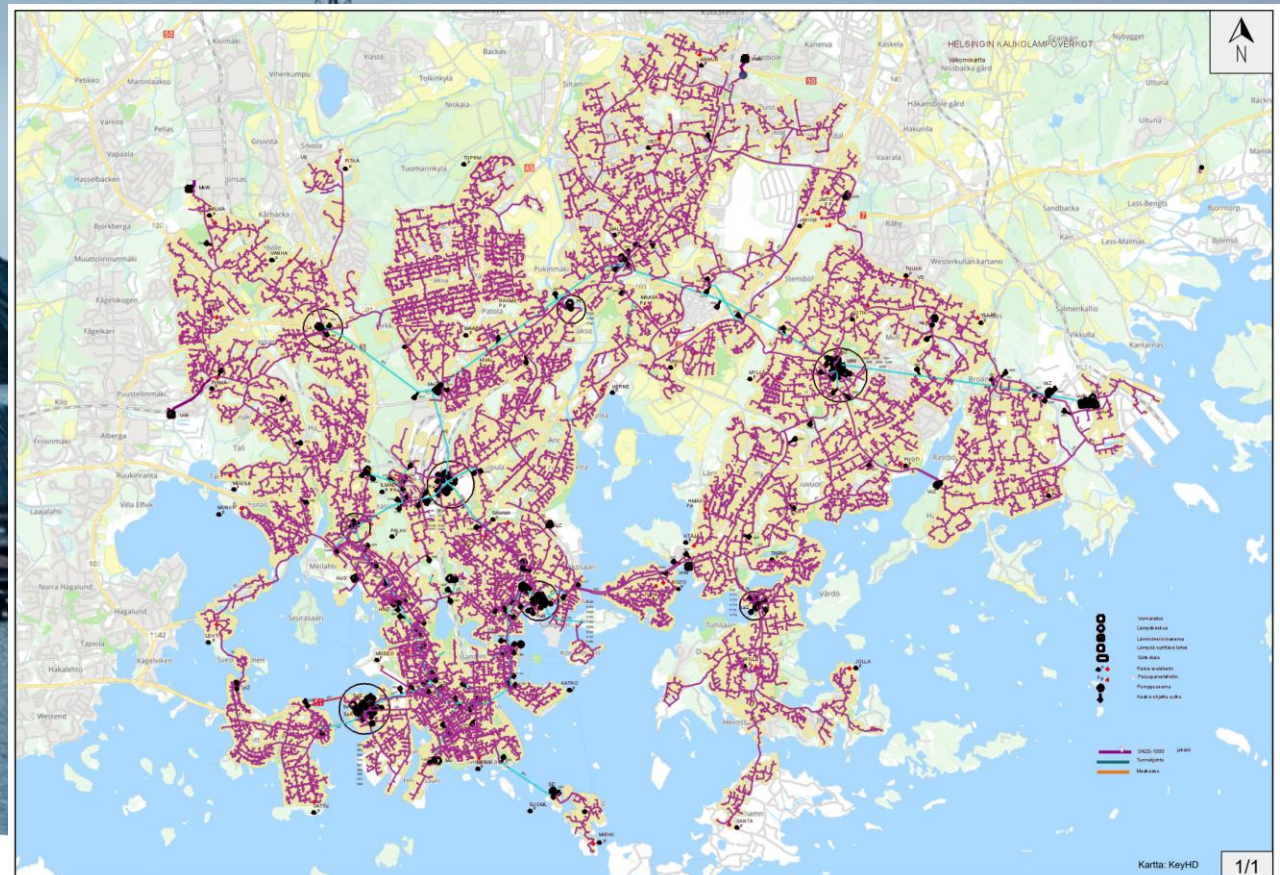
Heating in Helsinki today

Helsinki's goal is to be carbon-neutral by 2035. Currently, about 56 percent of Helsinki's direct carbon dioxide emissions originate from the production of district heating. In order to reach the carbon-neutrality goal, these emissions need to be significantly reduced.

Due to the cold climate, the heat demand in Helsinki is significant and has a strong correlation to outdoor temperatures and weather. The capacity needed to generate heat especially on cold winter days is substantial. The volume and variation of the heat demand means that it has been challenging to find a replacement for fossil fuels. The annual district heating production in Helsinki is approximately 7 TWh and currently more than half of this is generated using coal.

Use of coal will be completely banned by 2029

About 95% of the city of Helsinki is heated with district heat, and about 600,000 Helsinki residents live in an apartment block heated with district heat.




Microsoft