THINKING DIFFERENTLY ABOUT DIGITAL SUSTAINABILITY

18th JULY   GREEN TECH SOUTH WEST

Hannah Smith, Director of Operations

GREENWEBFOUNDATION.ORG

The internet is the world's largest coal-powered machine - but it doesn't need to be

WHAT CONTRIBUTES TO A FOSSIL-FREE INTERNET?

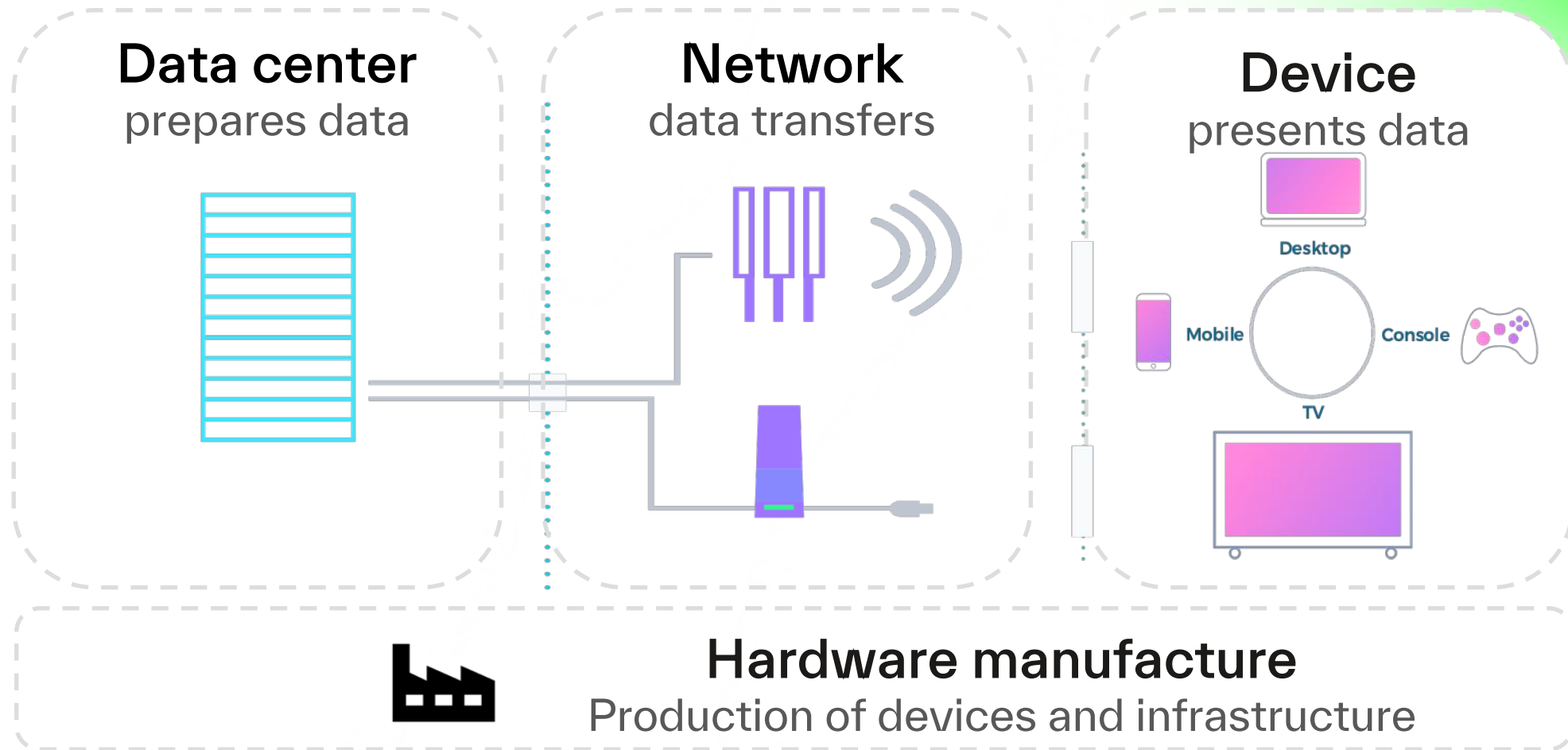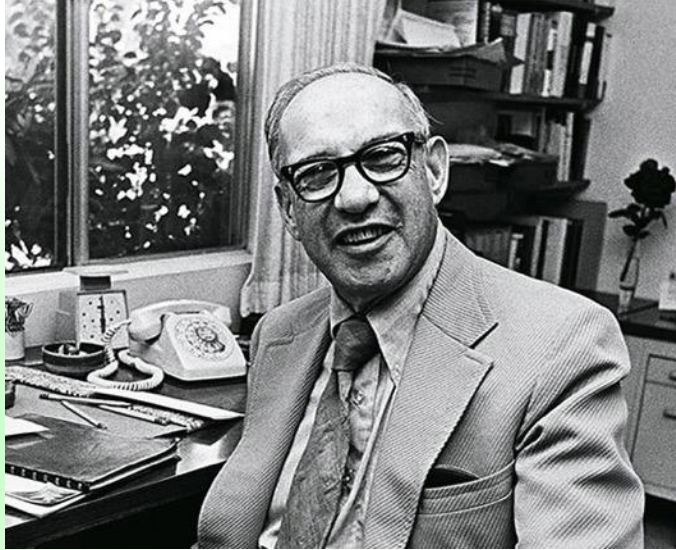# Accurate modelling of carbon emissions, and other impacts

1

Calculating electricity usage

Data center
prepares data

Network
data transfers

Device
presents data

Desktop

Mobile

Console

TV

Hardware manufacture
Production of devices and infrastructure

Sustainable Web Design model

"What gets measured gets managed"

Peter Drucker

But how do we know what the right things are to measure?

SCOPE 1 & 2 EMISSIONS

SCOPE 3 EMISSIONS

Image by Photo Mix from Pixabay

Estimated that ChatGPT requires 500 ml of water for every 20 to 50 questions answered.

https://www.businessinsider.com/chatgpt-generative-ai-water-use-environmental-impact-study-2023-4?r=US&IR=T

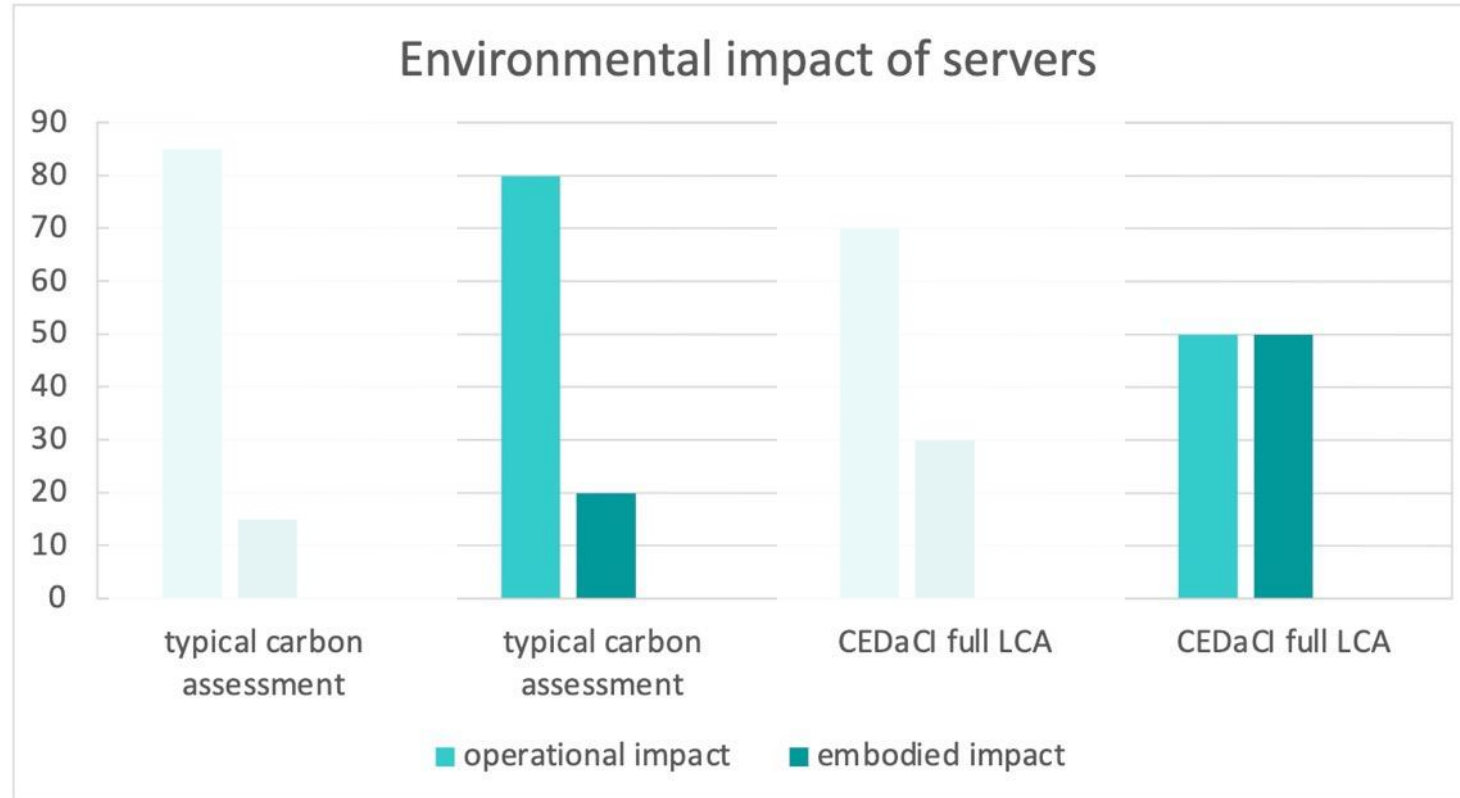What is the acceptable upper limit for resource use by tech?

RACHEL COLDICUTT
Exec Director
Promising Trouble

What if we already have all the technology we need? And the biggest challenge for innovation isn't making more stuff... But equitably distributing the technologies we already have?

Compare carbon assessments / preliminary LCA results – indicate much higher embodied impact

Environmental impact of servers

Bar chart showing operational impact and embodied impact across four categories:
- typical carbon assessment: operational impact 85, embodied impact 15
- typical carbon assessment: operational impact 80, embodied impact 20
- CEDaCI full LCA: operational impact 70, embodied impact 30
- CEDaCI full LCA: operational impact 50, embodied impact 50

Legend: operational impact, embodied impact
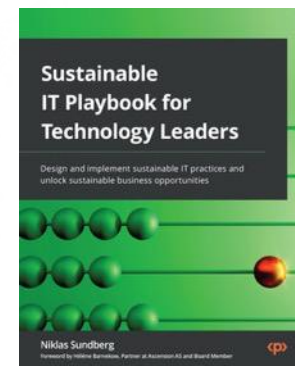
Green Software

- Less physical resources

- Less energy

- Using energy more intelligently (carbon aware software and scheduling)
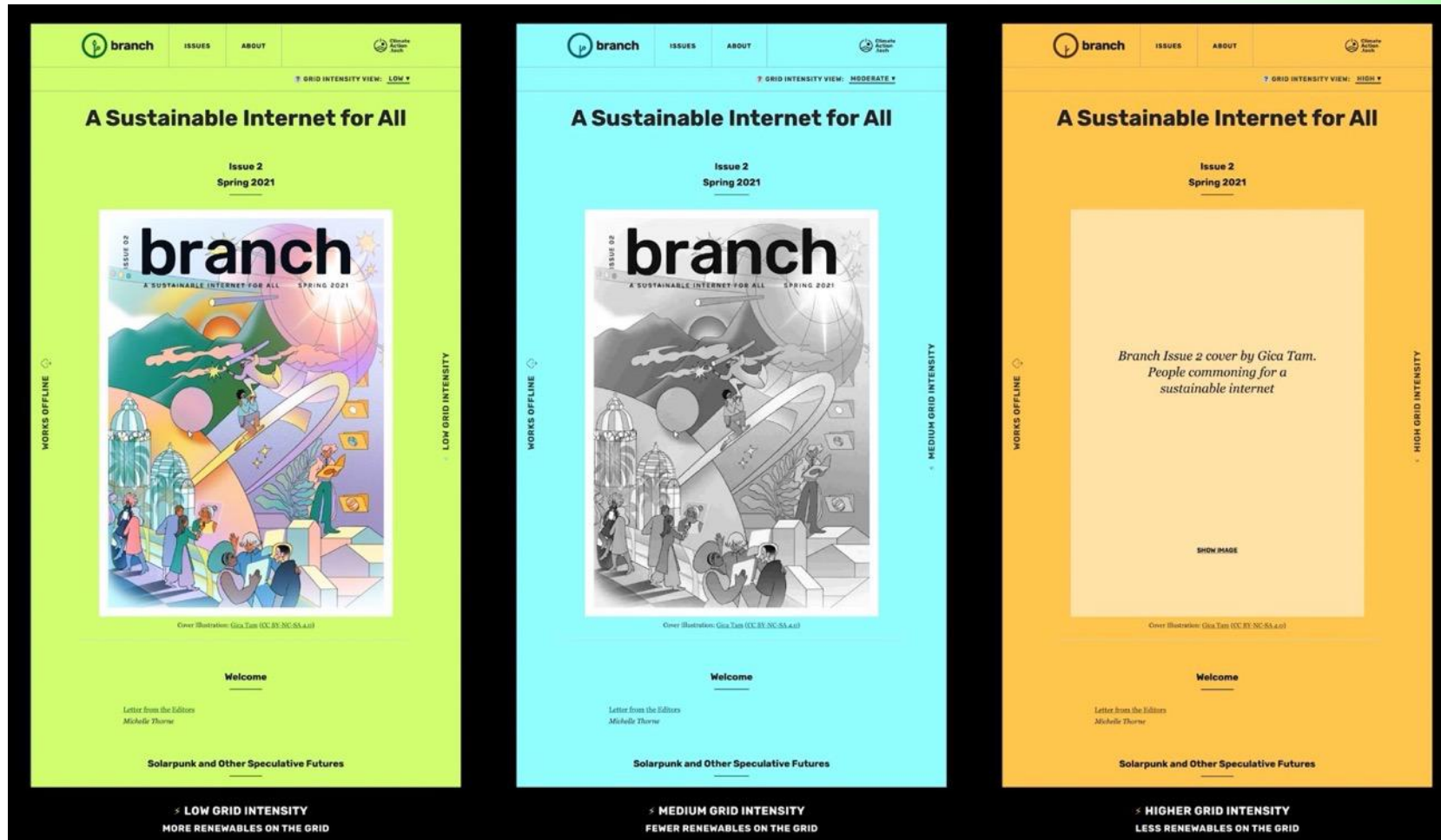

greensoftware.foundation

sustainablewebdesign.org

Sustainable IT Playbook for Technology Leaders

Branch magazine

A new internet: websites that serve different content depending on renewables on grid

Critical assessment of industry sustainability claims

2

Greenwashing

The Competition and Markets Authority (CMA) has developed the Green Claims Code

6 key points to check your environmental claims are genuinely green.

The six green checks

1. Be truthful and accurate

2. Be clear and unambiguous

3. Not omit or hide important information

4. Only make fair and meaningful comparisons

5. Consider the full life cycle of the product

6. Be substantiated

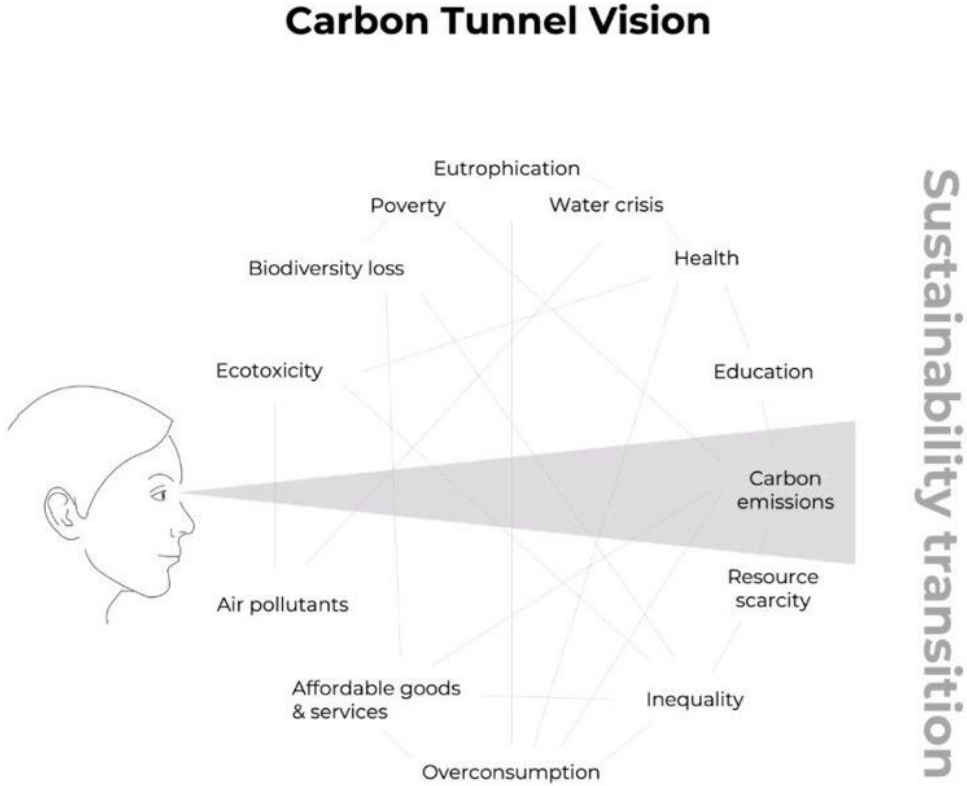Open data and methodologies helps prevent greenwashing in the sector

Image credit: NoName_13 from Pixabay

[Cloud Carbon Footprint](#)

Sustainability is more than decarbonisation
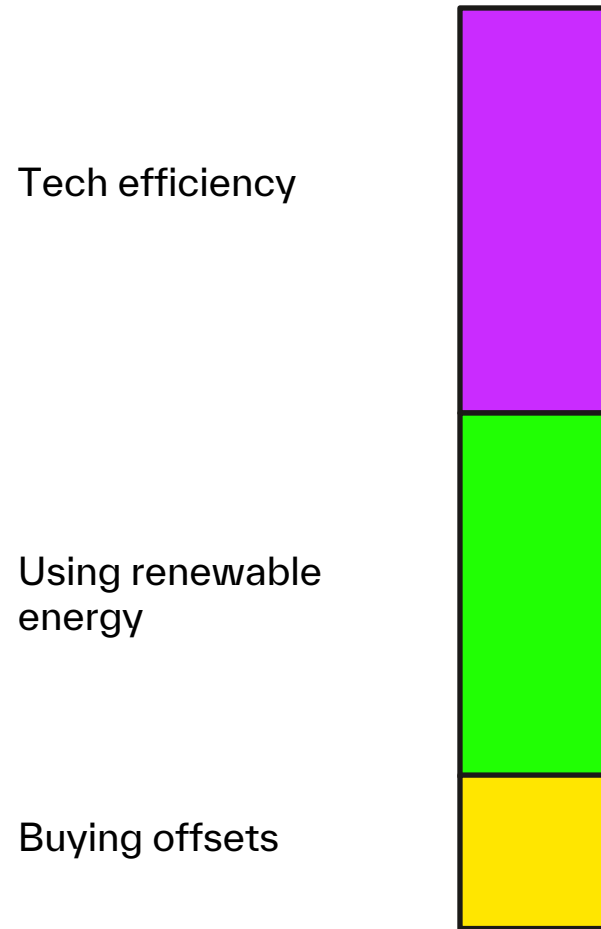

Image credit: Jan Konietzko

Greenwashy tech traps

These things alone do not make a sustainable supplier:

- Only optimizing code / infrastructure

- Uses green energy

- Planting trees or buy offsets

(They do indicate some effort)

What people think building a sustainable internet involves

- Tech efficiency
- Using renewable energy
- Buying offsets

What it's more about

- Diverse workforces
- Regenerative business models
- Accessible tech
- Care for unseen communities that feel the burdens
- The Right to Repair
- Slowing down and creating less
- Quality of life over growth and profit
- Distributive enterprises / open source
- Using renewable energy
- Efficient tech

What people think building a sustainable internet involves vs what it might actually be, by Hannah Smith

Address relationship between extractive industries and the tech sector

3

We are in a climate emergency because we keep extracting fossil fuels to burn, rather than keeping them in the ground
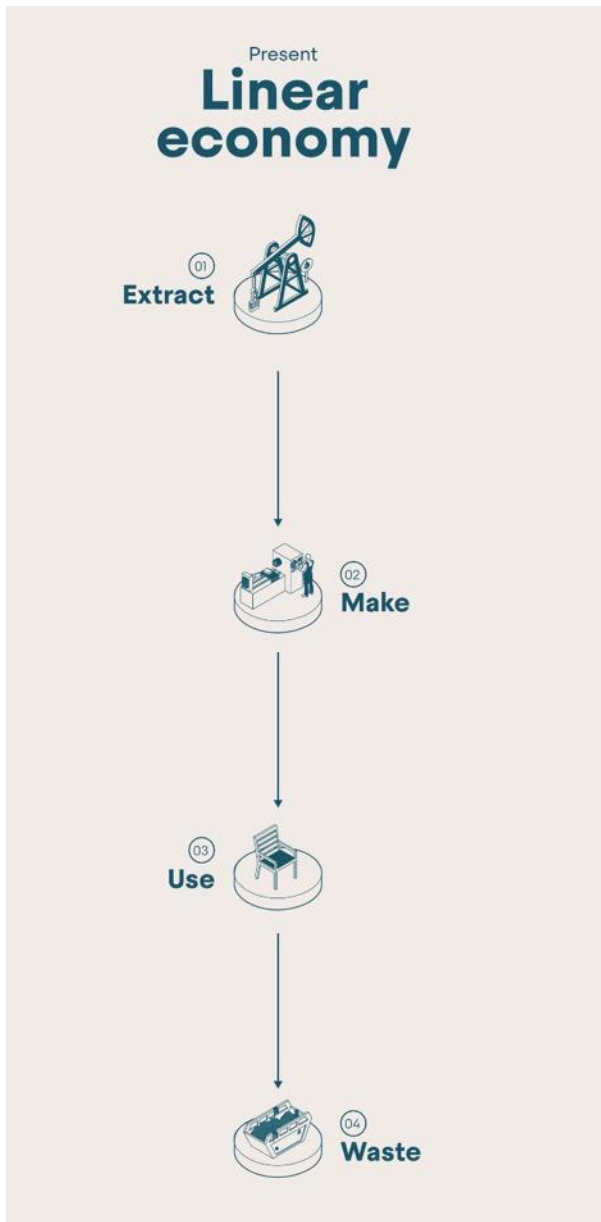
Image credit: Kasper Benjamin Reimer Bjørkskov. See images in more detail.

HM Government

Greening government: ICT and digital services strategy 2020 to 2025

"As a global leader in sustainable ICT, HMG will ensure that our digital infrastructure and associated supply chains are rationalised, responsible, resilient and **free of slavery/exploitation,** creating environmental, economic and social **benefits for all.**"

ARTICLE

#Tech4Bad: when do we say no?

19 November 2021

🕐 5 minute read

IAN BROOKS MBCS, MINNA LAURELL THORSLUND, AKSEL BIØRN-HANSEN AND ELENA SOMOVA

Share 🔗

Existing IT systems are enabling company activities that are unsustainable and damaging to the environment. 'When should we as IT professionals stop maintaining them?' ask Ian Brooks MBCS, Minna Laurell Thorslund, Aksel Biørn-Hansen and Elena Somova.

https://www.bcs.org/articles-opinion-and-research/tech4bad-when-do-we-say-no/

SUMMING UP

What contributes to a fossil-free internet?

1. Accurate modelling of carbon emissions, and other impacts

2. Critical assessment of industry sustainability claims

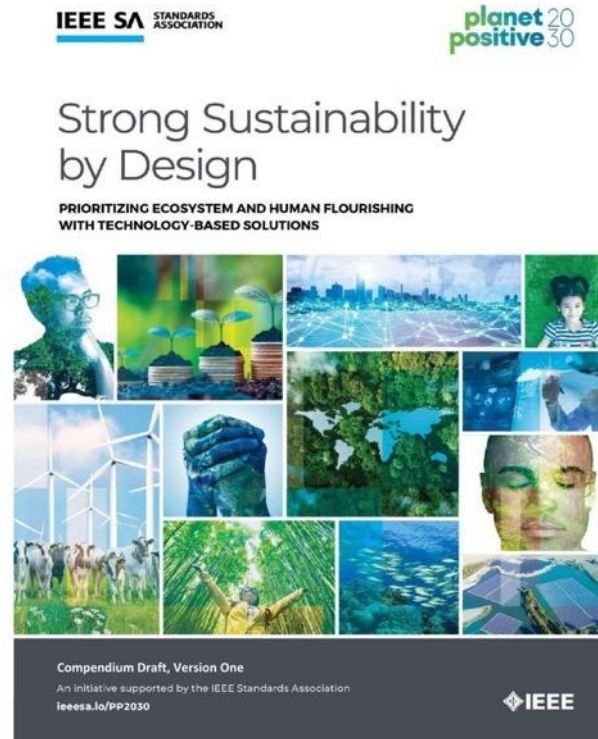3. Relationship between extractive industries and the tech sector
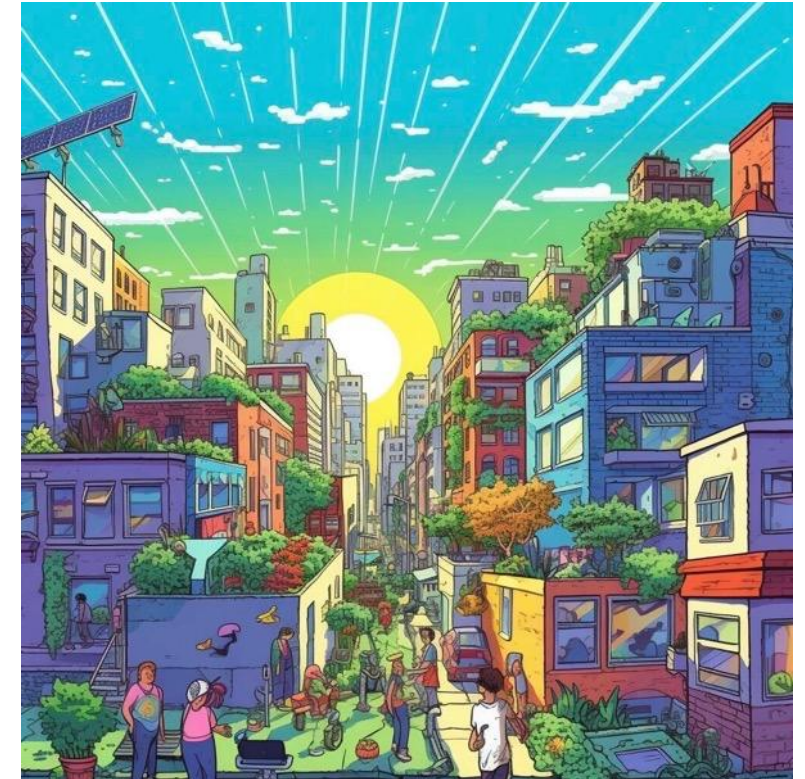
GREEN WEB FOUNDATION

Imagination!

Branch magazine

"The first step to imagine this future…"
IEEE Strong Sustainability by Design

The Imagine Project

Digital Sustainability is a~~n emerging~~ discipline

ANDRI JOHNSTON
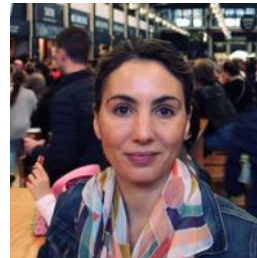**Digital Sustainability Lead**
Cambridge University Press

ADAM TURNER
Head of Digital Sustainability
DeFRA

MARKETA BENISEK
Digital Sustainability Lead
Wholegrain Digital

DERIKA V.
Digital Manager of Sustainability
Eastman Chemicals

LUCIE MANTIN
Digital Sustainability Leader
Michelin

GRANT MORLEY
ICT Sustainability Architect
UK Ministry of Defence

THANK YOU

- I'm Hannah Smith, Director of Operations

GREEN WEB
FOUNDATION

A little about Hannah Smith

Director of Operations, Green Web Foundation

Co-founder of the Green Tech South West meet-up

Computer Science BSc, former Environment Agency civil servant

linkedin.com/in/hanopcan/

A little about Green Web Foundation

Green Web Foundation works to accelerate the transition to a fossil-free internet by 2030.

Our open Green Web Dataset — accessed over 5 billion times — tracks how much of the internet runs on green energy. Estimate the carbon emissions of your digital products using our open tools.

Join us in advocating for a more sustainable and just internet.

https://www.thegreenwebfoundation.org/