What Can Go Wrong with Carbon Footprint Calculations

When You Want It To Be All About Data Science

Zheniya Mogilevski ©

Hi!

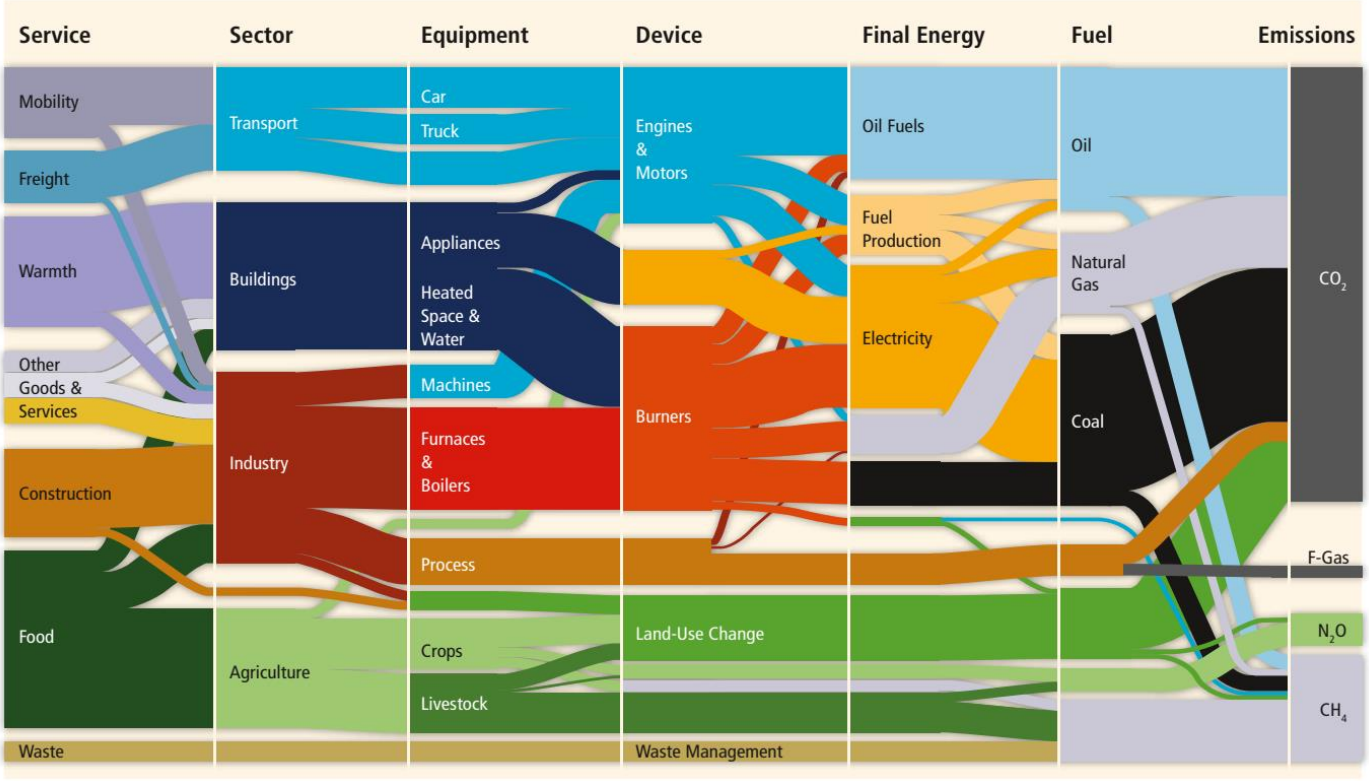
An independent mother of two
and a data professional

Zheniya Mogilevski ©

What is this talk about?

- I will share my hands-on experience in developing a high-resolution GHG emissions (aka carbon footprint) calculations solution…
- … while exploring the limits of the data science in the real-world context.

Short Intro to GHG Emissions



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Source: EPA , Bajželj et al., 2013

1. Who must be hold accountable?

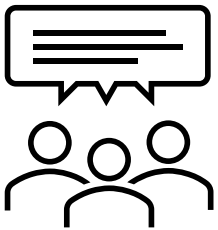
Large tech companies were the first to take net-zero goals

2. Where the numbers come from?

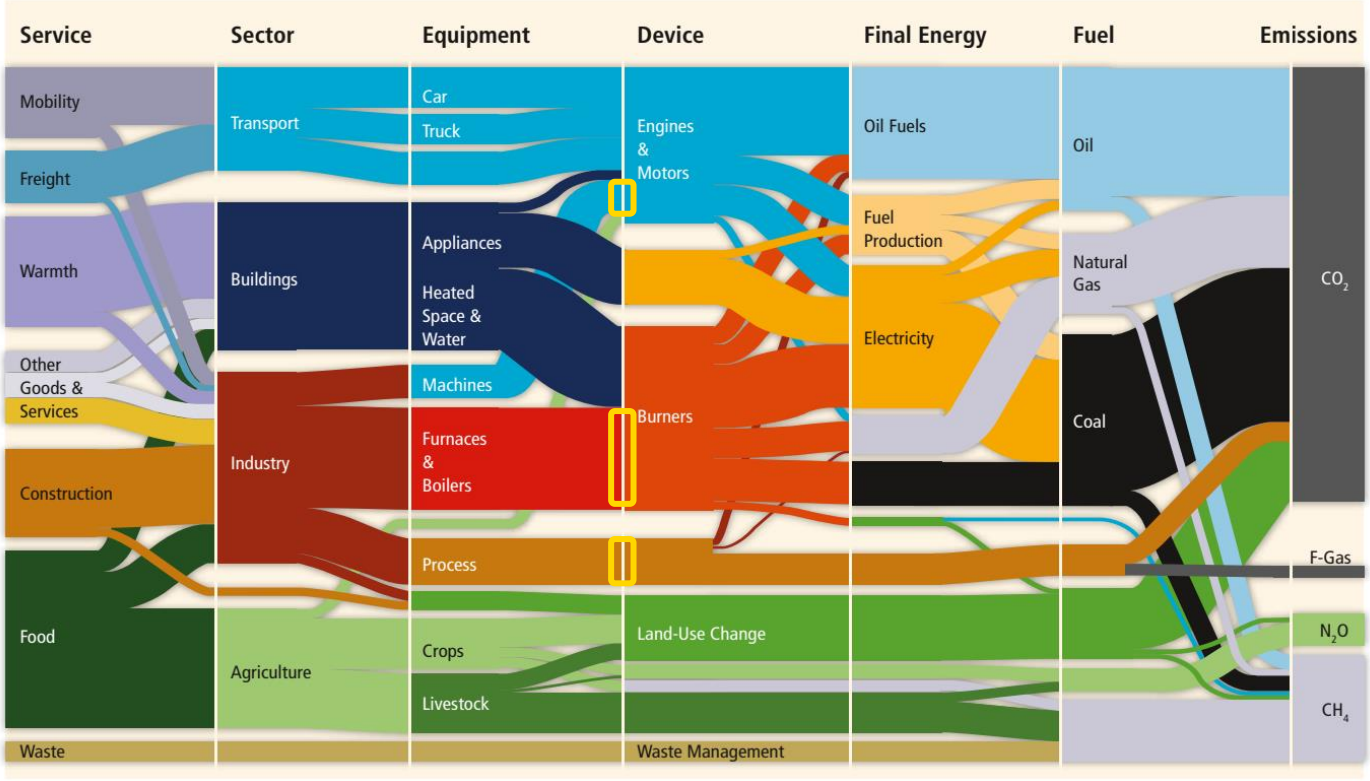
Primary Data

Large companies have the resources to implement high-granularity carbon footprint monitoring by utilizing data from existing monitoring systems.

Estimates



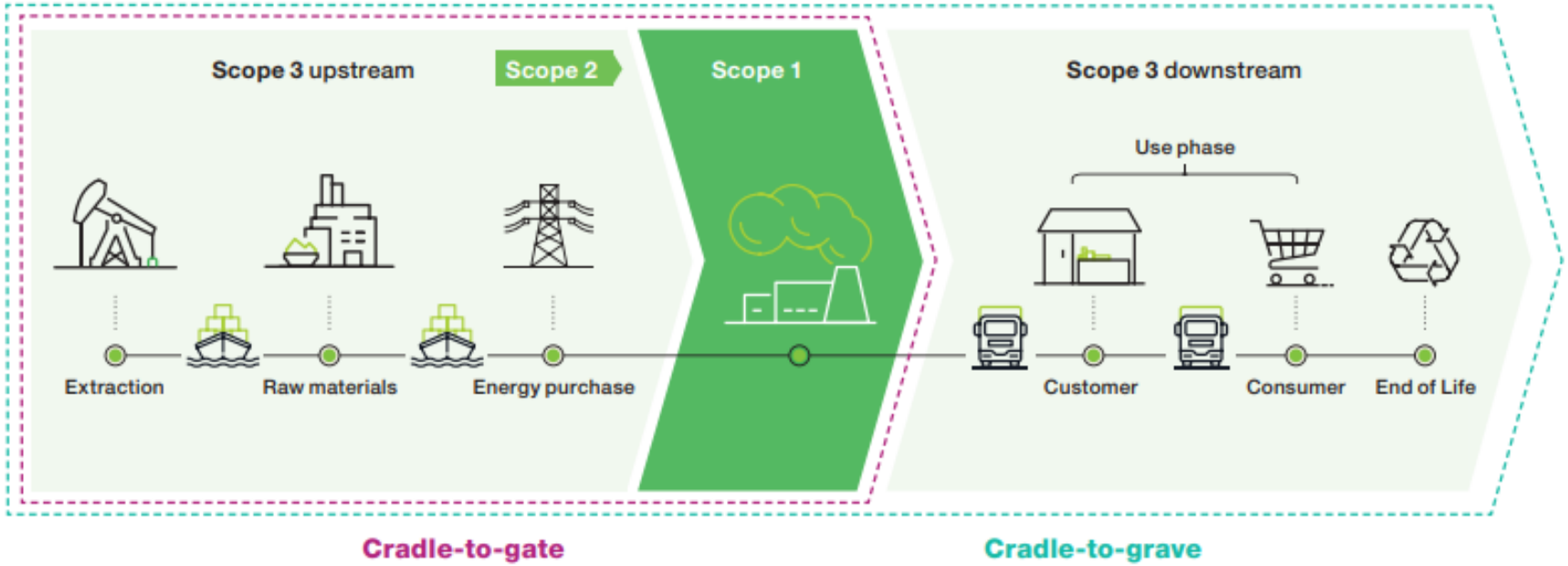
CASE: the Chemical Industry



Source: EPA , Bajželj et al., 2013

How Does It Work in the Chemical Industry

Figure 5.2 System boundary definition



Source: [Together for Sustainability, 2022]

How Does It Work in the Chemical Industry

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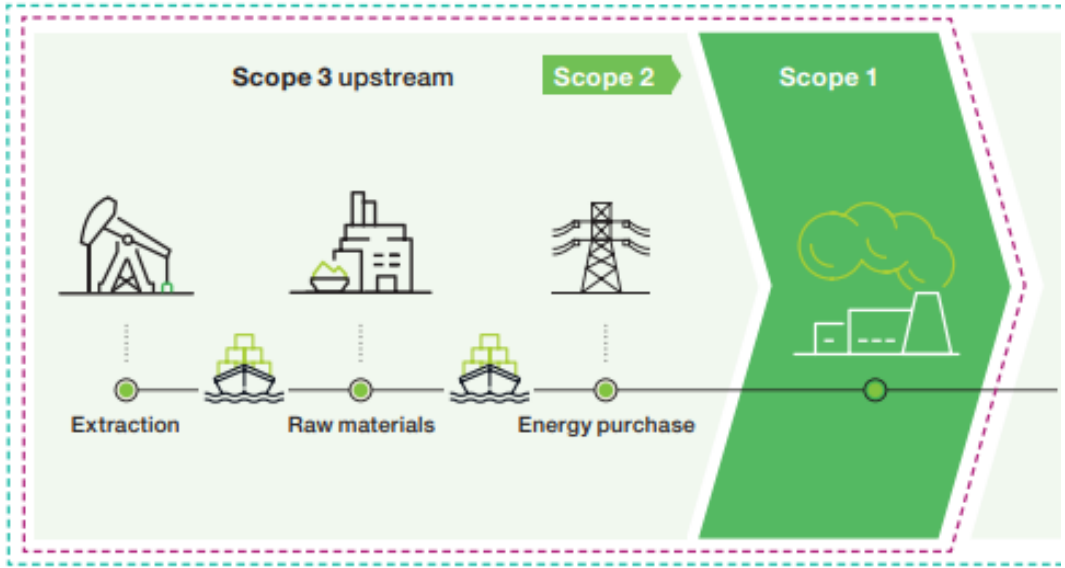


Cradle-to-gate

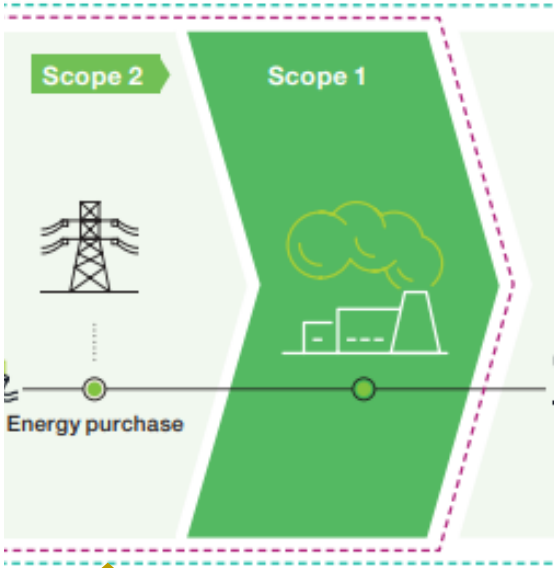
~50 large manufacturers

Source: Together for Sustainability, 2022, BASF News

Where Data Science Does Work...

Figure 5.2 System boundary definition

Businesses need to understand the granularity of their carbon footprint to actually understand HOW to remove



Primary Data!!!

Source: [Together for Sustainability, 2022]

… And Where It Does Not

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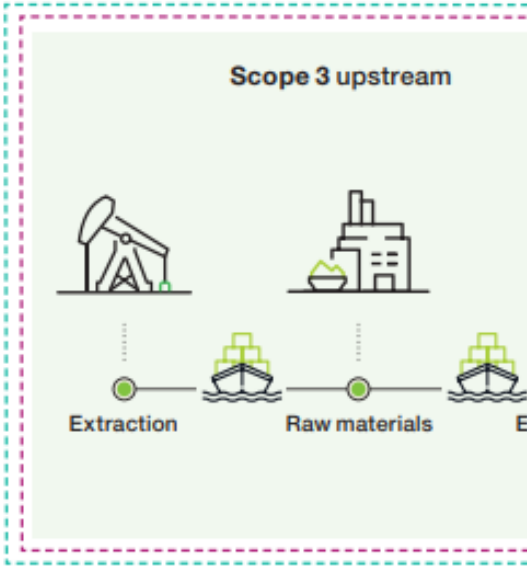

- **60-70%** of the footprint can come from upstream activities like raw materials
- One example: In their 2020 Sustainability Report, BASF reported purchasing a total of around 30,000 different raw materials from more than **6,500 suppliers**

Sources: BASF Online Report 2020, Together for Sustainability, 2022

Thank you!

Zheniya Mogilevski

My website