CityCatalyst

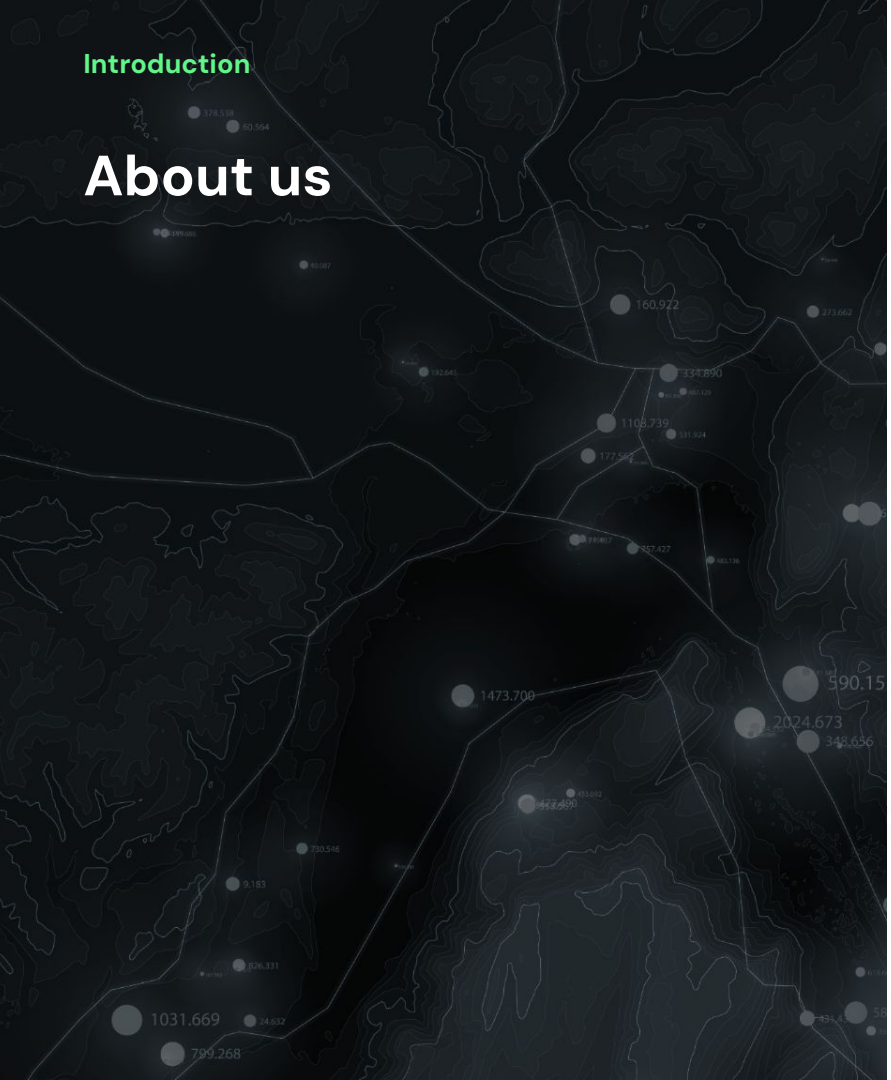
Evan Prodromou
Milan Gruner

FOSDEM, 2 Feb 2025

OpenEarth

Introduction

About us

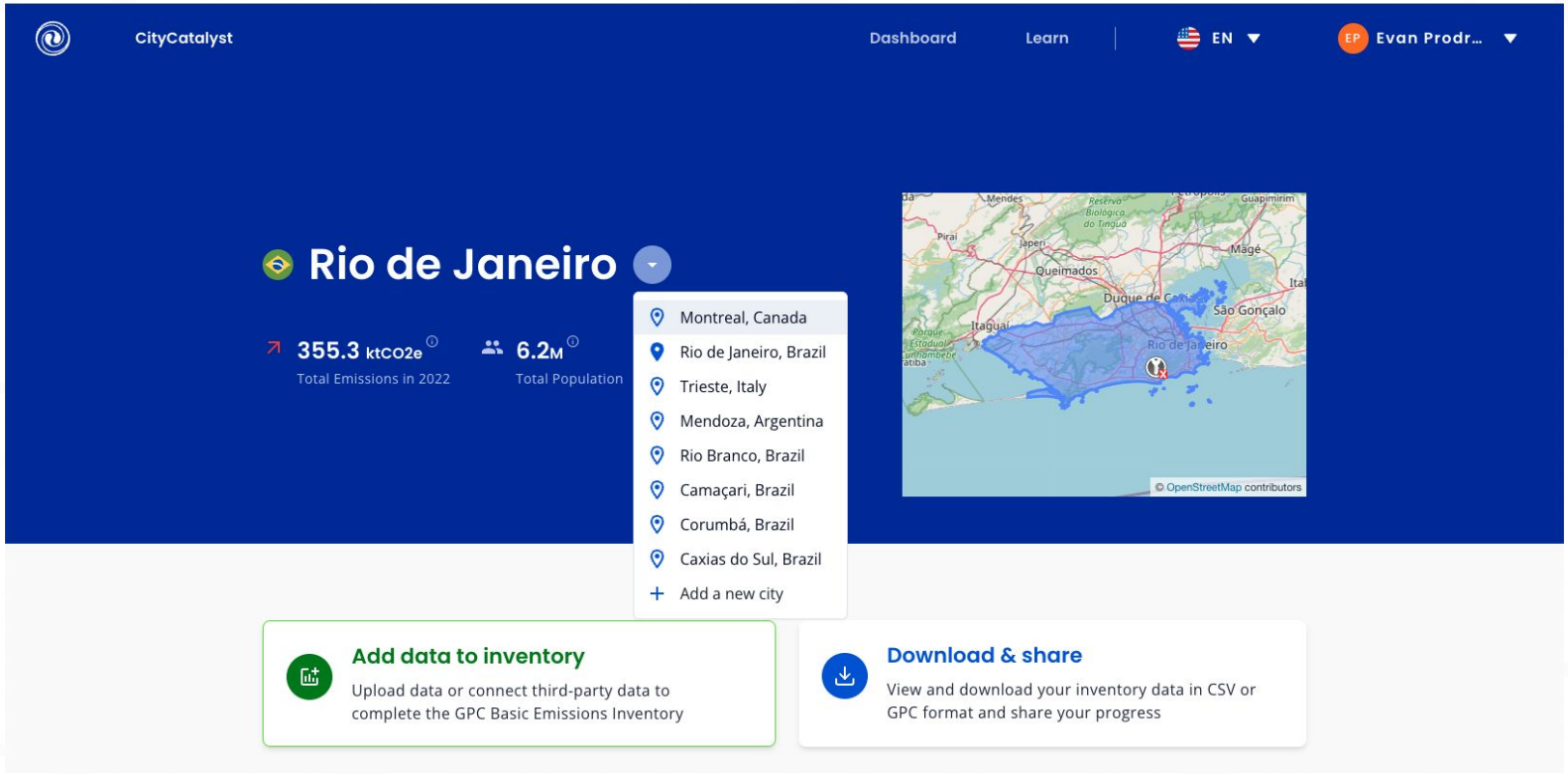


Open Earth Foundation
Open Source to fight climate change

Evan Prodromou
Director of Open Technology

Milan Gruner
Technical lead

CityCatalyst – Greenhouse Gas Inventories for Cities



What is a greenhouse gas inventory?

Accounting
For all greenhouse gases emitted by or within a city

Purpose

Ordered
By sector, gas, scope

Hierarchy

Standard
GHG Protocol for Cities

Format

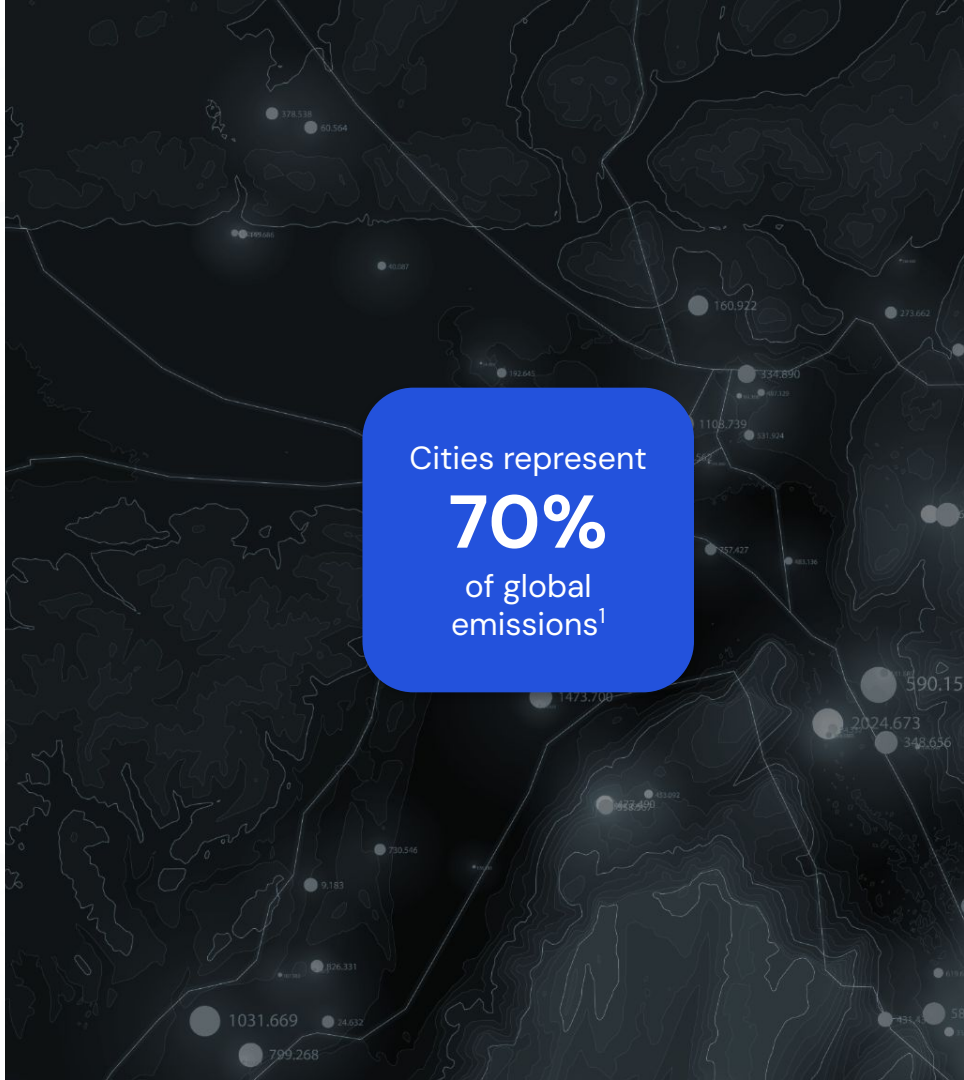
Why it matters

Measurement leads to climate action
Cities that track emissions are more likely to act

Necessary for investment
Grant-makers require an inventory

Coordination with other actors
Regional, national, corporate

Transparency for citizens
Holding city governments accountable



Challenge

Only 5% of Cities Have a Greenhouse Gas Inventory

Data

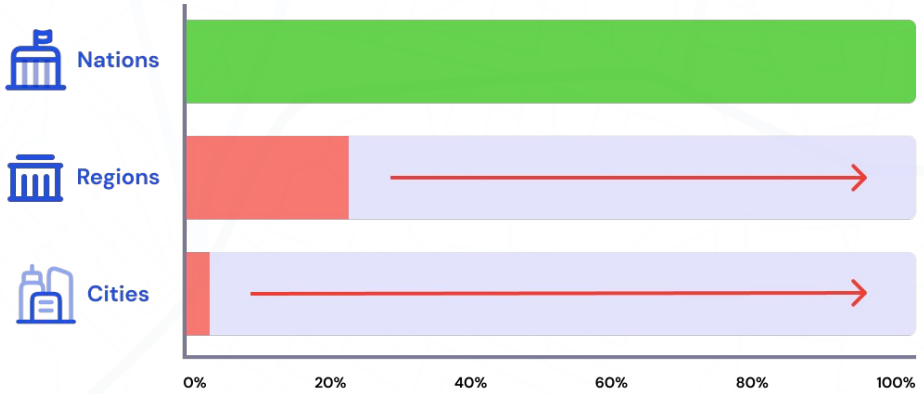
For every sector

Access

Personnel

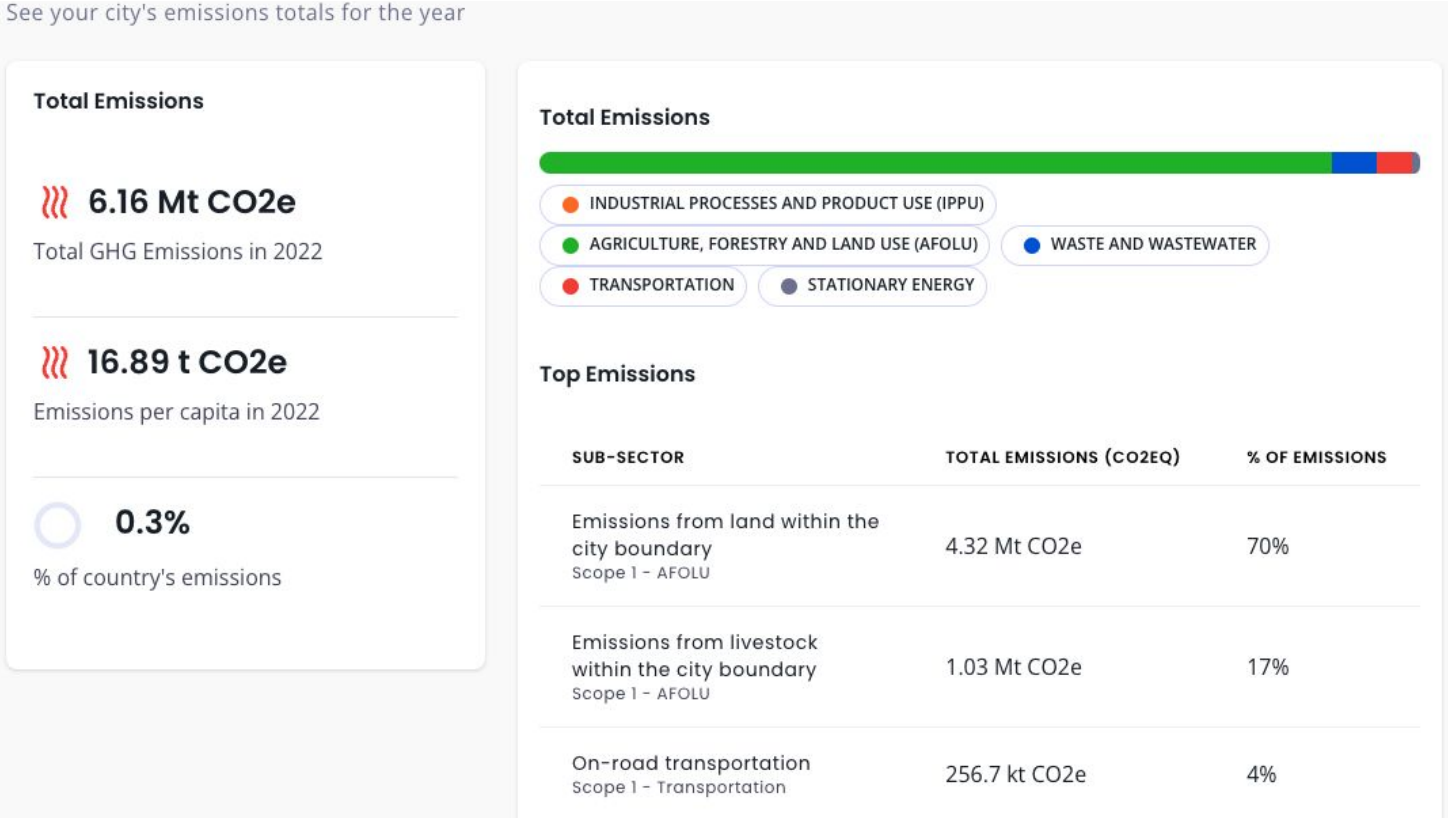
Of input and output

Reliability



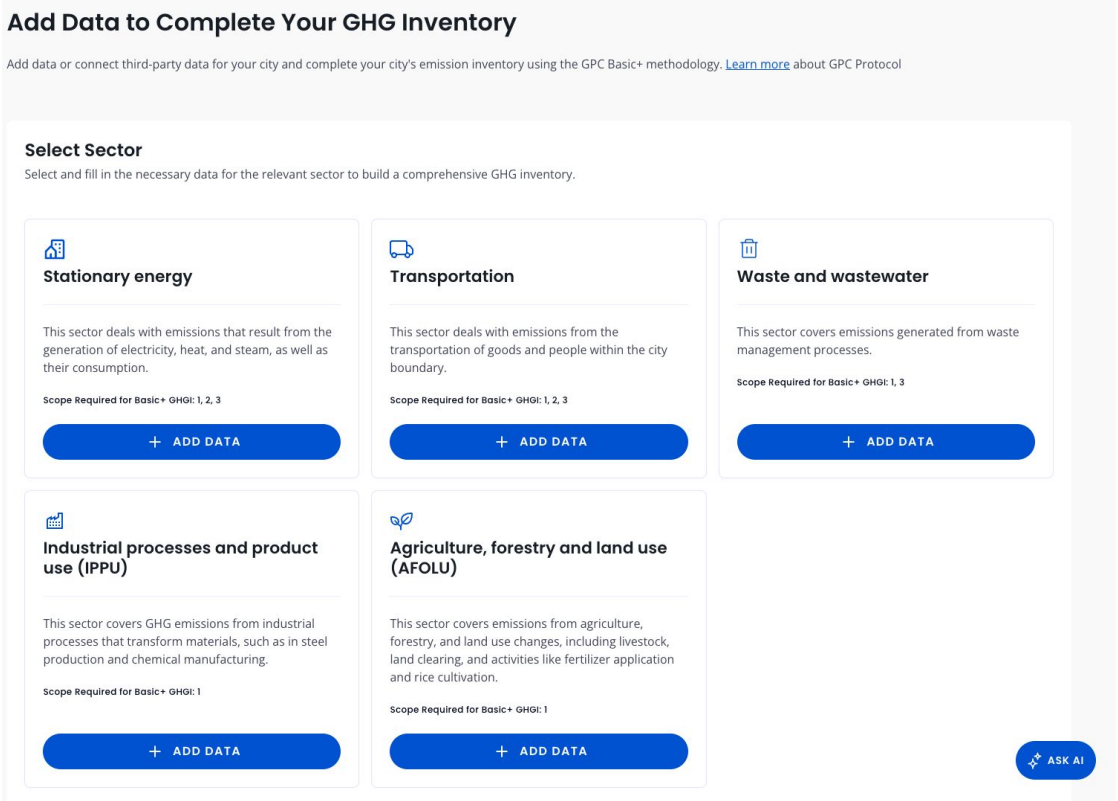
Overcoming

Web App For GHG Inventories



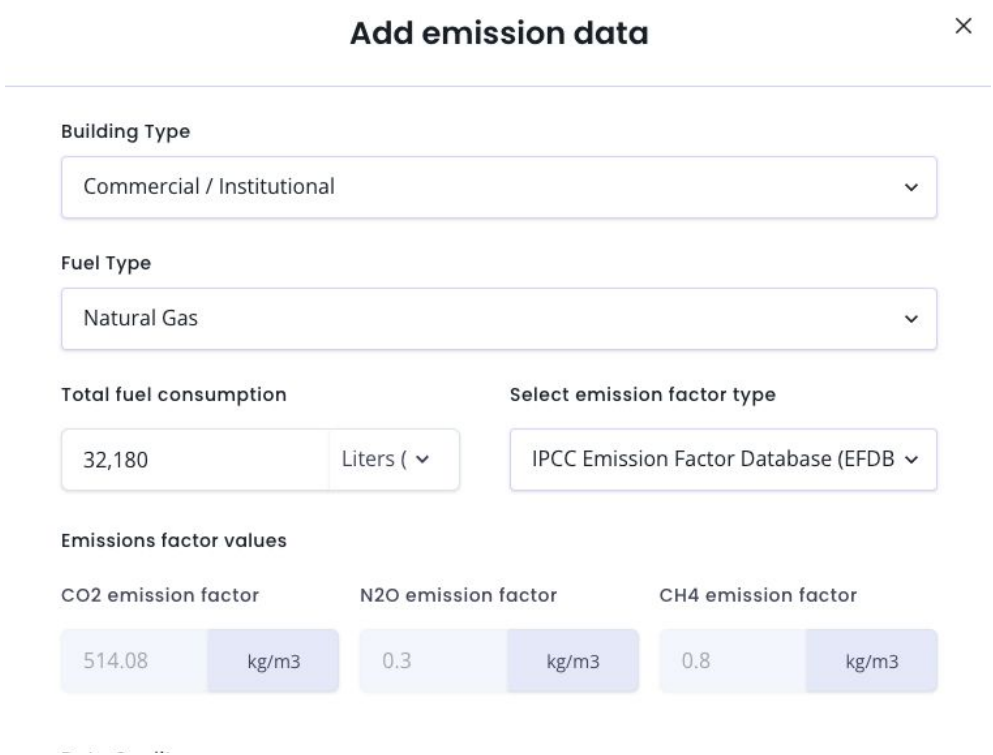
Overcoming

Global Data Warehouse For Easy Integration of Data



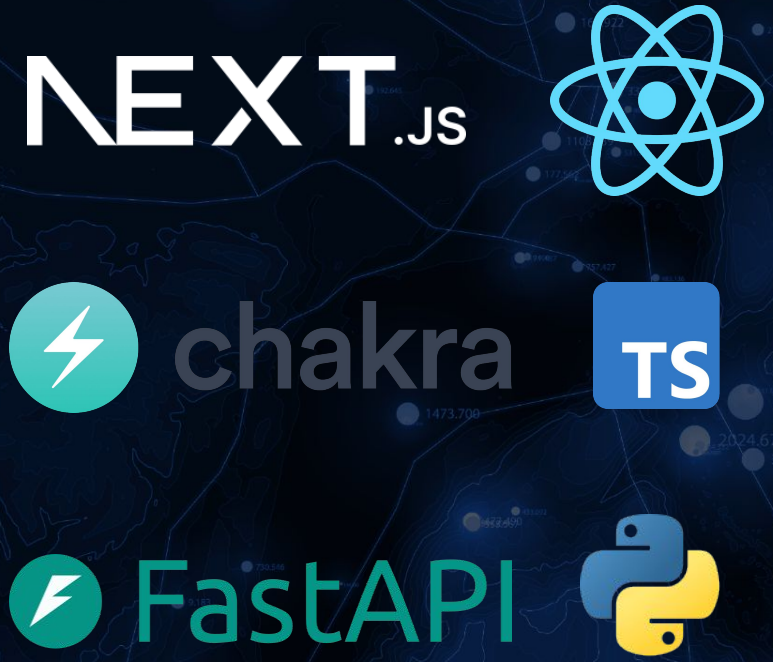
Overcoming

Guided data input for locally-sourced data



Implementation

How we built it



- Built using React, TypeScript, NextJS, ChakraUI, Postgres, Sequelize, AuthJS, Nivo, Pigeon Maps, Zod, i18next, decimal.js, …
- Separate API for accessing data sources that different instances can connect to (because the individual data sources are very large) built on Python, FastAPI
- Data pipeline with Python, Pandas, and Mage AI to process large data sets into GPC standard and group by individual cities

Pilot project

Brazil Pilot Project

- 50 cities in Brazil are getting a climate inventory (GHGI), climate action plan (CAP) and climate change risk assessment (CCRA) in this pilot project
- Collaboration with I Care Brasil for attaining the relevant data sources to supplement the publicly available ones
- 5 cities have been completed, the remaining ones are being finished in the next 2 months

Get involved

How to **contribute**

- Create issues to report bugs or propose features
- Open pull requests
- Reach out to us

https://github.com/Open-Earth-Foundation/CityCatalyst


CityCatalyst
Evan Prodromou, Milan Gruner
Open Earth | Foundation