greendeal report

MILESTONE 3

May 7, 2020

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EU GREEN DEAL

European Climate Law aimed at making the EU climate neutral by 2050.

AREAS OF FOCUS

ZERO POLLUTION

HIGH-QUALITY FOOD

AFFORDABLE SECURE ENERGY

SMARTER TRANSPORT

PROBLEM

Data is critical to measuring success

Available data is complex and widely dispersed

Tracking goals is challenging

No tools to match detailed data to high level targets

SOLUTION

Single platform

Accumulate data across numerous sources

Consolidated and summarized presentation of data

Customizable, impactful and actionable visualizations

Extensible

DATA SOURCES WE'RE INGESTING

SATELLITE IMAGES

Via REST requests with NetCDF file payloads. Hourly images for each pollutant.

REGION MAP POLYGONS

GeoPandas shape file payloads. 4 regional heirarchies.

AIR QUALITY SENSOR DATA

Via REST requests with CSV payloads. 5000 stations of hourly data.

POPULATION BY REGION

Via REST requests with CSV payloads.

EMISSIONS BY SECTOR

Via SPARQL requests with RDF payloads.
Annual output for all sectors and all pollutants.

AIR QUALITY GOALS

Via REST requests with CSV payloads.
For all pollutants.

LIVE DEMO

DESIGN

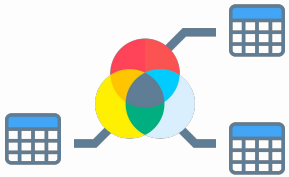
MODEL

Collects Data

RDF CSV SHP NetCDF

CONTROLLER

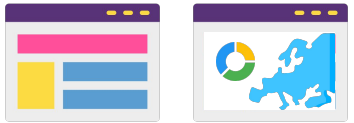
Combines Data



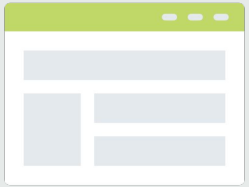
REST API

VIEW

Visualized Data, Admin UI, etc



EXTENSIBLE DESIGN



MODULAR UI

A graphical interface which uses configurable data tiles.

SIMPLE APIs

APIs which abstract away the underlying data structures.

ABSTRACT CLASSES

Abstract classes with versatility to adapt to various domains and data sources.

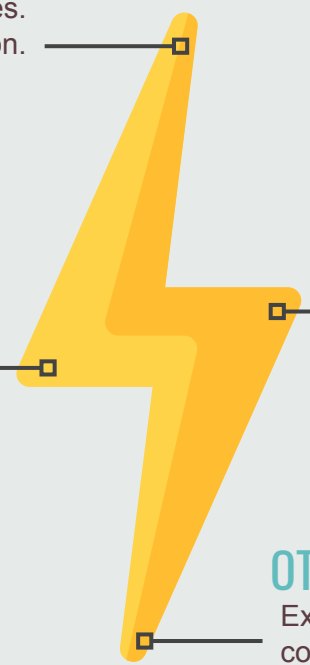
CHANGES FROM INITIAL SCOPE

DATA SOURCES

Included 6 types of data from 3 sources.
Additionally added sectors, population.

TECH STACK

AWS changes.
Bitbucket instead of Github.



VISUALIZATIONS

No Angular
Added Bokeh charting
Bootstrap material design

OTHER MAJOR CHANGES

External APIs, testing (81% code coverage) and documentation.

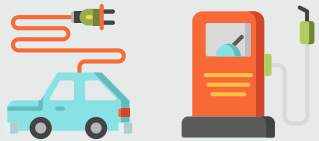
LESSONS LEARNED

DATA ZOO

Companies aren't always the best for data discipline, and Governments aren't either.

LOGIC IS HARD

Deciding is harder than doing.



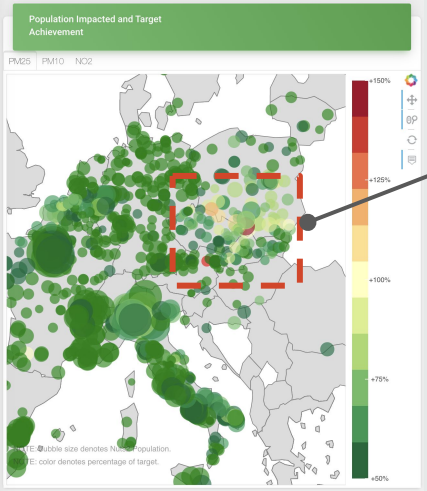
UX HARD TO BUILD

Meaningful visualizations are easy to use but very hard to design.

INSIGHTS

POLAND FIRES

The impact of recent fires in Poland can be seen from high-concentrations of PM2.5 and PM10 readings in regional views.

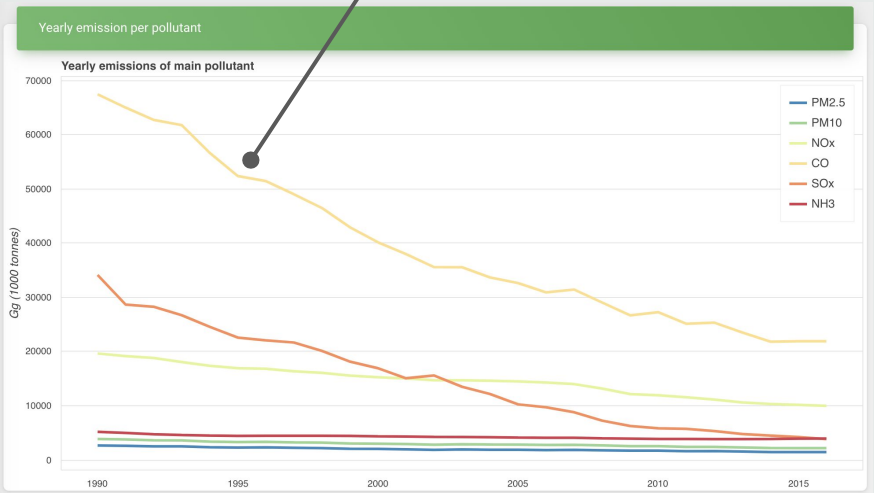


COVID 19

From an initial look at air quality trends, Covid seems to be contributing to reduced PM 2.5 levels and Ozone levels.

EMISSION IMPROVEMENTS

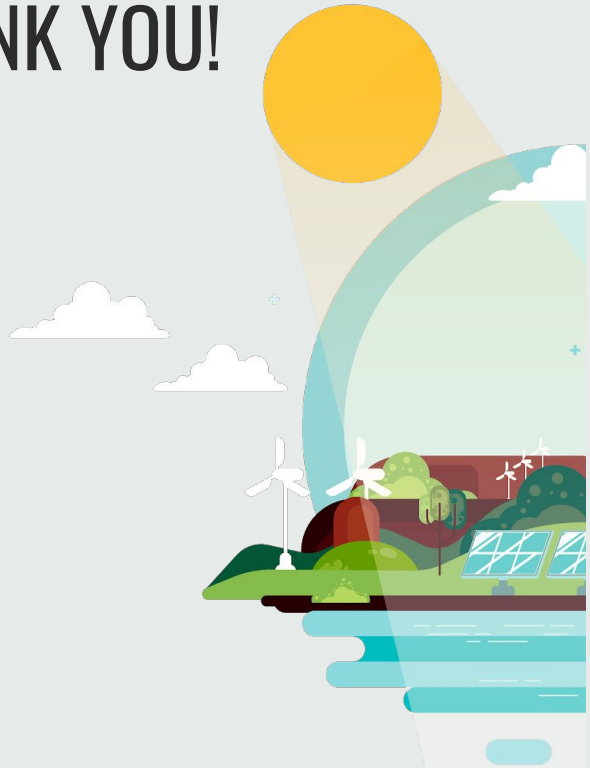
The EU has dramatically reduced emissions from all air pollutants that we report on over the past 20 years.



NEXT STEPS... PRESENTING IN BRUSSELS?

Thanks to our customer recommendation, we were inspired to apply to the Datathon program organized by the Publications Office of the European Union. If selected, we will be presenting our project at the European Week of Regions and Cities in Brussels in October.

THANK YOU!



Questions?