

Presented by: Algorithm

# Green Grid

Smarter Routing for  
Sustainable Energy  
Infrastructure

<https://github.com/mifavoyke/GreenHack>

# Agenda

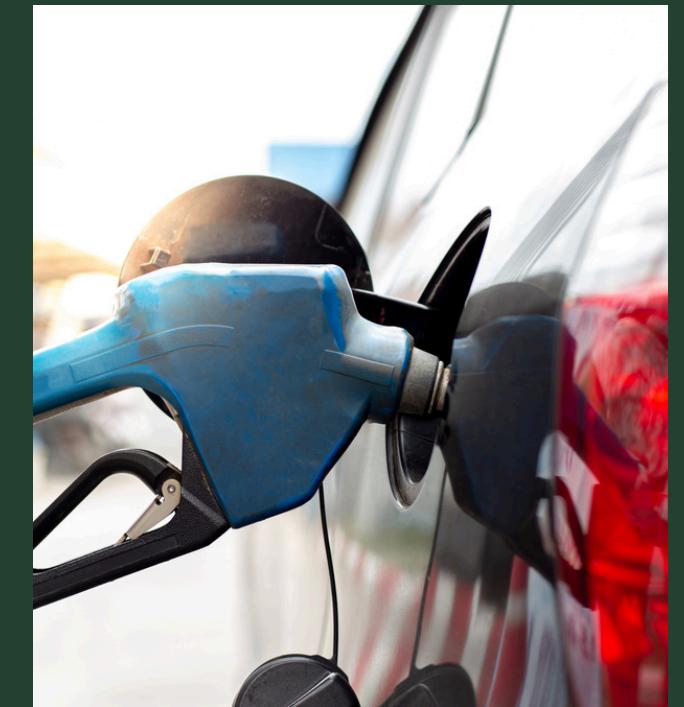
1. Concept
2. Progress
3. Future prospects



# The Problem

Current power grid expansion often overlooks ecological sensitivity and climate conditions, resulting in long-term environmental costs and planning inefficiencies

- 
- 
- 





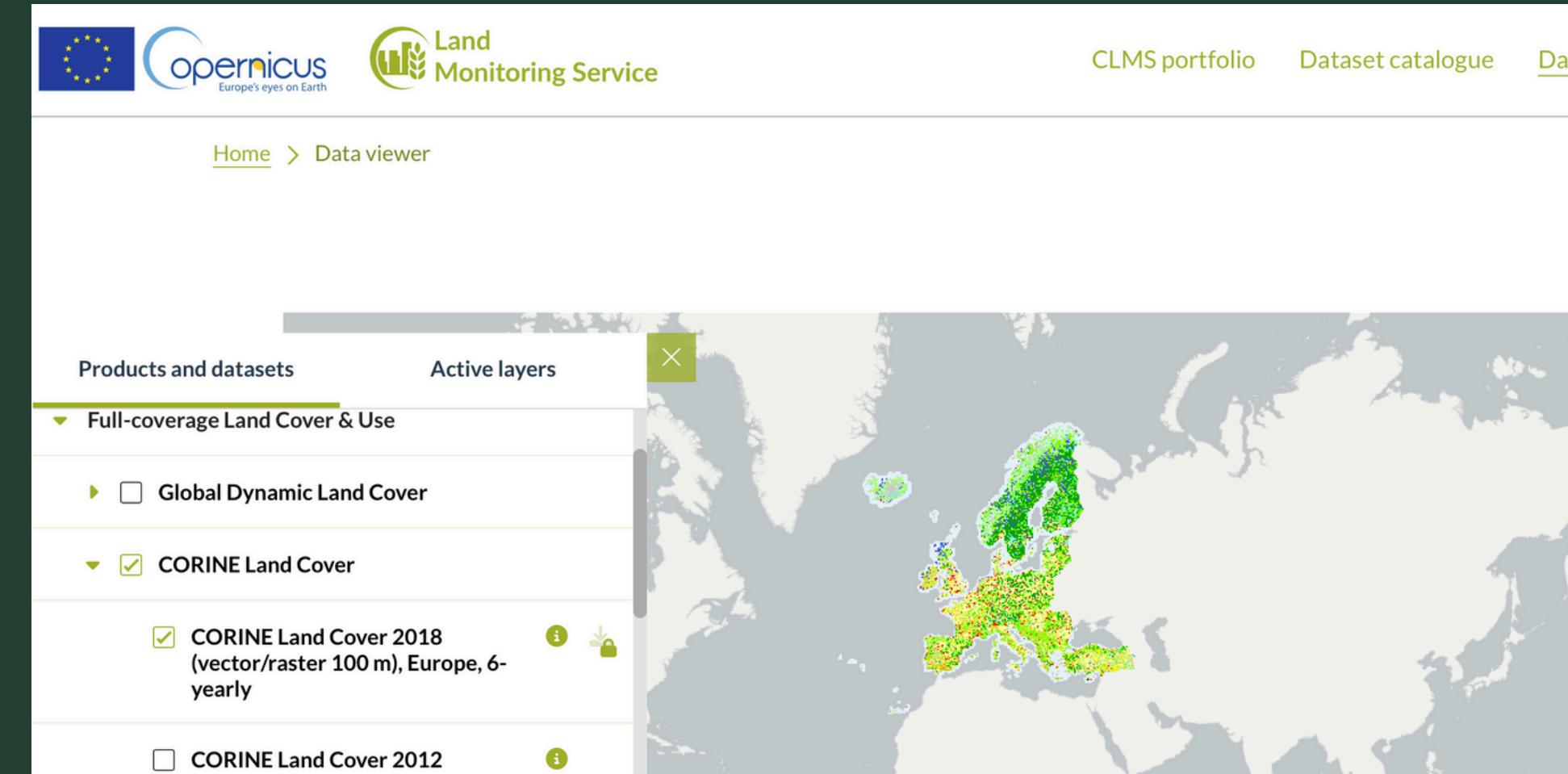
# The Solution

## A Web-based Tool

- Target audience: professionals (urban planners, civil engineers)
- Suggests **optimal power grid routes** through multi-factor analysis.
- Visualises and compares multiple alternative routes based on cost and sustainability.

# Data Used

- Minimises ecological disruption using datasets like **CORINE, Natura 2000, and ZABAGED.**



- Accounts for climate factors like temperature and soil moisture in real time.

# Demo

○ ○ ○ ○ ○

The screenshot shows the homepage of the GreenBean application. At the top left is the logo "GreenBean" with a green coffee cup icon. The top right features navigation links for "Home" and "Browse", and a user profile icon. A large central heading reads "Plan energy transmission routes" with a green sprout icon above it. Below the heading is a subtitle: "Explore and plan transmission routes across Czech Republic based on national data". A search form is centered, containing a search bar with "Prague" and a green "Browse and Plan" button. Below the search form is a note: "Examples: 'Prague', '50.0755, 14.4378', or leave empty for Czech Republic". At the bottom of the page, copyright information and developer links are provided: "© 2025 Algorythm. All rights reserved.", "Zuzana's GitHub: <https://github.com/zuzanapiarova>", and "Yeva's GitHub: <https://github.com/mifavoyke>". The footer also includes links for "Home", "Terms of Service", and "Contact".

GreenBean

Home Browse

Plan energy transmission routes

Explore and plan transmission routes across Czech Republic based on national data

Search Location

Prague

Browse and Plan

Examples: "Prague", "50.0755, 14.4378", or leave empty for Czech Republic

© 2025 Algorythm. All rights reserved.

Zuzana's GitHub: <https://github.com/zuzanapiarova>

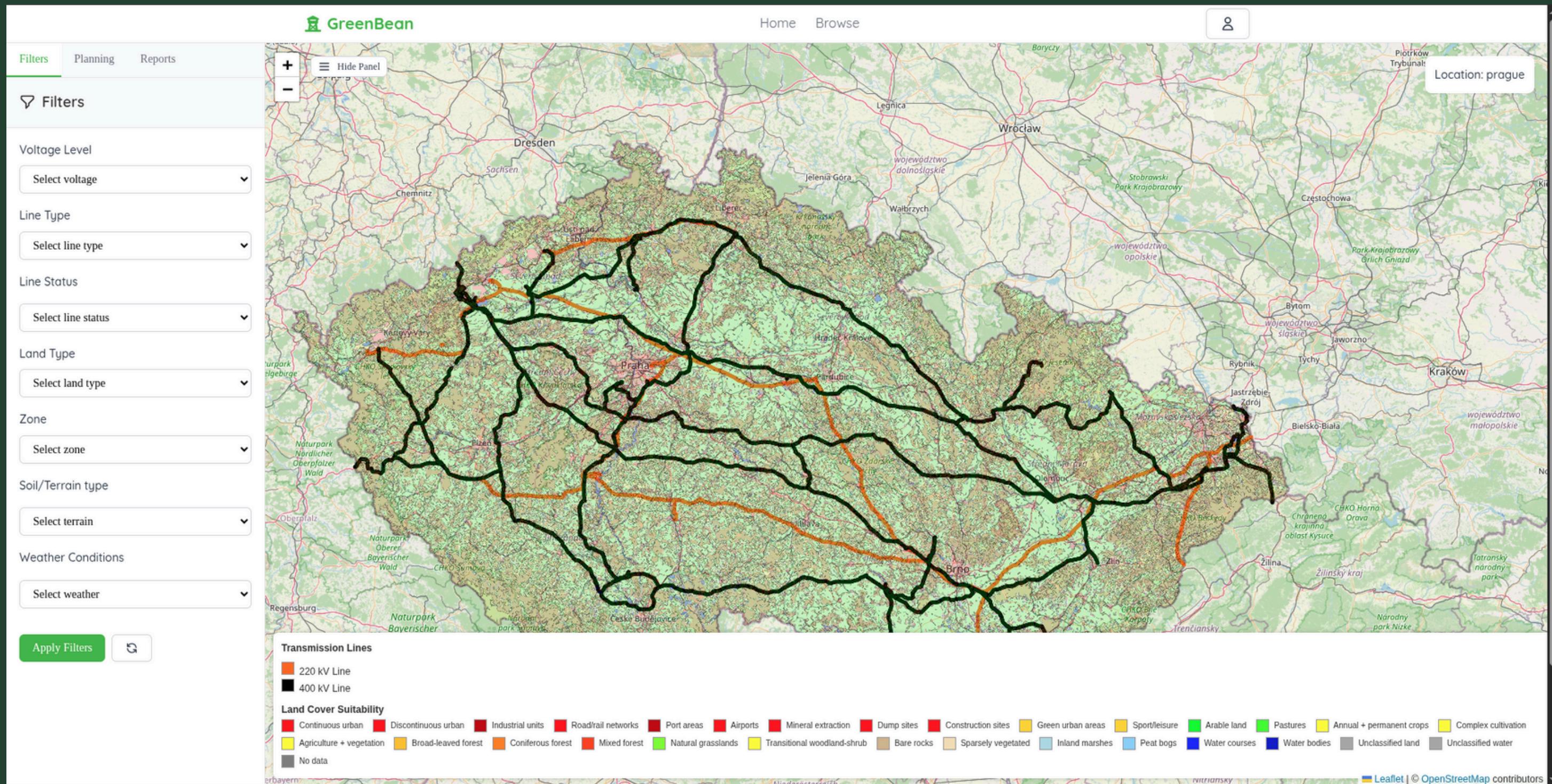
Yeva's GitHub: <https://github.com/mifavoyke>

Home Terms of Service Contact

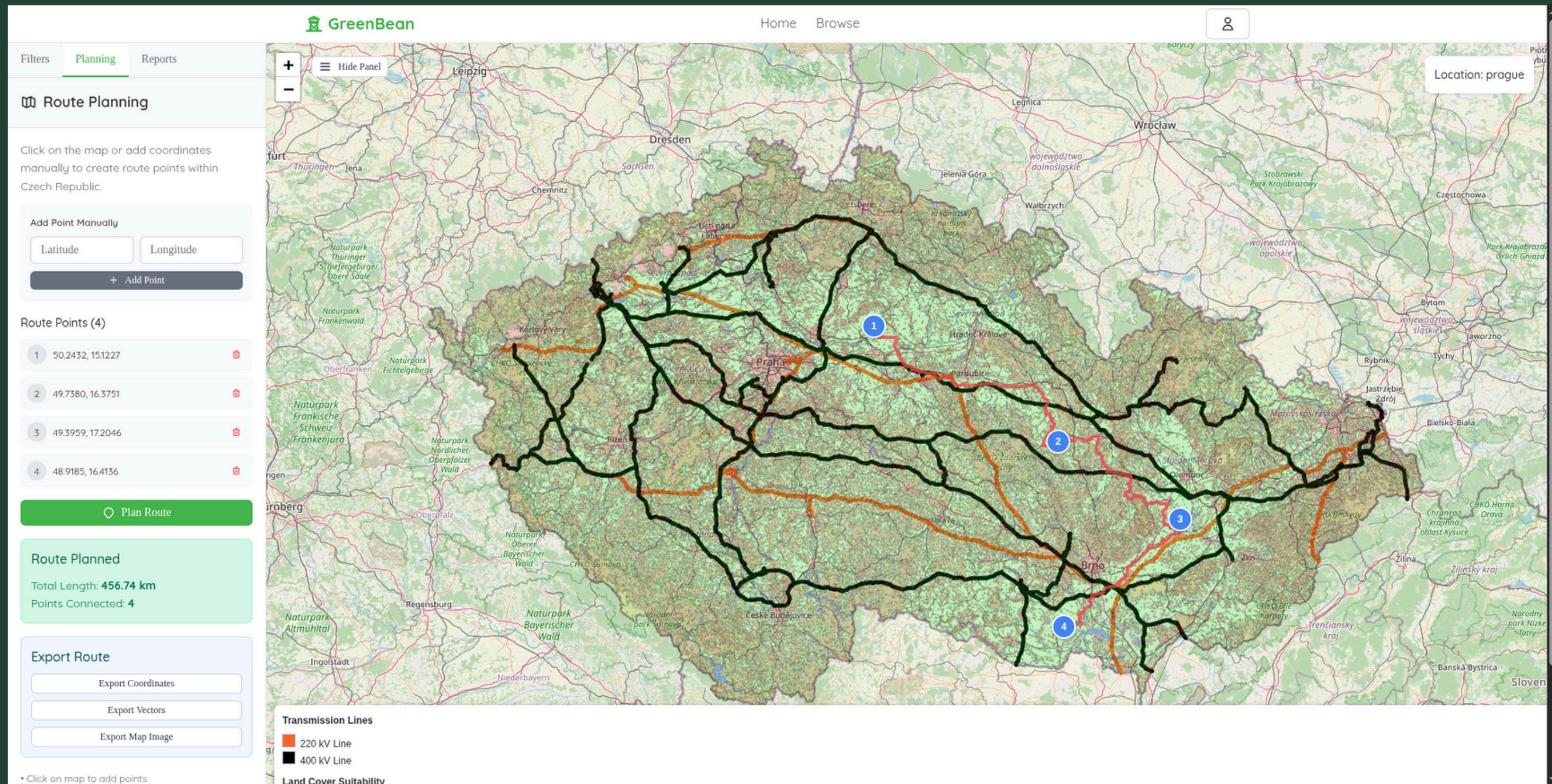
<https://github.com/mifavoyke/GreenHack>

# Demo

○ ○ ○ ○ ○

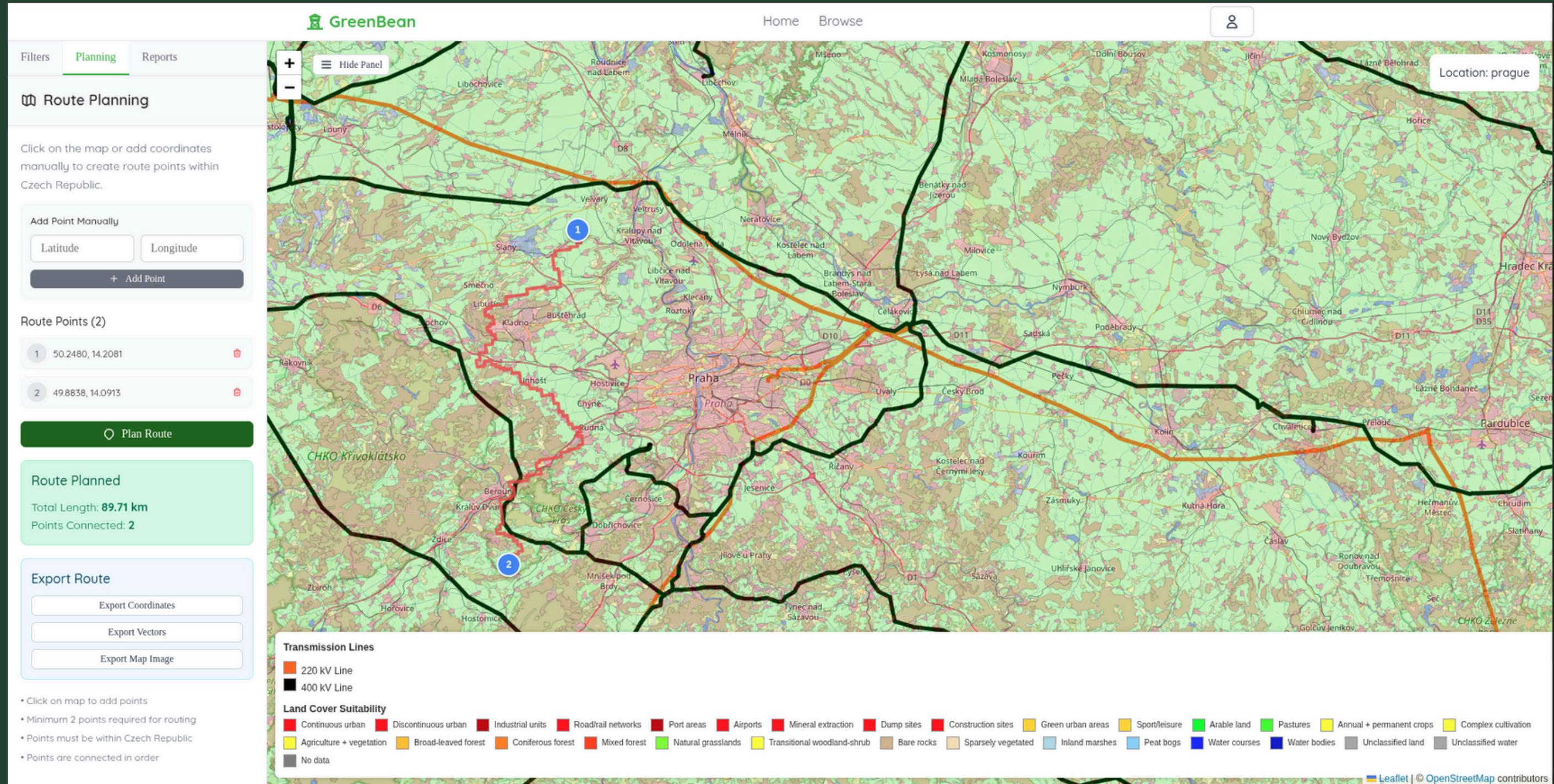


# Demo



# Demo

○ ○ ○ ○ ○



<https://github.com/mifavoyke/GreenHack>



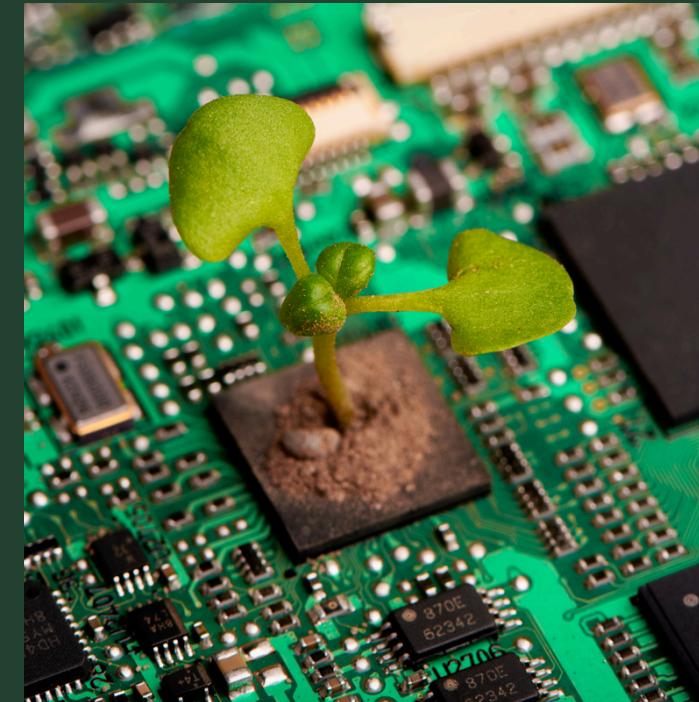
# Future Development Goals

○ ○ ○ ○



## Smarter AI

Integrate machine learning for dynamic impact scoring



## Integration

Plug directly into GIS platforms used by professionals (ArcGIS, QGIS plugins)

## More Data

Add flood maps, biodiversity indices, and carbon sink data

## Multi-Criteria Routing

Enable routes based on user-set priorities (cost vs sustainability)

o o o o o

# Our Team



**Zuzana Piarova**

Full-Stack  
Developer



**Yeva Husieva**

Algorithm/AI  
specialist



LinkedIn:

<https://www.linkedin.com/in/zuzanapiarova>

<https://github.com/mifavoyke/GreenHack>

# Thank you

○ ○ ○ ○ ○

