

Interreg
Baltic Sea Region



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SMART GREEN MOBILITY

HyTruck

Breakfast briefing HyTruck Spatial Planning Toolkit

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interreg-baltic.eu/project/HyTruck



Spatial Planning Toolkit

Overview

- Context: support the planning of HRS
- Work package main work period 2 years: 2023-2024 (2025 maintenance)
- Iterative process:
 - tool capabilities vs stakeholder needs
 - Tool to help stakeholders find good / needed locations for HRS
 - Stakeholders input (relevant criteria)
 - started with research component, literature review (criteria, methods)
- Implementation to support HRS planning and iterative stakeholder feedback, and to visualise and present project outcomes

Concepts 1 (3)

Suitability analysis

- selected criteria are amalgamated into a global grid system (IGEO7)
- evenly sized grid cells at ca 1km resolution
- classified based on literature review (and stakeholder inputs)
- assign basic suitability values ranging from 0 (not suitable) to 10 (very suitable) to each criterion within each grid cell
- base suitability score for each grid cell is then calculated as average



About the project

Web map

Layers' weights

Feedback

AHP ^

Suitability

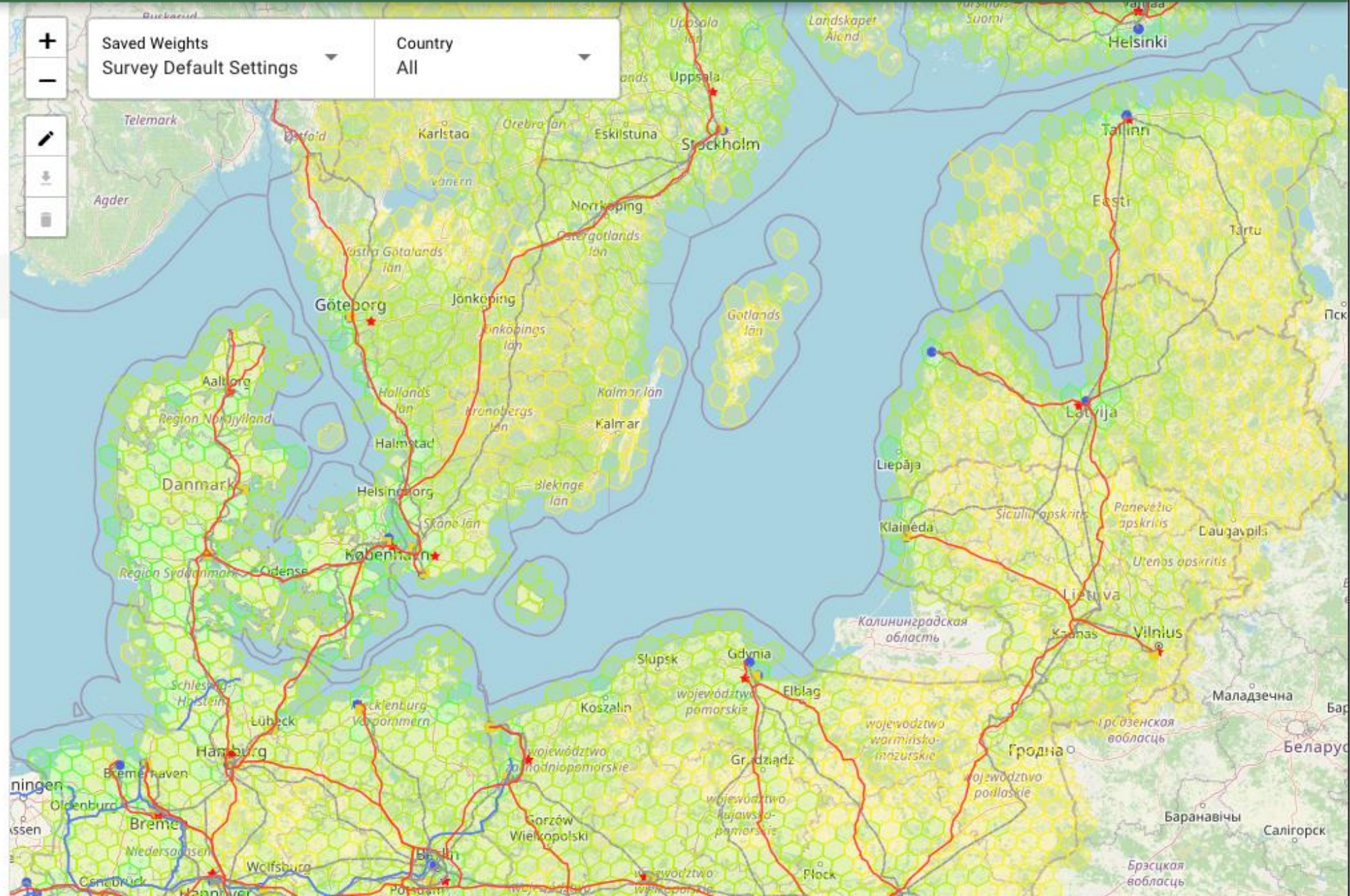
Overview v

EHB v

Power v

Ten-T v

H2live v



Concepts 2 (3)

Spatial suitability weighting (AHP and survey)

- The HRS construction suitability is informed by various spatial input criteria, and then weighted
- AHP-derived weights are informed by scientific literature, objectivity and consistency
- Survey weights were created from stakeholder interviews and their expert knowledge

modelled_fuel_stations
modelled_seashore
modelled_solar_wind
modelled_urban_nodes
modelled_water_bodies
modelled_gas_pipelines
modelled_hydrogen_pipelines
modelled_corridor_points
modelled_powerlines
modelled_transport_nodes
modelled_residential_areas
modelled_rest_areas
modelled_slope
suitability

Concepts 2 (3)

Layer name	Weight
Modelled fuel stations	0.059
Modelled seashore	0.041
Modelled solar wind	0.057
Modelled urban nodes	0.093
Modelled water bodies	0.048
Modelled gas pipelines	0.050
Modelled hydrogen pipelines	0.080
Modelled corridor points	0.085
Modelled powerlines	0.076
Modelled transport nodes	0.086
Modelled residential areas	0.068
Modelled rest areas	0.061
Modelled slope	0.062

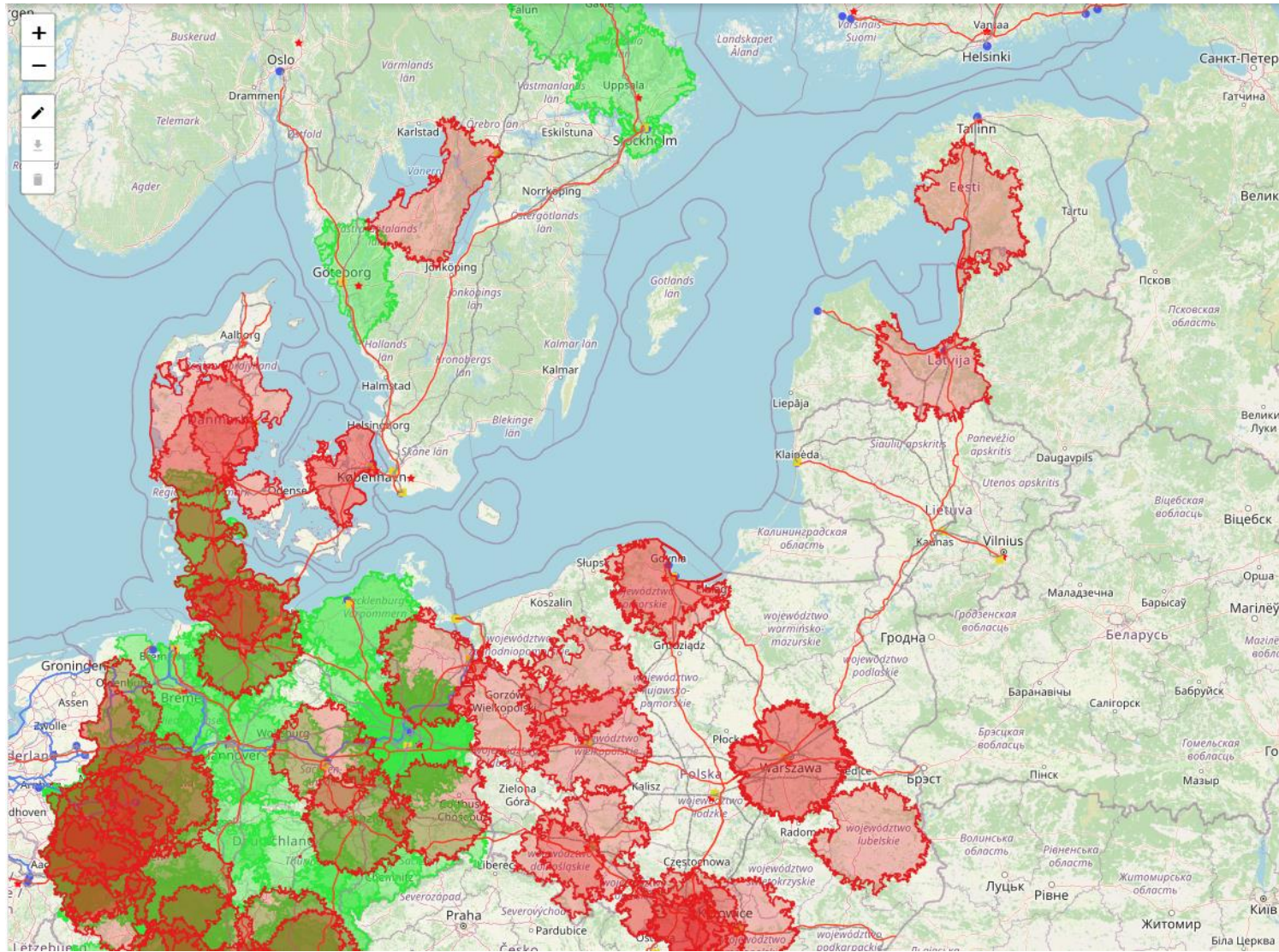
cellid	354653
modelled_fuel_stations	4
modelled_seashore	2
modelled_solar_wind	2
modelled_urban_nodes	2
modelled_water_bodies	10
modelled_gas_pipelines	4
modelled_hydrogen_pipelines	4
modelled_corridor_points	0
modelled_powerlines	6
modelled_transport_nodes	4
modelled_residential_areas	6
modelled_rest_areas	2
modelled_slope	8
suitability	3.97690529959836

Survey-based weights

Concepts 3 (3)

Spatial Allocation of HRS Placement

- Use planned/envisioned and existing HRS
- distribute potential minimal number stations (200 km) along Ten-T core roads
- Calculate service areas, i.e. reach from
- Prefer locations with higher suitability



“Service areas”

- existing and potential locations
- 200 km reach along Ten-T core road network

Login and authentication system

- Keycloak SSO software, user self-service (e.g. change pass)
- Does everybody have login, especially the pilot partners?
- <https://hytruck.landscape-geoinformatics.eu/>
- <https://auth.landscape-geoinformatics.eu/realms/HYTRUCK/account/>

DEMO

Functionalities

- Web map, zoom, pan, legend
- Limit view to a country / partner region
- Suitability grid, different weights for suitability visualisation
- Informative layers
- Feature info, activate/deactivate layers
- Service area function, export, delete
- Documentation link
- Login / account
- Create, edit, delete own suitability weights based
- Submit and review/edit submitted feedback

Outlook 2025

- Maintenance and documentation („polishing“)
- Partner Meeting Vilnius (March)
- collect priority feedback
- Direct data query and API access
- More usability features Potentially more data sources and criteria?
 - HRS Availability Map (vs H2.live)
 - EHB future scenarios
 - Localizer Market place
 - Traffic flow data

- make data and code open-source

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Thank you!

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