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Web Processing - Standardized GIS Analyses for Cable Route Planning

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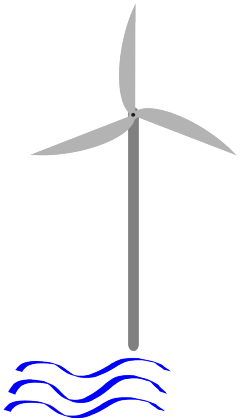
Topic and Motivation

Topic

- route planning, e.g. connection of offshore wind farms to the power grid
- conflicts with land usage, land coverage, regulation
- routing cables from landing point to final position
- offer a standard web service for the routing

Motivation

- Energy Security
- Contribution to important real world problems



Timetable

Start Date	End Date	
09/23/2022		Project Start
09/23/2022	10/10/2022	Initial Literature Study
10/01/2022	10/23/2022	Initial Data Search
10/14/2022		Kick-Off Presentation
10/16/2022	10/28/2022	Data Conversion/Costs/test execution
10/28/2022	12/31/2022	provide WPS/implement LCP
12/02/2022		Midterm Presentation
12/14/2022	02/01/2022	Optimization/Research Issue
02/01/2022		Feature Freeze
02/01/2022	02/28/2023	Finalizing Report
02/28/2023		Submission
03/15/2023		Final Presentation

Get Land coverage/ usage planning

Method

- Least cost path (LCP)
  1. input: Destination and Cost Raster
  2. Aggregated Cost and Backlink $\rightarrow$ Route
- Web Processing Service (WPS)
  - standardized GIS[1] web service
  - processing spatial data (Raster and Vector)

Research Issue

- optimization of rasterization
- reduce area of high resolution raster

[1] Geographic information system