

From Data to Direction: Tracking the Local Energy Transition Progress through a Composite Index

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Project Description

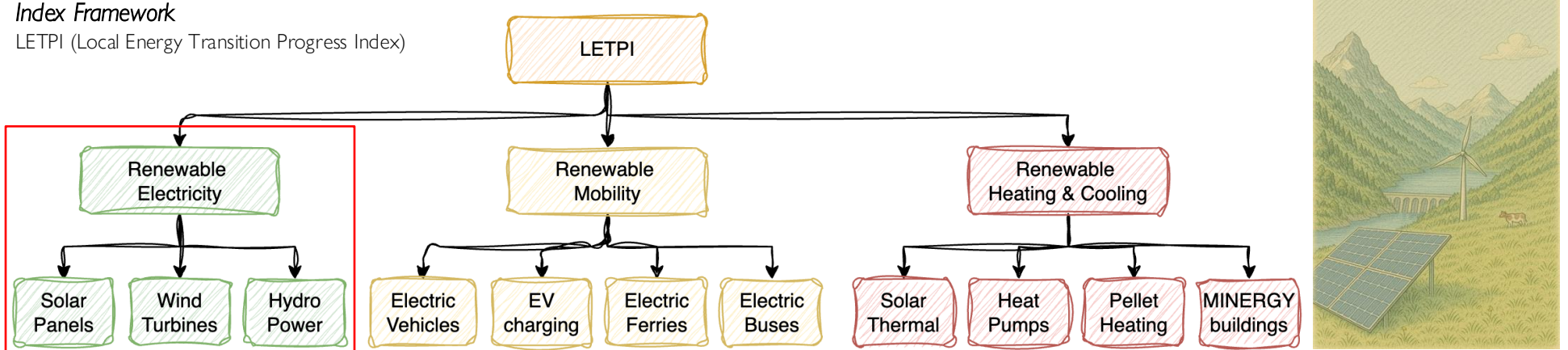
This poster presents the concept and early-stage development of the Local Energy Transition Progress Index (LETPI), a composite framework designed to assess and compare renewable energy progress across regions within a country. The pilot version is being developed for Switzerland, with plans to expand to Ukraine and beyond. LETPI focuses on solar, wind, hydropower, and electric vehicles, using multi-source data to visualise regional differences and support decentralisation.

The goal of this research project is to display progress through regional rankings, color-coded heatmaps, and a planned interactive dashboard, offering data-driven insights into opportunities and challenges in the local energy transition.

Research Methodology

Index Framework

LETPI (Local Energy Transition Progress Index)



Canton	Population	Solar (S) (avg) (MWp/1,000 ppl)	Wind (W) (MW/1,000 ppl)	Hydro (H) (MW/1,000 ppl)	LETPI	Sources	Ranking
Grisons	204,888	1.586	0.016	13.193	0.773	Suisseéole, 2023; Swissolar, 2023; BFE/FOE, 2023; opendataswiss, 2023; iea, 2023; IRENA, 2021&2023, EMBER, 2023	👑👑👑
Bern	1.063,533	0.470	0.053	1.266	0.200		👑
Valais	365,844	1.650	0.045	12.458	0.938		👑👑👑

Weighting formula: Total Renewable Energy Share

$$LETPI_i = 0.5S'_i + 0.3H'_i + 0.2W'_i$$

S'_i : normalised solar installed capacity (MWp/1,000 inhabitants)
 H'_i : normalised hydro installed capacity (MW/1,000 inhabitants)
 W'_i : normalised wind installed capacity (MW/1,000 inhabitants)

All values are min-max normalised (0–1) across cantons to ensure comparability.

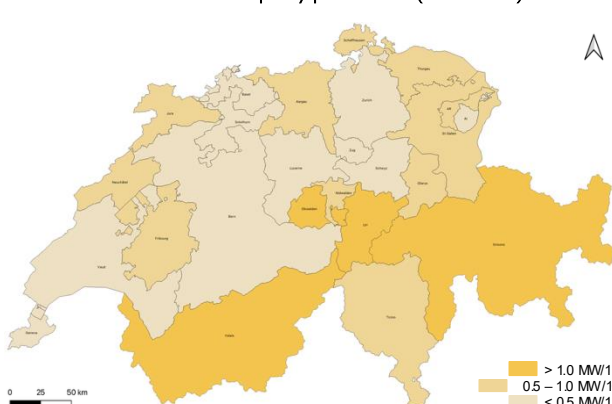
Preliminary Results

Installed Capacity in MW per 1,000 inhabitants for Swiss Cantons (2023) and Ukrainian Oblasts (2021)

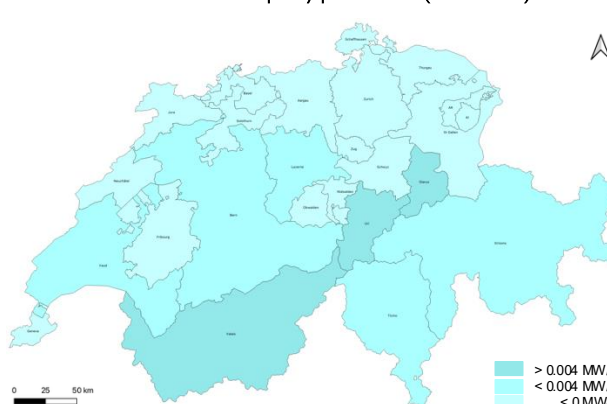
26 Swiss Cantons | 24 Ukrainian Oblasts + Crimea and two cities with specific status (Kyiv and Sevastopol)*

* No data for Sevastopol and Crimea because of occupation starting from 2014

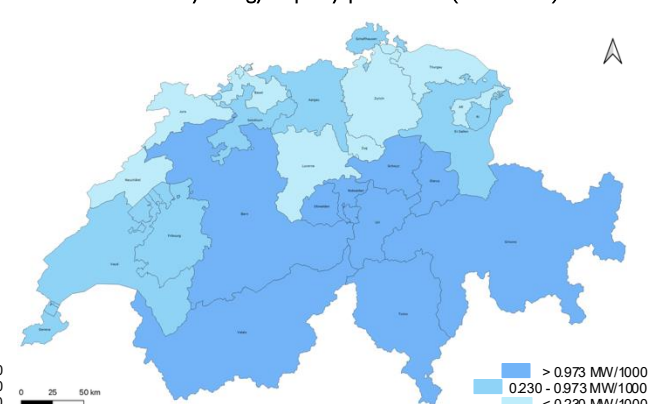
Installed Solar Capacity per Canton (Switzerland)



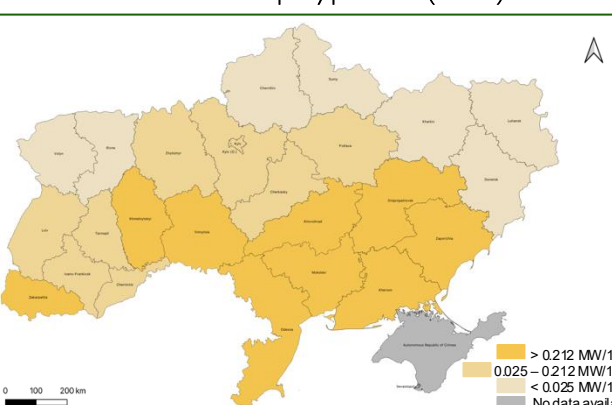
Installed Wind Capacity per Canton (Switzerland)



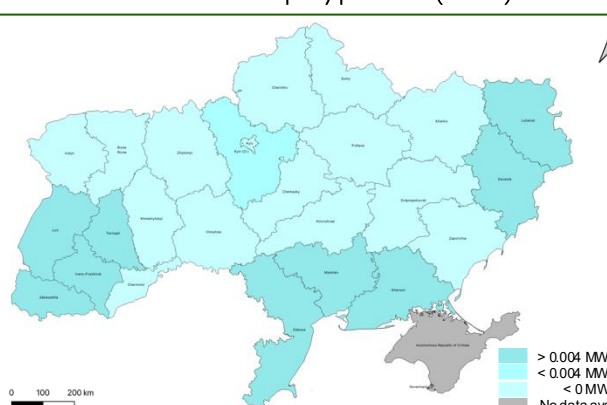
Installed Hydrology Capacity per Canton (Switzerland)



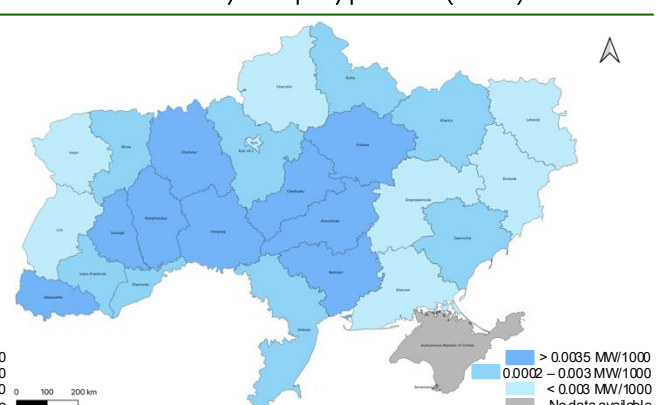
Installed Solar Capacity per Oblast (Ukraine)



Installed Wind Capacity per Oblast (Ukraine)



Installed Hydro Capacity per Oblast (Ukraine)



Recommendations

- A – A lack of real-time data hampers progress in the energy transition. What gets measured, gets done. Reliable forecasting is key.
- B – Comparing up-to-date renewable energy data can foster healthy competition between regions and drive local ambition.
- C – Communicating positive achievements helps promote climate action, build momentum, and strengthen public engagement across regions.