



Projet SETP 2050 : Description succincte ([Deutsche](#) / [English summary](#))

P-288 [ELETTRA - Electric Transport Transition Assessment]

Champ d'activité / Type de projet	Bus, ESPT2050, Vehicles Projet de recherche	Durée prévue du projet	1.2025-6.2026
Mandataire / direction du projet	SUPSI Davide Strepparava, davide.strepparava@supsi.ch	Budget total / Contribution OFT	141'745 CHF / 99'532 CHF

Objectives

- Expand the functionalities of the PVxTE web tool, developed as part of the PVxTutt'Elettrico project (BAV ESöV Nr. 249), to enhance its capabilities for assessing the pre-feasibility of bus line electrification.
- Optimize the tool's performance and improve the user experience to ensure its accessibility and ease of use.
- Promote the tool among relevant professional communities to increase its visibility and adoption.
- Provide tailored support to public transport companies, especially small operators, to facilitate their transition to electric vehicle fleets through precise analyses and customized solutions.

Method

The ELETTRA project is organized into six Work Packages (WPs) to streamline activities and ensure effective collaboration:

- WP1 - Project Management: This WP spans the entire project duration and ensures the coordination and overall management of activities.
- WP2 - Web Tool Development: This WP focuses on developing the new web tool in close collaboration with WP3.
- WP3 - Development of Underlying Models: This WP focuses on creating data-driven models to support the web tool, utilizing data from transportation companies that have already electrified some of their lines. It involves close collaboration with WP2.
- WP4 - Model Validation: Validates the models created in WP3, ensuring their robustness and reliability.
- WP5 - Tool Deployment and Testing: Following the completion of a first version of the web tool, this WP aims to finalize its deployment, conduct thorough testing, and improve the tool as needed.
- WP6 - Results Dissemination: The final WP focuses on dissemination and communication activities to conclude the project.

Expected results

- An Intelligent and Free Tool for Public Transport Companies: The ELETTRA application will provide an efficient tool specifically designed for small and medium-sized public transport companies to support them in the initial stages of their transition to electric vehicles (EVs).
- Support for Decision-Making: The tool will simplify the decision-making process for companies with limited resources by offering clear guidance on the necessary steps for electrification.
- A Valuable Resource for External Consultants: The tool will also serve as a foundation for consultants, enabling them to quickly identify priorities such as charging infrastructure, route efficiency, and operational costs.
- Acceleration of Electric Bus Adoption: By making the transition more accessible, the tool will help small and medium-sized public transport companies overcome traditional barriers, such as a lack of expertise, and adopt electric buses more quickly.
- Contribution to a Sustainable Public Transport Network: This widespread adoption will reduce



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emissions and promote green technology, enabling smaller operators to play a key role in creating a more environmentally friendly public transport network.

Deutsche Zusammenfassung

Das ELETTRA-Projekt verbessert das PVxTE-Webtool, um öffentliche Verkehrsunternehmen, insbesondere kleinere Betreiber, bei der Umstellung auf Elektrofahrzeuge zu unterstützen. Es geht die Herausforderungen der Elektrifizierung von Busflotten an, wie Energieverbrauch, Infrastrukturbedarf und Kosten, indem die Funktionalität und Benutzerfreundlichkeit des Tools optimiert werden. Zu den Verbesserungen gehören eine intuitivere Benutzeroberfläche, fortschrittliche Energiemodelle, die Unsicherheiten berücksichtigen, und schnellere Optimierungsalgorithmen für die Batteriedimensionierung.

Das Tool bietet präzise Analysen und umsetzbare Erkenntnisse, die Entscheidungsfindung für Betreiber und Berater vereinfachen. Durch die Beschleunigung des Elektrifizierungsprozesses zielt ELETTRA darauf ab, Hürden für kleinere Betreiber zu reduzieren und so zu nachhaltigem öffentlichen Verkehr und geringeren Emissionen beizutragen. Mit der Veröffentlichung als Open-Source fördert das Tool die Zusammenarbeit und unterstützt die Energiestrategie 2050 der Schweiz, indem es grüne und effiziente Mobilitätslösungen vorantreibt. Das Projekt befähigt Betreiber, die Komplexität der Flottenelektrifizierung mit zuverlässigen, datenbasierten Werkzeugen effektiv zu bewältigen.

English summary

The ELETTRA project enhances the PVxTE web tool to support public transport companies, particularly smaller operators, in transitioning to electric vehicles. It addresses the challenges of electrifying bus fleets, such as energy consumption, infrastructure needs, and costs, by refining the tool's functionality and usability. Improvements include a more intuitive user interface, advanced energy modelling accounting for uncertainties, and faster optimization algorithms for battery sizing. The tool will provide precise analyses and actionable insights, simplifying decision-making for operators and consultants. By accelerating the electrification process, ELETTRA aims to reduce barriers for smaller operators, contributing to sustainable public transport and reduced emissions. Released as open-source, the tool fosters collaboration and aligns with Switzerland's 2050 Energy Strategy by advancing green and efficient mobility solutions. The project empowers operators with reliable, data-driven tools to navigate the complexities of fleet electrification effectively.