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PATTERN

Providing operational economic appraisal methods and practices for decision-making on climate and environmental policies

Policy Brief
Italian Case Study

Decarbonizing Public Transport in the Piedmont Region, Italy

Introduction

The Piedmont Region in northern Italy faces significant environmental and air quality challenges, especially in the heavily polluted Po Valley. In response, the region has embarked on an ambitious strategy to decarbonize its local public transport (LPT) system. This policy brief outlines the region's efforts to modernize its public transport fleet, integrate renewable energy sources (RES), and encourage greater use of public transportation as part of broader goals to reduce carbon emissions and improve air quality.

Policy Context

Piedmont has developed a set of integrated policies aimed at transforming its public transport system into a cleaner, more efficient, and sustainable mobility network. Key policy instruments include:

- **Fleet Modernization**: a major initiative to replace the aging, diesel-powered fleet with electric vehicles (EVs) to reduce emissions. This includes investments to ensure fleet reliability and compliance with European Union (EU) emission standards.
- **Energy Efficiency and Renewable Energy**: the integration of renewable energy source (RES) into the LPT system is central to reducing the region's carbon footprint. Upgrades to infrastructure are being made to support electric transport, including energy production, distribution, and storage systems.
- **Promoting Public Transport**: to further reduce private car usage, the Piedmont Region is promoting public transport adoption through communication strategies and efforts to improve the overall quality and reliability of the services.

Key Findings

- **Short-Term Outcomes**: in the short term, the Piedmont Region expects to see a more modern, reliable, and efficient public transport system with reduced emissions from the fleet. These changes are anticipated to lead to an increase in public transport adoption, as the region strives to improve service quality.
- **Long-Term Outcomes**: over time, these efforts aim to achieve decarbonization targets, enhance air quality, and foster sustainable mobility within the region. The long-term goal is to significantly reduce transportation-related emissions and improve the health and environmental conditions in the Po Valley.

Challenges

While these policies represent important steps toward achieving sustainable mobility, several challenges persist:

- **Fleet Obsolescence**: the region's reliance on an old, diesel-powered fleet presents a significant barrier to achieving rapid decarbonization.
- **Cultural Barriers**: public resistance and negative perceptions of public transport are

slowing adoption rates. Changing citizen behavior is crucial to increasing public transport use.

- **Infrastructure Gaps**: adequate investments are requires in energy production, distribution, and storage infrastructure to ensure the successful integration of electric vehicles into public transport network.

Policy Recommendations

To further enhance the effectiveness of these policies, the following actions are recommended:

- **Accelerating Fleet Modernization**: prioritize investments in replacing old diesel vehicles with electric alternatives, aiming for a full transition to EVs (or low emissions fleet) in Urban Transport.
- **Enhancing Public Transport Image**: implemented targeted public campaigns to improve perceptions of public transport, focusing on reliability, accessibility, and environmental benefits.
- **Expanding Energy Infrastructure**: facilitate comprehensive investments in the energy infrastructure required for electric vehicles, including renewable energy production, storage facilities, and charging stations for public transport vehicles.
- **Encouraging Behavioral Change**: create incentives for individuals to shift from private car use to public transport, potentially through integrated fare schemes, improved coverage, and convenient transit options.
- **Promote Inter-modality** between different modes of transport through modal interchange hubs and comprehensive mobility plans to enhance efficiency and sustainability in mobility.

Conclusions

Piedmont's strategy to decarbonize its public transport system holds significant potential to address air quality issues and reduce carbon emissions in the region. The successful modernization of the LPT fleet, coupled with the integration of renewable energy and the promotion of public transport, will contribute to the region's environmental and health goals. However, overcoming the challenges related to fleet obsolescence, cultural barriers, and infrastructure gaps is critical. By continuing to invest in fleet upgrades, infrastructure, and public engagement, Piedmont can set an example for other regions aiming to achieve a sustainable, decarbonized mobility system.