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Växjö's Fossil Fuel-Free Initiative: A Case Study on the Challenges of Achieving Carbon Neutrality in a Small City

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INTRODUCTION & AIM

With the promotion of SDGs and sustainability, cities are expected to contribute more to the achieving of carbon neutrality by around 2050.

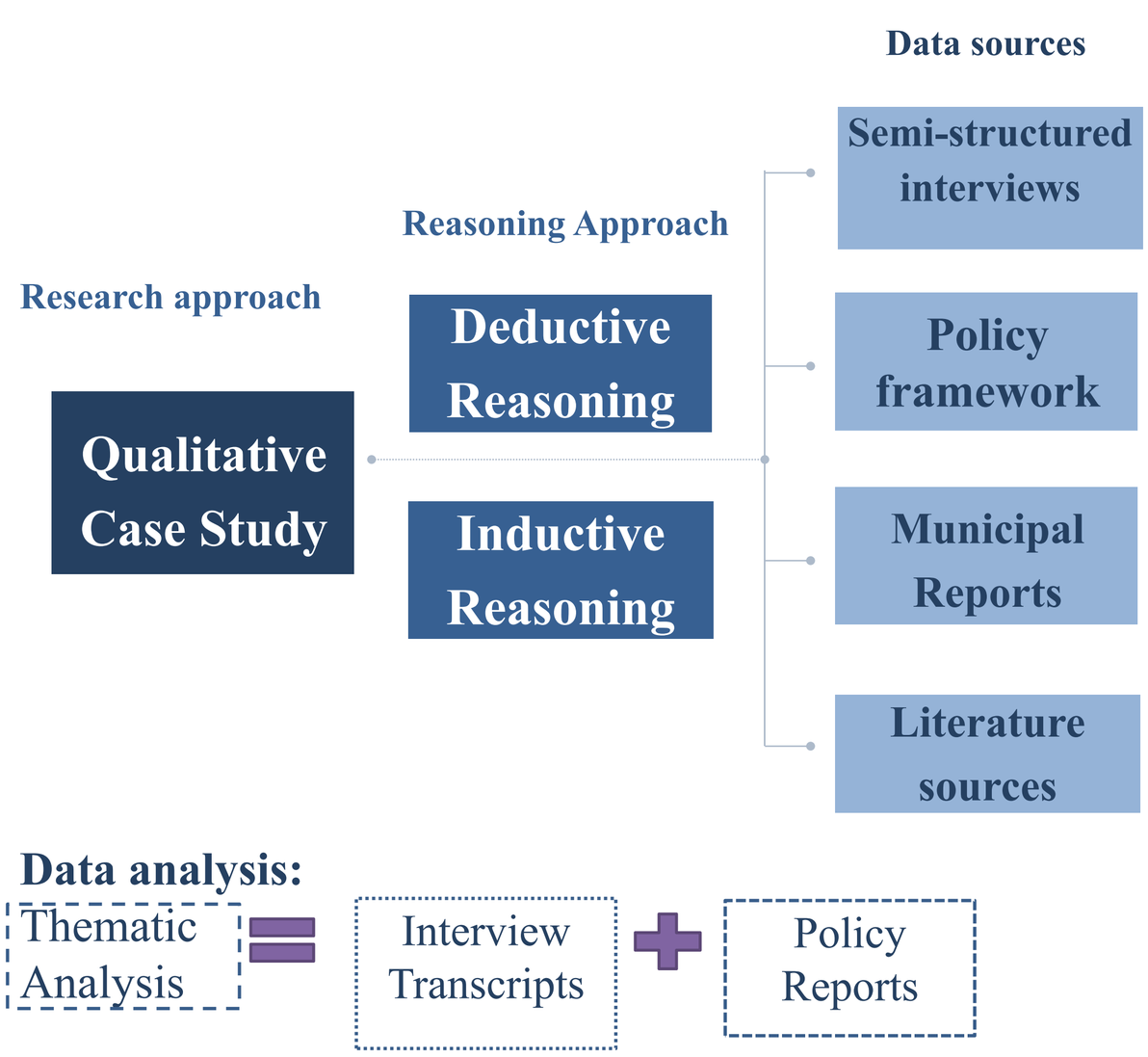
Sweden aims to achieve carbon neutrality by 2045 (1). Swedish municipalities set up their climate goals to achieve carbon neutrality (2). Växjö's municipality launched an ambitious called "Fossil Fuel-Free Växjö" in 1996, which was one of the earliest declarations of becoming fossil fuel-free (3).

There are just a few years left to 2030, whether the fossil fuel-fuel goal truly be met in Växjö? What challenges and gaps remain behind? Is it just greenwashing or implementing effective policies and practices?

Aim

Critically analyze the challenges and constraints that Växjö faces in its process of becoming fossil fuel-free. Through the analysis of the empirical and primary data, the study will focus on identifying the challenges in policies, technology, and systemic barriers that hinder the process of the achievement of fossil fuel-free target.

METHOD



RESULTS & DISCUSSION

Progress is concentrated in the energy system, while major gaps persist in transport and socio-economic dimensions, limiting the achievement of the 2030 fossil fuel-free goal in Växjö.

Table 1: Results: Progress vs Gaps

	Progress (Achievements)	Gaps (Limitations)
Energy System	- Renewable energy 74% - District heating nearly fossil-free	- Residual emissions remain in construction & agriculture
Transport System	- Growth of EVs & infrastructure - Investment in public transport & cycling	- ~95% of fossil CO_2 emissions - Only 26% renewable share - Persistent car dependency
Policy & Governance	- Clear roadmap (Sustainable Växjö 2030) - Strong multi-level collaboration	- Limited economic incentives - Reliance on voluntary behavior change
Socio-economic Dimension	- Public engagement initiatives	- Behavioral inertia - Inequality in access & participation

CONCLUSION

Strong green branding based on early achievements (renewable energy, biomass heating). Gaps between symbolic image and actual practices. Transport still heavily fossil-dependent (~85% vehicles)

Växjö's transition highlights a critical gap between green branding and real transformation, requiring a more just, inclusive, and systemic approach to achieve its climate ambition.

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