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Socially Fair Options for a Climate Neutral Transformation of Housing and Mobility in Austria

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MOTIVATION

The Austrian government strives for achieving greenhouse gas neutrality by 2040. The introduction of policy instruments to decarbonise housing and mobility will affect different household groups to a diverse extent depending on several (socio-economic) aspects.

The (presumed) regressivity of policy instruments (most notably fiscal measures) in the areas mobility and housing very often impedes an evidence-based discussion on the political level and is used as an argument against the implementation of respective measures, especially in times of low economic development as during the COVID-19 crisis or the current energy crisis.

PROJECT OBJECTIVES

The overarching objectives of the project TransFair-AT are

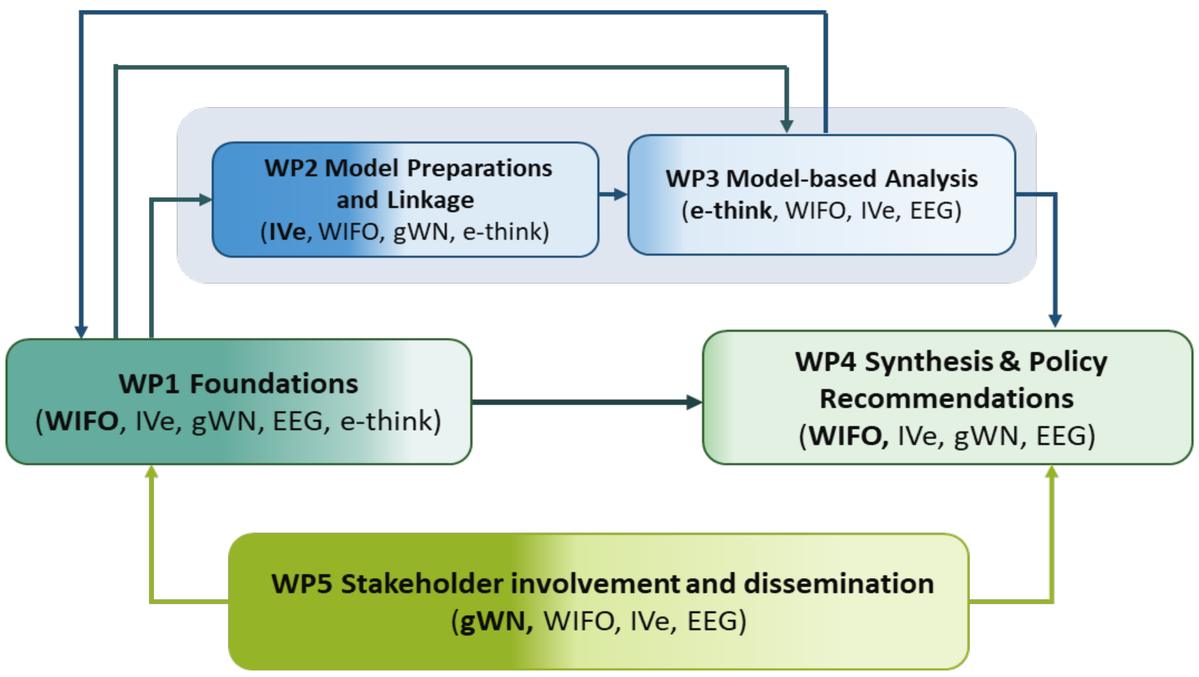
1. to provide comprehensive and innovative model-based analyses of the economic incidence and social impacts of a complete decarbonisation of the sectors residential buildings[1] and passenger transport in Austria by 2040 and
2. to develop targeted compensation mechanisms to mitigate the burden of these climate policies for particularly vulnerable groups, while ensuring that these compensation mechanisms are consistent with full decarbonisation.

[1] Heat demand only, but including upstream emissions of district heat and power generation.

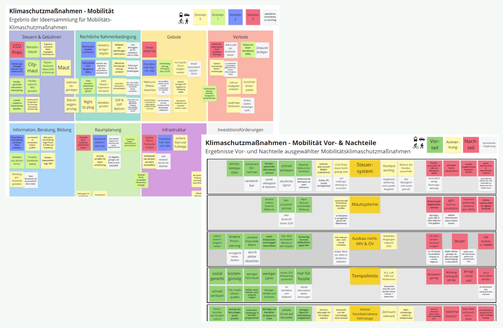
SUB-GOALS

- Iterative linking of the macroeconomic model DYNK with a vehicle choice model, the transport demand model MARS, and the building stock model Invert/EE-Lab to analyse the emission impact as well as the macroeconomic and distributional effects of the decarbonisation policy scenarios on different household types
- Definition of a joint household database for all models to translate the distributional effects amongst the different household groups
- Development of decarbonisation policy scenarios for the housing and mobility sectors to identify socially acceptable mitigation policy pathways
- Identification and development (and model-based analysis) of compensation mechanisms to mitigate burdens of climate policies for particularly vulnerable groups

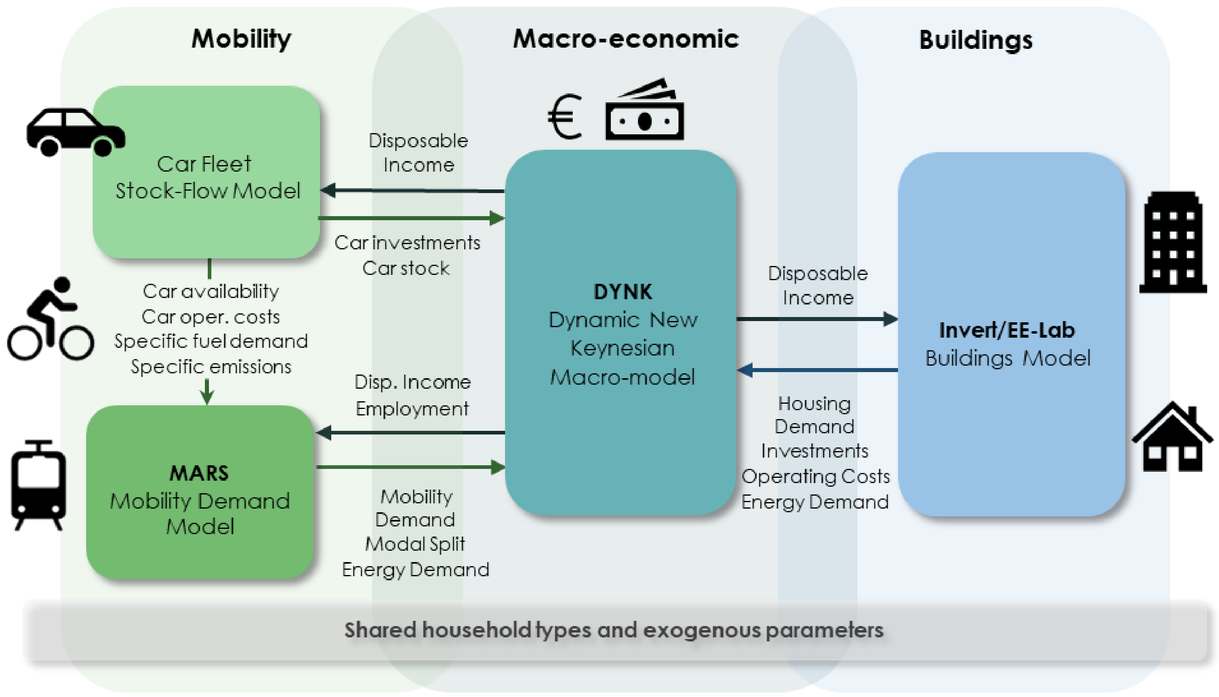
PROJECT STRUCTURE AND PROGRESS



Close cooperation with relevant stakeholders



MODELLING APPROACH



CURRENT ACTIVITIES

WP1 Foundations

- Complete definition of household types and case studies

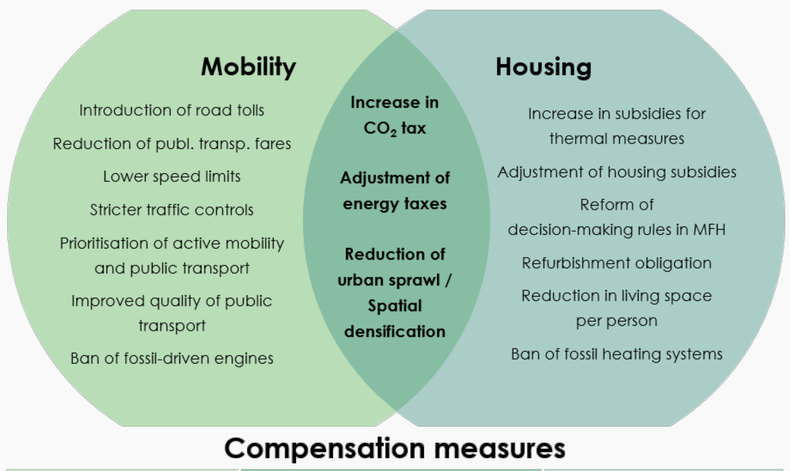
WP2 Model Preparations and Linkage

- Finalisation of model linkage
- Test, refinement and validation of linkage

FIRST RESULTS

Policy Measures

Decarbonisation measures

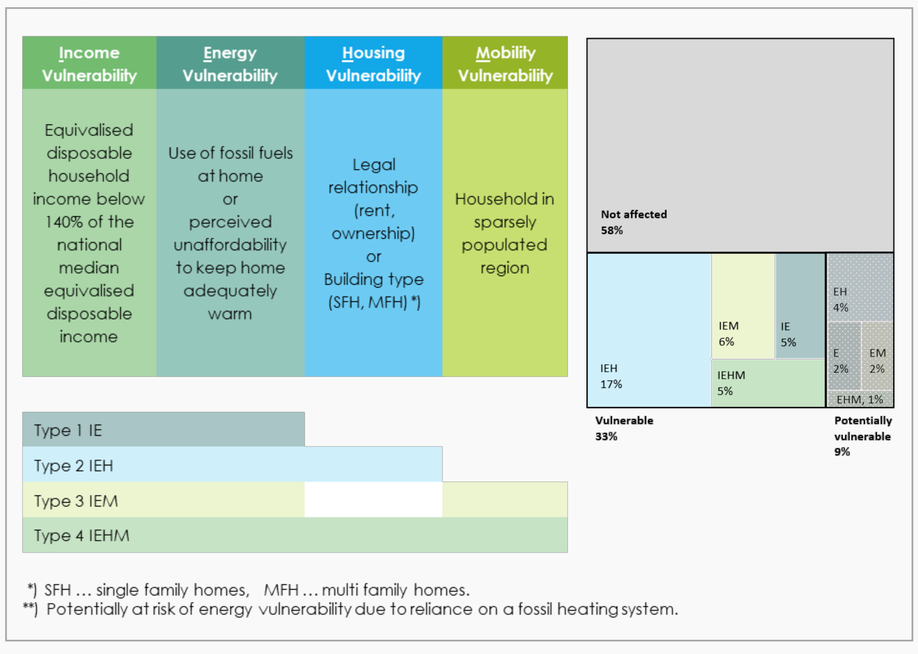


Compensation measures

Increase in infrastructure investments (public transport)	Subsidisation of planning and investments in thermal measures for vulnerable households	Tax revenue recycling via eco-bonus (lump-sum payment for all or only vulnerable households)
Reduction of public transport fares (free public transport)	Legal adjustments (protection against rent increases, rent neutrality)	Increase in existing socially targeted transfers
	Renewable energy (electricity) vouchers	

Vulnerable Household Types

Composite Index



*) SFH … single family homes, MFH … multi family homes.
**) Potentially at risk of energy vulnerability due to reliance on a fossil heating system.

Household Types in Modelling

Energy	Housing	Mobility	Income Q1	Q2	Q3	Q4	Q5
Fossil heating system	Single-family/ multi-family house	Peripheral					
		Non peripheral					
	Rented flat	Peripheral					
		Non peripheral					
	Owner-occupied flat	Peripheral					
		Non peripheral					
Non-fossil heating system		Peripheral					
		Non peripheral					

Case Studies

PROJECT OUTPUTS

J. Bock-Schappelwein, C. Kettner, 2023, TransFair-AT Research Brief #1: *Households vulnerable to rising energy prices.*

J. Bock-Schappelwein, C. Kettner, 2022, *Steigende Preise für fossile Brennstoffe: Was zeichnet betroffene Haushalte aus?*, 5th ESPANET AUSTRIA Konferenz, Vienna

P. Pfaffenbichler, *Social impacts of decarbonising the Austrian passenger transport system*, European Transport Conference, Milan, 6-8 Sept. 2023

Complementary ACRP projects

NetZero2040
SectorCoup
INTEGRATE

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