

INTEGRATE: Identifying across-sector integrated framework and incentive design, distributional and budgetary implications

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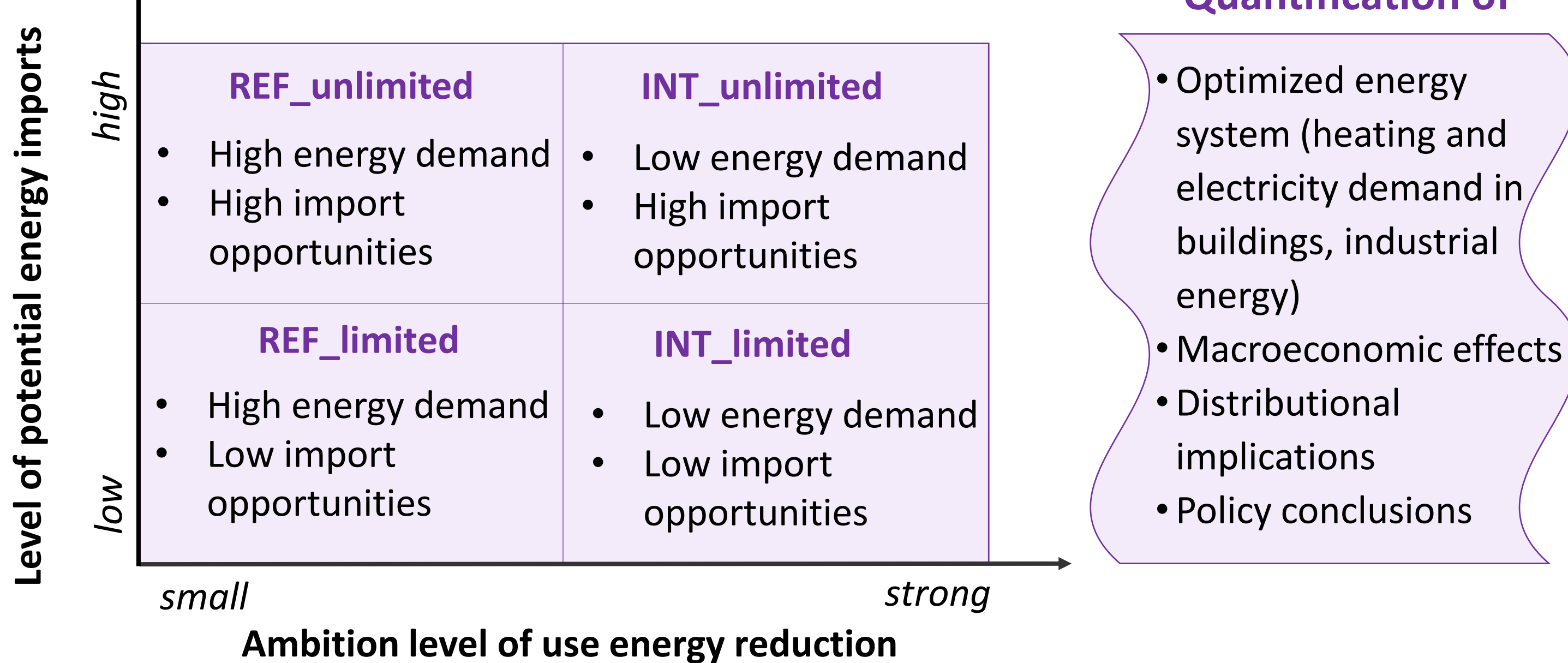


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Objectives

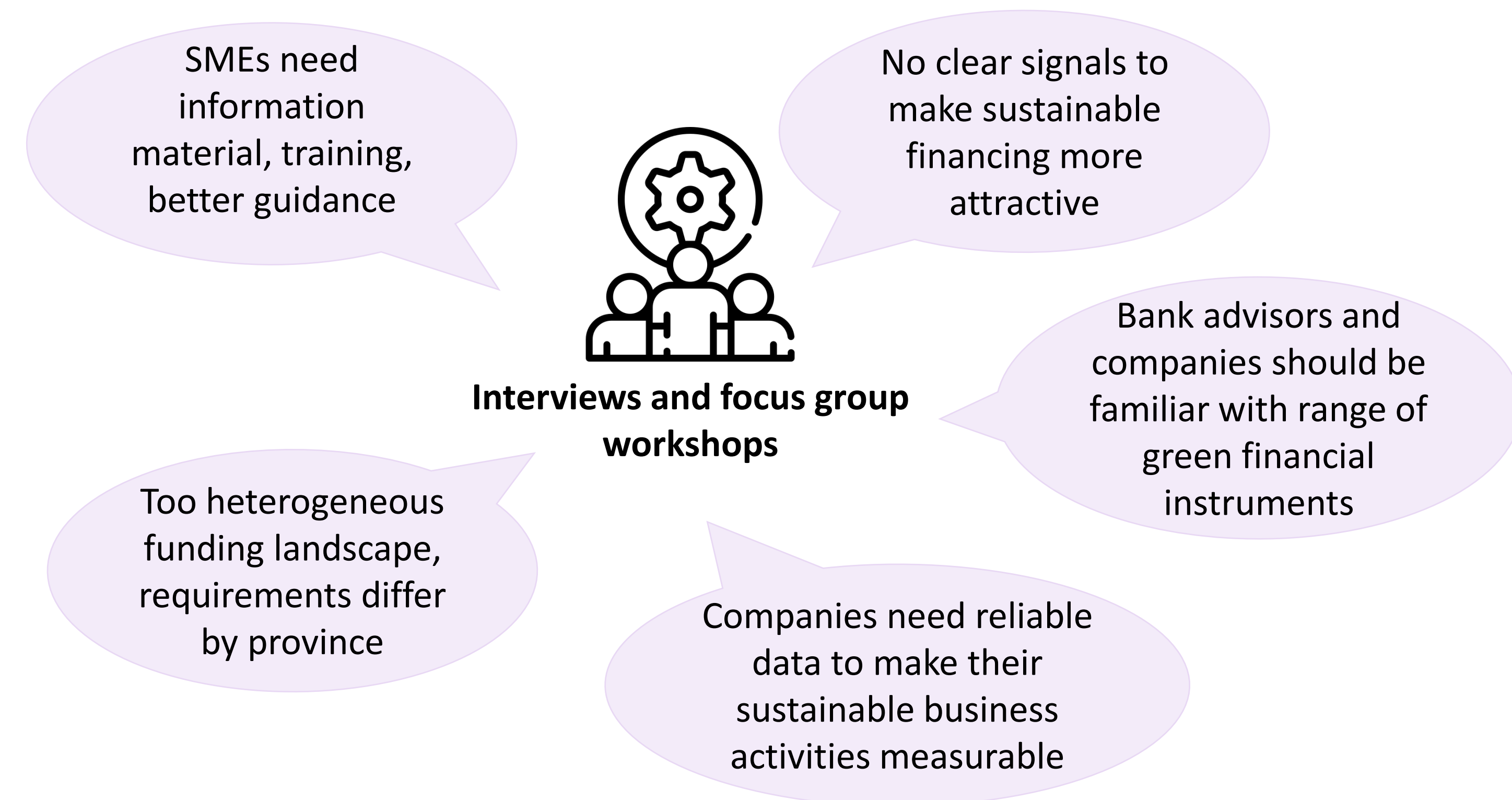
- Exploring potential pathways for Austria to achieve net-zero emissions by 2050. We define "net-zero emissions" as meeting all energy needs from renewable sources, thereby minimizing dependence on fossil fuels.
- Assessment of the financial market to identify appropriate instruments and investment strategies that can help Austria achieve its climate goals.
- Development of coherent policy frameworks and instruments that not only drive the low-carbon transformation, but also garner support and acceptance from stakeholders.

Assessment of integrative cross-sectoral net-zero emissions scenarios for Austria



Financial markets

- Financing the climate transition requires efficient cooperation between the real economy, the financial sector and the public sector.
- We analyze the nexus between the real economy and the financial sector, especially in the context of small and medium-sized enterprises (SMEs).
- We conduct a series of interviews and workshops to explore whether and how SMEs can more easily access financing for green investments.
- We develop a mapping-table of financial instruments that can accelerate the transition.



Quantitative modelling framework

→ Stepwise soft-link of the European energy-system model Euro-CALLIOPE and the macroeconomic CGE model for Austria WEGDYN_AT, including bottom-up sector model details for buildings, transport and industry

- The bottom-up quantified sector energy demand data directly serves as input for Euro-CALLIOPE and WEGDYN_AT
- Euro-CALLIOPE determines the corresponding optimized energy supply
- WEGDYN_AT incorporates the energy demand and supply details and quantifies associated macroeconomic and distributional implications

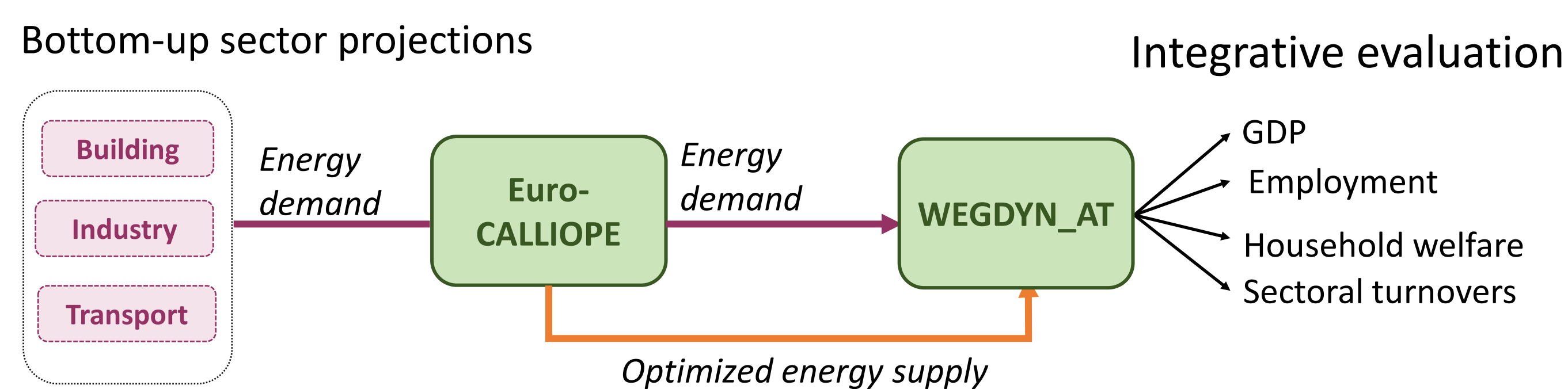


Figure 1: Model soft link: Illustration of the methodological approach

Step 1: Quantifying energy demands across scenarios:

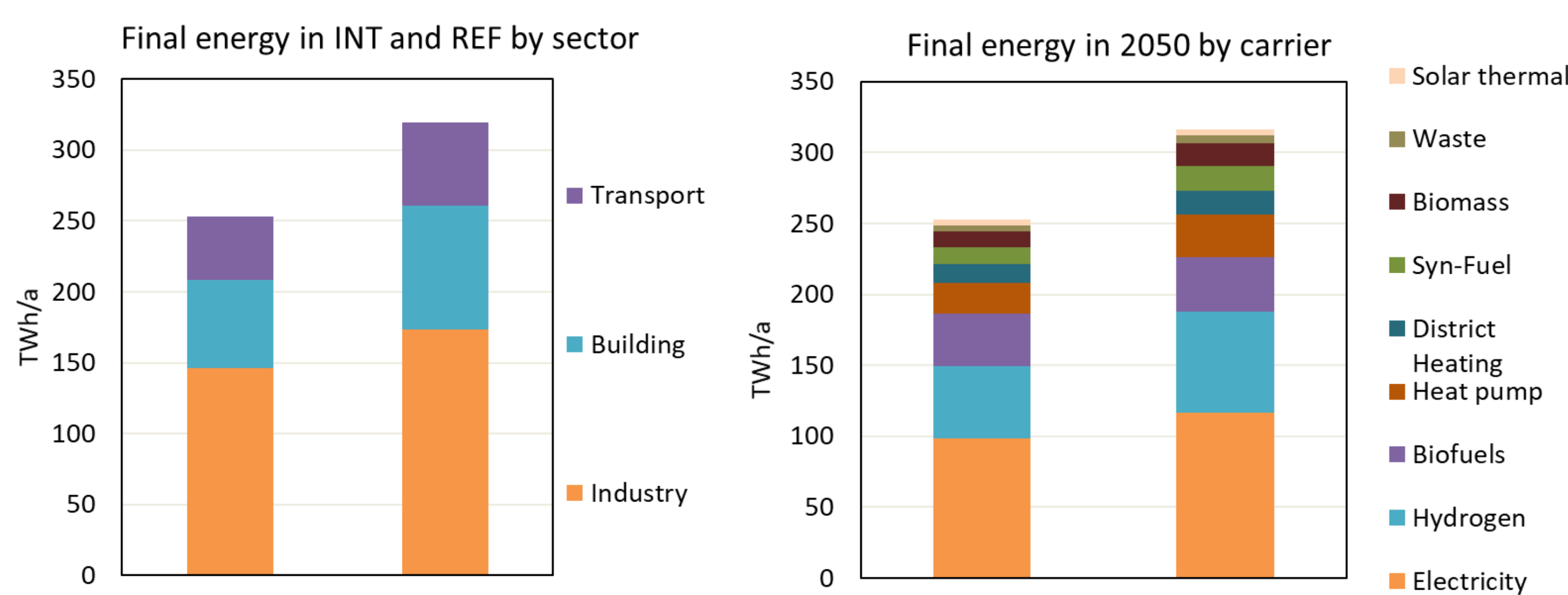


Figure 2: Cross-sectoral energy demand for scenarios REF and INT in 2050 (in TWh/a)
 * Note that the final energy demand is the same in case of limited or unlimited import possibilities

Step 2: Quantifying the optimized energy supply

Electricity supply in AUT 2050: domestic and imports

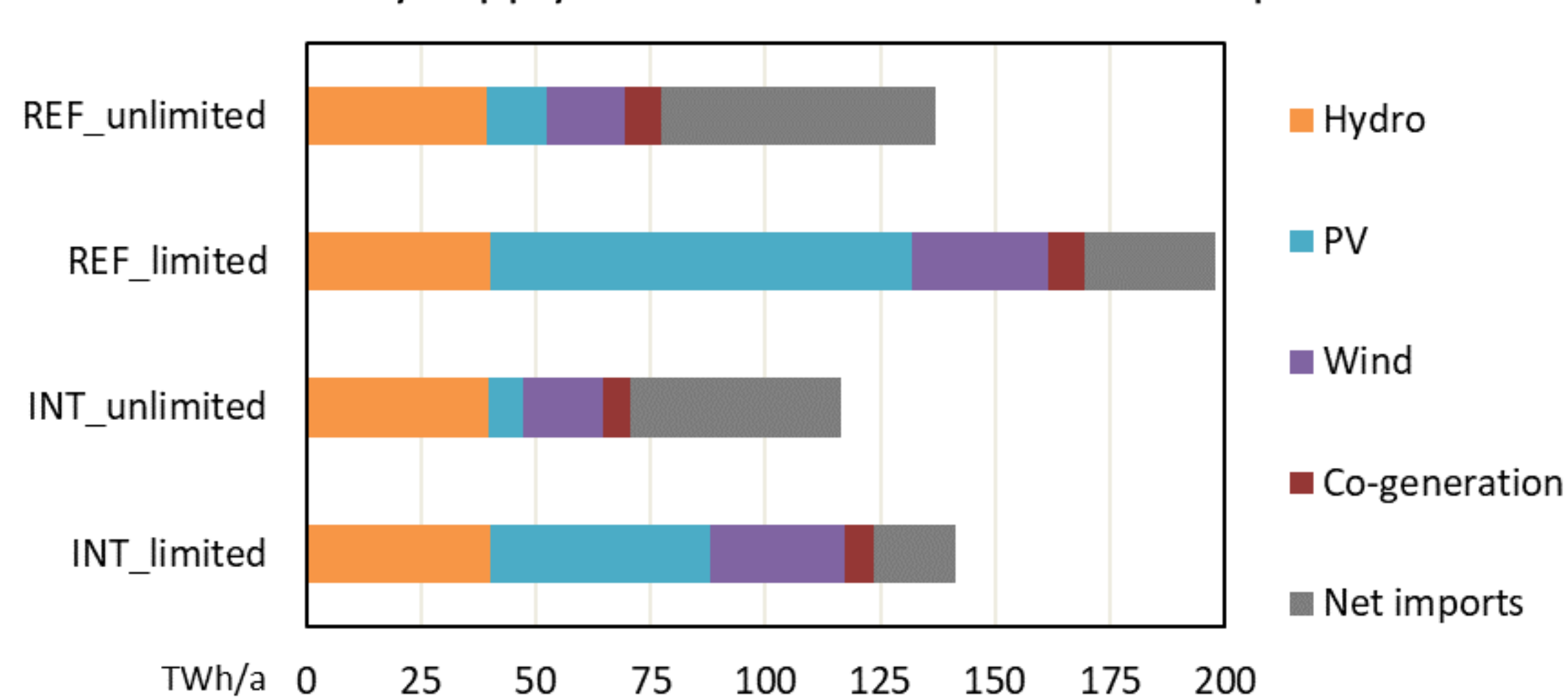


Figure 3: Domestic electricity supply and net imports for REF and INT with limited and unlimited import potential in 2050 (in TWh/a)

Integrated policy packages – Four pillars

- Literature research – both international for best-practice examples and in detail for Austria
- Assessment of Austria's current innovation and economic performance based on patent and trade data
- The stakeholder and co-creation dialogue of the project
- The collection of policy measures underlying the storyline of the defined scenarios

Increased availability of steel scrap of sufficient quality for reuse
 Increased recycling in the cement and chemical industries
 Increased use of wood waste in wood panels

Infrastructure to meet the high demand for electricity
 Increasing the capacity of the low-voltage electricity grid
 Decarbonization of district heating
 Infrastructure for the availability of synthetic gases

Avoid lock-in with inferior retrofit materials
 Faster reduction in energy demand of buildings
 Replace fossil fuels (move away from oil and gas)

Reduce the volume of transport (increase sharing)
 Provide infrastructure for electrification
 Expand public transportation to rural areas

Next steps

- Completion of quantitative modelling: Evaluation of energy system effects, macroeconomic and distributional implications
- Quantitative modelling results will feed into the interactive stakeholder process
- Within a stakeholder workshop on April 19th, 2024 in Vienna scenarios and results will be further refined
- Formulation of integrated policy packages based on quantitative and qualitative insights
- Working papers, policy briefs and Journal submissions
- Continuation of the Newsletter series (as resource for stakeholder)