LEAP Model Update

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Vermont Climate Council Cross-Sector Mitigation Subcommittee

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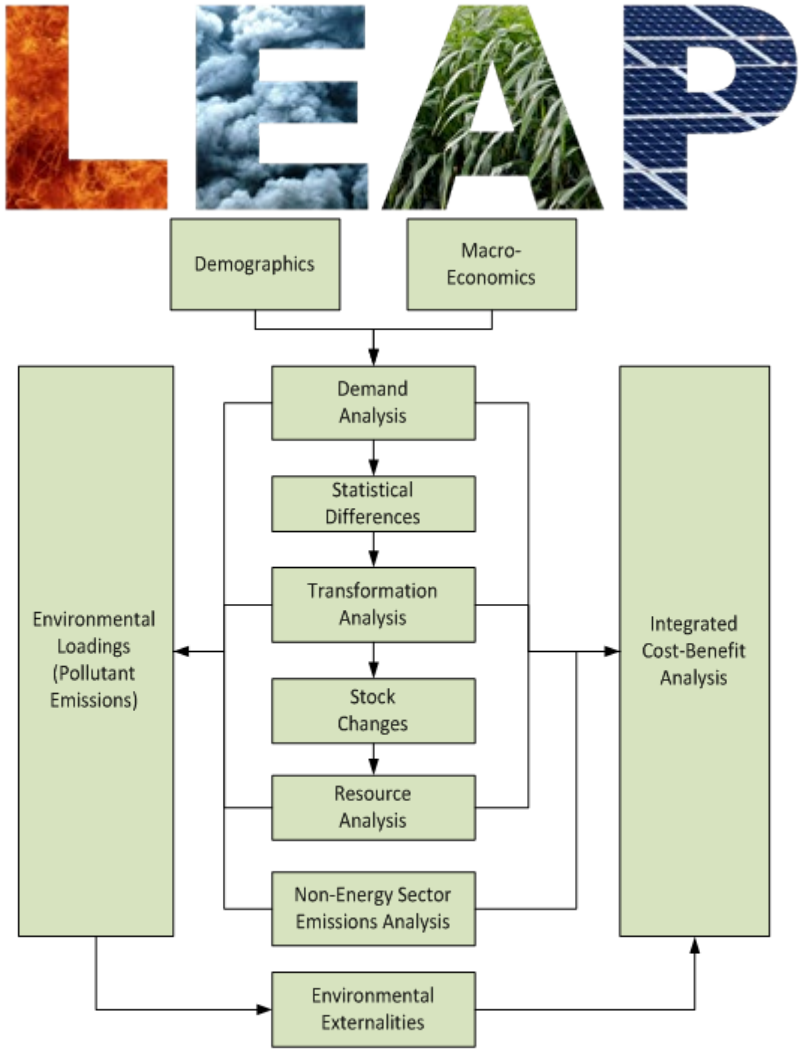
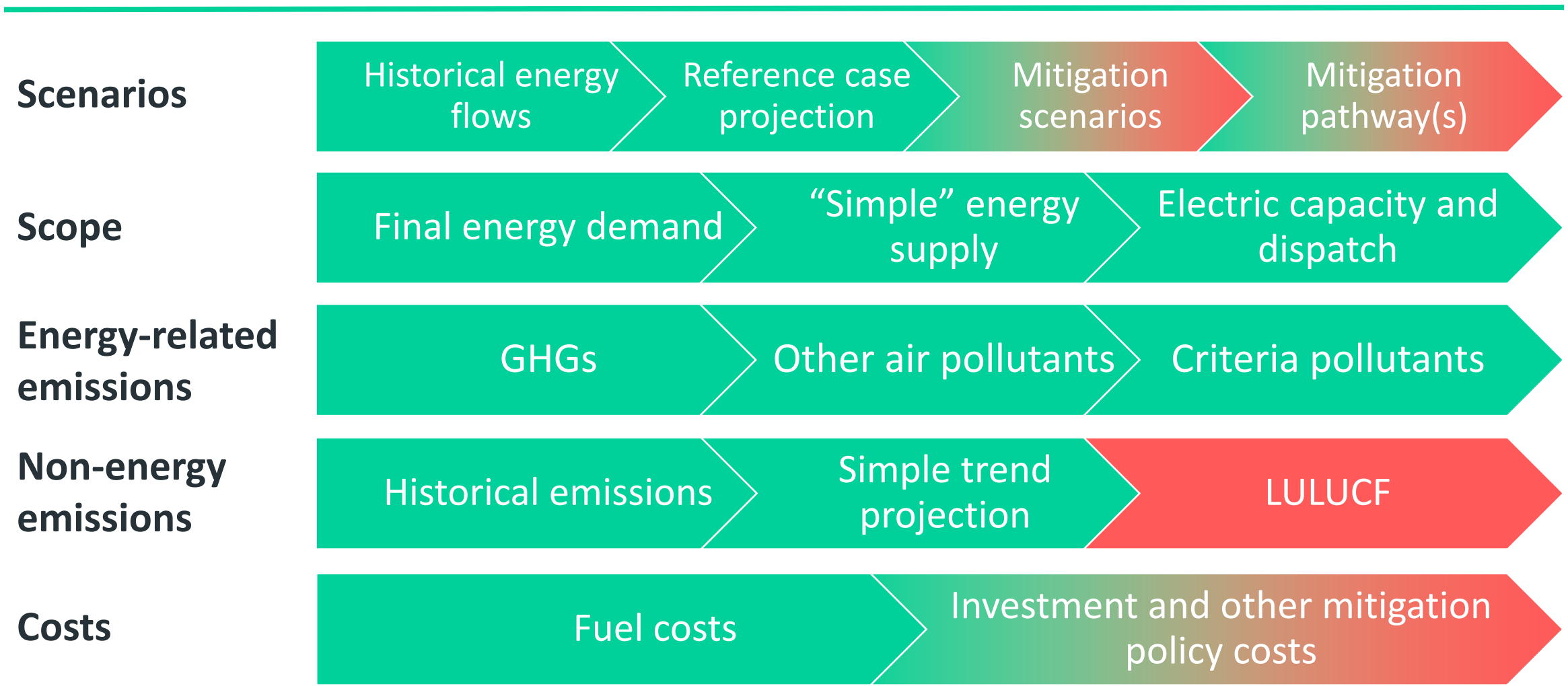
2022 CEP Modeling

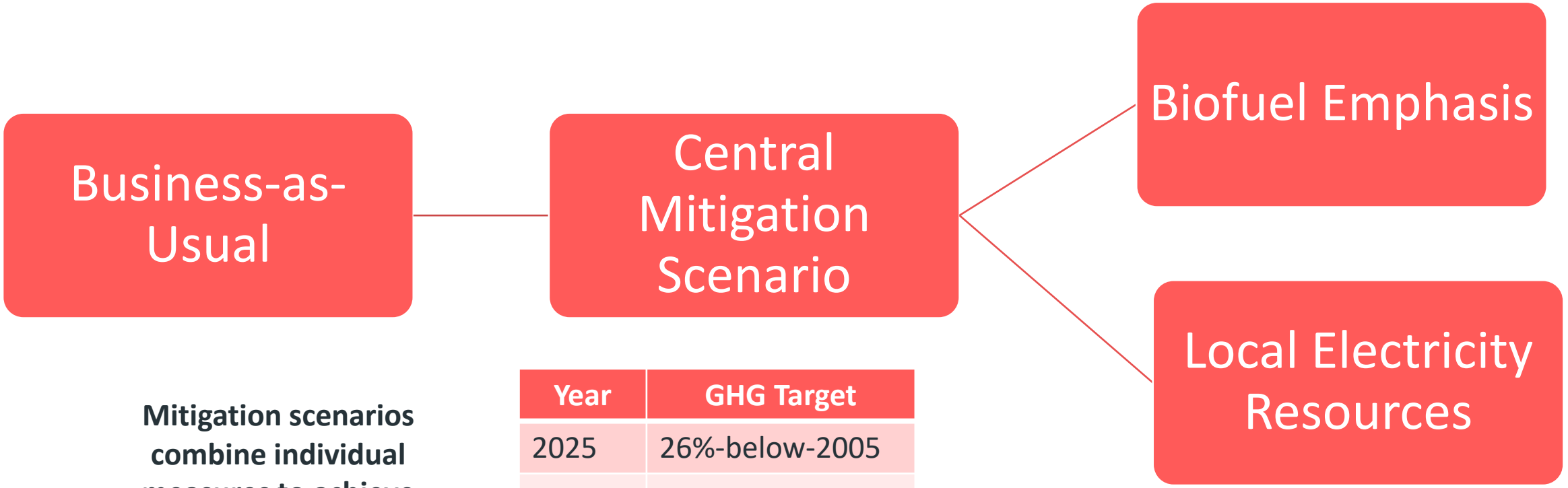
- Scenario analysis
  - Working with ANR, NESCAUM, Stockholm Environment Institute using Low Emissions Analysis Platform (LEAP)
  - Reference, “Business as Usual” case plus policy and technology scenarios
- Energy modeling, non-energy sector modeling
  - LEAP is scenario-based modeling tool that can track consumption, production, and resources in all sectors
  - Plan to regionalize results after initial modeling effort is complete
  - Local and regional air pollutants in addition to GHG



Model Development Process, Updated



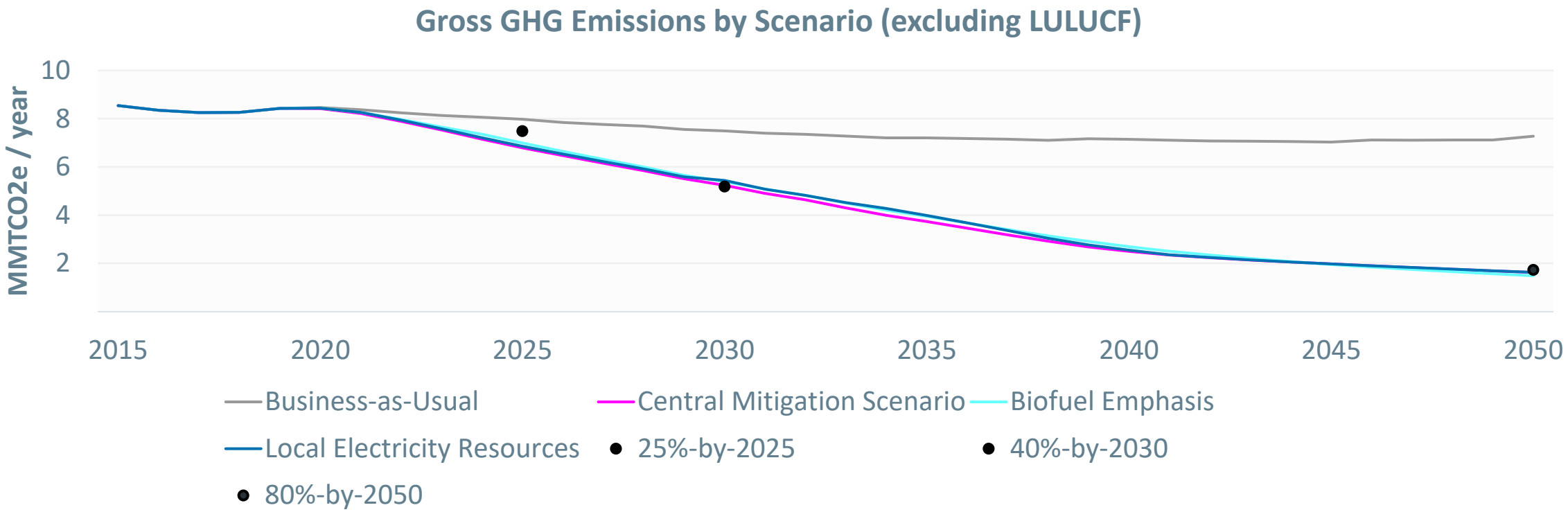
Initial Scenario Hierarchy



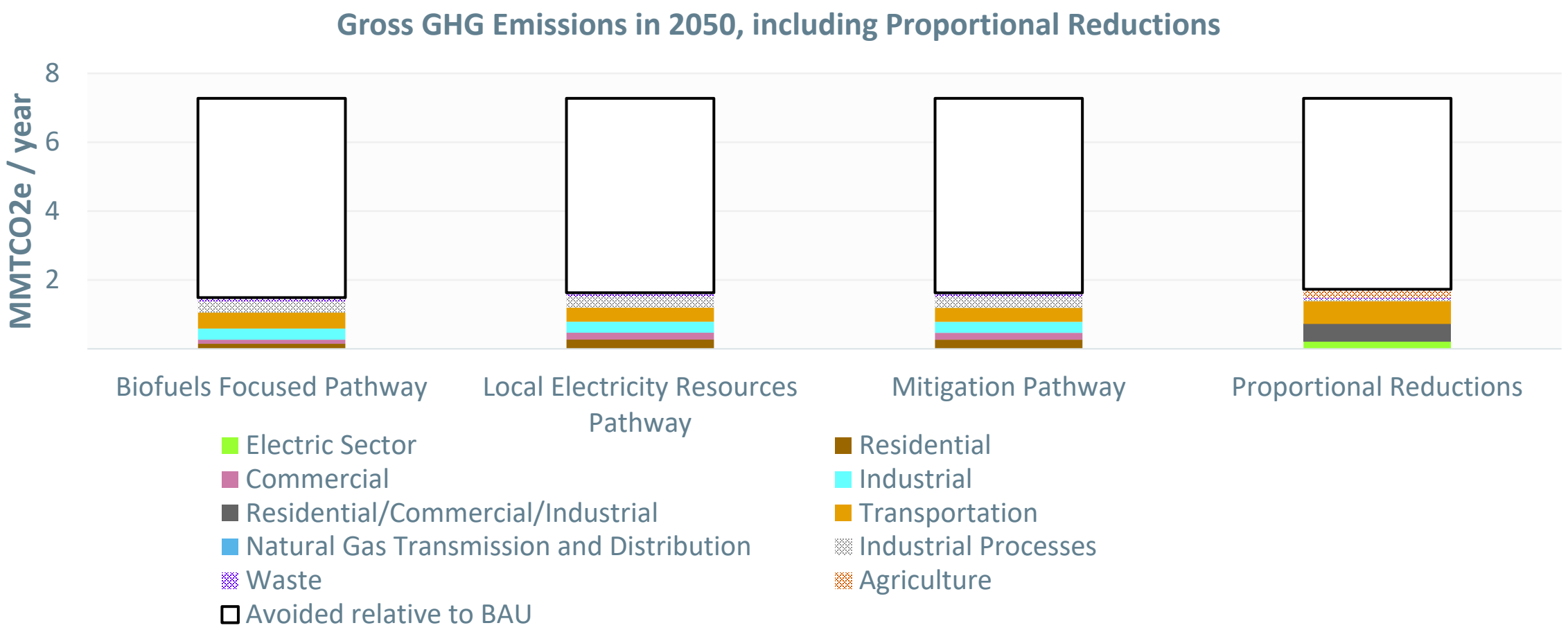
Mitigation scenarios combine individual measures to achieve Vermont's GWSA targets.

Year	GHG Target
2025	26%-below-2005
2030	40%-below-1990
2050	80%-below-1990

GHG Emissions and GWSA Targets

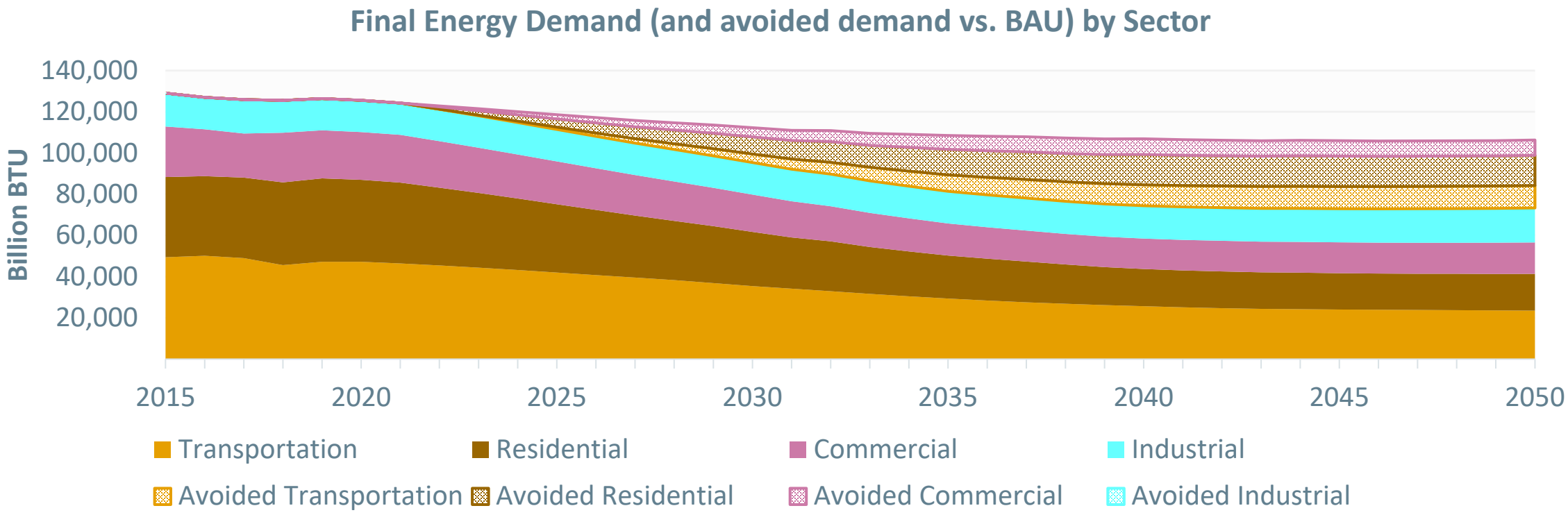


GHG Emissions by Sector



* Proportional Reductions shows GWSA targets applied to each sector individually. Proportional emissions for residential, commercial and industrial sectors cannot be disaggregated because they are combined in 1990 GHG inventory.

Energy Demand in Central Mitigation Scenario



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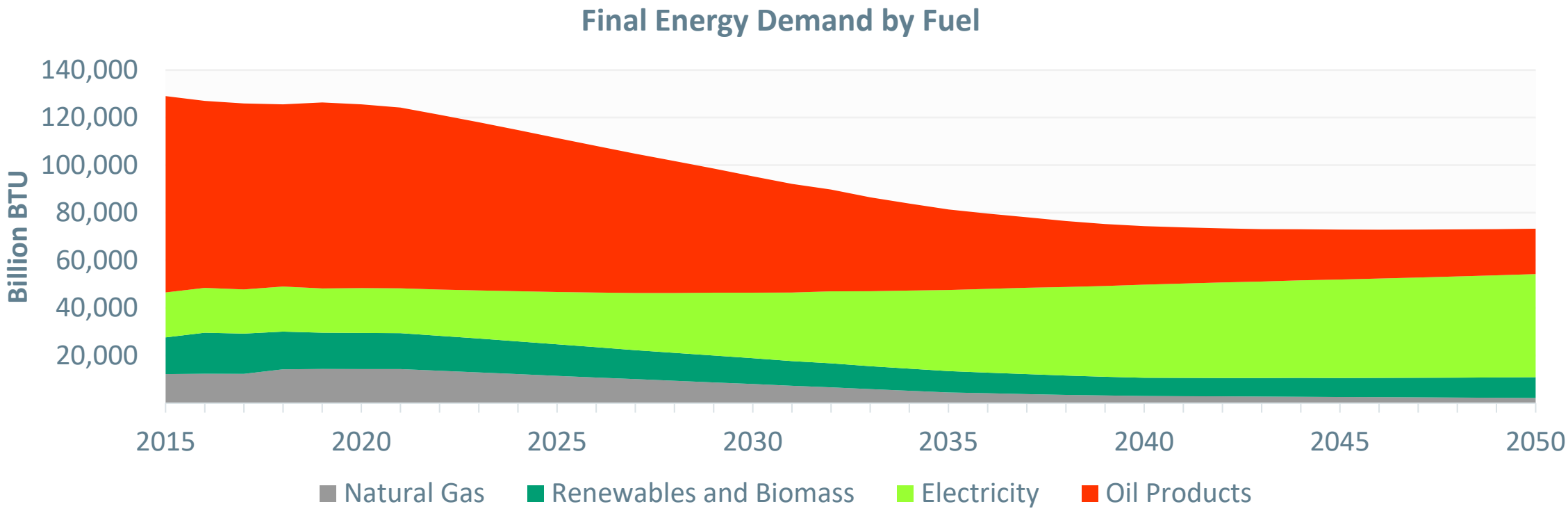

Initial Takeaways

- The Targets can be met with existing technologies
- The 2025 Requirements looks very achievable, but the 2030 Targets are much more challenging
- In either a bio-heavy or electrification approach, electrification plays a large role for both its ability to be low emissions and the inherent efficiencies in electro-technologies
- There are not tradeoffs between GHG and other pollutants – mitigation scenarios also reduce other pollutants
- Other, sector specific takeaways regarding equipment/vehicle stock etc. discussed in focused meetings.

LEAP will not inform specific design of policy, but it tracks it's expected impacts, and shows how those interact with other policies. Policy impacts – spending, technology transformation, etc. need to be input exogenously.

What is Expected Next

- Continued fine tuning of assumptions for these scenarios
- Task Group Leads review of details of each sector
  - For example: fuel use, technology shares
- Technical Consultant Cadmus/EFG development of sensitivities/adjustments to mitigation scenarios based upon Cross-Sector Mitigation policies
- Technical Report documenting assumptions and methodology

The expectation is that there is one base model that will be used to inform both the Comprehensive Energy Plan and the Climate Action Plan