

“Total Energy” Study

Public Service Department

Public Meeting

November 14, 2013

Tonight's Meeting

- Agenda:
 - Context, process, and structure
 - Criteria for evaluating policies
 - 5 policy sets
 - Q&A/Discussion
- Please:
 - Be patient: this is our first public meeting with webinar
 - Clarifying questions/short comments during presentation; longer discussion to follow

The Basics

- WHAT (the Legislature's ask):

Analyze (and recommend) policies designed to achieve GHG and renewable energy goals:

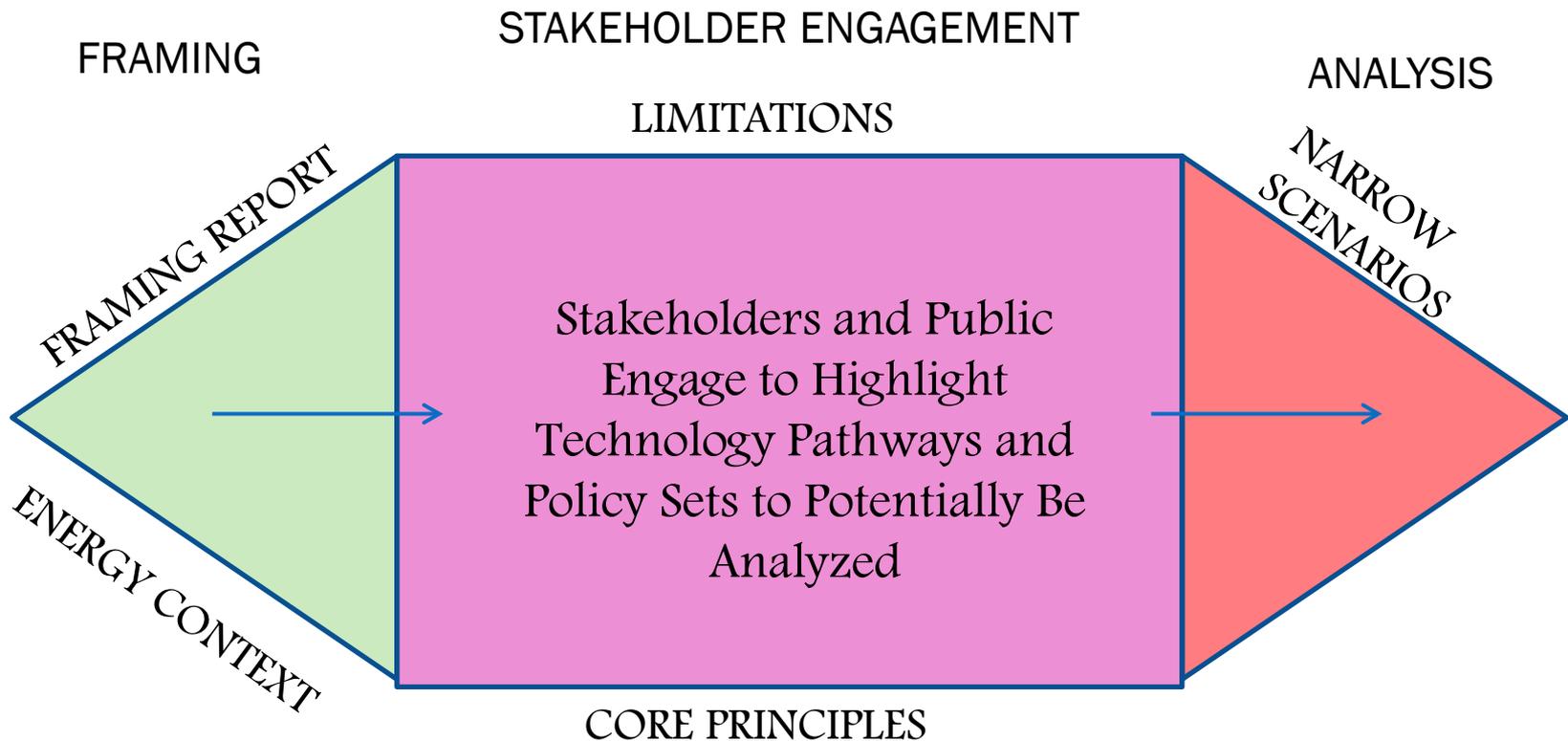
- *50% GHG reduction by 2028*
- *75% GHG reduction by 2050*
- *90% renewable energy by 2050*

This requires both *policy* and *technology* analysis.

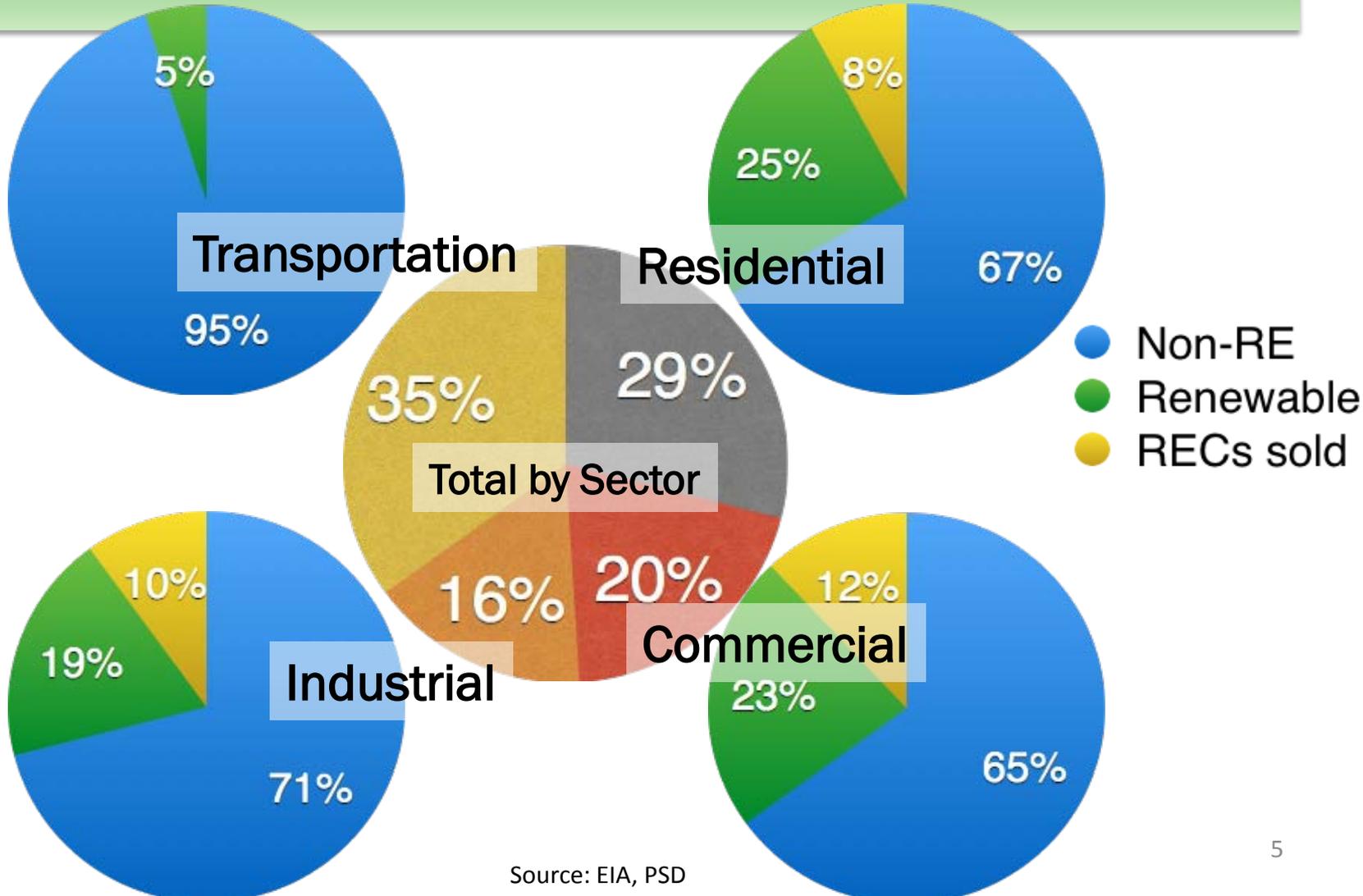
- WHO: Interagency, public, and stakeholder engagement are key

- WHEN: Report due to Legislature by December 15, 2013; Final process complete early summer 2014

Project Plan



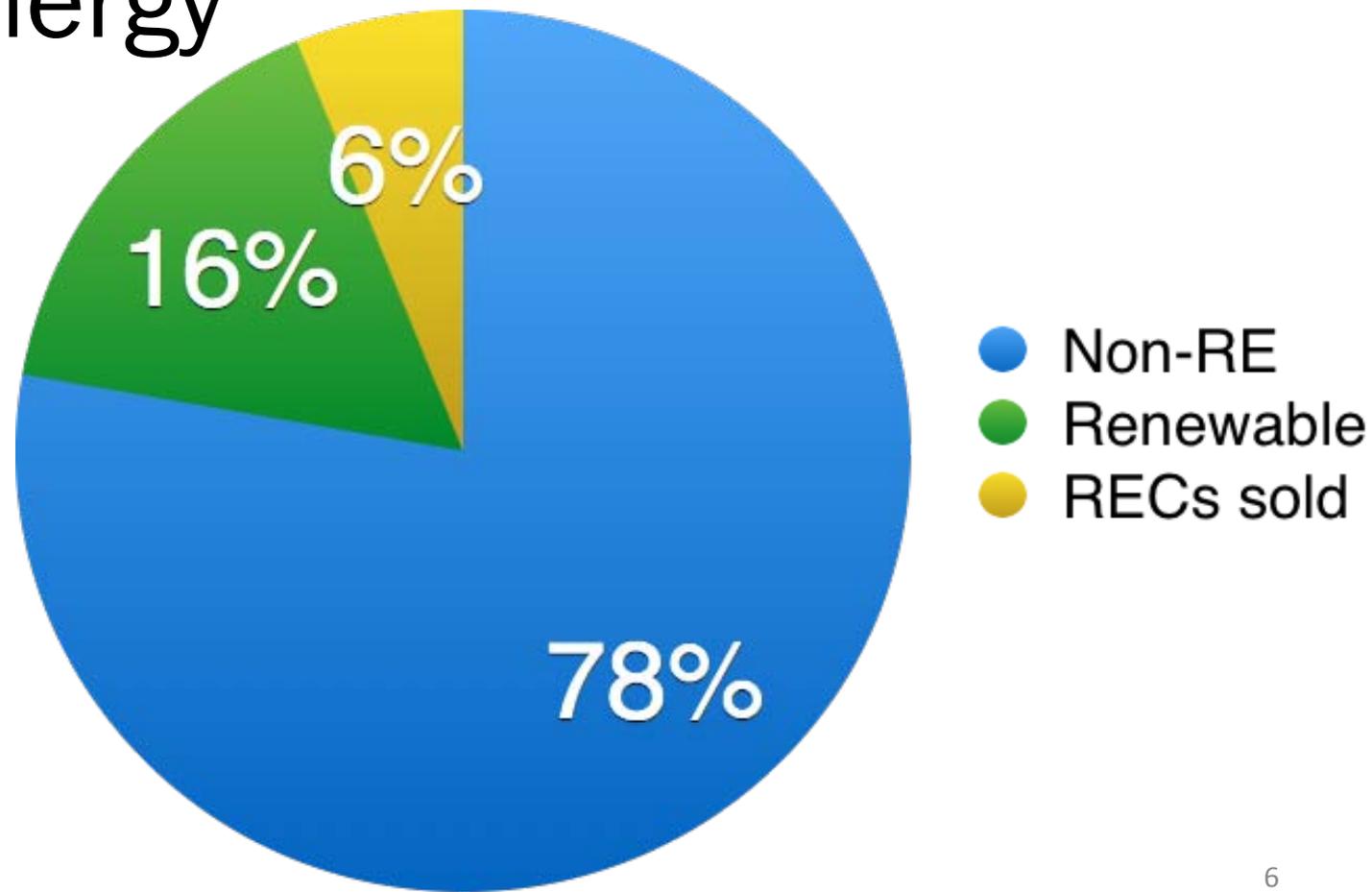
Renewable Energy Use in VT



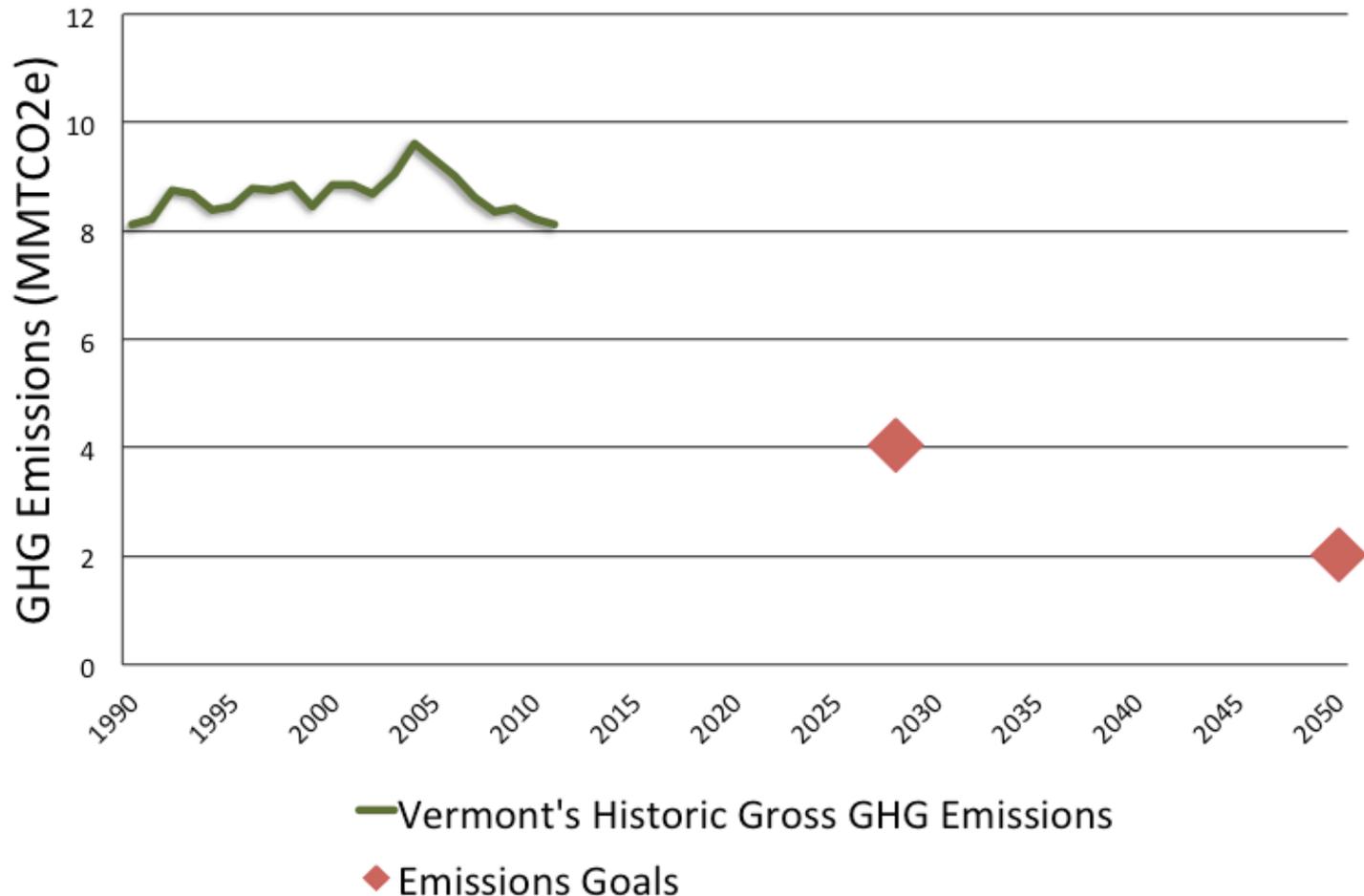
Source: EIA, PSD

Renewable Energy Use in VT

Total Energy



Meeting the GHG reduction goals



Source: ANR

Policy Evaluation Criteria

- **Costs and benefits:**
 - **Allocation:** To what extent do the benefits flow to those incurring costs?
- **Pacing:**
 - Timing of policy adoption/implementation
- **Risks:**
 - **Robustness:** Vulnerability to external changes and/or capacity to take advantage of new opportunities
 - **Dependency** on others' energy policies (regional, federal level)
 - **Complementarity** with other Vermont goals and policies (e.g. forestry, land-use)
 - **Diversity:** To what extent does it reduce the risk of having “all our eggs in one basket”?

The Ask

- Judge policies (by our criteria or your own)
- How well do you think each of these five policy sets would address state GHG and energy goals?
- What else might be needed or changed in any of the five sets to better meet state goals?
- How might you put them together differently?

Policy Sets

- 1) Nearly-Revenue-Neutral Carbon Tax Shift
“Tax bads not goods”
- 2) Renewable Targets with Carbon Revenue
Establish a common structure, across all sectors/fuels, without mandates (at least to start); address market failures with some revenue from carbon tax
- 3) Clean (Total) Energy Standard
Require all energy suppliers to get some fraction of their energy from renewable sources or efficiency, with tradable credits
- 4) Sector-Specific Policies
Identify and implement policies that work best in each sector
- 5) Regional Policy Focus
NE states all moving together

1) Nearly-Revenue-Neutral Carbon Tax Shift

- *Basic idea: “Tax bads not goods.”*
- “Social cost” of GHG emissions is likely much higher than current price of emissions (e.g. \$80-\$100/ton)
- 7 million tons of energy-related emissions => At \$100/ton, a carbon tax would raise about \$700M/yr
- Rather than raise that much extra revenue, compensate by lowering taxes on other things, like income, sales, gas/diesel, etc.
- British Columbia has done this (\$30/ton); MA legislature requested study this year

1) Nearly-Revenue-Neutral Carbon Tax Shift (cont'd)

- Two complementary pieces:
 - 1) Price alone cannot overcome market failures. Some extra revenue could be used to support programs that correct market failures
 - 2) Provide for tax credits if energy-intensive emitters make progress on productivity/efficiency metric (such as payroll \$/tons of emissions)

2) Renewable Targets w/ Carbon Revenue

- *Basic idea: Establish a common structure, across all sectors/fuels, without mandates (at least to start); address market failures with some revenue from carbon tax*
- Voluntary renewable energy planning targets for energy suppliers (**all fuels**)
- “Trigger” provision for higher carbon tax or renewable energy mandate (by sector) if voluntary targets are missed. (*Which is preferable?*)

2) Renewable Targets w/ Carbon Revenue (cont'd)

- Incent regulated utilities to invest in promotion of fuel switching to renewable electricity for transportation and heating
- Small tax on all CO₂-equivalent emissions in VT rising with inflation, used to fund additional programs that address market failures and advance state energy goals

3) Clean (Total) Energy Standard

- *Basic idea: Require all energy suppliers to get some fraction of energy sold from renewable sources or efficiency, with tradable credits*
- Generalize the Renewable Portfolio Standard concept to all sectors and include energy efficiency
- Energy suppliers must retire credits each year, with an obligation rising over time to 90% of sales by 2050
- Work sector-by-sector, expanding coverage over time

3) Clean (Total) Energy Standard (cont'd)

- One possible path:
 - Start with residential electricity and heating fuels
 - Expand obligations to sales to commercial and industrial customers, then transportation
- Earn credits in a sector before there is an obligation
 - Work out the kinks before there's a requirement in place
- Expect that the combination of efficiency and renewables will cause the overall % requirements to rise quickly, then level out and inch up to 90% as waste is wrung out of the system.
 - More efficiency early; more renewable supply later

4) Sector-Specific Policies

- *Basic idea: Identify and implement policies that work best in each sector*
- Electric supply governed by RPS (or voluntary RE targets)
- Continue EEU structure for regulated fuels
- Establish funding from fossil fuel content in heating fuels (avoided by deploying efficiency or using solid or liquid biofuels); use revenue for thermal efficiency programs

4) Sector-Specific Policies (cont'd)

- Feebate purchase and use tax structure for vehicles (more tax on less efficient vehicles; no tax on all-electrics)
- Tax credits for use of local liquid fuels (biodiesel)
- VMT (and weight)-based transportation funding, with increased support for alt. modes
- Land use policy uses strong incentives and restrictions to drive growth in designated areas; restrict it elsewhere

5) Regional Policy Focus

- *Basic idea: NE states all moving together*
- Electric supply RPS designed to match and pace with the rest of the region
- Regional renewable fuels standard or low carbon fuel standard (in transportation)
- States adopt VMT-based transportation funding
- Regional biomass harvesting and procurement standards

5) Regional Policy Focus (cont'd)

- Regional standards and programs for biofuels/bioheat/pellets/heat pumps
- Plan and coordinate regional infrastructure for EVs
- Continue adoption of vehicle air rules, with common vehicle incentive structures
- Receive programmatic funding from common regional tax or fee structure

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Thank you!

Please send comments and feedback
by Dec 2nd for use in Dec 15th report.

Email: PSD.TotalEnergy@state.vt.us

View the project webpage at

http://www.publicservice.vermont.gov/publications/total_energy_study

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