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Intro to GHG Regulation and Decarbonizing the PNW

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PRESENTATION OVERVIEW

- Why regulate GHGs and decarbonize?
- Basics of GHG regulation/decarbonization
- Illustrative snippets to highlight key concepts drawing from:
  - CETI's Deep Decarbonization Pathways Study
  - Oregon TIGHGER project

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WHY REGULATE GHGs AND DECARBONIZE?

- PNW is already experiencing climate impacts
  - Wildfires, drought, heatwaves, ocean acidification and hypoxia, etc.
  - Consequences to human health, the environment, and the economy
    - Disproportionate impacts on environmental justice communities
- Impacts expected to worsen with inaction
  - IPCC says that we need to basically halve our emissions by 2030 to avoid worst impacts
- Co-benefits of action
  - Examples include health benefits, jobs, economic savings, resilience, and equity
- Lead the way…

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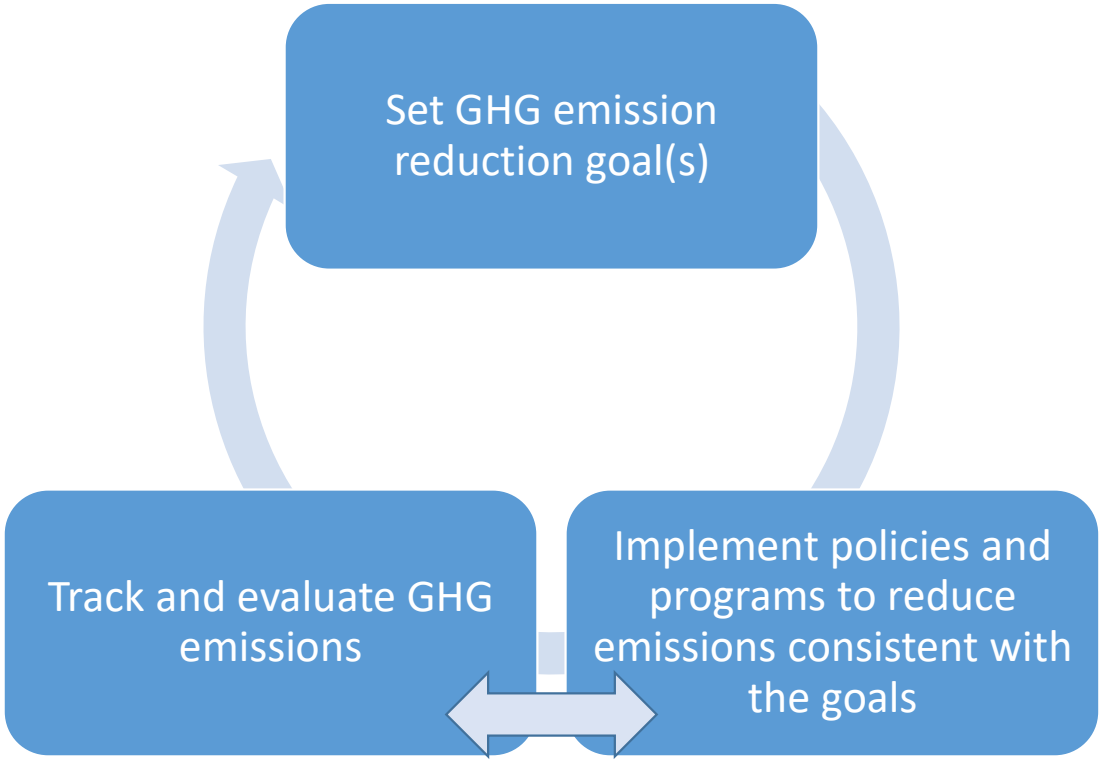
GHG REGULATION / HOW TO DECARBONIZE 101



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HOW TO DECARBONIZE 201

- What will it take to achieve economywide deep decarbonization and 100% clean energy?
- We reviewed 20 technical studies from across the country (mostly the west)

Key Findings:

- Achieving these policies is possible!
- Four pillars of decarbonization identified:
  - energy efficiency,
  - electrification of end uses,
  - cleaner electricity, and
  - develop low-carbon fuels
- There are multiple pathways to achieve policies by mid-century, each with its own tradeoffs

https://energyinfo.oregon.gov/ber

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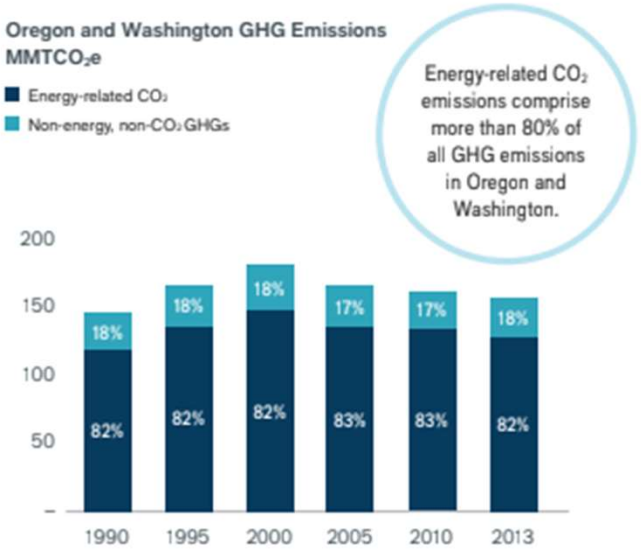
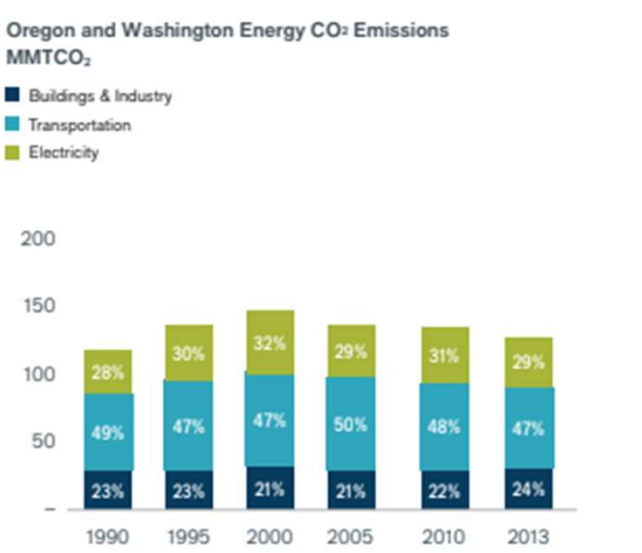
SNAPSHOT OF OR/WA EMISSIONS – *CETI STUDY*

FIGURE 2. Energy GHG emissions dominate in Washington and Oregon.



Source: Northwest Deep Decarbonization Pathways Study, May 2019, Evolved Energy Research, page 11. Data are from Oregon's Department of Environmental Quality and Washington's Department of Ecology.

FIGURE 3. Transportation emissions are nearly half of all energy-related CO_2 emissions in Washington and Oregon.



Source: Northwest Deep Decarbonization Pathways Study, May 2019, Evolved Energy Research, page 12. Data are from Oregon Department of Environmental Quality and Washington Department of Ecology.

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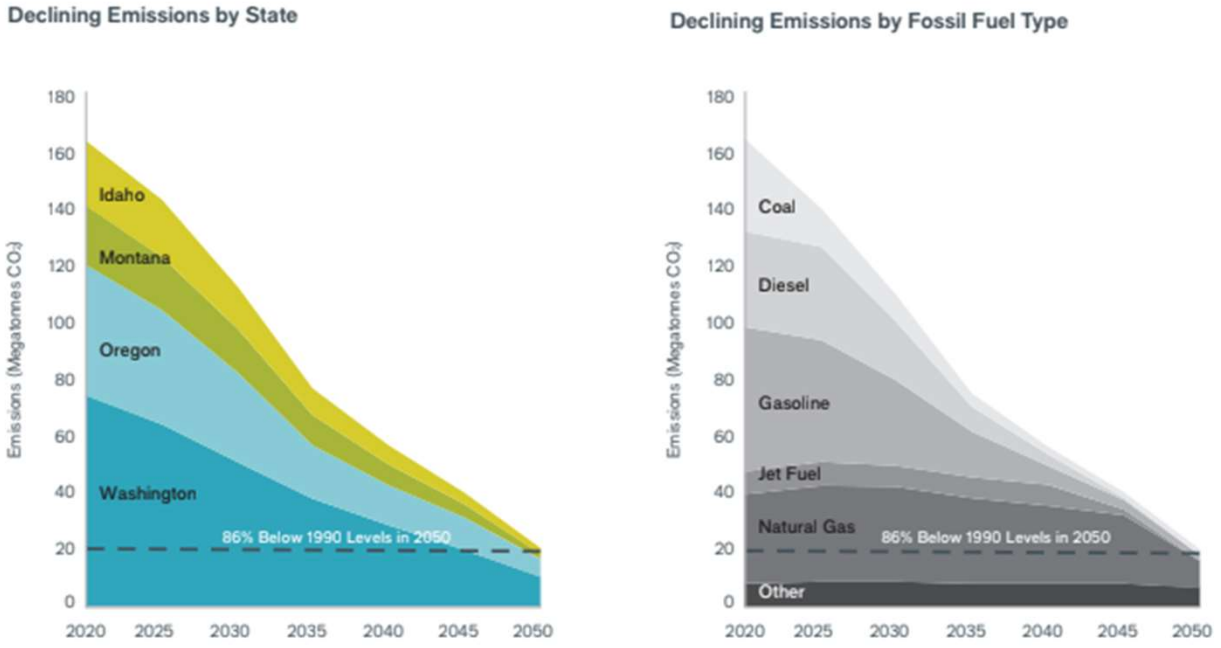
https://cleanenergytransition.github.io/mtc-report-full/

PACE AND SCALE OF REDUCTIONS – *CETI STUDY*

Central Case

FIGURE 3. Declining emissions by state and by fossil fuel type 2020–2050.



NOTE:

- In 2020, Washington set GHG emission reduction targets culminating in 95% reductions by 2050 and a goal of achieving net zero.
- A need for near-term, dramatic action appears across much of the literature.

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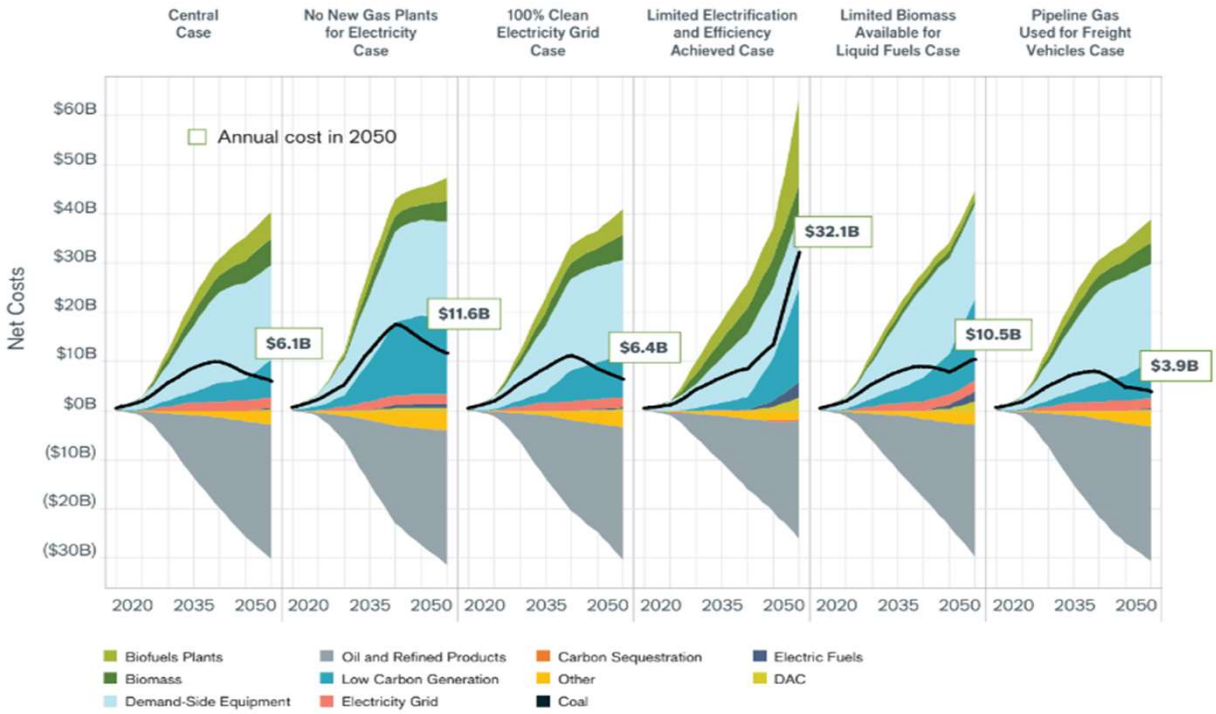
https://cleanenergytransition.github.io/mtc-report-full/

MULTIPLE PATHWAYS, DIFFERENT COSTS – *CETI STUDY*

FIGURE 31. Annual net energy system costs for six cases compared to the Business as Usual Case.



Source: Northwest Deep Decarbonization Pathways Study, May 2019, Evolved Energy Research, page 107

NOTE:

- Costs are mitigated by the savings from reduced spending on fossil fuels.
- Study excluded costs outside of the energy system or benefits from avoiding climate change and air pollution.
- Potential technical challenges to consider as well

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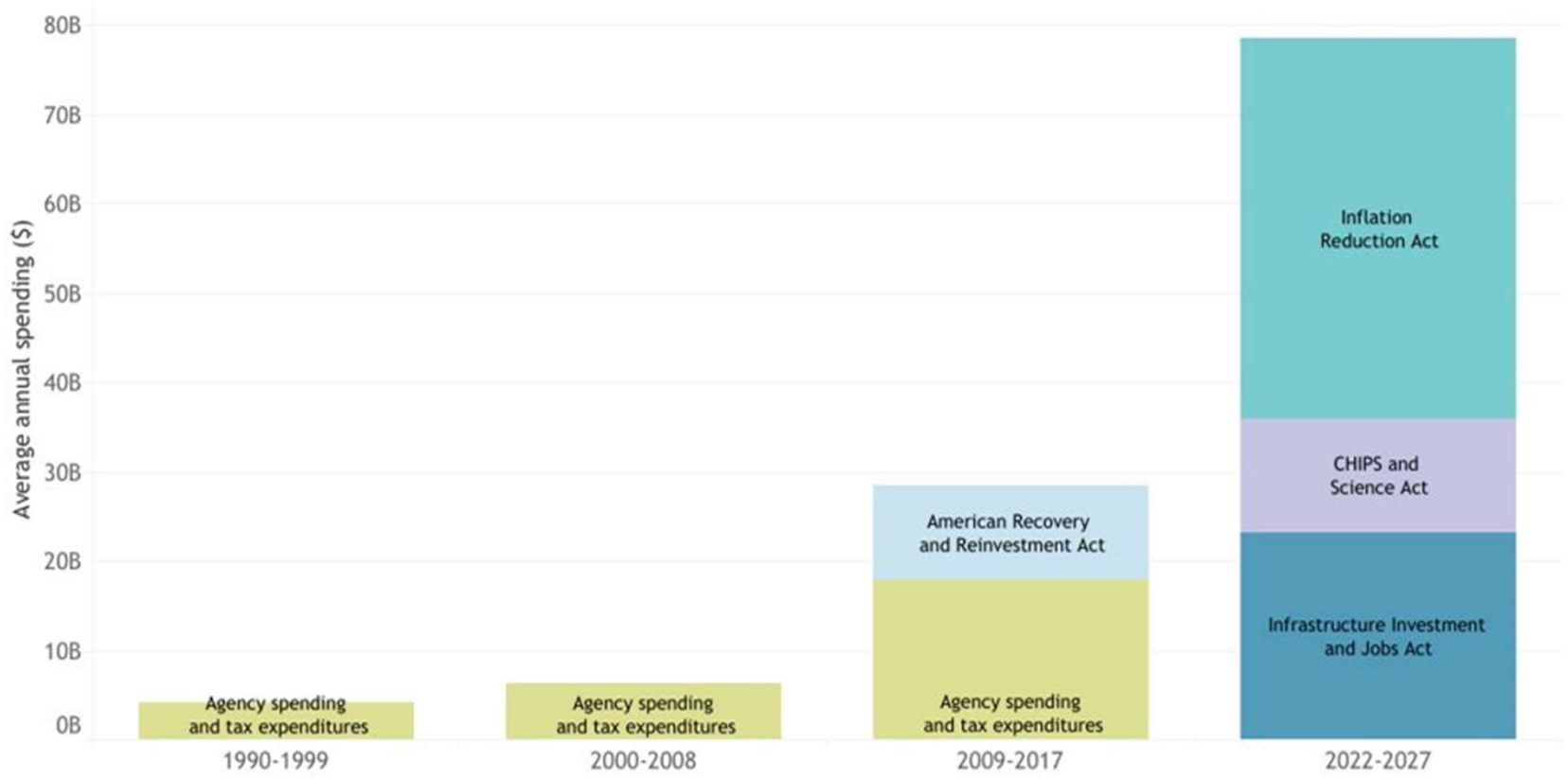
HISTORIC FEDERAL INVESTMENTS COMING



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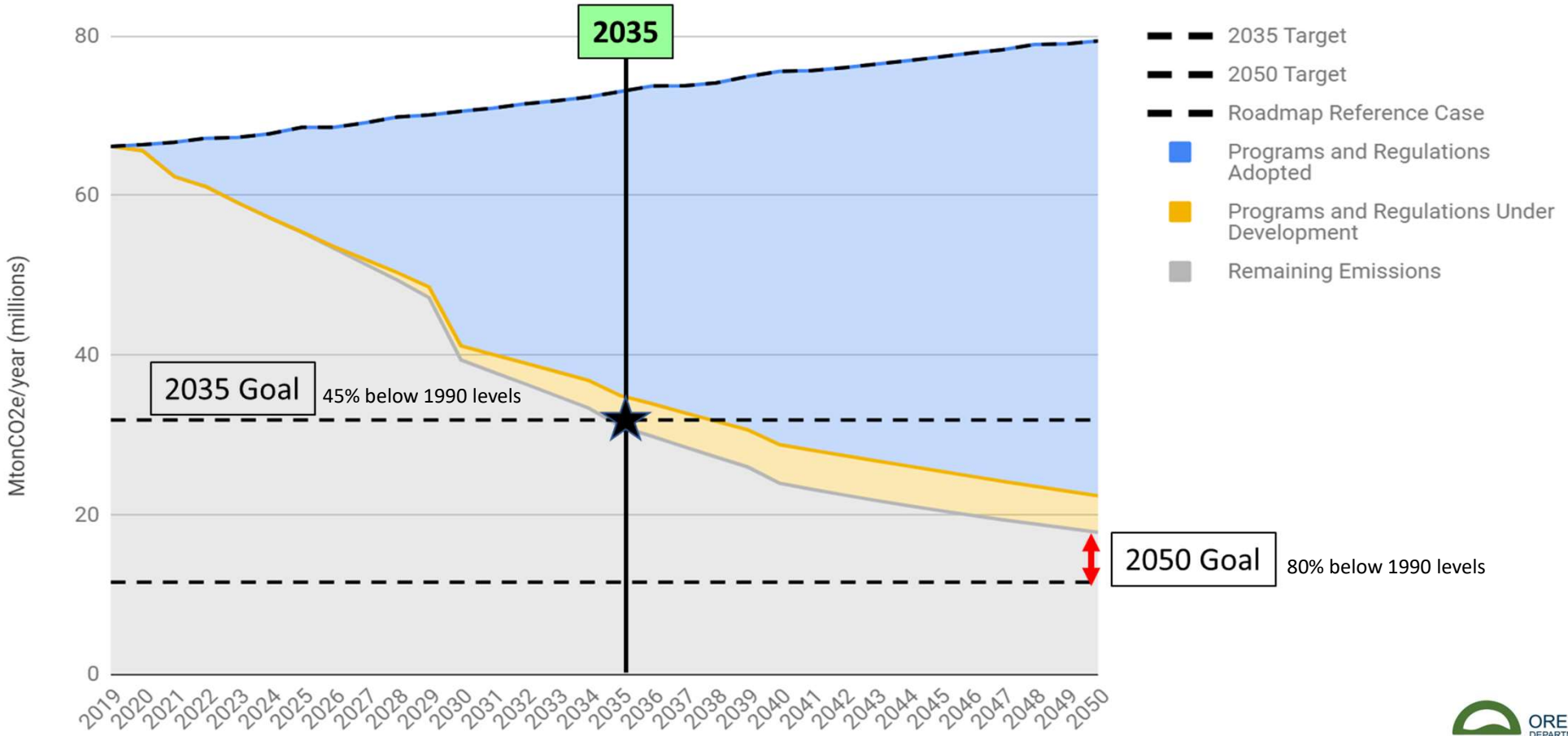
https://public.tableau.com/app/profile/jun.shepard2722/viz/FederalSpending1990-2029/FederalSpending1990-2029

PROGRESS CAN BE MADE – *OREGON TIGHGER*



https://www.keeporegoncool.org/tighger

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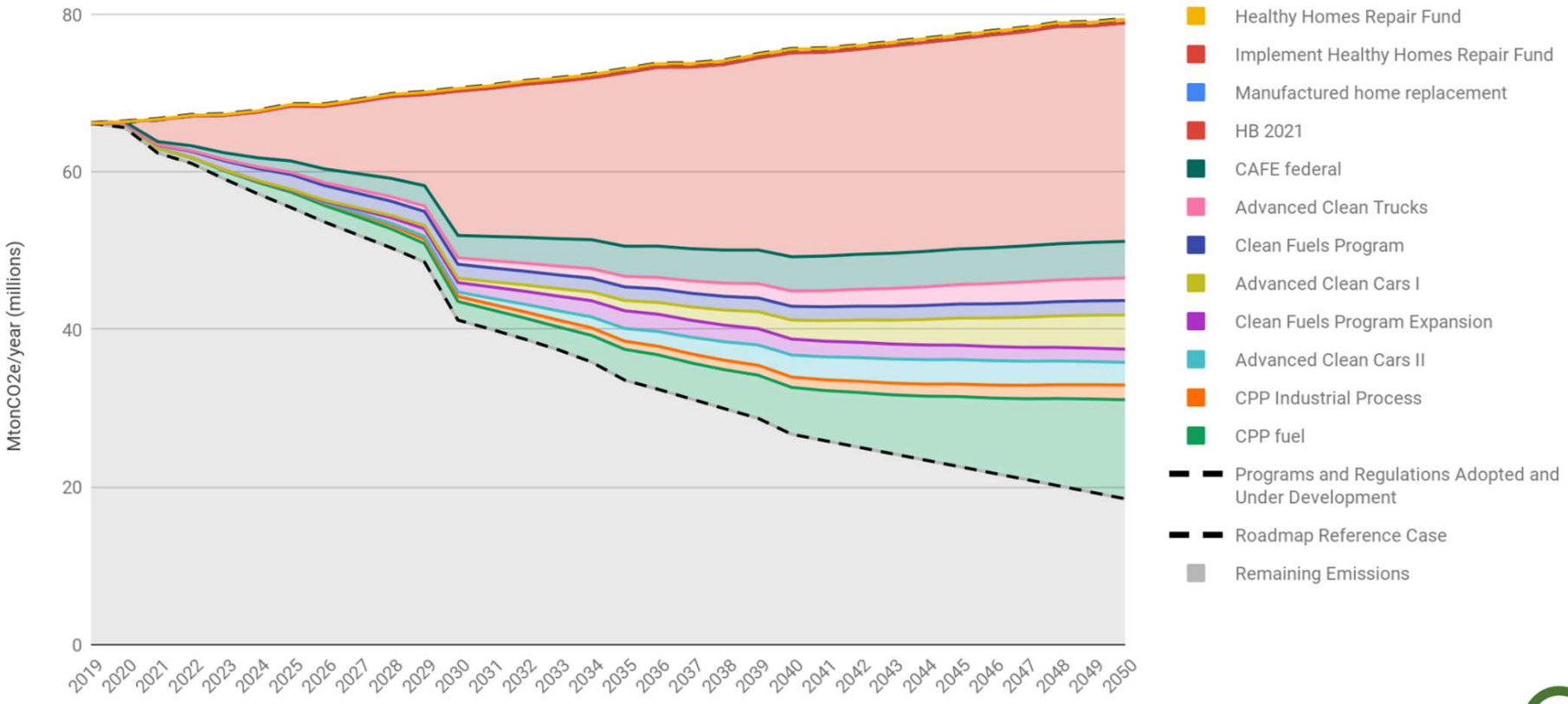
POLICIES & PROGRAMS ADD UP – *OREGON TIGHGER*



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Thank you!

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