Projected Sector-Based Greenhouse Gas Emissions for Oregon

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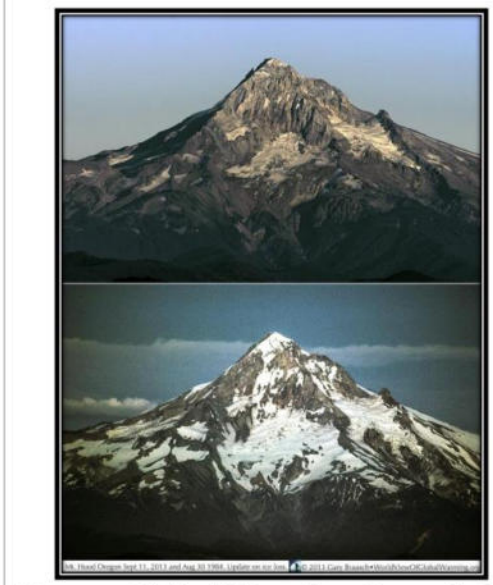
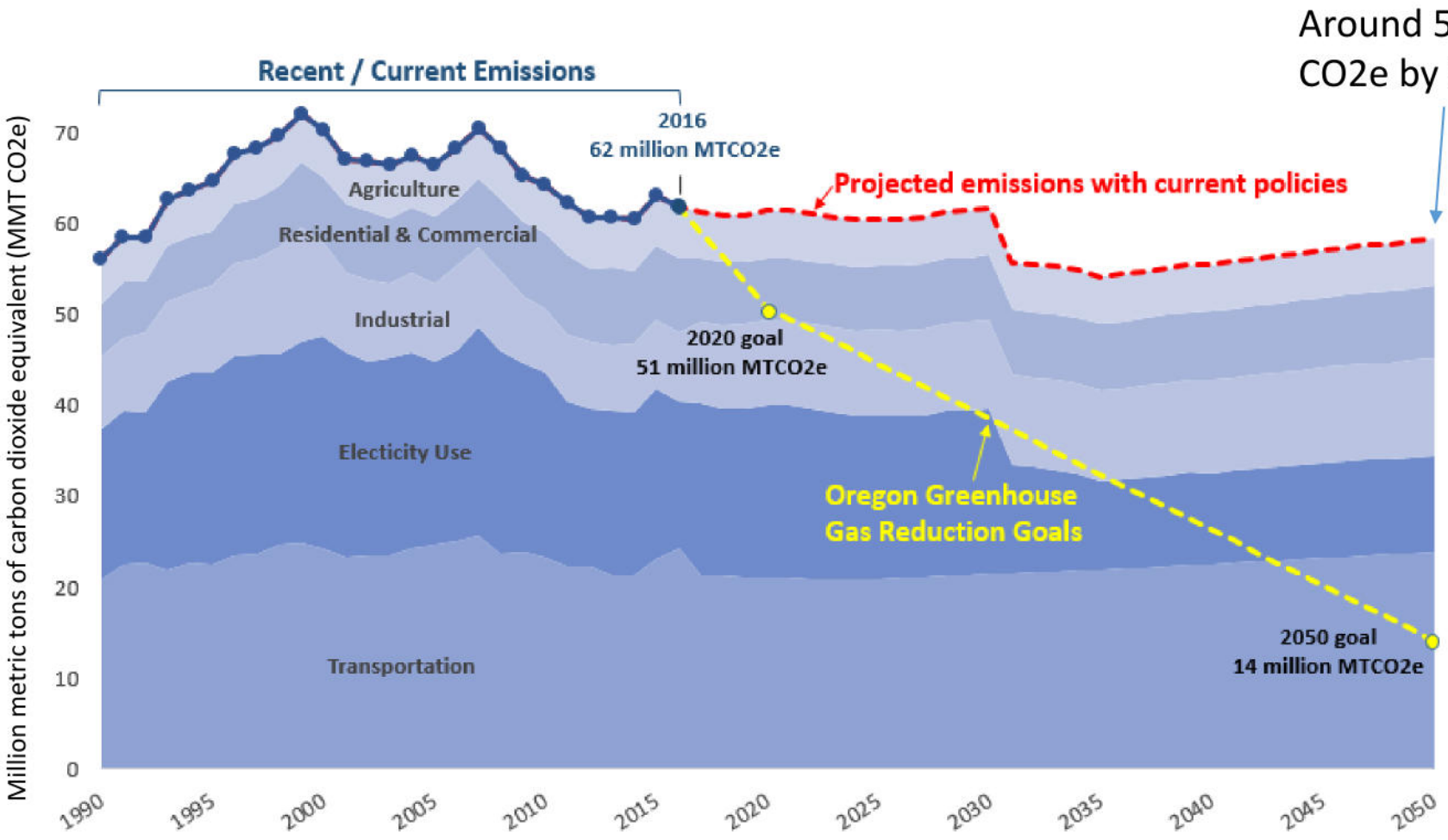


Most Recent Projection



https://carbonpolicy.oregon.gov

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A Closer Look: Oregon Electric Utility Emissions

- OGWC 2017 Biennial Report presented GHG forecasts for PGE and PacifiCorp compared against a "proportional share" line suggested by the Commission
  - 80% below a 2005 baseline (average of 2003-2007 emissions data)
  - Forecasts were based on 2016 IRPs
- These utilities agreed to provide updated forecast estimates for the 2018/19 OGWC report
- Draft report conclusion: Oregon's largest electric utilities are on a path that, if sustained, will deliver their proportional share of Oregon's 2050 goal

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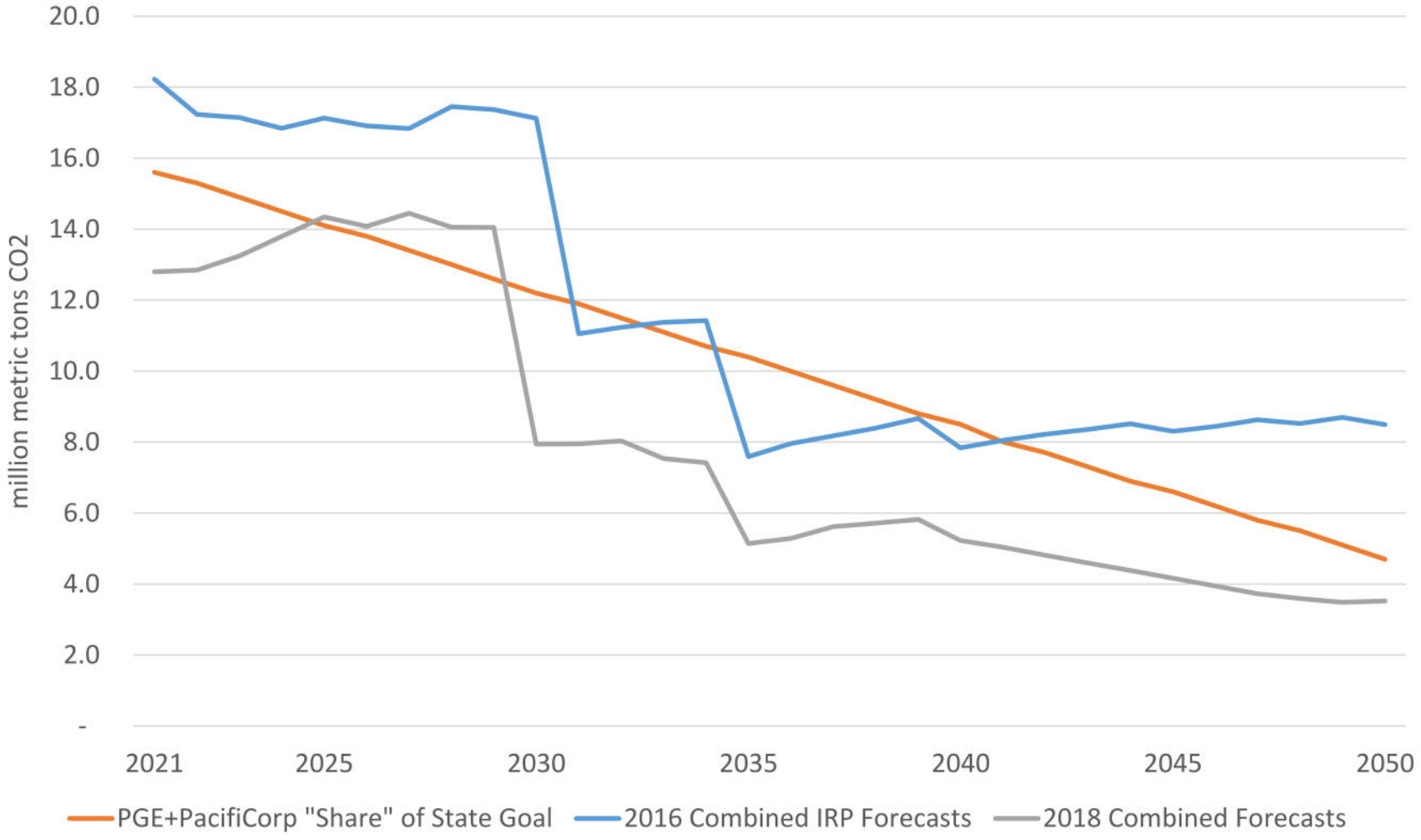
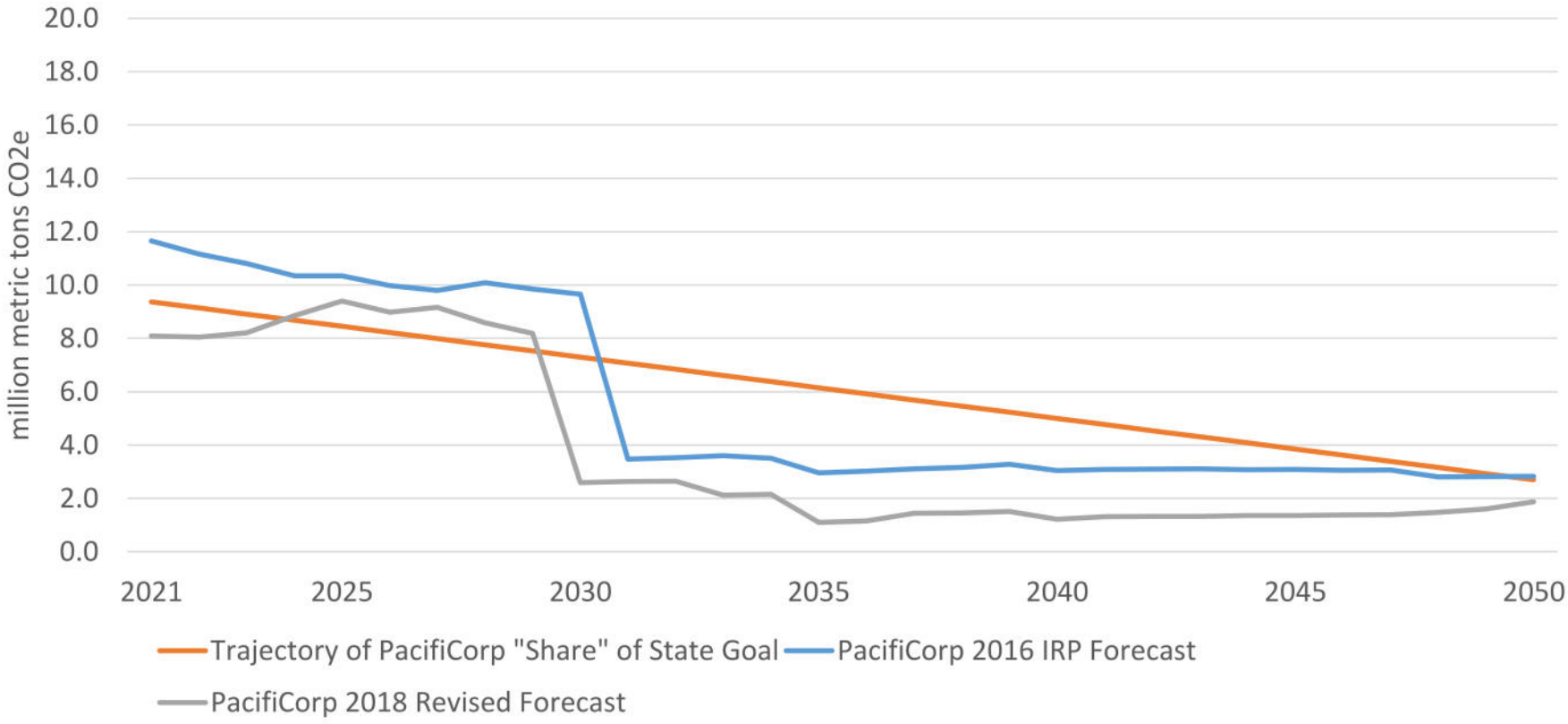
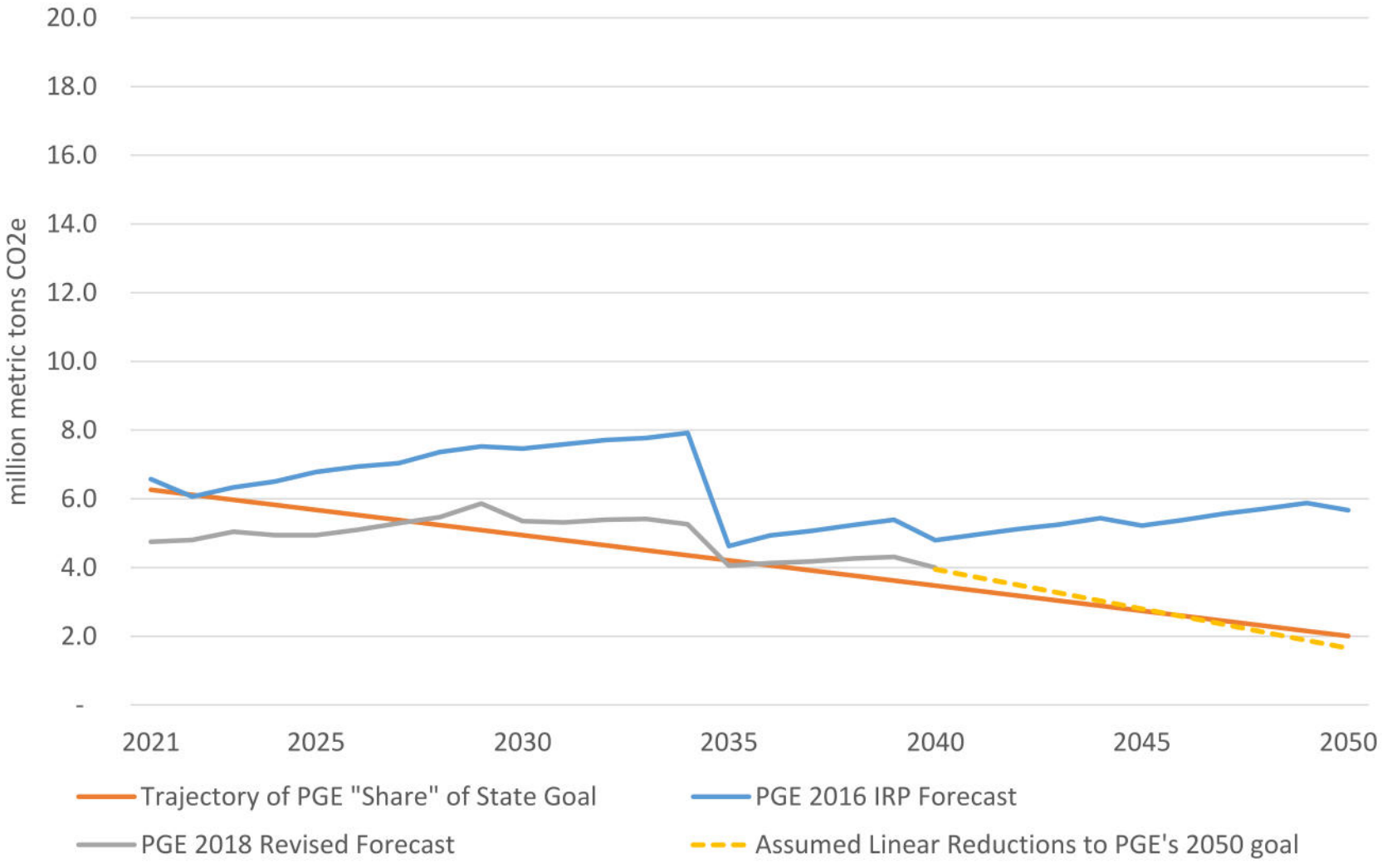
Combined PGE + Pac Forecasted Emissions



PacifiCorp Forecasted Emissions



PGE Forecasted Emissions



A Closer Look: Oregon Natural Gas Utility Emissions

- Since 2000, GHG emissions from all gas users in Oregon have stayed relatively level
  - low of 7.1 MMT CO2e in 2009
  - high of 8.2 MMT CO2e in 2013
  - Comprises 11 to 14 percent of Oregon's total annual GHG emissions
- Three gas utilities operating in Oregon, but no utility-specific GHG emissions projections available. NW Natural is the only with a voluntary GHG reduction target:
  - 30% overall reduction (not per customer) from 2015 levels by 2035
- Draft report conclusion: Contribution of Oregon's gas utilities to meeting state's climate goals will depend on their ability to find or produce low carbon versions of natural gas and package these with ongoing energy efficiency savings.

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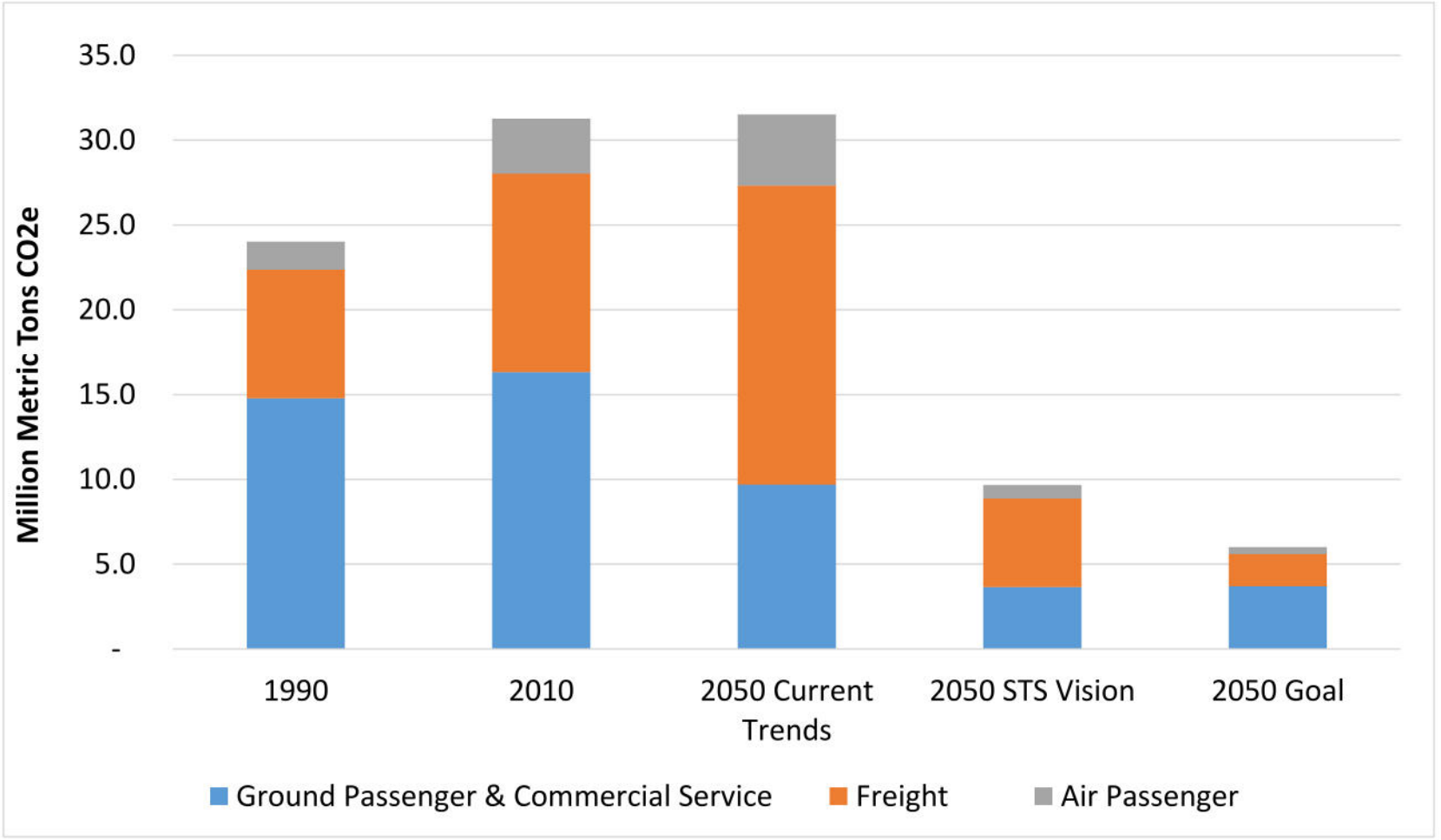
Oregon Biogas and Renewable Natural Gas Inventory

- Biogas and Renewable Natural Gas (RNG) Inventory: SB 334 (2017) 2018 Report to the Oregon Legislature
  - www.oregon.gov/energy/Data-and-Reports/Pages/Reports-to-the-Legislature
- RNG inventory indicates that there is potential for a substantial amount of RNG to be produced in Oregon from a variety of biogas production pathways.
  - Gross potential for RNG production when using anaerobic digestion technology is around 10 billion cubic feet of methane per year, which is about 4.6 percent of Oregon's total yearly use of natural gas.
  - Gross potential for RNG production when using thermal gasification technology is nearly 40 billion cubic feet of methane per year, which is about 17.5 percent of Oregon's total yearly use of natural gas.
- Scaling up production in Oregon would require addressing various financial, technical, market, policy and regulatory barriers identified in the report

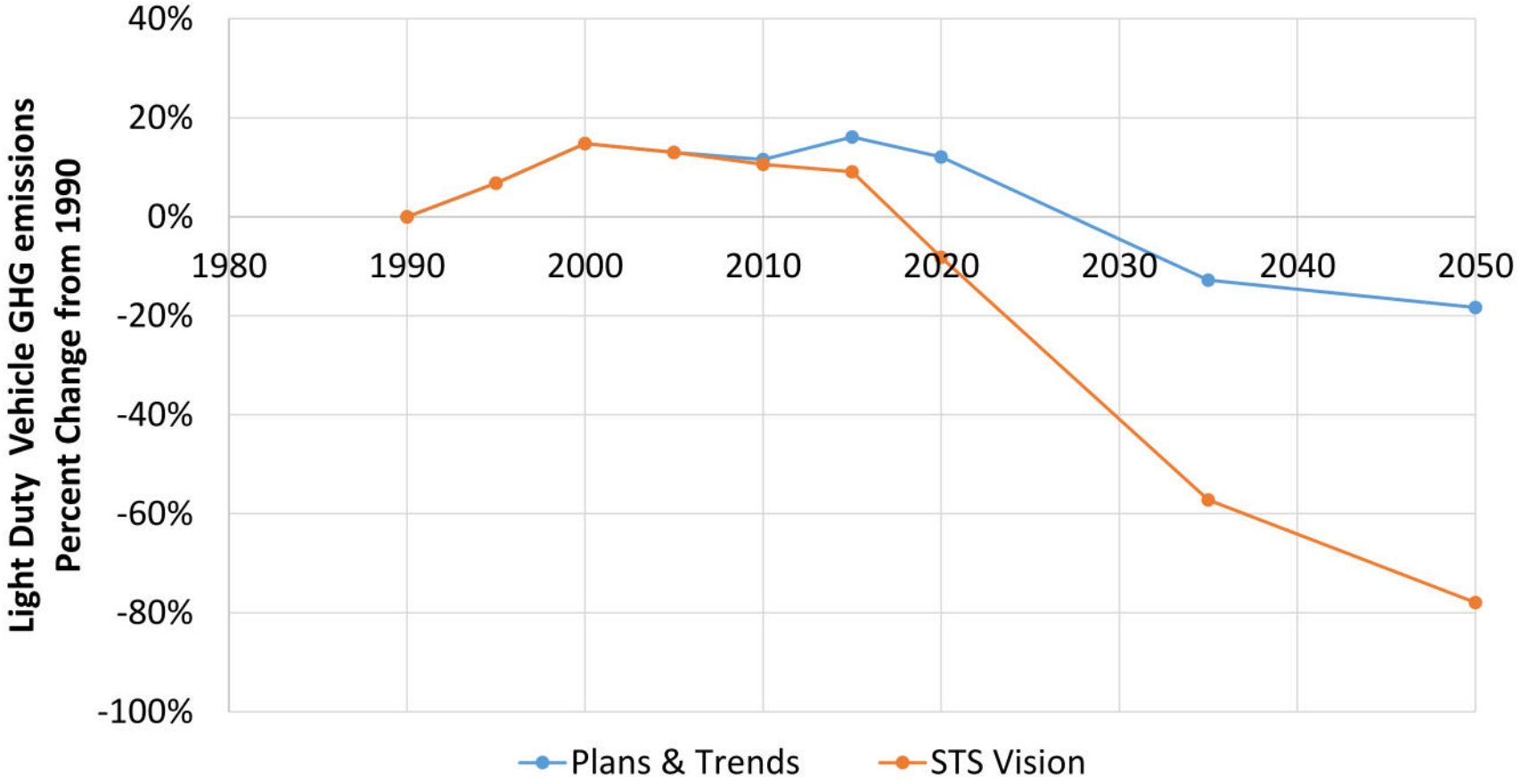
A Closer Look: Oregon Transportation Emissions

- Comparison of Historic and Projected Transportation Sector GHG Emissions from ODOT 2013 STS report.



A Closer Look: Oregon Transportation Emissions

- ODOT 2018 Monitoring Report – not on track to achieve trajectory for light-duty vehicles called for under STS.

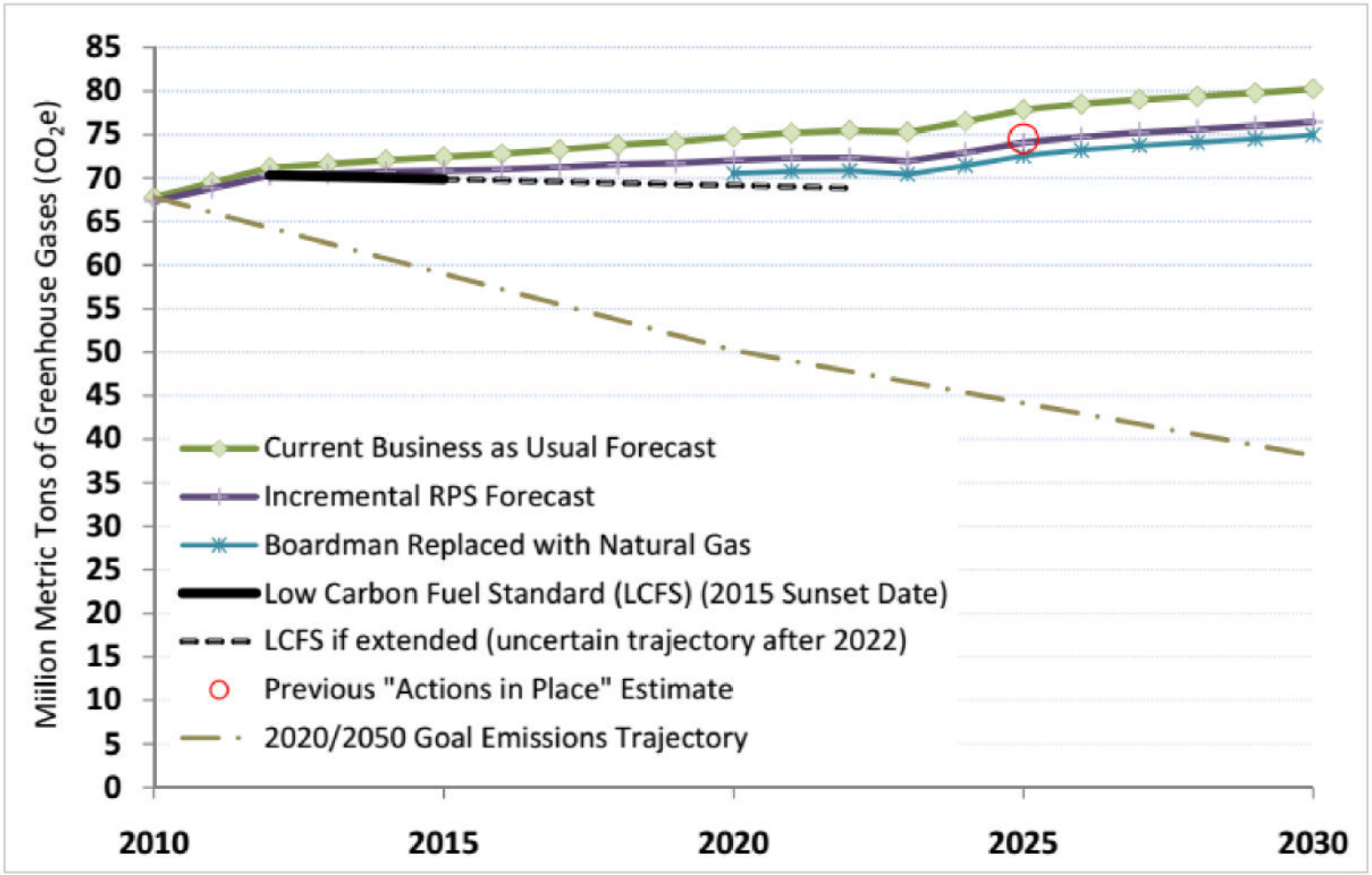


A Closer Look: Oregon Transportation Emissions

- Key assumptions underlying projection:
  - Extension of Federal Corporate Average Fuel Economy (CAFE) standards, Zero Emissions Vehicle program, and Oregon's Clean Fuels Program, as well as initiation of mechanism(s) for true-cost pricing.
- Going forward it will become increasingly important to account for rapidly changing policy and consumer landscape
- STS Monitoring Report emphasizes specific sets of strategies for continued and increased implementation
- Draft report conclusions:
  - Acknowledging the challenge of federal deregulation efforts
  - Oregon and other states can enable progress on transportation emissions reduction with policies that incentivize low-carbon choices: EVs, bicycle and pedestrian travel, and urban design, to name a few.

Appendix

Projections from 2011 OGWC Report (pgs 74 & 76)



Projected range for 2030: mid 70s to low 80s

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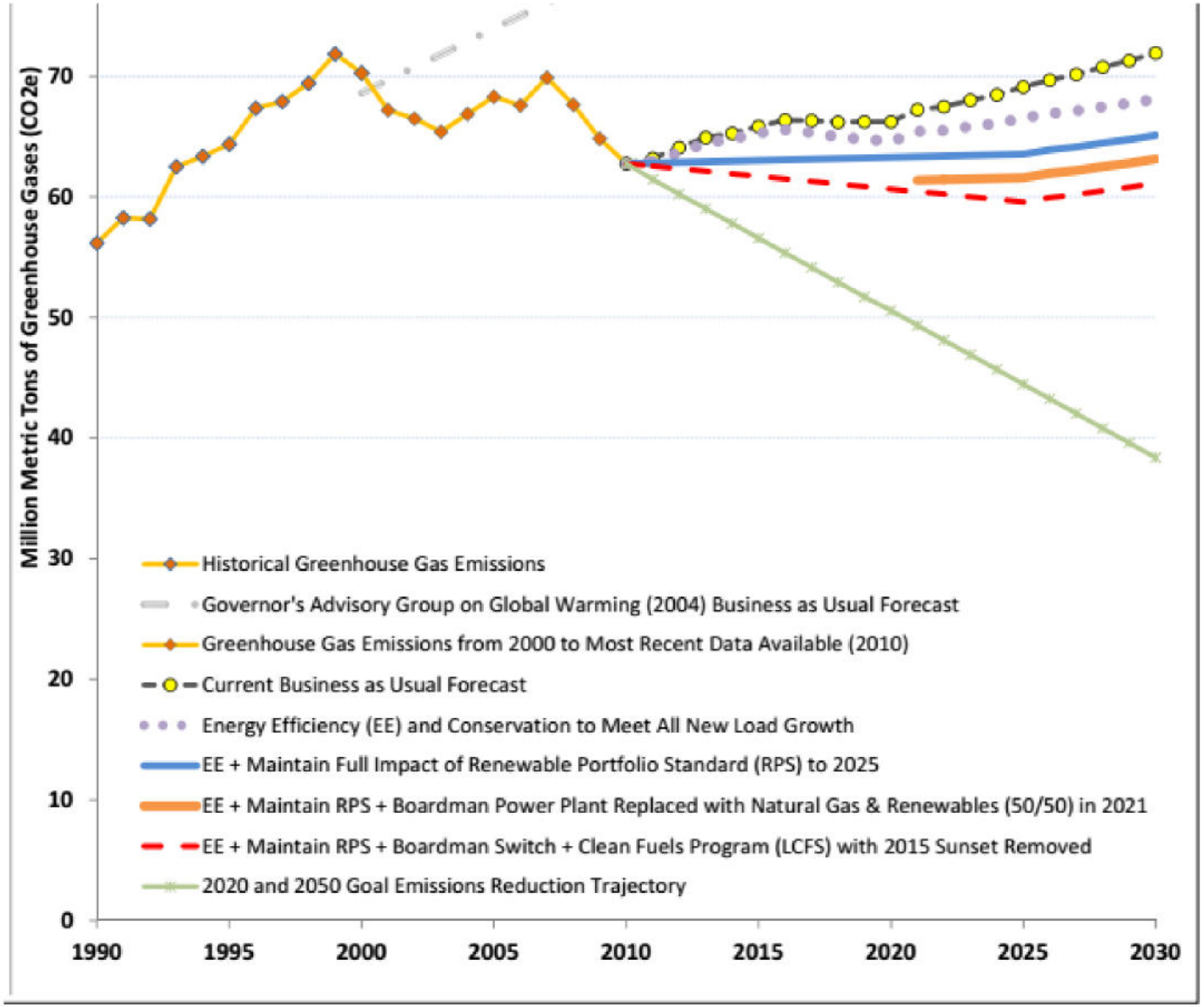
Projections from 2013 OGWC Report (pg 95)



Projected range for 2030: low 60s to low 70s

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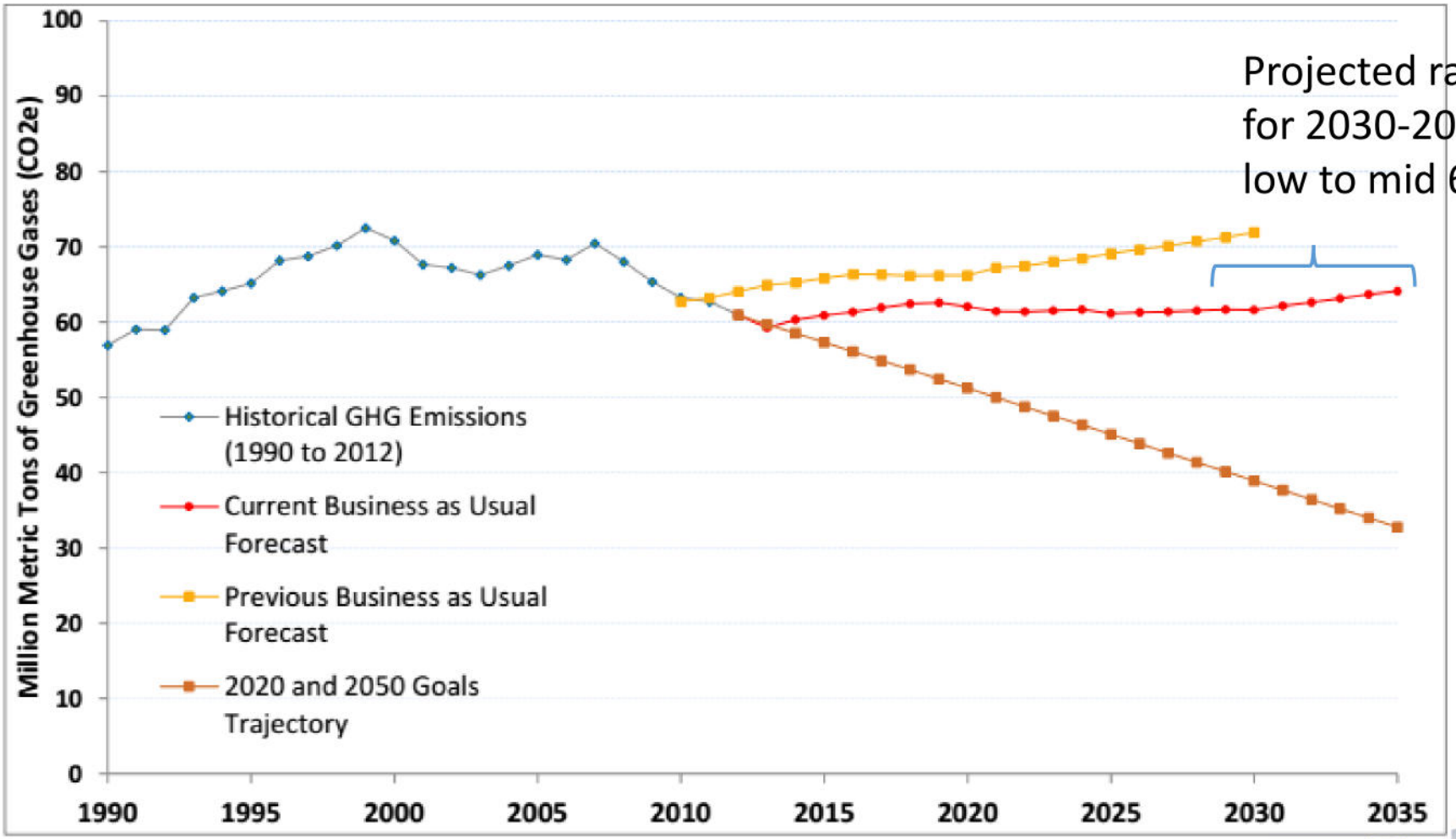
Projections from 2015 OGWC Report (pg 18)



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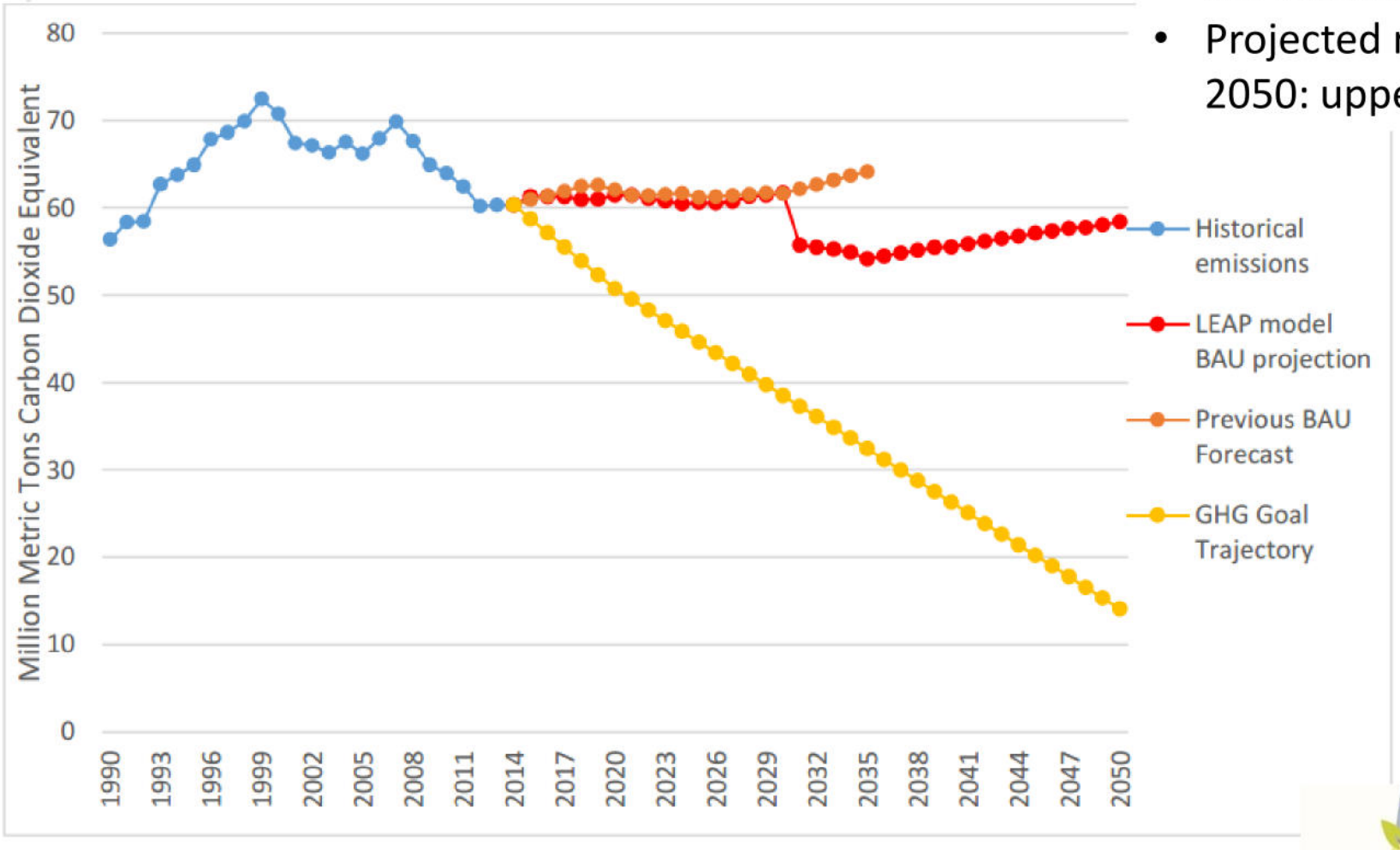
Projections from 2017 OGWC Report (pg 27)

- Projected range for the 2030s: mid 50s
- Projected range for 2050: upper 50s



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