

HB 4036 Oregon Clean Electricity & Coal Transition Plan

Oregon Public Utility Commission

January 29, 2016



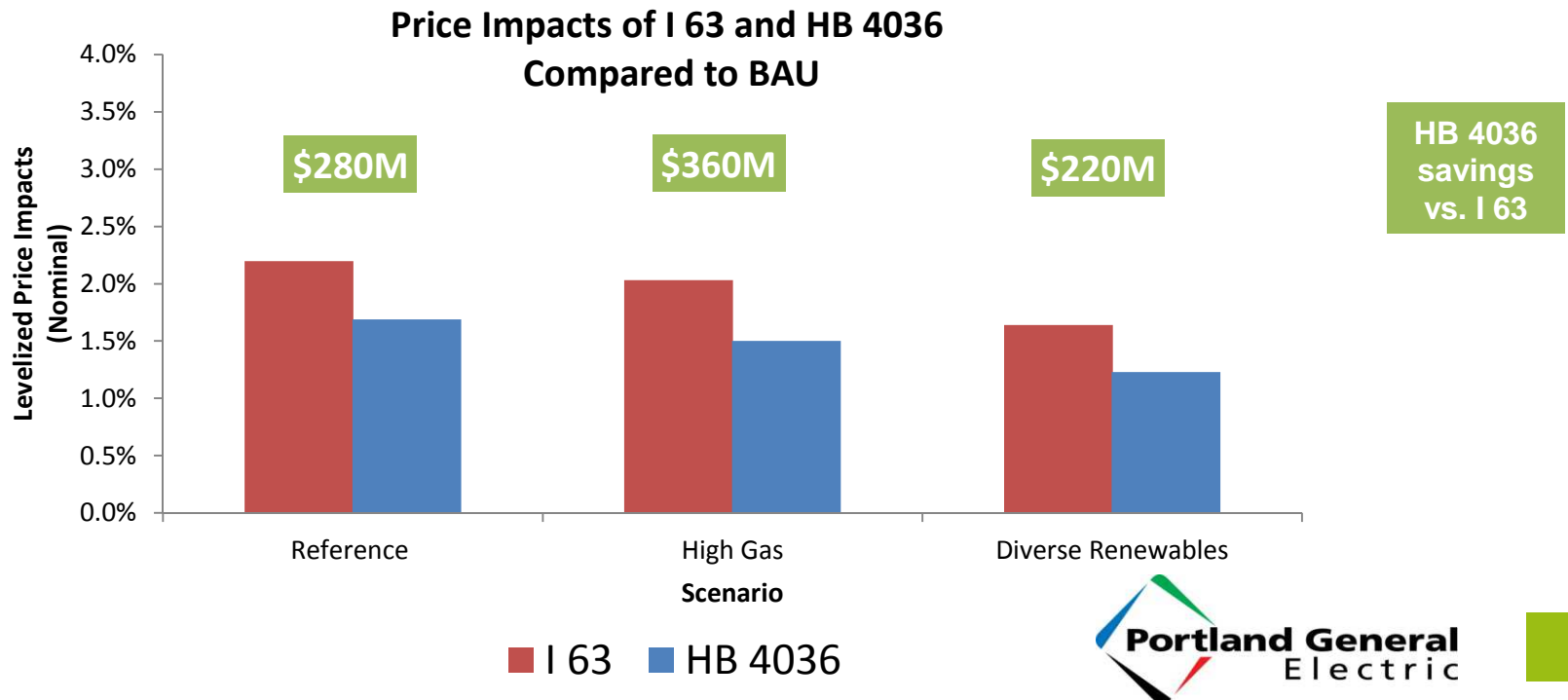
PGE Analysis of HB 4036 and Initiative 63

HB 4036 offers clear customer savings relative to Initiative 63

- PGE conducted initial comparative analysis of proposed legislation to increase the Renewable Portfolio Standard (RPS) to 50% by 2040 and transition of coal out of PGE's customer resource mix by 2035 .
- PGE performed analysis relative to a Business As Usual (BAU) scenario which indicates HB 4036 is feasible with modest and manageable cost outcomes.
- Analysis indicates HB 4036 will save PGE customers \$220 - \$360 million when compared to Initiative 63.

Price Impact Comparison

- House Bill 4036 Analyses:
 - Estimated price impact analysis (2017-2040)
 - Relative to Initiative 63 and Business as Usual case
 - Scenarios: Reference Case, High Gas Price, Diverse Renewables
 - Analysis indicates HB 4036 will save PGE customers \$220 - \$360 million when compared to Initiative 63.

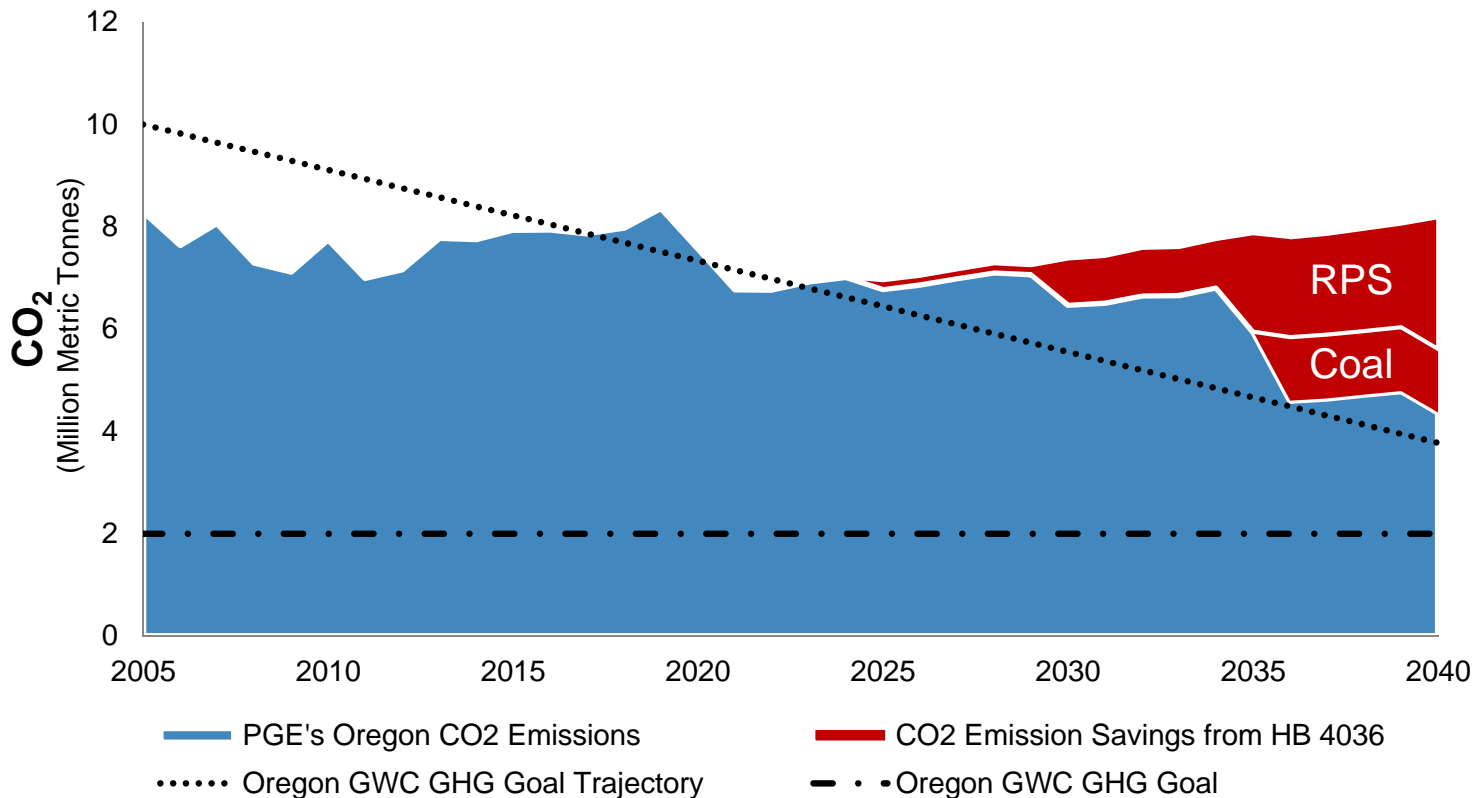


Reliability and Operational Impacts Analysis

- HB 4036 includes a reliability provision that creates a safety valve to allow temporary suspension of compliance if necessary for reliability.
- PGE's analysis includes the addition of sufficient capacity resources to ensure reliability under the higher renewable targets of HB 4036.
- PGE is exploring joining the Western Energy Imbalance Market. PGE submitted an energy market comparative analysis in 2015. Access to an EIM provides an important tool to help manage operational impacts from integrating increased levels of renewable resources.
- PGE is working on studies to assess resource adequacy, capacity contribution, and flexibility needs under a range of RPS levels. PGE shared preliminary results with OPUC Staff and stakeholders in August and December IRP public workshops. The studies are ongoing and include renewable scenarios up to 50%. PGE plans to include the completed studies in the 2016 IRP.

Impact of HB 4036 on PGE's Oregon CO₂ Emissions

- HB 4036 reduces PGE's Oregon CO₂ emissions by removing coal from PGE's customer resource mix and by increasing RPS levels beyond current statute.



WECC-wide Carbon Reductions

- While HB 4036 requires Oregon utilities to remove coal from customer resource mix, it does not require out of state coal plants to close.
- However, the increased renewable targets alone achieve meaningful CO₂ reductions:
 - On a WECC-wide basis, HB 4036's RPS additions are forecasted to reduce CO₂ emissions over 30 million metric tons between 2025 and 2040.
 - By 2040, WECC-wide CO₂ emissions will be reduced by 4 million metric tons annually. This reduction is greater than PGE's share of annual CO₂ emissions at Boardman and Colstrip combined.