NCASI Input to Regional Greenhouse Gas Regulation Development

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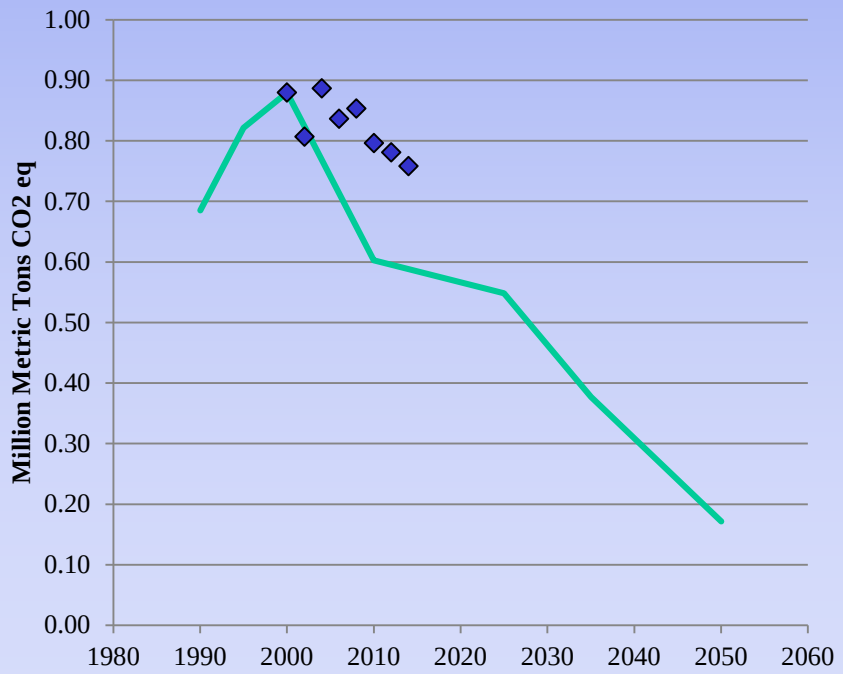
GHG Regulation Development in Oregon

- **Two bills introduced in Oregon legislature January 2016**
  - **LC 42:**
    - **Requires electric utilities to eliminate coal-fired resources from companies electricity supply**
  - **SB 1574:**
    - **Repeals existing GHG emission goals, requires Environmental Quality Commission to adopt new statewide emission goals and limits and adopt carbon pollution market**
    - **Requires ODEQ to administer auctions of carbon allowances under carbon pollution market**
  - **Very little detail in the bills on how either program would function**
  - **Neither bill made it out of committee**
- **NCASI helped regional industry understand potential impacts**

NCASI Support on Proposed OR GHG Regs

- **NCASI developed/provided:**
  - **Estimates of cost to the Oregon forest products industry**
  - **Historical GHG emission reductions by Oregon mills**
  - **Required emission reduction pathway for sector**

Required Emission Reduction Path



Costs Associated with SB 1574

Year	$12.71/mt CO_2	$25.00/mt CO_2
2025	$2,700,000	$5,250,000
2035	$4,850,000	$9,500,000
2050	$7,500,000	$14,700,000

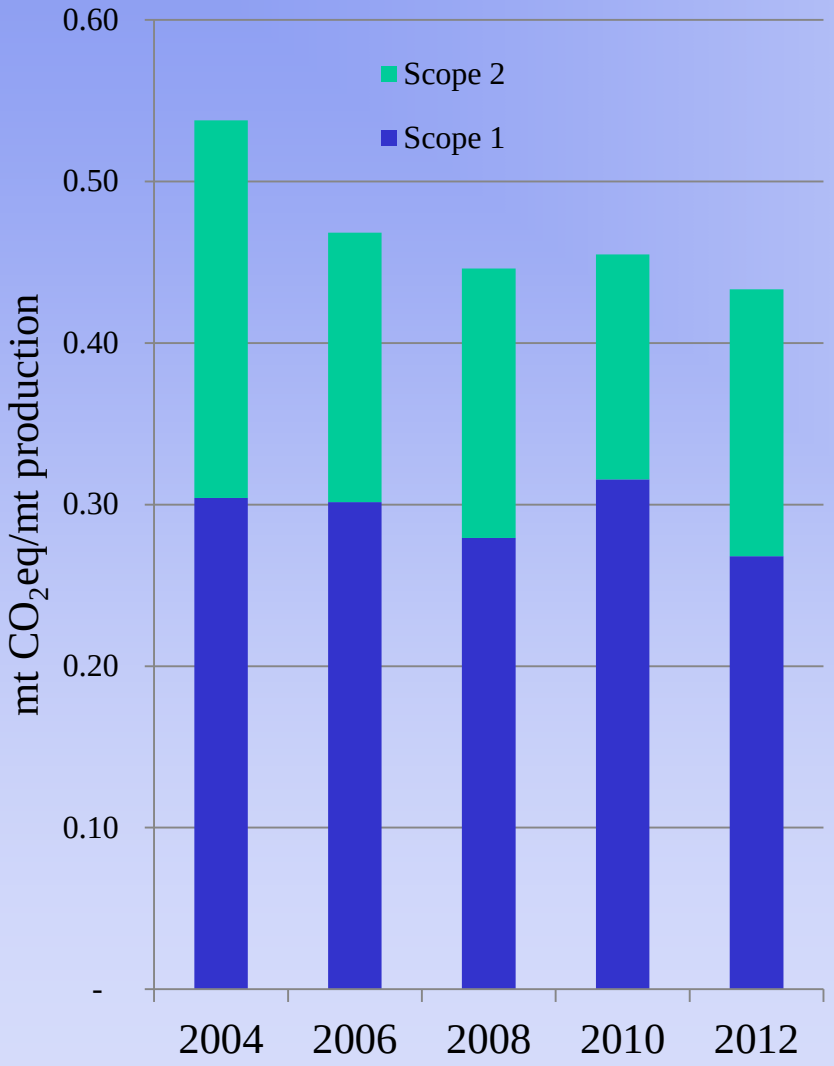
GHG Regulation Development in Washington

- **“Clean Air Rule” (CAR)**
  - **Proposed January 5, 2015**
  - **Withdrawn February 26**
  - **Re-proposed May 31**
  - **Finalized September 15**
  - **Effective October 17, 2016**
- **Is a “cap and reduce” program**
- **Biomass CO_2 is not included**
- **Pulp and paper listed as an EITE sector**
- **NCASI helped regional industry understand potential impacts**

Cost to Affected P&P Mills

- **Five Washington mills covered by proposed CAR**
- **Simplified assessment of compliance cost**
  - **Assume facilities meet obligation solely by purchasing allowances issued by California cap and trade program**
    - **I.e., facility emissions remain constant at the baseline**
    - **Not allowed after 2022**
    - **2016 annual auction reserve price $12.71/ton CO_2 eq.**
- **Direct compliance cost:**
  - **$200,000/year**
- **Indirect cost of compliance (e.g., purchased power)**
  - **Too uncertain to estimate**

GHG Emission Intensity Trends for Washington Pulp and Paper Facilities

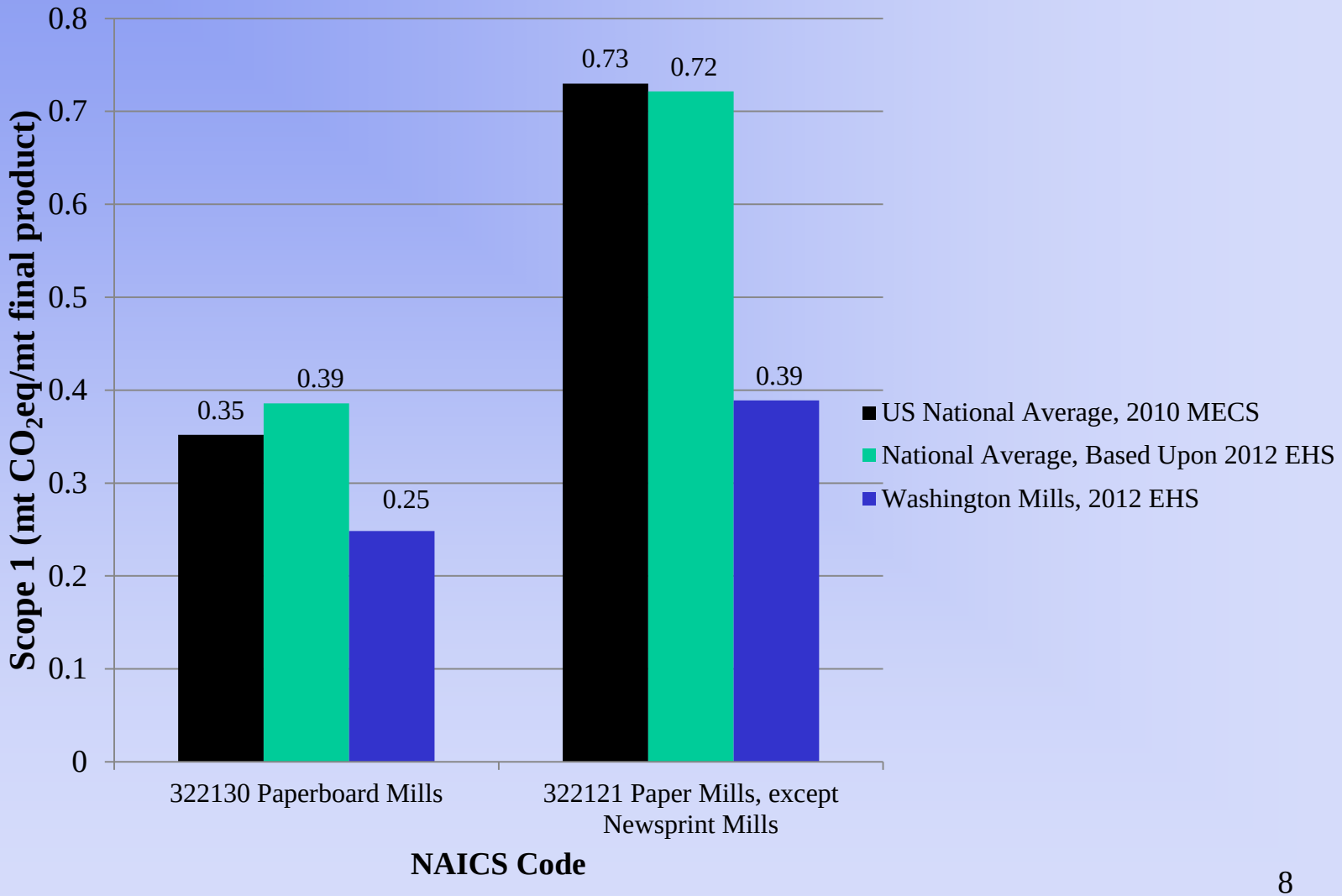


- **Early Actions at WA Mills:**
  - **Boiler and power generation improvements**
  - **Switching to lower GHG emitting fuels**
  - **Process efficiency improvements**
    - E.g., board machine rebuild

Benchmarking Used to Set Emission Reduction Pathway for EITE facilities

- **NCASI provided analysis of difficulties involved in benchmarking our sector by production category**
- **NCASI calculated GHG emission intensities of pulp and paper mills by NAICS code**
  - **Sector was categorize by 6-digit NAICS code**
    - **Overly broad for rational benchmarking for the sector, but frequently used for benchmarking industrial sectors.**
  - **Average GHG emission intensities from Washington mills were compared to various national averages.**

US Pulp and Paper Sector Scope 1 GHG Emission Intensity



Potential Leakage Effects Caused by Washington Carbon Policy

- **EITE industries are vulnerable to leakage**
  - **The shifting of production to locations without carbon regulation.**
  - **Leakage to areas with higher emission intensities increases overall GHG emissions**
  - **Washington state has significant forest resources AND low GHG emitting purchased power**
- **NCASI estimated change in indirect emissions corresponding to 5% leakage**
  - **34,000 mt CO_2 eq. / year (Canadian average)**
  - **260,000 mt CO_2 eq. / year (Chinese average)**

Industrial CHP as an Alternative Emission Reduction Measure

- **Industrial CHP is listed as an alternative emission reduction measure but no method is provided**
- **NCASI proposed a method**
  - **Emission reductions are equivalent to the difference in emissions between CHP electricity relative to purchased power (considering T&D losses)**
- **Forest product CHP emissions are much lower than those of purchased power, and could generate significant ERUs**
  - **40,000 to 100,000 ton CO_2 eq/year for 15 MW system**

What's Next?

- **Oregon likely to introduce GHG cap and trade legislation in 2017**
- **Washington will have to develop benchmarks for our sector, NCASI will likely be called on to help**

Questions?