



Looming Issues in California's Climate Policy

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Where we are now

- AB 32 established/co-opted a suite of policies directed at GHG reductions across several sectors
- LCFS directed at reducing carbon intensity of fuels by 10% by 2022
 - Currently implemented but frozen by litigation for a time at a 1% reduction, the current target.
 - Litigation resolved and program is up for renewal
- Cap-and-trade program extended to transport fuels in January 2015
 - Refinery emissions covered since 2013, Biofuels emissions fully exempt under the cap
- California starting process of next-stage carbon policy
 - Gov. Brown has set goal of 50/50/50
 - Consideration of trajectory toward 80% reductions by 2050

West Coast Choices:

Fuel Standards or Gasoline Taxes?

OLYMPIA — Over the objections of most of the chamber's Democrats, the state Senate on Monday passed a **\$15 billion transportation package** including an 11.7-cent gas tax increase.

Many Democrats opposed to the proposal cited environmental concerns, including a provision intended to keep Gov. Jay Inslee from **enacting low-carbon fuel standards** as a way to cut greenhouse gases.

Oregon Republicans are trying a similar tactic, pulling out of negotiations over a gasoline-tax increase to fund transportation projects in that state unless the low-carbon fuel standard is scuttled.

The Carbon Market: One year in

One Year Later, Carbon Auctions Thriving in California

By [KATIE HSIA-KIUNG](#) | Published: NOVEMBER 18, 2013

Part of this confidence stems from the auction results themselves. In the [last auction](#), all 2016 vintage allowances offered were purchased, signaling belief in the future of the carbon market, as these allowances cannot be used before 2016. In addition, California companies have become more comfortable participating in the carbon market. This is reflected in the healthy volumes traded daily on the secondary market and the increased stability of prices over the past few months.

The Carbon Market: One year in

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Monday, November 18, 2013 12:31 PM PT  Exclusive

Calif. carbon allowances for 2013 continue to lose ground

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By Amanda Luhavalja

California Carbon Prices

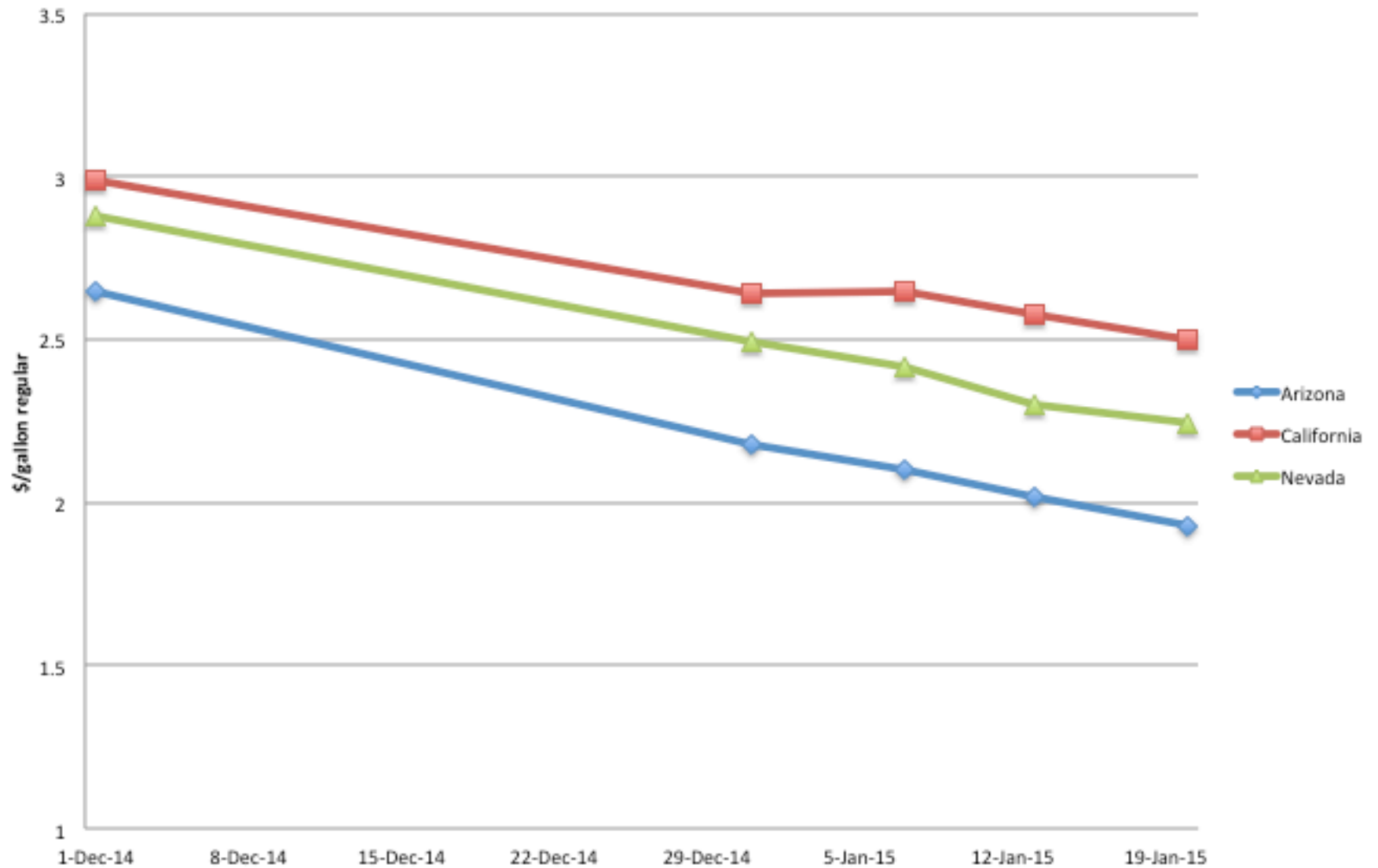
CARBON PRICE

\$/Tonne CO₂e

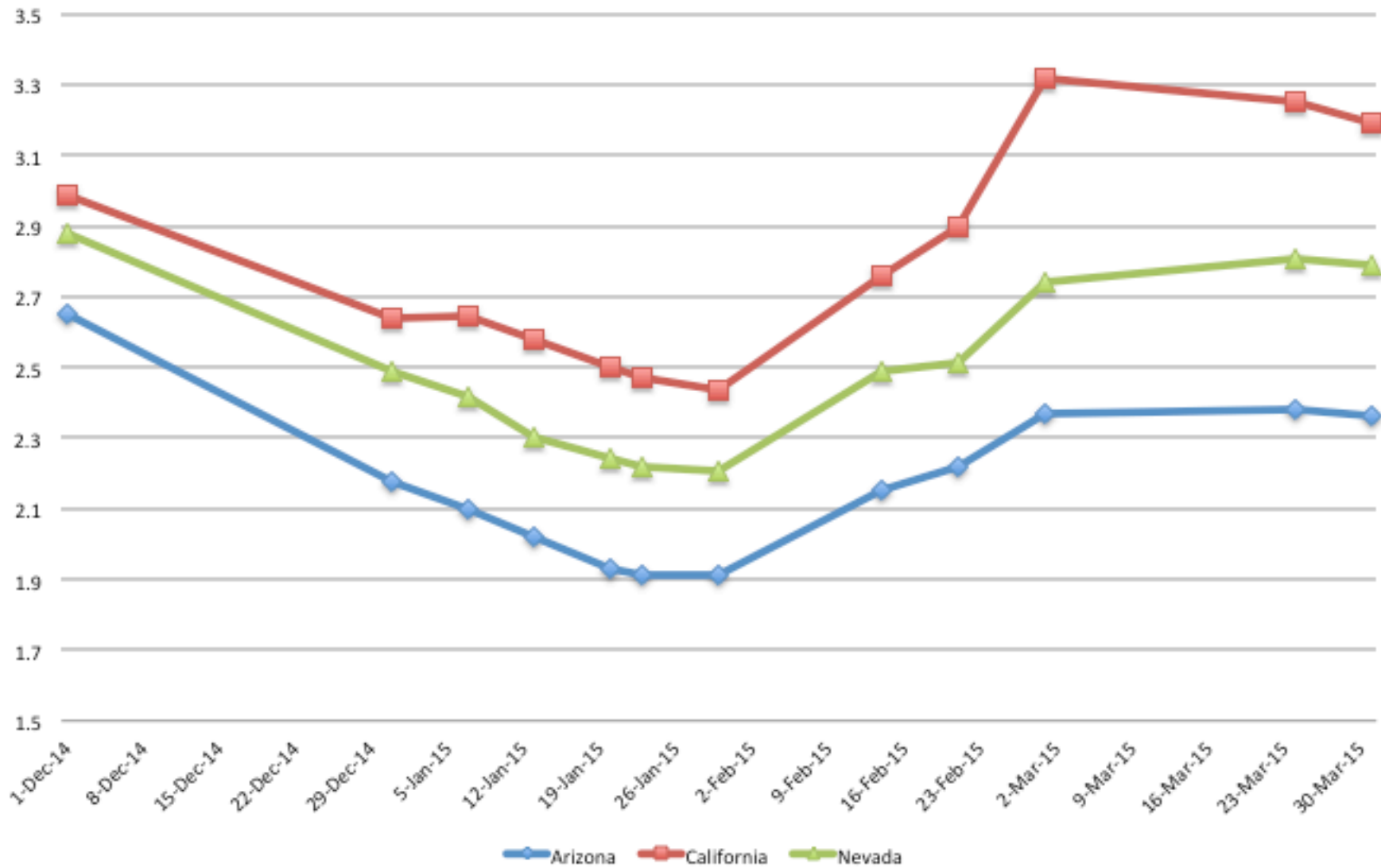


Price of California Carbon Allowance Futures over time from ICE End of Day Reports. Daily trading volume units are 1000 allowance futures. [Download source data.](#)

State Average Gasoline Prices (from AAA website)



California Gas Prices do Lots of Crazy Things

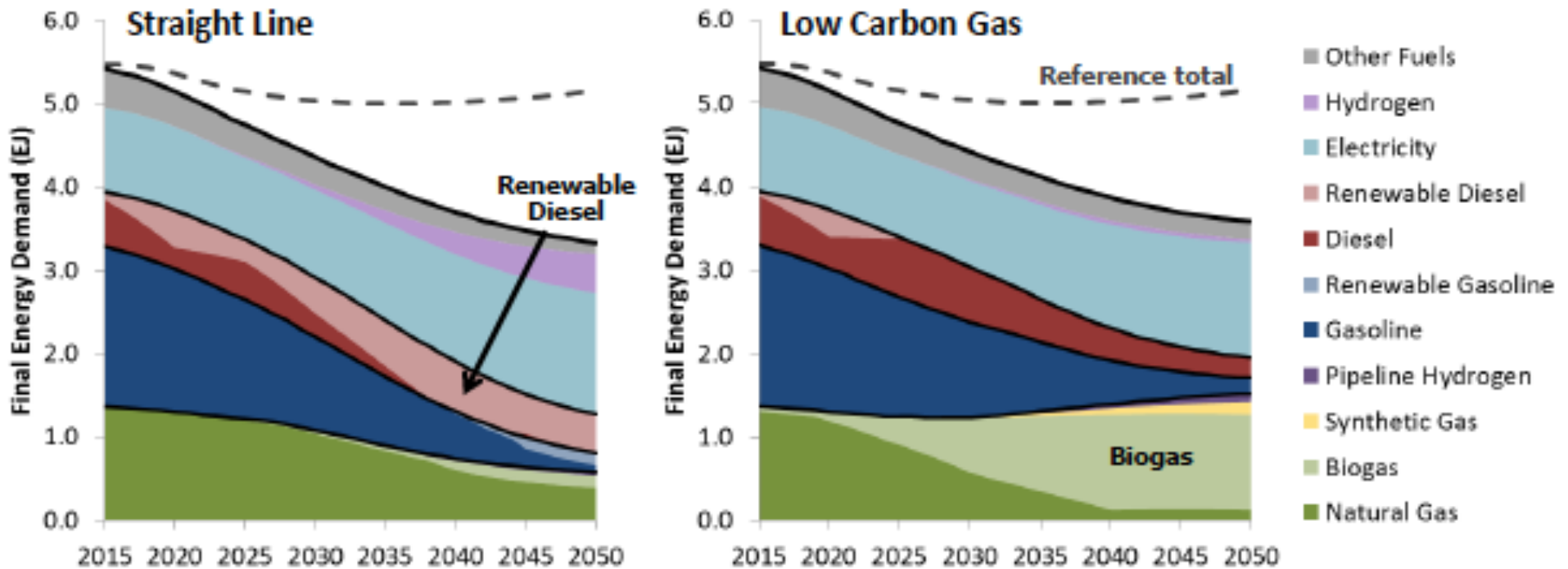


Looming Issues in Transportation

- Competition for feedstocks between power heating, and transportation sectors.
- Impact of any RFS changes on costs of biofuels and compliance with LCFS in west-coast states.
- Impact of sharply increased reductions targets on LCFS prices in west-coast states
 - Implications of cost-control measures (\$200/ton credit cap) for compliance levels and options.
- Sustainability of EV policies
 - Infrastructure funding debate (utility? Competition?)
 - EV mandate credit prices imply potentially large costs imposed on the sale of conventional vehicles.

Competing Demands for Feedstock

Final Energy Demand by Major Fuel Type



Looming Issues in Transportation

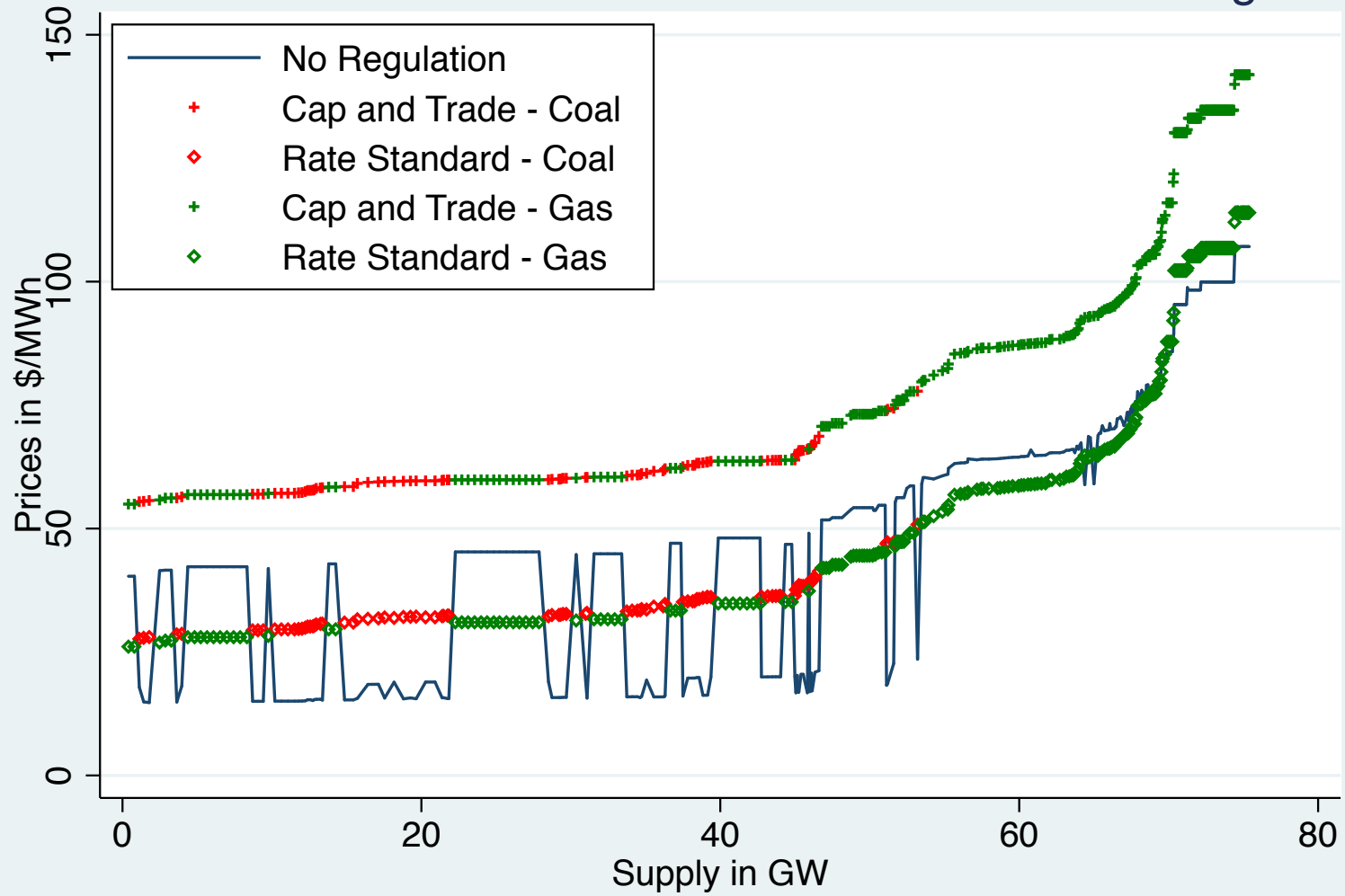
- Competition for feedstocks between power heating, and transportation sectors.
- Impact of any RFS changes on costs of biofuels and compliance with LCFS in west-coast states.
 - In general what is the role of these state-level policies relative to RFS?
- Impact of sharply increased reductions targets on LCFS prices in west-coast states
 - Implications of cost-control measures (\$200/ton credit cap) for compliance levels and options.
- Sustainability of EV policies
 - Infrastructure funding debate (utility? Competition?)
 - EV mandate credit prices imply potentially large costs imposed on the sale of conventional vehicles.

Looming Climate Policy Issues in the Electricity Sector



- Interaction of state-level climate policies with regional power trade (and emissions)
- US EPA Clean Power Plan
 - Compatibility of state-level choices can have a strong impact on regional emissions and compliance costs
- Western Energy Imbalance Market
 - Transforming paradigm for grid scale renewables
- Renewables Integration
 - Grid level reliability services
 - Distribution level reliability and charging

Generation Merit Order Under Different Emission Regimes



Generation Merit Order Under Different Emission Regimes

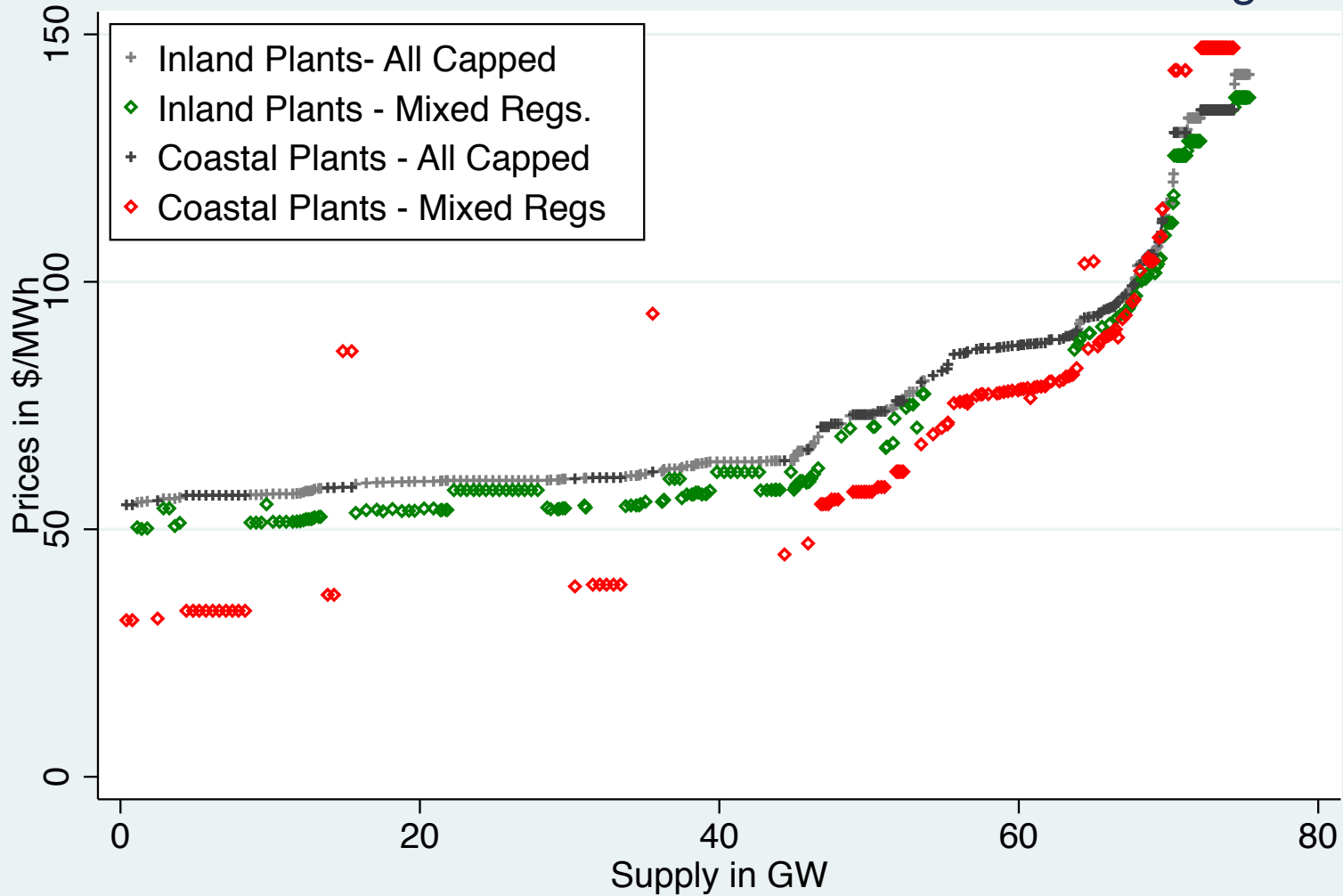
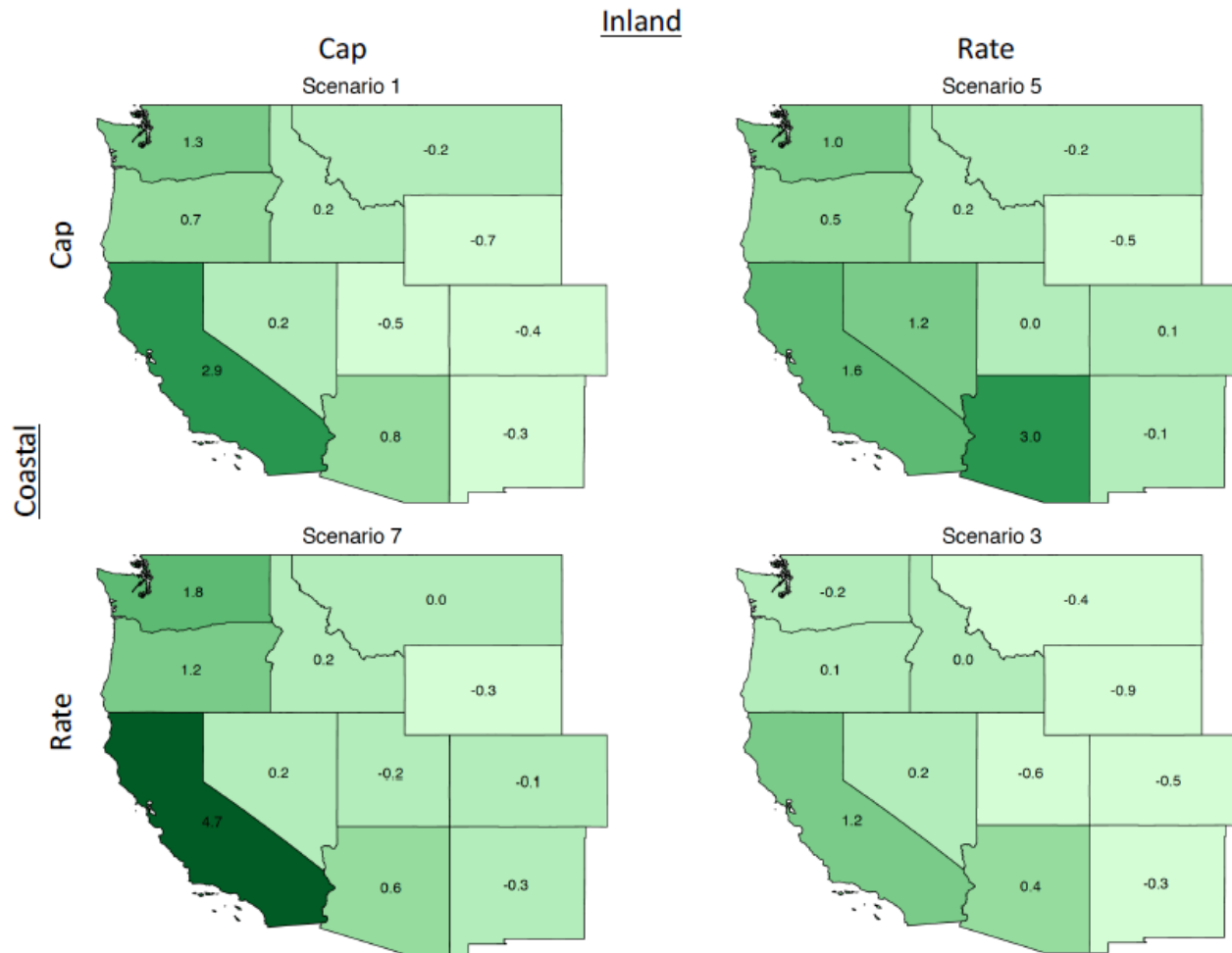


Figure 18: Profit incentives for all generation (covered and uncovered) under uniform and mixed regulation.



Note: Profit changes in \$ billion relative to BAU.

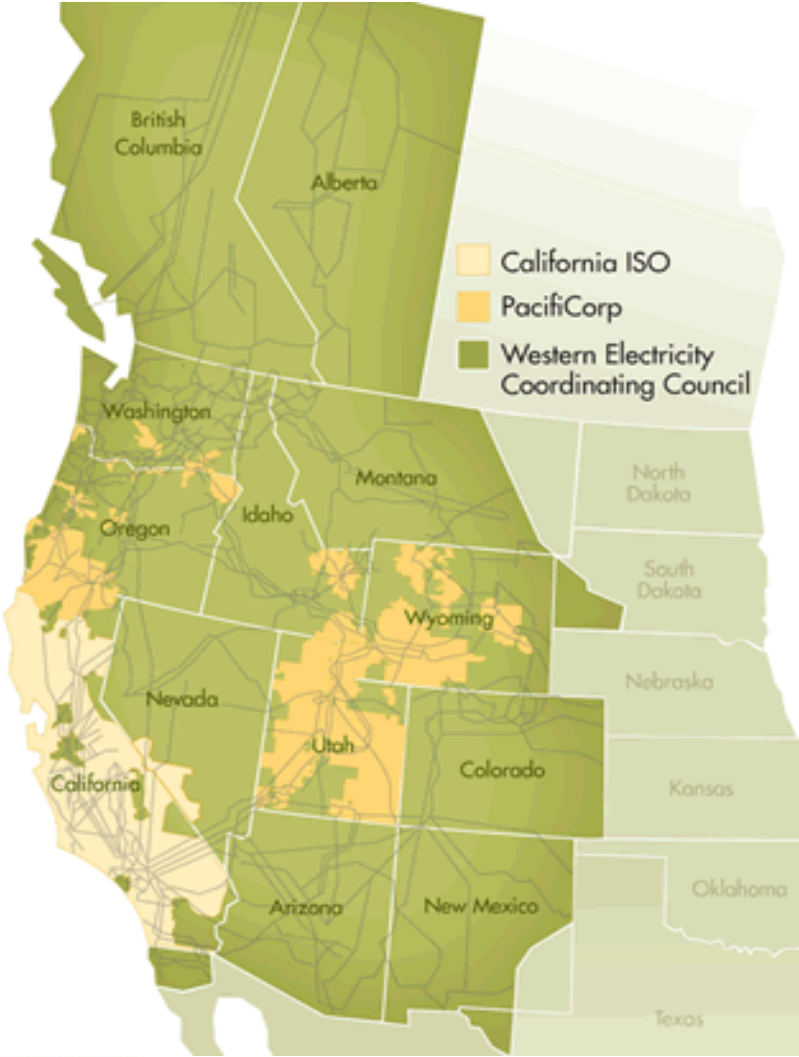
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Western Energy Imbalance Market

as of January 2015



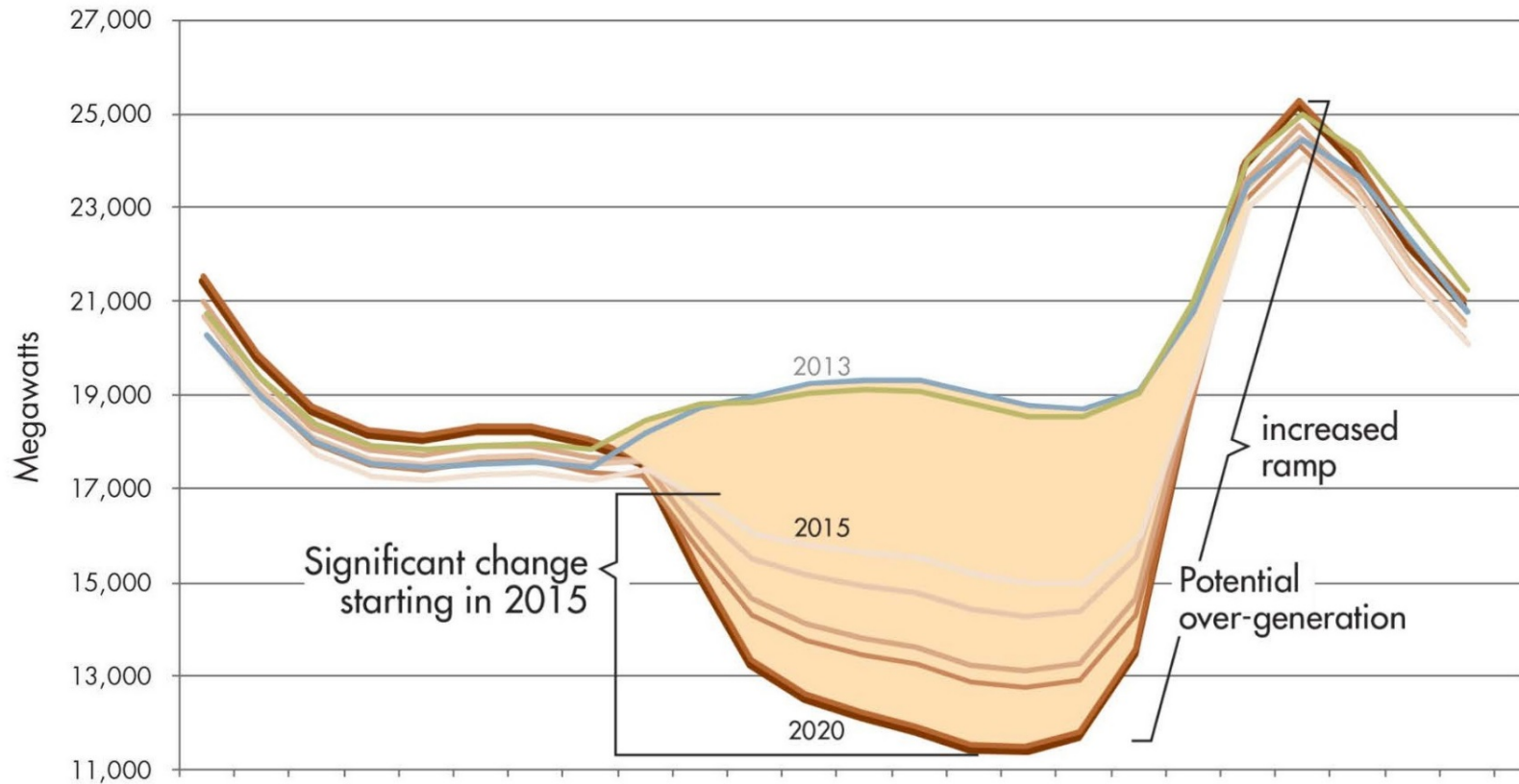
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The Duck Graph:

Rapid net demand changes with high solar PV penetration



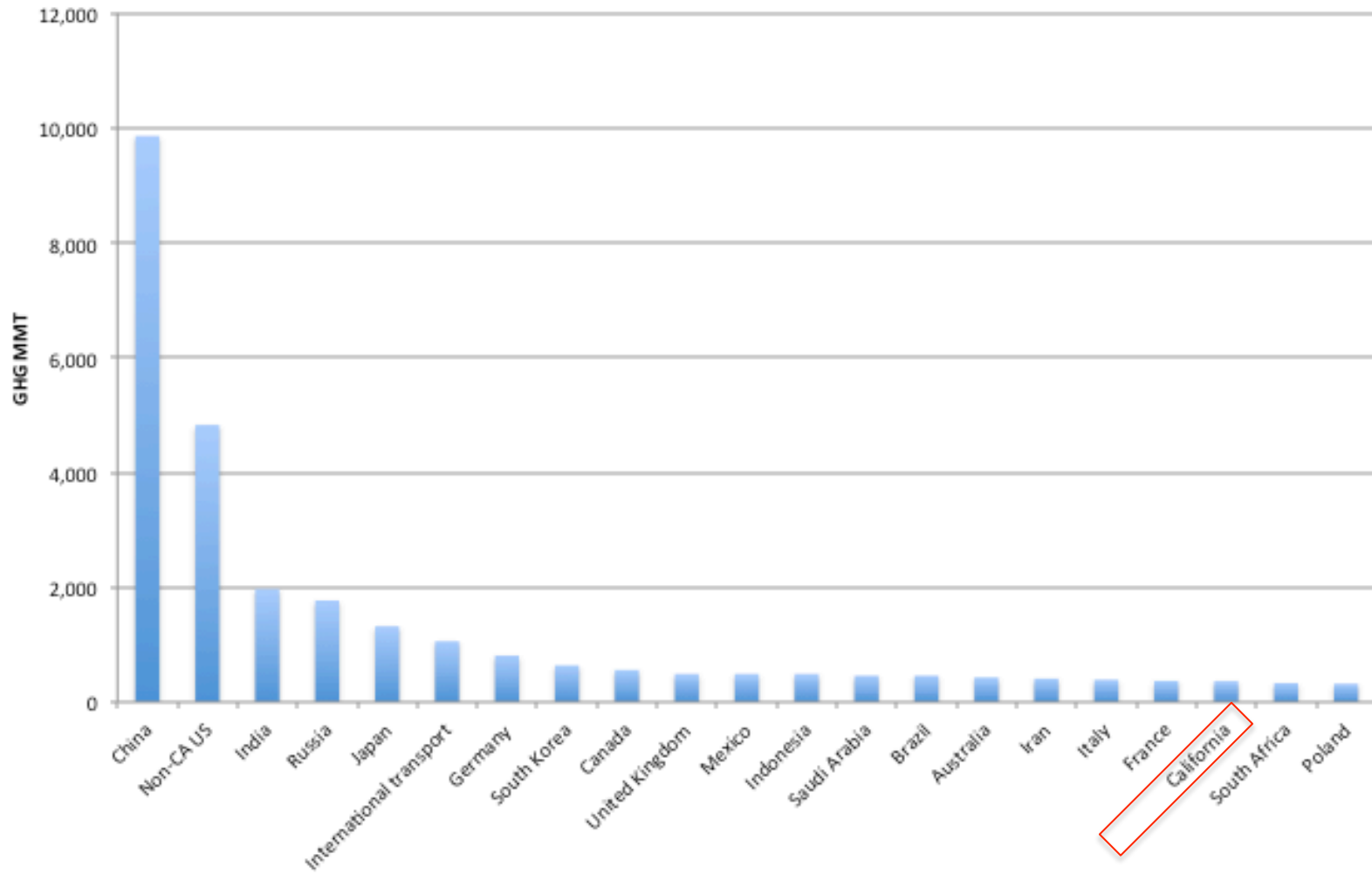
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- How (and who) pays for energy infrastructure?
 - How do we recover those costs fairly and equitably?
 - How do we prevent choices driven by cost-shifting rather than true technological and economic advantages?

Overarching issues

- What will be the regulatory and legislative framework for the next phase of climate policy?
 - Role of market based regulations vs. directed policies
 - Role of the legislature vs. agencies like ARB and CPUC
- What does it all mean in the broader global climate context?

World 2011 GHG Emissions





Thank you