

Western Climate Initiative

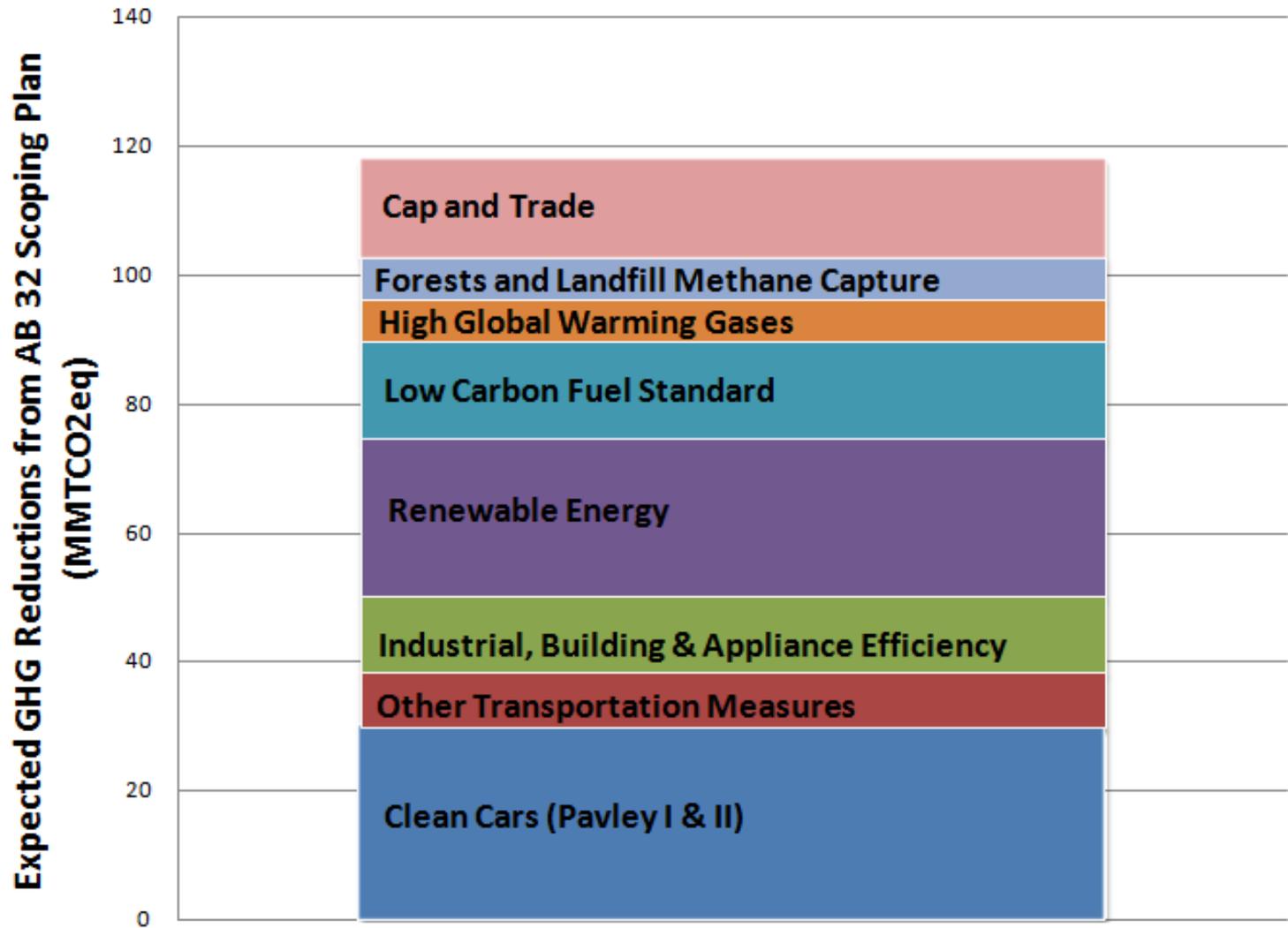
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WCI, Inc.

Colorado Air Quality Control Commission Meeting
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California Global Warming Solutions Act of 2006 – AB32

- AB 32 requires California to return to 1990 levels of greenhouse gas emissions by 2020 – first and only mandatory statewide cap on GHG emissions in the US
- Programs under AB 32 will deliver an overall 15% reduction in greenhouse gas emissions compared to the ‘business-as-usual’ scenario in 2020
- Cap and trade program is a key element in California’s climate plan. It sets a statewide limit on sources responsible for 85 percent of California’s greenhouse gas emissions, and establishes a price signal needed to drive long-term investment in clean energy and energy efficiency
- The program provides covered entities with flexibility to seek out and implement the lowest-cost options to reduce emissions.

Greenhouse Gas Reductions by Major Category



What is Cap-and-Trade?

- The “cap” limits total GHG emissions from all regulated sources
- The “cap” declines each year to reduce emissions
- Participants are allowed to “trade” state-issued GHG emissions allowances—creates flexibility, reduces costs of compliance
- “Works together with command-and-control measures (e.g. traditional regulation)

Elements of C&T

- Scope: what sources and pollutants are covered
 - Lack of accurate data keeps some sources out
- Stringency: the cap and its trajectory
- Point of regulation: who's responsible for compliance
- Mandatory reporting
- How are allowances distributed – free or auction
- Flexible compliance: provision for banking, offsets, safety valves
- Penalties

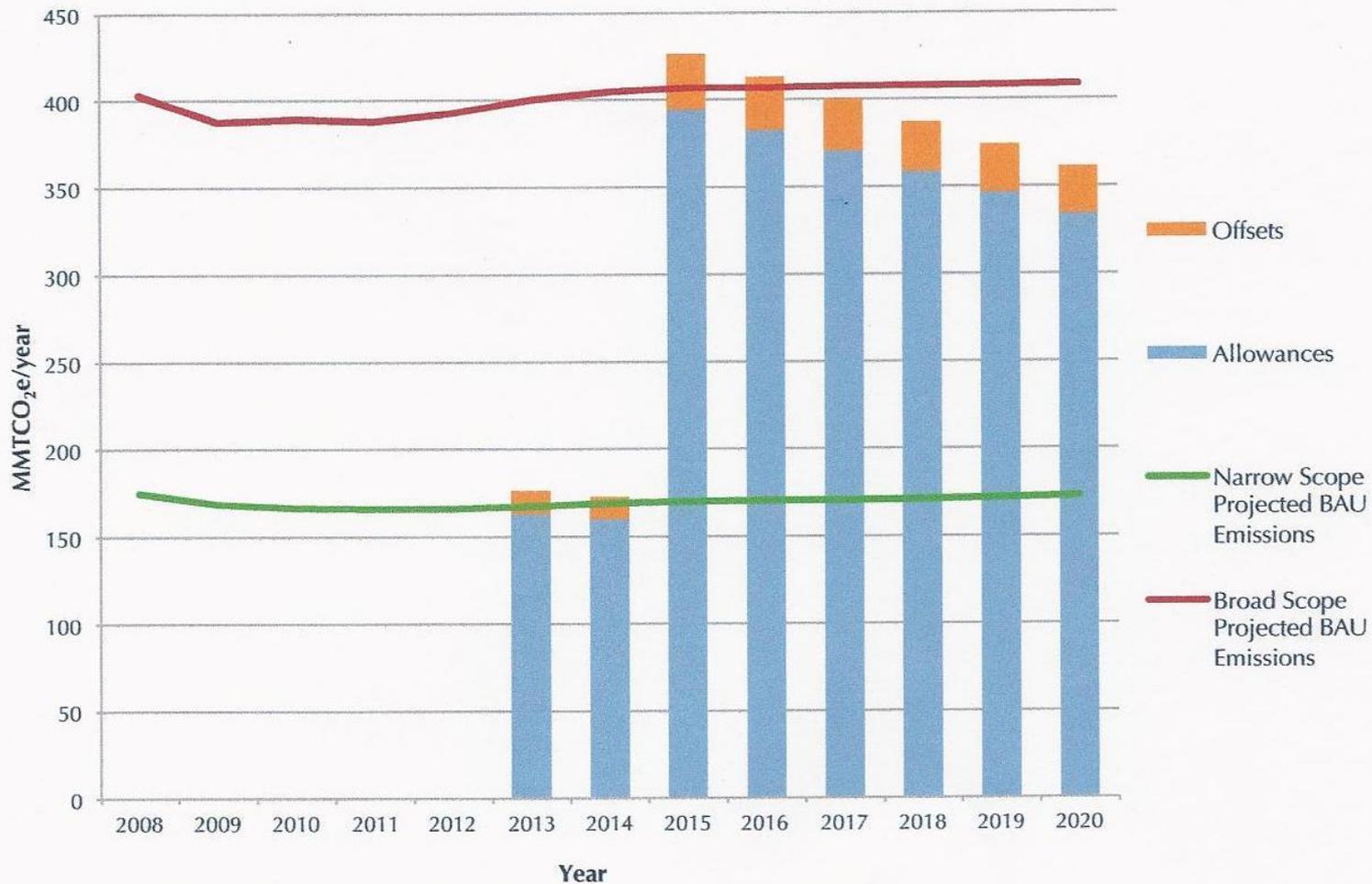
Who is covered?

- Stationary sources at or above 25,000 metric tons of CO₂e per year
 - Cement, refineries, oil and natural gas producers
 - Electricity generation and imports
- Upstream coverage of small combustion emission sources begins in 2015
 - Transportation fuels
 - Residential and commercial use of natural gas

The Cap

- Set in 2013 at about 2 percent below the emissions level forecast for 2012
- Declines about 2 percent in 2014
- Declines about 3 percent annually from 2015 to 2020

FIGURE 2: California's greenhouse gas emission cap and business-as-usual (BAU) projections



The cap-and-trade program has a “narrow” scope in 2013 and 2014 that encompasses the electricity and industrial sectors. The program expands in 2015 to encompass transportation and heating fuels. Offsets can be used for up to eight percent of each regulated entity’s compliance obligation.

Reporting and Verification

- Capped industries must report emissions annually (as required since 2008)
- Independent third-party verification of reported emissions

How are Allowances Distributed?

- Free allocation to industrial producers to provide transitional assistance and to minimize emissions leakage
- Free allocation to electric utilities
 - *Utilities* consign allowances at auction and use proceeds to benefit ratepayers
- A portion goes to a 'reserve' to contain prices should they get too high
- A portion are sold at auction by the State with proceeds appropriated during the budget process
 - This portion is what is left after free allocation to industry, and allocation to the reserve fund. Approx. 5% of market in 2013; Approx. 50% in 2015

Allowances

Large industrial facilities

- Start with free allocation but must buy auctioned allowances later in program
- Allowances for each industrial sector set at about 90 percent of average emissions, based on a benchmark that rewards efficient facilities
- Distribution of allowances to be updated annually for industries according to the production and efficiency of each facility

Compliance Obligation

- Capped entities must surrender compliance instruments to cover emissions
 - 3 year compliance intervals (first period 2 years)
 - Retire instruments equal to 30% of previous year emissions in first two years
 - Remainder after 3rd year
- Failure to surrender sufficient compliance instruments by deadline:
 - Compliance instrument penalty equal to 4 times the excess emissions
 - One fourth of penalty instruments may be offset credits
 - May be additional financial penalties, which escalate after 45 days

How Does Program Design Ensure Market Integrity?

- Purchase and holding limits—Prevent Market Manipulation
- All traders must register in the cap-and-trade tracking system
- The tracking system provides a chain of custody for allowances and offsets

Market Oversight

- Disclosure of direct or indirect corporate associations & beneficial holdings
 - Applies for auction purchase limits and holding limits
- General prohibition of manipulative or fraudulent behavior
- Independent entity monitors and reports to CARB on functioning of market and behavior of participants

Cost containment and market flexibility mechanisms

- Trading of allowances allowed
- Banking of allowances is allowed - to guard against shortages and price swings
- 4 percent of allowances held in a strategic reserve, to contain costs
- Three-year compliance periods, to buffer annual variations in product output

Offsets

- Limited to emission-reduction projects in U.S.
- Offsets must be independently verified
- Allowed for up to 8 percent of a facility's compliance obligation
- Offsets subject to potential invalidation (buyer liability) up to 8 years after issuance

General Offset Criteria

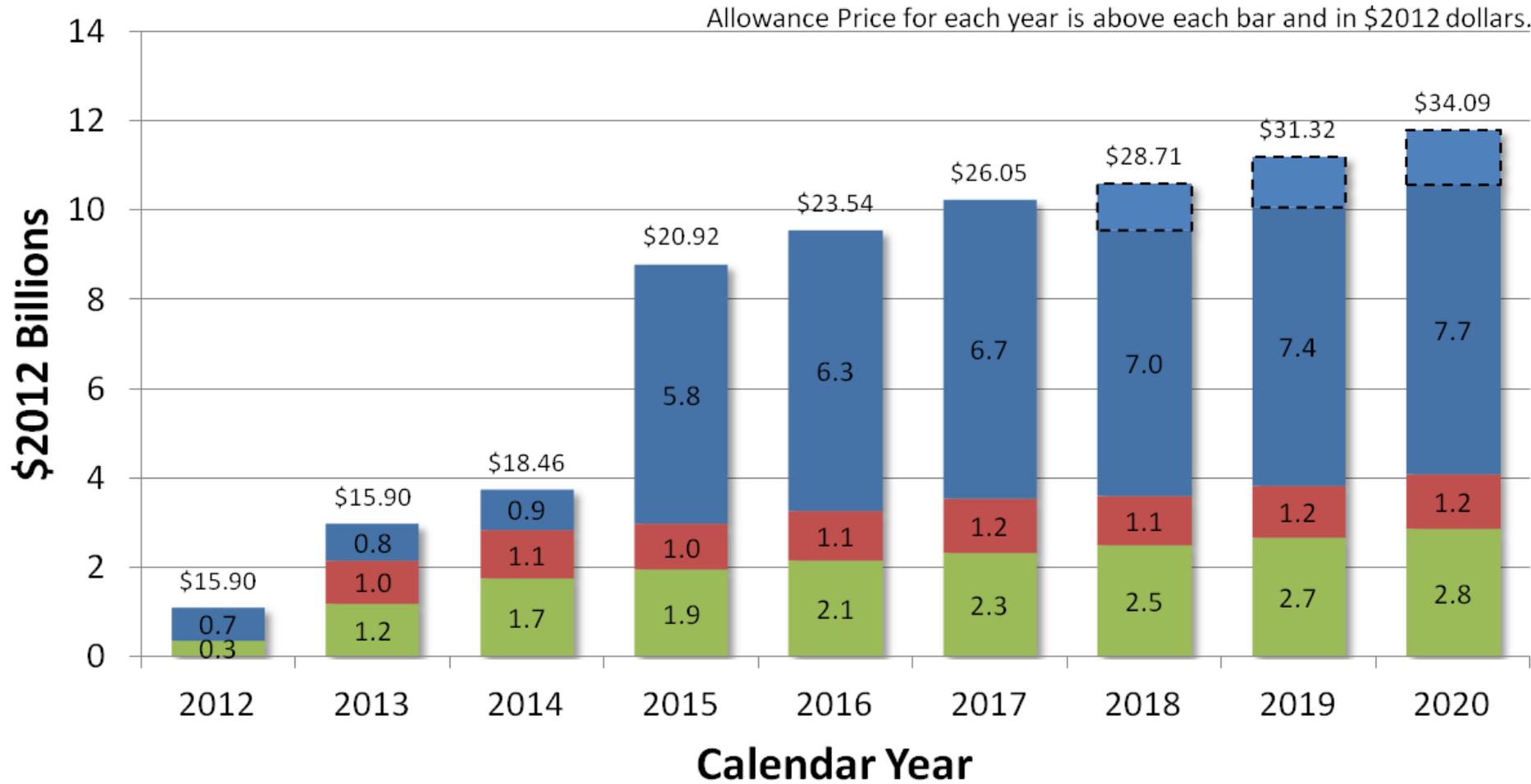
- Offset credits cannot be issued for GHG emission reduction activities already covered under the cap
- Offsets must be:
 - Real, additional, quantifiable, permanent, verifiable, and enforceable
 - Additional = beyond regulation or what would otherwise occur
- Offsets must result from Board-adopted compliance offset protocols

Current ARB Compliance Offset Protocols

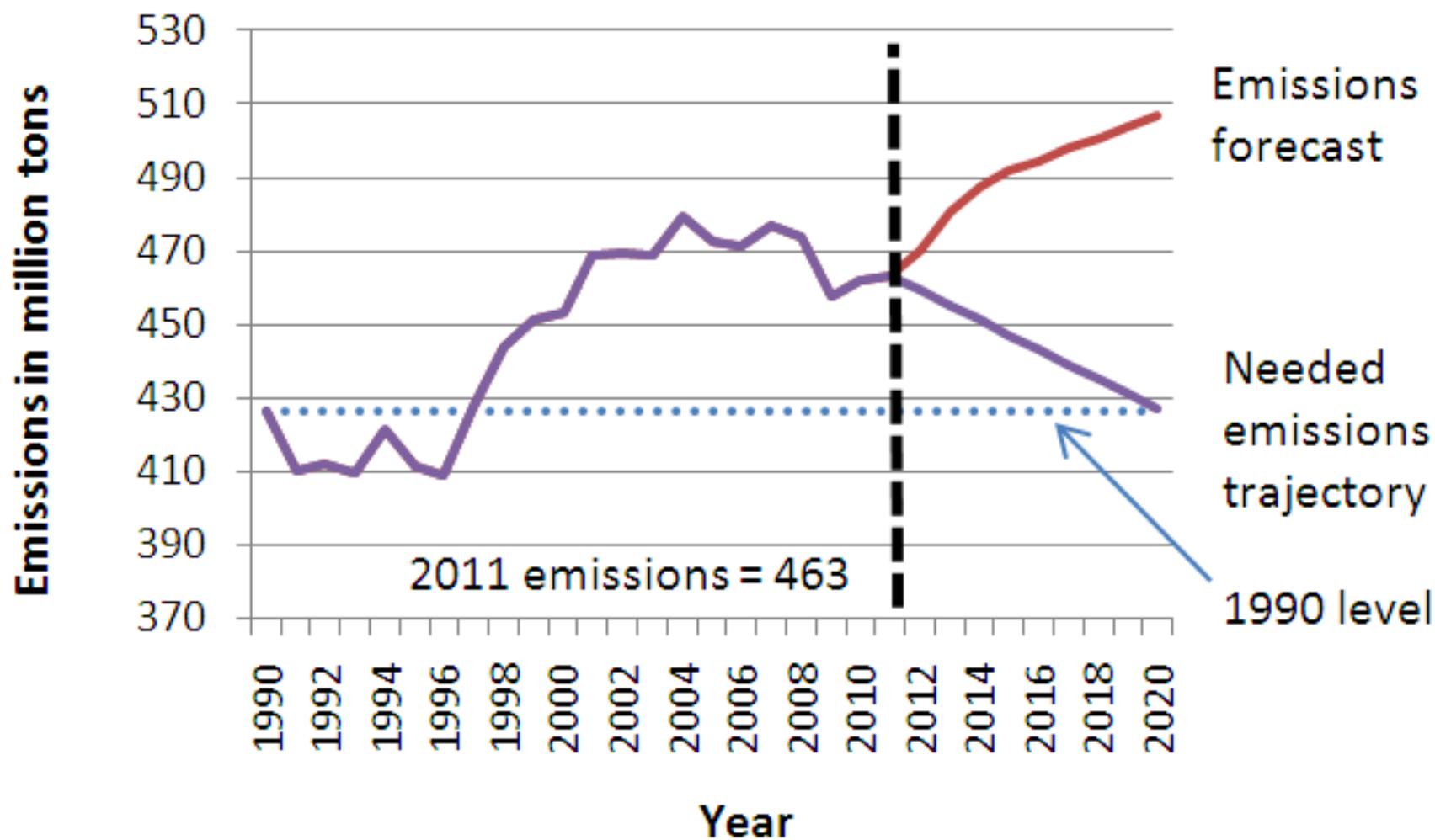
- Forestry, Urban Forestry, Ozone Depleting Substances, and Livestock Digesters
 - Originally developed for voluntary offset market
 - Modified by ARB for compliance offset market
- Future Protocol Development
 - Mine methane reductions
 - Rice straw methane reductions

Allowance Value

■ Value to IOUs & POUs
 ■ Free Allocation to Industry
 ■ Air Pollution Control Fund
 Anticipated Advance Auction Revenues Post 2020

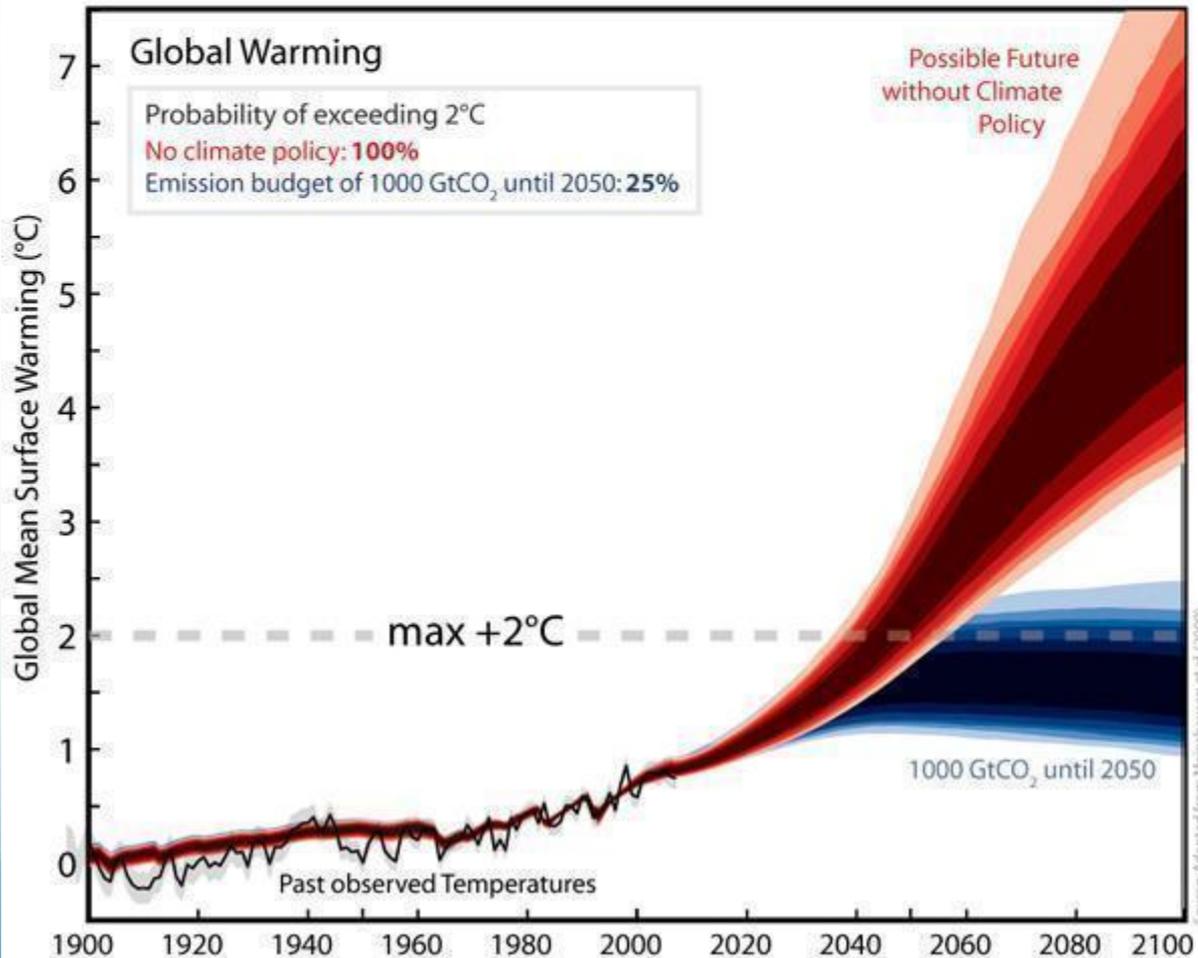
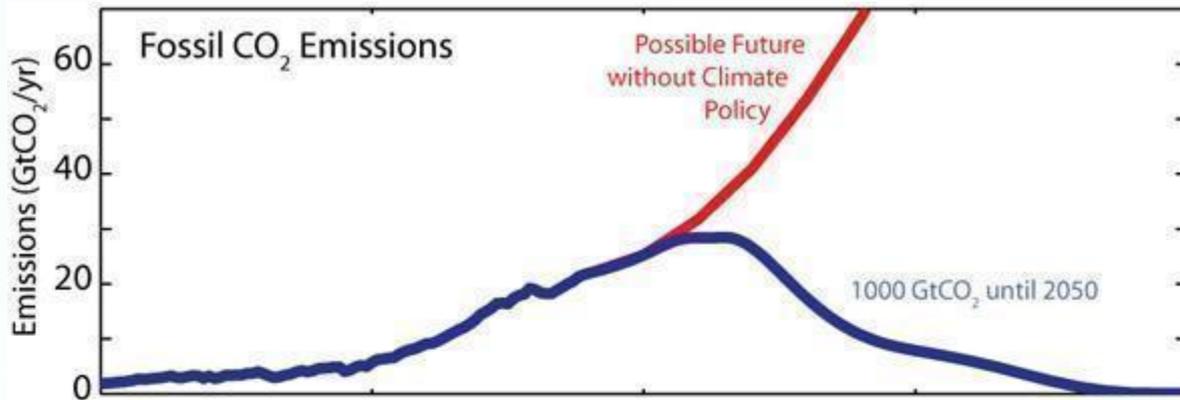


California Greenhouse Gas Emissions



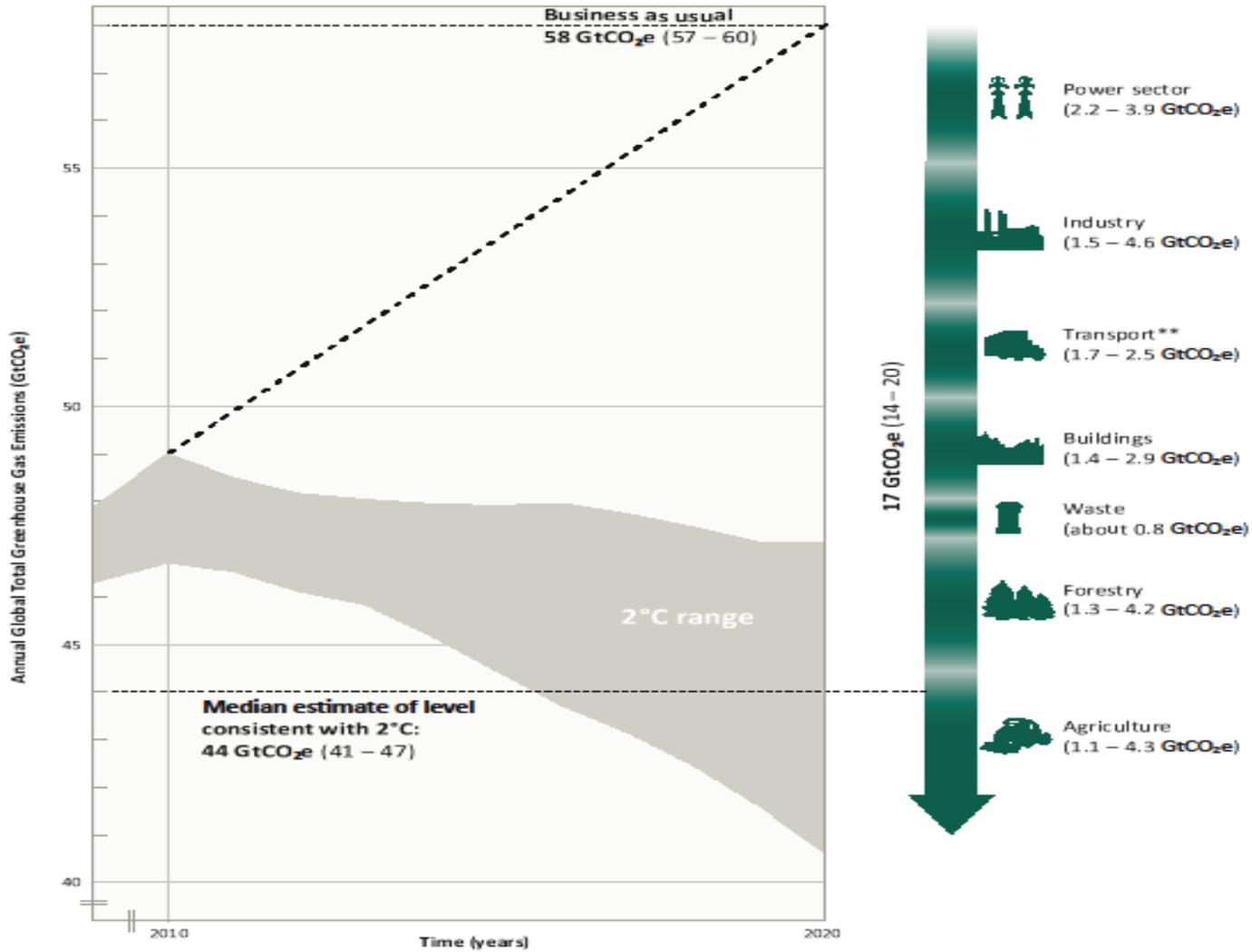
Cap-and-trade

- California quarterly auctions started in Nov 2012
- First compliance period is 2013-14
- Two more 3-year compliance periods through 2020
- Quebec's first auction to be held December 3
- First Joint CA-QC auction in 2014



Source: Adapted from Meinshausen et al. (2009)

How to bridge the gap: results from sectoral policy analysis*



*based on results from Bridging the Emissions Gap Report 2011

**including shipping and aviation

Source – US EPA

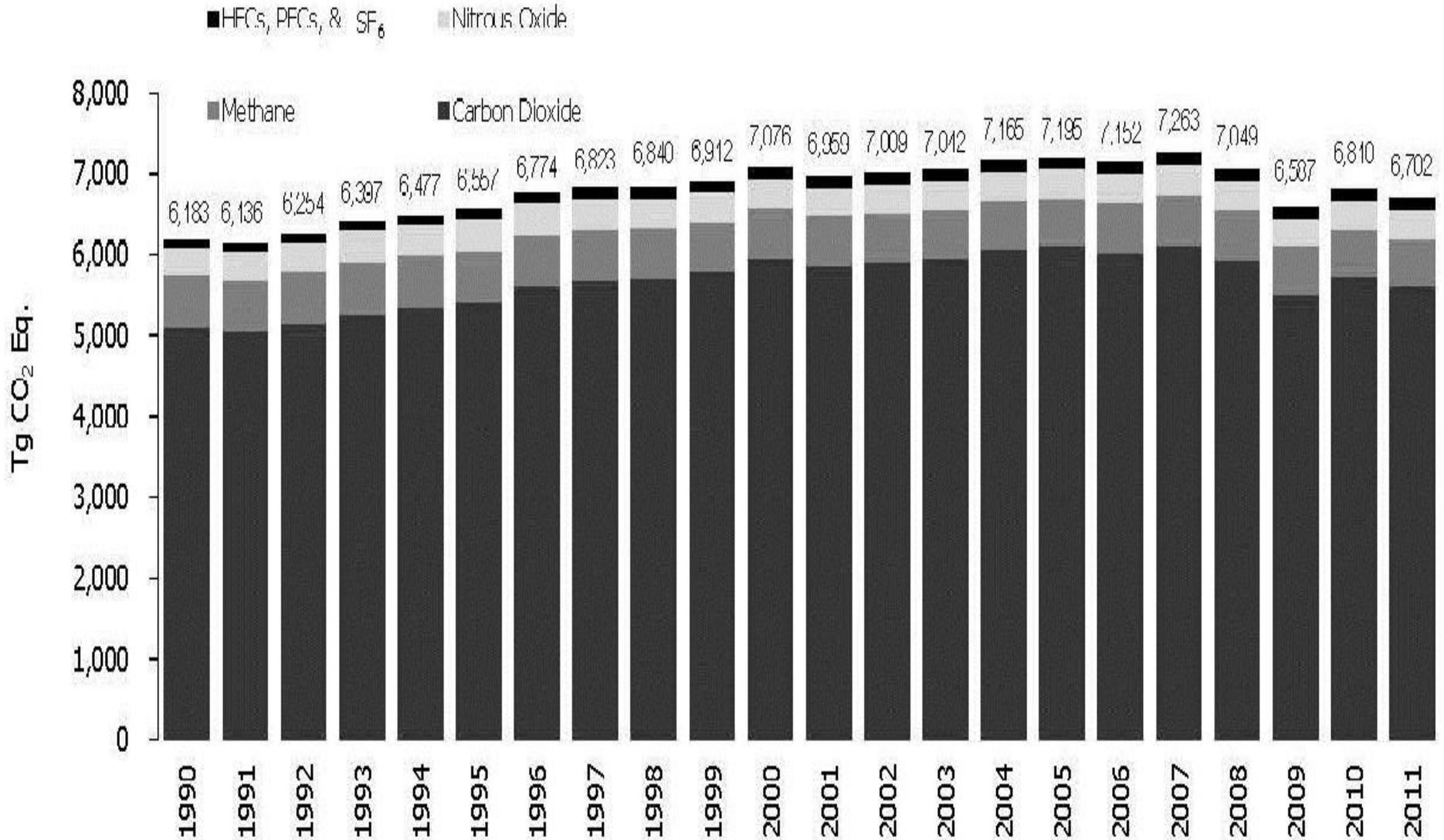
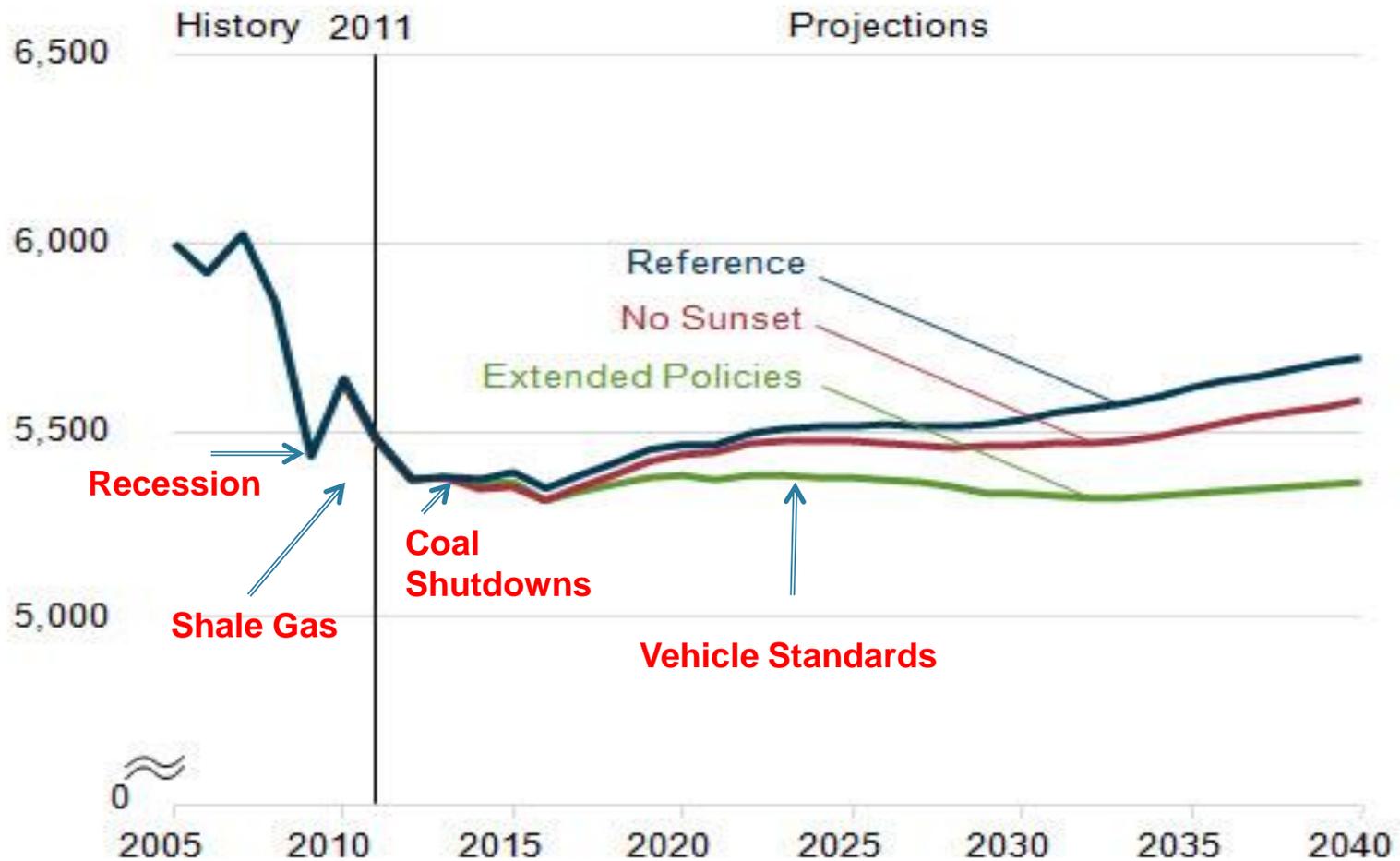
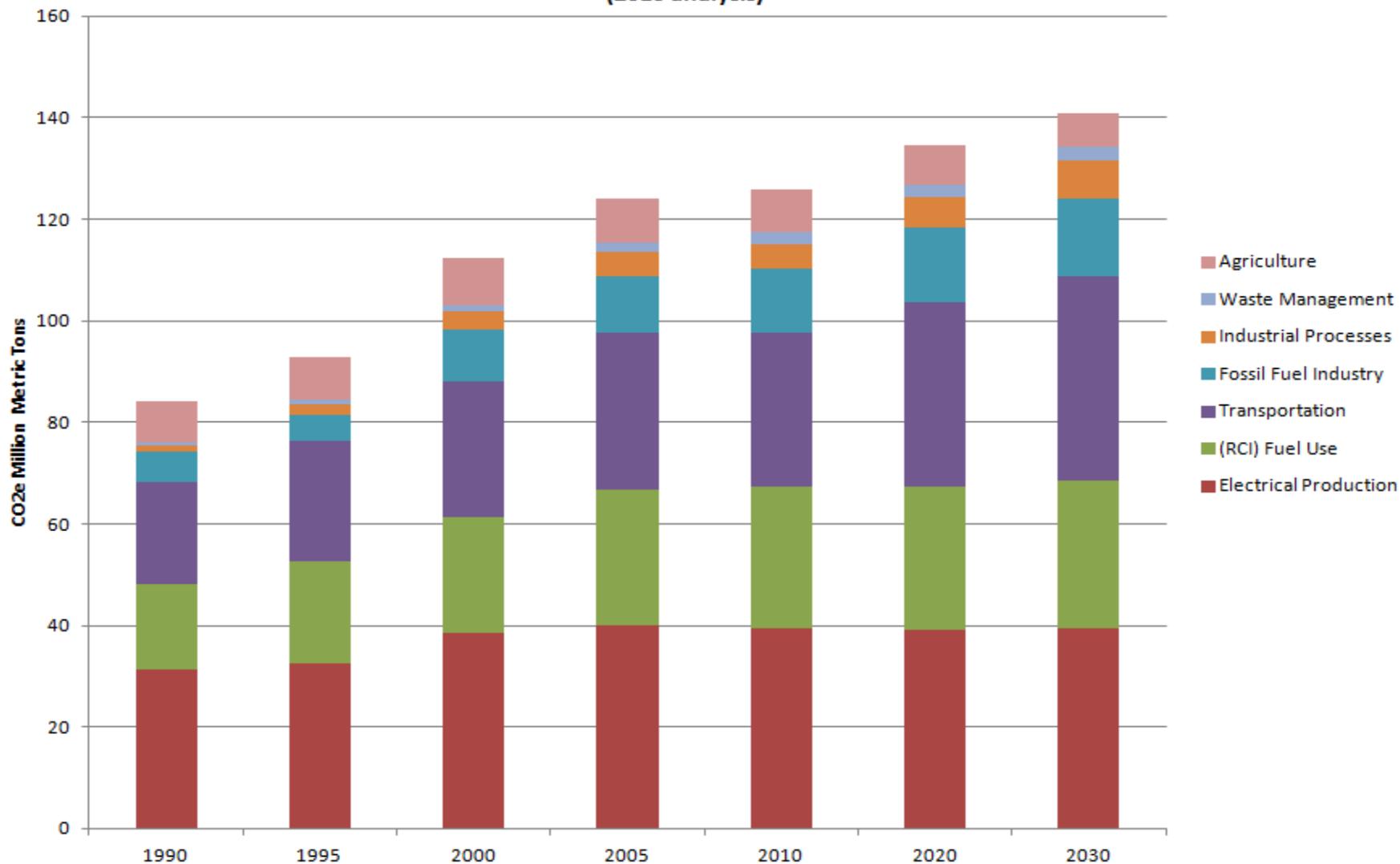


Figure 18. Energy-related carbon dioxide emissions in three cases, 2005-2040 (million metric tons)



Colorado Emissions Inventory

Draft SIT Model Runs 1990-2030 (2013 analysis)



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