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Wednesday, January 26, 2011

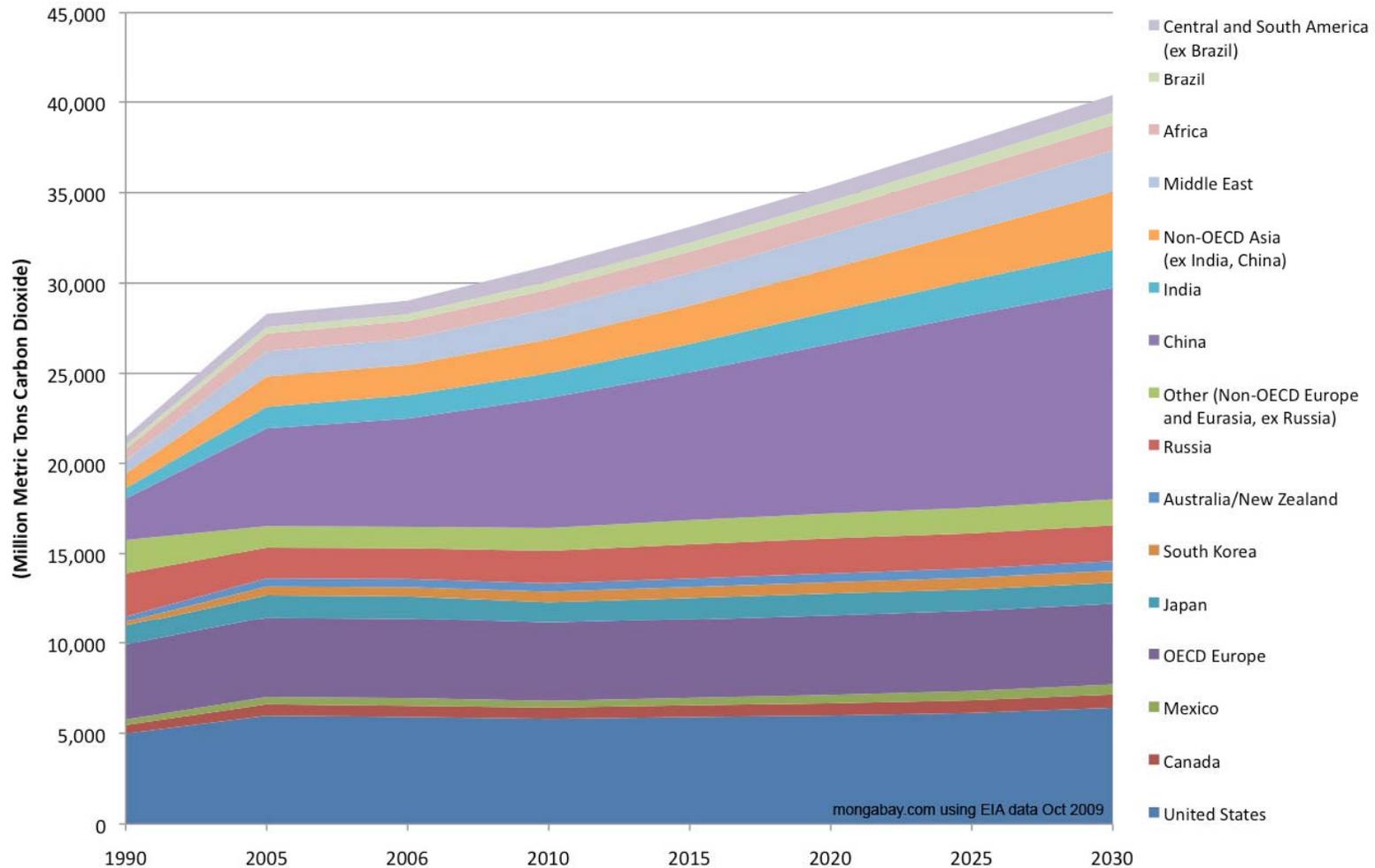
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New Restrictions on Greenhouse Gas Emissions

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World Carbon Dioxide Emissions by Region, Reference Case, 1990-2030



New Restrictions on Greenhouse Gas Emissions ("GHG")

- California's Global Warming Solutions Act
- GHG Monitoring and Reporting Requirements
- California's Cap and Trade Program
- Federal EPA's GHG Permitting Requirements

California's Global Warming Solutions Act ("AB 32")

- Effective January 1, 2007.
- Aims to reduce GHG emissions in California to 1990 levels by 2020.
- Charges the California Air Resources Board ("CARB") with monitoring and regulating all sources of emissions of GHG, which are defined to include:
 - carbon dioxide
 - methane
 - nitrous oxide
 - hydrofluorocarbons
 - perfluorocarbons
 - sulfur hexafluoride
- Potentially affects every business in California that emits GHG.

Statewide GHG Emissions Limit

- CARB has determined that the 1990 level of GHG emissions measured 427 million metric tons of carbon dioxide equivalent (“CO₂e”), and has set that number as the statewide emissions limit that must be reached by 2020.
- CARB estimates that the limit will require a *30% reduction in projected “business-as-usual” GHG emissions levels for 2020, or a 10% reduction in current GHG emissions levels.*
- To achieve this mark, California must reduce carbon emissions by *four tons per person per year.*

California's GHG Monitoring and Reporting Requirements

- CARB maintains and updates a GHG Inventory.
- The current GHG Inventory covers years 2000 to 2008.
- 2008 saw a small decrease in statewide GHG emissions, driven by a drop in on-road transportation emissions.
- However, California's GHG emissions increased by 4.3% from 2000 to 2008 (with maximum GHG emissions in 2004). During the same period, California's population increased by 11.8%.

California's GHG Monitoring and Reporting Requirements (cont.)

- Since January 2009, CARB has required the calculation, annual reporting and verification of GHG emissions by specific industry sectors and large GHG emitters (over 600 facilities).
- CARB approved substantial, proposed amendments to its reporting regulations in December 2010, to be finalized in 2011 for 2012 reporting year.
- The purpose of the proposed amendments is to: (i) harmonize with the U.S. EPA national GHG reporting requirements, (ii) ensure sufficient accuracy and completeness in reporting to support California's cap-and-trade system, and (iii) eventually support linkage with a Western Climate Initiative regional market system.

California's GHG Monitoring and Reporting Requirements (cont.)

- CARB's overall approach has been to start with the U.S. EPA reporting requirements, and then provide additional stringency or specificity where needed to support California cap-and-trade and WCI consistency.
- The goal is to streamline reporting for those entities subject to both CARB and U.S. EPA reporting rules. CARB is also pursuing development of a unified mechanism for federal and state reporting.
- Until CARB finalizes the revised regulations, however, GHG emitters should ensure they comply with both California and federal EPA monitoring and reporting requirements.

California's GHG Monitoring and Reporting Requirements (cont.)

- The proposed revision requires annual emissions reporting from facilities, fuel and carbon dioxide suppliers, and electric power entities that combined account for approximately 87 percent of the total carbon dioxide produced in California from industrial, commercial, and mobile sources of emissions, and similar portions of methane and nitrous oxide emissions.
- CARB estimates that approximately 750 facilities, suppliers and entities would be subject to GHG reporting under the proposed revised regulation, compared to about 600 under the current regulation.

California's GHG Monitoring and Reporting Requirements (cont.)

- No Reporting Threshold
 - Under EPA and proposed revised CARB regulations, “whole sector” reporting.
 - Applies to cement production, lime manufacturing, nitric acid production, petroleum refineries, natural gas liquid fractionators, carbon dioxide suppliers, and importers and exporters of electric power.

California's GHG Monitoring and Reporting Requirements (cont.)

- Reporters Over 25,000 MT of CO₂e
 - Under the proposed revision, the majority of facilities currently subject to reporting will still be required to report.
 - Full reporting is required for facilities emitting at least 25,000 metric tons of CO₂e emissions per year, most of which will hold a cap-and-trade compliance obligation under CARB's cap-and-trade program.
 - This will include electricity generating and cogeneration facilities, electric retail providers and other importers and exporters of electric power, oil refineries, hydrogen plants, cement plants, producers of glass, nitric acid, iron and steel, and manufacturers of lime and pulp and paper.
 - Proposed revised regulation will require new reporting by fuel suppliers (suppliers of transportation fuels, suppliers of natural gas, natural gas liquids, and liquefied petroleum gas), suppliers of carbon dioxide, and facilities in the oil and gas exploration and production sector.

California's GHG Monitoring and Reporting Requirements (cont.)

- Reporters Below 25,000 MT of CO₂e
 - Facilities and suppliers with emissions between 10,000 metric tons and 25,000 metric tons of CO₂e will be included in the mandatory reporting program under the proposed regulations, but will have abbreviated reporting requirements.
 - These reporters will report their combustion emissions using default emission factors or any other method of their choosing from the U.S. EPA regulation.
 - Under the current regulation, only power plants report within this emissions range. Under the revised regulation, power plants will continue to report down to 10,000 MT of CO₂e, but may use a simplified calculation approach.

California's GHG Monitoring and Reporting Requirements (cont.)

- The data required by the proposed revised regulation must be reported to CARB annually, for the previous calendar year.
- The first emissions reports under the proposed revised regulation, for 2011 emissions, must be submitted in 2012.
- Facilities and suppliers may report on 2011 emissions using only the requirements in the U.S. EPA regulation, in recognition that any needed shifts in monitoring practices to comply with the new CARB requirements may not be implemented until 2012.
- Most reports will be due April 1 of each year; electric power entities will have until June 1 to allow enough time for compilation of purchase and sales data for the previous year.

Federal EPA's GHG Monitoring and Reporting Requirements

- CARB has directed facilities to comply with federal EPA's reporting requirements until it finalizes its revised reporting regulations.
- First annual report to EPA due March 31, 2011.
- Very similar to CARB's proposed regulations, but there are some differences.

Read Jones Day Commentary, "***U.S. EPA Announces Final Rules for Mandatory Greenhouse Gas Reporting***" (in handout) for description and analysis of EPA reporting requirements.

California's Cap and Trade Program

- On December 16, 2010, CARB approved a resolution directing staff to finalize cap and trade regulations.
- Final proposed regulations are expected in early 2011.
- Will be first cap and trade program for GHG emissions that is mandatory for numerous sectors of a state economy.
- Test case for other state and federal cap and trade program.

California's Cap and Trade Program (cont.)

Key Components of Proposed Cap and Trade Regulations

- Covers emissions of the six GHGs.
- In the first phase of the program, the covered entities listed in the following table will be subject to compliance obligations commencing on January 1, 2012 if their annual GHG emissions in any year from 2008 to 2010 meet or exceed the applicable thresholds.

California’s Cap and Trade Program (cont.)

COVERED ENTITIES COMMENCING 2012	ANNUAL THRESHOLD (MTCO ₂ e)
Entities having operational control of electric generating facilities located in California.	25,000
Importers of specified sources of electricity into California.	25,000
Importers of unspecified sources of electricity into California.	0 (no threshold)
<p>Operators of facilities located in California that engage in any of the following operations:</p> <p>(1) Cement production, (2) Cogeneration, (3) Glass production, (4) Hydrogen production, (5) Iron and steel production, (6) Lime manufacturing, (7) Nitric acid production, (8) Oil and natural gas systems, (9) Petroleum refining, (10) Pulp and paper manufacturing, (11) Self-generation of electricity, and (12) Stationary combustion.</p>	25,000
Producers, importers, and exporters of CO ₂ into/out of California.	25,000

California's Cap and Trade Program (cont.)

- In the second phase of the program, the covered entities listed below will be subject to compliance obligations commencing on January 1, 2015 if their annual GHG emissions in any year from 2011 to 2014 meet or exceed the applicable thresholds.
- Certain fuel suppliers will be added to the list of covered entities starting in 2015, while the threshold for importers of electricity from specified sources will no longer apply.

California’s Cap and Trade Program (cont.)

COVERED ENTITIES COMMENCING 2015	ANNUAL THRESHOLD (MTCO ₂ e)
Entities having operational control of electric generating facilities located in California.	25,000
Importers of specified and unspecified sources of electricity into California.	0
Operators of facilities located in California that engage in any of the activities covered during the first phase of the program.	25,000
Producers, importers, and exporters of CO ₂ into/out of California.	25,000
Entities that distribute or use natural gas in California as follows: <ul style="list-style-type: none"> – public utility gas corporations – publicly owned natural gas utilities – operators of other intrastate pipelines that distribute natural gas directly to end users. 	25,000
Suppliers of RBOE and Distillate Fuel Oil.	25,000
Suppliers of Liquefied Petroleum Gas.	25,000

California's Cap and Trade Program (cont.)

- The program has three compliance periods: 2012–2014, 2015–2017, and 2018–2020.
- Once a covered entity becomes subject to a compliance obligation in a compliance period, the covered entity will have a compliance obligation for each year of that same period.
- Covered entities subject to annual thresholds may exit the program in a subsequent compliance period if annual reports demonstrate that past emissions were less than 25,000 MTCO₂e per year during an entire compliance period.
- A covered entity may exit the program if it shuts down all processes, units, and supply operations subject to GHG emissions reporting.

California's Cap and Trade Program (cont.)

- CARB has set, and will adjust (and eventually reduce) over time, a statewide cap or “budget” on annual GHG emissions, to achieve AB 32’s requirement of reducing statewide GHG emissions to 1990 levels by 2020.
- The cap will determine the total number of emission “allowances” CARB will issue each year.
- During initial years of program, CARB will issue most emission allowances for free; eventually it will transition to sales of allowances through quarterly auctions, with price controls.
- Initially, free allocations will be directed to (i) the covered entities in specific industrial sectors (including those required to submit annual reports), (ii) investor owned utilities, and (iii) publicly owned electric utilities.
- CARB is also considering expanding these free allocations to natural gas distribution utilities when they become subject to compliance obligations in the second compliance period.

California's Cap and Trade Program (cont.)

- Covered entities must surrender “compliance instruments” equivalent to their GHG emissions at end of each compliance period.
- “Compliance instruments” include emission allowances, offset credits, and sector-based offset credits.
- If covered entities do not have enough allowances to cover their GHG emissions, they may purchase “offset credits” on the secondary market.
- But there are strict limits on which “offset credits” qualify.

California's Cap and Trade Program (cont.)

- Under California's cap and trade program, an offset credit is a tradable compliance instrument that represents a GHG reduction or GHG removal of one metric ton of carbon dioxide equivalent.
- Offset credit can be generated from projects that achieve reductions or removal of GHG from activities that are not otherwise regulated or covered under California's cap and trade program.
- The purpose for permitting offset credits is (i) to increase compliance flexibility by permitting covered entities to surrender offset credits in lieu of allowances, (ii) to function as a limited cost-containment mechanism because offsets credit are expected to cost less than allowances, and (iii) to stimulate development of innovative projects and technologies to reduce GHG emissions from sources outside the capped sectors under the program.

California's Cap and Trade Program (cont.)

- In order for an offset project to be eligible to receive offset credits, the offset project developer must demonstrate that the GHG reductions or removal are real, additional, quantifiable, permanent, verifiable, and enforceable.
- Specifically with respect to the requirement for additionality, GHG reductions must result from activities that:
 - are not required by or undertaken to comply with any federal, state, or local law or ordinance;
 - are not considered common practice or would not have occurred under a business-as-usual scenario;
 - were not commenced prior to January 1, 2007;
 - exceed a project baseline calculated by a protocol for an offset project of that type; and
 - are located in the U.S., Canada, or Mexico.

California's Cap and Trade Program (cont.)

- The regulations also include a process for accepting **early action** offset credits from existing offset projects under other offset programs.
- At the outset, if an offset project meets the requirements of the Climate Action Reserve's protocols for ozone-depleting substances, livestock, urban forestry, or forestry (upon which CARB's own protocols are based), then its offset credits will be eligible for use under California's cap and trade program.
- These early action offset credits will also need to originate from GHG reductions or removals that occur between January 1, 2005 and December 31, 2014 and result from an offset project that commences prior to January 1, 2012.

California's Cap and Trade Program (cont.)

- The regulations also establish a framework for eventually accepting **sector-based** offset credits.
- Sector-based offset credits are generated from GHG emission reductions or removals by a sector-based crediting program that is established by a country, region, or sub-national jurisdiction in a developing country and covering a particular economic sector within that jurisdiction (such as forestry or cement).

California's Cap and Trade Program (cont.)

- The program allows a maximum of 232 million MTCO₂e of offset credits through the year 2020.
- This ceiling will be enforced through a limit on the use of offset credits by each covered entity equal to 8 percent of its annual and triennial compliance obligation, respectively.

California's Cap and Trade Program (cont.)

- Market participants may sell or purchase compliance instruments consisting of allowances, offset credits, and sector-based offset credits in the secondary market.
- Compliance instruments do not expire, which enables covered entities to “bank” and hold compliance instruments until they are needed and other market participants to hold and sell compliance instruments without any deadlines for sale.
- Information for each trade, including trade date, settlement date, and price, is required to be reported to the accounts administrator of the program.
- The program also will prohibit any trading activity of compliance instruments that involves an undisclosed counterparty, manipulative or deceptive devices, fraud, reporting of false or misleading information, misrepresentations, or other efforts to falsify or conceal material facts from the market.

California's Cap and Trade Program (cont.)

- When a covered entity fails to surrender a sufficient number of compliance instruments by the annual or triennial deadline, the regulations require the covered entity to surrender allowances in an amount equal to four times its excess emissions.
- If after 30 days the covered entity fails to fulfill this surrender obligation, CARB may take action through its general enforcement authority under the Health and Safety Code.
- Monetary penalties can reach \$25,000 per violation per day even for negligent violations, while knowing violations will carry more severe penalties, including the possibility of jail time.
- When calculating monetary penalties under the program, each individual compliance instrument that is not surrendered as required represents a separate violation.

California's Cap and Trade Program (cont.)

- CARB also may address any violation of the program by suspending, revoking, or placing transaction restrictions on holding accounts for covered entities, opt-in entities, or voluntarily associated entities, or by suspending or revoking the registrations of other registered participants.

Read Jones Day White Paper, “**California Adopts Cap and Trade Program for Greenhouse Gas Emissions**” (in handout) for a more detailed description and analysis of this program.

Federal EPA's GHG Permitting Requirements

- National Ambient Air Quality Standards
 - Criteria Pollutants
 - Attainment Areas (PSD)
 - Nonattainment Areas (Nonattainment New Source Review)
 - Unclassifiable Areas (PSD)

Federal EPA's GHG Permitting Requirements (cont.)

- EPA “Tailoring Rule” Modifies Statutory Thresholds That Would Otherwise Apply to Sources of GHGs.
 - Under the Clean Air Act, PSD Triggered if Source Has Potential to Emit 100 or 250 TPY of Regulated Pollutant;
 - Title V Triggered if Source Has Potential to Emit 100 TPY of Regulated Pollutant.
- If These Thresholds Applied to GHGs, EPA Estimates the Number of Construction Projects Requiring a PSD Permit Would Have Increased from 280 to 82,000 Per Year, and the Number of Facilities Requiring a Title V Operating Permit Would Have Increased from 14,700 to 6.1 Million Per Year.

Federal EPA's GHG Permitting Requirements (cont.)

- Calculating Greenhouse Gas Emissions
 - Rule Defines “Greenhouse Gases” as an Aggregate Group of all Six Gases Covered by the Endangerment Finding (the same six included in the reporting requirements).
 - EPA Has Assigned a “Carbon Dioxide Equivalent,” or CO₂e, to Each GHG, Based on EPA's View of its Potential to Contribute to Global Warming Compared to Carbon Dioxide; Some Have CO₂e Values More Than 10,000 Times Greater than Carbon Dioxide.
- To Determine if Source Will Exceed the Permitting Thresholds, Multiply the Tons Per Year of Each GHG Emitted by the Source by its CO₂e Value, then Add Together.

Federal EPA's GHG Permitting Requirements (cont.)

Permitting Phase-In: Step One (Jan. 2, 2011 through June 30, 2011)

- PSD Permit Required for Construction of New and Modified Sources Which:
 - Are Subject to PSD for Non-GHG Pollutant; and
 - Will Result in Net Increase of Potential GHG Emissions Without Considering GHG Equivalencies; and
 - Will Increase Potential GHG Emissions by > 75,000 TPY CO₂e.
- Title V Permit Required Only if Source is Otherwise Subject to Title V for Non-GHG Pollutant.
- Intended to Cover Largest Sources.

Federal EPA's GHG Permitting Requirements (cont.)

Permitting Phase-In: Step Two (July 1, 2011 through June 30, 2013)

- Regardless of Emissions of Other Pollutants, PSD Permit Required for:
 - Construction of New Source with Potential to Emit > 100,000 TPY CO₂e, and
 - Modification of Existing Source Which Will Increase Potential to Emit > 75,000 TPY CO₂e.
- Regardless of Emissions of Other Pollutants, Title V Permit Required for:
 - Source with Potential to Emit > 100,000 TPY CO₂e.
- 900 Additional PSD Permits Estimated for New and Modified Sources, and 550 Additional Title V Permits Estimated.

Federal EPA's GHG Permitting Requirements (cont.)

Permitting Phase-In: Step Three

- EPA to Issue Supplemental Notice of Proposed Rulemaking in 2011, to Conclude No Later Than July 1, 2012.
- To Explore Phasing in Smaller Sources, Beginning July 1, 2013.
- Expected to Lower the PSD and Title V Permitting Thresholds for GHGs.
- May Also Permanently Exclude Certain Smaller Sources of GHGs from PSD and Title V Permitting Requirements.
- Step Three Will Not Require Permitting, Before April 30, 2016, for Sources (New or Modified) with Potential to Emit <50,000 TPY CO₂e.

Read Jones Day White Paper, ***“Climate Change Regulation Via the Clean Air Act: EPA’s New Greenhouse Gas Rule for Facilities”*** (in handout) for description and analysis of these permitting requirements.

Efforts to Reverse or Delay GHG Requirements

- California Propositions 23 (Failed) and 26 (Passed)
- Court Challenges
- Congressional Action

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