

Major Design features for Cap and Carbon Trading	Western Climate Initiative (WCI) - Basis for CA and Quebec -	WA Proposal SB 5735 (2009 not enacted) and amendments	California Cap & Trade Program (AB 32)	Regional Greenhouse Gas Initiative (RGGI)	European Union Emission Trading System (ETS)	American Clean Energy and Security Act, 2009 H.R. 2454 (Waxman-Markey bill)
Program start date (actual or planned)	2012	2012	2012	2009	2005 28 EU countries	2012 (completely phased in by 2016)
Emission Reduction Targets	15% below 2005 for region (individual jurisdictions retained their existing reduction targets)	1990 levels by 2020	1990 levels by 2020 (AB32) 80% below 1990 by 2050 (Executive Order)	2009 cap: 5% above 2005 until 2015 10% below the cap by 2019	1990 for CO ₂ , N ₂ O, and Methane; 1995 for HFCs, PFCs and SF ₆ 8% below 1990 in 2008-12 2020– 20% from 1990 2050 – 80-90% of 1990	(2005 baseline) 3 percent cut by 2012; 17 percent cut by 2020; 42 percent cut by 2030; more than 80 percent cut by 2050
Scope/Coverage - Covered Gases - Threshold - Covered Entities	CO ₂ , methane, nitrous oxide, sulfur hexafluoride, HFCs, PFCs, 25,000 MT CO _{2e} per year 2012- Phase I: Electricity generation (including electricity generated outside WCI states & provinces, delivered into a WCI jurisdiction for consumption) Combustion at industrial and commercial facilities Industrial process emission sources 2015- Phase II: Residential, commercial and industrial fuel combustion at facilities below thresholds Transportation fuel combustion Biomass, and biofuels not included in C&T	CO ₂ , methane, nitrous oxide, sulfur hexafluoride, HFCs, PFCs, and greenhouse gases designated by rule, 25,000 MT CO _{2e} per year 2012 – Phase I: In-state electricity generation, electricity generated out of state, delivered to the state by long-term agreement Industrial and commercial fuel combustion Industrial process emissions 2015 – phase II Transportation fuel combustion Residential fuel combustion Fuel delivered or sold for industrial and commercial combustion Phase II may include complementary policies Not covered: industrial - emissions from biomass with conditions	CO ₂ , methane, nitrous oxide, sulfur hexafluoride, HFCs, PFCs, nitrogen trifluoride, and other fluorinated GHGs 25,000 MT CO _{2e} per year Phase I (2013): Electric generating utilities, electricity importers and large industrial processing facilities suppliers of natural gas, fuel oil, liquefied petroleum gas and carbon dioxide suppliers ~35% of emissions Phase II (2015): Fuel distributors ~85% of emissions	CO ₂ Fossil fuel power plants generating more than 25 MWe in 9 Eastern states Fossil fuel electricity generation within RGGI region (Does not include imports) ~ 5.5 percent of total US emissions from the power sector,	CO ₂ , PFCs (aluminum production), nitrous oxide 45% of total EU's GHG emissions Limits GHG emissions from <ul style="list-style-type: none"> Power and heat generation Energy intensive industry sectors Civil aviation - Operators of flight to and from EU, Iceland, Norway and Liechtenstein EU ETS phases: 2005-2007 1 st 2008-2012 – 2 nd 2013-2020 – 3 rd 2021-2028 – 4 th	Carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, HFCs, PFCs, nitrogen trifluoride and other gases designated by EPA 25,000 MT CO _{2e} per year Phase I: 2013 electricity sources, fuel producers (i.e., refineries) and importers, industrial gas producers and importers, producers of “F-gases”, and other specified sources – nitrogen trifluoride, and geological sequestration sites Black carbon is to be limited Phase II: 2015 industrial stationary sources, industrial fossil fuel-fired combustion devices Phase III: 2017 local distribution companies for natural gas delivered to customers not covered
Point of Regulation	Industrial sources – at the point of emission Electricity: in-state generator and first entity delivering imported electricity for	Industrial sources – at the point of emission Electricity: in-state generator, and first entity delivering electricity	Industrial sources – at the point of emission Electricity: : in-state generator and first entity delivering	Sources of electricity generation (168 facilities)	Downstream at the point of emission	Industrial processes at the point of emission Coal combustion at point of emission.

	consumption RCI fuel combustion: Where the fuels enter commerce Transportation fuel consumption: where the fuels enter commerce	from other state for consumption in-state RCI fuel combustion: Where the fuels enter commerce Transportation fuel consumption: where the fuels enter commerce	imported electricity for consumption RCI fuel combustion: Where the fuels enter commerce Transportation fuel consumption: where the fuels enter commerce			Other energy use is generally covered upstream at the producer or distributor of the combusted fuels
Setting the Cap	Annual caps set in advance of the start date 2012 Decline over time Initial cap based on expected actual emissions in 2012 for sources covered 2015: cap set by adding RCI and transportation 2020: cap for 2020 set so that reduction by the cap plus reductions from other policies will achieve WCI 2020 goal. Post-2020: caps will be set not less than 3 years in advance Restrictions on adjusting the caps , adjustment made prior to compliance period	Proposed to set statewide and sector emission caps for covered entities - recommendations subject to legislative approval Emissions cap must decline evenly in each sector until the state GHG are reduced as required in RCW 70.235.020	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	Referred to as CO ₂ budget MOU set the overall emissions budget per compliance period 2.5% per year reduction	EU-wide caps for Phase I and II From 2013 onward the cap is reduced by 1.74%, by 2020 GHG is reduced 21% from 2005	Establish the quantity of allowances for years 2012-2050 (4627 to 1035 MMTCO ₂ e)
Allowance Distribution	Allowances issued by each Jurisdiction Distribution can be standardized to address competitiveness 10% minimum is auctioned in 1 st compliance period, increase to 25% in 2020 Coordinated regional auction process designed by jurisdictions 5% of allowances are reserved to avoid over-supply, & reserve price is set Early reduction allowances for reduction from 1/2008 to 1/2012, in addition to 2012 allowance budget	Didn't advance to this decision phase	Annual allowance budgets set for years 2013-2020 Allowances directly allocated to covered entity or opt-in covered entity based on methodology which includes emissions efficiency benchmark per unit Free allowances to industrial facilities for leakage prevention and transition assistance All remaining allowances are auctioned. 1 st auction conducted Nov. 2012 Auction reserve price (\$10) An auction purchase limit is set per entity or groups of entities within same corporation Allowance price containment reserve	RGGI auctions virtually all allowances Fixed additional supply of allowances that are only available for sale if CO ₂ allowance prices exceed certain price levels RGGI adjust budgets to account for banked allowances held by emitters	The vast majority of allowances were previously given away (grandfathered), for Phase I and II only 5% were auctioned From 2013 auctioning is the main method of allocating allowances From 2013 power generators must buy all of their allowances (there are some exceptions to new member states) Allocation to states are based on several factors (verified emissions, least wealthy states, Kyoto bonus) Manufacturing industry will receive 80% of its allowances free of charge in 2013, decreasing annually to 30% in 2020. Distributed based on harmonized rules- meaning on the basis of an average or expected performance benchmark (Free allowances phased out by 2027. Most governments use a common platform	About 80 percent of emission permits would be given away free at the start of the program, with the percentage decreasing over time. By 2030 70% of allowances will be auctioned. For 2020 free allowances are given with different phase out periods and conditions to: <ul style="list-style-type: none">• energy-intensive industries• merchant coal generators and to electricity producers under long-term contracts;• oil refineries• state governments to support renewable energy, EE, etc.• local natural-gas distribution companies• automobile industry Strategic allowance reserve auction

Revenue	A portion of the value of allowance budget dedicated for public purposes (i.e. energy efficiency, emissions reductions and sequestration in agriculture and forestry, adaptation, R&D, demonstrations and deployment). The rest used as the jurisdiction sees fit.	Didn't advance to this decision phase	Proceeds from the sale of allowances deposited into the Air Pollution Control Fund and available for appropriation by the Legislature	Proceeds invested in energy efficiency, renewable, direct bill assistance	At least ½ of auctioning revenues should be used to combat climate change in Europe or other countries	The proportion of allowances auctioned for deficit reduction or for refunds to consumer increases from about ½ a percent in 2020 to over 50 percent by 2050.
Cost containment (Banking and Borrowing)	Unlimited banking – number of allowances held by any party is limited to prevent market manipulation Borrowing is not allowed	Would have looked to WCI structure	Banking of allowances for unlimited time, with holding limits for entities. No borrowing. Between 1 to 7 percent of allowances held in a strategic reserve to contain costs, increasing over time.	Unlimited banking Cost containment reserve (CCR) to provide flexibility and cost containment	There was no banking allowed between Phases 1 and 2, but unlimited banking is allowed between phases 2 and 3, and unlimited banking will remain the policy. Borrowing is not allowed, apart from for those entities that receive a free allocation of EUAs, and only within-year (i.e. for the two months between them being given their allowance for a current year in February and them having to surrender their allowances for the previous year in April).	Unlimited banking Unlimited next year borrowing with no interest and borrowing of 15% of compliance obligation from 2-5 years at 8% annual interest
Compliance period	3 year compliance periods: 2012-2014, 2015-2017, and 2018-2020	Would have looked to WCI structure	1 st period- 2013-2014 2 nd period 2015-2017 3 rd period 2018-2020 Three-year compliance periods	3 year compliance period	Annual compliance period Business is penalized if it does not surrender enough allowances – has to buy allowances, named and shamed and pay penalty of €100 per ton	Two-year compliance period
Compliance & Enforcement mechanisms	Sufficient allowance surrendered at end of each compliance period If no compliance entity or facility will be required to obtain and surrender 3X allowances Penalties can be imposed	Would have looked to WCI structure	Capped industries provide allowances and offsets for 30 percent of previous year's emissions Every three years, these industries provide allowances and offsets covering the remainder of emissions in that three-year compliance period If deadline is missed or there is a shortfall, four allowances must be provided for every ton of emissions that was not covered in time Various mechanisms to prevent market manipulation	Entities must hold 50% of their allowance obligation at the end of each Interim Control Period, (any year that is not the end of a three-year compliance period). Fine equal to three times the allowance price for each ton of CO2 emissions exceeding the number of submitted allowances. Additional penalties for sources not holding allowances accounting for the 50% compliance obligation. Independent market monitor. Violations subject to Clean Air Act penalties.	Under phase 3 there is a fine of €100 for every tCO2-e unit that is not surrendered.	Penalties for non-compliance – 2X number of allowances not delivered An allowance tracking system must be established to facilitate the orderly functioning of allowance and offset credit markets

<p>Offset credits</p>	<p>Limit use of offsets and allowances from other trading systems to no more than 49% of total emission reductions from 2012-2020</p> <p>Projects inside WCI, but may accept offset credits from developing countries</p> <p>List of project types to use as priority for offset projects (agriculture, forestry and waste)</p> <p>Protocols to be developed</p>	<p>No more than 49% of a sector's total emissions reductions from 2012 to 2020 can be from offsets</p>	<p>Offset credit - real, additional, quantifiable, permanent, verifiable, and enforceable;</p> <p>Must meet the compliance Offset Protocol</p> <p>Must be within US, Canada or Mexico</p> <p>Requirements for offset projects are set</p> <p>Projects registered and listed Offsets verified by an ARB accredited verification body</p>	<p>Offset credits limited to 3.3% of covered entity reported emissions</p> <p>Offsets must originate within U.S. unless prices exceed \$10</p>	<p>Quantitative restrictions: In phases 2 and 3 each country can set its own limit for how many CERs (certified emission reduction unit) can be surrendered, but the maximum is 11% of each entity's total free allocation from phase 2, and for entities that did not participate in phase 2 this number is 4.5% of its allowance for each year.</p> <p>Qualitative restrictions: In phase 1 CERs from LULUCF (Land Use, Land-Use Change and Forestry) projects were ineligible. In phases 2 and 3 CERs referring to abatement from of HFC and N₂O (from the production of adipic acid) were also designated as ineligible. Finally in phase three all CERs surrendered that were registered after 31 December 2012 must be in an LDC (less developed country). Restrictions on ERUs (emissions reduction units - JI units) were also introduced for phase 3.</p>	<p>Offset registry and fees paid by project developers</p> <p>Offsets could account for up to 2 billion tons of total emission reductions each year under the entire cap; in 2012 up to 15 % and by 2050 33%</p> <p>EPA to determine eligible projects</p> <p>1/2 offsets would be domestic, 1/2 international. Up to 3/4 from international sources if not enough US sources</p> <p>USDA would have established a list of eligible agricultural and forestry offset programs. The USDA will then issue offset credits to the project developers.</p>
<p>Governance and Institutions</p>	<p>Regional organization created to administer the program (WCI inc.)</p>	<p>Would have been part of WCI, so same institutions</p>	<p>Auction Administrator Executive Officer Financial Service Administrator</p> <p>WCI Inc. serves as regional organization for CA and QC</p>	<p>RGGI Inc.</p>	<p>Oversight and guidance is provided by the European Union by co-decision of the Member States. The detailed implementation is designed by the European Commission, with approval from the Member States. Third parties are responsible for verification. National governments are responsible for accreditation and enforcement.</p>	<p>Federal GHG registry FERC regulate cash market in allowances and offsets Commodity Futures Trading Commission responsible for derivative markets No over-the-counter trading of derivatives Offsets Integrity Advisory board</p>
<p>Linking to other markets</p>	<p>New WCI partner can be added – must adopt GHG reduction goal as stringent or more</p> <p>Done by bilateral or multilateral agreement</p>	<p>Would have been part of larger WCI trading market</p>	<p>Government of Quebec (effective January 1, 2014), under a formal linkage agreement</p>	<p>Frequent discussions but formal linkage considered unlikely due to differences in program scope and allowance prices.</p>	<p>Over the next decade ETSs are planned across the OECD (Organization for Economic Co-operation and Development - 34 countries founded in 1961</p>	<p>States could not enact C&T</p> <p>State trading put on hold</p> <p>Allowed holder of allowances from RGGI and CA to exchange them for federal allowances</p>
<p>Role of other policies (complementary and/or supplementary)</p>	<p>Other fiscal measures can be used, or can implement policies for transportation (smart growth, LCFS, transit options, etc)</p>	<p>Alternative non-market based strategies for achieving targets – e.g., regulatory, performance based, economic and fiscal measures, measures to transition from coal-fired electricity, transportation, energy efficiency in buildings.</p>	<p>Large role for complementary policies, which make up the majority of the emission reductions necessary under AB 32. The AB 32 scoping plan lays out the total emission reductions.</p>	<p>Proceeds from auctions largely directed to energy efficiency programs. Transportation initiative also underway in RGGI region.</p>	<p>Complementary policies needed to transform the energy system – renewable energy policies</p>	<p>Supplemental emissions reductions through reduced deforestation – use allowance set-aside to reduce GHG emissions from deforestation</p>