

Market Mechanisms 101

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WA Webinar Series

- Webinar #1: Introduction to Market Mechanisms
- Webinar #2: Key Lessons from Other Programs
(European Union Emissions Trading Scheme, Northeast Regional Greenhouse Gas Initiative, Cal Market Advisory Committee, Cal Low Carbon Fuel Standard, & Oregon Load-based electricity cap)
- Webinar #3: What Issues Arise for Washington and for the Western Region in Designing a Program?
- Webinar #4: A Chance to Hear from Washington Groups?

Preview

- Introduction to “Market Mechanisms”
 - A Definition
 - Examples of Market Mechanisms
- Focus on Cap-and-Trade
- Focus on Regional Cap-and-Trade
- Sneak-Peek at Next Webinar

Definition of “Market Mechanism”

“The process by which a market solves a problem of allocating resources, especially that of deciding how much of a good or service should be produced, but other such problems as well. The market mechanism is an alternative, for example, to having such decisions made by government.”

Source: University of Michigan, Deardoff's Glossary of International Economics



Definition Applied

“The process by which a market solves the problem of allocating responsibility for supplying an environmental good, such as emissions reductions necessary to achieve an environmental goal. The market mechanism is an alternative, for example, to having such decisions made by government.”

Adapted from University of Michigan, Deardoff's Glossary of International Economics

“Command-and-Control”

- In general, pollution sources must meet requirements on, for example:
 - what technology will be installed; and/or
 - what fuel the facility will burn; and/or
 - what emissions rate facilities must meet; and/or
 - how many tons per year a facility may emit.
- Government allocates responsibility for providing the environmental good, not a market.



CENTER FOR CLIMATE STRATEGIES

Examples of Market Mechanisms

- Carbon Tax or Per Ton Emissions Charge
- Renewable Portfolio Standard (RPS) with Certificates Trading
- Low Carbon Fuel Standard (LCFS) with Certificates Trading
- Emissions Cap-and-Trade
- “Individual Transferable Quotas” in Fisheries

Renewable Portfolio Standard with Trading

- Government says: minimum amount of electricity will come from renewable sources
- Renewable energy providers compete to supply the load-serving entity with certificates
- Objective: market will be created in certificates, ensuring that the lowest cost renewable energy is obtained
- Achievement of goal is certain (given sufficient time for development and no cap on cost)

Low Carbon Fuel Standard with Trading

- Government says: all fuel must meet a low carbon fuel standard by a certain date, i.e. carbon attributable to fuel (on a life-cycle basis) must be reduced by $X\%$ by date.
- Instead of making all producers meet the standard, producers can buy credits from other producers that are able to exceed the standard.
- Objective: overall average of fuel delivered in the covered area will meet or exceed the LCFS.
- Achievement of low carbon average is certain, but amount of total carbon is not limited.

Carbon Tax

- Government assesses per unit charge for pollution
- Pollution charge results in reduced pollution, because pollution costs the firms money
- Firms would reduce pollution as long as it is cheaper to reduce rather than pay the charge
- Emission reductions uncertain--reductions proceed until the marginal cost of reduction = tax or charge
- Emphasis is therefore on cost, or revenue, not reductions

Carbon Tax vs. Cap-and-Trade

<ul style="list-style-type: none">• Extent of Emissions reductions uncertain	<ul style="list-style-type: none">• Emissions reductions fixed by Cap
<ul style="list-style-type: none">• Price of carbon set at level of tax	<ul style="list-style-type: none">• Price of carbon is function of supply and demand in emissions market
<ul style="list-style-type: none">• Both establish market signal to reduce emissions	<ul style="list-style-type: none">• Both establish market signal to reduce emissions
<ul style="list-style-type: none">• Source of revenue that can be used for complimentary purposes	<ul style="list-style-type: none">• Source of revenue can come from auction of allowances

Emissions Cap-and-Trade

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BASIC BUILDING BLOCKS OF CAP-AND-TRADE

ENFORCEMENT & PENALTIES FOR NON-COMPLIANCE

SOURCES “TRUE UP” AT END OF EACH COMPLIANCE PERIOD

ESTABLISH COMPLIANCE PERIOD FOR SOURCES

DISTRIBUTE OR AUCTION ONE “ALLOWANCE” FOR EACH TON IN BUDGET

DETERMINE THE REDUCTION OVER TIME (i.e., SUCCESSIVE BUDGETS REDUCED)

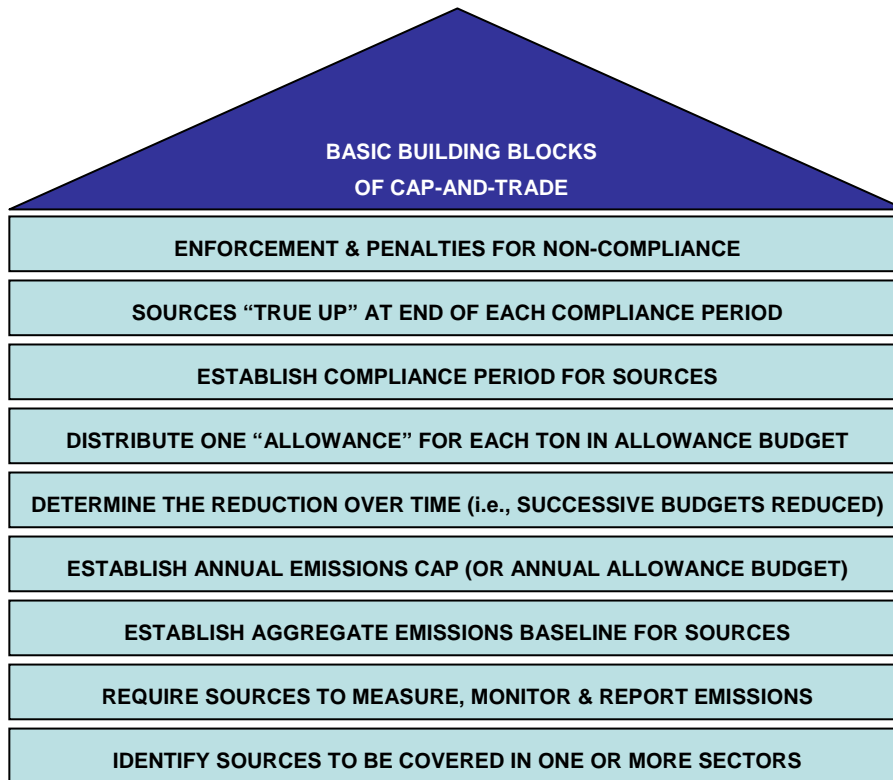
ESTABLISH ANNUAL EMISSIONS CAP (OR ANNUAL ALLOWANCE BUDGET)

ESTABLISH AGGREGATE EMISSIONS BASELINE FOR SOURCES

REQUIRE SOURCES TO MEASURE, MONITOR & REPORT EMISSIONS

IDENTIFY SOURCES TO BE COVERED IN ONE OR MORE SECTORS

ADDITIONAL DESIGN ISSUES



- Will mandatory emissions reporting be required as a first step?
- Program phased in sector by sector or all at once?
- Will project-based reductions, or offsets, be allowed in addition to the cap?
- If so, what offsets credits will be allowed?
- Credit for Early Action?
- How will new sources be treated?
- Will allowances be auctioned or distributed at no cost to sources, and if so, how?
- Will the program link with other programs?

What is an Offset Credit?

- An offset credit is a project-based reduction that is demonstrated outside the capped sector.
- To receive credit, most existing programs require the reduction be real, surplus (or additional), verifiable, permanent, and enforceable (RSVP & E).
- Examples of offset projects are: land to forest sequestration project; sulfur hexafluoride (SF6) leak prevention; landfill gas capture and destruction.
- Offsets expand the cap on covered sources in exchange for reductions outside the sector.

From the Perspective of a Source

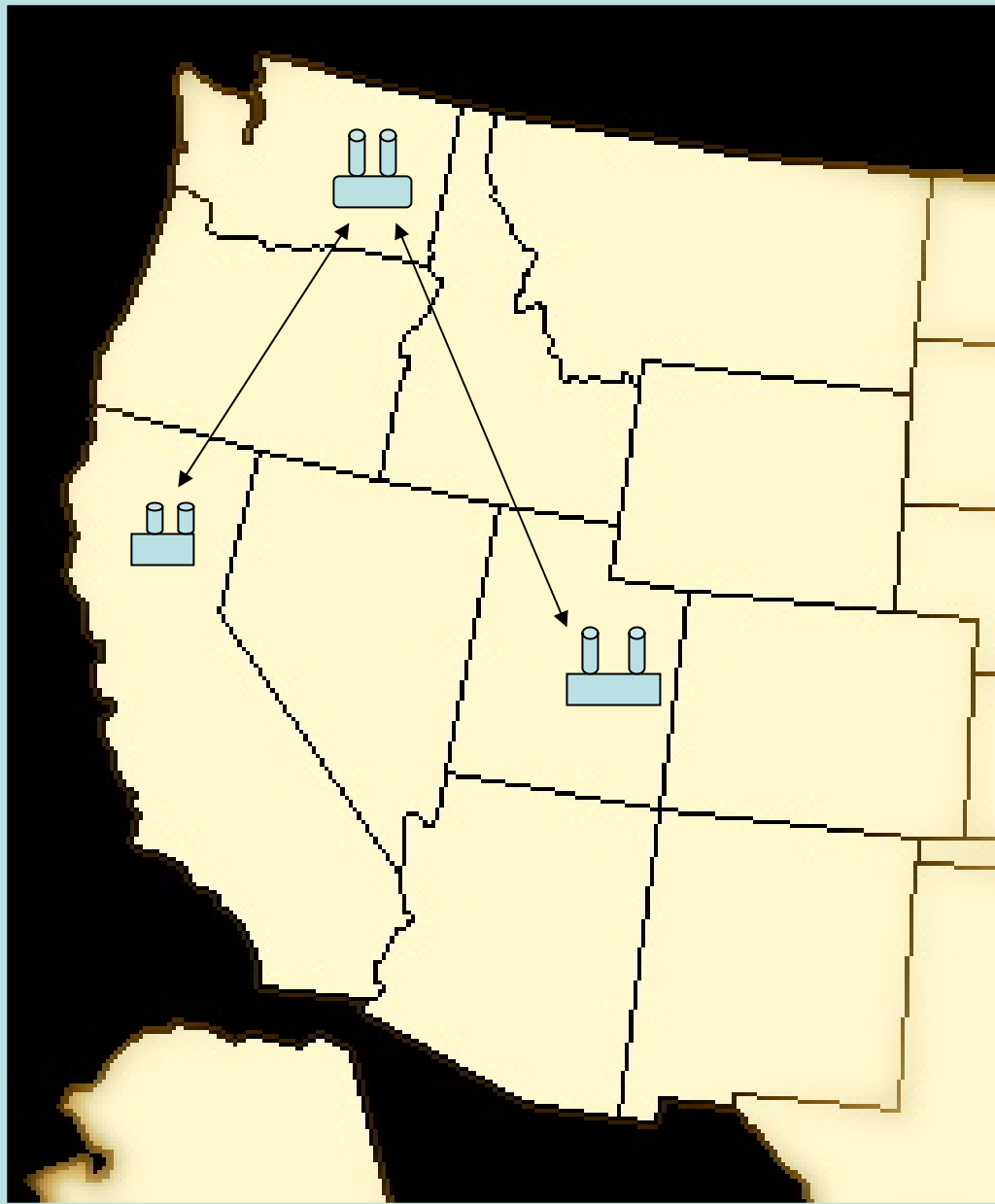
- A cap-and-trade program consists of two basic requirements:
 - (1) Source must measure, monitor and report its emissions to source's central registry account; and
 - (2) At the end of the compliance period, source must hold sufficient allowances in its allowance account to cover all emissions in that compliance period.
- Allowances are freely tradable among sources.
- A covered entity can comply by: reducing its emissions; buying allowances from another source that has reduced its emissions; buying offset credits.

Regional Cap-and-Trade Programs

- Benefits of regional program:
 - more sources, greater potential for lower cost reductions; and
 - more players in the emissions trading market, better functioning market; and
 - more states under cap, lesser potential for “emissions leakage” to uncapped areas.

Regional Cap-and-Trade Programs

- Mechanics:
 - Each state gets a annual allowance budget;
 - Regional effort produces model program that states must then propose individually;
 - Each state recognizes the allowances of other states as long as the other state is in good standing; and
 - State registries are linked (or a regional registry is established) to allow for seamless trading across states.



Regional Trading

- Sources in one state may buy or sell allowances to sources in another state;
- Cap is maintained;
- Aggregate total of emissions remains the sum of participating states' allowance budgets, plus offsets.

Sneak Preview of Webinar #2

- What issues have other states, regions & countries confronted in the design of market-based programs?
 - European Union Emissions Trading Scheme,
Northeast Regional Greenhouse Gas Initiative,
Cal Market Advisory Committee Recommendations,
Cal. Low Carbon Fuel Standard, & Oregon Load-based cap
- What key points may be taken from these other experiences to help WA CAT in its deliberations?

Questions?

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