

Additional Topics

Submitter's Name/Affiliation: Eileen Claussen/ Pew Center on Global Climate Change

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Possible Cost Containment Strategies that can be used with Emissions Trading Programs

Table 1. Measures that provide **price certainty** to regulated entities and may or may not provide environmental certainty

Mechanism	Description	Where used	Enviro Certainty	Strengths	Weaknesses
Safety valve (variation 1 – cap not assured)	Places a ceiling price on CO ₂ permits. When price hits this level, one of many things may happen, e.g.: <ul style="list-style-type: none"> the program administrator (government) sells additional allowances at this specified price regulated entities pay the amount of the safety valve as a tax or into a fund without acquiring an allowance <p>Additional allowances are not made up in later</p>	Bingaman-NCEP (S.Amdt.868) proposal (submit allowance or pay \$7 per metric ton of CO ₂ initially) UK trading system offers companies the option of paying the UK Climate Levy or taking an emissions target. Amount varies by industry.	No environmental certainty if price cap is low. More likelihood of certainty if cap is high.	<p>a) Generates revenue for the government – though this may be considered a weakness to the extent such revenue generation is considered a tax.</p> <p>b) Potential revenue recycling -- revenue received from safety valve payment could improve the efficiency of the program by reducing less efficient taxes in other parts of the economy (similar to the “double dividend” of auctioned allowances).</p> <p>c) Payment into a fund could be potentially more popular with industry than an undirected tax, especially if dollars directed at efforts that improve sectoral industrial efficiency.</p>	<p>a) Level of reduction is uncertain. Depending on the safety valve level, the cap may be broken and emissions levels may not be significantly affected.</p> <p>b) Difficult to know the level of price that encourages the appropriate level of control.</p> <p>c) Innovation efforts are limited to those that are below the safety valve price. Depending on the level of the safety valve, the incentive for innovation (the reward for innovation) may be significantly reduced.</p> <p>d) If perceived as a tax, may diminish public acceptability of policy.</p> <p>e) With relatively low targets, small danger of high prices and thus no economic justification for cost certainty.</p> <p>f) Could result in taking money from private sector investment and giving it to government, potentially without a link to emissions reductions.</p>

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	periods.				g) Can make linking to other trading systems difficult or impossible. h) If linking permitted, could set international prices because of arbitrage. (This could be limited by allowing only government-to-government trading or only if country price was equal or above international price.)
Safety valve (variation 2 – cap assured, firms responsible)	Same as safety valve 1, but additional tons are made up in later periods by firms (similar to penalty or to borrowing).	McCain-Lieberman (S.1151) allows borrowing and has a penalty for non compliance (see below).	Yes	Same as safety valve 1, plus: d) Private sector retains liability for reductions and incentive for improvement.	Same as safety valve 1, except (a).
Safety valve (variation 3 – cap assured, government responsible)	Same as safety valve 1, but additional tons are made up in later periods by government	The Canadian government implemented a \$15 CD/metric ton price guarantee, which will likely be paid into a fund and tons made up by government purchase.	Yes	Same as safety valve 1, except (a), (b).	Same as safety valve 1, except (a) and plus: (i) Government has liability instead of private sector. (j) Cost to government is uncertain, even though cost to firms is certain.
Penalty Cost	The penalty for noncompliance is set such that it can effectively offer an upper bound on the allowance prices. Penalties should provide an incentive to stay within the program and as such should be higher than the expected cost of compliance.	Acid rain, initially \$2000/metric ton EU ETS Phase I penalty is 40 euros. Phase II is 100 euros. New South Wales has a \$13 penalty for non compliance McCain-Lieberman has a penalty of 3x the market value of	Yes if tons are made up and/or level is high. No if tons are not repaid and level is low.	If set high enough, does not interfere with the market. Sends a signal to comply. Can be set to level the playing field to assure that those who comply are not put at a competitive disadvantage by those who fail to comply U.S. companies typically prefer to avoid the bad press associated with penalties.	If tons are not repaid and the level of the penalty is too low, compared to other options, companies may choose to pay the penalty rather than invest in options that reduce emissions. To the extent that this is set low and becomes a cost containment mechanism rather than an enforcement mechanism, the term “penalty” may be viewed as inaccurately pejorative by some firms.

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	To distinguish from safety valve, often repayment of allowances is required and level is relatively high.	the allowances that are not submitted. Bingaman-NCEP has a penalty of 3x the safety valve price for each allowance not submitted.			

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Table 2. Measures that **minimize costs** of compliance and provide **environmental certainty**

Mechanism	Description	Where used	Strengths	Weaknesses
Safety valve (variation 4 – flexibility expansion)	When safety valve price is reached, different compliance strategies are allowed to minimize permit prices. (Increases offsets, extends compliance periods, etc.)	RGGI		Requires that compliance strategies (e.g., offsets, and other flexibility mechanisms) be restricted before the safety valve is reached, which is not preferable. Can significantly increase program complexity and administrative costs
Circuit Breaker	A scheduled decline in the cap is delayed, cancelled (or even reversed) when the trigger price is exceeded.	Proposed by some environmental advocates to minimize the threat of future more stringent targets. Proposed in lieu of a safety valve.	Avoids price spikes that would result from increase target stringency.	Does not provide cost or price certainty. Prices may still rise. Does not provide regulatory (target) certainty to firms. Does not provide environmental certainty beyond the first cap.
Allocation	Allowances given freely to those with targets can be seen as industry compensation for additional control costs.	Acid Rain Program EU ETS	Allocation does not impact the efficient function of the market. May compensate firms for the cost of control and help keep consumer prices low.	Distributional/competitive equity concerns. May give companies “windfall” profits, which may not get passed along to consumers in the form of lower energy prices. Firms see higher profits and consumers see higher prices.
Full banking of allowances and offsets	Firms are able to make reductions at any time and use those efforts toward compliance at any time.	McCain-Lieberman bill Acid Rain Program EU ETS, phase I	Allows a firm to determine when it is most cost effective to make reductions or buy offsets. Intertemporal flexibility reduces overall program cost.	More reductions may occur immediately and if not utilized in the near term could serve to increase the near term price of carbon Alternatively, if targets are seen as stable in the long run, firms may not make excess reductions and a bank of permits might be slow to develop and would thus not be available to prevent price spikes that might occur unexpectedly.

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Offsets	Emission reductions that occur voluntarily outside of a regulated requirement but which can be used in place of regulated requirements. For example, reducing one ton of methane emitted from an unregulated landfill could be seen and counted as an equivalent reduction for a firm that is required to reduce 1 ton of methane at its gas processing facility.	<p>Proposed in McCain-Lieberman, Bingaman-NCEP, and RGGI but limited.</p> <p>EU- ETS, international (CDM and JI) offsets only.</p> <p>Oregon, Washington new electricity rules</p> <p>Canadian Carbon trading system</p> <p>RGGI – regional offsets only</p> <p>New South Wales carbon reduction effort for electricity providers – regional reductions only.</p>	<p>Sends a market signal to the entire economy that carbon has a value. Provides an incentive for action and innovation in a wider variety of industrial sectors than a cap and trade program without offsets.</p> <p>The larger the pool of offsets to choose from, the more competitive the market for those offsets and the lower the cost.</p> <p>Unlimited usage of offsets allows a company to cost effectively manage their control costs.</p> <p>Allows a firm to choose the least cost path towards compliance.</p> <p>Gives firms the ability take advantage of the natural capital turnover rate by paying someone else to reduce.</p> <p>All reductions regardless of sector or location are equivalent in terms of climate change mitigation.</p>	<p>May allow financial capital to flow out of region.</p> <p>Offsets (and ancillary benefits) may not happen within the focus sector(s)/location(s).</p> <p>Monitoring, verification and compliance may be complicated.</p>
Stagger deadline for compliance	Stagger the dates by which entities are scheduled to comply, avoiding a spike in demand for permits at the compliance deadline.	RECLAIM	<p>Smooths out demand for permits and helps to avoid price spikes.</p> <p>The market determines the incentive for innovation.</p>	Potentially more difficult to administer.

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Incentives for improved energy efficiency	<p>Effort is aimed at reducing energy consumption. This can be consumer consumption or industrial consumption.</p> <p>Incentives, in the form of rebates, tax credits, accelerated depreciation etc., are given to promote more energy-efficient technology or better energy management.</p>	Common	<p>Energy efficiency is relatively cost effective. Reducing energy demand is a national goal.</p> <p>Consumers are made better off or “whole”.</p>	<p>Behavior change is a long-term effort and required sustained effort.</p> <p>Depending on structure of effort, may distort the market.</p>
Consumer Dividends (can be used to compensate for higher prices)	Payment is made to energy consumers to compensate them for the increased energy costs.	<p>Alberta gas rebates.</p> <p>Alaska gives back a resource dividend to state residents (may be to compensate them for higher resource costs)</p>	<p>Addresses consumer cost issues directly. Consumers are happy.</p> <p>Revenue recycling through lump sum payments to consumers in the form of rebates for energy expenditures should not reduce the efficiency of the program.</p> <p>Consumers would have the same incentive to efficiently use household energy sources because the rebate will not change the marginal cost of these energy sources.</p> <p>The energy expenditure commitment by the states will not distort the market for emissions allowances.</p>	<p>Wealth transfer back to consumers may in turn raise incomes and result in higher levels of energy consumption.</p> <p>Does not send a specific signal for energy conservation.</p> <p>Difficult to know how much to compensate. (How much of rate is due to policy?)</p> <p>Inefficient to manage—may cost more to administer than the resulting benefits.</p>
Hedging with forward contracts	Put and Call options are utilized to “lock in” a commodity price	Common practice in commodity markets	Little government involvement. Full advantage of the market-based approach is observed	Markets must be relatively mature and liquid. Rule certainty is essential before these types of financial tools will be made available.

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Extension of compliance deadline	If price of allowances reach some specified level, the compliance deadline is extended. Such an extension will relieve short-term demand pressure for permits. Near term price of allowances should stabilize or fall. Firms would have more time (and hopefully) more options that would serve to reduce longer term permit prices. In essence this is similar to borrowing.	RGGI	<p>The market for permits continuously determines the appropriate price and level of innovation and does not need additional government assessment.</p> <p>Cap remains intact.</p> <p>The reward for innovation is set and paid for by market forces.</p>	<p>A delay in compliance may not increase options and may only increase the level of reductions that a firm is liable to make in later periods.</p> <p>Complicates regulatory certainty to firms and may delay significant action.</p> <p>May make timely program review more difficult.</p>
Borrowing	Firms or governments are allowed to borrow allowances from future allocations. This could be with or without a cost of borrowing. (The cost could be in terms of dollars or tons.)	<p>McCain-Lieberman includes borrowing at a cost of 10% of tons borrowed per year.</p> <p>Kyoto's 1.3x metric ton penalty in the second period is a form of borrowing.</p>	<p>The market for permits continuously determines the appropriate price and level of innovation and does not need additional government assessment.</p> <p>Since climate change is a long-term problem, the timing of reductions is not a significant issue</p> <p>Cap remains intact.</p> <p>The reward for innovation is set and paid for by market forces.</p> <p>Provides additional time for capital stock turnover that will result in potentially larger future reductions outside of the initial compliance period.</p>	<p>Logistically, difficult to administer and enforce.</p> <p>Requires the setting of future caps to ensure meaningful borrowing and repayment.</p> <p>Firms may be afraid to assume they would get credit for future reductions if they borrow on future allocations.</p> <p>Firms may eventually lobby for "loan forgiveness."</p>

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Relief for individual emitters	Individual emitters or vulnerable sectors could apply for relief if it can show that its mitigation costs/ton are higher than some level. Government would allocate additional allowances to that emitter, and may or may not be required to make up reductions elsewhere.	Not used (possibly considered in EU for some sectors)	May allow relief to firms or sectors potentially hard hit by carbon constraints or high-energy costs. May have political support in key regions and may reduce concerns about capital and jobs moving off-shore.	<p>Impacts regulatory expectations and may distort the level of innovation. For example, some analysts have suggested that the expectation that the California Energy Commission would provide air permit regulatory relief for the CA electricity sector if electricity price rose significantly kept industry from investing in new infrastructure that would have prevented the electricity price spike of the 2001.</p> <p>High administrative costs relative to release of additional allowances into market.</p> <p>Distributional and equity concerns.</p> <p>Does not provide a market signal for economy wide participation</p> <p>If government does not makeup for additional allowances, cap would be broken.</p> <p>Disincentive for emitters to reduce costs.</p> <p>Enormous potential for corruption.</p>