

STAFF DRAFT
Explanation of Spreadsheet on
CO₂ Adder Impacts on Fossil-Fuel PPC Level
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Purpose

The spreadsheet “CO₂-adder-impacts-PPC.xls” is intended to show how an increase in resource costs due to a CO₂ adder can affect the level of the public purpose charge (PPC) that would be needed to acquire all conservation that is economic with and without the adder.

Overview

This spreadsheet shows an example of a CO₂ cost adder of \$20 per metric ton that raises the resource cost from \$5 per MMBtu to about \$6 per MMBtu (rows 3 and 23 respectively). The example is for one hypothetical non-residential customer; and, all measures have a 1-year life. This determines what programmatic conservation is economic (rows 21 and 24). Because conservation has more value with the CO₂ cost adder, the savings potential of the tranche from \$5 to \$6 per MMBtu becomes economic. This is 20 MMBtu of savings in the example (row 13). Acquiring this tranche of conservation would require \$56 in total annual incentives (row 20). Without the CO₂ adder only the tranches of \$3 to \$4 MMBtu and \$4 to \$5 MMBtu are economic (10 and 20 MMBtu in row 13). The costs of the incentives for these tranches are \$8 and \$36, respectively (row 20). Therefore, adding the tranche from \$5 to \$6 per MMBtu raises the level of the public purpose charge from \$44 to \$100 annually (not shown). These annual costs are 1 percent (row 22) and 2.2 percent (row 25) of the toy example’s annual retail revenues of \$4,500 (row 7).

Detailed Calculations

The spreadsheet has three main sections, each with a major border. The first area (rows 3-11) is the major inputs. The second area (rows 12-20) has the calculations for each tranche of conservation. The third area (rows 21-25) has the results. The first tranche of conservation (costing less than \$3 per MMBtu) is acquired by the consumer without any incentives. Sometimes this kind of conservation is sometimes called “market-driven.” This tranche has 30 MMBtu of conservation (row 13) and requires no incentives. This 30 MMBtu of conservation potentials is not included in rows 21 and 24.

The hypothetical consumer in this example is assumed to have a strict simple payback threshold of 0.3 years (row 11). If a measure’s payback is less than this, it is acquired. If the payback is more, it is not. Therefore, the PPC must buydown the cost of the conservation \$2.70 per MMBtu (row 18). This is a check on the calculations. Row 19 shows that these assumptions result in PPC incentives paying a smaller cost share for the higher cost tranches (row 19).

The PPC must pay the rest of the costs (row 17). This incentive cost per MMBtu is multiplied by the MMBtu of potential for that tranche to get the total incentive payments for that tranche (row 20).

Row **CO2 ADDER IMPACTS ON FOSSIL-FUEL PPC LEVEL**

1 This spreadsheet provides a simple example of how a CO2 adder might affect
 2 the level of a public purpose charge to capture all economic conservation.

3	Levelized wholesale market price of	\$5	per MMBtu
4	Distribution Cost	\$4	per MMBtu
5	Total Rate to Consumer	\$9	per MMBtu
6	Total Sales	500	MMBtu
7	Retail Revenues	\$ 4,500	
8	CO2 content of fuel	117 lb	per MMBtu
9	CO2 Adder	\$20	per metric ton of CO2
10	Measure life is one year		
11	Consumer requires payback be less than	0.3	years

12	Conservation Cost Level	Less than \$3/MMBtu	\$3 to \$4/MMBtu	\$4 to \$5/MMBtu	\$5 to \$6/MMBtu	\$6 to \$7/MMBtu	\$7 to \$8/MMBtu	\$8 to \$9/MMBtu	\$9 to \$10/MMBtu	Total	% of use
13	MMBtu Savings Potential	30	10	20	20	10	10	5	0	100	20%
14	Avg. Cost of Conservation	\$1.50	\$3.50	\$4.50	\$5.50	\$6.50	\$7.50	\$8.50	\$9.50		per MMBtu
15	Payback w/o Incentive (yrs)	0.17	0.39	0.50	0.61	0.72	0.83	0.94	1.06		
16	Payback Reduction Needed (yrs)	0%	0.09	0.20	0.31	0.42	0.53	0.64	0.76		
17	Incentive for Measure		\$0.80	\$1.80	\$2.80	\$3.80	\$4.80	\$5.80	\$6.80		per MMBtu
18	Consumer Cost		\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70	\$2.70		per MMBtu
19	Consumer Cost Share		77%	60%	49%	42%	36%	32%	28%		
20	Total Incentives		\$8	\$36	\$56	\$38	\$48	\$29	\$0		per tranch
21	Economic conservation without CO2 adder				30 MMBtu or		6% of Total Sales				
22	PPC without CO2 Adder						1.0%				
23	Economic limit with CO2 adder		\$6.06								
24	Economic conservation with CO2 adder				50 MMBtu or		10% of Total Sales				
25	PPC with CO2 Adder						2.2%				