STATE OF MINNESOTA
BEFORE THE PUBLIC UTILITIES COMMISSION

In the Matter of Establishing an Updated 2016 Estimate of the Costs of Future Carbon Dioxide Regulation on Electricity Generation under Minn. Stat. §216H.06	Docket No. E999/DI-17-53 Related Docket No. E999/CI-07-1199

CLEAN ENERGY ORGANIZATIONS' COMMENTS

On Behalf Of

Fresh Energy
Minnesota Center for Environmental Advocacy
Sierra Club
Union of Concerned Scientists
Wind on the Wires

February 15, 2018

TABLE OF CONTENTS

I. INTRODUCTION

Fresh Energy, Wind on the Wires, Sierra Club, Union of Concerned Scientists and Minnesota Center for Environmental Advocacy ("Clean Energy Organizations") submit these comments in response to the Commission's January 23, 2018 Notice regarding Establishing an Estimate of the Likely Range of Costs of Future Carbon Dioxide Regulation. The Clean Energy Organizations address the following recommendations in their comments:

- The Commission should reject the Department of Commerce and the Pollution Control Agency ("the Agencies") recommended values.
- The Commission should adopt a range of values based on the floor and ceiling prices of allowances in the North American cap and trade programs beginning in 2022.
- The adopted values should escalate based on forecasts used by those programs, not only by inflation.
- The Commission should clarify that regulatory values must be used by utilities in the reference or base case scenarios in resource acquisition and planning proceedings.
- The Commission should clarify that externality costs in excess of regulatory costs must be included when assessing the full societal costs of a plan.

II. THE VALUES AND APPLICABILITY DATES RECOMMENDED BY THE AGENCIES ARE A SIGNIFICANT DEPARTURE FROM COMMISSION PRECEDENT AND ARE NOT SUPPORTED BY THE BEST AVAILABLE EVIDENCE.

The Agencies propose a dramatic reduction in the CO_2 regulatory cost range. Their recommendation does not rely on the best evidence of likely future regulatory costs, but instead uses current North American regional auction prices as the basis for future costs of state or federal regulations. The Agencies also ignore relevant benchmarks such as international carbon regulations, federal legislation that has been proposed, and the state's obligation to regulate CO_2 in the absence of federal action. As a result, the Agencies' recommendation is unreasonably low.

The Agencies suggested values are a steep downward departure from previous Commission orders. As shown in Table 1 the Agencies' recommendation would reduce the

existing midpoint of the carbon values—the value that is used most often in resource acquisition and planning dockets—by 30%. If adopted, it would mark the first time the Commission has ever reduced the regulatory value cost range. In fact, it would set the cost range at the lowest point it has ever been. The Agencies have failed to explain or provide a record for why, in 2018, the expected regulatory cost of CO_2 has diminished by 30%.

Table 1

Previously Approved CO_2 Values ($/ton)				
Order date	**Low**	**Mid**	**High**	**Starting**
12-21-2007	$4	$17	$30	2012
10-8-2009	$9	$21.50	$34	2012
6-3-2011	$9	$21.50	$34	2012
11-2-2012	$9	$21.50	$34	2017
4-28-2014	$9	$21.50	$34	2019
8-5-2016	$9	$21.50	$34	2022
Agencies' rec	$5	$15	$25	2025

Further, the Agencies' recommended implementation date is seven years into the future, which would also be the longest delay ever approved by the Commission. In short, the Agencies' recommendation would be a radical departure from previous Commission decisions, and would constitute the most significant changes the Commission has ever made to the value range and implementation date.

The Agencies based their recommendation on the current CO_2 prices in the country's two extant cap and trade programs: the Regional Greenhouse Gas Initiative ("RGGI") and the Western Climate Initiative ("WCI"). As the Agencies noted, these programs, "have recently seen declines in their auction prices to less than three dollars per ton CO_2e for RGGI (June 2017) and

14 dollars per ton CO_2e for California (May 2017)."[1] In light of the relatively low current price in RGGI, the Agencies propose to lower the minimum of the cost range (for 2025) to $5/ton.

This rationale inappropriately equates current and future prices. Minnesota Statute Section 216H.02 requires "an estimate of the likely range of costs of ***future*** carbon dioxide regulation" (emphasis added). As the Agencies themselves note, "carbon market costs are current costs and do not reflect likely future values."[2] RGGI and WCI are "cap and trade" programs rather than carbon taxes, meaning the price per ton of CO_2 will vary depending on the supply of and demand for credits. Notably, each program requires the rate of CO_2 reductions to accelerate over time, meaning utilities will need to make larger reductions in the 2020s than were required in the 2010s. Auction prices will likely increase over time, as the requirements become more stringent. It would be erroneous for the Commission to adopt today's price from a carbon trading market as its value of *future* regulation.

Not only does this Agencies' recommendation equate current and future prices, it also ignores market rules in RGGI and WCI that will require carbon prices to be significantly higher than the Agencies' minimum value. The design of RGGI and the WCI cap and trade programs limits the range of CO_2 prices within a given year. Each of these programs includes both a "price floor" (or minimum price per ton) and a "price ceiling" (or maximum price per ton). As displayed in Table 2, the price floors for both programs will be dramatically higher in the 2020s than current auction prices. The price floor in 2025 for RGGI will be $7.86/ton, or *57% more*

[1] *Agencies' Analysis and Recommendations* (January 19, 2018) at 3 (hereinafter Analysis and Recommendations).
[2] *Id.* at 4.

than the Agencies minimum price in 2025.[3] In WCI, the price floor will be approximately $22.58 in 2025, more than four times larger than the Agencies' low range, and nearly as large as the Agencies' *high* range of CO_2 regulatory costs.[4] Thus, the value range proposed by the Agencies is not supported by the very markets that they have looked to for justification.

Table 2

RGGI and WCI price floors and ceilings				
	Price floor		Price ceiling	
	RGGI	WCI	RGGI	WCI
2022	$6.42	$18.69	$13.91	$69.80
2023	$6.87	$19.91	$14.88	$74.34
2024	$7.35	$21.20	$15.92	$79.17
2025	$7.86	$22.58	$17.03	$84.32
2026	$8.41	$24.05	$18.22	$89.80
2027	$9.00	$25.61	$19.50	$95.64
2028	$9.63	$27.27	$20.87	$101.85
2029	$10.30	$29.05	$22.33	$108.47
2030	$11.02	$30.94	$23.89	$115.52

Likewise, the Agencies have failed to justify delaying implementation of the regulatory costs until 2025. While there is continued uncertainty with regard to federal regulation of CO_2 emissions, the fact remains that the Clean Air Act *requires* federal action on greenhouse gases.[5] Indeed, the Trump Administration, while noticing its intent to repeal the Clean Power Plan, also issued, on December 28, 2017, an Advance Notice of Proposed Rulemaking to solicit comments

---

[3] *2017 RGGI Model Rule* at 6-7 *available at* https://www.rggi.org/program-overview-and-design/design-archive/mou-model-rule.
[4] *2018 Annual Auction Reserve Price Notice* (December 1, 2017) (escalated at 6.5% annually (5% plus 1.5% inflation)) *available at* https://www.arb.ca.gov/cc/capandtrade/capandtrade.htm. *2018 Annual Allowance Price Containment Reserve Notice* (December 1, 2017) (escalated at 6.5% annually (5% plus 1.5% inflation)) *available at* https://www.arb.ca.gov/cc/capandtrade/reservesale/reservesale.htm.
[5] *Massachusetts v. EPA*, 549 U.S. 497 (2007).

on the regulation it intends to adopt to replace the Clean Power Plan.[6] This suggests federal regulations may be in place sooner than the Agencies project.

Moreover, federal rulemaking is only one form the future regulation of CO_2 might take. In the absence of federal action, the Minnesota Pollution Control Agency ("MPCA") has an obligation to limit CO_2 emissions. *See* Minn. Stat. § 116.07, subd. 2(a) ("The Pollution Control Agency *shall* improve air quality by promoting . . . the use of energy sources . . . which produce or emit the least air contaminants… The agency *shall* adopt standards of air quality. . .") (emphasis added). The MPCA could easily do so, for example, by adopting rules joining the RGGI or the WCI. In November 2017, for example, Virginia regulators adopted rules that would allow that state to join RGGI beginning in 2020.[7]

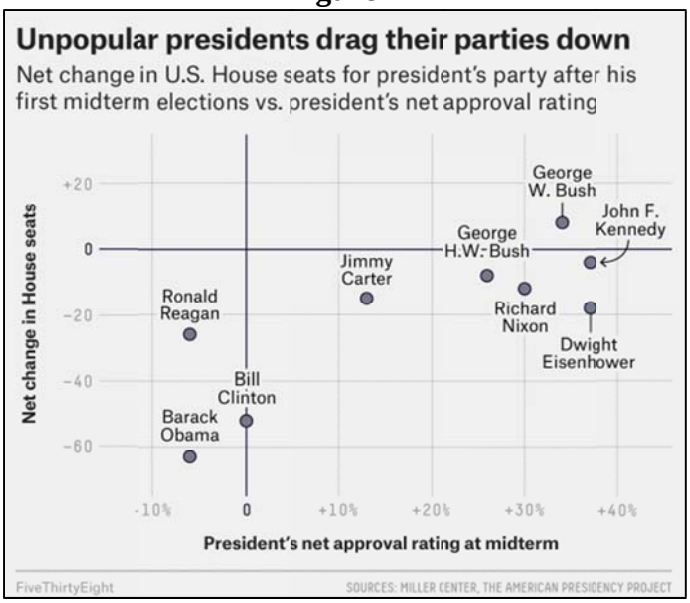
Additionally, aside from state and federal rulemakings, there is the potential for state or federal legislation to rein in CO_2 emissions. Over the next three years there will be a new governor, a presidential election, and two rounds each of Minnesota Legislature and U.S. Congressional elections. As Figure 1 shows, the President's party virtually always loses Congressional seats in Midterm elections,[8] and President Trump had—by an extraordinarily large margin—the lowest net approval rating (-15 points) after his first year of any president since approval ratings have been tracked.[9] In short, if current trends continue, the political landscape—both at the state and federal level—could be dramatically different in 2021 than it is

---

[6] 82 Fed. Reg. Vol. 61507 (December 28, 2017).
[7] https://insideclimatenews.org/news/15112017/virginia-carbon-market-cap-trade-rggi-greenhouse-gas-coal-emissions-climate-change.
[8] https://fivethirtyeight.com/features/will-trumps-approval-rating-be-a-problem-for-republicans-in-2018/.
[9] https://fivethirtyeight.com/features/the-year-in-trumps-approval-rating/.

today. And, as PUC staff noted in 2016 Briefing Papers, each of the carbon pricing programs introduced in the 113th Congress would have taken effect within two years of passage.[10]

Figure 1



Federal and state agencies have existing authority to adopt regulations to limit CO_2 emissions in the electric sector. Likewise, state and federal legislatures have the information they need to address climate change through a carbon tax or other law. Given the enormous scale of the climate change problem and the urgency of addressing it, it is not reasonable to assume that Minnesota or the federal government will wait until 2025 – another 7 years – to take action to reduce emissions.

III. THE COMMISSION SHOULD ADOPT A VALUE RANGE BASED ON THE FLOOR AND CEILING PRICES FROM THE NORTH AMERICAN REGIONAL CAP AND TRADE PROGRAMS BEGINNING IN 2022.

The Clean Energy Organizations note that there are several options from which the Commission could choose in adopting an appropriate range for the CO_2 regulatory value. The

---

[10] *Staff Briefing Papers* , Docket No. E999/CI-07-1199 (June 30, 2016) at 2 (citing Ye, Jason, *Comparison of carbon Pricing Proposals in the 113th Congress*, Center for Climate and Energy Solutions, December 2014).

CEO recommend that the Commission base its selection on the North American regional markets, as suggested by the Agencies, but offer an alternative calculation that better aligns with Commission precedent and the likely outcome of future regulations. The CEO recommend a range based on the average of the floor and ceiling allowance prices in RGGI and WCI beginning in 2022.

As detailed above, the Agencies based their recommended CO_2 regulatory value on recent auction prices in RGGI and the WCI cap and trade programs, ignoring the price floors in those programs that will require carbon prices to be higher than the Agencies' minimum value. As shown in Table 2 above, the price floors in 2025 will be roughly $7.86/ton and $22.58/ton for RGGI and WCI, respectively, which far exceeds the Agencies' recommended price of $5/ton. In short, the Agencies' approach produces a low carbon price that is not supported by the record they have supplied to the Commission.

The CEO submit that the Commission can improve on the Agencies' approach of setting the regulatory cost values based on existing carbon pricing programs in the U.S. by setting the range according to the price floors and ceilings in these programs for the relevant future years. This would be consistent with the Agencies' criteria of "being objective, easily accessible and provid[ing] true regulatory costs (prices reflecting the direct costs that emitters need to pay today for their emissions)."[11] The CEO recommend that the Commission set the low range as the average of the two price floors for a given year and set the high range as the average of the two price ceilings for a given year. Table 3 displays the resulting regulatory value range for 2022-2030. (For use in long-term modeling this table could be extended using the applicable escalators for each program.)

---

[11] *Analysis and Recommendations* at 4.

Table 3

Recommended CO_2 regulatory value range			
	Low	Midpoint	High
2022	$12.56	$27.21	$41.86
2023	$13.39	$29.00	$44.61
2024	$14.28	$30.91	$47.55
2025	$15.22	$32.95	$50.67
2026	$16.23	$35.12	$54.01
2027	$17.31	$37.44	$57.57
2028	$18.45	$39.91	$61.36
2029	$19.67	$42.54	$65.40
2030	$20.98	$45.34	$69.71

As noted above, there is little record support for determining that it will take state and federal regulators and lawmakers until 2025 to establish a regulatory price on CO_2 emissions. MPCA today has the authority to join RGGI or WCI. Virginia's November 2017 decision to do just that means that emissions in that state will be capped starting in 2020. The Commission should avoid giving in to cynicism. Ten U.S. states are covered by a cap and trade program. All other countries besides the United States are parties to the Paris Agreement, curtailing global emissions. Minnesotans expect our state to continue to lead, not lag, on the regulation of global warming pollution. The Commission should, therefore, maintain 2022 as the applicability date.

That the CEO recommended range is reasonable is confirmed by looking at alternative approaches to setting a regulatory value. For example, the CEO range falls well within the range of current prices for existing international carbon pricing programs. According to the World Bank, worldwide there are 47 carbon pricing initiatives implemented or scheduled for

implementation in 2018, ranging in price from <$1/ton (Mexico) to $140/ton (Sweden).[12] If one considers the average low and high values among these programs, the range is fairly consistent with the CEO recommendation: The average of the 10 lowest-value international carbon pricing programs is $3.70/ton, while the average of the 10 highest-value programs is $54.80/ton, resulting in a mid-point of $29.25/ton.[13]

The reasonableness of the CEO recommendation is likewise confirmed by a comparison to recently introduced federal or state legislation. Notably, the Commission's current high value of $34/ton was originally set based on modeled costs proposed federal legislation.[14] As the 2016 PUC staff briefing papers noted, there were six bills introduced in the 113th Congress that would have imposed some type of carbon pricing program.[15] Of those bills, the most moderate would have started at $20/ton and escalated to $30/ton over the next ten years, while the most extreme would have escalated from at least $6.25 in the first year to at least $118.75 in the tenth year. Since the briefing papers were published, many of these bills have been updated, and additional carbon pricing legislation has been introduced, such as H.R. 4962[16]—which includes a $50/ton CO_2 tax in 2019, escalating at 2% above inflation thereafter. Moreover, in 2017 a coalition of prominent Republicans[17] proposed "The Conservative Case For Carbon Dividends," which

---

[12] *State and Trends of Carbon Pricing 2017*, World Bank (November 2017) at 10, 14.
[13] Calculated using data from State and Trends of Carbon Pricing 2017. Norway's and Mexico's carbon taxes were calculated as the midpoint between their upper and lower bounds. Pilot programs were excluded from the calculation.
[14] *Agency Analysis and Recommendation* (March 27, 2009) at 3-4.
[15] *Staff Briefing Papers, Docket No. E999/CI-07-1199* (June 30, 2016) at 2 (citing Ye, Jason, *Comparison of carbon Pricing Proposals in the 113th Congress*, Center for Climate and Energy Solutions, December 2014).
[16] https://www.congress.gov/bill/115th-congress/house-bill/4926/text .
[17] Including James Baker (former Secretary of State, Secretary of the Treasury, and White House chief of staff), Hank Paulson (former Secretary of the Treasury and CEO of Goldman Sachs), Martin Feldstein and Gregory Mankiw (each former Chairmen of the President's Council of

includes a $40/ton carbon tax that would increase steadily over time.[18] Thus, the CEO's recommended range is supported by other indicators of the likely regulatory costs of CO_2 emissions.

IV. THE ADOPTED VALUES SHOULD ESCALATE AT A RATE 5% HIGHER THAN INFLATION.

Regardless of the approach it takes or values it chooses, the Commission should escalate its regulatory cost values at a rate greater than inflation. It is clear that carbon regulation will get more stringent over time and all of the existing indicators suggest that this cost will rise at a rate greater than inflation.

If the Commission elects to adopt the CEO's recommendation, a reasonable cost escalation will be built into the values. Both RGGI and WCI escalate their price floors and ceilings at roughly 5% above inflation. RGGI's price floors and ceilings escalate at a fixed 7% per year, and WCI is "5% above inflation" which would total 7% when combined with the Federal Reserve's target inflation rate of 2%.

The federal legislation cited here would likewise increase at a higher rate than inflation. Of the bills cited in the 2016 PUC Staff Briefing Papers, one would escalate at 2% above inflation, a second would escalate at a fixed 5.6% a year, a third would escalate at 4% above inflation, and the remaining two would escalate at an even faster rate.[19]

Economic Advisers and current Harvard economics professors), George Shultz (former Secretary of State and Secretary of the Treasury), and Rob Walton (chairman of the board of Walmart from 1992-2015), among others.

[18] https://www.clcouncil.org/wp-content/uploads/2017/02/TheConservativeCaseforCarbonDividends.pdf.

[19] https://www.c2es.org/site/assets/uploads/2014/12/113th-congress-carbon-pricing-proposals.pdf.

In sum, if the Commission does not adopt the CEO's recommended regulatory cost values, it should set the escalation rate for its chosen values at 5% above inflation, which would be consistent with the escalation rate employed in the RGGI and WCI programs.

V. THE COMMISSION SHOULD CLARIFY THAT REGULATORY VALUES MUST BE USED BY UTILITIES IN THE REFERENCE OR BASE CASE SCENARIOS IN RESOURCE ACQUISITION AND PLANNING PROCEEDINGS.

While externality and regulatory costs are both used in resource acquisition and planning, they serve different functions and are conceptually distinct. Externalities occur when an economic transaction between two or more parties has an impact on other, unrelated parties. Minnesota Statutes Section 216B.2422 Subd. 3 contemplates damage costs, or externalities, resulting from the combustion of fossil fuels for electricity generation. The pollution from fossil fuel generation creates economic damages in the form of public health and climate change costs. The parties to the transaction—the electricity generators and electricity consumers—do not directly pay the full cost of damages, so they will produce (and consume) more electricity than the societally optimal amount. This is an example of a "market failure," meaning the private market, on its own, will not maximize economic efficiency. Including externality costs in resource acquisition and planning allows the Commission to determine the societally optimal—i.e. most economically efficient—electricity generation resource mix.

Regulatory costs values, in contrast, account for the cost to a utility (and, thus, customers) to comply with future federal or state regulations, such as a carbon tax. These costs are included in resource planning and acquisition to account for the financial risk inherent in CO_2 emissions. As the Commission explained in its 2009 Order in this docket:

> Minnesota Statutes § 216H.06 reflects the Legislature's conclusion that it is likely that eventually laws will govern the emission of CO_2 and that utilities and their ratepayers will need to bear these costs. The statute's chief requirement is to compel utilities to plan accordingly. A utility's failure to correctly forecast the

> magnitude of CO_2 regulation costs may result in the utility's making choices that prove to be costly in retrospect.[20]

In other words, the regulatory values are predictions of costs that utilities, and ratepayers, will have to pay. They are similar to any other cost prediction; for example, the cost of natural gas or the cost of solar.

Historically, many utilities have failed to include these regulatory values in the base or reference case of their plans. For example, Great River Energy's "expected values" case had no externalities and no regulatory cost of carbon included, and it ran those values as sensitivities only.[21] Minnesota Power used the midpoint externality values in its Base Case[22] but only applied the carbon regulatory value to generation resources it determined would be subject to carbon regulation in certain sensitivities.[23] Otter Tail Power had two sets of 30 different sensitivities. One set of sensitivities included the carbon regulatory value and externality values and the other set included neither.[24] Only Xcel Energy included the midpoint of the regulatory value starting in 2019 and escalating at inflation, and ran carbon (and other) externality values as sensitivities.[25]

There is no justification for excluding the regulatory values because, as explained above, they are costs that utilities and ratepayers are expected to incur, just like any other cost in the plan. The Commission should therefore clarify in its order that these regulatory costs must be included in the utility's base or reference case, just like all other forecasted costs for which the

---

[20] *Order,* Docket No. E-999/CI-07-1199 (October 8, 2009) at 2.
[21] *Great River Energy 2018-2032 Integrated Resource Plan*, Docket No. ET2/RP-17-286 (April 28, 2017) at 107, Table 11.
[22] *Minnesota Power 2016-2030 Integrated Resource Plan*, Docket No. E015/RP-15-690 (September 1, 2015) at App. J, 1.
[23] *Id.* at 4-6.
[24] *Otter Tail Power 2017-2031 Integrated Resource Plan*, Docket No. E017/RP-16-386 (June 1, 2016) at App. I.
[25] *Xcel Energy 2016-2030 Integrated Resource Plan*, Docket No. E002/RP-15-21 (January 2, 2015) at App. J, 5.

utility and ratepayers will pay. CEO's recommend that the Commission order all utilities to use the mid-point of the adopted range in the reference case as well as providing low and high regulatory cost runs as sensitivities, just as is done with other variable future costs.

VI. THE COMMISSION SHOULD CLARIFY THAT EXTERNALITY COSTS IN EXCESS OF REGULATORY COSTS MUST BE INCLUDED WHEN ASSESSING THE FULL SOCIETAL COSTS OF A PLAN

As explained above, the externality and regulatory cost values serve different purposes: externality costs are included to determine the societally optimal electricity generation mix, even though utilities are not financially accountable for these costs. Regulatory costs estimate future costs that would have to be paid directly by utilities for producing CO_2.

Before the Commission's recent update of the externality values,[26] the externality cost range for CO_2 was unrealistically low ($0.38 to $3.91/ton), and, as a result, the Commission-adopted regulatory cost for CO_2 appeared to fully "internalize" the external costs of emitting CO_2, even at its lowest historical level ($4/ton, as approved in 2007). If total damages from CO_2 emissions really were only between $0.38 and $3.91/ton, the adopted regulatory values would have fully captured the societal cost of CO_2, and the market failure would have been corrected—i.e., the free market (with the regulatory cost) would be able to maximize economic efficiency. In this context, the externality cost would not need to be included in years in which the regulatory cost was applied because those damage costs had been fully internalized through regulation.

As a consequence of the lower externality values, it became the common practice in resource planning to exclude consideration of the external costs during those years in which a regulatory cost applied: as the Agencies explained, the "accepted practice has been to apply the externality value range in the years prior to the year in which the Commission has determined

[26] *Order*, Docket No. E-999/CI-14-643 (January 3, 2018).

that the regulatory cost value range should start being applied, with only the regulatory cost value range applied in the remaining years of the planning period."[27]

Because the Commission has now adopted externality costs for CO_2 that better reflect real societal costs, it is no longer appropriate to simply exclude consideration of externalities when the regulatory costs are included. Instead, the external damages that exceed the costs internalized through regulation must be accounted for. Thus, in each year when a Commission-adopted externality value is greater than the regulatory value for that year, the utility should provide an externality sensitivity run that includes those extra societal costs.

For example, the Commission has established a new externality cost range for CO_2 of $8.64 to $40.66/ton in 2018,[28] and the midpoint of the current CO_2 regulatory costs is $21.50/ton. When the low CO_2 externality cost is used, the regulatory cost estimate ($21.50) fully internalizes the externality cost, correcting the market failure. Under the high CO_2 externality cost, however, the regulatory cost no longer fully internalizes the externality cost. Under this scenario, there is still an additional externality cost of $19.16/ton. Without an additional adjustment, the market failure will remain, and the regulatory cost value alone will no longer be sufficient to determine the societally optimal level of CO_2 emissions.

Fortunately, this problem is easily addressed. For scenarios in which the CO_2 externality cost is lower than the CO_2 regulatory cost, the externality cost should be used only in the years before the regulatory cost is applied, as is "accepted practice" today. Using the current midpoint of the CO_2 regulatory cost and the low point of the CO_2 externality cost, the modeling inputs would look like this:

---

[27] *Analysis and Recommendations* at 6.
[28] *Order*, Docket No. E-999/CI-14-643 (January 3, 2018) at 31.

Table 4

	2020	2021	2022	2023	2024
CO_2 regulatory cost (midpoint)	$0	$0	$21.50/ton	$21.50/ton	$21.50/ton
CO_2 externality cost (low)	$9.05/ton	$9.25/ton	$0	$0	$0

For scenarios in which the CO_2 externality cost is higher than the CO_2 regulatory cost value, the *incremental* externality cost should also be applied in years in which the regulatory value is included. This will ensure that the externality costs of CO_2 are fully internalized. Using the current midpoint of the CO_2 regulatory cost and the high point of the CO_2 externality cost, the modeling inputs would look like this:

Table 5

	2020	2021	2022	2023	2024
CO_2 regulatory cost (midpoint)	$0.00	$0.00	$21.50/ton	$21.50/ton	$21.50/ton
CO_2 externality cost (high)	$42.46/ton	$43.36/ton	$22.76/ton	$23.66/ton	$24.56/ton

The Clean Energy Organizations recognize that because both the regulatory cost values and the externality values are expressed as a range from low to high with a midpoint, there are combinations of values that could lead to several alternative model runs. Alternative combinations would provide additional information to the Commission and stakeholders and are likely of value, but may also be considered burdensome in some circumstances by the utilities. CEO recommend, therefore, that the Commission order all utilities in all proceedings to provide, *at a minimum*, the following: (1) A base or reference case that embeds the midpoint of the regulatory value; (2) A sensitivity run using the low regulatory value; (3) a sensitivity run using the high regulatory value; (4) a sensitivity on the reference case (i.e., with the midpoint regulatory value) using the low externality value; and (5) a sensitivity on the reference case (i.e., with the midpoint regulatory value) using the high externality value.

CEO submit that an order from the Commission providing guidance to the utilities would help bring uniformity and consistency to resource acquisition and planning proceedings. Without such direction, the Commission and stakeholders are denied the value of this information as different utilities take different approaches and fail to fully implement the regulatory cost values as an actual forecasted cost to be incurred.

VII. SUMMARY OF CEO RECOMMENDATIONS

The Clean Energy Organizations urge the Commission to adopt the following recommendations in its Order:

- Establish the regulatory cost values based on the RGGI and WCI trading programs by calculating the low value as the average of the programs' floor prices and the high value as the average of the programs' ceiling prices. The values are set out in Table 3.
- Maintain 2022 as the applicability date.
- Establish an escalation rate for the chosen values at 5% above the rate of inflation
- Clarify that the regulatory cost value must be incorporated into the reference or base case of all modeling by all utilities in all resource acquisition and planning proceedings.
- Clarify that externality costs in excess of regulatory costs must be included when assessing the societal costs of a resource package or plan, as set out in example Tables 3 and 4.

Respectfully submitted,

/s/ Andrew Twite
Andrew Twite
Fresh Energy
408 St. Peter Str., Suite 220
St. Paul, MN 55102

/s/ Kevin Reuther
Kevin Reuther
Minnesota Center for Environmental Advocacy
26 E. Exchange Street, Ste. 206
St. Paul, MN 55101
(651) 287-4861

Attorney for Fresh Energy, Minnesota Center for Environmental Advocacy, Sierra Club, and Wind on the Wires