

Roger Caiazza Personal Comments on the Integrating Public Policy Task Force (IPPTF) proposal  
to incorporate carbon pricing into the wholesale energy markets  
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Via email to NYISO at [IPP\\_feedback@nyiso.com](mailto:IPP_feedback@nyiso.com)

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These comments are submitted as a private retired citizen. They do not reflect the position of any of my previous employers or any other company I have been associated with, these comments are mine alone.

I am motivated to submit these comments to make the point that the majority of New York State ratepayers are unaware of the ramifications of this proceeding and have never heard of the Social Cost of Carbon (SCC). I doubt that if they understood the SCC as the basis for this initiative that they would favor its implementation as proposed. Therefore, I recommend that the carbon pricing initiative consider a range of SCC values including the proposed value and the values included in the [Regulatory Impact Analysis for the Review of the Clean Power Plan: Proposal](#).

The SCC is the present day value of projected future net damages from emitting a ton of CO<sub>2</sub> today. In order to estimate the impact of today's emissions it is necessary to estimate total CO<sub>2</sub> emissions, model the purported impacts of those emissions and then assess the global economic damage from those impacts. The projected global economic damage is then discounted to present value. Finally, the future damage is allocated to present day emissions on a per ton basis to get the SCC value.

Because of the huge uncertainties of the SCC providing a range of values is appropriate. The SCC future net damages includes impacts out 300 years. It is an act of extreme hubris to claim that any projection of how the world will operate in 100 years, much less 300 years, should be used to guide current actions simply because no one could have imagined the technology available in today's society in 1917. In addition, the SCC relies on a complex causal chain from carbon dioxide emissions to social impacts that are alleged to result from those emissions. [Richard Tol](#) testified that these connections are "long, complex and contingent on human decisions that are at least partly unrelated to climate policy. The social cost of carbon is, at least in part, also the social cost of underinvestment in infectious disease, the social cost of institutional failure in coastal countries, and so on."

The current value of the SCC proposed for use in this initiative was developed by the US Interagency Working Group (IWG). There are three technical reasons that the single value the IWG developed and proposed for use in this initiative should not be used exclusively: global benefits, discount rates and equilibrium climate sensitivity.

The IWG SCC value considers global benefits and impacts not just New York State benefits impacts. In other words New Yorkers are being asked to pay today for some estimated far future impact elsewhere. Given that the State has limited resources to provide benefits to New Yorkers today is reason enough to consider a range of the SCC for a program that could increase costs to ratepayers. The EPA RIA for the

revised Clean Power Plan includes a domestic rather than international social cost of carbon value. Putting aside for the moment the question whether a New York only policy should only consider benefits to New Yorkers, it nonetheless seems obvious that the policy should at least limit benefits to the United States in any calculation on the value of the program to New Yorkers.

The IWG SCC value did not follow Office of Management Budget Circular A-4 guidance that states that regulatory analyses “should provide estimates of net benefits using both 3 percent and 7 percent.” The 7 percent rate is intended to represent the average before-tax rate of return to private capital in the U.S. economy. The 3 percent rate is intended to reflect the rate at which society discounts future consumption, which is particularly relevant if a regulation is expected to affect private consumption directly. The EPA RIA for the revised Clean Power Plan follows this guidance by presenting estimates based on both 3 and 7 percent discount rates in the main analysis.

Equilibrium climate sensitivity (ECS) is the expected change in temperature when the atmospheric CO<sub>2</sub> concentration doubles. The costs of this warming are dominated by the higher possible values of the ECS. The ultimate problem is that the IWG did not use the most recent values of the ECS for the value that the price of carbon initiative proposes to use. On July 23, 2015, Patrick Michaels presented relevant [testimony](#) to the House Committee on Natural Resources. Excerpts:

“In May 2013, the Interagency Working Group produced an updated SCC value by incorporating revisions to the underlying three Integrated Assessment Models (IAMs) used by the IWG in its initial 2010 SCC determination. But, at that time, the IWG did not update the equilibrium climate sensitivity (ECS) employed in the IAMs. This was not done, despite there having been, since January 1, 2011, at least 14 new studies and 20 experiments (involving more than 45 researchers) examining the ECS, each lowering the best estimate and tightening the error distribution about that estimate. Instead, the IWG wrote in its 2013 report: “It does not revisit other interagency modeling decisions (e.g., with regard to the discount rate, reference case socioeconomic and emission scenarios, or equilibrium climate sensitivity).”

“Clearly, the IWG’s assessment of the low end of the probability density function that best describes the current level of scientific understanding of the climate sensitivity is incorrect and indefensible. But even more influential in the SCC determination is the upper bound (i.e., 95th percentile) of the ECS probability distribution. Apart from not even being consistent with the AR4, now, more than five years hence, the scientific literature tells a completely different story. And this is very significant and important difference because the high end of the ECS distribution has a large impact on the SCC determination—a fact frequently commented on by the IWG2010.”

[Dr. Judith Curry has prepared a table](#) of different values of the ECS that illustrates the relative impacts of the indefensible cherry picking of a value that suited the agenda of the IWG rather than a more recent value.

## Equilibrium Climate Sensitivity

	Median	5 <sup>th</sup> pctile	95 <sup>th</sup> pctile
US IWG	3.0	1.72	7.14
AR4	3.0	1.5	-
AR5	-	1.0	6.0
CMIP5	3.45	2.08	4.67
Lewis & Curry 14	1.64	1.05	4.05
Lewis (15)*	1.45	1.05	2.2

\* Incorporates lower aerosol forcing of Stevens (2015)

Because the extreme values are a key driver of the ECS, the 95<sup>th</sup> percentile values are of most interest. Refer back to the Michaels testimony above to see that the IWG had lower values available to it for years but chose not to use them. There is another nuance to this table that is important to me personally as a meteorologist with over 40 years of experience with modeling and monitoring. The last two rows in this table are estimates based on monitoring and not modeling so, in my opinion, are more likely to be correct.

When the time comes to decide whether to implement the carbon pricing initiative it is important for decision makers to be aware of the changes in the value of the program possible by tweaking two parameters in the calculation of the SCC which is the fundamental rationale of the program. The uncertainties with the methodology and the three technical reasons support my recommendation to include the SCC values from the EPA RIA for the revised Clean Power Plan so a range of potential benefits is provided.

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