Documentation for Correspondence between Richard Tol and Roger Caiazza

From: **Richard Tol** <[redacted]>
Date: Mon, Nov 16, 2020 at 1:28 PM
Subject: Re: SCC Question
To: Roger Caiazza <[redacted]>

Dear Roger,

If a cap is set, you should not use the social cost of carbon. The social cost of carbon is an efficiency concept. A cap violates efficiency.

A cap requires that methane emissions are valued according to the shadow price of the cap.

See https://iopscience.iop.org/article/10.1088/1748-9326/7/4/044006/pdf

stay healthy

Richard

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Energy Economics

From: Roger Caiazza <[redacted]>
Sent: 16 November 2020 4:10 PM
To: Richard Tol <[redacted]>
Subject: Re: SCC Question

Dr. Tol,

I have another question about social cost calculations that I hope you can answer. In particular, New York State is developing guidance for a social cost of methane and I am confused how the short lifetime of it affects the social cost calculations when New York has set a cap on methane emission levels.

I am working on personal comments on the guidance and noted that carbon dioxide is long-lived and accumulates over time because it stays in the atmosphere. Methane is a short-lived (10 to 12 years) pollutant that lasts in the atmosphere less because "methane undergoes hydroxyl oxidation and becomes carbon dioxide and water vapor. The resulting carbon dioxide is recycled and returned to the atmosphere, ending methane's warming". For the SC-$C0_2$ impacts are aggregated and discounted out to 2300 for the IWG assessment which is predicated on the long atmospheric lifetime of CO_2 (Archer et al.,2009). The IWG assumes a lifetime of 12 years so methane is not accumulating in the atmosphere.

New York's climate law target is an 85% reduction of methane by 2050. That being the case then twelve years after the cap limit is reached the impact of New York methane on warming is done. It stands to reason that the economic impact on aspects of the economy, such as energy use, health, and agriculture, projected from these climatic changes is also done. Therefore, the SC-CH_4 time horizon should be 2062, 12 years after the attainment deadline when methane emissions will be fixed in the state. It does not matter if there are emissions only that the emissions are fixed.

Is this argument wrong?

Thank you.

Roger Caiazza
Liverpool, NY

From: **Richard Tol** <[redacted]>
Date: Tue, Jul 14, 2020 at 10:57 AM
Subject: Re: SCC Question
To: Roger Caiazza <[redacted]>

Dear Roger,

Apples with apples.

The Social Cost of Carbon of 2020 is indeed the net present benefit of reducing carbon dioxide emissions by one tonne in 2020.

It should be compared to the costs of reducing emissions in 2020.

The SCC should not be compared to life-time savings or life-time costs (unless the project life is one year).

stay healthy

Richard

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From: Roger Caiazza <[redacted]
Sent: 14 July 2020 2:02 PM
To: Richard Tol <[redacted]>
Subject: SCC Question

Dr. Tol,

I am hoping that you can answer a social cost of carbon question for me. In particular, the New York State Energy Research and Development Authority (NYSERDA) calculates that when the money they invest for energy efficiency projects reduces CO2 emissions that the social benefit value equals the annual reduction amount times the expected lifetime of the investment times the SCC value.

In the summer of 2019 the Governor Cuomo and the New York State Legislature passed the Climate Leadership and Community Protection Act (Climate Act) which was described as the most ambitious and comprehensive climate and clean energy legislation in the country when Cuomo signed the legislation.

The legislation includes a requirement to produce 70% of the electricity from renewable sources in 2030 and eliminate them altogether by 2040. Unfortunately, the politicians that passed this law never bothered to figure out how it could be done.

I am a retired electric utility meteorologist. I am positive that the costs to do this will be enormous and have little effect on global emissions even if all the technological issues can be overcome so I have been following the regulatory process in New York and commenting where I can. I also have a blog and I have written a series of posts on the feasibility, implications and consequences of this aspect of the law based on evaluation of data.

The New York Climate Act legislation mandates reductions against 1990 emissions. In order to evaluate the value of control equipment, the emissions reduction over the same annual time frame is the key parameter. In my experience, when you calculate the cost effectiveness of a control program the cost of the control system is divided by the annual emissions reduction to get the dollars per ton reduced. That is the mandated approach in the Environmental Protection Agency's Reasonably Available Control Technology rule. As a result, when I attempt to estimate Climate Act costs, I only consider the annual reductions and the costs for those reductions.

There is a current proceeding where NYSERDA is claiming that their investments are cost-effective but they use life-time benefits. I concede that the ratepayer cost-benefit calculation should consider the life-time avoided costs of energy and can see how that reasoning might also apply to the social cost of carbon. However, in the following definition, SCC is the present-day value of projected future net damages from emitting a ton of CO2 today, I can interpret that to mean that you shouldn't include the lifetime of the reduction. Am I reading to much into that?

I just finished reading the rebuttal comments you submitted as part of the Minnesota Public Utilities Commission hearings on the environmental and socioeconomic costs of their much less ambitious climate regulation. I thought your comments were devastating to the State's case but facts don't matter when politicians want to save the world. New York is supposed to do a similar proceeding and I have no doubt that nothing can dissuade the State's crusade to be climate leaders. If there were any chance of changing minds and, more importantly, the Governor was not a vindictive bully who has repeatedly denounced any corporation that has opposed his policies and ordered state agencies to not co-operate with them when it comes to getting permits or getting rate cases approved, I would try to find funding to hire you and the other experts used in Minnesota. However, in this instance it would only be a futile gesture.

I did a lot of regulatory analysis before retirement and have been a lifetime resident of Upstate New York. I know this is going to end badly so I am trying to at least raise issues for the record. Roger Pielke Jr's Iron Law is going to eventually stop this madness. In the meantime, I am trying to raise issues to accelerate the public's knowledge of the madness of this effort. I hope you can answer this question to help me.

Thank you,

Roger Caiazza