

September 2, 2025

ELECTRONIC SUBMISSION

Attn: FTA-2025-0068

U.S. Department of Transportation
1200 New Jersey Ave SE
Washington, DC 20590-0001

RE: Notice of Availability of Proposed Policy Guidance for the Capital Investment Grants Program

To Whom It May Concern:

On August 19, 2025, the Federal Transit Administration (FTA) within the U.S. Department of Transportation (DOT) published its “Notice of Availability of Proposed Policy Guidance for the Capital Investment Grants Program.”¹ Given the arbitrary and deeply flawed methodology used to compute the Social Cost of Carbon (SCC), this announcement marks a welcome return to the statutory purposes of the Capital Investment Grants (CIG) Program. In the hopes of assisting FTA in its proposed policy guidance, we respectfully submit these comments for FTA’s consideration.

Discussion

I. The Social Cost of Carbon (SCC) Methodology is Fundamentally Flawed

In 2013, FTA skewed its grant determinations under the CIG program by incorporating the SCC into its processes, thereby introducing a speculative and arbitrary factor into its considerations. There are myriads of problems with the SCC related to policymaker assumptions. *First*, this figure is predicated on making multi-century assumptions in the future. *Second*, policymakers have a long history of inflating the SCC by using an artificially low discount rate that contradicts long-established OMB guidance. *Third*, the SCC relies on unempirical, outdated projections involving Equilibrium Climate Sensitivity (ECS) that have been shown to be inaccurate. *Fourth*, SCC modeling by the federal government has historically been predicated on underestimates of the agricultural benefits of CO2 emissions.

To some extent, it is inevitable that any predictive model will be sensitive to the assumptions used as model inputs. If this challenge is not guarded against, then the model does not become a useful guide for regulatory decisions, but instead merely reinforces the policy priorities of whoever creates the model inputs.

¹ U.S. Department of Transportation, “Notice of Availability of Proposed Policy Guidance for the Capital Investment Grants Program,” *Federal Register*, Vol. 90, No. 158 (August 19, 2025), p. 40,465.

The SCC calculations have been made by a variety of Integrated Assessment Models. In particular over the last fifteen years, the federal government has relied on (1) Dynamic Integrated Climate Economy (DICE); (2) Framework for Uncertainty, Negotiation, and Distribution (FUND); and (3) Policy Analysis of the Greenhouse Effect (PAGE), the Data-driven Spatial Climate Impact Model (DSCIM), the Greenhouse Gas Impact Value Estimator (GIVE) model, and the Howard and Sterner meta analysis model.

Unfortunately, the models are so sensitive to assumptions that they are highly susceptible to user-manipulation.

1. The SCC can be manipulated based on predictions 300 years into the future.

To begin with, these models use an incredibly long-time horizon, purporting to project 300 years into the future. As a simple mental exercise, this is the functional equivalent of a royal official in colonial America, 50 years before the signing of the Declaration of Independence, purporting to predict with economic precision the impact that his decisions would have on the present day.

Simply reducing the time horizon of these models from 300 years to 150 eliminates an enormous portion of any claimed benefit, by reducing the timescale of the model.² As a point of comparison, most Central Bank models only purport to model the economy two or three years out, and MBAs in business school are generally taught SCC proponents would argue that the impact of carbon is both slow-acting and fundamental enough to require such long timeframes. Yet, as an economic model, this centuries-long time horizon has the effect of destroying the model's predictive value, and instead making it a tool to illustrate the assumptions of the modeler.

2. The SCC Calculations Can be Manipulated by Use an Artificially Low Discount Rate

Perhaps most glaringly for any regulatory economist, EPA simply disregarded OMB's guidance on discount rates in order to inflate the SCC. OMB Circular A-4 requires agencies to use two rates, 3 and 7 percent, to discount future benefits. Yet the EPA disregarded this guidance in calculating the SCC using a range of discount rates to discount future benefits. In laymen's terms, EPA effectively placed a thumb on the scale, by calculating future potential benefits from carbon regulation at a higher level than the Federal Government allows to be calculated for benefits from any other type of regulation. As a result, using this number effectively encourages agencies to value carbon reduction at an enhanced rate compared to other priorities, including their statutory authorities.

² Dayaratna, K. & Kreutzer, D. "Loaded DICE: An EPA Model Not Ready for the Big Game." The Heritage Foundation, 2013.

<https://www.heritage.org/environment/report/loaded-dice-epa-model-not-ready-the-big-game>

Dayaratna, K. & Gae, A. "Calculating the 'Social Cost of Carbon' with the GIVE Model: An EPA Model Not Ready for Prime Time." The Heritage Foundation, 2025.

<https://www.heritage.org/climate/report/calculating-the-social-cost-carbon-the-give-model-epa-model-not-ready-prime-time>

Gae, A. & Dayaratna, K. "Social Cost of Carbon: DSCIM's Unreliable Foundations." The Heritage Foundation, 2025.

<https://www.heritage.org/energy/report/social-cost-carbon-dscims-unreliable-foundations>

There are plenty of different criticisms to make for these artificially low numbers. Yet one extraordinary point to make is that with inflation currently at 2.7 percent, the lower bound discount rate for SCC calculations is actually lower than inflation, which should not even be economically possible, absent a prediction of significant, imminent inflation reduction, which seems bold given that inflation has been at or above this level for four years now, since 2021. Even the median 3 percent discount rate for SCC calculations (which would be the lower bound for any other regulatory cost or benefit projection) is extraordinarily close to the current inflation rate.

To demonstrate how thoroughly the U.S. Environmental Protection Agency (EPA) has inflated the SCC metric, it is worth noting that the subjecting the SCC to OMB's 7 percent discount rate reduces the SCC by approximately 75 percent. Indeed, many of the models show a negative cost of carbon once the 7 percent rate is introduced, which perhaps explains why the SCC never uses that rate. Most agencies, in being faced with such a negative projection, would hopefully reconsider the proposed regulation. Yet in relying on EPA's SCC calculations in its own programs, FTA has essentially made a policy determination effectively to inflate the values of another agency's priorities in relation to its own statutory objectives. Accordingly, the proposed policy guidance is a much needed, long overdue corrective to that major policy error.

3. The SCC Can be Inflated by an Inaccurate ECS Input

Finally, the SCC calculations are based on an outdated, inaccurate understanding of the effect that carbon emissions will have on the climate. Yet there is a major gap between the projections in climate models, compared to actual, empirical observations. Specifically, warming has thus far been approximately 43 percent less than most climate models' predictions.³ Given the enormous discrepancies between climate models and instrumental observations, and the consistency with which models have overshoot the observed reality, the continued reliance on ECS projections further reinforces the inaccuracy of the SCC calculation, and the extent to which activists and the EPA have abused the methodology to exaggerate, if not fabricate, the economic value of limiting carbon emissions.⁴

³ Spencer (2024). Global Warming: Observations vs. climate models. Environment Backgrounder, The Heritage Foundation.

<https://www.heritage.org/environment/report/global-warming-observations-vs-climate-models>

⁴ *Supra*, n. 2; Dayaratna, K. & Kreutzer, D., "Unfounded FUND: Yet Another EPA Model Not Ready for the Big Game." The Heritage Foundation, 2014.

<https://www.heritage.org/environment/report/unfounded-fund-yet-another-epa-model-not-ready-the-big-game>

Dayaratna, K., McKittrick, R., & Kreutzer, D., "Empirically Constrained Climate Sensitivity and the Social Cost of Carbon." *Climate Change Economics*, vol. 08, no. 02, 2017. <https://doi.org/10.1142/S2010007817500063>

Dayaratna, K. McKittrick, R. & Michaels, P., "Climate Sensitivity, Agricultural Productivity and the Social Cost of Carbon in FUND." *Environmental Economics and Policy Studies*, vol. 22, 18 January 2020, pp. 433-48.

<https://link.springer.com/article/10.1007/s10018-020-00263-w>

4. *The SCC can be manipulated by improper (or lack of) specifications of agricultural productivity.*

It is essential for government policy to engage in reasonable cost-benefit analysis.⁵ SCC modeling as done by the federal government has failed to take into account accurate assumptions about agricultural productivity, which are a benefit of CO₂ emissions that should be accounted for. Plants feed on carbon dioxide, and as a result carbon emissions have been shown to have a fertilization benefit, essentially acting as a natural fertilizer for agricultural products. This benefit has meaningful economic benefits for agricultural producers, and consumers of plant-based products. It is worth noting that upon updating assumptions to account for these observations that government estimates of the SCC essentially decline to zero or can be slightly negative under reasonable updates to agricultural productivity inputs.

5. *The SCC can be negative under reasonable assumptions.*

Under reasonable alterations to a number of the assumptions stated above, the federal government's own estimates of the SCC becomes negative, signifying that benefits of CO₂ emissions outweigh the costs. From a Pigouvian perspective, the SCC serves as the basis for setting a carbon tax equal to the marginal external damages of emissions. When the SCC becomes negative, however, the implication is that the federal government should be subsidizing or otherwise encouraging CO₂ emissions. I do not take the position that government should be taxing or subsidizing CO₂ emissions; however, the sheer fact that the models can suggest either under reasonable assumptions underscore their sensitivity to model manipulation.⁶

II. Using SCC to Guide Investment Decisions Undermines the Statutory Priorities that Should Guide FTA Determinations Under the CIG Program

Congress provided FTA a discrete list of policy priorities to weigh when administering the CIG Program. That list of policy priorities, with respect to entering into the engineering phase for new fixed guideway grants, includes: “a comprehensive overview of the project’s mobility improvements, the project’s environmental benefits, congestion relief associated with the project, economic development effects associated with the project, policies and land use patterns that support public transportation, and the project’s cost-effectiveness as measured by cost per rider.”⁷

An identical list of priorities recurs in the provisions governing the evaluation of benefits and Federal investment for Small Start projects,⁸ and a nearly identical list of priorities appears in the statutory provisions governing entry into the engineering phase for core capacity improvement projects.⁹

⁵ Exec. Order No. 12,866, “Regulatory Planning and Review” (1993).

⁶ *Supra*, n. 2 and 4.

⁷ 42 U.S.C. 5309(d)(2)(A)(iii).

⁸ *Id.* at § 5309(h)(4).

⁹ *Id.* at § 5309(h)(4). This list is slightly different, in that it also includes consideration of “the capacity needs of the corridor” and does not include consideration of policies and land use patterns that support public transportation. This slight difference is not germane to the change in policy guidance proposed, nor to this comment’s concerns with FTA’s current use of the SCC.

Nothing in this list mentions carbon emissions, nor the consideration of SCC. Although “environmental benefits” are included, they are mentioned as one of six factors for FTA to weigh in its grant determinations. To introduce an extraneous metric as deeply flawed as SCC into this Congressionally mandated balancing mechanism effectively skews FTA’s determinations in a way that hides the arbitrariness of the factor behind a misleadingly precise, yet fictitious number.

By removing the consideration of SCC, FTA would restore its consideration of “environmental benefits” to focus on the transportation-related criteria pollutants, namely carbon monoxide, nitrous oxide, ozone, and particulate matter, which have demonstrably been shown to harm public health, and which Congress has explicitly prioritized for the Executive Branch to regulate. Moreover, by focusing on how to limit emissions of such hazardous pollutants to levels aligned with public health, this proposal will allow FTA to weigh its various Congressional priorities appropriately, rather than rely on speculative, inaccurate economic projections to effectively minimize the very public transportation goals that Congress intended these grants to promote.

Conclusion

Considering the excessive time range, artificially low discount rates, and inaccurate reliance on exaggerated warming projections over the more muted observations, the SCC model artificially inflates the dollar value of limiting Greenhouse Gas emissions, and then uses that inflated value to justify costly interventions in the name of preventing global warming. Moreover, regardless of one’s perspective on climate change, it has been noted using the IPCC’s own models that if the United States were to completely abate CO₂ emissions, there would be less than 0.23 degrees C impact on the climate.¹⁰

Although FTA is not accountable for the way in which EPA has abused its discretion in calculating the SCC metric, in using such an inflated number FTA has effectively allowed EPA objectives to take a disproportionate emphasis over the objectives that Congress directed in the underlying statute. Accordingly, this proposal represents a welcome update to the policy guidance for the Capital Investment Grants (CIG) Program, and it is encouraging to see FTA return its focus to implementing the CIG statute as Congress intended.

Respectfully yours,

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The Heritage Foundation¹¹

¹⁰ <https://calculators.heritage.org/climate/calculate-the-temperature-changes-for-alternative-carbon-dioxide-reduction-policies>

¹¹ These comments reflect my personal views and not necessarily those of The Heritage Foundation.