

Fairness in a Carbon Charge System

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The following concerns were heard often during the introduction of the Yale carbon charge.

In any new policy intervention, some are likely to benefit while others are disadvantaged. Consider this advice: A game need not be perfectly fair. In a basketball tournament, the teams are not even. Each has different players, resources, and conditions. The question is whether the game is fair enough that participants are willing to play.

Below we provide a series of concerns and responses based on Yale's experience.

1. **Inefficient building** My building is inherently inefficient, so its charge will be too high.

Yale's carbon charge formula corrects for this by normalizing across all buildings, based on percent change from historical to current emissions. To do this, the formula first compares current emissions from a building to its own historical baseline emissions, then compares that percent change to the baseline-to-current emissions percent change of all buildings in the carbon charge system. This puts buildings of different size and efficiency on a level playing field.

2. **Early action penalty** Staff performed so much efficiency work before or during the baseline period that our building's emissions baseline is too low.

This is an issue. At Yale it was substantially mitigated, though not entirely, by setting the emissions baseline period so it ends before anyone on campus could have known a carbon charge would be instituted. Yale's baseline period is July 2010–June 2015. The carbon charge pilot did not take effect until December 2015, and the full campus roll-out was not assured until early 2017.

3. **Renovation/occupancy bias** My building was having work done or was unoccupied during part of the baseline period so its emissions baseline is too low.

This may be difficult to address. At Yale, this was true for many buildings. Carbon charge staff created custom baselines for only the most extreme cases. Beyond these, any cutoff point would have been arbitrary.

4. **Programming bias** Programming, or building use, increased between the baseline period and the advent of the charge, so my building's emissions baseline is too low.

At Yale, most instances of increased building use either had no discernable impact on energy consumption, or were accompanied by building improvements, such as LED lighting retrofits, that reduced energy consumption. Absent such luck, this could require forbearance by those responsible for buildings.

5. **Incentive/autonomy misalignment** Building occupants have few tools to reduce emissions, so they have a difficult time reacting to the incentive.

This may be the most challenging issue for the Yale carbon charge. In the short term, it is difficult to address. However, carbon pricing is not targeted to short-term results. If leaders want to bring greater rationality, efficiency, and humanity to their complex organization, putting a price on carbon is a reasonable step. Turning hundreds of eyes to finding inefficiencies can bring to light misaligned

incentives and other organizational issues. With sufficient empowerment, those closest to the problems can develop solutions.

6. **Uneven central investment** The facilities department has or will invest more in other buildings, reducing emissions for the university, which increases the relative carbon charge liability for my building.

One should want their institution to act rationally, addressing first those projects with the greatest potential for reducing energy consumption and return on investment. The incentive should be for building personnel to identify and pursue the most cost-effective energy consumption reduction projects.

7. **Resource scarcity** My school is working on a cure for cancer, and you want to divert funds for carbon dioxide?

Yes. Consider the health co-benefits of reducing the air pollutants that go along with carbon dioxide emissions. Putting a price on carbon will reduce pollutants linked with certain kinds of cancer. And it is not just cancer: whether your interests are human health, air quality, equitable global economic development, food scarcity, or refugee crises, reversing climate change may help prevent the issue you are working to address.

Questions to consider

• Knowledge & Timing

- » How, if at all, should energy efficiency investments made before the advent of the carbon charge policy affect carbon charges to organizational units?
- » How frustrating is it to not know the emissions level necessary to receive a net return?

• Inheritance & Grandfathering

- » How, if at all, should carbon charges incorporate inefficiencies in buildings and equipment that predate the advent of the carbon charge?
- » Should emissions baselines for units be adjusted as new buildings are built, as they transfer between units, and as they are razed? Or should they be fixed by unit?

• Dividing cost savings

- » How should cost savings be divided between the institution, the facilities department, and building occupants?