

Comments:

Scientific Issues in Identifying, Estimating and Validating the Co-Benefits of Clean Air Regulation Proposed EPA SAB Project

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June 3, 2019

These comments are responsive to the “self-initiated project proposal,” issued 4/25/19, for consideration by the EPA’s Science Advisory Board. They roughly follow the narrative in the proposal and primarily relate to the definition of co-benefits.

1. The first paragraph says that co-benefits are “somewhat ill-defined.” This is not accurate. The theory and practice of CBA (and its regulatory analogue the RIA) would define co-benefits as additional benefits (under the Clean Air Act, this would almost always be those stemming from reductions in one or more air pollutants) not directly targeted by the regulation in question. The most usual source of co-benefits is treatment technology that reduces both the targeted and other pollutants. A less frequent source of co-benefits would be from meteorological processes (say a regulation to reduce ozone precursors also ends up reducing stratospheric ozone, which could cause increased risks of skin cancer). In this case, the definition in the first paragraph of the proposal is not wrong, but lacks specificity.
2. I am concerned about the apparent exclusion of ancillary costs (disbenefits) from the discussion. This is illogical and impractical, as ancillary disbenefits are common. Consider a regulation for flue gas desulfurization (FGD), for instance. FGD reduces SO₂ as its primary effect, but because energy is needed to run the FGD equipment, more NO_x and other pollutants are produced (causing an ancillary disbenefit). The net change is the relevant metric.
3. The second paragraph dramatically and to great confusion expands co-benefits to cover general equilibrium environmental effects in markets not targeted by the regulation itself. Actually, most CAA regulations are not sector specific (except for tailpipe standards under title IV and SO₂ trading across power plants in Title III). So the “co-benefits” example given of regulation of energy source A affecting energy source B’s emissions would generally not be applicable, because both energy sources would be affected by the regulation, and the air impacts of the targeted pollutant in B would be captured in the RIA along with impacts from A. In this case, ancillary impacts from non-targeted pollutants would occur across energy sources A and B. Indeed, if the regulation is energy source-specific and source A and B are substitutes (such as a regulation on coal as A and natural gas is B), then, the non-targeted emissions reduction benefits in A would be offset to some degree by non-targeted emissions increases in B. In this case, one could consider ancillary negative benefits. In practice, all of these changes would be covered in the same analyses, with net targeted emissions benefits (disbenefits) and net non-targeted ancillary benefits (disbenefits).
4. The third paragraph introduces even more confusion by labeling general equilibrium *economic* impacts as ancillary benefits. This is wholly inappropriate to theory and standard practice.

5. Environmental economists, of which I am one, consider the issue of ancillary benefits non-controversial and settled. The controversy that has been generated appears to have come from the RIA for the MATS rule, where mercury benefits were very difficult to estimate and so were quantitatively small, and the jointly reduced NOx/SO2 emissions were relatively easy to estimate and large, thus justifying the rule on the basis of the latter ancillary benefits. My view is that the EPA's estimation and use of ancillary benefits was wholly in keeping with standard practice and theory of CBA. To ignore the benefits of PM2.5 reductions would have made no sense. At the same time, EPA must ensure that there was no double counting of these reductions. I have no indication that they failed to do that.
6. As for the issues with identification, estimation and validation of co-benefits, there is nothing unique to these tasks associated with co-benefits. Identification, estimation and validation of direct benefits poses identical issues. Thus, all the scientific issues with ancillary benefits apply to direct benefits.

Here are my comments on the first two specific charge questions:

1. The Agency should limit its purview to the benefits and disbenefits of regulations that arise due to the joint treatment of pollutants of physical/chemical properties that result in pollution changes in addition to those sought by the regulation.
2. I think the Agency has been prudent in its use of this concept. The much maligned mercury rule, with its relatively large ancillary benefits from PM2.5 reductions can be considered, perhaps, a failure of the Agency to properly name the rule and provide context, as well as to the difficulty of estimating exposure and the health effects associated with a toxic, long-lived pollutant so different from the conventional air pollutants. But nothing improper was done analytically or conceptually.