Trinity Consultants

trinityconsultants.com

CIBO Quarterly Meeting

June 10, 2020

Jay Hofmann, President, CEO
jhofmann@trinityconsultants.com

40 CFR 63 Subpart DDDDD (Boiler MACT)

- On March 21, 2011, the EPA established final emission standards for industrial, commercial, and institutional (ICI) boilers and process heaters at major sources to meet hazardous air pollutant (HAP) standards reflecting the application of maximum achievable control technology (MACT)—the Boiler MACT (76 FR 15608).

Trinity Consultants

CO Limits

HAP/Fuel	Proposal	2011	2013+R	2020	Factor Better	Proposal	2011	2013+R	2020	Factor Better	Units
	Existing Boilers					New Boilers					
CO Biomass Wet Stoker/Sloped Grate/Other	560	490	1500	1020	0.7	560	160	620	610	1.0	ppm at 3%O2
CO Biomass Kiln-Dried Stoker/Sloped Grate/Other	560	490	460	460	1.0		160	460	460	1.0	ppm at 3%O2
CO Biomass FB	250	430	470	210	0.4	40	260	230	210	0.9	ppm at 3%O2
CO Biomass Dutch/Pile	1010	470	770	770	1.0	1010	470	330	330	0.7	ppm at 3%O2
CO Biomass Suspension Burner	1010	470	2400	2400	1.0	NA	NA	2400	2400	NA	ppm at 3%O2
CO Biomass Fuel Cell	270	690	1100	1100	1.0	270	470	910	910	1.0	ppm at 3%O2
CO Biomass Hybrid Suspension/ Grate	NA	3500	3500	3500	1.0	NA	1500	1100	180	0.2	ppm at 3%O2
CO Coal pulverized	90	160	130	130	1.0	90	12	130	130	1.0	ppm at 3%O2
CO Coal stoker	50	270	160	160	1.0	7	6	130	130	1.0	ppm at 3%O2
CO Coal FB	30	82	130	130	1.0	30	18	130	130	1.0	ppm at 3%O2
CO Coal FBHE			140	140	1.0			140	140	1.0	ppm at 3%O2
CO Oil - Heavy	1	10	130	130	1.0	1	3	130	130	1.0	ppm at 3%O2
CO Oil - Light	1	10	130	130	1.0	1	3	130	130	1.0	ppm at 3%O2
CO Oil non-continental	1	160	130	130	1.0	1	51	130	130	1.0	ppm at 3%O2
CO Gas2	1	9	130	130	1.0	1	3	130	130	1.0	ppm at 3%O2

Trinity Consultants

Hg, PM, and HCl Limits

HAP/Fuel	Proposal	2011	2013+R	2020	Factor Better	Proposal	2011	2013+R	2020	Factor Better	Units
	Existing Boilers					New Boilers					
Hg Biomass	0.9	4.6	5.7	5.4	0.9	0.2	3.5	0.8	0.80	1.0	lb/TBtu
PM Biomass	0.02	0.039	multiple	multiple	below	0.008	0.0011	multiple	multiple	NA	lb/MMBtu
HCl Biomass	0.006	0.035	0.022	0.020	0.9	0.004	0.0022	0.022	0.020	0.9	lb/MMBtu
Hg Coal	3	4.6	5.7	5.4	0.9	2	3.5	0.8	0.80	1.0	lb/TBtu
PM Coal	0.02	0.039	multiple	multiple	below	0.001	0.0011	multiple	multiple	below	lb/MMBtu
HCl Coal	0.02	0.035	0.022	0.020	0.9	0.00006	0.0022	0.022	0.020	0.9	lb/MMBtu
Hg Oil	4	3.5	2.0	0.7	0.4	0.3	0.21	0.48	0.48	1.0	lb/TBtu
Hg Oil non-continental	4	0.78	2.0	0.7	0.4	0.3	0.78	0.48	0.48	1.0	lb/TBtu
PM Oil	0.004	0.0075	multiple	multiple	below	0.002	0.0013	multiple	multiple	NA	lb/MMBtu
HCl Oil	0.0009	0.00033	0.0011	0.00035	0.3	0.0004	0.0032	0.00044	0.00035	0.8	lb/MMBtu
Hg Gas 2	0.2	13	7.9	7.9	1.0	0.2	7.9	7.9	7.9	1.0	lb/TBtu
PM Gas 2	0.05	0.043	0.0067	0.0067	1.0	0.003	0.0067	0.0067	0.0067	1.0	lb/MMBtu
HCl Gas 2	0.000003	0.0017	0.0017	0.0017	1.0	0.000003	0.0017	0.0017	0.0017	1.0	lb/MMBtu

Trinity Consultants

Alternative CO Limits (30 day with CEMS or other)

HAP/Fuel	Proposal	2011	2013+R	2020	Factor Better	Proposal	2011	2013+R	2020	Factor Better	Units
	Existing Boilers					New Boilers					
CO Biomass Wet Stoker/Sloped Grate/Other	NA	NA	720	720	NA	NA	NA	390	390	NA	ppm at 3%O2
CO Biomass Kiln-Dried Stoker/Sloped Grate/Other	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ppm at 3%O2
CO Biomass FB	NA	NA	310	310	NA	NA	NA	310	310	NA	ppm at 3%O2
CO Biomass Fuel Cell	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ppm at 3%O2
CO Biomass Suspension Burner	NA	NA	2000 (10 day)	2000 (10 day)	NA	NA	NA	2000 (10 day)	2000 (10 day)	NA	ppm at 3%O2
CO Biomass Dutch/Pile	NA	NA	520 (10 day)	520 (10 day)	NA	NA	NA	520 (10 day)	520 (10 day)	NA	ppm at 3%O2
CO Biomass Hybrid Suspension/ Grate	NA	NA	900	900	NA	NA	NA	900	900	NA	ppm at 3%O2
CO Coal stoker	NA	NA	340	340	NA	NA	NA	340	340	NA	ppm at 3%O2
FB with heat exchanger			150	150	NA			150	150	NA	
CO Coal FB	NA	NA	230	230	NA	NA	NA	230	230	NA	ppm at 3%O2
CO Coal pulverized	NA	NA	320	320	NA	NA	NA	320	320	NA	ppm at 3%O2
CO Oil - Heavy	NA	NA	na	na	NA	NA	NA	na	na	NA	ppm at 3%O2
CO Oil - Light	NA	NA	na	na	NA	NA	NA	na	na	NA	1 day block average
CO Oil non-continental	NA	NA	na	na	NA	NA	NA	na	na	NA	3 hour rolling average

Trinity Consultants

PM Limits

HAP/Fuel	Proposal	2011	2013+R	2020	Factor Better	Proposal	2011	2013+R	2020	Factor Better	Units
	Existing Boilers					New Boilers					
PM Biomass Wet Stoker/Sloped Grate/Other	0.02	0.039	0.037	0.034	0.9	lb/MMBtu	0.001	0.03	0.03	1.0	lb/MMBtu
PM Biomass Kiln-Dried Stoker/Sloped Grate/Other	0.02	0.039	0.32	0.32	1.0	lb/MMBtu	0.001	0.03	0.03	1.0	lb/MMBtu
PM Biomass FB	0.02	0.039	0.11	0.021	0.2	lb/MMBtu	0.001	0.0098	0.0098	1.0	lb/MMBtu
PM Biomass Dutch/Pile	0.02	0.039	0.28	0.18	0.7	lb/MMBtu	0.001	0.0032	0.0025	0.8	lb/MMBtu
PM Biomass Suspension Burner	0.02	0.039	0.051	0.041	0.8	lb/MMBtu	0.001	0.03	0.030	1.0	lb/MMBtu
PM Biomass Fuel Cell	0.02	0.039	0.020	0.020	1.0	lb/MMBtu	0.001	0.02	0.02	1.0	lb/MMBtu
PM Biomass Hybrid Suspension/ Grate	0.02	0.039	0.44	0.44	1.0	lb/MMBtu	0.001	0.026	0.026	1.0	lb/MMBtu
PM Coal pulverized	0.02	0.039	0.040	0.040	1.0	lb/MMBtu	0.001	0.0011	0.0011	1.0	lb/MMBtu
PM Coal stoker	0.02	0.039	0.040	0.040	1.0	lb/MMBtu	0.001	0.0011	0.0011	1.0	lb/MMBtu
PM Coal FB	0.02	0.039	0.040	0.040	1.0	lb/MMBtu	0.001	0.0011	0.0011	1.0	lb/MMBtu
PM Oil - heavy	0.004	0.0075	0.062	0.062	1.0	lb/MMBtu	0.0013	0.013	0.013	1.0	lb/MMBtu
PM Oil - light	0.004	0.0075	0.0079	0.008	1.0	lb/MMBtu	0.0013	0.0011	0.0011	1.0	lb/MMBtu
PM Oil non-continental	0.004	0.0075	0.27	0.27	1.0	lb/MMBtu	0.0013	0.023	0.023	1.0	lb/MMBtu
PM Gas2	0.05	0.043	0.0067	0.0067	1.0	lb/MMBtu	0.0067	0.0067	0.0067	1.0	lb/MMBtu

Trinity Consultants

"Recent" History of 40 CFR 63 Subpart DDDDD

- On January 31, 2013, the EPA promulgated amendments to the Boiler MACT (78 FR 7138).
  - In the January 2013 amendments to the Boiler MACT, the EPA established a CO emission limit for certain subcategories at a level of 130 ppm, based on an analysis of CO levels and associated organic HAP emission reductions.

Trinity Consultants

"Recent" History of 40 CFR 63 Subpart DDDDD

- Following the promulgation of the 2013 amendments, the EPA received 13 petitions for reconsideration that identified certain issues that petitioners claimed warranted further opportunity for public comment.
  - The EPA received petitions dated March 28, 2013, from New Hope Power Company (NHPC) and the Sugar Cane Growers Cooperative of Florida.
  - The EPA received a petition dated March 29, 2013, from the Eastman Chemical Company (Eastman).
  - The EPA received petitions dated April 1, 2013, from Earthjustice, on behalf of Sierra Club, Clean Air Council, Partnership for Policy Integrity, Louisiana Environmental Action Network, and Environmental Integrity Project (hereinafter referred to as Sierra Club); American Forest and Paper Association on behalf of American Wood Council, National Association of Manufacturers, Biomass Power Association, Corn Refiners Association, National Oilseed Processors Association, Rubber Manufacturers Association, Southeastern Lumber Manufacturers Association, and U.S. Chamber of Commerce (hereinafter referred to as AF&PA); the Florida Sugar Industry (FSI); Council of Industrial Boiler Owners, American Municipal Power, Inc., and American Chemistry Council (hereinafter referred to as CIBO/ACC); American Petroleum Institute (API); and the Utility Air Regulatory Group (UARG) which also submitted a supplemental petition on July 3, 2013.
  - The EPA received a petition dated July 2, 2013, from the Natural Environmental Development Association's Clean Air Project (NEDACAP) and CIBO.
  - The EPA received revised petitions from CIBO/ ACC on July 1, 2014, and on July 11, 2014, from Eastman. Both of these were revised to withdraw one of the issues raised in their initial submittal.

Trinity Consultants

"Recent" History of 40 CFR 63 Subpart DDDDD

- In response to the petitions, the EPA reconsidered and requested comment on several provisions of the January 31, 2013, final amendments to the Boiler MACT. The EPA published a proposed notice of reconsideration in the Federal Register on January 21, 2015 (80 FR 3090).
- EPA finalized the reconsideration on November 20, 2015 (80 FR 72790)

Trinity Consultants

CO Limits at 130 PPM Retained (for now)

- After consideration of the comments received, the EPA maintained a minimum level of 130 ppm CO at 3-percent O2.
- The issue of whether or not CO is an appropriate surrogate for formaldehyde (the representative organic HAP in boiler emissions), or non-dioxin organic HAP in general, was outside the scope of the 2015 reconsideration, since the reconsideration solicited comment only on the CO limits established at 130 ppm, not on the broader issue of using CO as a surrogate for organic HAP.

Trinity Consultants

Summary of the final 2015 Action

- Definition of startup and shutdown periods and the work practices that apply during such periods
- Revised CO limits based on a minimum CO level of 130 ppm
- PM CPMS
- Technical Corrections and Clarifications
  - Opacity is an Operating Parameter
  - CO monitoring and moisture Corrections
  - Affirmative defense for violation of emission standards during malfunction
  - Definition of coal
  - Other corrections and clarifications
- Other actions taken
  - Petitioners' comments impacted by technical corrections
  - Petitions related to ongoing litigation
  - Other petitions

Trinity Consultants

Boiler MACT Today

- EPA is currently revising the National Emission Standards for Hazardous Air Pollutants ("NESHAP") for Industrial, Commercial, and Institutional Boilers and Process Heaters ("Boiler MACT") at 40 CFR Part 63, Subpart DDDDD.
- In the Boiler MACT, subject sources must comply with a carbon monoxide ("CO") emission limit of at least 130 parts per million (ppm), which serves as a surrogate for non-dioxin organic hazardous air pollutants ("HAP") emissions. "Gas 1" units are not subject to a CO emissions limitation.
- Two decisions by the U.S. Court of Appeals for the District of Columbia Circuit ("D.C. Circuit") in recent years impact the Boiler MACT in general, and the CO emission limit in particular.

Trinity Consultants

U.S. Sugar - 2016 Case

- In U.S. Sugar Corp. v. EPA, 830 F.3d 579 (D.C. Cir. 2016), the D.C. Circuit rejected environmental petitioners' argument that EPA's decision to use CO as a surrogate for non-dioxin organic HAPs was arbitrary and capricious.
- The court reached this decision on the basis of an apparent breakdown of the correlation between CO and organic HAP below 130 ppm CO.

Trinity Consultants

Sierra Club – 2018 Case

- The D.C. Circuit again reviewed challenges to the Boiler MACT and its CO limit in Sierra Club v. EPA, 884 F.3d 1185 (D.C. Cir. 2018), this time considering EPA's decision to set 130 ppm as the limit.
- The court held that EPA's decision to set the 130 ppm CO limit as the MACT floor for certain subcategories was arbitrary and capricious because the agency had not supported the necessary conclusion that no further reduction in organic HAP emissions occurs after CO emissions are reduced below 130 ppm.
- To conclude that CO limits below 130 ppm would not result in further organic HAP emissions reductions, EPA relied on data showing increased formaldehyde emissions (the only organic HAP for which EPA had data) at CO emissions below 130 ppm.
- The court rejected EPA's reliance on the data for this purpose because the agency had already dismissed those same formaldehyde data as unreliable in defending the appropriateness of CO as an organic HAP surrogate, finding the increased formaldehyde emissions were due to difficulties in measuring organic HAP emissions at such low levels and not an actual increase.

Trinity Consultants

Key Excerpts - 2018 Sierra Club Case

- 130 PPM limit not supported by the data
  - "…even if EPA had grounds to conclude that there is some nonzero level of CO emissions that marks a point below which organic HAP emissions cannot be further reduced, it offered no basis for identifying 130 ppm as that level. As just noted, EPA cites only the unreliable formaldehyde data— which, on average, show HAP emissions increasing below 150 ppm of CO, not leveling off or zeroing out.
  - Accepting that boomerang as a data flaw, and not as an accurate representation of a shift in the physical correlation between CO and HAP combustion, it is not evident how those unreliable data could support a conclusion that emissions in fact plateau at their lowest achievable level, rather than either increasing or continuing to decrease, at an inflection point of 130 ppm. EPA has not explained how the data could suffice."

Trinity Consultants

Key Excerpts - 2018 Sierra Club Case

- "If EPA concludes that the relationship it previously identified between CO and organic HAP is actually valid only to a point (130 PPM)——it must explain how the limiting point it specifies reflects the emission control actually achieved by the best performing sources and, further, that it is the lowest emission level achievable with existing technology.
- "In revisiting the CO-based standards (in light of both this decision and U.S. Sugar), however, EPA must consider both
  - (1) whether the standards it adopts are Section 7412(d)(3)-compliant MACT Floors and
  - (2) whether Section 7412(d)(2) beyond-the-floor standards are called for here."

Trinity Consultants

Summary

- As a result of the two court decisions, EPA must address three issues related to the emission limits for CO established in the Boiler MACT on remand:
  - (1) adequately explain how CO emissions act as a reasonable surrogate for non-dioxin organic HAP emissions,
  - (2) address the fact that the best performing sources are not using alternative control technologies or methods for reducing organic HAP emissions lower than what is achieved by regulating surrogate CO emissions to 130 ppm, and
  - (3) demonstrate that its decision to set CO limits no lower than 130 ppm was reasonable because that threshold reduces organic HAP emissions to the fullest extent achievable by the best performing sources.

Trinity Consultants

Summary of Expected Changes

- HCl - reduction
- CO – wet biomass stokers and biomass fluidized bed limit decreases
- PM – biomass fluidized bed drop as well as other biomass boilers
- Mercury – smaller drop

Trinity Consultants

New EPA Notice of Proposed Rulemaking

Trinity Consultants

Increasing Consistency and Transparency in Considering Benefits and Costs in the Clean Air Act Rulemaking Process

Trinity Consultants

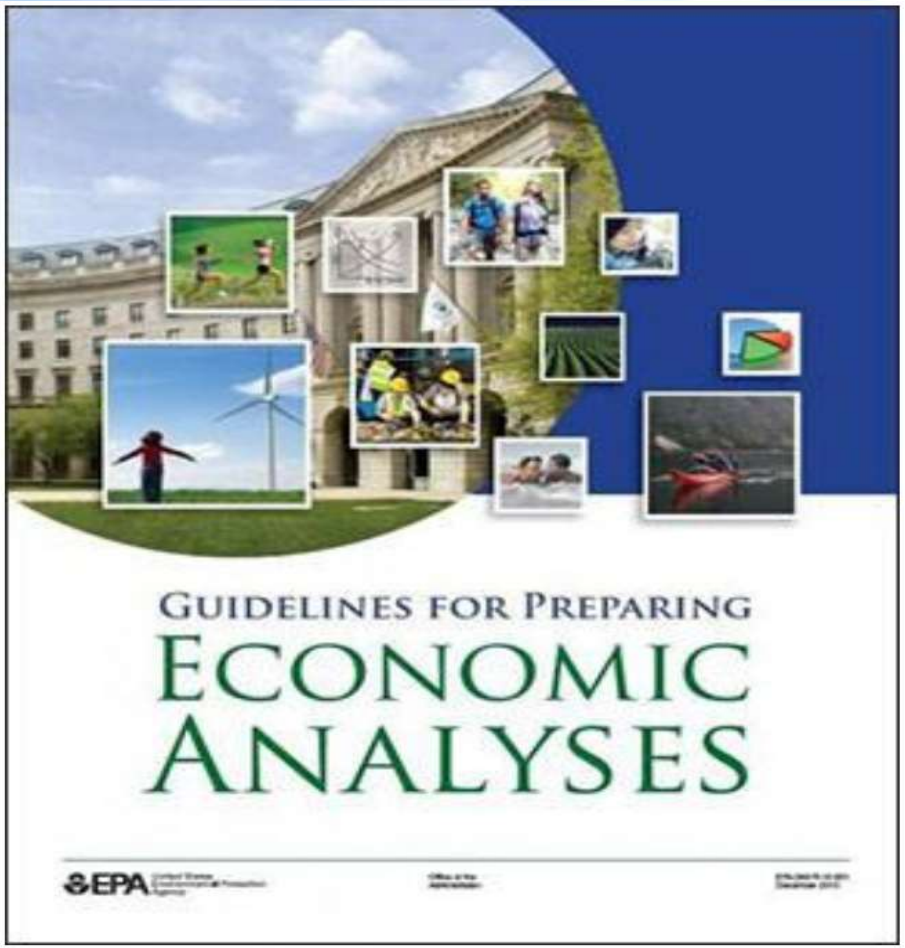
Benefit-Cost Analyses

- What is a BCA?
  - In general terms, a BCA is an evaluation of both the benefits and costs to society as a result of a policy and the difference between the two
  - It is a calculation of net benefits (benefits – costs)
  - It provides information about whether a policy change (new/amended CAA regulation, etc.) has the potential to improve the aggregate well-being of society

Trinity Consultants

Existing Guidelines

- EPA's "Guidelines for Preparing Economic Analyses" provides guidance on how to conduct a BCA and other types of economic analyses.



Trinity Consultants

Existing Guidelines

- The guidelines establish a framework for analyzing the benefits, costs, and other economic impacts of regulations and policies, including assessing the distribution of costs and benefits among various segments of the population.

Trinity Consultants

EPA's Goals

- The EPA is proposing to establish requirements that ensure it consistently assesses the costs and benefits of significant CAA rules.
- In April, 2017, EPA solicited feedback on any regulations that impose costs that exceed benefits.
  - According to the Notice of Proposed Rulemaking: "a large cross-section of stakeholders stated that the agency either underestimated costs, overestimated benefits, or evaluated benefits and costs inconsistently in its rulemakings."

Trinity Consultants

May 13, 2019, Memorandum

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

May 13, 2019

THE ADMINISTRATOR

MEMORANDUM

SUBJECT: Increasing Consistency and Transparency in Considering Benefits and Costs in the Rulemaking Process

FROM: Andrew R. Wheeler

TO: Assistant Administrators

As the U.S. Environmental Protection Agency works to advance its mission of protecting public health and the environment, the agency should ensure that its regulatory decisions are rooted in sound, transparent and consistent approaches to evaluating benefits and costs. Many EPA statutes contemplate the consideration of benefits and costs as part of regulatory decision-making. However, benefits and costs have historically been treated differently depending on the media office and the underlying authority. This has resulted in various concepts of benefits, costs and other factors that may be considered. This memorandum will initiate an effort to rectify these inconsistencies through statute-specific actions.

The importance of benefit-cost analysis is reflected in Executive Order 13777, "Enforcing the Regulatory Reform Agenda" (82 FR 12285), which directs agencies to identify regulations that "impose costs that exceed benefits." Following this executive order, the EPA opened a public docket to solicit feedback in April 2017. Among the public comments received, a large cross-section of stakeholders identified instances when the agency underestimated costs, overestimated benefits or evaluated benefits and costs inconsistently. Per the executive order and based on these public comments, the EPA decided to take further action to evaluate opportunities for reform.

In June 2018, the EPA issued an Advanced Notice of Proposed Rulemaking to solicit public input on potential approaches for increasing consistency and transparency in how the EPA considers benefits and costs. Informed by the public comments received on that ANPRM, I have determined that the agency should proceed with benefit-cost reforms using a media-specific approach, taking into account the variety of statutory programs. Specifically, I am asking the assistant administrators for the offices of Air and Radiation, Chemical Safety and Pollution Prevention, Land and Emergency Management and Water to develop reforms, including notice-and-comment rulemakings, that outline how benefit-cost considerations will be applied in areas that are in need of greater clarity, transparency and consistency. The rulemaking efforts should not forestall near-term benefit-cost methodological changes for individual regulatory actions.

In developing these regulatory proposals, consistent with applicable laws and regulations, media offices shall be guided by the following principles:

- *Ensuring the agency balances benefits and costs in regulatory decision-making*. The EPA should evaluate and consider both benefits and costs in decision-making.
- *Increasing consistency in the interpretation of statutory terminology*. The EPA media offices should evaluate benefits and costs in a manner that applies consistent interpretations of key terms and concepts for specific statutes (e.g. "practical," "appropriate," "reasonable" and "feasible").
- *Providing transparency in the weight assigned to various factors in regulatory decisions*. Media offices should transparently identify which factors were and were not considered in regulatory analysis and how these factors were weighed to arrive at a particular regulatory outcome.
- *Promoting adherence to best practices in conducting the technical analysis used to inform decisions*. The EPA's technical analyses should follow sound economic and scientific principles and adhere to existing guidance and best practices for benefit-cost analysis, including the EPA's *Guidelines for Preparing Economic Analyses* and other peer-reviewed standards of practice that are applicable to rulemaking.

Regulatory proposals implementing the principles outlined above will be developed using the EPA's Action Development Process for Tier 1 actions. Media offices should coordinate across the agency, including with the Office of Policy and the Office of General Counsel, to ensure consistency. Offices should stagger the development of these proposals and work as expeditiously as possible to promulgate rules accordingly. Specifically, I am asking the Office of Air and Radiation to be the first to issue a proposal later this year, followed by the other offices.

To further support these efforts, I am also asking the Office of Policy to continue to improve and update the EPA's *Guidelines for Preparing Economic Analyses*. Revisions to the guidelines will help clarify best practices for how to conduct benefit-cost analysis, including guidance on key methodological and modeling choices, assumptions, uncertainties and context around benefits and costs.

With these improvements to our regulatory decision-making, the EPA is taking another step to provide the public with a more open federal government and more effective environmental and public health protection.

cc: Deputy Administrator
General Counsel
Chief of Staff
Associate Administrators

Trinity Consultants

May 13, 2019, Memorandum

- In developing regulatory proposals, EPA media offices shall be guided by the following principles:
  - Ensuring the agency balances benefits and costs in regulatory decision-making.
  - Increasing consistency in the interpretation of statutory terminology. EPA media offices should evaluate benefits and costs in a manner that applies consistent interpretations of key terms and concepts for specific statutes.
  - Providing transparency in the weight assigned to various factors in regulatory decisions.
  - Promoting adherence to best practices in conducting the technical analysis used to inform decisions. The EPA's technical analyses should follow sound economic and scientific principles and adhere to existing guidance and best practices for benefit-cost analysis.

Trinity Consultants

Best Practices

- The EPA is proposing to codify several best practices for the conduct and presentation of BCA.
  - EPA would require an explanation for any departures from best practices
- Best Practices – Three Key Elements
  - Statement of need
  - Examination of regulatory options
  - Assessment of all benefits and costs of the regulatory options relative to the baseline (no action) scenario

Trinity Consultants

Statement of Need

- Three elements:
  - Description of the problem being addressed
  - Reasons for and significance of any failure of private markets or public institutions causing the problem
  - Compelling need for federal government intervention in the market to correct the problem

Trinity Consultants

Examination of regulatory options

- Where there is a continuum of options (options that vary in stringency), the BCA must analyze at least three options which accomplish the stated objectives of the CAA.
  - The proposed or finalized option
  - A less beneficial/less stringent option (presumably less costly)
  - A more beneficial/more stringent option (higher costs)

Trinity Consultants

Benefits and Costs

- Baseline – How would the world look without the regulatory action?
  - Must account for other/existing regulations to avoid double counting of benefits.
- BCAs measure social benefits and costs – society wide well-being is augmented by the benefits and reduced by the costs
- The concept of "willingness to pay" (WTP) as the BCA best practice. What is an individual willing to give up to achieve the benefits?

Trinity Consultants

Measuring Costs

- Complex Assessments
  - Regulatory compliance costs
  - Partial economic equilibrium assessments when the costs are likely to be contained within a narrow slice of the economy (one industry)
    - Possible impact on supply of products produced
    - Possible impact on product pricing
    - Impacts on the labor/wages (similar to a tax)
  - General economic equilibrium assessments when the costs are expected to be higher and impact the linkages between economic sectors – economy wide impacts – Boiler MACT?

Trinity Consultants

Measuring Benefits

- The social benefits should link regulatory requirements to the value that individuals place on the beneficial outcomes or endpoints.
- EPA proposes to select endpoints for which the scientific evidence indicates there is:
  - A clear/likely causal relationship between pollutant exposures and effect
  - An anticipated change in response to changes in the environmental quality or exposures is expected as a result of the regulation under analysis.
- Rigorous economic valuation of the benefits (where possible) otherwise qualitative characterizations should be applied

Trinity Consultants

Measuring Benefits

- In summary, the EPA proposes that:
  - BCAs will quantify all benefits;
  - BCAs will monetize all the benefits by following well-defined economic principles using well-established economic methods; and
  - BCAs will qualitatively characterize benefits that cannot be quantified or monetized.

Trinity Consultants

Presentations of the BCA Results

- EPA does not clearly distinguish benefit categories in its regulatory documents.
- EPA's BCAs generally present benefits as an aggregate total, and that insufficient effort is made to clearly distinguish between the public health and welfare benefits attributable to the specific pollution reductions or other environmental quality goals that are targeted by the specific statutory provision(s) that authorize the regulation, and other welfare effects of the regulation that are not the primary objective of the statutory provision(s).
- For example, the majority of the monetized benefits for CAA regulations were attributable to reductions in fine particulate matter (PM2.5) even though the regulation did not target PM2.5.

Trinity Consultants

Other Topics Addressed in the Proposal

- Quantifying health endpoints in the BCA
- Uncertainty analysis
- Principle of transparency

Trinity Consultants

Selected Topics to Comment Upon

- How the Agency could take into consideration the results of a BCA in future rulemakings under specific provisions of the CAA.
- Approaches for how the results of the BCA could be weighed in future CAA regulatory decisions.
- The EPA solicits comment on whether and under what circumstances the EPA could or should determine that a future significant CAA regulation be promulgated only when the benefits of the intended action justify its costs.
- The EPA also solicits comment on whether and under what circumstances the EPA could determine that a future significant CAA regulation be promulgated only when monetized benefits exceed the costs of the action.

Trinity Consultants

Topics to Comment Upon

- Whether certain elements of the proposed action should consider resource constraints when being implemented for CAA significant regulations, the intensity of the resources dedicated to an analysis should be coordinated and consistent with the level of impact of a decision.
- Whether this rulemaking should apply only to the subset of CAA significant regulations that are determined to be economically significant, which the EPA could define as those that are likely to have an effect on the economy (benefits, costs or transfers) of $100 million or more in any one year or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities.
- Whether EPA should include a requirement for conducting retrospective analysis of significant CAA rulemakings.

Trinity Consultants

Link to Proposal

- https://www.epa.gov/air-and-radiation/proposed-rule-increasing-consistency-considering-benefits-and-costs-clean-air-act

Trinity Consultants


Trinity
Consultants