

October 13, 2015

VIA ELECTRONIC MAIL

Dr. Holly Stallworth
Science Advisory Board Staff Office
Environmental Protection Agency
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RE: Recommendations for First In-Person Meeting of Economy-wide Modeling Science Advisory Board Panel on October 22-23, 2015

Dear Dr. Stallworth:

The U.S. Chamber of Commerce, the American Chemistry Council, the American Forest & Paper Association, the American Petroleum Institute, and the American Wood Council (collectively, the “Associations”) offer these comments for the consideration of the Environmental Protection Agency’s (“EPA”) Science Advisory Board Panel on the Role of Economy-Wide Modeling in U.S. EPA Analysis of Air Regulations (“SAB”). As discussed below, the Associations offer the following recommendations on issues that the SAB should consider in its deliberations on the role of economy-wide modeling in EPA air regulation analyses.

The **U.S. Chamber of Commerce** (“the Chamber”) is the world’s largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations. The Chamber is dedicated to promoting, protecting, and defending America’s free enterprise system.

The **American Chemistry Council** (“ACC”) represents the leading companies engaged in the business of chemistry. ACC members apply the science of chemistry to make innovative products and services that make people’s lives better, healthier and safer. The business of chemistry is an \$801 billion enterprise and a key element of the nation’s economy.

The **American Forest & Paper Association** (“AF&PA”) is the national trade association of the paper and wood products industry, which accounts for approximately 4 percent of the total U.S. manufacturing GDP. The industry makes products essential for everyday life from renewable and recyclable resources, producing about \$200 billion in products annually and employing nearly 900,000 men and women with an annual payroll of approximately \$50 billion.

The **American Petroleum Institute** (“API”) represents over 590 oil and natural gas companies, leaders of a technology-driven industry that supplies most of America's energy, supports more than 9.8 million jobs and 8 percent of the U.S. economy, and, since 2000, has

invested nearly \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives.

The **American Wood Council** (“AWC”) is the voice of North American wood products manufacturing, representing over 75 percent of an industry that provides approximately 400,000 men and women with family-wage jobs. AWC members make products that are essential to everyday life from a renewable resource that absorbs and sequesters carbon. Staff experts develop state-of-the-art engineering data, technology, and standards for wood products to assure their safe and efficient design, as well as provide information on wood design, green building, and environmental regulations. AWC also advocates for balanced government policies that affect wood products.

Background

The Associations take the position that whole economy modeling should be the standard modeling tool for EPA Clean Air Act (CAA) regulations in order to more fully and accurately portray the effects of these far-reaching regulatory actions. The Associations previously noted that the EPA has too often relied upon partial economy, or partial equilibrium analysis, in its modeling of the economic impacts of CAA regulations.¹ Research has demonstrated how disparate the costs and labor market impacts of rules can be when the effects of regulation outside the directly regulated market are considered versus when they are ignored.

NERA Economic Consulting found in a review of EPA’s methods of estimating employment impacts that properly applying a whole economy model rather than relying on partial economy analysis and outdated, inappropriately applied empirical studies resulted in a massive and consistent shift in estimated impacts across examined regulations. For instance, EPA in its Regulatory Impact Analysis (RIA) estimated that the 2012 Mercury and Air Toxics Standard (MATS) rule would create 46,000 temporary construction jobs and 8,000 net new permanent jobs, while application of an economy-wide, multi-sector model found that in fact the rule would actually have negative employment impacts equivalent to 180,000 to 215,000 lost jobs in 2015 tapering to 50,000 to 85,000 annual jobs annually.² Obviously, properly applied economy-wide modeling can make a significant difference in the scope of impacts estimated as well as the accuracy of those impact estimates.

Furthermore, it is important to note that EPA has already been instructed to assess the cumulative impact of its regulations, as indicated in Executive Order 12866 Sec.

1(b)(11)(emphasis added):

(11) Each agency shall tailor its regulations to impose the least burden on society, including individuals, businesses of differing sizes, and other entities (including small communities and governmental entities), consistent with obtaining the regulatory

¹ NERA Economic Consulting, “Estimating Employment Impacts of Regulations: A Review of EPA’s Methods for Its Air Rules,” pps. 14-16.

² *Id.* at 26-29.

objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations.

In light of the shortcomings of some recent EPA modeling practices, the Associations welcome the opportunity to offer suggestions to the EPA's Science Advisory Board (SAB) Panel on the use of whole economy models in order to better inform the rulemaking process for EPA CAA rules.

Recommendations

The Associations' recommendations to the EPA for the SAB panel to consider are outlined below and cover two broad areas. First, recommendations one through five include suggestions for more detailed analytical requirements on the cost side that are important for improving the utility of whole economy models as well as recommendations for ensuring that models produce robust results. Second, recommendations six, seven and eight present caveats concerning the vast differences in analytical challenges in incorporating costs and benefits into economy-wide models. Costs tend to be certain, expensed in the near term, and accounted for easily via market transactions, and are therefore simpler to include in models and produce sensible outputs. However, certain societal costs are not necessarily easily measured and have largely been ignored by EPA analysis despite being well-known and previously studied by the agency. Benefits tend to be uncertain, cover vast potential ranges, are often unrealized for long and indeterminate time periods extending into the future, and are often difficult to verify and measure upon realization, making them exceedingly difficult to incorporate into analytical models of market transactions in ways that produce meaningful outputs.

In particular, EPA should charge the panel to consider the appropriateness and applicability of the operating principles and questions, and provide through its "Blueprint" document support materials described below.

1) Economy-wide models should include significant industry sector detail

Any model used for assessing the broad impacts of CAA regulation on the economy should include sufficient detail by industry sector to enable detailed views of both direct and indirect industry impacts. When assessing regulation, the distribution of impacts is as important as the overall impact. While it is important for cost-benefit modeling to capture economy-wide impacts, it should not be accomplished at the expense of reducing the level of modeling detail, such as employment losses and plant shutdowns, regarding highly-impacted industries. The Associations recommend adopting a model with as much detail as possible in terms of both industry sector and labor occupational differentiation, so that transitional adjustment costs can be inferred from the comparison of base case versus post regulation equilibria.

2) Economy-wide models should include significant regional detail

Any adopted model used for assessing economy wide impacts should include sufficient regional detail to identify changes in the regional distribution of output and employment, which may imply relocation adjustment costs imposed on labor and capital.

3) Economy-wide models should include international trade flows

The SAB panel should investigate the inclusion of trade flows to estimate the effects of regulatory costs on US tradable sectors. It is important to note the impacts of regulation on US competitiveness, a key element missing in virtually all partial equilibrium estimates of regulatory impacts and in many general equilibrium impacts estimates. Many industries are more susceptible to employment and production displacements due to fierce foreign competition; when this is the case the magnitude of regulatory compliance costs alone is insufficient to judge the true impact of a regulation.

4) Economy-wide models should employ dynamic analysis of adjustments

The SAB panel should investigate the appropriate dynamic analyses appropriate for examining the short-, medium-, and long-term adjustments required in capital and labor markets when regulations are imposed. Because most whole economy models are equilibrium models, they tend to provide snapshot results of the economy before and after regulatory impacts are fully incorporated into the simulated markets. While instructive, this often glosses over important adjustment effects that may move relevant markets away from equilibrium for extended periods of time. These effects are important to understand and should be an integral part of CAA economy-wide modeling.

5) Economy-wide models should be frequently and consistently validated

The SAB panel should investigate and consider recommending that EPA engage in an ongoing testing and validation exercise for whole economy modeling that includes public comment and participation. Because of the complexity of the models discussed in EPA's analytical blueprint, and their sensitivity to parameterization, ongoing testing and validation should be used to enhance model calibration over time. Additionally, whole economy models should be subjected to thorough sensitivity analysis in order to understand and quantify model robustness with respect to parameterization and specification.

6) Economy-wide models should be reviewed for validity of inputs, especially with respect to benefits

The SAB panel should carefully evaluate EPA's attempts to add benefits estimates that revolve around non-market impacts into economic models that evaluate the effects of policy on market transactions. Much of EPA's discussion in its analytical blueprint and draft charge questions revolves around incorporating benefits estimates into models, with

the agency noting the magnitude of effects in previous model runs. The SAB should carefully investigate the mechanisms by which EPA proposes to include benefits, many of which affect non-market transactions or accrue to individuals through non-traded channels. It is imperative that the channels of transmission for estimates of price and quantity impacts of benefits claims be thoroughly and carefully vetted to ensure that “phantom” benefits do not inflate estimates and thereby short circuit the usefulness of economy-wide models for addressing the appropriateness of policy choices. It would be misleading if, for instance, EPA claimed economic benefits via labor market effects for benefits that would actually accrue only to retired individuals no longer in the labor force. Careful attention to detail in terms of the expected timing of costs and benefits is important to avoid such misleading results.

7) Economy-wide models should be reviewed to ensure that all relevant impacts be included

On a related note to point 6 above, any inclusion of changes to the status quo should be evaluated for effects on both costs and benefits – for example, if avoided medical expenses for premature morbidity and mortality are incorporated into a model as a benefit appropriately valued in a market-based model, then it is incumbent upon the agency to include the full value of changes over the lifecycle of individuals to which the benefits accrue.³

8) An appropriate measure should be established for incorporating societal costs from unemployment impacts when incorporating costs and benefits into the impact analysis as a component of economy-wide modeling

EPA has long incorporated questionable health benefit impacts, as well as double counted such benefits across multiple regulatory actions under the Clean Air Act. For example, many of the health benefits from a myriad of EPA air regulations are tied to decreased concentrations of fine particulate matter without any accounting for past rulemakings addressing this same pollutant.⁴ Furthermore, EPA has readily ignored previous work commissioned by the agency pertaining to societal and community impacts from loss of jobs and higher unemployment rates. There are negative impacts of increased poverty and unemployment (e.g., lower lifetime wages, worse mental and physical health, increased mortality, and negative impacts on dependent children)⁵. An appropriate cost-benefit analysis for regulatory purposes should calculate these societal costs when measured against the claimed or perceived benefits of a regulation so that benefits claims

³ For example, if benefits accrue to individuals with compromised health, it is inappropriate to model benefits as if a delay in premature morbidity or mortality saves all relevant medical expenditures. Rather the savings arise from pushing medical expenditures further into the future where at some point expenditures will be realized (possibly more or less than the modeled savings). Incorporating this wrinkle in the modeling of savings to medical expenditures exposes the thorny nature and extreme assumptions that must be made in order to claim these benefits as realized savings in a market-based model.

⁴ http://regulatorystudies.columbian.gwu.edu/files/downloads/Dudley_OMB_BC_Regulation-v36n2-4.pdf

⁵ http://www.urban.org/research/publication/consequences-long-term-unemployment/view/full_report

are not unnecessarily skewed to support a regulation, but rather more fairly quantify potential costs and benefits.

Conclusion

The Associations recommend that the SAB panel take great care to ensure that the cost analysis of any whole economy modeling that the EPA undertakes provides sufficient detail as to be useful in addressing current gaps in knowledge in typical regulatory impact analyses. Specifically, the EPA should be considering the impacts of regulations on industry sectors' competitiveness in global trade and the impacts of regulation on employment and how those employment impacts affect specific regional economies that are strongly tied to affected industries. The Associations also recommend that the SAB panel provide strong guidance on the appropriate methodology for incorporating benefits into economy-wide models. Such guidance should outline the care that must be taken in identifying and validating the channels through which benefits impact markets.

Thank you for the opportunity to participate in this proceeding. If you have any follow up questions regarding these comments, please feel free to reach out to William L. Kovacs, Senior Vice President of Environment, Technology & Regulatory Affairs at the U.S. Chamber of Commerce at (202) 463-5457 or by e-mail: wkovacs@uschamber.com.

U.S. Chamber of Commerce

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