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American Federation of Labor and Congress of Industrial Organizations



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March 30, 1998

cc: MJ
JAF
RL
JA
AM

Dr. Janet Yellen, Chair
Council of Economic Advisers
17th and Pennsylvania Avenue, NW
Room 314
Washington, DC 20502

Dear Dr. Yellen,

As you know from our early meetings on climate change, the AFL-CIO has been concerned for some time about how the Administration's plan to tackle this problem is developing. We have said in many fora that we support a program that will: (1) assure global environmental repair, by requiring firm commitments from every member of the world community; (2) provide no perverse incentives, but rather provide incentives and mechanisms that reduce pollution here and create higher global standards both environmentally and economically; and (3) explicitly protect against economic upheaval and loss to U.S. workers.

On first read, the plan you outlined in your testimony before the Commerce Committee on March 4 appears to address several important concerns. I want to thank you for being forthright in your presentation and for providing needed insight into the Administration's thinking on this difficult topic. We appreciate having additional information to consider, as well as a more clearly developed picture to react to.

On closer examination, we believe that there are problems with the analysis you presented. In short, your testimony constructs a rosy, low-cost scenario, based upon a series of optimistic — and frequently, poorly substantiated — assumptions about electricity deregulation, an international emissions permit trading regime linked to joint implementation agreements and Clean

Yellen letter, March 30, 1998

Development Mechanisms, incorporation of carbon sinks and non-CO₂ gases in emissions reduction accounting, and investments in new carbon-reducing technologies. We believe that this is only one of many plausible scenarios, many of which would not produce outcomes as positive as those you predict.

Specifically, there are four principal areas where we believe your presentation either provides incomplete data and explanations — therefore requiring greater clarification — or, more problematical, misleads the public by understating the difficulties, uncertainties and potential costs associated with implementing the President's climate change program. These problem areas can be summarized as follows:

- *The presentation lacks sufficient data and information to support key economic conclusions.* For example, where are the numbers to back up your assertions about the financial and environmental gains from electricity deregulation, or how reliance on carbon "sinks" and reduction of non-CO₂ gases will make it much easier for the U.S. meet its carbon reduction caps?
- *It understates the difficulties in implementing an efficient, global carbon trading system.* Although there is much evidence that a global trading system may be an effective strategy for achieving desired global emissions reductions with the least economic disruption here and abroad, the substantial diplomatic, political, institutional, cultural and economic difficulties of implementing such a system are not addressed. This misleads the public as to the actual likelihood — or unlikelihood — of successfully instituting a carbon trading system without substantial costs to U.S. consumers and taxpayers.
- *While noted in your testimony, the inherent uncertainties in the available economic models used in your analysis — as well as those associated with international efforts to address climate change — are not reflected in your conclusions.* Given the large uncertainties in both the econometric models and the carbon trading scenario we find it misleading to state that the costs of our carbon reduction policies will probably be small. We hope that they will be, but there is also a significant likelihood that the costs will be substantially greater than those the Administration projects. In addition, you provide no evaluation of the sensitivities of key parameters with respect to different potential outcomes achieved by applying different climate change strategies.
- *You underestimate the probable transition costs to climate change compliance in the United States, giving the impression that this will be almost "a walk in the park."* Most importantly, even in the best case scenario, certain industrial sectors and geographic regions will be badly hurt. The Administration continues to ignore these likely impacts, and therefore pays insufficient attention to policies that would help to mitigate them.

Yellen letter, March 30, 1998

I address each of these points in detail below.

1. Insufficient Data and Information.

We recognize the difficulties of presenting within the limited space of your testimony a comprehensive accounting of the data and analyses underlying your arguments. Nevertheless, in certain instances, you provide little or no explanation of the bases for your conclusions. We are being asked to take on faith numbers and inferences drawn from information sources and studies that, to the best of our knowledge, are not readily available to the public. The Administration needs to further clarify the sources of these data before we can fully consider its program.

In particular, we are baffled about how the President's plan for electricity restructuring will generate \$20 billion in cost savings to consumers while simultaneously reducing greenhouse emissions. This is stated without explanations or even references to how we can learn more about the Administration's restructuring plan. We are very skeptical about any potential gains to consumers, and even more so about whether — or how — restructuring will lead to carbon reductions. Indeed, we are very concerned about the potential impacts restructuring will have on the livelihoods of many of our members. We need the Administration to reveal its proposal, with projected impacts on different fuels (coal, nuclear power, natural gas, and renewables), and how it ties economic efficiencies derived from deregulation of the electrical utility sector to the reduction of carbon emissions. (Does your reference to "appropriate market-based provisions" (p. 14), in fact, imply the need for new regulations to make this connection work?)

Second, you base much of your argument on the belief that it will be relatively easy to meet as much as 4-5 percent of our nation's emissions reduction goals by a combination of reducing the three long-lived halocarbons and related compounds (HFCs, PFCs, and SF₆) with very high global warming potential and using allowable means to employ "carbon sinks." Our own estimates suggest that this goal *may* be plausible, but not necessarily easy to achieve. Using the 1995 baseline for emissions of halocarbons and related compounds provided by the Energy Information Administration, completely reducing these gases from the atmosphere (highly unlikely) would, at most, set an upper bound of 2 percent out of a total greenhouse gas reduction goal of 7 percent below the 1990 U.S. emissions level (1618 million metric tons of carbon or carbon equivalent). Carbon "sinks" in your scenario would have to account for a minimum of 2-3 percent — and perhaps 4 percent — of the total reduction goal. This does not sound realistic to us, but we are open to further explanation.

Unfortunately, your presentation sheds little light on either the projected quantities or the means by which the Administration expects to cut the non-CO₂ gases or increase the use of carbon sinks. Indeed, you admit in your testimony (p. 16) that the "quantitative uncertainty" in estimating the impacts of carbon sinks are very large, particularly on an international level. You also note that your conclusions here are based upon "very preliminary estimates." For example, you state (p. 8) that an "initial analysis indicates that a strategy of reducing non-CO₂ greenhouse gas emissions by

Yellen letter, March 30, 1998

a greater percent than CO₂ emissions could lower prices by as much as 10 percent.” But without more corroborative detail, this point seems highly speculative. The lack of data and the uncertainties in your own estimates therefore raises serious doubts about the validity of a fundamental assumption in your testimony, that the nation only needs to be concerned about reducing the three remaining greenhouse gas (CO₂, methane, NO₂) emissions by a total of 2-3 percent below the U.S. 1990 emissions baseline.

We also have concerns about the lack of specificity regarding the Administration’s plans and goals in implementing programs like Joint Implementation, the Clean Development Mechanism (CDM) and an international emissions trading system (see below). While these mechanisms may very well prove to be the most cost-effective strategies for reducing greenhouse emissions, they remain a “black box” for us. How will they be implemented and calibrated with respect to the trading of emissions permits? How do you account for their impacts on emissions levels and costs in your carbon trading models? What assurances do we have that Joint Implementation and CDM will not create incentives for U.S. investments in modernizing offshore producers at the expense of U.S. jobs, as well as increased investment at home? Without far more elaboration about these mechanisms, it is difficult to accept your testimony as anything but a highly optimistic guess.

2. Carbon Trading Difficulties.

The Administration’s climate change program hinges on the successful implementation of an international carbon emissions trading system. In principal, we do not have an argument with the notion of carbon trading. We are in full agreement that “climate change is a global problem requiring a global solution.” We also appreciate that the President has agreed not to submit the Kyoto Protocol to the Senate without “meaningful participation” from key developing countries, assuming that “meaningful participation” includes agreement to participate fully in any international carbon trading system that is ultimately established, as well as specific emissions targets and goals. Finally, we are aware of the evidence that suggests carbon trading may be the most effective, flexible mechanism for meeting the Protocol’s emission reduction goals, resulting in the least economic disruptions both here and around the world. Your models, and others that we are familiar with, all predict that carbon trading — *as long as it is implemented on a fully global basis* — would result in far less reduction in economic welfare than a system of rigid emissions regulations and controls.

Our primary concern is with obtaining greater certainty from the Administration as to how the carbon trading system (in conjunction with Joint Implementation and CDM) will be established, calibrated and enforced, to ensure the greatest impacts on carbon reduction with the least costs to U.S. taxpayers and workers. Your testimony glosses over the substantial difficulties of negotiating the necessary international agreements, especially with non-Annex I countries. Theoretically, such a system should be attractive to these nations, especially if we tie our agreements to appropriate incentives; it could mean substantial new sources of dollars for internal economic development. But there is far less certainty that we can make such a highly complex

Yellen letter, March 30, 1998

system work than suggested in your presentation, given the complicated international mechanisms that need to be defined, fleshed out and engaged in by the entire globe.

Moreover, you (and other proponents) base your optimistic assessments of the carbon trading system upon the much touted SO₂ emissions trading program within the United States. Other experts point out, however, that establishing, monitoring and enforcing appropriate emissions baselines on an international basis present far more formidable challenges than had to be faced by the geographically limited, domestic SO₂ trading program. From the perspective of emissions reduction and costs the SO₂ trading experience may appear encouraging, but it is still quite a leap to conclude that it "demonstrates how programs like international permit trading, Joint Implementation, and the Clean Development Mechanism will lead firms to find cheaper ways of reducing emissions that can lead to unexpectedly low costs." As you yourself indicate (p. 9), the costs savings from carbon trading may not be as large as in the SO₂ program, and may not always be accompanied by "cheaper control strategies."

First, the SO₂ trading system was only applied to a very small universe of heavily-regulated entities: the carbon system would need to be administered internationally, requiring the implementation of far more complex and difficult to enforce trading mechanisms. Second, the government's original high cost estimates for SO₂ allowances were based on unrealistic assumptions (i.e., the arbitrary assumption that western sub-bituminous coals would not be allowed to move east of the Mississippi River): hence, the alleged large gains derived from the trading system above the government's initial expectations are overstated. Finally, SO₂ reductions were not achieved without significant transition costs in the form of closed facilities and lost jobs as utilities switched from Midwestern and Northern Appalachian coal to western sources of coal. These dislocations may be even larger in the carbon trading system. While lower-cost, lower sulfur coal alternatives existed within the United States there is no lower-cost, lower-carbon coal alternative either here or abroad.

There are also dangers in the more easy to implement aspects of the carbon trading system. In all probability, the lowest-hanging fruit in the system will involve permit trading between high-cost emissions producers in the U.S. and large greenhouse industrial emission producers in Russia and other Eastern bloc nations, perhaps within the so-called "umbrella." Reductions in the latter countries may be much less costly because of the very inefficient and carbon-intensive uses of energy in their economies today. U.S. producers will be able to buy their way out of reductions by purchasing cheap permits from Russian or other Eastern bloc energy users which are able to meet their goals by modernizing and actually increasing their energy use, albeit if more efficiently than before. Hence, the United States may be able to meet its emissions caps with very little reduction in actual greenhouse emissions. This is especially attractive if your assumptions about needing only to reduce CO₂ emissions by 2-3 percent prove correct.

Aside from our reservations concerning the last statement (expressed above), however, we may only be delaying the inevitable with this approach. The "umbrella" strategy may create a false impression of the actual extent greenhouse gases are reduced among the trading countries. There needs to be some consideration of how large a portion of the U.S. carbon reduction "budget" the emissions trading regime should allow to be allocated through such trading. Sooner or later real, substantial reductions in our emissions levels will be required if we are going to meet the climate change challenge. If this strategy buys us time to adopt more energy efficient technologies and minimize our economic and social costs, it may be worth pursuing. On the other hand, it means that we may be faced with descending a far steeper reduction curve (after 2012) to meet future emissions goals, which could result in substantially greater costs to our economy, than if we fail to prepare for the impacts of reductions now.

Secondly, adopting such a strategy, which appears to let us off the hook over the short-run, may undercut our long-term efforts to achieve buy-in from the developing countries outside of both the "umbrella" and Annex I, thereby undermining any serious effort to establish a fully global trading regime. Even putting aside the need for a global goal, it is unclear to us how the United States can take an easy way out on our own reductions, and then expect the developing world to follow the path that your testimony requires.

3. Uncertainties in the Models.

We are particularly disturbed that your conclusions do not reflect the large, inherent uncertainties in the models you draw upon in your statement. Even though you acknowledge the existence of uncertainties in the text, you appear to soft-peddle them in your assessments about the potential costs of emissions reductions. For example, you state that based on the SGM model, emissions prices are estimated to range from \$14 to \$23 per ton of carbon equivalent, translating into an increase in household energy prices between 2008-2012 of between 3 and 5 percent, and comparable increases in various fuel prices (oil, natural gas, gasoline, and electricity). The increase in energy prices would in turn raise the average household energy bill in ten years by between \$70 and \$100 per year, adding that "such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity deregulation."

These assertions are presented as if they are the most plausible outcomes, an impression that was reflected in newspaper articles about your testimony appearing *prior* to the Congressional hearing, that portrayed your conclusions as the "first official assessment" of the costs of the Kyoto agreement. But as you point out later, "other models will yield other answers and much work needs to be done by the modeling community to test the robustness of these results." Given the very large levels of uncertainty in the underlying assumptions, inputs and design of the models you use to draw upon, the best that can be said now is that, if certain favorable conditions are met, there is some possibility that the costs can be kept reasonably low. In fact, the probabilities

Yellen letter, March 30, 1998

are at least as high that the costs will be an order of magnitude or more greater than your projections.

I already noted a few of the major sources of uncertainty above: unsubstantiated assumptions about gains from electricity restructuring; the lack of information about the impacts of carbon sinks and reducing non-CO₂ gases; the difficulties of implementing a global carbon trading system. If any of your assumptions about these activities alone proves incorrect, the costs could be significantly larger. Indeed, the three areas (when, what, where) of "flexibility" that you portray as a strength in the Administration's approach, themselves are sources of great uncertainty, that do necessarily work in favor of reduced costs. Moreover, the models you refer to are very complex, highly aggregated, general equilibrium models that are not designed to address many of the inherent uncertainties that derive from human economic and political behaviors at a far more disaggregated level (variations in geographical regions, industry sectors, historical situation, etc.).

Your statement also does not address the sensitivity of your models' results to the uncertainties in key parameters. For example, the MIT Joint Program on the Science and Policy of Global Change has attempted to explore the sensitivity of its Emissions Prediction and Policy Analysis (EPPA) model, which is similar to the models you refer to, to key inputs. The MIT model identifies three parameter assumptions that have the greatest influence on future emissions trajectories, each of which is subject to significant uncertainty. These include rates of population and labor productivity growth, the rate of non-price induced improvements in energy efficiency, and the relative costs of carbon-free electric backstop technologies (e.g., renewables). We would feel more comfortable with your statement if these sources of uncertainty were acknowledged and factored into your analysis. In short, when trying to understand the behavior of highly complex systems, models like those you relied upon in your testimony can be very useful for assessing the direction of change for key variables given different starting points and assumptions, but we draw conclusions about actual magnitudes at our peril.

4. Underestimated Transition Costs.

Perhaps our greatest concern is that the Administration's projected "low-cost" scenario leads to a conclusion that there will be few if any adjustment costs for workers and communities. As already discussed, although you concede that this finding is predicated on whether "we achieve the conditions" described in your statement, there are very large uncertainties tied to this assumption. At the same time, without any qualification, you minimize the probable impacts on employment in energy-intensive sectors, based on your predictions of very small changes in energy prices, which, as we already noted, are inherently suspect.

By their nature, general equilibrium models tend to underestimate the costs of adjustment, and are especially ill-suited to generate meaningful insights about disaggregated costs at a regional or industry sector level. Even granting your contention about low aggregate welfare impacts (which

Yellen letter, March 30, 1998

we do not), we unfortunately do not have the luxury of ignoring profound impacts on particular industry sectors (or geographical regions), even if they are offset by gains elsewhere, or appear small compared to overall aggregate output. There are people who make their livings their livelihoods, have built their communities, and support their families based on today's technology. They mine coal, they run power plants, they drive large trucks. Our planning must take into account their concerns as well. A job that you may get is cool comfort to me if I have lost mine.

The employment effects of the proposed regime can be modeled at the sectoral and regional levels using a dynamic, econometric model like that of REMI, Inc. in Amherst, MA. This model can be used to evaluate various scenarios and should be useful to policy makers since it can help in estimating the sectors and regions most at risk of economic dislocation and job displacement. As we learned from defense downsizing and trade adjustment, macroeconomic assurances of robust aggregate job growth are not enough to deal with actual regional and sectoral dislocations. Such modeling efforts during the post-Cold War reductions in military expenditures and facilities proved quite reliable in predicting the most affected location and sectors. They also were helpful in predicting the magnitude of the impacts. We believe that the Administration should consider sponsoring similar large-scale studies to assess the sectoral impacts of climate change policy.

In any event, we can say with some certainty, that even in a best case scenario— a fully global carbon trading system is in place, and new energy-efficient and non-carbon electricity generation technologies are widely employed throughout the economy — certain sectors such as coal mining and coal transportation (railroads) will suffer serious dislocations. Following your scenario, the combination of electricity restructuring and carbon trading will lead to a major shift from coal to natural gas and renewables in utility (and industry) generation of electricity. The coal industry, and the regions which are heavily dependent on that industry, are already experiencing long-term economic decline. Pursuing an emissions reduction strategy in the United States will accelerate this trend. Given all the uncertainties we have talked about, the rate of acceleration might be slower or faster depending upon certain conditions, but the direction is clear.

Other industry sectors will be affected as well, though probably not as greatly as coal, and perhaps petroleum. The President's climate change technology initiative is an important step in promoting the development and diffusion of new energy-saving and non-carbon energy generating technologies. Unfortunately, the Administration has not provided us with any estimates of the expected returns on this investment in terms of improved efficiencies, economic growth and jobs. Your own models (e.g., the SGM, EMF) can at best only account for the impacts of technology improvements through proxy parameters such as the Autonomous Energy Efficiency Index or the Carbon-Free Electric Backstop Price (reflecting substitution effects through use of new non-carbon electricity generation technologies) used in the MIT EPPA model. We would be very interested in any accounting of the expected economic impacts of the President's technology initiative, particularly its affects on the outputs of key industry sectors.

Yellen letter, March 30, 1998

At the very least, we anticipate that this initiative will generate some new industrial growth and job creating opportunities. There may also be significant changes in industrial processes and organization, particularly in the main energy-intensive industries, that will have impacts upon a wide range of job-related concerns of our members. The Energy Department's Industry of the Future program, which is slated for substantial funding increases in the President's budget, has already supported significant research and development, jointly with industry leaders, in energy-efficient technologies that could have profound effects on how these industries operate in the future.

We have already discussed with the White House our desire to participate in any future government-industry consultations not only concerning this program, but also to consider industry-specific energy reduction strategies. We have made ourselves available to work with the Administration and with industry to help identify the best means for reducing energy costs in each sector, and to assess any potential economic impacts (especially on jobs) from such measures. We believe that labor's active participation will help to mitigate any potential adverse job-related impacts from introducing new technologies, while ensuring more effective implementation of energy-reduction strategies within these industries.

Finally, while we appreciate the President's stated commitment to assist any workers adversely affected, your testimony works to minimize the serious need to identify specific adjustment mechanisms early, before the impacts are felt by our workers and in communities. For example, we would welcome an examination of how we can use potential money generated by auctioning off carbon permits (as opposed to simply giving them away), as suggested by the Economic Policy Institute, for establishing a climate change adjustment fund. We think this is one of several different transition mechanisms worth looking at, and we are anxious to discuss this further with you.

In conclusion, we have been pressing for some time to have an Administration economic analysis of the climate change situation. Unfortunately, we feel that we still do not have one. This is no time, and not the issue, for equivocating, the stakes are too high. Failing to address the problem could have catastrophic environmental consequences. Erring in judgement about the basic strategy could also have huge economic consequences if we must make big domestic adjustments in mid-stream in 10 or 15 years, and have not laid the foundation for those changes that protect the U.S. economy and U.S. worker's jobs.

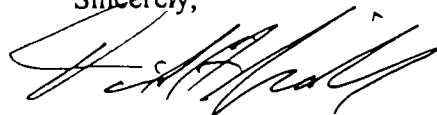
This is not the time to assume an easy answer. Not economically, not politically, not socially, not ecologically. Your current analysis of proposals for solving this global problem leaves us skeptical, and leaves us deeply concerned that too little attention is being paid to the consequences of being wrong. We suggest erring on the side of precaution.

Yellen letter, March 30, 1998

We agree, that inaction is not a prudent option. But action based too casually on a cascade of optimistic assumptions is unlikely to serve our mutual interests.

We look forward to more data, and to a healthy debate and dialogue with the administration as further plans are developed.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Smith', written in a cursive style.

David Smith
AFL-CIO, Director Public Policy

DS/jy

bcc: Todd Stern

Karen Tremantano

CONSAD

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JUL 06 1998

WILLIAM J. COYNE
WASHINGTON, D.C. 20515

29 June 1998

Dear Reader,

CONSAD Research Corporation has conducted an analysis of the economic impacts of the proposed Kyoto Protocol which is summarized in the enclosed May 1998 report. Our results parallel findings by other leading economic forecasters, and detail the primarily adverse impact the treaty would have on employment, economic output, and standard of living for working families, senior citizens, and those who live on fixed or low-incomes. The study also provides a 50 state breakdown of job changes and economic dislocations due to policies enacted to implement the Kyoto Protocol. Given the embryonic status of the proposed international emission trading system, this study assumes that the system will not be sufficiently mature by the first budget period to have an appreciable impact on costs. We therefore assume that only domestic emission trading will occur.

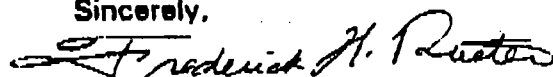
Very briefly, CONSAD's key findings are that implementation of the Kyoto Protocol will mean that:

- As many as 3.1 million fewer American workers will be working in 2010 as a direct result of this treaty;
- U.S. Gross Domestic Product (GDP) in 2012 will decline by at least \$177 billion and perhaps by as much as \$318 billion; and
- Every region of the U.S. will experience increased unemployment due to the treaty, with the greatest losses occurring in California, Arizona, Louisiana, Oklahoma, and Texas.

Detailed results and explanations are presented in the report.

This subject is, clearly, of interest to all Americans. By all means, feel free to call me with questions, comments, and observations.

Sincerely,

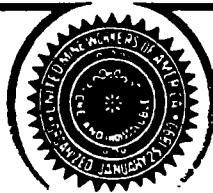


Frederick H. Rueter, Ph.D.
Vice President

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March 16, 1998

Janet Yellen, Chair
Council of Economic Advisors
Old Executive Office Building
17th St. and Pennsylvania Ave., N.W.
Washington, D.C. 20500

Dear Dr. Yellen:

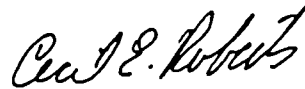
I am writing in response to your recent testimony on the economic effects of climate change policies before the House Commerce Committee. As the president of a union that has participated in the climate change debate quite extensively, I was struck by the discrepancy between your testimony and numerous other studies (including the Administration's IAT analysis) that have concluded that climate policies are likely to involve significant costs. As you are no doubt aware, the UMWA is concerned that the Kyoto Protocol will result in lost jobs, lost economic activity and higher energy prices, but will accomplish virtually nothing in terms of stabilizing atmospheric concentrations of greenhouse gases. We have termed the proposed protocol "All Pain and No Gain" and have called for its rejection by the President and the Senate. Your testimony implies the reverse—that this is all gain and no pain. *Not quite*

I would be interested in receiving from you, in as much detail as possible, the analytical basis for your conclusions. For instance, we would very much appreciate the detailed results of all model runs on which your testimony relies, including any reports that analyze the underlying data. We are particularly interested in your analysis of the extent to which the U.S. could achieve its proposed targets through emissions trading and joint implementation, and at what cost. We note that many environmental organizations have called for limits on the amount of credits to be achieved from trading and JI. Your testimony appears to assume unfettered trading and JI. It is unclear from your testimony what prices are assumed for trading, particularly in the former Soviet Bloc states. While the U.S. appears not to be included in the European "bubble", it seems clear that the EU definitely wants to be included in the JUSCANZ "umbrella." If so, this would seem to put upward pressure on the price of available credits. *No*

Janet Yellen, Chair
Council of Economic Advisors
March 16, 1998
Page Two

The UMWA is interested in learning as much as possible about the economic effects of the proposed protocol, because we believe that our members' jobs are at the greatest risk. I would appreciate your assistance in this matter, and look forward to your response.

Sincerely,

A handwritten signature in cursive script, reading "Cecil E. Roberts". The signature is written in dark ink and is positioned above the printed name.

Cecil E. Roberts

AFL CIO

Labour

Anti · UMW, Electrical workers, Boilermakers,
Paper, carpenters

Mtgs.
planned

- 1) Richards, ~~Energy~~ elec. Electricity restr. / drive.
- 2) Coal industry
- 3) Sally K. Transition issues
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Dear Dr. Yellen,

As you know from our early meetings on climate change, the AFL-CIO has been concerned for some time about how the Administration's plan to tackle this problem is developing. We have said in many fora that we support a program that will: (1) assure global environmental repair, by requiring firm commitments from every member of the world community; (2) provide no perverse incentives, but rather provide incentives and mechanisms that reduce pollution here and create higher global standards both environmentally and economically; and (3) explicitly protect against economic upheaval and loss to U.S. workers.

On first read, the plan you outlined in your testimony before the Commerce Committee on March 4 appears to address several important concerns. I want to thank you for being forthright in your presentation and for providing needed insight into the Administration's thinking on this difficult topic. We appreciate having additional information to consider, as well as a more clearly developed picture to react to.

On closer examination, we believe that there are problems with the analysis you presented. In short, your testimony constructs a rosy, low-cost scenario, based upon a series of optimistic — and frequently, poorly substantiated — assumptions about electricity deregulation, an international emissions permit trading regime linked to joint implementation agreements and Clean

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Yellen letter, March 30, 1998

Development Mechanisms, incorporation of carbon sinks and non-CO₂ gases in emissions reduction accounting, and investments in new carbon-reducing technologies. We believe that this is only one of many plausible scenarios, many of which would not produce outcomes as positive as those you predict.

Specifically, there are four principal areas where we believe your presentation either provides incomplete data and explanations — therefore requiring greater clarification — or, more problematical, misleads the public by understating the difficulties, uncertainties and potential costs associated with implementing the President's climate change program. These problem areas can be summarized as follows:

- *The presentation lacks sufficient data and information to support key economic conclusions.* For example, where are the numbers to back up your assertions about the financial and environmental gains from electricity deregulation, or how reliance on carbon “sinks” and reduction of non-CO₂ gases will make it much easier for the U.S. meet its carbon reduction caps?
- *It understates the difficulties in implementing an efficient, global carbon trading system.* Although there is much evidence that a global trading system may be an effective strategy for achieving desired global emissions reductions with the least economic disruption here and abroad, the substantial diplomatic, political, institutional, cultural and economic difficulties of implementing such a system are not addressed. This misleads the public as to the actual likelihood — or unlikelihood — of successfully instituting a carbon trading system without substantial costs to U.S. consumers and taxpayers.
- *While noted in your testimony, the inherent uncertainties in the available economic models used in your analysis — as well as those associated with international efforts to address climate change — are not reflected in your conclusions.* Given the large uncertainties in both the econometric models and the carbon trading scenario we find it misleading to state that the costs of our carbon reduction policies will probably be small. We hope that they will be, but there is also a significant likelihood that the costs will be substantially greater than those the Administration projects. In addition, you provide no evaluation of the sensitivities of key parameters with respect to different potential outcomes achieved by applying different climate change strategies.
- *You underestimate the probable transition costs to climate change compliance in the United States, giving the impression that this will be almost “a walk in the park.”* Most importantly, even in the best case scenario, certain industrial sectors and geographic regions will be badly hurt. The Administration continues to ignore these likely impacts, and therefore pays insufficient attention to policies that would help to mitigate them.

Yellen letter, March 30, 1998

I address each of these points in detail below.

1. Insufficient Data and Information.

We recognize the difficulties of presenting within the limited space of your testimony a comprehensive accounting of the data and analyses underlying your arguments. Nevertheless, in certain instances, you provide little or no explanation of the bases for your conclusions. We are being asked to take on faith numbers and inferences drawn from information sources and studies that, to the best of our knowledge, are not readily available to the public. The Administration needs to further clarify the sources of these data before we can fully consider its program.

In particular, we are baffled about how the President's plan for electricity restructuring will generate \$20 billion in cost savings to consumers while simultaneously reducing greenhouse emissions. This is stated without explanations or even references to how we can learn more about the Administration's restructuring plan. We are very skeptical about any potential gains to consumers, and even more so about whether — or how — restructuring will lead to carbon reductions. Indeed, we are very concerned about the potential impacts restructuring will have on the livelihoods of many of our members. We need the Administration to reveal its proposal, with projected impacts on different fuels (coal, nuclear power, natural gas, and renewables), and how it ties economic efficiencies derived from deregulation of the electrical utility sector to the reduction of carbon emissions. (Does your reference to "appropriate market-based provisions" (p. 14), in fact, imply the need for new regulations to make this connection work?)

Second, you base much of your argument on the belief that it will be relatively easy to meet as much as 4-5 percent of our nation's emissions reduction goals by a combination of reducing the three long-lived halocarbons and related compounds (HFCs, PFCs, and SF₆) with very high global warming potential and using allowable means to employ "carbon sinks." Our own estimates suggest that this goal *may* be plausible, but not necessarily easy to achieve. Using the 1995 baseline for emissions of halocarbons and related compounds provided by the Energy Information Administration, completely reducing these gases from the atmosphere (highly unlikely) would, at most, set an upper bound of 2 percent out of a total greenhouse gas reduction goal of 7 percent below the 1990 U.S. emissions level (1618 million metric tons of carbon or carbon equivalent). Carbon "sinks" in your scenario would have to account for a minimum of 2-3 percent — and perhaps 4 percent — of the total reduction goal. This does not sound realistic to us, but we are open to further explanation.

Unfortunately, your presentation sheds little light on either the projected quantities or the means by which the Administration expects to cut the non-CO₂ gases or increase the use of carbon sinks. Indeed, you admit in your testimony (p. 16) that the "quantitative uncertainty" in estimating the impacts of carbon sinks are very large, particularly on an international level. You also note that your conclusions here are based upon "very preliminary estimates." For example, you state (p. 8) that an "initial analysis indicates that a strategy of reducing non-CO₂ greenhouse gas emissions by

Yellen letter, March 30, 1998

a greater percent than CO₂ emissions could lower prices by as much as 10 percent.” But without more corroborative detail, this point seems highly speculative. The lack of data and the uncertainties in your own estimates therefore raises serious doubts about the validity of a fundamental assumption in your testimony, that the nation only needs to be concerned about reducing the three remaining greenhouse gas (CO₂, methane, NO₂) emissions by a total of 2-3 percent below the U.S. 1990 emissions baseline.

We also have concerns about the lack of specificity regarding the Administration’s plans and goals in implementing programs like Joint Implementation, the Clean Development Mechanism (CDM) and an international emissions trading system (see below). While these mechanisms may very well prove to be the most cost-effective strategies for reducing greenhouse emissions, they remain a “black box” for us. How will they be implemented and calibrated with respect to the trading of emissions permits? How do you account for their impacts on emissions levels and costs in your carbon trading models? What assurances do we have that Joint Implementation and CDM will not create incentives for U.S. investments in modernizing offshore producers at the expense of U.S. jobs, as well as increased investment at home? Without far more elaboration about these mechanisms, it is difficult to accept your testimony as anything but a highly optimistic guess.

2. Carbon Trading Difficulties.

The Administration’s climate change program hinges on the successful implementation of an international carbon emissions trading system. In principal, we do not have an argument with the notion of carbon trading. We are in full agreement that “climate change is a global problem requiring a global solution.” We also appreciate that the President has agreed not to submit the Kyoto Protocol to the Senate without “meaningful participation” from key developing countries, assuming that “meaningful participation” includes agreement to participate fully in any international carbon trading system that is ultimately established, as well as specific emissions targets and goals. Finally, we are aware of the evidence that suggests carbon trading may be the most effective, flexible mechanism for meeting the Protocol’s emission reduction goals, resulting in the least economic disruptions both here and around the world. Your models, and others that we are familiar with, all predict that carbon trading — *as long as it is implemented on a fully global basis* — would result in far less reduction in economic welfare than a system of rigid emissions regulations and controls.

Our primary concern is with obtaining greater certainty from the Administration as to how the carbon trading system (in conjunction with Joint Implementation and CDM) will be established, calibrated and enforced, to ensure the greatest impacts on carbon reduction with the least costs to U.S. taxpayers and workers. Your testimony glosses over the substantial difficulties of negotiating the necessary international agreements, especially with non-Annex I countries. Theoretically, such a system should be attractive to these nations, especially if we tie our agreements to appropriate incentives; it could mean substantial new sources of dollars for internal economic development. But there is far less certainty that we can make such a highly complex

Yellen letter, March 30, 1998

system work than suggested in your presentation, given the complicated international mechanisms that need to be defined, fleshed out and engaged in by the entire globe.

Moreover, you (and other proponents) base your optimistic assessments of the carbon trading system upon the much touted SO₂ emissions trading program within the United States. Other experts point out, however, that establishing, monitoring and enforcing appropriate emissions baselines on an international basis present far more formidable challenges than had to be faced by the geographically limited, domestic SO₂ trading program. From the perspective of emissions reduction and costs the SO₂ trading experience may appear encouraging, but it is still quite a leap to conclude that it "demonstrates how programs like international permit trading, Joint Implementation, and the Clean Development Mechanism will lead firms to find cheaper ways of reducing emissions that can lead to unexpectedly low costs." As you yourself indicate (p. 9), the costs savings from carbon trading may not be as large as in the SO₂ program, and may not always be accompanied by "cheaper control strategies."

First, the SO₂ trading system was only applied to a very small universe of heavily-regulated entities: the carbon system would need to be administered internationally, requiring the implementation of far more complex and difficult to enforce trading mechanisms. Second, the government's original high cost estimates for SO₂ allowances were based on unrealistic assumptions (i.e., the arbitrary assumption that western sub-bituminous coals would not be allowed to move east of the Mississippi River): hence, the alleged large gains derived from the trading system above the government's initial expectations are overstated. Finally, SO₂ reductions were not achieved without significant transition costs in the form of closed facilities and lost jobs as utilities switched from Midwestern and Northern Appalachian coal to western sources of coal. These dislocations may be even larger in the carbon trading system. While lower-cost, lower sulfur coal alternatives existed within the United States there is no lower-cost, lower-carbon coal alternative either here or abroad.

There are also dangers in the more easy to implement aspects of the carbon trading system. In all probability, the lowest-hanging fruit in the system will involve permit trading between high-cost emissions producers in the U.S. and large greenhouse industrial emission producers in Russia and other Eastern bloc nations, perhaps within the so-called "umbrella." Reductions in the latter countries may be much less costly because of the very inefficient and carbon-intensive uses of energy in their economies today. U.S. producers will be able to buy their way out of reductions by purchasing cheap permits from Russian or other Eastern bloc energy users which are able to meet their goals by modernizing and actually increasing their energy use, albeit if more efficiently than before. Hence, the United States may be able to meet its emissions caps with very little reduction in actual greenhouse emissions. This is especially attractive if your assumptions about needing only to reduce CO₂ emissions by 2-3 percent prove correct.

Yellen letter, March 30, 1998

Aside from our reservations concerning the last statement (expressed above), however, we may only be delaying the inevitable with this approach. The “umbrella” strategy may create a false impression of the actual extent greenhouse gases are reduced among the trading countries. There needs to be some consideration of how large a portion of the U.S. carbon reduction “budget” the emissions trading regime should allow to be allocated through such trading. Sooner or later real, substantial reductions in our emissions levels will be required if we are going to meet the climate change challenge. If this strategy buys us time to adopt more energy efficient technologies and minimize our economic and social costs, it may be worth pursuing. On the other hand, it means that we may be faced with descending a far steeper reduction curve (after 2012) to meet future emissions goals, which could result in substantially greater costs to our economy, than if we fail to prepare for the impacts of reductions now.

Secondly, adopting such a strategy, which appears to let us off the hook over the short-run, may undercut our long-term efforts to achieve buy-in from the developing countries outside of both the “umbrella” and Annex I, thereby undermining any serious effort to establish a fully global trading regime. Even putting aside the need for a global goal, it is unclear to us how the United States can take an easy way out on our own reductions, and then expect the developing world to follow the path that your testimony requires.

3. Uncertainties in the Models.

We are particularly disturbed that your conclusions do not reflect the large, inherent uncertainties in the models you draw upon in your statement. Even though you acknowledge the existence of uncertainties in the text, you appear to soft-peddle them in your assessments about the potential costs of emissions reductions. For example, you state that based on the SGM model, emissions prices are estimated to range from \$14 to \$23 per ton of carbon equivalent, translating into an increase in household energy prices between 2008-2012 of between 3 and 5 percent, and comparable increases in various fuel prices (oil, natural gas, gasoline, and electricity). The increase in energy prices would in turn raise the average household energy bill in ten years by between \$70 and \$100 per year, adding that “such predictions may not be observable because they would be small relative to typical energy price changes, and nearly fully offset by electricity price declines from Federal electricity deregulation.”

These assertions are presented as if they are the most plausible outcomes, an impression that was reflected in newspaper articles about your testimony appearing *prior* to the Congressional hearing, that portrayed your conclusions as the “first official assessment” of the costs of the Kyoto agreement. But as you point out later, “other models will yield other answers and much work needs to be done by the modeling community to test the robustness of these results.” Given the very large levels of uncertainty in the underlying assumptions, inputs and design of the models you use to draw upon, the best that can be said now is that, if certain favorable conditions are met, there is some possibility that the costs can be kept reasonably low. In fact, the probabilities

Yellen letter, March 30, 1998

are at least as high that the costs will be an order of magnitude or more greater than your projections.

I already noted a few of the major sources of uncertainty above: unsubstantiated assumptions about gains from electricity restructuring; the lack of information about the impacts of carbon sinks and reducing non-CO₂ gases; the difficulties of implementing a global carbon trading system. If any of your assumptions about these activities alone proves incorrect, the costs could be significantly larger. Indeed, the three areas (when, what, where) of “flexibility” that you portray as a strength in the Administration’s approach, themselves are sources of great uncertainty, that do necessarily work in favor of reduced costs. Moreover, the models you refer to are very complex, highly aggregated, general equilibrium models that are not designed to address many of the inherent uncertainties that derive from human economic and political behaviors at a far more disaggregated level (variations in geographical regions, industry sectors, historical situation, etc.).

Your statement also does not address the sensitivity of your models’ results to the uncertainties in key parameters. For example, the MIT Joint Program on the Science and Policy of Global Change has attempted to explore the sensitivity of its Emissions Prediction and Policy Analysis (EPPA) model, which is similar to the models you refer to, to key inputs. The MIT model identifies three parameter assumptions that have the greatest influence on future emissions trajectories, each of which is subject to significant uncertainty. These include rates of population and labor productivity growth, the rate of non-price induced improvements in energy efficiency, and the relative costs of carbon-free electric backstop technologies (e.g., renewables). We would feel more comfortable with your statement if these sources of uncertainty were acknowledged and factored into your analysis. In short, when trying to understand the behavior of highly complex systems, models like those you relied upon in your testimony can be very useful for assessing the direction of change for key variables given different starting points and assumptions, but we draw conclusions about actual magnitudes at our peril.

4. Underestimated Transition Costs.

Perhaps our greatest concern is that the Administration’s projected “low-cost” scenario leads to a conclusion that there will few if any adjustment costs for workers and communities. As already discussed, although you concede that this finding is predicated on whether “we achieve the conditions” described in your statement, there are very large uncertainties tied to this assumption. At the same time, without any qualification, you minimize the probable impacts on employment in energy-intensive sectors, based on your predictions of very small changes in energy prices, which, as we already noted, are inherently suspect.

By their nature, general equilibrium models tend to underestimate the costs of adjustment, and are especially ill-suited to generate meaningful insights about disaggregated costs at a regional or industry sector level. Even granting your contention about low aggregate welfare impacts (which

Yellen letter, March 30, 1998

we do not), we unfortunately do not have the luxury of ignoring profound impacts on particular industry sectors (or geographical regions), even if they are offset by gains elsewhere, or appear small compared to overall aggregate output. There are people who make their livings their livelihoods, have built their communities, and support their families based on today's technology. They mine coal, they run power plants, they drive large trucks. Our planning must take into account their concerns as well. A job that you may get is cool comfort to me if I have lost mine.

The employment effects of the proposed regime can be modeled at the sectoral and regional levels using a dynamic, econometric model like that of REMI, Inc. in Amherst, MA. This model can be used to evaluate various scenarios and should be useful to policy makers since it can help in estimating the sectors and regions most at risk of economic dislocation and job displacement. As we learned from defense downsizing and trade adjustment, macroeconomic assurances of robust aggregate job growth are not enough to deal with actual regional and sectoral dislocations. Such modeling efforts during the post-Cold War reductions in military expenditures and facilities proved quite reliable in predicting the most affected location and sectors. They also were helpful in predicting the magnitude of the impacts. We believe that the Administration should consider sponsoring similar large-scale studies to assess the sectoral impacts of climate change policy.

In any event, we can say with some certainty, that even in a best case scenario—a fully global carbon trading system is in place, and new energy-efficient and non-carbon electricity generation technologies are widely employed throughout the economy—certain sectors such as coal mining and coal transportation (railroads) will suffer serious dislocations. Following your scenario, the combination of electricity restructuring and carbon trading will lead to a major shift from coal to natural gas and renewables in utility (and industry) generation of electricity. The coal industry, and the regions which are heavily dependent on that industry, are already experiencing long-term economic decline. Pursuing an emissions reduction strategy in the United States will accelerate this trend. Given all the uncertainties we have talked about, the rate of acceleration might be slower or faster depending upon certain conditions, but the direction is clear.

Other industry sectors will be affected as well, though probably not as greatly as coal, and perhaps petroleum. The President's climate change technology initiative is an important step in promoting the development and diffusion of new energy-saving and non-carbon energy generating technologies. Unfortunately, the Administration has not provided us with any estimates of the expected returns on this investment in terms of improved efficiencies, economic growth and jobs. Your own models (e.g., the SGM, EMF) can at best only account for the impacts of technology improvements through proxy parameters such as the Autonomous Energy Efficiency Index or the Carbon-Free Electric Backstop Price (reflecting substitution effects through use of new non-carbon electricity generation technologies) used in the MIT EPPA model. We would be very interested in any accounting of the expected economic impacts of the President's technology initiative, particularly its affects on the outputs of key industry sectors.

Yellen letter, March 30, 1998

At the very least, we anticipate that this initiative will generate some new industrial growth and job creating opportunities. There may also be significant changes in industrial processes and organization, particularly in the main energy-intensive industries, that will have impacts upon a wide range of job-related concerns of our members. The Energy Department's Industry of the Future program, which is slated for substantial funding increases in the President's budget, has already supported significant research and development, jointly with industry leaders, in energy-efficient technologies that could have profound effects on how these industries operate in the future.

We have already discussed with the White House our desire to participate in any future government-industry consultations not only concerning this program, but also to consider industry-specific energy reduction strategies. We have made ourselves available to work with the Administration and with industry to help identify the best means for reducing energy costs in each sector, and to assess any potential economic impacts (especially on jobs) from such measures. We believe that labor's active participation will help to mitigate any potential adverse job-related impacts from introducing new technologies, while ensuring more effective implementation of energy-reduction strategies within these industries.

Finally, while we appreciate the President's stated commitment to assist any workers adversely affected, your testimony works to minimize the serious need to identify specific adjustment mechanisms early, before the impacts are felt by our workers and in communities. For example, we would welcome an examination of how we can use potential money generated by auctioning off carbon permits (as opposed to simply giving them away), as suggested by the Economic Policy Institute, for establishing a climate change adjustment fund. We think this is one of several different transition mechanisms worth looking at, and we are anxious to discuss this further with you.

In conclusion, we have been pressing for some time to have an Administration economic analysis of the climate change situation. Unfortunately, we feel that we still do not have one. This is no time, and not the issue, for equivocating, the stakes are too high. Failing to address the problem could have catastrophic environmental consequences. Erring in judgement about the basic strategy could also have huge economic consequences if we must make big domestic adjustments in mid-stream in 10 or 15 years, and have not laid the foundation for those changes that protect the U.S. economy and U.S. worker's jobs.

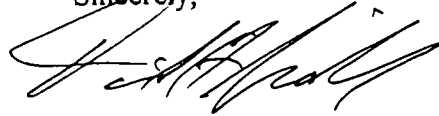
This is not the time to assume an easy answer. Not economically, not politically, not socially, not ecologically. Your current analysis of proposals for solving this global problem leaves us skeptical, and leaves us deeply concerned that too little attention is being paid to the consequences of being wrong. We suggest erring on the side of precaution.

Yellen letter, March 30, 1998

We agree, that inaction is not a prudent option. But action based too casually on a cascade of optimistic assumptions is unlikely to serve our mutual interests.

We look forward to more data, and to a healthy debate and dialogue with the administration as further plans are developed.

Sincerely,

A handwritten signature in black ink, appearing to read 'David Smith', with a stylized flourish at the end.

David Smith
AFL-CIO, Director Public Policy

DS/jy

Meeting w/AFL-CIO

Monday, November 23, 1998
11:00 a.m.

AFL-CIO

3 David Smith
6 Leslie Leopold
2 Joel Yudken tub pol
8 Thomas Palley
7 James P. Barrett
1 Michael Buckner U.N.V.
4 Jane Perkins f U.N.V. pol

Labor

David Luna
William Samuel
Ed Montgomery

Jane Ed
Perkins
Leslie Leopold
Darryl Smith James Barrett
Joel Y Thomas Palley
m B Jde
JF JY

Paul Smith QUESTIONS

1. Depends on trade / JZ. Politically realistic.
Tough. Budgets
2. Gen Eq. Full E.
transition costs assumed away.
Look at impacts on sectors.
3. Permits given away. No revs generated
many revs generated, to pay for transition cost
4. CDM generate incentives for inv. overseas
Looked at effects on domestic empl.
5. Assumption en. efficiency. 17.
Effect of Δp . Interacts
Signal

11/23/98

AFLC10

think they'd like us to do.

Tedg
assumes

How sensitive to assumptions of growth in Russia

Unempl

How many coal miners? How many steelworkers?
under different price scenarios.

Is Admin. committed to addressing transition issues,

need to know.

Existing Admin. will

Fairplay out of DRI model breakdown
done for IAT

Mike we don't believe us will walk away, it's early log
insist