THE WHITE HOUSE

WASHINGTON

February 9, 1994

MEMORANDUM FOR DISTRIBUTION

FROM: JACK GIBBONS, KATIE MCGINTY, BO CUTTER

SUBJECT: FIRST INTERAGENCY MEETING OF THE "BEYOND 2000" TASK FORCE
MONDAY, FEBRUARY 14, 1994, OEOB 476, 4:30-5:30 PM

As you know, President Clinton directed OSTP, OEP, and NEC to co-chair a long-term strategy group to examine all budget, technology, R&D, regulatory, and economic policies that could impact greenhouse gas emissions beyond the year 2000. We are charged with developing initial recommendations by the end of this year.

The 3 co-chairs have had initial discussions and agreed on a general workplan (attached). At our February 14 meeting, we hope to discuss the overall scope of work as well as the formation and operation of the proposed subcommittees.

Given the virtually unanimous response at this week's Geneva INC meeting that the current climate agreement is "inadequate," we can assume our "Beyond 2000" effort will gain visibility over the course of the year and influence the international debate. Despite the short notice for this meeting, we hope you can attend.

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OSTP Draft: 1/26/94

LONG-TERM STRATEGY WORKING GROUP ON GREENHOUSE GAS EMISSIONS

1. Background

President Clinton has directed OSTP, OEP and NEC to co-chair a long-term strategy group to examine all budget, technology, R&D, regulatory and economic policies that could impact greenhouse gas emissions beyond the year 2000. The purpose of this working group will be to explore reasonable U.S. and global emission goals beyond the year 2000, and to identify realistic domestic and international paths to achieve these goals. The range of possible solutions will attempt to integrate other key objectives of the U.S. government including: (i) strengthening the U.S. economy and its international competitiveness, (ii) positioning U.S. industry to capture a large share of the projected international energy market; (iii) re-establishing world leadership in the development and commercialization of renewable energy technologies; (iv) decreasing U.S. dependence on foreign energy sources; and (v) improving environmental quality in the U.S.

The strategic plan will have three major components:

I. **Scientific and Economic Basis for Action.** An analysis of the scientific and economic imperative for national and global action to reduce greenhouse gases: (i) changes in the climate system; (ii) vulnerability of, and adaptation strategies for, human health, ecological systems, and socio-economic sectors; (iii) economic costs of action and inaction; and (iv) research needed to reduce uncertainties. The policy relevance of uncertainties will be explicitly examined.

II. **Long-Term Vision for Energy Supply.** An examination of the technical, economic and political feasibility of long-term greenhouse gas emissions reductions by transforming the energy sector away from carbon based fuels. The path to a low-carbon supply future requires early attention to R&D and other long-lead time efforts in order to have options available over the next 20 - 50 years. The ancillary benefits of low carbon futures will be explicitly examined.

III. **Mid-Term Analysis of Potential Emission Trajectories (2000-2015).** A rigorous examination of the characteristics of energy supply, energy demand, and land-use, and potential changes in them, for the 2000 - 2015 timeframe. In addition, mid-term control strategies for other greenhouse gases e.g., methane, nitrous oxide, halogenated chemicals, and tropospheric ozone precursors, will be identified.

The strategic plan will:

* provide the scientific, technical and economic foundation needed to develop the U.S. position on the issue of "adequacy of measures" under the Climate Convention;
* provide a blue print for R&D investments in energy efficiency, renewable energy and low-carbon technologies;
* identify paths for cost-effective reductions of domestic emissions in both the mid- and long-term (through the commercialization of existing technologies, the development

and commercialization of new technologies, and use of various policy tools),
- explore ways in which the US can position itself to capture a major share of the international trade in renewable energy and energy efficient technologies;
- provide guidance on how international economic assistance programs, and the private sector, can facilitate joint implementation programs.
- identify approaches to reduce emissions in other countries so that U.S. policy actions are part of a larger whole.

2. Proposed Approach

The strategic plan will:

- build upon existing governmental and private sector work, including:
  —President Clinton's Climate Action Plan, and the ongoing CCMC (Climate Change Management Committee) overseeing the implementation of the plan
  —the ongoing transportation working group "Car Talk" (involving NEC, OEP, and OSTP),
  —reports by the Intergovernmental Panel on Climate Change, the National Academy of Sciences, the Office of Technology Assessment, the Environmental Protection agency and the Department of Energy,
  —the President's Council on Sustainable Development.
  —the International Working Group on adequacy of measures in support of the Climate Treaty negotiations (DOS/NSC)

- be developed within the Administration, but with extensive participation by all interested stakeholders, i.e., Congress, state and local government, industry, environmental NGOs, and the academic community.
  — we will use **public fora** to review and revise Part I: *The Scientific and Economic Rationale for Action,* as per discussions at the 12/27/93 principals meeting.
  —we also propose several **interagency working groups** (listed below) to work on Part II (*Long-term Analyses)* and Part III (*Mid-term Analyses).*

3. Proposed Work Plan

Chairs: OSTP, NEC and OEP

Staff Lead: R. Watson and R. Bierbaum of OSTP will serve to coordinate all parts; NEC and OEP will lead efforts in key working groups below.

In-house paper and public forum for Part I: *Scientific and Economic Rationale for Action.*
Develop the scientific and economic imperative for action, and discuss policy implications of different stabilization goals. Paper to be written in-house and vetted in a public forum. OSTP with OEP and NEC participating in review and fora.

Working Groups[1] for Part II: *Long-term Analyses*, and Part III: *Mid-term Analyses*.

A. **Energy Supply**: Mid- and long-term energy supply strategy. DOE/OSTP

B. **Energy Demand:** Mid-term demand strategy. EPA/DOE/OEP

C. **Transportation**[2] **and urban design:** Transportation strategy. DOT/NEC

D. **Agricultural Land Use**[3]: Carbon sequestration and biofuels. USDA/OSTP

E. **International**: Joint implementation, specific country analyses, and global action strategy. DOS/NSC/OEP/OSTP/NEC

F. **Synthesis**: This group will examine cross-cutting issues and look at interactions across sectors. OSTP/OEP/NEC/CEA/Treasury

There will be an overall Steering Committee composed of members of each of the working groups to assure compatibility of analyses and to oversee writing of the final report.

4. Timetable

The scientific and economic imperative, and the policy and economic implications of different stabilization goals will be completed by early June for presentation to the President and Vice-President. OSTP will draft the text in collaboration with a small number of Federal and outside experts, obtain White House and Federal agency clearance, and submit the document for a critical peer-review by all interested stakeholders in a White House sponsored forum.

The remaining sections of the report will be completed by the end of 1994, unless there is a need to finish earlier in order to: (i)include some of the material in the U.S. Action Plan, which must be submitted by August, 1994, or (ii) evaluate the US government position on "adequacy of measures". Interim results should be reviewed by late June.

5. Outline of the Report

PART I: SCIENTIFIC AND ECONOMIC BASIS FOR ACTION

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[1]Each working group should analyze the market or other barriers that limit the diffusion of existing technologies into the marketplace, develop an R&D priority strategy for the most promising technologies, a strategy for commercialization and export of new technologies, and develop policy instruments to reduce greenhouse gas emissions in their sector.

[2]This working group needs to closely coordinate with the "Car Talk" working group.

[3]This group needs to work closely with the energy supply group on biofuels, and with the transportation group on land-use planning.

1. **Setting the Stage**

A. **The Earth's Climate: Will it Change?** Climate change at both the national and global scale, i.e., what are the predictions of the magnitude, timing and regional patterns of climate change, and what is the level of confidence in these predictions.

B. **How Vulnerable are Human Health, Ecological Systems, and Socio-Economic Sectors to a Changing Climate and how can these Systems Adapt?** The impact of climate change on human health, ecological systems (e.g., forests, grasslands, and wetlands), and socio-economic systems (e.g., agriculture, forestry, fisheries, water supplies, and energy systems), i.e., how sensitive are these systems to the rate, or the absolute magnitude, of climate change, and how can these systems adapt. What is our level of confidence in these predictions?

C. **What are the Costs of Inaction?** The economic costs, and regional dislocations, associated with climate-induced changes in human health, ecological systems, and socio-economic sectors. What is our level of confidence in these predictions?

D. **What Research is Needed to Reduce Uncertainties?** The time frame and research needed to reduce the uncertainties associated with predicting the magnitude, timing and regional patterns of climate change, and the associated impacts on human health, ecological systems, and socio-economic sectors.

2. **Policy Implications of Different Stabilization Goals**

A. **What are the Projected Global and National Emissions of Greenhouse Gases?** Predicted emissions of greenhouse gases as a function of GNP, population, technology, trade, labor productivity, energy prices and availability.

B. **What Emissions are Required to Stabilize Atmospheric Concentrations of Greenhouse Gases?** An analysis of the relationship between global and regional emissions and atmospheric concentrations for a wide range of "stabilization goals".

C. **What are the Relative Radiative Forcings of Different Greenhouse Gases?** Quantification of the relative radiative forcing of different greenhouse gases for a range of time horizons.

D. **What are the Costs of Action?** A rough calibration of the economic resources expended or redirected in order to meet alternative stabilization goals, and resulting effects on the U.S> macroeconomy and competitiveness.

PART II: LONG-TERM ANALYSES

1. **Strategy for moving the U.S. to a "low/no net emissions" future**

A. Analyze future energy needs in the 2015 to 2050 time frame.

B. Examine ongoing U.S. R&D on solar, wind, biomass, hydrogen, nuclear, fusion. Review relative budgets for each of these renewables, development and diffusion rates, success, U.S. competitiveness. How can commercialization be speeded by different funding levels for different technologies? What innovative government/industry partnerships can be developed?

C. Examine options for leveling the playing field for renewables compared to other traditional supply sources. What are the comparative social costs of various energy supply technologies?

D. What role can advanced carbon scrubbing and sequestration technologies play in offsetting U.S. emissions beyond 2015?

2. **Slowing growth in World greenhouse gas emissions**

A. Implications of different emissions trajectories regionally on world emissions. Analysis of the importance of participation in a world treaty by LDCs and key energy-using countries.

B. Opportunities of U.S. business to make low-carbon technologies available to Central Europe and Third World Countries.

C. Role of Institution building and infrastructure development.

D. Role of Natural resource policies/land-use planning.

E. Role of Population, education, family planning.

PART III: **NEAR TERM ANALYSES--the years 2000-2015**

1. **U.S. emissions paths over the next several decades.** (See appendix for more detail.) CO_2 emissions will be key to the period. The following sectoral studies should present plausible future scenarios given near-commercial technologies and examine if we have mined all possible cost-effective reductions in the near term.

A. Energy Supply

Fossil/non-fossil mix possibilities over the near term
Incentives/regulatory options to reduce emissions
R&D needs

B. Energy Demand

Buildings: Residential and Commercial
Transportation ("Car Talk" group, NSTC Committee on Transportation, PCSD)

Industry (Environmental Technology Workgroup, PCSD

C. Forestry (C sequestration)

D. Agriculture (energy emissions, CH4, N2O, biomass production, land use, subsidies, environmental concerns).

2. International Considerations: Joint Implementation in the 2000-2015 time frame

A. General Opportunities for the U.S. to help reduce emissions abroad

B. Best Available energy supply technology (efficient coal, oil and gas technology)

C. Renewables market for supply

D. Demand side management technologies

E. Land-use interactions

F. U.S. Federal Role in helping reduce emissions abroad.

G. Bilateral and Multilateral funding and loan policies

H. Barriers/Opportunities for U.S. Joint Ventures/Role of the Private Sector

APPENDIX (Details of U.S. Mid-term analyses)

A. MID-TERM ENERGY SUPPLY

1. Trends in Energy Use: coal, oil, gas, biomass, nuclear, solar, wind
2. Mid-term research needs to prepare us for lower carbon futures
3. Evaluation of Success of ongoing programs
4. Estimates of supply needed between 2000 and 2015 under different policy regimes
5. Technological, economic, institutional and behavioral barriers to changing demand
6. Further options:
   - Incentives
   - price signals
   - fuel switching/blending
   - marketable permits
   - plugging leaks in the system (T&D losses; CH_4)
   - carbon scrubbing
7. Research, Development and Demonstration Needs

B. MID-TERM ENERGY DEMAND

1. BUILDINGS: Residential and Commercial

   a. Trends in Energy Use (residential and commercial separately)
   b. Evaluation of Success of ongoing programs
   c. Technological, economic, institutional and behavioral barriers to changing demand
   d. Estimates of demand between 2000 and 2015 under different policy regimes (residential and commercial separately)
   e. Further options:
      - **both** Residential and Commercial
        - Incentives
        - Tax Credits
        - Demand-side Management
        - Appliance Standards
        - Building Energy Codes
        - Enhanced "Cool Communities"
        - Information programs
      - Commercial only:
        - cogeneration
        - Office equipment
        - Public buildings/state incentives
        - Shared-cost demonstrations
   f. Research, Development and Demonstration Needs

2. TRANSPORTATION

a. Trends in Energy Use
b. Evaluation of Success of ongoing programs
c. Estimates of demand between 2000 and 2015 under different policy regimes
d. Technological, economic, institutional and behavioral barriers to changing demand

e. Further options:
   - Incentives for manufacturers
   - Efficiency standards
   - Rebates/Feebates
   - Alternate fuels
   - Scrappage of old vehicles
   - Airplanes
   - Off-road vehicles
   - Operation and maintenance
   - Fuel price signals
   - Vehicle price signals
   - Transportation control measures
   - Settlement patterns

f. Research, Development and Demonstration Needs

3. INDUSTRY

a. Trends in Energy Use
b. Evaluation of Success of ongoing programs
c. Estimates of demand between 2000 and 2015 under different policy regimes
d. Technological, Economic, Institutional and Behavioral barriers to changing demand
e. Further options:
   - Motors
   - Fuel price or "effective price"
   - Fuel switching/blending
   - Cogeneration
   - "System integration"
   - Process changes

f. Research, Development and Demonstration Needs

C. FORESTRY

1. Trends in Wood Use
2. Trends in Carbon sequestration
3. Evaluation of Success of ongoing programs
4. Technological, economic, institutional and behavioral barriers to changing carbon

storage

5. Further options:
   - incentives to private landholders
   - management of federal lands
   - increased planting
   - Conservation reserve program
   - biomass energy crops
   - urban trees
6. Research, Development and Demonstration Needs

D. AGRICULTURE

1. Trends in emissions--N_2O, CO_2, CH4
2. Evaluation of Success of ongoing programs
3. Technological, economic, institutional and behavioral barriers to greater emissions reductions:
   - livestock
   - fertilizers
   - land use changes
   - biomass energy crops
   - low input agriculture
   - post-harvest loss
   - irrigation
4. Research, Development and Demonstration Needs