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Climate Change Budget/Finance FY2001 Appropriations [2]

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December 12, 1999

MEMORANDUM FOR GEORGE FRAMPTON

CC: ROGER BALLENTINE, OSINA BIERBAUM, TOM KALIL, LINDA LANCE, RON MINSK, WESLEY WARREN

FROM: DAVID GARDINER
JEFF SEABRIGHT

RE: CLEAN ENERGY/CLIMATE – FY2001/SOTU

This memo elaborates on the memo Roger sent to John Podesta earlier this week, and gives you the information you need to effectively advocate for climate funding in the context of discussions that you may have with other senior White House officials regarding the budget and State of the Union. In addition, we recommend that we brief you on the international clean energy initiative.

FOR NON-NEW INITIATIVE FUNDING: It is imperative that we maintain our funding commitment to goals and initiatives that the President has already announced. While we are waiting for the resolution of funding levels in the agency appeals process, we know that we will have two key goals:

- **Climate Change Technology Initiative:** Overall CCTI funding should not go below the levels of our FY2000 request or those set by the President in our 5-yr plan; anything less would be criticized as a retreat. *Passback is \$18 million below the 5 year plan level of 1.366 billion for FY2001. Specifically, DOE's Solar/Renewable Energy programs were cut \$17 million from the levels expected in the President's five year CCTI plan, while USDA's research at NRCS into sequestration of carbon in soils was cut \$5 million.* Solar programs are extremely popular with the public, and the sequestration work is important to establish the scientific underpinnings for including soils in the Kyoto Protocol and to build support for climate change in the agricultural community.

Also, our *Clean Air Partnership Fund* request needs to stay at least \$100 million – the level called for in passback. This was a SOTU announcement last year when we requested \$200 million. Congress gave us zero, but backing down below \$100 million would look bad. It has substantial backing from states and local governments.

- **Bio-Energy:** We must fully fund the Bio-Energy Initiative. Passback actually cut the 2001 base request from DOE – even as they are seeking over-target additional funding of \$128 million to implement the Executive Order announced by the President last August. The President called for tripling use of bioenergy and bio-based products by 2010 – equal to taking more than 70 million cars off the road. We need to put resources behind this commitment which marries farm interests, economic growth and environmental protection and enjoys bipartisan support, especially in the Senate. *DOE and USDA base request for FY2001 is \$242 million, and they propose an "over target" increase in funding of \$128*

million. DOE would receive \$53 million and USDA \$75 million. To meet the goal, we must reduce the costs of converting sustainable raw materials – crops, trees, and biological wastes – into fuels, electric power, chemicals, and building materials and consumer goods. The funds will be used for research and development, demonstration and commercialization.

FOR NEW INITIATIVE FUNDING: We need to lay claim to funding (beyond that settled out in the agency appeals) out of the “new initiative pot”. The request for an additional \$332 million for the “Clean Energy for the 21st Century Initiative” is described in Roger Ballentine’s memo of December 6 to Jack Lew. Of the \$332 million, \$128 million is for bioenergy. *We need to make it clear that the bio-energy funding is in fulfillment of an existing commitment/initiative and should not compete for the new initiative funding.* The new components (as distinct from fulfilling the President’s commitment on bio-energy) are:

- **International Clean Energy Initiative:** We have crafted a bold new initiative to reflect the President’s repeated pronouncements about growing developing economies, reducing emissions, and promoting U.S. business. This international clean energy initiative builds on the recent report of the President’s Committee of Advisers on Science and Technology (PCAST) led by John Holdren. It is not a “Kyoto” proposal, nor exclusively a climate initiative. Targeted at the electric power sector, our “Clean Energy for the 21st Century” Initiative has a strong jobs/exports/environment message. PCAST recommended to the President an additional \$250 million in FY2001; we request \$183 in three categories:
 1. *Research, development and demonstration* programs at DOE and AID. Programs will focus on large grid power systems (advanced coal, nuclear, natural gas and wind/biomass), and distributed generation, including fuels cells and solar. *Requested funding: \$93 million.*
 2. Creating more effective demand for clean energy choices through *policy reform and capacity building* programs at DOE and AID. Examples of policy reform include electricity restructuring, regulatory reform and elimination of fossil fuels subsidies. *Requested funding: \$33 million.*
 3. Expanded *trade promotion and finance* at Commerce, TDA, EXIM, and OPIC. To enable US technology exporters to compete for and win clean power projects, we propose boosting TDA’s funding for feasibility studies, EXIM’s financial risk insurance programs, and OPIC’s political risk insurance programs. *Requested funding: \$57 million.*

These funds would build on existing successes in programs that are today poorly funded. A more detailed description of this request is attached at TAB A. Note: program requests for AID, TDA, EXIM, and OPIC are in Bob Kyle’s PAD at OMB, while the Commerce funds are in Michael Deich’s PAD.

- **Tax expenditures.** As part of a legislative initiative to “reinvent” the Clean Air Act in order to clean up power plants, we are seeking a *Clean Air Bond* – an added incentive for action for utilities in the form of a special class of tax-exempt “private activity bonds” to finance

qualified clean energy investments. *Costs in FY2001 are expected to be \$21 million.* In addition, overall tax expenditures for the CCTI must not be below the \$3.6 billion five-year total called for in the President's climate change plan. We are working with Treasury on all these items.

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TAB A

Global Clean Energy in the 21st Century

Why launch an International Clean Energy Initiative?

- Energy use by developing countries is expected to double from 1990 to 2020, passing OECD countries -- and quadruple by 2050, accounting for three-fourths of the increase in global energy use.
- As a result of this rapid growth, developing country greenhouse gas emissions will overtake OECD emissions by 2020; “meaningful participation” by developing countries in addressing this global threat is essential.
- Developing country energy technology markets will total \$4 to \$5 trillion over the next 20 years; survival of key parts of the U.S. energy technology industry depends on access to these markets.
- Polluting industry, transport, and energy supply infrastructure built in developing countries today will remain in place through much of the next century; the time to act is now.

What will the International Clean Energy Initiative do?

- Build the technical and policy foundation for a clean energy future to enable developing countries to leapfrog past the polluting fossil energy technologies used by the industrial countries.
- Double U.S. clean energy technology exports by 2005.
- Cut energy use in new buildings and appliances in half, reducing carbon emissions by as much as 250 million metric tonnes per year by 2020.
- Guide the reduction of methane emissions from pipelines and coal mines, stopping the equivalent of 330 million metric tonnes of carbon emissions over the period 2000-2015.
- Develop and demonstrate renewable energy technologies that can cost-effectively provide the full range of electricity services to the 2 billion people worldwide that do not now have access to electricity.

How can we achieve this?

- Place U.S. experts in key posts in developing countries to provide technical and policy assistance on energy sector restructuring, the development of competitive markets, and clean energy technology.

- Conduct collaborative R&D with key foreign research groups to accelerate advanced coal technology development .
- Develop and demonstrate integrated renewable energy. Link these pilot projects to large-scale in-country or multilateral development bank deployment programs.
- Expand U.S. project feasibility studies, strengthen market-based financing, and provide trade a range of trade supports to expand clean energy technology exports.

Can these investments be effective?

Examples of past experience demonstrate the impact these activities can have – and need for more resources.

Brazil

- *What we are doing now:* USAID, DOE and state energy regulators are working with the new federal energy regulatory body on environmental issues; successful in implementing a 1% wire charge for a federal energy efficiency fund. Recent policy work with government agencies led to World Bank efficiency loan and removal of tariffs on renewable energy imports.
- *What we are not doing:* Lack of funding prevents USG from taking full advantage of the new markets for clean energy we are helping create. Programs to build US ESCO presence in the marketplace, establish off-grid renewable concessions and other initiatives will not happen with private sector alone; and can yield significant trade benefits to US firms.

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- *What we are doing:* USAID, DOE are working on restructuring of power sector in Orissa and Andra Pradesh and have been instrumental in opening markets for more efficient private power in those two states.
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- *What we are doing:* USAID and DOE have worked closely with the National Thermal Power Corporation (generates 25% of India's power) to improve power plant efficiency. A DOE lab expert has spent two years in NTPC offices; Bechtel personnel have trained staff; a demonstration facility was funded. Result: NTPC today generates the same amount of electricity with 2 million less tons of coal.
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David Gardiner
12/06/99 06:46:04 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP, Jefferson B. Seabright/WHCCTF/EOP@EOP, Julie M. Anderson/WHCCTF/EOP@EOP, Janet Anderson/WHCCTF/EOP@EOP

cc:

Subject: passback

My understanding is that passback reduces CCTI's overall level from \$1.366 billion (we asked for this level in 2000 and had planned to spend it in 2001), to \$1.348 billion -- a cut of \$18 million. Big cuts are in solar and renewables at DOE, and in the budget for NRCS (ag soils). The latter cut went to fund WIC programs (food stamps). There's a large increase in DOE's fossil budget, and Bob Tuccillo didn't know if it included the transfer of the black liquor program. I put the attached chart together with the details.



2001 passback chart.d

**Climate Change Technology Initiative and Key
Climate-Related Programs
Budget Status**

	<u>FY99</u>	<u>FY2000 Request</u>	<u>FY2000 Conf.</u>	CCTI 5 Year Plan	Pass- Back
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Energy And Water

• Solar/Renewable Energy	336	398	315	382	365
• Nuclear Energy	0	5	5	10	5
• Science Office	14	33	33	39	33

+17m

Interior

• Energy Conservation	526	647	577	643	643
• Fossil Energy	24	36	51	35	47
• EIA	3	3	3	3	3
• Forest Service	0	6	0	6	6
• Weatherization & Grants*	166	191	169	?	?

VA-HUD

• EPA Climate Change Programs	109	216	103	227	227
• HUD	10	10	10	0	10
• Clean Air Partnership Fund*	N/A	200	0	0	100

Agriculture

• ARS & NRCS	0	10	0	12	10-12
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Commerce, Justice, State

• Commerce	0	2	2	8	2
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Foreign Operations

• Global Environment Facility*	168	143	36	?	?
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CCTI Total	1,021	1,366	1,099	1,366	1,348
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CCTI & Weatherization, Clean Air Partnership Fund, & GEF	1,355	1,900	1,304	?	?
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*Not in CCTI, but important climate change related programs.

Bob Kyle



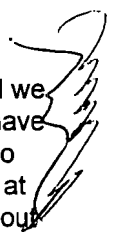
David Gardiner
12/07/99 10:09:48 AM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP

cc:

Subject: Re: passback 

I think this is not good. I don't think that you want to look as if you are backing off from the CCTI, and we are definitely under from last year. When we go out on February 1, I don't see how we are going to have a good message on the budget side headed towards Earth Day when we are down on funding. It also appears inconsistent with the messages that at least I had received from OMB that the CCTI funding at the planning level would be okay. You should complain about it, because if you don't raise a stink about it, you will lose more later in the process. 

You have two good points to make: the renewables cut is very large, and this is a program that is popular with the public (now is not the time to worry about the appropriators), and , second, we do not want to cut the sinks work on soils at USDA because we are trying to build bridges to the ag community, and build the scientific basis for including soils in the Protocol and the long-term accounting system for greenhouse gases and climate. The ag cut is also really small, and I can't believe that USDA really needs that to fund food stamps.

We should work with DOE on the cuts at DOE.

The director of the PATH program at HUD wants you to weigh in the with Cuomo's deputy chief of staff, Jackie Lawring, to encourage their appeal of the \$10 million that they got. I recommend against doing that.

December 6, 1999

MEMORANDUM FOR JACK LEW
GENE SPERLING
SYLVIA MATTHEWS

CC: JOHN PODESTA
GEORGE FRAMPTON
NEAL LANE
MARTIN BAILY
ELGIE HOLSTEIN
BOB KYLE

FROM: ROGER BALLENTINE

SUBJECT: "Clean Energy for the 21st Century" -- FY2001 Budget

During the past several months, the President has repeatedly stressed the need to move beyond the "big idea" of the 20th Century -- that economic growth must necessarily be accompanied by increased pollution, including greenhouse gases. Both at home and abroad, there are urgent environmental needs and significant economic opportunities in accelerating the shift to clean and efficient energy technologies and practices. The two priorities of economic growth and a clean environment can and must be achieved together. To fulfill the President's commitment to that vision, we propose for the FY2001 budget this Administration's final major climate change-related initiative -- the "Clean Energy for the 21st Century Initiative".

For this initiative, we are requesting a total over-base amount of \$332 million (across eight agencies: DOE, AID, USDA, Treasury, DOC, ExIm, OPIC and TDA) in FY2001 in two components:

- Domestic: promote clean power through implementation of the President's 1999 Bioenergy Executive Order and through cleaner and more efficient power production (\$149 million);
- International: focus on cleaner energy markets in developing countries, drawing on the recommendations of the President's Committee of Advisers on Science and Technology (PCAST) in their June 1999 report to the President (\$183 million).

SUMMARY: PROPOSED FY2001 BUDGET

	2001 Request (over target)	2001 Base
Bioenergy	\$128	\$215.3
Clean Air	\$ 21	N/A
Global Energy	\$183	\$266 (<i>not including</i> DOC, ExIm, OPIC)
Total	\$332	

I. GLOBAL CLEAN ENERGY IN THE 21ST CENTURY

"I have an obsession... The world is still largely in the grip of a "big idea" that isn't true anymore. And that big idea is that in order for any country that's not rich to get rich, they have to burn more fossil fuels and put more greenhouse gases in the atmosphere, because that's the way we got rich and that's the way the British got rich. And that's not true anymore. The whole economics of energy and the economy have changed. And we could have a revolution in the environment with more trade and investment available for environmental technologies and alternative energy sources... But it won't necessarily happen automatically."

-- President Clinton. October 14, 1999.

"We should act expeditiously on PCAST's recommendations ... assess the portfolio of programs underway in the Federal agencies and develop a strategic vision, including budget recommendations that can be considered in agency requests for FY2001".

-- President Clinton in a letter to Neal Lane, September 15, 1999.

This proposed international trade and environment initiative will accelerate the development and deployment of clean energy technologies for electric power in developing countries. The initiative is built on the PCAST "Powerful Partnerships" report and the work of the National Science and Technology Council working group. The goal is to increase and "green" U.S. private capital flows and exports to the developing world in electric power production and consumption infrastructure and products.

Electric power alone is now responsible for one third of global greenhouse gas emissions, with the fastest growth coming from developing nations. "Business as usual" expansion of electric power supply in developing countries is estimated to triple their emissions of CO₂ over 1995 levels by 2020 – and lead to significant increases in local air pollution from sulfur oxides, nitrogen oxides and particulate matter.

At the same time, the trade and investment opportunities for U.S. companies in this growing market offer important advantages to U.S. workers and technology innovators. Between 1995 and 2020, \$1.7 trillion will be invested in electric power capacity in developing countries. American companies are highly competitive in the global power market and are well positioned to lead the way to a cleaner energy future. As the PCAST report pointed out, however, we stand to lose market share to our trade competitors unless we fashion a more effective and robust USG-private sector partnership to address the challenge of global clean energy markets.

The international component of the Clean Energy for the 21st Century Initiative has three related pieces:

A. Coordination of Existing Programs.

Drawing on the recommendations of the PCAST report, the Clean Energy Initiative will enhance coordination of relevant agency programs at DOE, USAID, TDA, EXIM, OPIC, Commerce. Greater coordination of these programs and budgets will be achieved through an Executive Order directing the Secretaries of Commerce, Energy and the USAID Administrator, working through the Environmental Trade Working Group, to establish a focussed coordination mechanism and senior responsible personnel in each key agency. This coordination will assure that the full spectrum of USG support for clean energy technology – from DOE’s technology programs, to USAID’s policy and capacity building work in the field, to trade promotion programs at TDA, OPIC and EXIM – is harnessed to the goals of this initiative (*No FY2001 budgetary impact*).

B. Additional Funding and New Export Promotion Programs.

The recommendations for additional funding of existing and new programs included in this Initiative fall into three categories:

1. Clean electric power generation and use technology demonstration and R&D. The new R&D and demonstration funding will focus on large grid power systems (advanced coal, nuclear, natural gas and wind/biomass), as well as distributed generation technologies, including renewable energy. Included also are demonstration projects that prove the reliability, feasibility and desirability of cleaner power production technologies, as well as design and production techniques that save energy. (*Requested FY2001 funding: \$93 million*).
2. Policy reform and capacity building. Policy reform and capacity building includes existing programs by DOE and USAID in key developing countries to “open markets” for cleaner energy infrastructure and create greater demand for low-carbon options. Examples of policy reform include efforts involving electric industry restructuring, specification reform in proposal requests, and elimination of fossil fuel subsidies. (*Requested FY2001 funding: \$33 million*).

3. Clean energy trade promotion and finance. For export promotion and finance, the goal is to target existing and propose new USG trade promotion programs to make greater levels of investment possible. For example, we propose cost-shared clean power feasibility studies at TDA, new bid-cost insurance at TDA (small U.S. exporters often decline to bid on projects due to the costs of the bid process), expanded utilization of ExIm's "Environmental Export Program", similar dedicated funds at OPIC, and a new EXIM pilot program to provide limited currency exchange risk insurance for exporters of clean energy technologies. *(Requested FY2001 funding: \$57 million).*

C. Multilateral Clean Energy Trade Diplomacy.

"Greening" global capital flows to provide cleaner energy infrastructure will require the United States to play an active international leadership role. The U.S. led the successful effort to put export credit agency environmental guidelines on the Cologne G8 agenda and has been the most vocal proponent of changes in World Bank policies on energy and environment lending practices. The success of our bilateral efforts will require continued leadership within the OECD, G8 and WTO venues to establish common principles and favorable terms for clean energy technologies in ECA guidelines and through WTO policies. (e.g. longer/more favorable OECD lending terms for clean energy projects; liberalization of trade in environment and energy services; removal of fossil fuel subsidies). *(No FY2001 budgetary impact).*

[A summary table of the request for the Global Clean Energy Initiative is attached]

II. CLEAN ENERGY AT HOME IN THE 21ST CENTURY

The domestic piece of the initiative contains two components – 1) fulfillment of the President's new Executive Order establishing a national goal of tripling U.S. use of bio-based products and bioenergy; and 2) a new effort to accelerate the conversion of dirtier, older power plants to cleaner, more efficient technologies.

A. Bioenergy – Clean Fuel For The 21st Century

In August of this year, the President signed an Executive Order and Memorandum committing to triple use of bioenergy and bio-based products in the US by 2010. Meeting the goal will spur rural economies, seize world leadership in new biological technologies, reduce our dependence on foreign oil supplies, improve our environment, and enhance forest and agricultural productivity. To meet the President's goal, we must reduce the costs of converting sustainable raw materials – crops, trees, and biological wastes – into fuels, electric power, chemicals, and building materials and consumer goods.

As directed by the President, the Secretaries of Energy and Agriculture have developed a coordinated research and development plan to accomplish that goal. The plan accelerates and coordinates existing government and industry research and development efforts at the two Departments. *The two departments currently spend \$215.3 million, and we propose a 60% increase in funding of \$123.5 million.*

The fundamental obstacle to meeting the President's goal is to lower the cost of bioenergy to allow it to compete and win in the marketplace with fossil-based fuels. The plan would meet specific cost-lowering goals by 2010 rather than 2015 or 2020 as called for under current spending. The bioenergy plan tackles three fundamental cost-lowering opportunities and technical challenges to meet the President's goal. It reduces the cost of: 1) biomass feedstock itself; 2) converting feedstock to electricity, chemicals, ethanol, and building products; and 3) developing biobased products and energy. In each of these three areas – feedstocks, conversion, and products -- DOE and USDA will develop the science and technology base to support the President's goal, facilitate commercial deployment of the biotechnologies, analyze the results, and conduct education and outreach.

	DOE Base	USDA Base	DOE New	USDA New
Feedstocks	34.1	61.7	5.0	31.9
Conversion	112.7	14.3	48.0	19.7
Products	3.5	16.1	0	23.4
Totals	150.3	92.1	53.0	75.0

B. Clean Power Plants For The 21st Century

Electricity generation is the largest source of air pollution in the U.S., releasing more than two thirds of the nation's sulfur dioxide, and approximately one third of carbon dioxide, nitrogen oxides, and mercury. These pollutants contribute to disease and premature death from smog, soot, and toxic air pollution, worsened visibility in national parks, acid rain and water pollution. Power plants are also the largest contributor to greenhouse gas concentrations and global warming. Many of these emissions come from the 70% of U.S. power plants that are more than 30 years old, and which are specifically exempted from clean air rules requiring the cleanest technology. These plants can emit air pollution at four to ten times the rate of new, clean facilities.

The electric utility industry is going through a period of dramatic change as more than twenty states have adopted legislation to restructure the industry, and Congress is considering legislation as well. Many industry leaders have been seeking certainty for clean air requirements while they enter the uncertain world of a deregulated marketplace.

Any steps with respect to environmental requirements should be viewed against the backdrop of a changing marketplace, and in conjunction with the Administration's own strong support for utility restructuring and the \$20 billion in consumer savings that would result.

The President would propose a significant additional effort to clean up and modernize these power plants. The plan should include two key elements:

1. Clean Air Act Reinvention.

In the State of the Union, the President should announce his intention to submit a bold, new legislative proposal to mandate pollutant reductions over the next 15 years through market-based emissions trading. It should also eliminate counter-productive regulatory barriers. The proposal would give industry regulatory certainty over the next 15 years, and deliver cleaner air for Americans to breathe (*No budgetary impact for FY2001*).

2. The Clean Air Bond.

While legislative changes would lay out a new landscape for power production in the U.S., we can help bring about important improvements in the short term. The budget should include a new financial incentive for the utility industry to accelerate the conversion of today's older, dirtier power plants to clean, more efficient power production: the Clean Air Bond.

We propose to amend the tax code to create a special class of tax exempt "private activity bonds" to finance qualified clean energy technology investments (similar to pre-1986 state and municipal "pollution control bonds"). This version of the Clean Air Bond would require competitive bids from qualifying entities, with the tax-exempt capital going to those demonstrating the greatest environmental benefit at least cost. Based on Joint Tax Committee scoring in 1998 of private activity bonds, it is estimated that \$523 million in lost revenues to the Treasury over five years would leverage \$15 billion in bond issues (\$3 billion per year over the years 2001-2006). Treasury has not reviewed this proposal in detail.

Millions in Dollars

Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
20.88	63.36	107.64	147.60	183.06	523.44

GLOBAL CLEAN ENERGY – SUMMARY TABLE

	PRINCIPAL ACTIVITIES*	PCAST Target	Over-target Request FY2001
Clean Power: Fossil	Powerplant improvements Combined Heat and Power Fuel Cells Advanced Coal/Hydrogen production and use Methane Leakage Reduction/Recovery Sequestration Policy support for gas grid development; data/analysis	35	32
: Nuclear	International NERI Reactor Safety	10	8
: Renewables	Resource Assessment Grid-Systems with biomass, PV, wind Off Grid/Mini-Grid systems with biomass, PV, wind	40	32
: Building Efficiency	Energy Efficient Buildings. Appliances, Stoves	20	19
: Industry Efficiency	Energy Efficient Industry Best Practices	10	6
Energy Sector Reform and Capacity Building	Power Sector Restructuring/Policy Reform: Regional Energy Innovation Networks: Institution Building	35	33
Trade Promotion and Finance	Technical Assessments: Feasibility Studies Partial Grant Loan Guarantee Mechanism MDB Technical/Financial Assistance International Market Development ExIm Exchange Risk Assistance Fund Revolving Fund: small business project development	80	53
Other		20	0
TOTAL		250	\$183

AGENCY	Domestic FY2000 Base	International FY2000 Base	International In-Guidance Request FY2001	International Over-Target Request FY2001
DOE	~800+	~25	~32	72
USAID	NA	~225	~225**	67.5
DOC				8
Ex-Im	NA	NA	NA	15
OPIC	NA	NA	NA	3.5
TDA	NA	15.7***	19.25	17

*NA—Not Applicable

**FY2000

***FY1999

TO: WES WARREN, DAN SAKURA, ELIOTT DIRINGER

FROM: DAVID GARDINER

RE: FY2001 CLIMATE DISCRETIONARY SPENDING

December 2, 1999

The White House Climate Change Task Force has two major budget priorities for FY2001 – a new Clean Energy for the 21st Century Initiative and continued adequate funding for the Climate Change Technology Initiative.

New Clean Energy For the 21st Century Initiative

The Administration should launch a major new initiative to promote clean energy technologies at home and abroad. Program would target domestic and international electric power sectors for emissions reductions through clean new technologies, and implement the President's new Executive Order to triple use of bio-based products and bioenergy here in the United States. The international program targets coordinated public-private effort to promote key technologies and would launch a new financial mechanism for clean energy technologies. Domestically, the program would fund a coordinated DOE-USDA biotechnology effort. It would also include a tax provision – the Clean Air Bond, through which the federal government would either pay interest on privately-issued bonds or create tax-free state bonds to pay for conversion of older, dirtier power plants to clean new technologies.

Clean Energy International	\$200 million
Clean Energy Domestic	128 million

Total Discretionary Spending:	\$328 million
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Domestic Tax Provision	\$750 million cost over 5 years.
------------------------	----------------------------------

CCTI Tax

The President's five year plan anticipates tax incentives of \$606 million in FY2001, and an additional \$813 million in FY2002 and \$1.213 billion in FY2003. We expect to change specific provisions within the overall total and to work with the Treasury Department to shape the specific proposals within that total.

CCTI Spending

The five year plan original created for the Climate Change Technology initiative committed the Administration to a funding level for FY2001 of \$1.366 billion. We are seeking to add \$10 million for the PATH program at HUD under the CCTI. In addition, there are a variety of

climate-related programs, the most important of which are the Clean Air Partnership Fund at EPA and the Global Environmental Facility. We need at least \$150 million for the Clean Air Partnership Fund. For the GEF, the US is approximately \$200 million in arrears so something substantial will be necessary, but Treasury has yet to recommend a specific amount. We expect them to do so early next week. Attached is the detailed breakdown of CCTI funding, with OMB-planned FY2001 expenditures in the far right column.

**Climate Change Technology Initiative and Key
Climate-Related Programs**

	FY99	FY00 (Req)	FY00	FY01 (Plan)
<u>I. Energy And Water</u>				
■ Solar and Renewable Energy	336	398	315	382
■ Nuclear Energy	0	5	5	10
■ Science Office	14	33	33	39
<u>II. Interior</u>				
■ Energy Conservation	526	647	577	642
■ Fossil Energy	24	36	51	35*
■ EIA	3	3	3	4
■ Forest Service	0	6	0	6
■ Weatherization & Grants**	166	191	169	?
<u>III. VA-HUD</u>				
■ EPA Climate Change Programs	109	216	103	227
■ HUD	10	10	10	0

■ Clean Air Partnership Fund**	N/A	200	0	0
<u>IV. Agriculture</u>				
■ ARS & NRCS	0	10	0	12
<u>V. Commerce, Justice, State</u>				
■ Commerce	0	2	2	8
<u>VI. Foreign Operations</u>				
■ Global Environment Facility**	168	143	36	
■ USAID**	150	150	150	150
CCTI Total	1,021	1,366	1,099	1,366
CCTI & Weatherization, Clean Air Partnership Fund, & GEF/USAID	1,505	2,050	1,454	??

* Elements of EE/RE were shifted to FE in FY2000, including black liquor gasification.

**Not in CCTI, but important climate change related programs.

THE WHITE HOUSE

WEDNESDAY
NOVEMBER 24, 1999

9:50am Car to State

10:00am meeting with
Loy/Sandalow

10:45am Car back

11:00am Option 4 meeting
Room 472 OEOB
(have room 'til 1:30)

12:00 working lunch with
Jeff/ David on
FY 2001

1:30pm meet with Elgie
his office/Turkey time
Rose Garden



CCTI - Syn plan

ECTI - Changes w/n; Tucillo

Over target - Richardson \$150m - PCATSK

LL - Offset in budget

- Farmland Protection

**Climate Change Technology Initiative and Key
Climate-Related Programs**

	FY99	FY00 (Req)	FY00	FY01 (Plan)
<u>I. Energy And Water</u>				
■ Solar and Renewable Energy	336	398	315	382 318
■ Nuclear Energy	0	5	5	10
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<u>IV. Agriculture</u>				
■ ARS & NRCS	0	10	0	12?
<u>V. Commerce, Justice, State</u>				
■ Commerce	0	2	2	8

VI. Foreign Operations

■ Global Environment Facility**	168	143	36	?
■ USAID**	150	150	150	150
CCTI Total	1,021	1,366	1,099	1,392 1,392
CCTI & Weatherization, Clean Air Partnership Fund, & GEF/USAID	1,505	2,050	1,454	1,505 150 + ?

* Elements of EE/RE were shifted to FE in FY2000, including black liquor gasification.

**Not in CCTI, but important climate change related programs.

Climate Change Technology Initiative and Key Climate-Related Programs

I. Energy And Water

- **Solar and Renewable Energy**

Key Programs

Photovoltaics (PV), biomass/biofuels, wind, geothermal, hydrogen (fuel cells), electric systems

Key Issues

Biomass/biofuels and over target request

More for interconnection issue and distributed generation?

More for PV to capitalize on conversion efficiency (>20%) breakthrough?

More for hydrogen?

- **Nuclear Energy Plant Optimization (NEPO) and Nuclear Energy Research Initiative (NERI)**
(neither of these were listed as climate related programs for FY00; NEPO funded for first time in FY00; NERI for second time – req. was \$24M, got \$22.5M)

Key Programs

extending existing nuclear power plant life

research and development for new nuclear technology

Key Issues

Small increase for NEPO sends very strong signal

- **Science Office**

Key Programs

Sequestration research and development

Key Issues

Is major increase expected next year appropriate?

II. Interior

- **Energy Conservation**

Key Programs

Buildings (R&D, end use equipment, energy standards)

Industry – Industries of the Future

Transport – PNGV and Clean Fuels

Federal Energy Management

Key Issues

More money for planned big push on efficiency standards?
More money to expand *Energy Star*?

- Fossil Energy

Key Programs

Large Fuel Cells (molten carbonate -- more than 200 MW)
Black Liquor Gasification
Advanced Coal Technology *
Natural Gas Supply and Infrastructure *
Clean Coal Technology
Oil Supply and Infrastructure

Key Issues

More for Natural Gas Supply and Infrastructure?
More for Advanced Coal?
Black Liquor?

- EIA (1605b and other statistical reports)

- Forest Service

Key Program – forest sinks work

Key Issue – More funding?

- Weatherization & Grants* (some state grants are focused on climate/efficiency benefits)

III. VA-HUD

- EPA Climate Change Programs

Key Program

Energy Efficiency Deployment (Energy Star)
Transport -- PNGV
Industry

Key Issue

Do we seek large requests in face of congressional opposition?

- HUD

Key Program

PATH

Key Issue

Do we continue funding request?

- Clean Air Partnership Fund*

Key Programs

Grants to states and localities for integrated clean air projects

Key Issue

Do we continue funding in face of congressional opposition?

IV. Agriculture

- ARS & NRCS

Key Program

Soils Sinks Research

Key Issue

Do we increase funding?

V. Commerce, Justice, State

- Commerce (\$ at NIST)

VI. Foreign Operations

- Global Environment Facility*

*Not in CCTI, but important climate change related programs.



The Secretary of Energy
Washington, DC 20585

September 13, 1999

The Honorable Jacob Lew
Director
Office of Management and Budget
Old Executive Office Building
Washington, DC 20503

Make
File
2001 budget

Dear Mr. Lew:

I am pleased to transmit the Department of Energy's (DOE) budget submission for FY 2001. It represents an aggressive statement of this Administration's commitment to the future. This is a "capstone" budget that builds on the foundation this Administration has laid at DOE in the areas of: scientific advancement; national security investments to advance peace; secure, clean and efficient energy resources for the nation's economic future; and cleanup of the Cold War legacy.

I believe we have a strong portfolio of programs in this budget to:

- *promote peace* and address the *next generation* of national security threats;
- *spur economic growth* by strengthening U.S. scientific and technological resources-- improving America's position in an increasingly competitive world economy;
- *provide energy options for a better America*—enhancing U.S. energy security with economically and environmentally desirable energy use and production options; and
- *improve the quality of life for millions of Americans* by fulfilling our cleanup obligations to communities throughout the country and moving forward with a permanent geologic repository for nuclear waste.

As provided in your guidance, I have directed that the budget be prepared at the \$18.7 billion target, while providing increases for important Presidential initiatives for which we did not receive specific increases in our target. At this level, however, the Department can meet only the minimum of our program needs. We would not be able to fully accommodate statutory or negotiated requirements and long-standing commitments. Therefore, I am also submitting an *above target* request of \$21.2 billion, that more fully supports long-standing Administration commitments, and new initiatives to meet national needs.



Powering America's Future

National Security: With \$6.3 billion at target for national security programs we are able to meet our minimum national security requirements; providing \$4.4 billion for Defense Programs, \$578 million for Nonproliferation and National Security, \$331 million for Security and Emergency Operations, and \$244 million for Fissile Materials Disposition. Included within the at target request is \$265 million to continue the Expanded Threat Reduction Initiative begun last year.

An additional \$1.0 billion is required to fully maintain the strength of the nuclear weapons complex while adhering to Comprehensive Test Ban Treaty requirements; expand long-term R&D, chem-bio, and Russian nonproliferation activities; and significantly increase our cyber-security activities throughout the DOE complex.

Science and Technology: At the \$3.0 billion target for Science and Technology programs, core DOE Science activities are supported at a minimum level. Because of their importance to the future of science, the target level includes a \$67 million increase for the Spallation Neutron Source (\$281 million total), \$123 million for global change research, \$14 million for the Next Generation Internet, and \$70 million for the Scientific Simulation Initiative (SSI) to bring lightning-speed computing advancements to the world of civilian science.

Also requested is \$259 million over target to fully restore core science activities to FY 2000 levels and support enhanced R&D in high priority areas, namely the life sciences.

Energy Resources: The \$2.4 billion target level for Energy Resource programs includes funding for Climate Change Technology (CCTI) programs, \$1.2 billion throughout all DOE programs is proposed for CCTI; \$1.2 billion total for Energy Efficiency and Renewable Energy programs which includes \$148 million for the Partnership for New Generation Vehicles (PNGV); and \$215 million for Natural Gas R&D among DOE's energy programs.

An over target request of \$433 million is also proposed to support important initiatives in reliability of our nation's gas and electric energy systems, carbon sequestration, and implementation of the President's Committee of Advisors on Science and Technology (PCAST) recommendations on energy technology needs for the 21st Century.

Environmental Quality: The \$6.8 billion target level for Environmental Quality programs includes \$5.7 billion for Environmental Management, \$671 million for Privatization, \$399 million for Civilian Radioactive Waste Management, and \$152

million for Environment, Safety and Health programs. At the target level the Department will continue to emphasize closure at the Rocky Flats and Ohio sites; however, we will not be able to remain in compliance with all environmental cleanup legal requirements and negotiated agreements. At the target level, the schedule for the Viability Assessment of a permanent repository at Yucca Mountain also will be impacted.

This funding is particularly important in light of the agreements signed September 10, with the Governors of many of these states embody a new cooperative way for working together on the cleanup of the Department's facilities. The over target request of \$718 million is needed to: meet compliance requirements in critical locations such as Hanford, Washington and Savannah River, South Carolina; maintain the current program schedule for the Viability Assessment; and better support current privatization projects.

Meeting America's Needs -- FY 2001 Proposed Initiatives

For FY 2001, the Department is proposing strategic investments to help the nation address challenges in the near and long-term future. In some cases, we are proposing new programs and, in others, expanded investments in areas that complement current Administration initiatives. Most of this funding is reflected in our "above target" request, which supports priority programs which could not be accommodated at the lower target level.

- ***Reducing the Nuclear Danger: Cooperation with Russia (RND)***

The Department proposes a comprehensive program to reduce the risk of nuclear accidents, theft, proliferation or catastrophe in the Russian weapons/nuclear complex. This program, divided into four prioritized and individually-coherent packages, could provide an enduring Administration legacy in international nuclear nonproliferation.

Nuclear Spent Fuel Management (NSFM): Two decades ago, the U.S. decided to forego civilian nuclear fuel reprocessing on nonproliferation grounds. For energy security reasons, other countries continue to reprocess nuclear spent fuel. Russia is our greatest concern; its significant stockpile of separated plutonium is stored with poor physical protection and with no realistic prospect of utilization for the next 10-20 years.

The goals of the *NSFM Initiative* are, through a U.S.-Russia partnership, to improve security over existing spent fuel and separated plutonium, and prepare

the way for a nuclear energy future with diminished proliferation risks. The *NSFM Initiative*, for which we are asking \$125 million in FY 2001 (above target), has five specific program elements: plutonium accounting and security; limiting the stocks of separated weapons-usable material; fuel cycle cooperation; geologic disposal cooperation; and the development of non-government funding mechanisms to offset the costs of the Initiative.

Infrastructure Reduction and Personnel Re-deployment (IRPR): The Department is proposing \$80 million (above target) to assist Russia in non-weapons economic development and the dismantlement of their nuclear infrastructure. This would be achieved through the defueling and dismantling of Russian nuclear general purpose submarines; the accelerated closure of serial production facilities; the establishment of a contract research project, the creation of international centers for environmental safety; and the development of a nuclear harbors program.

HEU II Initiative: The Department proposes a \$35 million (above target) program to blend-down non-weapons related highly enriched uranium (HEU) to Low Enriched Uranium (LEU). In addition, the Department would explore with Russia ways to facilitate the aggregation, securing and safeguarding of Soviet-supplied HEU reactor fuel in secure locations.

Crisis Response Cooperation: (CRC) The Situation Crisis Cooperation Center is currently being built in Moscow to implement the Richardson-Adamov decision of March, 1999, to link crisis communication between DOE and Minatom. This center, which will be launched during a late September trip to Moscow, will serve as the basis for expansive emergency response coordination involving the Russian nuclear weapons complex, including far-flung facilities in the production and laboratory categories. The DOE seeks \$60 million (above target) for FY 2001.

Life and Physical Sciences

- ***Scientific Simulation Initiative (SSI)***

High-end computation and its application to complex scientific and engineering problems of national importance have been at the core of this Department's activities for the past fifty years. The technical challenges we now face cannot be adequately addressed without major new efforts in scientific simulation, computer science, and applied mathematics. Significant new investments are essential to achieving our mission goals.

We are proposing \$142 million (\$70M in target, \$72M above target) for the Scientific Simulation Initiative—DOE's component of the FY2001 budget for the President's Information Technology Initiative for the Twenty-first Century (IT²). This initiative entails a close collaboration with the National Science Foundation, in which DOE would match its historic leadership in high-end computation and support of large user communities, to NSF's large community of scientific investigators and major contributions in computer science.

We propose to establish and make available to the scientific community a national terascale computing infrastructure to address a wide range of complex scientific and engineering problems. Applications would have broad economic, scientific, and social benefit including: developing exotic materials that underpin everything from manufacturing to microelectronics; modeling regional and global climate patterns and changes; understanding the link between gene sequence and biological function; designing new medicines for public health, or new microbes for environmental remediation; and developing cleaner, efficient combustion devices to power our economy and run our automobiles.

- ***Microbial Genomics Initiative***

The study of microbes -- organisms that have survived and thrived in extreme and inhospitable environments for 3.7 billion years -- could hold the key to many of our challenges in energy production and use, environmental cleanup, medicine, agriculture and industrial processing. Microbial genomics, first supported by DOE in 1993 as an outgrowth of the Department's pioneering work in the Human Genome Program, continues to be one of the most exciting and rapidly growing fields in biology today.

Scientific advances over the last five years are also enabling a fundamental shift in our approach to biology -- from an understanding of parts of cells, to an understanding of the complex, dynamic behavior of entire cells -- to gain a better understanding of their genetic information. We propose a \$34 million over target initiative to expand our efforts in microbial cell research to: identify and characterize a minimum set of genes, proteins, and metabolic capabilities that are both necessary and sufficient for a microbe to survive; characterize the cell machinery and regulatory pathways responsible for making, transporting, and using all of the products needed for its survival; and, as part of our long-term goals, design or engineer microbes to address DOE mission needs, such as degradation or sequestration of hazardous waste, efficient degradation of cellulose for producing sugars, alcohols, and biofuels.

- *Bioengineering Initiative*

DOE's national laboratories are doing cutting-edge work in engineering and the physical sciences which supports a compelling public need -- the development of artificial human organs. Currently the national laboratories have more than 250 active research projects in biomedical engineering, many of them directly concerned with solving fundamental problems related to the development of specific artificial organs and sophisticated limb prostheses. Ongoing DOE research in mathematical simulation, sensors, micro-engineering, imaging, materials, lasers, electrochemistry and fiber-optics presents real opportunity to tap their unique capabilities to address this important need.

To build on this, we propose a small program to be coordinated with the National Institutes of Health of about \$12 million (\$2M in target, \$10M above target) in FY 2001 that will focus research on bioengineering applications and technologies needed for the artificial eye, artificial bones and joints, artificial pancreas and kidney, and tissue engineering.

Intelligent Technology

- *Robotics and Intelligent Machines*

Over the next 20 years, DOE will retire numerous strategic weapons, refurbish the remaining nuclear stockpile, clean up radioactive and other hazardous wastes that are the 50-year environmental legacy of producing nuclear weapons, and dispose of our nation's spent nuclear fuel. These activities must be accomplished in a manner that ensures worker safety, speeds waste remediation, and minimizes defects, costs and cycle time in weapons manufacturing.

Over the past year, DOE has developed a five-year technology road map to integrate research and development in robotics and intelligent machines (RIM)—systems composed of machines, sensors, computers, and software—throughout the DOE complex. The plan has specific projects with measurable goals.

In FY 2001, we propose \$59 million (\$28M in target, \$31M above target) to carry out the first phase of this integrated research agenda. Activities will focus on applied research projects, and prototype systems development including areas such as: sensor-based motion control, glovebox automation, precision dexterity research, remote characterization of spent nuclear fuel, universal communication standards, multi-modal transportation systems, and micromanipulation.

Energy & Environmental Technology

- ***"Intergrid Initiative": Reliable Energy Systems for the 21st Century***

By 2015, the United States will likely add 250,000 megawatts of new power generation to today's grid, at the same time the grid is responding to the demands of evolving competitive electricity markets. Measures taken to limit transmission loading and preserve system reliability were contributing factors to the shortages of power in the mid-western wholesale markets in the summer of 1998. Cascading power failures in 1996 cost the California agriculture industry alone \$1-3 billion in product spoilage. In addition, the natural gas and electricity industries and their supporting infrastructures are merging, creating a whole new set of reliability issues and problems.

In this continuing transition from regulated to restructured electricity and natural gas markets, ensuring the reliability and security of our energy delivery systems is becoming an increasingly important priority for the federal government. We need to promote policies and invest in technologies to develop and maintain the "Intergrid" -- the increasingly inter-connected energy delivery system of the 21st Century.

Through a government/private sector partnership, this multi-program, "Intergrid Initiative," for which we are seeking \$44 million in FY 2001 (\$21M in target, \$23M above target), focuses on the development of the policies and technologies -- e.g. system simulation, power storage, real time sensors and controls, new distributed power options -- that will help protect against potential new market failures and promote reliability through system flexibility, efficiency and security.

- ***Carbon Control Through Separation and Sequestration Initiative (CCSS)***

Fossil energy will continue to provide a significant and growing fraction of world energy supplies well into the next century. As world demand continues to grow, by 2015 we can expect world carbon emissions to increase by 3.5 billion metric tons over current levels. "Business as usual" greenhouse gas emissions may lead to significant increases in average global temperatures, disrupt patterns of world agricultural production, and have wide-ranging impacts on human health.

DOE's Offices of Fossil Energy, and Science, are developing an "Evolving Science and Technology Roadmap for Carbon Sequestration" to identify ways to mitigate the impacts of carbon emissions. The roadmap has already identified specific scientific/technical focus areas for R&D including: separation and

capture; sequestration in geological formations; ocean sequestration; terrestrial ecosystem sequestration; and advanced concepts (e.g., chemical, biological).

These areas, in addition to modeling and assessment techniques, will form the central elements of DOE's CCSS initiative. This program, (\$45M in target, \$5M above target) will be designed to: establish the technical and economic feasibility of sequestration; drive down the cost of CO₂ separation; determine the environmental consequences of large-scale CO₂ storage; integrate sequestration technologies with natural sinks; develop innovative technologies to produce marketable commodities from CO₂; and incorporate carbon sequestration processes into advanced energy production and utilization systems.

- ***Advanced Fuels Technology Initiative (AFTEC)***

For at least the next 30 years, the nation's transportation vehicles will be powered mostly with petroleum-based fuels. The prototype next-generation vehicle, being developed through the Administration's PNGV program, must have the cleanest possible fuel in order to achieve maximum efficiency. In addition, both gasoline and diesel fuels will have to comply with various EPA regulations, e.g. sulfur emissions reductions or possible restrictions on MTBE as an oxygenate.

There are environmental, regulatory and technological drivers which point to the need for a significant and focused effort to develop super-clean petroleum-based fuels. The multi-program Advanced Fuels Technology Initiative (\$111 million in FY2001) would mobilize and focus government/industry resources to develop a portfolio of market-viable, advanced petroleum-based highway transportation fuels (including alternative fuels as blending stocks) and fuels utilization technologies, that are responsive to the near- to mid-term environmental, technical and regulatory challenges. This will significantly enhance U.S. energy security, environmental quality and industrial competitiveness.

Administration Initiatives

- ***National Nanotechnology and Nanoscience (N³) Initiative***

Nanotechnology, the extreme miniaturization of materials and structures, hundreds of times smaller than the width of human hair, will revolutionize many areas of information technology, energy and environment, materials and manufacturing, aeronautics and space exploration, medicine, and national security. New phenomena will be manifest at this scale, where quantum behavior

plays a significant role. The needed fundamental research will require government support and will have important mission payoffs for the DOE.

DOE's base budget includes \$58 million to fund basic science, engineering, modeling, diagnostics and fabrication of sophisticated miniaturized technologies. This investment will leverage ongoing activities at DOE national laboratories in a broad range of activities including research in nanoscale synthesis and assembly methods to: significantly improve solar energy conversion and energy-efficient lighting; develop stronger, lighter materials that will improve efficiency in transportation; greatly enhance chemical and biological sensing; and develop better sensors and controls to increase efficiency in manufacturing. The Department supports the interagency working group and will adjust its budget as the roles of each agency become clearer.

- ***Powerful Partnerships Initiative***

The general conclusion of the 1999 report "*Powerful Partnerships*" issued by the President's Committee of Advisors on Science and Technology (PCAST), was that current energy R&D investments, while generally effective, are not adequate in scale to address world energy, environmental and market demands. The PCAST report found that the most conspicuous gap was in the demonstration and cost buy-down areas, a crucial link in the chain from basic research to commercial deployment.

The Department's *Powerful Partnerships Initiative*, focuses on this critical link -- identifying and developing pre-commercial energy technologies and potential markets for their deployment, to promote efficient and environmentally sound energy production, generation and end use, and to encourage international markets for U.S. businesses.

The Department, largely through extension of existing RD&D programs, proposes a series of investments, totaling \$150 million in FY 2001, to respond to the PCAST report. The Department's Office of International Affairs, with analytic and modeling support from the Policy Office and EIA, would coordinate the initiative. The specific R&D work would be conducted by the Fossil Energy, Nuclear Energy, and Energy Efficiency & Renewable Energy programs drawing on the expertise of DOE laboratories, universities, industry and international partners.

The Department of Energy's FY 2001 budget submission is strong and features an array of dynamic programs that meet emerging needs critical to our nation's future. I believe this budget, and its initiatives, will allow us to bring the resources of this Department to advance this Administration's vision and legacy for America. I look forward to working with you closely in the coming months to discuss these activities and to finalize the Department's budget request to be submitted to Congress.

Yours sincerely,

A handwritten signature in black ink, reading "Bill Richardson", with a long, sweeping horizontal line extending to the right.

Bill Richardson

Itinerary for Climate Oversight Meeting Tuesday November 16, 1999 4:30pm

1. Budget update
2. Power plant ideas -- we could have a one page outline of options to discuss with a view to getting a smaller group to generate paper by next week
3. Update on global clean energy initiative
4. Next steps on credit for early

2001 CLIMATE CHANGE BUDGET SCHEDULE

November 24	Any WHCCTF feedback to OMB for passback.
December 3	OMB passback to departments and agencies. Date may slip. WHCCTF draft of Clean Energy for the 21 st Century proposal.
December 10	Final draft of WHCCTF Clean Energy for 21 st Century proposal. Any other policy ideas for the State of the Union.
December 15	Call for State of the Union ideas. NEC will coordinate.
December 21	Deadline to resolve appeals. POTUS leaves for vacation.
January 1	Finalize details of CCTI tax package Draft of DOE and EPA reports to Congress begin OMB review
January 1 – 15	NEC process to resolve State of the Union ideas.
February 1	Budget announced and sent to Hill. OMB, EPA, DOE, and AID reports to Hill.

**Climate Change Technology Initiative and Key
Climate-Related Programs
Budget Status**

	<u>FY99</u>	<u>FY2000 Request</u>	<u>FY2000 Conf.</u>
<u>I. Energy And Water</u>			
■ Solar and Renewable Energy	336	398	315
■ Nuclear Energy	0	5	5
■ Science Office	14	33	33
<u>II. Interior</u>			
■ Energy Conservation	526	647	577
■ Fossil Energy	24	36	51
■ EIA	3	3	3
■ Forest Service	0	6	0
■ Weatherization & Grants*	166	191	169
<u>III. VA-HUD</u>			
■ EPA Climate Change Programs	109	216	103
■ HUD	10	10	10
■ Clean Air Partnership Fund*	N/A	200	0
<u>IV. Agriculture</u>			
■ ARS & NRCS	0	10	0
<u>V. Commerce, Justice, State</u>			

■ Commerce	0	2	2
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VI. Foreign Operations

■ Global Environment Facility*	168	143	36
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CCTI Total	1,021	1,366	1,099
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CCTI & Weatherization, Clean Air Partnership Fund, & GEF	1,355	1,900	1,304
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*Not in CCTI, but important climate change related programs.

MEMORANDUM

TO: Roger Ballentine

FROM: David Gardiner
John Gibson

DATE: September 27, 1999

RE: 2001 Budget Ideas -- Transportation

As you recall, you asked us to look further for ideas in the transportation sector for possible 2001 budget initiatives. We have consulted with experts at the Department of Commerce, DOE, DOT, and EPA, and present four ideas here – presented first in summary fashion, and then in more detail. When we meet tomorrow, we need your guidance regarding proposals you think have merit and next steps that you want us to take. We apologize for the length and uneven quality of this document – we did not have much time to cut and polish the agency submissions.

Summary of Options

- *GreenVee Initiative* – move beyond PNGV to create a substantially more fuel-efficient vehicle. Not included here is the Heavy Duty Truck Initiative led by the Department of the Defense. We are unclear what the potential budget implications are for this proposal, but think it may be more deserving than the initiative presented here.
- *Fueling the Future* – make today's fuels cleaner while developing even cleaner, sustainable, renewable fuels for the future.
- *Green Fuels Infrastructure* -- invest in infrastructure for alternatively-fueled vehicles – specifically electric, natural gas, and ethanol.
- *Cleaner Cities* -- proposals for *reducing vehicle miles traveled through policies for smarter growth*.

Globally Responsible Energy and Environmental Vehicle (GreenVee) Initiative

GreenVee is an interagency initiative designed to move beyond PNGV. It would build on PNGV technologies for high efficiency and low emissions, advancing the technologies further, and applying them to all light-duty vehicle (LDV) market segments, instead of just mid-size cars. The objective would be to develop core vehicle systems and component technologies that are designed ultimately to achieve fuel economies even greater than 3X, such as 100 mpg (gasoline-equivalent gallons) for mid-size cars, 70 mpg for sports utility vehicles (SUVs), and 150 mpg for

mini-compacts. Additional goals for the GreenVee initiative include achievement of zero vehicular emissions; incorporation of new, innovative vehicular safety features; greater than 90% recyclability; and competitive ownership costs relative to today's vehicles. Development of these vehicles must include a systems approach that incorporates fuel and infrastructure considerations.

While many of the technologies developed under PNGV will be adaptable to other LDV market segments, considerable development effort is required to do so, particularly for vehicles with heavier payload or off-road requirements (e.g., SUVs). Also, some highly promising designs will not be ready by the 2004 PNGV end date. Recognizing this fact, in its 1997 report, PCAST recommended that the longer-term, more promising technologies be addressed in a separate effort that it termed PNGV II.

What It Does: This initiative would direct \$100 million/year for 10 years beginning in FY2001 towards developing technology systems that would enable the achievement of 4X (or near 4X) fuel economy across all light-duty vehicle types. Approximate breakdown would be:

- \$35 million for SUVs, minivans and pickups (LDTs);
- \$23 million for sedans;
- \$35 million for minicompacts;
- \$7 million for research on the vehicle-fuel interface (e.g., on-board vehicle refueling connections which must be designed to assure their safety during refueling and avoid refueling emissions).

During the initial stages of this initiative, progress made outside of PNGV will be assessed on those technologies which PNGV determined were not sufficiently mature to be included in the PNGV timeframe. These include microturbines, Stirling engine, hydropneumatic and flywheel storage, ultracapacitors, direct methanol fuel cells and other technologies, such as solid oxide fuel cells, where significant progress has been made in recent years.

One of the most important efforts of the initiative will be cost reduction for fuel cell vehicles – especially on-board hydrogen which is expected to have the highest efficiency, coupled with zero emissions. The vehicle initiative will be planned and implemented in conjunction with the fuels and infrastructure research initiatives, since fuels are integral to the fuel cell vehicle system. Considerations in this area include such concerns as the option of service station reforming of natural gas to hydrogen. If either the fuels R&D and deployment/infrastructure initiatives is not fully funded, additional funding could be required for this initiative to ensure that related fuel production and fuel distribution research is completed.

Benefits: Clearly, this initiative has the potential to achieve substantial environmental benefits. Environmentalists should support this program because of the emphasis on developing zero criteria pollutant and very low GHG emission vehicles. (Generally, they do not support the

current emphasis of PNGV on the use of diesel and cells potentially using gasoline.) The programs could be expected to generate substantial support within industry, especially suppliers of advanced technologies and the fuel industries. The auto industry would probably support a PNGV-type program to SUVs, but may be nervous about the additional safety research and the new 3X and 4X goals, due to concerns that the next step could be increased government regulation in these areas. Note also that this program could place U.S. manufacturers in the forefront of growing export market – the worldwide market for vehicles (predominantly small cars) will grow dramatically in the next decades (by 2020, approximately 1.4 billion vehicles versus 0.7 billion today). Most of this growth will occur in developing countries.

Fueling the Future

The U.S. transportation sector remains over 95 percent dependent on petroleum-based fuels, which account for 30 to 40 percent of urban air pollution. The transportation sector is also responsible for one-third of all the carbon emissions in the U.S.

A Fueling the Future Initiative would encompass research, development, and demonstration (RD&D) that will provide for both near-term and longer term results. In the near term, it would seek to develop ultra-clean petroleum based fuels that would allow for extremely efficient low emission engine technologies currently under development in the PNGV and heavy truck programs to become realities and therefore more efficiently use our petroleum resources. It would also seek to conserve petroleum based fuels by blending in non-petroleum based components. Blending feedstocks can be derived from domestic resources such as natural gas and coal. This can be done by converting these hydrocarbons to synthetic fuels. Synthetic fuels blend readily with petroleum diesel fuel and enhance its quality.

In the long term, this initiative would seek to make environmentally-friendly, sustainable, renewable fuels derived from non-petroleum feed stocks (e.g., natural gas, coal, bio-feed stocks) cost competitive. This would be conducted in conjunction with vehicle technologies and infrastructure development programs so that they can be introduced.

What It Does: This initiative would direct \$X over Y years towards both its short and long term objectives. The program would be directed by the DOE Office of Energy Efficiency and Renewable Energy and the Office of Fossil Energy and coordinated with the Department of Commerce. The near term program component (making today's fuels cleaner) would focus on: [Note: Some of these activities are already starting under a DOE Advanced Fuels Technology Initiative that is just getting underway.]

- Establishing a coalition among the energy, auto, engine and emissions-control industries; and government (DOE, DOC, EPA, DOD, DOT) to coordinate development of advanced petroleum-based fuels (including alternative fuel blending stocks) with advanced, high efficiency engines in autos, light trucks, and heavy-duty trucks;
- Conduct research, development and test programs to identify the fuel that best enables greatly

increased fuel economy and near-zero harmful emissions using advanced, internal combustion engines;

- Develop advanced fuels for fuel cell power plants that:
 - Greatly increase fuel economy, achieving two to three times contemporary internal combustion engine fuel economy,
 - Contribute very low, near zero-emissions,
 - Can utilize the existing refueling infrastructure,
 - Have costs comparable with conventional fuels,
 - Provide for rapid refueling, safety, and ease of use;
- Develop renewable fuels as potential blending stocks for petroleum-based fuels (*will be conducted as an element of the BioEnergy initiative*);
- Develop and verify technologies (including bio-processing technologies) for the economical removal of sulfur and heavy metals from fossil fuel feed stocks; and,
- Develop a fuels production technology base that will enable the production of advanced fossil-based, ultra-clean highway transportation fuels.

The long term program component would focus on:

- Development of liquid fuels produced from natural gas or other domestic hydrocarbon feedstocks;
- Development of advanced fuels produced from renewable energy sources for advanced combustion engines and fuel cells (*in conjunction with Bioenergy Initiative*).

Benefits: [waiting for carbon numbers]. Specific outcomes of the Fueling the Future initiative would be:

- Determination of the degree of reduction of diesel fuel sulfur required for:
 - CIDI diesel technologies to meet EPA Tier 2 emissions standards in 2004-2008, enabling 35-50% higher fuel economy;
 - Major reduction in emissions from diesel trucks and busses
- CIDI hybrid light trucks that have at least twice the fuel economy of conventional vehicles.
- Fuel identified for CIDI PNGV prototype passenger vehicles enabling attainment of EPA Tier 2 emissions standards with near tripling of fuel economy.
- Identification and demonstration of advanced petroleum-based fuels enabling

near-zero-emission engine systems for trucks and autos.

- CNG and LNG vehicle engine/fuel systems enabling CNG and LNG heavy vehicles to improve air quality.
- Gas-to-liquids production technologies and economics demonstrated that lead to production facilities for ultra-clean fuel blends beyond 2010.
- Petroleum refinery production with minimal sulfur and other polluting impurities at minimum costs from conventional crude oils by 2010.
- Renewable fuel production technologies and economics demonstrated that lead to cost competitive renewable fuels for advanced combustion engines and fuel cells in the long term.

Green Fuels Infrastructure Initiative

This initiative would aim to develop clean fuels for 21st Century vehicles, with a focus on developing infrastructure needed to support widespread use of new fuels, such as hydrogen and renewable fuels. The initiative will include incentives for alternative fuel users, incentives for alternative fuel infrastructure development, technology development and demonstration for critical infrastructure technologies, and educational efforts to increase awareness of alternative fuels. Most alternative fuels offer 20-30% reductions in greenhouse gas emissions, and some offer 100% reductions if produced from renewable feedstocks.

Since the passage of the Alternative Motor Fuel Act of 1988 and the Energy Policy Act of 1992, the development and introduction of alternative fuel vehicles has been dramatically successful. More than 20 models of light-duty AFVs are now available, up from just 2 in 1992. More than a dozen heavy-duty alternative fuel engines are now available, up from none in 1990. Major auto makers are now manufacturing over 100,000 flexible fuel ethanol vehicles each year. Over 25% of all transit buses on order in the U.S. are alternative fuel.

However, alternative fuel refueling infrastructure has not grown to meet the potential. The number of ethanol stations has doubled, but remains under 75 nation-wide. Natural gas stations have increased to over 1,500, but that is far too few to sustain a growing market. Fuel providers are not selling enough alternative fuel to keep the existing stations open, in part because stations and AFVs are often too far apart.

Although all alternative fuels have a potential to make contributions to a future transportation system, three of the most promising are natural gas, ethanol, and electricity. All three are produced domestically, offer local and greenhouse gas emissions reductions, and help enable key technologies that will be critical to future transportation needs. Propane and methanol are both good alternative fuels, but are not included in this draft.

What It Does: Total cost of \$37.5 million per year for 10 years. Initiative would focus on four areas:

1. Technology development and demonstration for critical infrastructure technologies.

Alternative fuel infrastructure technologies have lagged behind AFV development. R&D funding is needed to lower costs for LNG liquefaction plants and refueling facilities, CNG home refueling appliances, hydrogen compatible compressor and fueling equipment, hydrogen liquefaction and storage technologies, and EV charging infrastructure. Cost: \$10 million.

2. Incentives for alternative fuel infrastructure development. The government could provide tax or spending incentives for investments in alternative fuel infrastructure. Incentives would be tailored to encourage refueling station development in key non-attainment areas and areas that can sustain a long-term market for alternative fuels. These incentives would produce:

- 10 LNG stations each in 21 non-attainment areas by 2010, allowing goods movement to use ultra-clean natural gas engines. (\$2 million per year)
- CNG facilities at every airport in 21 non-attainment areas, fueling shuttle services, rental car buses, and airport vehicles (\$1 million per year)
- CNG fueling station and servicing facilities for every public transit agency in 21 non-attainment areas (\$2 million per year)
- fueling stations at school bus depots in 21 non-attainment areas (\$2 million per year)
- 20,000 homes with CNG or hydrogen refueling units in 21 non-attainment areas (\$2 million per year for 5 years)
- 100 ethanol refueling stations each in 10 major metropolitan areas (\$1 million per year)

3. Incentives for alternative fuel users. In order to create a sustainable business, alternative fuel providers need adequate volume. Rebates or lower taxes of \$0.25 per gallon to 100,000 light duty AFV users per year would cost \$12.5 million per year.

4. Educational efforts to increase awareness of alternative fuels. Specific educational efforts must be focused on fleets and other users of AFVs in selected niche markets. Broader educational efforts for the general public are needed to improve awareness of the linkage between clean fuel use, reduced emissions, and reduced oil consumption. Interagency programmatic efforts, developed in cooperation with State and local governments, and NGOs, would need to be on the same scale as educational efforts for “recycling” and “Smokey the Bear” campaigns. \$5 million per year.

Benefits: The potential for substantial environmental benefits . . .

Waiting for performance metrics

Fuel providers (natural gas and ethanol) are already pushing for incentives for refueling station development and will strongly support this initiative. Auto makers with existing AFV offerings and those with investments in hydrogen fueled vehicles will support this effort. State and local

governments and environmental groups will be strong supporters. Petroleum interests and conventional fuel providers may take an interest in developing a long-term plan for refueling infrastructure, especially if it maintains a strong role for their retail stations, but we can probably expect significant resistance.

Cleaner Cities Initiative [not finished – unclear how fits in with car sharing initiative below]

ISSUE: Transportation policies, choices and options have a profound impact on greenhouse gas emissions, particularly on carbon production. While we recognize that technology and market-oriented measures will continue to make a major contribution toward reducing emissions, it is also important that communities plan transportation in a way that has a positive effect on climate change. Communities must be empowered to make more informed choices. This means that communities must have the necessary information and the tools to plan transportation strategies that protect our environment while continuing to promote mobility and economic growth essential to our long-term well being. Communities need the proper tools to evaluate the effectiveness of various transportation options to give them a better understanding of the impact and consequences of the choices they make.

TOTAL COSTS: \$108.5 million

BACKGROUND: Department of Transportation initiatives and programs such as Livable Communities, The Transportation and Community and System Preservation Program, Transportation Enhancements, the Commuter Choice Initiative and brownfields redevelopment promote land use and urban design that foster more efficient transportation. These programs and policies are directed toward promoting transit-friendly development, mixed-use development patterns and bicycle and pedestrian-friendly cities. These programs have independent objectives, but also contribute to climate change progress.

Intelligent Transportation Systems encourage the use of advanced electronic and communications technologies to increase both the safety and efficiency of transportation. The Travel Model Improvement Program (TMIP) and the Transportation Analysis and Simulation System (TRANSIMS) are efforts to develop tools to show how different urban designs change travel and trip making. TRANSIMS combines activity forecasting, traffic simulation, and air quality estimation models that will help local transportation planning agencies better evaluate air quality and other environmental options.

Mixed-use development, where a variety of land uses are located near one another, can make walking, bicycling and transit more practical means of travel. Studies have shown that providing incentives to developers allows them to better tailor project design to specific markets. It generally takes time before a project is built and the residential densities are in place to support the commercial development. Consequently, financing for mixed-use development often is difficult to obtain.

The relationship between land use and transportation is not well understood, and there are few models available to predict and analyze land development options. In some cases, we do not have adequate information or the tools necessary to show the effects of various strategies that alter transportation use such as infill development, nor do we have the capability to determine the long-term environmental effect of various transportation choices. If we are to make progress in reducing greenhouse gas emissions, we will need to have tools that identify the most cost-effective strategies to achieve that objective.

RECOMMENDED APPROACH: There are strong state and metropolitan transportation planning processes in place that include public participation and community input. These planning processes and the planning bodies responsible for carrying them out provide a good forum for enhancing the quality and scope of information on which elected officials and policy makers base their decisions regarding transportation investments.

OBJECTIVE: The objective of this initiative is to demonstrate measures that increase transportation efficiency, decrease congestion, maintain and improve regional mobility and reduce the negative environmental impacts of transportation. The sum total of these actions will have a positive long-term influence on climate change.

PROPOSED ACTIVITIES AND FUNDING:

1. **Pilot Program:** Sponsor 10 regional pilot projects to develop and refine better analysis tools for integrating transportation and land use planning and for demonstrating new or emerging concepts for promoting more environmentally-sound transportation. These projects also would be directed toward demonstrating approaches to overcoming institutional barriers to better integration of transportation and land use planning. They would demonstrate the concepts outlined above and serve as models for other areas across the country. Total Cost: Average of \$500,000 per project for a total of \$5 million.
2. **Tax Credits:** Provide tax credits or coinsurance incentives to major mixed-use development in up to 10 locations, including demonstrations of infill development as well as new or expanded development in urban and inner suburban areas. These mixed-use developments would reduce the need to travel by personal vehicles by making walking, biking, and transit usage more feasible. Localities would be required to put up a financial match, which could include in-kind resources, such as height or density bonuses, or other considerations of value pertinent to project feasibility and risk reduction. Total Cost: Provide a tax credit to the developer of up to 10 percent for each of the ten sites. Assuming an average cost of \$100 million per site, the tax credit for 10 projects would total \$100 million in Federal supports. Alternatively, a similar amount of coinsurance, by which the Federal government would agree to accept the top 10 percent of loss risk and also would provide substantial incentives.
3. **Research:** Carry out research to develop and refine the existing tools and to expand the range of tools available to states and communities to assess the impact of their

transportation choices and actions.

- Case Studies in Growth Management to document ongoing efforts by state and local governments to coordinate land use and transportation. Total Cost: \$300,000.
 - Land Use-Transportation Planning Manual to assist state and local agencies in promoting more efficient urban design through such things as growth boundaries, site design, setback regulations and building height limitations. Total Cost: \$300,000.
 - Refine Land Use Forecasting Models to operate at finer levels of disaggregation to improve our capability to analyze the impact of urban design and transportation alternatives. Total Cost: \$500,000.
- Develop a New Generation of Land Use Forecasting Models that simulate location decisions and urban travel at the micro level. Total Cost: \$3.5 million.

Demonstration of Car Sharing Benefits

This initiative is designed to provide added stimulus to the emerging trend in car sharing, as well as the deployment of new high technology vehicles. Car sharing has a number of environmental and economic benefits to the communities and to its users, including reductions in Vehicle Miles Traveled (VMT). It would also reduce the amount of space needed for parking, and provide direct economic benefits to its users. Further, the initiative would accelerate the deployment of the new generation of cars that have lower greenhouse gas emissions by providing a preliminary, small, but well publicized market for them.

Costs: \$40 million

Background

The benefits of car sharing have been demonstrated far more successfully in Europe than in the U.S. This proposed initiative would subsidize the investment in low-GHG cars for car sharing, building on the pilot efforts in three major U.S. cities (San Francisco, CA, Portland OR, and Seattle WA), as well as a number of cities overseas. These programs offer the potential to reduce VMT by eliminating unnecessary automobile trips. In addition, car sharing programs can also

In *car sharing*, members have joint access to a fleet of vehicles strategically located throughout the urban area, and pay only for the hours and/or miles driven. Insurance, gas and maintenance are included in the rate. The membership fee is usually in the \$400 to \$800 range, to help defray start-up costs and provide a deposit as evidence of serious intent on the part of the member.

A special form of car sharing is found in the *station car* concept, wherein the shared cars are electric vehicles driven to and from mass transit terminals by transit riders. They may be used for any kind of short trip while away from the station. The station is a place for quickly renting and returning the vehicle, for charging, storing, cleaning, and performing low levels of maintenance.

reduce congestion and emissions associated with criteria pollutants. In contrast to car ownership, where already incurred fixed costs such as insurance and depreciation encourage owners to make more use of their cars, car sharing has the advantage of consolidating all the costs of the trip, variable or fixed, into the mileage charge or hourly rate.

Proposed Initiative

The initiative will:

- underwrite low-GHG vehicle purchases in support of car sharing programs in 20 urban areas,
- underwrite station car acquisitions, and
- underwrite new specialized technology and infrastructure is necessary to make the sharing enterprise appealing and viable.

Low-GHG Vehicle Purchase Program

The low-GHG vehicle purchase program would provide financial support to cities desiring to establish a pilot program to demonstrate the viability and benefits of car sharing and station car programs, using low-GHG vehicles. The program would provide seed money to subsidize the purchase of these low-emitting vehicles at the rate of \$10,000 each. A one-time \$40 million program could help establish pilot programs in as many as 20 cities, each acquiring up to 200 such vehicles. It is important that these pilot efforts demonstrate the advantages of the latest in technological developments, and that the benefits and areas of best applicability be clearly established. Therefore, some of the funding could be set aside for underwriting employment of new technology and infrastructure development, and for evaluation. Eligible candidate vehicles must be defined, but could range across all of the low emitting vehicles, from the new electric-hybrids, to the station cars such as those being promoted by the National Station Car Association. The buy-down amounts for specific vehicles could be tailored to be inversely proportional to the perceived difficulty of their deployment if left solely to market forces.

The program would support urban areas in the development of vehicle pick-up and drop-off sites, fueling / recharging locations, "smart card" transponder technologies for efficient renting, billing, and tracking processes, and program administration costs. In their proposals to participate in the program, communities would be required to develop a public-private partnership to undertake the car sharing program. This partnership could include collaboration with transit operators, area automobile dealers or rental agencies, fuel companies, major regional employers, or other business and civic interests.

AUGUST 13, 1999

TO: ROGER BALLENTINE
FROM: DAVID GARDINER
RE: FY2001 BUDGET PROCESS

Jeff, John Gibson and I have completed a round of discussions with DOE, USDA, State, AID, and EPA regarding the FY2001 budget. We will be meeting with you today to discuss this issue with you in more detail, and to get guidance for our next set of actions.

As an initial matter, we'd like to put this discussion in context.

First, we should think about what messages we are sending with new initiatives we decide to pursue. CCTI – as its name implies – is very much technology oriented; sending a strong message that the Administration believes climate change can be addressed through a series of win-win solutions keyed to the development and deployment of new energy-efficient products, practices and industrial processes. Last year, this message was augmented by the proposal of the Clean Air Partnership Fund, underscoring the importance of states and localities and that reducing ghg is consistent with other clean air goals. New initiatives we consider should be thought of with this recent history in mind.

Second, you should know that the tight budget caps that Congress and the Administration are struggling with on the FY 2000 spending bills continue through FY 2002, making next year's budget no easier to develop than this year's. Money for new or expanded initiatives will be tight and we can expect a lot of competition. OMB guidance earlier this year to agencies on the FY 2001 budget strongly emphasized a freeze at the FY 2000 budget level, or the enacted level, if passed before the agency submits its budget to OMB in September. Agencies were also asked to develop alternative budgets below and above a freeze, though it is unlikely that funding above a freeze is realistic given the caps.

With this in mind, we recommend that you and George Frampton take four steps now to move ahead on the climate change actions in the FY 2001 budget.

1. You should identify one or two big (at least \$200 million) ideas that you can promote within the White House for inclusion in the FY2001 budget as Presidential initiatives, and begin to promote them as soon as possible with OMB and others in the White House. These ideas could be further elaborated, and most can work as either tax or spending proposals. We are presenting the ideas that we have received from USDA, DOE, and EPA by sector. It would be helpful to get your reactions not only to the specific ideas presented, but also to the sectors upon which we should focus more work. The best ideas so far are:

- An aggressive bioenergy effort.

- A significant effort aimed at reducing emissions from electric utilities by retiring old, dirty coal-fired power plants or by aggressively promoting clean distributed energy. Any effort here should only be undertaken if it is consistent with the discussions with the electric utility industry.
- Improving transportation fuels or transportation efficiency.
- A sequestration fund or expansion of USDA conservation programs which store carbon and have other environmental benefits.
- An international effort to promote international cooperation on energy technology innovation that closely parallels the PCAST report.

All of these are elaborated in more detail below.

2. For those items on this list that do not represent the most saleable ideas for new Presidential initiatives beyond the CCTI, you should help us work with OMB and key departments which will have increases for the Climate Change Technology Initiative in FY2001 -- DOE (\$26 million), EPA (\$11 million), USDA (\$2 million) -- to build these ideas in into the CCTI.

3. You should direct us to work with Treasury on modest modifications to the tax package. The provisions on buildings, vehicles, and renewable energy all seem to have strong support, and we think it's not worth re-examining them. It would make sense to reexamine the CHP provision, as industry support for it is weak. It is, however, a small provision.

4. You should direct us to work with DOE, EPA, and USDA on modest ideas for repackaging proposals which were contained in the Administration's FY2000 budget under the CCTI and other climate-related programs. We could use your guidance on the directions that we should pursue on this.

We do not recommend cutting the CCTI package and shifting the funds to some other climate-related effort. To do so risks losing funding which you already have for climate and climate-related programs, as well as creating negative symbolism both domestically and internationally by reducing the Administration's overall commitment to funding for this issue. Moreover, if we aren't prepared to do something bolder then it's the only thing we have. If we are prepared to do something bolder, then this package helps with the business community as a demonstration of our support for the things that they will need to accomplish the bolder objectives.

A fuller explanation of all the budget ideas submitted to date (both major initiatives and repackaging ideas), broken down by sectors, follows.

MULTI-SECTOR

Bioenergy Initiative – this initiative would carry through on the message of the President's recent Executive Order. To an extent, we had a bioenergy initiative in this year's request; this would bump it up several orders of magnitude and be a multi-year, multi-agency approach to making

bioenergy a mainstream fuel source in widespread use. \$100 million for FY01, ramping up to \$150 million by FY03. -- DOE

TRANSPORTATION

Transportation Fuels – a federal tax credit for producers of low-ghg transportation fuels with a goal of making them economically competitive in the post-2012 time frame. Smaller credits for smaller ghg reductions in earlier years; larger credits available for larger ghg reductions in later years. Credit could be made proportional to the life-cycle ghg reduction of the fuel on a schedule from 2001 through 2012. Aggregate cost for 2001-05 would be \$1.4 billion to \$2.6 billion. Aggregate cost through 2012 would be about \$20 billion. -- EPA

Telecommuting Incentives Program – develop a menu of national incentive options to promote telecommuting. Test market in 5 to 10 selected metro areas. Develop methodology to quantify emission reductions and spreadsheet model for transportation officials, air quality managers and employers. Could be done as repackaging of EPA programs. -- EPA

ELECTRIC POWER

Clean Power Technology Initiative – an interagency initiative EPA, DOE and other agencies to provide 1/3 of U.S. electricity generation using clean power technology – including CHP, direct energy systems, distributed energy technologies (including fuel cells and microturbines), gasification technologies, and renewables – by 2020. Cost estimated at \$200 million per year for five years, beginning in 2001. Carbon emissions would be reduced by 20 MMTC/year by 2010; there would also be significant reductions in both SO₂ and NO_x. Program would focus on accelerating capital stock turnover and encouraging new investments in clean power. Specific programs to be expanded and/or extended include Energy Star, Climate Wise, R&D for clean power technologies, and tax credits for CHP, wind, and biomass. – EPA

Wind – Put resources behind Secretary Richardson's announced goal of having wind supply 5% of U.S. electricity generation by 2020. Advances will be required in turbine design and other generation technology. Start with an additional \$25 million over FY00 request level for R&D. - DOE

Distributed Generation – distributed power plants (e.g., a micro-turbine at a Taco Bell) is one of the most promising areas for new power generation and an initiative in this area dovetails nicely with the Administration's restructuring bill. Greenhouse gas emissions are reduced through lower transmission losses and improvements in overall efficiency. A \$25 million increase for FY01 would yield "significant" dividends. -- DOE

SINKS AND CARBON SEQUESTRATION

All of the ideas in this category – and, of course, the bioenergy initiative above – would underscore how important the Administration believes the ag sector is to climate change, both substantively and politically. Though this year's increased funding for ag is not faring well,

Natural gas infrastructure

Liability
Wesley

nothing has changed to lessen ag's importance in the climate calculus. A major initiative here would be challenging to enact but potentially rewarding.

Agricultural Carbon Fund -- \$200 million per year for FY01-03 for USDA to design and implement a program to share costs and technical assistance with the private sector for afforestation, soil management, and restoration of degraded croplands. Existing USDA conservation programs would be beefed up. USDA, EPA and DOE would also establish a private/public Carbon Bank on the Fannie Mae model, creating a privately financed but government guaranteed market for carbon assets. This dovetails with USDA proposal below. -- EPA

Expanding Conservation Programs -- up to \$100 million for expansion of USDA programs with potential to increase sequestration including the Resource Conservation and Development program, EQUIP, CTA, CRP, and FIP. In general, these programs use tools such as technical assistance, cost-sharing assistance, rental and easement incentive payments, and compliance provisions requiring approved conservation plans for certain fragile lands (such as wetlands) in order to maintain eligibility for other USDA programs. Dovetails with EPA proposal above. -- USDA

Expanding USDA Global Change Research -- \$30 to \$100 million in additional research on linkages between ag, forestry and climate (adaptation needs, strategies and sequestration). Programs expanded would include Carbon Cycle Research Program, Soil Carbon Inventories and Studies, and research on sequestration and the incentives needed to encourage. -- USDA

Pilot Projects to Reduce GHG emissions and Sequester Carbon -- \$3 to \$20 million for incentives, planning tools and technical assistance. Projects would be on croplands, grazing lands and feed operations and use existing financial and technical assistance programs. -- USDA

Technology Development and Demonstration -- \$6 to \$20 million for:

- ARS development and application of innovative management systems and planning tools for building soil organic carbon and reduce emissions;
- Forest Service development and demonstration ways to optimize sink performance, including low impact harvesting and soil management techniques, and for testing methods of using forest soils for direct carbon storage;
- ARS development of new modeling technology designed to help ag sector adjust to climate change. -- USDA

Creating a National Soil Carbon Project -- \$200,000 to \$400,000 for a nationwide expansion of the Iowa Soil Carbon Project that collects data on historical and current conservation practices and predicts actual amounts of soil sequestered. -- USDA

Enhancing Global Change Education and Outreach -- \$100,000+ for a coordinated program to inform private landowners about climate change. -- USDA

INDUSTRY

Expanding Industries of Future -- \$25-30 million in additional funding for FY01 for R&D in the agricultural products and petroleum refining sectors. -- DOE

Climate Wise – All ideas involve repackaging EPA's existing programs.

- Smart Systems for Corporate Efficiency – work with industrial companies to develop expertise in establishing corporate baselines and tracking and crediting emissions reductions projects.
- Blended Cement Initiative – work with federal, state and local governments to encourage use of blended (low CO2) cement in roads and buildings.
- Moving in the Right Direction Program – help companies move goods, services and employees cost effectively and in a carbon friendly way. Provide technical assistance to help reduce fuels use in vehicle fleet operations, air travel and shipping and employee commute patterns.

INTERNATIONAL PROGRAMS

Engaging Developing Countries on Climate Change – This initiative would essentially tell Congress to put its money where it mouth is on developing countries. Building on the U.S. Country Studies program, we would launch new multi-agency initiative to engage developing countries in meaningful participation in addressing climate change. Initiative would build capacity of countries to participate, and offer specific assistance to countries that had announced a commitment to adopt an emissions reductions target. Program would build strategic international partnerships, expand understanding and commitment to market mechanisms, improve institutional structures for climate-friendly technologies, and build greenhouse gas emissions inventories. Proposed funding is at either \$25 million or \$50 million per year for five years. – State, DOE, EPA, AID

International Technology Initiative – Playing off the PCAST report, this initiative would highlight the benefits to American businesses and job creation of engaging aggressively in the new clean energy economy – and the lost opportunities of ceding this turf to our European and Asian competitors. We would launch a multi-agency initiative to promote clean energy technology in the developing world. As recommended by the PCAST report, the initiative would include capacity building; sectoral reform with public benefits; demonstration projects and buy down provisions; financing; efficiency for buildings, industry, and transport; and power production technologies including clean fossil, renewables, and nuclear fission and fusion. Proposed initiative is \$250 million in FY2001, ramping up to \$500 million in FY2005. – DOE, AID, EPA.

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TO: ROGER BALLENTINE

FROM: DAVID GARDINER

RE: PROPOSED FY2001 BUDGET PROCESS

We will review and propose appropriate changes to existing department and Agency budgets under the Climate Change Technology Initiative and climate-related programs and develop possible new initiatives FY2001. We will seek revisions in FY2000 proposals or new initiatives which will be effective in either the short or the long term in reducing greenhouse gas emissions, making other environmental improvements, improve the economic performance of the United States, and have substantial political support. By August 1, we will produce for you and George Frampton an initial list of suggestions for consideration during OMB and departmental development and review of the FY2001 budget. In addition, we will review overall messages and packaging.

Key issues areas in which we expect to have new initiatives to propose are: developing countries and international technology promotion, agriculture and bioenergy, electricity production, and autos and transportation. Any further guidance that you can provide us at this stage would be immensely helpful.

There are three categories of funding to examine. The first category is what was contained in the FY2000 budget for both the CCTI and climate-related programs. The second category is the \$64 million in increased funding (\$12 million) and taxes (\$24 million) for FY2001 which the President already committed to in the five year CCTI plan (see chart below). And the third category is additional funds that will be held back in the budget process to fund new FY2001 budget initiatives. This is the pool from which the Clean Air Partnership Fund, for example, came in FY2000.

David Gardiner will provide overall direction and guide the development of ideas on the domestic side. Jeff Seabright will guide development of ideas on the international side. Bob Tuccillo will be OMB contact on domestic issues, and Mark Casella for the international issues. Key leaders at appropriate departments are:

DOE – Dan Reicher, Mark Mazur
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USDA – Linda Delgado, Margot Anderson
Treasury – Len Berman, Gerrie Gerardi, and Bill Schuerch for GEF funding
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Under OMB's planning guidance, departments and agencies are required to submit their proposed budget to OMB by September 9, 1999. Passback to the departments will

happen on the day before Thanksgiving. The President's absolutely final budget decisions typically are made during the second week in January.

I propose the following schedule to get us to the August 1 deadline:

Week of July 12 – Initial discussions with Roger Ballentine to identify overall objectives and preferred outcomes.

Week of July 19 –Initial meetings with Gardiner and Seabright with DOE, EPA, Treasury, USDA, HUD, State, and AID.

Week of July 26 – Second round of meetings with Gardiner/Seabright. Use oversight meeting and one Ballentine meeting (July 29) with key leaders to discuss options both domestically and internationally.

Week of August 2 and through fall – Ballentine and Frampton engage with OMB and other White House officials on specific items for recommendation.

BACKGROUND

The Climate Change Technology Initiative is a five year plan incorporating \$6.344.5 billion in tax incentives and federal spending -- \$2.7 billion for spending and \$3.6 billion in taxes. Since DOE and EPA had existing climate programs in place prior to the initiative, the initiative includes increases in spending and taxation above the FY98 level. Funding levels for spending and the tax incentives increase annually over the five year period. (all figure in millions)

	FY99	FY00	FY01	FY02	FY03
DOE*	330.7	358.2	384.2	410.2	415.2
EPA**	115.0	126.0	137.0	148.0	151.0
USDA	10.0	16.0	18.0	21.0	21.0
HUD	10.0	0.0	0.0	0.0	0.0
COMMERCE	7.0	7.0	8.0	8.0	8.0
TAXES	421.0	582.0	606.0	813.0	1,213.0

* DOE's base program in FY98 was \$728.0 million, so total spending for their climate change programs include that figure plus the annual figure shown for the Climate Change

Technology Initiative.

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