

Cabinet

August 12, 1997

To: Todd Stern

RB

From: Henry Kelly and Rosina Bierbaum, OSTP

You asked for potential cabinet events, what we could hope to accomplish with them, and where we could hold these events. We built on our previous Cabinet memo "wish list" and submit the attached. The possible outcomes could be announcements, initiatives, etc.

These events would help develop and advance 3 of the 4 kinds of policy responses I noted in my E-MAIL to you last night (R&D, existing levers, and new initiatives).

Henry is leaving on Friday for 2 weeks of vacation in Mexico. If you want us to develop these any further, it might be good to find time to sit down with Henry and me before then. Thanks.

1. Agriculture: Glickman	Possible Outcomes: (i) Promote biomass as a new commodity crop and biomass conversion to energy as a new rural economic initiative using the authorities of the Farm bill and a new research partnership in farm and forestry (ii) Develop crops and crop systems that allow continued growth in ag productivity while reducing use of nitrogen fertilizer (made from methane). This would be the next step of the "green revolution", productivity without huge chemical inputs (which contribute to climate change)			
Why	Issues	Who	Where	
• biomass harvested from farms or forests can be used as an energy source worldwide with no net contribution to climatic carbon • reducing demand for nitrogen fertilizer (mostly made from natural gas) would reduce a major source of greenhouse gases worldwide and could help poor areas struggling to afford the fertilizers needed for "green revolution" crops. • Worldwide markets for US harvesting and energy conversion products (turbines, fuel cells) • Biomass production and conversion can create jobs in rural communities • biomass management can contribute to flood control,	• Discuss how authorities in farm bill can promote new biomass crops and low-input agriculture. Potential tools include: ➢ Conservation reserve program ➢ Flood control ➢ Riparian protection ➢ Flood control ➢ Experimental rural economic development programs • Discuss expanding or starting research partnership priorities in : ➢ Specialized biomass crops (e.g. Switchgrass) ➢ fast growing trees ➢ conversion to liquid fuels ➢ gasification for conversion to electricity	• farm organizations • forest product organizations • equipment suppliers (GE, Westinghouse) • fuel producers (Amoco, Exxon) • forest products industry State/Local • Dashed • Lugar (real advocate) • Midwest governors Cabinet Glickman Peña Daley	• midwest (farm) • southeast (farm) • northwest (forest)	

erosion control, control over runoff, and may contribute to forest fire prevention			
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2. Housing: Cuomo	Possible Outcomes: (i) A grand bargain between builders, insurers, and regulators creating a national market for innovations in construction and housing design that can cut energy use in housing by factors of two or more while making the structures more insurable (in wind and earthquake areas) and cheaper (ii) A focused research initiative on engineered whole-building designs (including solar roof options)		
Why	Issues	Who	Where
- A third of greenhouse gases and more than two thirds of all electricity is used in housing - Energy use can be cut by factors of two or three in all climates (net use can be zero with solar roofs) - Cut construction and operating costs (cutting energy bills), housing more resistant to wind and earthquakes (and therefore more insurable), more comfortable, and safer for construction workers - Industry restructuring in recent years has introduced	- Federal, State, and Local regulatory reinvention is essential for capturing the potential: discuss options for streamlining and coordinating building regulation to encourage innovation and energy efficiency - Discuss ways the insurance industry could reward proven housing technology. Key insurers are now developing tools for testing and certifying products. This could revolutionize the introduction of brand-named products and encourage growth in product quality. Discuss - Discuss options for research and demonstration partnerships that can lead to higher productivity, higher quality, and more care in tailoring products to local or even individual taste (<i>mass specialization</i>) - Discuss options for integrating "solar roof" options into construction to lower total lifetime	<u>Builders/Developers</u> <u>Manufactured Housing</u> <u>Suppliers</u> <u>Finance</u> <u>Insurance</u> <u>Associations</u> - National Association of Home Builders - Manufactured Housing Institute - Insurance Institute for Property Loss Reduction - trade unions <u>State</u> - Romer (Colorado) - Childs (Florida)	Denver: Stapleton Airpor site Florida: New communitie needing hurricane insurance California: New communities needing earthquake insurance

elements of a new, more technologically sophisticated industry eager to shed the yoke of old regulations and provide a higher quality house using modern production methods Fragmented regulations, huge swings in demand, and no tradition of research mean low levels of technology	costs.	Mayors Cabinet Cuomo Daley Peña	
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3. Utilities: Peña	Possible Outcomes: (i) Craft utility deregulation legislation which ensures efficient competition in utilities and also provides a "public benefits charge" that would encourage investments in greenhouse gas reducing technologies (end use and production). DoE proposes 1 mill/kwh with incentives for state matching (ii) Add a renewable portfolio standard to the bill (a proxy for a carbon permitting scheme that may be easier to sell). DoE recommends 4.5%		
Why	Issues	Who	Where
- one third of US emissions - major source of urban pollution	- Federal utility deregulation legislation (restructuring can accelerate capital turnover) - State utility regulation - research partnerships for - high efficiency natural gas - renewables - distributed power (fuel cells, cogeneration) - storage - transmission/distribution/controls	Utilities Electric Equipment Suppliers Cabinet Peña States California	

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4. Renewables: Peña	Possible Outcome: (i) Accelerated R&D program in key renewable areas: PV, Wind, biomass (ii) Plan for using "green carrot", lending, and other authorities to create markets large enough to justify mass production investments		
Why	Issues	Who	Where
- can provide electricity and fuels at competitive prices by early next century given R&D - large worldwide export opportunities	- million solar roofs - golden carrot procurement opportunities for PV - Research partnerships in: ➤ Photovoltaic manufacturing ➤ Wind equipment ➤ Biomass ➤ Solar thermal - utility deregulation legislation	Renewable energy producers (Photovoltaic, wind, biomass, solar thermal) Electric utilities Mayors Cabinet: Peña Daley	California Colorado Florida

5. Chemical Manufacturing: Daley/Peña	Possible Outcome: (i) Focused, well funded research partnerships that can ensure the competitiveness of US commodity chemical producers and lead to 30% or more reduction in greenhouse emissions.		
Why	Issues	Who	Where
Primary Energy Use: 6.9% (6.0 quadrillion Btus = 6.9% of all US energy) Value of Shipments: \$292 billion	- Discuss research partnerships that could double the rate of efficiency improvements in the industry ➤ bioprocessing replaces inefficient, polluting	Dupont Kodak Dow Goodyear	Mid Atlantic Midwest

Employees: 846,000 Pollution Control Costs: \$7.2 billion	- high temperature processes ➤ recycling broader mix of waste chemical products ➤ improved membrane separation • Regulatory reinvention	Monsanto Cabinet Peña Daley Lane (NSF)	
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6. Forest Products: Daley/Peña	Possible Outcome: (i) Focused, well funded research partnerships that can ensure the competitiveness of US paper, lumber, and other forest products industries and lead to 30% or more reduction in greenhouse emissions.		
Why	Issues	Who	Where
Primary Energy Use: 3.3% (2.9 quadrillion Btus = 3.3% of all US energy) Employees: 621,000 Total Wastes: 2.3 billion tons Pollution Control Costs: \$2.9 billion Value of Shipments: \$129 billion	• Research Partnerships in : ➤ high efficiency cogeneration ➤ gasification of waste products ("black liquor") ➤ impulse drying of paper replaces heat drying ➤ Sustainable Forest Management ➤ Environmental Performance ➤ Energy Performance ➤ Improved Capital Effectiveness ➤ Recycling ➤ Sensors and Control • Regulatory reinvention	Pulp and Paper Lumber Furniture Turbine Manufacturers (General Electric, Westinghouse, Solar, Cummings) Electric Utilities	Pacific Northwest Western

7. Steel, Aluminum and other Primary metals: Daley/Peña	Possible Outcome: (i) Focused, well funded research partnerships that can ensure the competitiveness of US steel,		
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	aluminum and other primary metal producers and lead to 30% or more reduction in greenhouse emissions.		
Why	Issues	Who	Where
Primary Energy Use: 4.1% (3.6 quadrillion Btus = 4.1% of all US energy) Total Wastes: 1.4 billion tons Pollution Control Costs: \$2.7 billion Value of Shipments: \$133 billion	- Research Partnerships in: ➤ carbon-free electrodes in aluminum manufacture ➤ materials recycling ➤ direct smelting of steel ➤ efficient scrap reheating - Regulatory reinvention	Alcoa US Steel	Midwest

8. Petroleum Refining: Daley/Peña	Possible Outcome: (i) Focused, well funded research partnerships that can ensure the competitiveness of US Petroleum refiners and lead to 30% or more reduction in greenhouse emissions.		
Why	Issues	Who	Where
Primary Energy Use: (6.2 quadrillion Btus = 7% of all US energy) Employees: 113,000 Total Wastes: 0.18 billion tons Pollution Control Costs: \$5.9 billion Value of Shipments: \$158 billion	- Research Partnerships in: ➤ carbon-free electrodes in aluminum manufacture ➤ materials recycling ➤ improved catalysts ➤ alternative fuel production and distribution ➤ sequestration of carbon in production facilities ➤ direct smelting of steel ➤ efficient scrap reheating - Regulatory reinvention	Major oil producers Equipment manufacturers Governors • Texas • Louisiana • California Cabinet Peña	

		Daley	
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9. Surface Transportation: Slater	Possible Outcome: (i) Expanded plan to use the proposed new surface transportation act (NEXTEA) to encourage urban transportation planning that reduces congestion and fuel use (following the ideas pioneered in Portland) (ii) Expanded plan to use NEXTEA for experiments with expanded mass transit, para-transit, intelligent highway management, specialized commuter vehicles and other innovations			
Why	Issues	Who	Where	
• surface transportation uses 60% of petroleum • growing congestion problems lead to lower efficiency • urban planning can lead to large reductions in future transportation growth	• NEXTEA legislation contains a number of provisions encouraging: ➤ Urban planning that minimizes driving and congestion ➤ Encouraging mass transit ➤ Reducing congestion • Research partnerships in: ➤ Intelligent management of highways ➤ Reduced delays because of accidents, toll collection, truck paperwork and inspection, border crossings	Mayors Trucing Companies State Highway Officials Automobile Associations Cabinet: Slater Peña	Portland Oregon (model of successful city plan with land use, parking, transit policy an strong political support)	

10. Automobiles/Trucks: Peña/Daley	Possible Outcome: (i) Review and fully fund the PNGV partnership (Academy of Engineering expressed concern that key areas were underfunded by both industry and government putting goals at risk)\ (ii) start new partnership in trucks			
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Why	Issues	Who	Where
- The energy efficiency of personal vehicles hasn't changed for a decade but miles driven has been increasing at 2-3%. Low gasoline prices mean that this trend won't change - A presidential commission on measures to control greenhouse emissions of cars launched by our 1994 climate change policy deadlocked	- The PNGV partnership has a real opportunity to achieve enormous gains without stiff gasoline taxes or regulations likely to ignite a political firestorm the project could be accelerated with more funding - options for a new partnership in high-efficiency trucks - voluntary agreements to introduce efficiency technologies into the market	- CEOs of the big 3 - major suppliers (GE plastics, Dupont, Allied Signal, United Technologies, TRW, PPG, ITT automotive U.S. Steel, Delphi, Alcoa, Motorola, Siemens) - Petroleum and Natural gas companies - alternative fuels - UAW Cabinet: Peña Daley	Washington Detroit (note: the president is scheduled to meet with the CEOs of the big three sometime in December)

11, Air transport: Golden/Slater		Possible Outcomes: (i) Revolutionary new subsonic aircraft design with low drag and high efficiency engines that can increase efficiencies 20% or more (ii) Revolutionary new air traffic control system that is much safer and reduces fuel waste on the ground and in the air	
Why	Issues	Who	Where
- air travel is growing rapidly worldwide - large efficiency gains are	Discuss accelerated partnerships in development of energy efficient aircraft to determine if an expanded program could	- airlines - aircraft manufacturers	Seattle?

possible in aircraft design and air traffic management (inefficient routing in the air and on the ground wastes enormous amounts of fuel)	accelerate development of highly efficient aircraft (advanced propulsion systems, airframes, etc) • Discuss options for partnerships in improved air traffic control and management that can achieve savings through efficient aircraft routing and management both in the air and on the ground	(Boeing) • airlines • airline passengers associations	
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Cabinet

**OSTP/USGCRP Regional Climate Change Meetings
Outreach/Media Opportunities
8/6/97**

Baseline Plan:

- Plan is to have at least one Cabinet or very senior official (Cabinet Deputy or Assistant to the President) at each workshop from now on.
- They should deliver speech, hold a press conference, and have an editorial board meeting.
- Another possibility is to place an Op/ed piece by them the week of the meeting in regional media. This could both identify regional vulnerabilities and outline Administration position.
- Prior to meetings, we will have short summary piece on regional vulnerabilities distributed to press, and we will also make regional experts available as back-ups at the press conference.

Additional Opportunities if Cabinet Affairs can orchestrate:

- If it proves possible to coordinate timing and location of Cabinet Roundtables with natural resources industries and workshops (even to the extent of being in the same region and the same week) it offers opportunity for more extended and in-depth media coverage of the issue.
- Complimentary workshops focused on the mitigation and technology side of the climate change issue could also be loosely coordinated with regional impacts workshops.

Possibilities for Cabinet Attendance at Workshops

Region	Site	Date	Possible Cabinet Member	Other Senior Official
New England	Durham, NH	Sep. 3-5	Cohen	Gibbons (accepted)
Southwest	Tucson, AZ	Sep. 3-5	?	Garamendi (accepted)
Mid Atlantic	State College, PA	Sep. 9-11	Browner	
Midwest	Grand Forks, ND	Nov. 5-7	Glickman (invited)	
TX/Southern Great Plains		TBD	Glickman	
Upper Great Lakes		TBD	Daley	
Gulf Coast		TBD	Witt	
California		TBD	Slater	Goldin, Garamendi
Central Appalachia		TBD	Pena	
Hawaii/Pacific Islands		TBD	Babbitt	
Metropolitan East Coast		TBD	Cuomo	
Southeast Coast/Caribbean		TBD	Witt	
Rocky Mountains/Great Basin		TBD	Babbitt	

OSTP Press

Climate Change Media and Outreach Possibilities

Print Media:

1. A series of opinion pieces by prominent climate science experts in regional media could help to define the problem and set the terms of debate.

- Our goal should be to place an science opinion piece in the largest paper in each state. We need to work with the organizers of the scientists letter to get scientists or groups of scientists to do these.
- Three key points need to be included in a science op/ed:
 - The problem is real: Scientific evidence for climate change caused by human activities is compelling
 - The US (and the relevant state) is vulnerable to climate change: doing nothing is a significant risk.
 - The longer we wait, the worse the problem gets: the time to get started on solving the climate change problem is now.
- The rest of each piece can be tailored to address regional issues and/or the specialties of the writers.
- We should be prepared for criticisms by skeptics, and we can either attempt to pre-empt these in the pieces, or respond to them if they appear. The problem with a pre-emptive strategy is that it elevates the arguments of the skeptics and keeps their arguments in the center of the debate.

2. Economic/Technology op/ed pieces are also needed that emphasize the following points:

- Confronting climate change can be good for the economy and the environment
- Technology development provides major business opportunities
- Starting to solve the problem now minimizes adverse consequences

3. Administration op/ed pieces in national or large media markets (or whatever regional markets are defined as critical) from senior officials (Cabinet level) can then integrate both sets of arguments and position the administration in a responsible, middle ground position.

- The problem is real
- We are stepping up to the challenge
- We are taking steps to benefit the environment, the economy, and future generations.

Television

1. News

OSTP is already working with representatives from network news organizations to explain the state of the science and make sure that they have access to prominent scientists and the latest findings if they choose to do stories.

We need to make b-roll footage of the recent roundtable event available to local/regional news organizations, and the independent producers that serve these markets.

2. More "in-depth" Stories:

- The subject is not particularly video-friendly; it is not easy to make compelling climate change TV stories.
- The USGCRP has been making sure that each regional climate change impacts meeting is videotaped, and has had some discussions with producers about the possibility of doing an in-depth story on regional impacts.
- Several series have been done over the last several years; perhaps we can work to have some of these repeated on cable and or public tv stations.

3. Appearances by senior Administration officials and/or scientists on non-news television should also be considered:

- Larry King and other Talk shows should be considered
- Need simple visual props

3. Advertising/PSA's:

- We need to determine if climate action network is contemplating any kind of advertising campaign. This could be very effective.
- EPA has done some work on PSA's, one of which is shown in blockbuster video outlets. Need wider exposure for these kinds of efforts.

Climate Event Ideas From OSTP

Options for Enhanced Outreach: Background information is needed to facilitate the effective planning of future events: Where does each Senator stand on the issue? Where do the top 500 corporations stand (and most importantly, where do the Administrations allies stand)? How do these map geographically? Do the trade associations actually matter, and where do they stand?

A number of events could be useful over the next several months:

1. Industry/government roundtables hosted by Cabinet level or above officials could provide a forum for explanation of Administration positions and an opportunity for private sector input into final Administration decisions on targets, timing, and implementation.

There are a number of ways these could be designed:

- On a state by state basis, targeting key states where support is needed.
 - On a regional basis, especially where business stakeholders exert regional influence.
 - On a political basis, to solidify existing supporters, convince “fence sitters,” and isolate critics.
 - On a sectoral basis, with message focused on benefits and or/assistance as appropriate.
2. A series of technology demonstration events with friendly companies and/or sectors could be defined, such as the POTUS solar shingle event that was never implemented. These would provide photo and sound bite opportunities.
3. We can also have a series of “impacts example” POTUS and VPOTUS photo and statement opportunities, such as a visit to a Mt. Rainier glacier, statements about floods and other extreme weather events, statements about sea-level rise vulnerability when visiting coastal areas, etc. We could also give regional recognition for climate mitigation achievements, such as Portland OR making major GHG emissions reductions.
4. A series of agency led events could be defined and implemented, with agencies conducting focused outreach to their own constituencies (see attached list).
5. A complimentary set of workshops can be arranged by federal agencies that would focus on the mitigation and technology side of the climate change issue. This activity would require close coordination with DOE and progressive elements of industry.

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Modification of events that are already planned:

1. Cabinet members and/or other senior officials can attend each OSTP/USGCRP regional workshop and deliver address on Administration position, followed by a press conference.

- At the Seattle workshop, Dr. Gibbons speech and press conference resulted in 7 news stories in regional print media and extensive local TV coverage.
- This helps solidify the science message through regional repetition of compelling science case to take action now.

Why is Technology Important for Climate Change

- Sustaining rapid economic growth in the US and achieving economic progress worldwide while achieving stability in greenhouse gas emissions years means cutting emissions per unit of economic activity by a factor of 4 or more over the next 50. Only rapid innovation can achieve this.
- The kinds of technology needed to achieve the large reductions in emissions are almost always good investments for reasons unrelated to climate change – they represent breakthroughs in productivity which reduce inputs, reduce waste, and lower costs.
- Programs which encourage technical innovations which serve both business and environmental goals enjoy broad business support
- Technology is the only real alternative to reducing the amenities. We either consume less or improve efficiency through innovation
- Technology programs can provide a core of political agreement around which other policies can be discussed

Rationale for Technology Policy

- We all agree that the best way to encourage the innovation and investment needed to reduce emissions is to use tradeable permits, taxes, or some other mechanism to ensure that markets reflect the real cost of greenhouse gas emissions.
- Markets which do not reflect the real cost of greenhouse gases lead to overproduction of emissions and underinvestment in research needed to reduce emissions.
- If it proves politically impossible to have markets reflect the full cost of carbon production it is essential that public support encourage greater investment in research and innovation that can reduce climate change
- Even if it proves possible to have prices fully reflect the cost of emissions, business may still underinvest in research needed to develop productive new technologies. Some business groups crucial for greenhouse gas reductions (e.g. construction) have no tradition of research and have an industrial structure incompatible with innovation. The benefits of some innovations may spread too quickly and too widely to earn adequate returns for an individual investor.
- The vast majority of the technologies needed to achieve the levels of reduction needed to achieve climate change goals serve clear business and public policy purposes unrelated to climate change.

Elements of a Strategy

1. Create the best possible fiscal environment for encouraging private research and investment on technologies that improve productivity. This means sound fiscal policy and a balanced federal budget
2. Ensure that regulations encourage business strategies using technology to achieve climate goals at the lowest possible cost. This applies to management of existing regulatory responsibilities and should guide all new regulations considered to reduce greenhouse gas emissions.
3. Support research partnerships in key areas. These partnerships should
 - require cost sharing
 - have clear targets and performance goals
 - be subject to external review
 - be open and competitive
 - build on strong business support
 - be sensitive to the unique needs of each industrial sector.
4. Cabinet Agencies with missions in areas relevant to climate change should be asked to explore practical technology options with their constituents (see below)

Cabinet
Plans

THE WHITE HOUSE
WASHINGTON

'97 JUL 11 AM 10:59

good memo

July 11, 1997

MEMORANDUM FOR GENE SPERLING, DAN TARULLO, TODD STERN, MARK MAZUR

FROM: TOM KALIL TAK

RE: TECHNOLOGY STRATEGY FOR CLIMATE CHANGE

It seems to me that we should explore handing out some assignments to Cabinet members if we are going to make any progress on the role that technology can play in the Administration's climate change policy, especially given our time constraints.

OSTP has put together a list (attached) of the major opportunities for energy-efficient and low-carbon technologies, organized by Cabinet secretary. I don't know whether this is exactly the right list, but it looks like a good start. Obviously, we also need to link this "technology push" perspective with an understanding of how energy prices (or other policies) will impact adoption of the technology.

Consider E.O.

Several members of the Cabinet can play a key role in climate change policy by (I) developing options for controlling greenhouse gas emissions consistent with agency missions and (ii) working with the agency's key constituent groups to develop a consensus on both the seriousness of the problem and the practicality of proposed solutions. Each agency has a different set of policy tools and a different natural constituency. Each can identify technologies that meet climate-change goals, meet agency missions, and create opportunities for growth and employment in key parts of the economy.

DOE

Secretary Pena has a major role in all areas of energy technology. The agency has major programs in energy efficiency which provide technologies for buildings, automobiles, and major energy-consuming industries. His group has worked with a number of industry groups to develop and fund energy efficiency R&D roadmaps. DoE groups need to work closely with other cabinet agencies in these areas. DoE has a unique relationship with the energy industry.

Key constituencies:

- renewable energy producers and installers (wind, photovoltaics, biomass)
- producers of high-efficiency electric generating equipment
- petroleum and natural gas producers and refiners
- electric utilities

HUD

Secretary Cuomo can lead the Administration's efforts to reduce greenhouse emissions from buildings (about a third of the total). A fragmented industry and a crazy quilt of federal, state, and local regulations and zoning have frustrated innovation in this industry for many years. This lack of innovation has contributed to housing costs (both first costs and energy and other operating costs) and made it difficult to make structures more resistant to wind and earthquake damage in areas where this is a concern. HUD is in a key position to help the construction industry improve quality and lower costs through innovative design and production methods. The Secretary has a clear understanding of the unique problems of the housing and construction industry and the many institutions that affect its market. He is in a key position to drive the bargains needed to create a broad market for innovative construction practices. This can also be a key part of our effort to accelerate the "million solar roofs" initiative since good production methods will make it much cheaper to install rooftop units.

Key constituencies:

- builders
- building suppliers
- insurance industry
- state and local governments

Agriculture

Secretary Glickman can play a key role in exploring ways to substitute wood waste and energy crops for fossil fuels using existing programs and authorities. There is enormous potential for providing development opportunities for rural economies around these activities. While there is no certainty that energy can lead to a new commodity product for forestry and farming, it's surely worth a significant investment to find out what is possible. The potential impact of these activities on global climate is enormous.

Key constituencies:

- farmers and farm organizations
- farm product suppliers and brokers
- lumber, forest product, and paper industry
- rural communities looking for opportunities for employment
- rural utilities
- equipment manufacturers (harvesting equipment, agricultural chemicals, chemical processing, turbine equipment)

Commerce

Secretary Daley is already leading the PNGV effort and can explore ways to augment this effort possibly by adding research to develop diesel engines that can meet the new particulate and ozone standards, and explore research in other areas relevant to vehicles such as heavy trucks. The Secretary also has key contacts with many other business communities which must play a major role in any solution to climate change. For example, the chemical manufacturing industry is concerned about the trade effects of climate change policy but is very anxious to work with federal agencies to sponsor the development of new production technologies. Their R&D roadmap highlights a series of projects nearly all of which would result in both greater productivity and far lower levels of greenhouse gas emissions. Monsanto and other key chemical producers have made very enlightened statements on climate change. Daley could work with them to develop projects the industry could support. Other industries with major impacts on the climate include pulp and paper, steel, aluminum, and cement.

Key constituencies:

- chemical manufacturers (bioprocessing and other new methods)
- aluminum producers (low carbon anodes)
- iron and steel
- pulp and paper (cogeneration using wood waste)
- metal casting

Transportation

Secretary Slater can find ways to improve the efficiency of the nation's surface transportation and air transport system using authorities provided under the NEXTEA bill and the reform of air traffic control.

Key constituencies:

- cities with congestion problems
- commuters
- trucking industry
- police, fire, rescue
- manufacturers of new equipment (dashboard displays, highway sensors)
- vendors of advanced communication and computation equipment
- information service providers (telecom firms, firms selling new information services to commuters - GPS, weather/highway information)

NASA

Dan Goldin has an ambitious program to reduce energy use and emissions of aircraft both through improved aircraft and engine design and through improvements in air traffic control systems.

Key constituencies:

- airlines
- aircraft manufacturers
- airlines
- airline passengers

Agriculture:

'97 JUL 31 PM 4:29

Major Issues:

- Develop and commercialize highly productive, low-input agricultural methods (reduce need for fertilizers and pesticides)
- Develop and commercialize biomass crops as feedstocks for energy and chemical production

Actions:

- Assess the way USDA authorities can be used to create incentives for biomass production including but not limited to; CRP, Flood Risk Reduction Program, Fund for Rural America, Agricultural Market Transition Program, Conservation Farm Option Pilot Program and other programs
- Develop a comprehensive strategic plan and technology roadmap for low-input agriculture and for production and use of biomass as a feedstock for producing energy and other chemicals
- Conduct a detailed assessment of the economics of low-energy agricultural production and of biomass energy
- Develop recommended programs for ensuring that biomass production in forestry and farming is consistent with sound environmental stewardship.

Technology Goals

- Biomass crop achieving net production over 20 dry tons per hectare per year
- Nitrogen fixing cereals or soil bacteria that could reduce or eliminate use of nitrogen fertilizer (most made from methane) worldwide
- low-cost gasifiers for biomass

Constituents:

- farmers and farm organizations
- farm product suppliers and brokers
- lumber, forest product, and paper industry
- rural communities looking for opportunities for employment
- rural utilities
- equipment manufacturers (harvesting equipment, agricultural chemicals, chemical processing, turbine equipment)

- It is difficult or impossible for federal agencies to include externalities (such as climate change) in decisions about energy procurement options.

Actions:

- Review existing legislation, executive orders, and regulations affecting procurement practices affecting federal energy use and determine how effective they have been and make recommendations for change. This would include procurement of alternative fueled vehicles.
- Develop options for including externalities in federal procurement decisions
- Review options for encouraging use of energy service companies and other innovative methods for funding efficiency investments

Technology goals

- The federal government should invest in energy efficiency at levels justified by business accounting practices.
- Federal energy procurement should reflect externalities and encourage innovations in efficiency and energy generation technologies
- Set goals for federal "solar roofs" as a part of the million solar roof initiative

NASA/FAA

Major Issues

- air travel is growing rapidly worldwide
- large efficiency gains are possible in aircraft design and air traffic management

Actions:

- review ongoing partnerships in development of energy efficient aircraft to determine if an expanded program could accelerate development of highly efficient aircraft (advanced propulsion systems, airframes, etc)
- review ongoing partnerships in improved air traffic control and management that can achieve savings through efficient aircraft routing and management both in the air and on the ground

Key constituencies:

- airlines
- aircraft manufacturers
- airlines
- airline passengers

HUD

Major Issues:

- Create an effective market for productivity in home construction methods and quality in housing products.
- Develop technologies capable of reducing energy requirements 50%, meeting stringent wind and seismic standards, increase workforce safety, and provide other quality improvements while lowering the cost of housing

Actions:

- Lead state and local efforts to streamline codes and product approval process to encourage innovative products and assembly techniques
- Help insurance companies develop and implement testing procedures for products which can be linked to insurance approvals and rates
- Help form industry consortia that can use modern design and production methods to ensure high quality and increased productivity in construction

Technology Goals

- Integrated design tools and production methods
- techniques for rapid site assembly
- low-cost seismic and wind-load management
- low-cost use of recycled materials
-
- integrated photovoltaic roof materials

Constituents:

- builders
- building suppliers
- insurance industry
- state and local governments

OMB/Office of Federal Procurement Policy

Major Issues:

- The federal government is a major purchaser of energy through DoD and other agency activities.
- Federal management of public housing and other national activities has a large indirect effect on national energy use
- There are many executive orders and directives calling on agencies to use sound discounting principles in decisions about energy procurement which are widely ignored. This is due in part to the difficulty of moving funds from operating to capital accounts. As a result, federal buildings are often much less energy efficient than structures owned and operated by private firms.

DoT

Actions

- Explore options for using the NEXTEA legislation to reduce carbon emissions including
 - urban design and integrated transportation planning
 - investments in transit, rail, and pedestrian transport
 - intelligent highway programs to reduce congestion (eliminate toll taking delays, improved safety to reduce accidents and speed response to accidents, improved emergency information)
- FAA programs to improve routing efficiency in the air and in airports that can lead to large fuel savings (in cooperation with NASA and DoD)

Key constituencies:

- cities with congestion problems
- Commuters
- Trucking industry
- Police, fire, rescue
- manufacturers of new equipment (dashboard displays, highway sensors)
- vendors of advanced communication and computation equipment
- information service providers (telecom firms, firms selling new information services to commuters - GPS, weather/highway information)

DOE

Major Issues

- Technical advances supported by DoE are key to the gains in energy efficiency and low-carbon energy production needed to achieve the 3-4 fold reduction in the ratio of economic activity to greenhouse emissions needed over the next century
- DoE programs have been the subject of political and ideological battles for 15 years resulting in wild budget fluctuations and changes in priorities and many earmarks
- Legislation deregulating electric utilities is being reviewed and will dramatically change incentives in the US for investment in renewable energy and energy efficiency technologies.

Actions:

- Develop options in the proposed electric utility legislation which would ensure sustained or increased investment in low carbon energy sources and investment in energy efficiency (California and other states have passed legislation which appears to achieve these goals with broad bipartisan support)
- review priorities for energy research in light of new climate change concerns and new technological opportunities, a dramatically changed regulatory environment, and an improved understanding of how to manage partnerships with industry [the PCAST panel and the national lab study underway will provide key help]

DOE/DoC/EPA

Major Issues

- large gains in productivity are possible in the most energy intensive sectors of industry. These improvements can enhance the competitive position of US firms and lead to dramatic reductions in greenhouse gas emissions.
- several industries have created detailed roadmaps of needed research and are anxious to start research partnerships
- programs and partnerships need to

Actions:

- review existing research roadmap proposals already developed by key energy intensive industries
- propose specific research initiatives in key industrial sectors:
 - chemicals 5.5 Quads (bioprocessing, process integration & controls)
 - forest products 3.3 Quads (high efficiency cogeneration of waste from paper and lumber, impulse drying)
 - aluminum (non-carbon electrodes)
 - steel
 - petroleum refining 5.9 quads
- explore regulatory reinvention or other actions that can accelerate research and investment in each industry.

Key Constituencies:

- Industry groups

- Support the research component of an interagency effort aimed at encouraging innovation in major industries (see DoE/DoC)
- Propose a balanced portfolio of research matched to new energy and environmental needs which balances near, medium, and long-term requirements. Initiatives built around key technologies should be proposed supported by an assessment of costs, benefits, and potential industrial support.

Key constituencies:

- electric utilities
- producers of high-efficiency electric generating equipment (e.g. producers of gas turbines)
- renewable energy producers and installers (wind, photovoltaics, biomass)
- petroleum and natural gas producers and refiners
- appliance industry

Cabinat

Agriculture:

Major Issues:

- Develop and commercialize highly productive, low-input agricultural methods (reduce need for fertilizers and pesticides)
- Develop and commercialize biomass crops as feedstocks for energy and chemical production

Actions:

- Assess the way USDA authorities can be used to create incentives for biomass production including but not limited to; CRP, Flood Risk Reduction Program, Fund for Rural America, Agricultural Market Transition Program, Conservation Farm Option Pilot Program and other programs
- Develop a comprehensive strategic plan and technology roadmap for low-input agriculture and for production and use of biomass as a feedstock for producing energy and other chemicals
- Conduct a detailed assessment of the economics of low-energy agricultural production and of biomass energy
- Develop recommended programs for ensuring that biomass production in forestry and farming is consistent with sound environmental stewardship.

Technology Goals

- Biomass crop achieving net production over 20 dry tons per hectare per year
- Nitrogen fixing cereals or soil bacteria that could reduce or eliminate use of nitrogen fertilizer (most made from methane) worldwide
- low-cost gasifiers for biomass

Constituents:

- farmers and farm organizations
- farm product suppliers and brokers
- lumber, forest product, and paper industry
- rural communities looking for opportunities for employment
- rural utilities
- equipment manufacturers (harvesting equipment, agricultural chemicals, chemical processing, turbine equipment)

- It is difficult or impossible for federal agencies to include externalities (such as climate change) in decisions about energy procurement options.

Actions:

- Review existing legislation, executive orders, and regulations affecting procurement practices affecting federal energy use and determine how effective they have been and make recommendations for change. This would include procurement of alternative fueled vehicles.
- Develop options for including externalities in federal procurement decisions
- Review options for encouraging use of energy service companies and other innovative methods for funding efficiency investments

Technology goals

- The federal government should invest in energy efficiency at levels justified by business accounting practices.
- Federal energy procurement should reflect externalities and encourage innovations in efficiency and energy generation technologies
- Set goals for federal "solar roofs" as a part of the million solar roof initiative

NASA/FAA

Major Issues

- air travel is growing rapidly worldwide
- large efficiency gains are possible in aircraft design and air traffic management

Actions:

- review ongoing partnerships in development of energy efficient aircraft to determine if an expanded program could accelerate development of highly efficient aircraft (advanced propulsion systems, airframes, etc)
- review ongoing partnerships in improved air traffic control and management that can achieve savings through efficient aircraft routing and management both in the air and on the ground

Key constituencies:

- airlines
- aircraft manufacturers
- airlines
- airline passengers

HUD

Major Issues:

- Create an effective market for productivity in home construction methods and quality in housing products.
- Develop technologies capable of reducing energy requirements 50%, meeting stringent wind and seismic standards, increase workforce safety, and provide other quality improvements while lowering the cost of housing

Actions:

- Lead state and local efforts to streamline codes and product approval process to encourage innovative products and assembly techniques
- Help insurance companies develop and implement testing procedures for products which can be linked to insurance approvals and rates
- Help form industry consortia that can use modern design and production methods to ensure high quality and increased productivity in construction

Technology Goals

- Integrated design tools and production methods
- techniques for rapid site assembly
- low-cost seismic and wind-load management
- low-cost use of recycled materials
-
- integrated photovoltaic roof materials

Constituents:

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