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EXPORT-IMPORT BANK
OF THE UNITED STATES

EX-IM BANK RENEWABLE ENERGY SUPPORT

The Export-Import Bank of the United States (Ex-Im Bank) is an independent U.S. Government agency that helps to finance the export sales of U.S. goods and services. Ex-Im Bank is committed to increasing the level of support it provides to exporters and customers of environmentally beneficial goods and services such as renewable energy. To achieve this objective, Ex-Im Bank has designed a special "Environmental Exports Program" that will provide enhanced levels of financing support. These enhancements include:

1. Local cost coverage up to 15% of the U.S. contract price.
2. Capitalization of interest during construction.
3. Maximum allowable OECD repayment terms (10-12 years starting 6 months after project completion).

Ex-Im Bank has long supported renewable energy. From 1980 through 1999, Ex-Im Bank supported over 54 projects totalling \$2 billion in U.S. renewable energy goods and services exports. *Ex-Im Bank has no minimum nor maximum project size and is very interested in financing even small projects.* The following highlights a few of the projects and sales financed by Ex-Im Bank since 1980:

In 1980, Ex-Im Bank supported \$34 million in U.S. exports to a hydropower project in Argentina.

In 1982, Ex-Im Bank approved financing for a \$350,000 sale of photovoltaic generating equipment to power a telecommunications system based in the mountains of Colombia, and supported \$647 million of U.S. exports for the Yacyreta hydroelectric project in Argentina.

In 1984, Ex-Im Bank supported \$217 million of U.S. exports to major hydroelectric projects in Chile and Venezuela.

In 1986, Ex-Im Bank supported sales of \$420,000 for solar electric systems to Chile and \$499,000 for geothermal plant equipment to Mexico.

In 1994, Ex-Im Bank authorized financing for 3 renewable energy transactions representing \$396 million in export sales for projects in geothermal and biomass in the Philippines and Russia.

In 1995, Ex-Im Bank issued Letters of Interest to U.S. companies representing over \$1 billion in potential renewable energy exports, including Letters of Interest to match "Tied Aid" offered by other government export credit agencies. Ex-Im Bank supported several transactions for Flowind Company.

In 1996, Ex-Im Bank approved a \$49.7 million Direct Loan to finance a geothermal power project in the Philippines for Ormat Leyte Co. done on a limited recourse project finance basis, approved \$12.5MM in financing for 3 wind energy projects for Zond Systems, Inc. in China that matched other Tied Aid offers, and approved a request for Medium-Term Insurance for a \$440,000 sale of 1 wind turbine by Zond Systems, Inc.

In 1997, Ex-Im Bank approved a Short-Term Environmental Export Credit Insurance Policy for International Product & Technology Exchange, Inc. to offer up to 360-day open account or unsecured credit to a number of customers worldwide. The company is offering a \$50,000 credit line to an Indian customer to purchase solar energy components.

In 1998, issued several Short-Term Environmental Export Credit Insurance Policies for renewable energy suppliers to offer open account or unsecured credit to customers worldwide, including United Solar Sysytems, Inc. as well as International Product & Technology Exchange, Inc.

For 1999, Ex-Im Bank has a top priority to pro-actively outreach to U.S. small business environmental exporters such as renewable energy suppliers. New renewable energy customers of Ex-Im Bank include Southwest Windpower, Inc. and Golden Genesis, Inc.

INTERNATIONAL CLEAN ENERGY INITIATIVE PROGRAM ACTIVITIES

Energy use by developing countries is expected to double between 1990 and 2020, and quadruple by 2050, accounting for three-fourths or more of the increase in global energy use and reaching 2-3 times the level of energy use by today's industrial countries. The services this energy provides are critical for economic development--powering factories, lighting buildings, and fueling transport; failing to provide needed energy services would risk economic development and political stability. Advanced energy efficient end-use and clean energy supply technologies can provide the energy these countries need for economic development while protecting the environment. These technologies reduce the risks of oil supply disruption and nuclear proliferation.

The development and widespread deployment of clean and efficient energy technologies creates tremendous economic opportunities for the United States. Global markets for energy supply technologies alone could total \$10 trillion over the next 20 years. U.S. firms need to capture a significant share of that market if they are to remain competitive.

This initiative responds to these challenges by developing energy technologies for these global markets through public-private partnerships and by systematically supporting their export and use. This initiative will be an important example of how protecting the environment and growing the economy can be mutually supportive.

Buildings: Two-thirds of developing country population growth is in cities, with urban populations expected to grow by more than 1.5 billion people over the next twenty years. This is resulting in unprecedented rates of construction and even greater demand for building equipment and appliances. This initiative will support the development, adaptation, and use of energy-efficient building design tools, building energy performance standards, and equipment and appliance energy standards and labeling. These activities will help cut energy use by new buildings by 50 percent while strongly supporting U.S. exports of energy efficient materials, sensors/controls, and building equipment and appliances.

In rural and poor urban areas, more than two billion people cook their food over traditional open fires. This generates high levels of smoke in kitchens and households, and is a major contributor to respiratory disease, particularly women and young children. This initiative will support development of improved stoves and fuels to reduce the global death rate due to acute respiratory infections—estimated as high as two million people per year—resulting substantially from indoor air pollution from traditional stoves.

Industry: Industrial energy use by developing countries grows even more rapidly than their overall economies as they use steel, cement, and other energy-intensive materials to build their infrastructures of roads, bridges, buildings, and factories. This initiative will support industrial technology roadmapping, best practice programs, the use of Combined Heat and Power (CHP), and other technical and policy assistance to reduce industrial energy use by 40 percent and supply 20 percent of new power generating capacity over the next two decades while positioning U.S. firms to export high-performance industrial equipment—efficient motor drives, control systems, advanced processing equipment, CHP systems, etc.

Transport: In Brazil there is one car for 13 people; in Asia one for 200. Two- and three-wheel vehicles and buses help fill some of the huge demand for transport services, but cause very high levels of urban air pollution. The development and widespread deployment of advanced hybrid and fuel cell vehicles, vehicle polluting-emissions testing, assistance with policy and planning, and other supports would reduce global oil demand and urban air pollution. U.S. companies are leaders in technologies key to such vehicles, e.g. electric drive trains, and will substantially benefit from the strong R&D and export program that will be undertaken through this initiative.

Fossil Energy Supply: Fossil fuels currently provide roughly 85% of global commercial energy and will continue to supply high levels of energy use for decades to come. Advanced coal gasification systems with combined cycle turbines or fuel cells can significantly improve efficiencies and lower air pollution, and carbon sequestration technologies can sharply reduce greenhouse gas emissions. This initiative will make possible the economic use of fossil fuels with near-zero lifecycle carbon emissions and near-zero pollutant emissions. U.S. companies are global leaders in these advanced coal technologies, but their domestic market has sharply declined in the face of stiff competition from natural gas. In many cases, the survival of this U.S. business depends on its ability to penetrate developing country markets. This initiative provides high-leverage support to develop and deploy these coal technologies internationally.

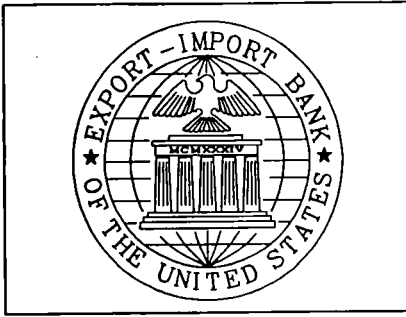
Nuclear Energy Supply: Nuclear energy produces little conventional air pollution or greenhouse gases, but high costs, safety, radioactive waste, and nuclear proliferation concerns cloud its future. Collaborative research to address these concerns can substantially improve nuclear power systems and their prospects for continuing or strengthening their contribution to our global energy future. Given the lack of a U.S. market for new nuclear power plants for the foreseeable future, the survival of the U.S. nuclear energy technology industry depends on the development of advanced reactors for international markets that meet these cost, safety, waste, and proliferation concerns.

Renewable Energy: The costs of renewable energy technologies such as photovoltaics and wind turbines have been reduced by as much as ten times or more over the past two decades. Today these systems are competitive in many remote locations and, increasingly, in grid-connected systems where solar, wind, or other renewable resources are sufficient. These technologies could provide some two billion people in developing countries access to electricity and the opportunities of modern life for the first time, while creating a non-polluting energy infrastructure. Further development of these technologies and applications for developing countries under this initiative can open these new economic opportunities. This initiative will help renewable energy contribute as much to world energy supply in the second quarter of the 21st century as fossil energy contributes today. Most of the market for renewable energy technologies is overseas, which is particularly difficult for small innovative U.S. renewable energy firms to penetrate. This initiative will help develop technologies for and aggressively pursue these markets.

Foundations: The research, development, demonstration, and large-scale deployment of these clean and efficient energy technologies require:

- Capacity building, to develop the capable staff required by research, public, and private institutions that will produce, market, install and service these technologies, and to reduce policy barriers;
- Energy sector reform, to move towards competitive markets that can attract private capital, while protecting the public interest in technology innovation and addressing externalities;
- Technology demonstration and cost buy-down mechanisms, to reduce the costs of these innovative technologies to competitive levels; and
- Financial mechanisms to assist the large-scale deployment of innovative clean energy technologies.

This initiative provides for each of these activities, building the foundation for strong competitive markets that can rapidly develop and deploy clean energy technologies to meet the economic, environmental, and national security needs of all the world's people. The programs within this initiative are designed to catalyze and facilitate efforts of the private sector, and will launch advanced clean energy technologies into large international markets, free of the need for ongoing government subsidies. This will provide large export benefits to the United States at the same time as providing economic, environmental, and security benefits to our partners.



THE EXPORT - IMPORT BANK OF THE UNITED STATES

OFFICE OF THE CHAIRMAN

September 22, 1999

MEMORANDUM

TO: Assistant Secretary of Commerce Mike Copps

FROM: Jeffrey S. Glueck, Assistant to the Chairman

SUBJECT: ETWG (Environmental Trade Working Group) & the ETEPI (Environmental Technologies Exports Promotion Initiative)

Ex-Im Bank Support for the Initiative

Ex-Im Bank supports the goal proposed by the ETWG of dramatically increasing, even doubling, US environmental technologies exports between 2001 and 2004. Ex-Im Bank has placed a high priority on this sector; indeed it is the only industrial sector to which the US Congress has specifically mandated Ex-Im Bank give special support. Congress added the promotion of environmentally-beneficial exports to Ex-Im Bank's Charter in 1992, in recognition of their double value, supporting high-paying jobs while bringing global benefits from a cleaner environment.

We must answer the question, however, of how we propose to accomplish this radical shift; the goal cannot be reached by relying on simple "business as usual" trend lines. From Ex-Im Bank's point of view, progress will require not only enhancements on our part, but also significant changes in the practice of other agencies, including the Commerce Department, DOE and EPA.

At the same time, we cannot forget that in the final analysis, US environmental exports depend less on US government actions than on external factors, including: (1) the initiative of private US firms and associations, (2) the domestic policy decisions of foreign countries (enforcement of pollution controls, market access and trade liberalization, etc.), and (3) the vagaries of international growth rates (e.g., Asian power projects, both clean and otherwise, will be slowed by a medium-term glut of energy following the financial crisis).

ETWG's Four Questions

The ETWG meeting of June 10 resulted in a request for specific answers to four questions in designing the ETEI.

1. *What countries and regions should be targeted?* Our suggestion would be to work closely with the private sector environmental trade groups (ETTAC, and a broader set of associations) to define priorities; we felt some discomfort with the US government deciding this unilaterally. As well, we assume that the Commerce Department experts should inform the decision with their projections for which countries will have the highest demand levels for various categories of environmental goods and services (we would appreciate being directed to this data, to the extent it is compiled in one easily comparable place). Still, our unscientific opinion would suggest:
 - **Latin America:** This region is by far the leader in environmental purchases financed currently by Ex-Im. Argentina is first in transaction number, and Venezuela in transaction value (over \$300M in the last three years, mainly wastewater treatment). For growth prospects, a focus on Mexico and Brazil makes sense; these are Ex-Im's two largest markets in the world for general Ex-Im financing, and they face severe environmental needs.
 - **Eastern Europe:** These countries, particularly Czech Republic, Hungary, and Poland, are preparing for EU accession and improving environmental compliance, and have more purchasing power than many "developing" countries. TDA is already preparing a major conference for this fall, AID has launched its Ecolinks network, and DOE is building its P-H-D network to hunt for smaller projects. Our business development officers report that buyers there express interest, but complain that they are unfamiliar with US technology.
 - **China:** In dollar terms, despite popular imagination, the near-term potential of this market is tiny compared to OECD countries, and it is an infuriatingly frustrating place to do business. We need, however, to continue to push there for sales of US environmental goods and services, particularly clean energy and energy efficiency, because China's size means its energy use profile has great impact on the global environment and US national interests.
 - While these three regions/countries seem logical, other Asian countries (India, etc.) may also bear special attention.
2. *What sectors should the ETEI target?* As above, Ex-Im Bank is reluctant to see the USG reach for a micro-managing style of industrial policy, "picking winners," and so this seems an exercise that requires private sector input.

In our experience, US firms have been strong in air pollution control and monitoring, industrial and wastewater treatment, energy efficiency services (ESCOs), and even in certain renewable energy niches (e.g. photovoltaics, etc.), but this is constantly evolving. Rather than picking sub-sectors far in advance (competitiveness can shift quickly with acquisitions, new strategies, etc.), it would seem better to open incentives for the whole environmental sector, and empower FCS and Embassy staff to spend less time in areas where they discover no US firms seem to have interest or strong credentials (this may require continuous learning rather than two year inflexible workplans). Better data on US world market share by sub-segment would facilitate this, if widely shared in the USG. If this does not exist, Commerce

should ask for the funding to obtain it.

- Rather than select sectors or countries, however, it may be more valuable to decide the project sizes we will target, in particular to add more focus on **small business exporters**. Large businesses already have field networks and know of opportunities. For them, USG diplomacy may help ensure a level playing field in tenders, and has a role. Yet explosive growth in exports will only come if the USG (or private associations) can help US smaller businesses bridge their information gaps on opportunities abroad, as well as potential representatives and distributors overseas.

3. *How will Ex-Im Bank contribute to the plan based on current funding?* Ex-Im Bank today supports US environmental exports in a variety of ways:

- Environmental Export Program (EEP). Ex-Im is the only export credit agency (ECA) in the world to offer special incentives for environmental projects, including longer terms on loans and guarantees, financing of certain local costs, and capitalization of interest during construction.
- Environmental Business Development. Ex-Im is the only ECA in the world to have a dedicated staff (unfortunately, just one person) for promoting environmental exports.
- Environmental Guidelines for all Large Projects. Because Ex-Im Bank's Engineering and Environment Division has established procedures for reviewing major projects and requires projects to meet minimum criteria (pollution control, etc.), buyers often have to upgrade their projects to remain eligible for Ex-Im financing. Just in the past four years, over \$50 million in *extra* sales for US companies has resulted from such project additions and re-designs.
- Marketing MOU's. Ex-Im Bank has signed four well-publicized MOUs in the last two years for environmental credit lines, including with China, Colombia, Poland, and the Province of Buenos Aires, for amounts totaling over \$350M. These frameworks urge cooperation in promoting the availability of Ex-Im financing to public and private buyers, but do not promise more favorable credit terms.

4. *What could Ex-Im contribute in the event of additional funding?* We have set out below proposals for the ETEI in three areas:

- Enhanced Ex-Im Marketing and Outreach
- Innovative Financing Structures
- Improved Coordination among Agencies

A small amount of additional resources (approximately \$500K per annum in the administrative budget and \$14M in program budget¹) for Ex-Im in FY'01 could yield sizable dividends for US industry. The administrative budget funds would be used particularly for overseas deployment of Ex-Im representatives and an expanded

¹ Budget assumptions explained below.

travel budget, to put resources in the field capable of explaining our financing programs and their benefits to potential buyers and sellers.

A three-pronged ETEI strategy is described below:

A. Enhanced Ex-Im Marketing and Outreach

The proposed \$0.5M in additional funding would principally fund a more intensive *outreach campaign* to support US environmental exports—sales in this area are particularly dependent on access to reasonable financing (rates and terms), and yet many overseas buyers and small exporters are unaware of Ex-Im programs. Funding would enable us to:

- Add 1-2 additional business development staff in the US for outreach to US environmental exporters, and accompanying trade missions abroad.
- Increase the travel budget for environmental business development. There are many opportunities for our presence at trade shows and conferences that we do not attend for lack of budget, and many smaller companies still do not know us.
- Train FCS, FSN, and economic officers abroad, especially in Asia, for Ex-Im business development, both in the US and at post.

In addition, Ex-Im Bank, if its budget requests for FY2000 and FY2001 are fully funded by Congress, could deploy six or more international representatives to work in coordination with FCS and other USG actors to stir up interest among potential buyers. While these would not concentrate exclusively in environmental, health, and safety areas, these areas would be priorities. These trade finance specialists will be able to explain sometimes confusing financial offerings and train Embassy and related staff in ways not otherwise achievable. Anticipated locations include Mexico, Brazil, Eastern Europe, China, and Africa.

B. Innovative Financing Structures

Because many environmental investments are not inherently profit-generating (e.g. most pollution control), or promise financial returns which may not be as attractive as alternative uses of capital (e.g. renewable energy), sensitivity to financing terms among environmental buyers runs particularly high.²

² The importance of financing is only magnified by the nature of OECD Helsinki Arrangement rules which bind Export Credit Agencies, and have re-directed “tied aid” concessional financing towards “commercially non-viable” projects such as renewable energy or flood control. Hence US exporters in many environmental and energy-related fields face competitors backed by foreign government-subsidized financing, designed to favor foreign firms. Most US exporters are familiar with US Ex-Im Bank’s willingness to match foreign tied aid offers, although they may not be familiar with recent policy changes which make it easier for Ex-Im to approve matching offers, particularly in Africa. (For background on tied aid policy, see www.exim.gov/tiedaid.html).

Ex-Im Bank is considering creative solutions which may help expand the willingness of foreign buyers to "think USA" in purchasing decisions.

Foreign Currency Guarantees (FCG's): Under current policy, Ex-Im can provide guarantees on financing on a variety of "hard currencies," including Yen, Marks, and Euros. The Treasury Department recently authorized Ex-Im Bank to include for the first time a "medium hard" currency, the South African Rand (widely used for trade in Africa).

Unfortunately, few people inside or outside the USG are aware of our FCG capacity. This may be attractive to buyers for various sound economic reasons, including risk management (matching debt and income streams). Additionally, some buyers are susceptible to so-called "interest rate illusion." Market rates in Japanese Yen, for instance, run around 2%, while the best market rates in the US fall around 7%. Some buyers, particularly state-owned entities, prefer lower interest rates even when one explains that these rate differentials incorporate the market's view of expected exchange rate movements. We are particularly hopeful FCG's will be helpful in countering Japanese tied aid offers of 0.75% financing to countries such as China, to the extent that US technology appears superior in specific areas and "worth the difference."

With FCG's, Ex-Im Bank covers repayment risk, *not* exchange risk, so the budget cost to the US taxpayer (in loss reserve requirements) is lower. Despite their lower cost, FCG's are probably not be the right tool to catalyze a *dramatic* increase in environmental exports. This may require Ex-Im Bank to begin limited "local currency" financing, which in practice means assuming some exchange risk. Project sponsors in developing countries may be averse to purchasing foreign technology because this means foreign currency debts, which might rise overnight in value in the event of a devaluation, particularly problematic if the buyer's revenues are denominated in local currency (e.g. Indian rupee or Malaysian ringgit). Already the UK's ECGD is announcing willingness to finance in local currency for many of their Commonwealth partners. FCG's are less effective in this area, because FCG's are dependent on finding private banks willing to make medium-term loans in those currencies (again, in an FCG, the bank takes the currency risk, not Ex-Im); few private banks are willing if the buyer wants loans in "softer," local currencies.

Local Currency Financing (LCF): Thus a more aggressive solution would have Ex-Im branch into local currency financing for environmental exports, at least those areas which promise "global" environmental benefits, such as clean energy and energy conservation.

To the extent OMB and Treasury concerns (particularly about budget cost) can be met, we could design a structure for particularly important target countries and exclusively for certain environmental exports, in which Ex-Im Bank would assume a capped portion of exchange rate risk. This could be done in ways consistent with current OECD Helsinki

Arrangement rules (no provision now exists to treat local currency financing, for instance, as concessional tied aid). The benefit of LCF is that it would help overcome resistance to adoption of US technology that derives from fears by project owners that potential devaluations will raise their debt loads. Since we are talking about a small fraction of trade credit, the “moral hazard” involved is minimal.

Costing such an effort requires difficult estimations, and is dependent on resolving issues with OMB around methodology for calculating budget cost. The current Black-Scholes option pricing method is open to criticism that it only charges for increased exposure risk in the event of devaluation, but not for potential decreased exposure if a currency appreciates.

To arrive at the \$14 M figure of incremental program budget for FY’01, we assumed that if environmental exports doubled in three years, the amounts financed by Ex-Im would similarly double. In the last two years, financing of environmentally-beneficial projects has around \$180M-\$210M annually, so we would assume EEP authorizations would grow to \$360M by FY’03. Half of this growth would come at a 10% budget cost under normal US dollar financing with environmental enhancements, while the other half under the new local currency scheme, with estimated 35% budget costs.

Year	Budget Cost (est.) for Environm. Projects
‘00	Baseline ³
‘01	Baseline + \$14M
‘02	Baseline + \$28M
‘03	Baseline + \$40M

Ex-Im could of course try to expand environmental financing without new program budget allocations, but this risks “crowding out” other sectors from the limited pot, including aircraft, mining, conventional power development, etc.

C. Improved Coordination among Agencies

The recommendation that would cost nothing may actually yield the greatest benefit, which implies a more cooperative and proactive effort among USG agencies.

1. **The government should emphasize more the role of “networking facilitator” for sellers and buyers.** For instance, Ex-Im’s experience has been that we receive more actionable referrals from OSTP and the EPA Office of Innovative Technologies than from the extensive FCS network. Commerce, EPA, DOE, TDA, OPIC, and Ex-Im

³ Budget cost of approx. \$20M in FY’98 and FY’99 (based on assumption of 10% of authorized amounts), although budget cost has run as high as \$40-\$50M for environmental projects in FY’95 and FY’96, when renewable power project sales were more frequent, in part due to oil prices being higher.

need to work together closely in arranging targeted conferences which create forums for contacts between US private firms and foreign buyers, and support powerful demonstration events. We do find that USEAC officials in a decentralized way generate referrals, but FCS officers need to call more on smaller international customers to let them know of US offerings, even if this means workplans for market reports may need to be extended.

2. **Agencies need to inform and invite each other to participate, and educate front-line people on relevant programs of other agencies.** There is a limit to the amount of time agencies should spend coordinating, but we have not reached it. To simplify communication, an environmental email network of key figures in ETWG agencies may work better than more meetings.

- By way of example, DOE and Ex-Im recently discovered that while we are partners in the China Clean Energy Program, parts of DOE were funding bilateral conferences with Chinese clean energy buyers and sending technical delegations to Beijing without informing Ex-Im. DOE leaders have promised to correct this and pledged to host an internal event where DOE staff could become more informed of the initiative. Even the best intentions from front offices do not filter down automatically.
- TDA has been more proactive in recent months, inviting Ex-Im to its very well-run conferences, and Ex-Im's Chairman has set a goal that Ex-Im attend more of these events than in the past.
- EPA has promised to include periodically Ex-Im in its department-wide China conference calls in the future, which should be beneficial.
- Ex-Im Bank can do more to be user-friendly and speed case processing, which will motivate other agencies to recommend us more; the Board is examining in particular how to accelerate post-approval credit administration.

3. **Diffuse Best Practice for Trade Events and Conferences.** We have seen some world class international events organized by agencies, and more can be done to ensure these become the norm.

- *Sales Pitch:* Too often US government seminars focus on the presence of government programs rather than their benefits, the practical and unique value they provide, with case studies.
- *Shared Planning:* Seminars must include DOC, EPA, Ex-Im Bank, TDA, and OPIC in their planning at some stage, as well as private trade associations.
- *Demonstrations:* The recent PCAST report emphasized that the diffusion and demonstration stages represent the biggest gap in USG support for clean energy progress. We constantly hear from foreign customers that they are unfamiliar with US technology. A great model for this exists in the EPA's Office of Technology Innovation (OTI):

- ❖ A recent OTI conference in Argentina demonstrated a variety of U.S. environmental technologies at a contaminated property in Buenos Aires (a YPF refinery). The Conference drew more than 470 participants from the public and private sectors in Argentina, an excellent venue for the 14 U.S. environmental technology vendors present. Ex-Im Bank presented its environmental finance incentives, and applications for several deals were received within a week of the event.
4. **Target small business exporters.** Large business already know about US federal programs and the large deals abroad attract attention more or less on their own. On the other hand, small business is less aware of foreign opportunities, or potential representatives for their services. The GTN network built by USAID holds great promise, and more inter-agency synergies are possible in capitalizing on its information.⁴
 5. **Solve the World Bank trust fund issue,** as suggested by the PCAST report. Other countries provide pools of grant financing at the World Bank for project managers to hire consultants and engineering firms to prepare specs and tenders. These *tied* trust funds in practice allow foreign governments to bias the designs towards foreign suppliers. Getting US firms involved earlier in the planning stages at the World Bank may yield substantial improvements in US procurement success there and similarly at other MDB's.
 - ❖ As the PCAST report emphasizes, the grants of the Global Environment Facility (GEF), housed in the World Bank offices, provide the optimal mode of incentivizing clean energy demonstration and deployment projects in the developing world. Most GEF projects in the energy area (such as the upcoming \$200M China Efficient Boiler Project) operate through the World Bank and IFC, which in turn have stated they seek additional sources of financing. Ex-Im Bank and other ECA's, operating fairly through international competitive tenders, can step in to act as a co-financier if private lending is not available.

While this memo provides a long read, we hope the substance—developed in wide consultation within Ex-Im Bank—stimulates a productive dialogue in the ETWG, and we look forward to responses and suggestions.

⁴ For instance, Ex-Im Bank would like to organize itself to track new buyers and exporters that appear active on the GTN system, and automatically generate a letter to them informing them of the availability of Ex-Im financing for developing/transition country buyers, as something that can be introduced during a sales pitch.

International Clean Energy Initiative

Draft

Budgets are staff-level estimates and have not been formally reviewed or approved by the Agencies

	PRINCIPAL ACTIVITIES*	AID	DOE	EPA	TRADE	TOTAL
Efficient Buildings	Building Shells: develop/adapt/implement building energy design tools/codes/standards Building Equipment/Appliances: develop/adapt/implement codes/standards/labels Stoves: Develop cost-effective biomass-fueled stoves 2x efficient and 0.1x as polluting	7.0	7.5	2.0	1.5	18 (+2 stoves?)
Combined Heat and Power	CHP: Develop/adapt site selection tools, data; identify sites; conduct feasibility studies	2.4	5.4	0.2	2.0	10
Efficiency Industry	Technology Roadmaps: develop/implement roadmaps for energy-intensive industry Best Practice Program: establish program to extend US info/tools on motors, steam, etc	2.5	3.0	2.5	2.0	10
Efficient Transport	Advanced Vehicles: RD&D on 2- & 3-wheelers and buses, esp. hybrids and fuel cells Emissions testing: technical/policy assistance and training on vehicle emissions testing Transportation Planning: RD&D on best practices, including system design/modeling	2.0	6.5	9.6	1.5	19.6
Fossil Energy Supply	R&D: Gas Hydrates; Gas-to-Liquids; Hydrogen Production and Use; Sequestration Methane Leakage Reduction/Recovery: from gas pipelines; coal-bed methane Environmental benefits analysis; environmental standards for oil and gas operations	1.0	14.2 (+26)	6.0	2 (+2)	23 (+28)
Nuclear Energy Supply	International NERI; ATW; Generation IV Reactor; PbBi Coolant Technology; isotopes Student Exchange Program: provide training under INERI Nuclear Energy Plant Optimization: improve cost/performance of operating reactors Reactor Safety: technical assistance to regulatory institutions to improve safety/security	3.0	7.0 (+18)	0	0.5	10.5 (+18)
Renewable Energy Supply	Resource Assessment: develop tools/databases and assess country renewable resources Biomass: develop feedstocks; industrial scale power/fuels/coproducts; small systems Grid-Systems: RD ³ on distributed, grid connected PV/Wind/storage/...; screening tools Off Grid/Mini-Grid: RD ³ on village/remote renewable energy applications/systems	16.	12.	8	4	40
Capacity Building	Data and Analysis: Country-specific macro energy models; microeconomic analyses Regional Energy Innovation Networks: Voluntary Programs Institute; tech verification Institution Building: technical/policy assistance/training for energy sector RD ³ /policy	12	4	4.2	0	20.2
Energy Sector Reform	Power/Gas Sector Restructuring/Policy Reform: assistance for legal/regulatory reform Gas Grid Development: assistance for establishing evolutionary regulatory frameworks	14	3	3	1	21
Demonstration and Buy-down	Demonstration Support Facility: tbd? Clean Energy Technology Obligation: ? partial grant financing under CETO structure	4	0	0	3.3	7.3 (+33?)
Finance	Technical Assessments: identification and prefeasibility analysis of potential projects Feasibility Studies: detailed feasibility analyses of projects. Market Based Financing: tbd MDB Technical/Financial Assistance: trust fund support of MDB clean energy projects International Market Development: training in energy sector private market/finance	3	2.5	2.5	29.1	37.1
TOTAL		66.9	65.1 (+44)	38	46.9 (+2)	216.9 (+81)

(Funding levels) in parentheses are agency proposals above the PCAST recommended levels.

*All sectors include a strong deployment and market development component, not explicitly listed with these activities.

INTERNATIONAL CLEAN ENERGY INITIATIVE

The President requested OSTP to lead the definition of an interagency clean energy technology development and export initiative based on the recently published PCAST *Powerful Partnerships* analysis. Enhanced investment in this area is expected to generate high-value jobs and income in the United States; open very large international market opportunities for U.S. industry (with total global market value of perhaps \$10 trillion over the next 20 years); support international development; and reduce the local, regional, and global environmental impacts of energy supply and use. This initiative is an important example of how protecting the environment and growing the economy can be mutually supportive. Achieving these benefits requires near-term action:

- A major round of energy sector restructuring is currently underway in countries around the world; it will probably be largely completed in the next 10 years. Technical and policy assistance now can ensure that this restructured environment allows for clean energy development and is open to U.S. exports.
- Energy technology markets are growing rapidly, with developing countries projected to account for two-thirds of global growth over the next 20 years and markets outside the United States accounting for 90% of global growth. In a number of important cases, U.S. companies must capture a significant portion of these markets to survive.
- The buildings, industry, transport, and energy supply infrastructures typically last 40-80 years or more. Failure to shift to clean energy technologies will leave polluting infrastructure in place through much of the next century. Failure to capture markets now forecloses opportunity for decades.

Initiative Structure: This initiative, building on the PCAST report, is designed to provide a coherent and systematic process for developing clean energy technologies in partnership with the private sector and foreign counterparts, demonstrating the technologies, driving down their cost through competitive mechanisms, and facilitating private sector finance of their large-scale deployment. The foundations for these actions include support for in-country policy reform that can open markets and attract private capital while protecting the public interest as well as for in-country capacity building.

Participants and Funding: \$250 million of new funding is proposed for the first year of the initiative, growing to \$500 million in year 5. Agency roles are based on their technical and international expertise:

- USAID activities build on its extensive network of missions to support technology development, demonstration, and deployment in the country, and its long-term experience with policy reform and capacity building.
- DOE activities focus primarily on Research and Development, building on their expertise in energy technology development, demonstration, analysis, and policy as well as experience with innovative financial mechanisms such as Energy Service Performance Contracting.
- EPA activities build on their environmental expertise—analytical, technical, and policy—as well as experience with non-regulatory approaches such as the Energy Star programs.
- Department of Commerce and the Trade Agencies—Export-Import Bank, Overseas Private Investment Corporation, and the Trade and Development Agency—provide a complementary mix of project analysis, development, finance, and trade supports to spur strong exports of these clean energy technologies.

DRAFT

International Clean Energy Initiative

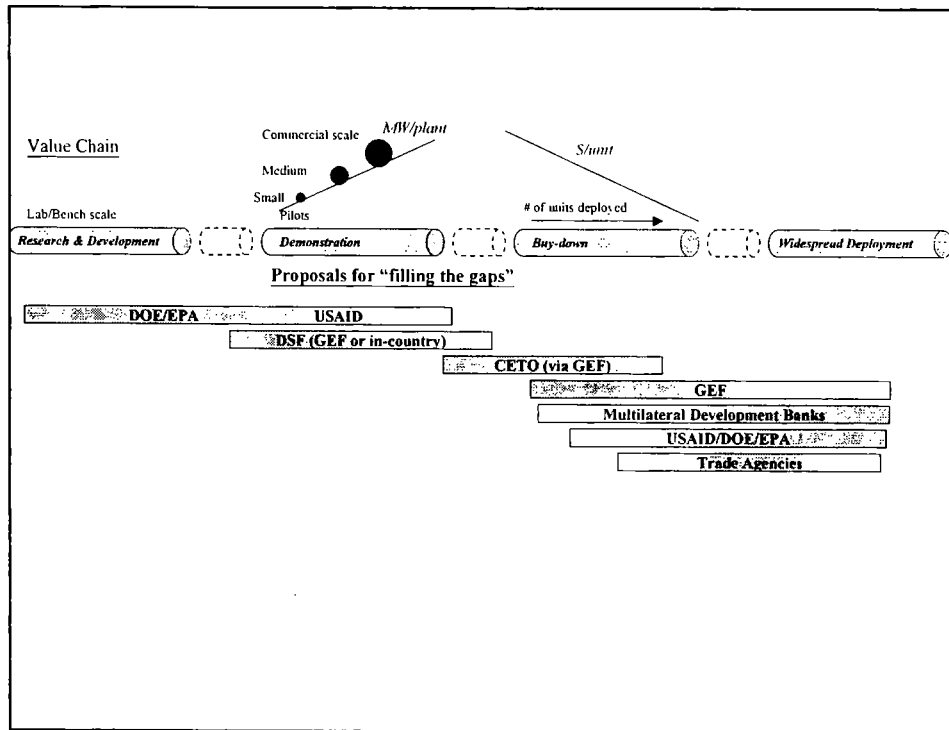
NSTC Working Group Principals Meeting

November 22, 1999

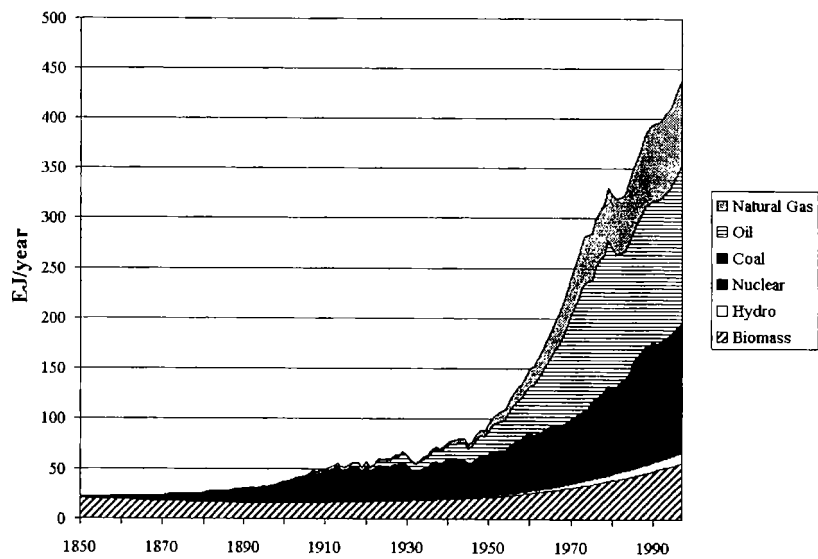
Development of the Inter-Agency Initiative

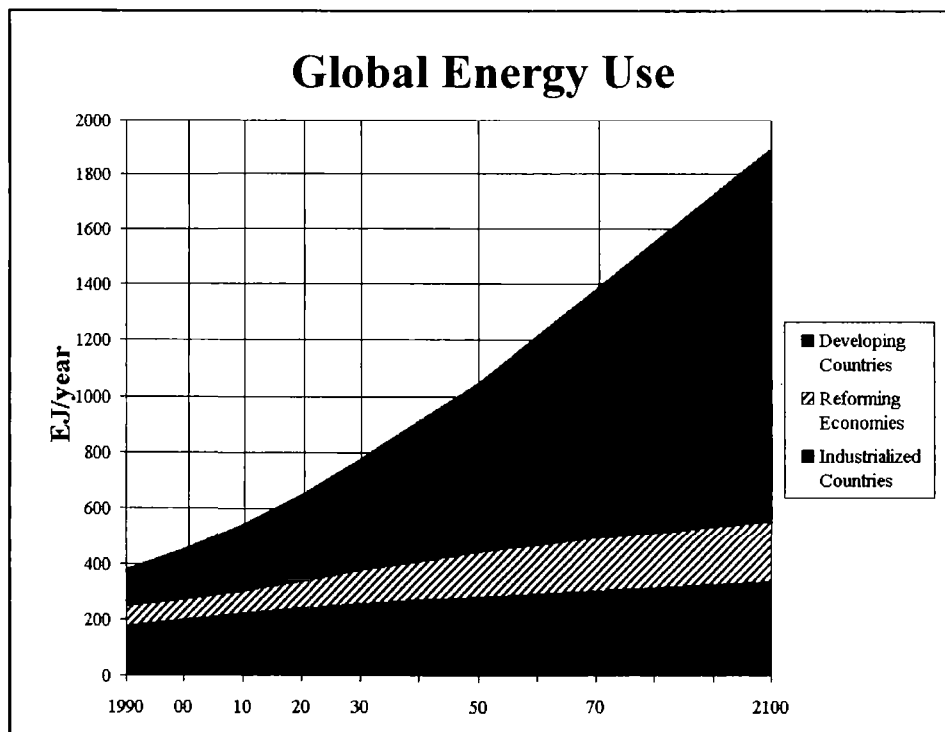
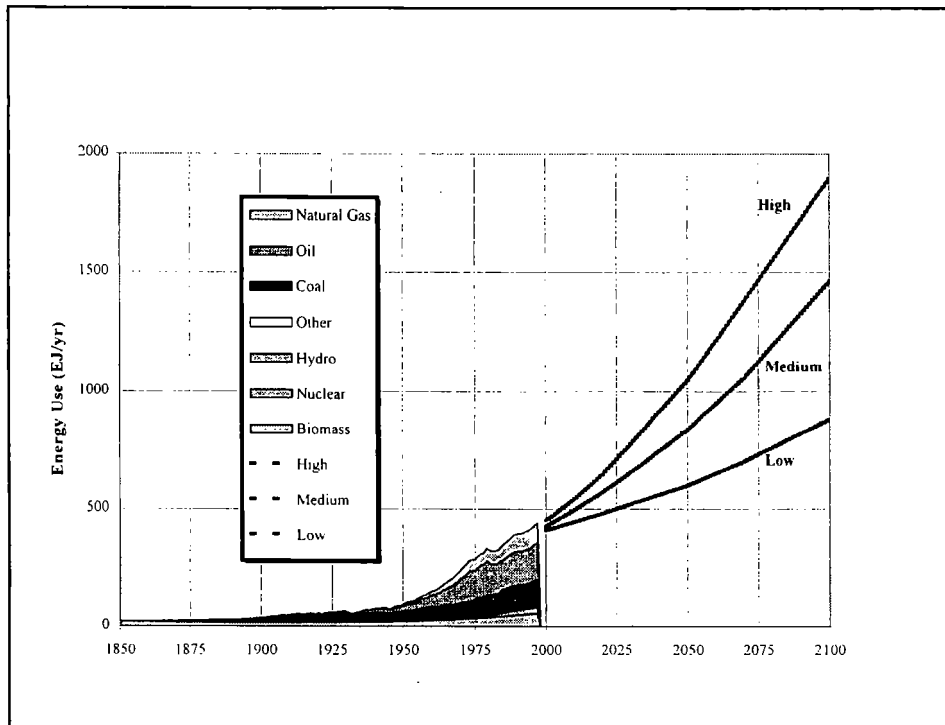
- **PCAST, *Powerful Partnerships*.**
 - Conducted extensive independent external review of agency activities.
 - Met with U.S. industry, academic, NGO, foreign experts.
 - Developed proposals for integrated RD³ pipeline and budgets based on current activities and PCAST-97 recommendations, private sector roles, highest leverage, balance across the portfolio, etc.
 - A Consensus Report.
- **Agencies**
 - Were requested to review programs, capabilities, capacities, and develop proposals in response to the PCAST recommendations.
 - Many good ideas proposed; total budgets well above PCAST recommendations.
 - Proposals winnowed to reduce overlaps, build on Agency capabilities and capacities, link across Agencies to build the RD3 pipeline.

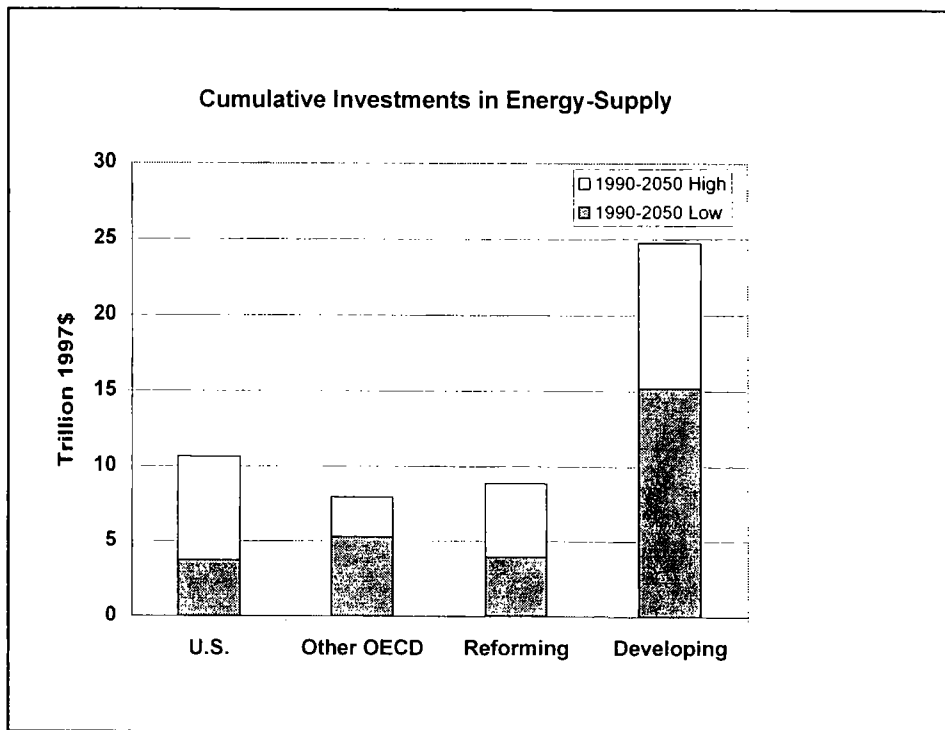
Work remains to clarify agency roles/responsibilities, capabilities/capacities, budgets, metrics, interagency linkages, etc.



World Primary Energy Supply by Source, 1850-1997







Global Energy End-Use

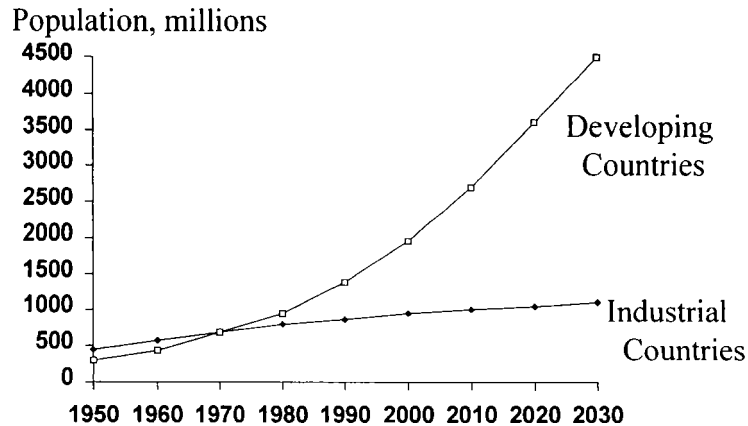
End-Use Primary Energy Consumption, 1992, ExaJoules

Sector	Industrial Countries	Transition Countries	Developing Countries	World
Buildings	66	22	25	113
Industry	60	32	43	134
Transport	39	9	14	63
TOTAL	165	63	82	311

Source: WEC, 1995

- Early industry development as countries build their infrastructure.
- Rapid development of the buildings sector.
- Later development of transport sector, driven by early corridor lock-in.

Urban Populations, 1950-2030



Efficient Buildings

- **Goal.** Cut energy use in new buildings by 50% over next 20 years.
- **Building Shells.** DOE to develop/adapt/demonstrate whole building energy design tools to country; develop/implement building codes/standards. X
- **Building Equipment/Appliances.** DOE to develop/adapt/demonstrate building equipment/appliance energy efficiency codes/standards/labels. X
- **Widespread Deployment and Market Development.**
 - USAID to provide in-country policy/program assistance for implementation.
 - DOE to provide training in Energy Savings Performance Contracts.
 - (EPA?) to support development of Energy Star-like branding programs.
 - DOC/TDA to support trade missions, feasibility studies, other export supports.
- **Biomass Stoves.** (EPA?) to provide technical assistance to develop cost-effective biomass-fueled stove with 2x efficiency and 10x lower emissions. X

Note that all activities in the entire initiative are undertaken as cost or in-kind partnerships with counterpart countries, and that the U.S. provides technical/other assistance in cooperation with the private sector and other stakeholders.

Note that the EPA role is uncertain.

Combined Heat and Power

- **Goal:** Encourage maximum use, where appropriate, of CHP with a goal of developing 20% of new generating capacity in developing countries from CHP.
- **CHP:** DOE to develop/adapt CHP site selection/design tools; develop in-country data; support information/education programs; conduct prefeasibility assessments; develop standards that ensure US companies can compete fairly in the market.
- **Widespread Deployment and Market Development**
 - USAID to address legal, regulatory, permitting, and market barriers to CHP.
 - (EPA?) to provide technical assistance evaluating environmental performance.
 - DOC/TDA to support trade missions, feasibility studies, other export supports.

Efficient Industry

- **Goal.** Reduce energy intensity of major energy using industrial processes over next two decades by 40% compared to current performance.
- **Technology Roadmapping.** Develop/implement technology roadmaps in developing countries in partnership with U.S. industry.
 - DOE to facilitate development of technology roadmaps.
 - (EPA?) to assist technically on environmental performance for roadmaps.
- **Best Practices.** Establish an industrial best practices program.
 - DOE to extend /adapt U.S. information/tools on motors, compressed air, steam.
 - (EPA?) to assist in establishing environmental performance benchmarks.
- **Widespread Deployment and Market Development.**
 - (EPA?) to assist in establishing regulatory/voluntary programs.
 - USAID to provide in-country support, including training, partnership assistance; address legal, regulatory, permitting, and market barriers to efficiency.
 - DOC/TDA to support trade missions, feasibility studies, other export supports

Efficient Transport

- **Goal.** Develop/demonstrate clean, efficient 2- and 3-wheel vehicles and buses; assist planning of efficient transportation systems, mass-transit systems, and related land-use planning.
- **Advanced Vehicles and Buses:** DOE to conduct cooperative RD&D on 2- and 3- wheel vehicles, buses, especially fuel-cell and hybrid systems.
- **Vehicle Emissions Testing.** (EPA?) to provide technical/policy assistance and training on vehicle emissions testing.
- **Transport Planning.** (EPA?) to assist RD&D of best practices for transportation planning, including needs assessment, system design and modeling tools, information and training.
- **Widespread Deployment and Market Development.**
 - USAID to provide in-country technical, policy, program, and partnering support for advanced vehicles and buses, and for transport planning program.
 - DOC/TDA to support trade missions, feasibility studies, other export supports

Fossil Supply

- **Goal.** Develop fossil-fuel decarbonization and carbon dioxide sequestration technologies that will eventually make possible economic use of fossil fuels with near-zero lifecycle carbon dioxide emissions and near-zero pollutant emissions.
- **Gas hydrates.** DOE to assess/monitor marine/arctic hydrates, production at 2 sites.
- **Gas-to-liquids.** DOE to complete feasibility study for arctic GTL center; detail designs and initiate long lead-time fabrication and site/structure development.
- **Low-cost hydrogen.** DOE R&D on membranes/catalysis/reformers for hydrogen production; R&D on hydrogen fueled turbines with sequestration.
- **Carbon sequestration.** DOE RD&D on geological sequestration, possible in deep coal-beds, and in novel (unspecified) sequestration concepts.
- **Methane leakage.** EPA to support methane leakage reduction/recovery from natural gas/petroleum systems; coalbed methane recovery.
- **Environmental benefits.** EPA to analyze costs/benefits of cleaner fossil fuels.
- **Environmental standards.** DOE to develop regional standards for oil/gas operations
- **Widespread Deployment and Market Development.**
 - USAID to provide in-country policy support for reforms for coproduct strategies
 - DOC/TDA to support trade missions, feasibility studies, other export supports

Nuclear Supply

- **Goal:** To preserve/enhance possibility that nuclear power could play an expanding role addressing climate change and other energy-linked challenges in 21st century.
- **International NERI:** DOE to strengthen NERI's international program element
- **International student exchange:** DOE to create student exchange in NERI
- **Reactor safety/security:** USAID passthrough to NRC to provide technical assistance to nuclear regulatory institutions to improve safety/security of reactors.
- **Nuclear Energy Plant Optimization:** DOE to extend US NEPO program internationally to improve cost/performance of operating reactors in other countries.
- **Market development:** DOE to promote cooperation in nuclear energy sector, including commercial solutions for waste disposal and nuclear project cost reduction
- **Accelerator transmutation of waste:** DOE R&D on ATW and materials.
- **Generation IV reactors:** DOE R&D on proliferation-resistant reactor design.
- **Lead-Bismuth coolant technology:** DOE R&D with Russia on Pb-Bi tech.
- **Medical isotopes:** DOE R&D to broaden availability/variety, lower cost of medical isotopes

Renewable Supply

- **Goal:** accelerate development/deployment of renewables to contribute to world energy supply by 2025-2050 at levels comparable to those of fossil fuels today.
- **Resource Assessment.** DOE to develop/adapt tools/databases; USAID to support country assessments.
- **Bioenergy.** USAID to identify potential bioenergy feedstocks; (EPA?) to examine their environmental benefits and sequestration potential.
 - DOE to conduct RD&D on industrial-scale power/fuels/co-products systems for developing countries; RD&D on small-scale biomass power systems.
 - EPA to expand US Landfill Methane Outreach Program internationally.
- **Grid-connected power.** DOE RD&D on distributed, grid-connected PV/wind/etc. and storage; develop screening tools for identifying good sites.
- **Off grid/minigrid power.** DOE RDD on village/remote applications/systems
 - EPA to support pilot demonstrations of hybrid village systems.
- **Widespread deployment and market development.**
 - USAID to provide in-country technical/programmatic support for biomass, grid, and off-grid/minigrid demonstrations, and link them to widespread deployment.
 - DOC/TDA to support trade missions, feasibility studies, other export supports
 - EPA to develop tools/conduct country assessments of pollution reduction.

Capacity Building

- **Data and Analysis.** DOE to develop country-specific macro energy models and in-country capacity to conduct microeconomic analyses of technologies and policies.
- **Regional Energy Innovation Networks.**
 - (EPA?) to create on-line registry of regional clean technology centers;
 - (EPA?) to develop International Voluntary Programs Institute to provide information resources/training for activities such as the Energy Star program
 - (EPA?) to expand domestic Environmental Technology Verification program.
- **Institution Building.**
 - USAID to support technical/policy assistance/training for energy sector restructuring such as privatization, technology options analysis, market analysis
 - DOE to strengthen technical knowledge, R&D capabilities, through building long-term relationships between US laboratories and foreign counterparts, strengthening capability to do monitoring/evaluation of energy projects
 - (EPA?) to support government-government partnerships to identify/promote key clean energy technologies by addressing market barriers and facilitating private sector activities.

Sector Reform

- **Power and gas sector restructuring and policy reform.**
 - USAID to provide technical assistance for legal/regulatory reform, institutional development and privatization in the energy sector, including clear/transparent regulations and contract sanctity.
 - DOE to support analysis of social costs of energy production, transport, and use.
 - EPA to estimate price-adders for environmental externalities.
 - DOC to assist formation of a clean energy private power project clearinghouse.
- **Gas Grid Development.**
 - USAID to provide technical assistance for establishing evolutionary regulatory frameworks for gas grids.
 - EPA to assist business-driven partnerships to expand gas use by evaluating economic/environmental potential/impacts and facilitating bilateral projects.
 - DOE to promote the APEC Natural Gas Initiative to identify policy and regulatory principles and best practices.
 - DOC to promote Foreign Direct Investment in restructured gas sector.

Demonstration and Buy-Down

- **Buydown:**

- (??USAID and OPIC) to create partial grant financing of renewable energy and energy efficiency projects through a Clean Energy Technology Obligation type of mechanism, with USAID providing the incremental cost through a grant component and OPIC supporting the baseline project, as needed, with funding for administrative costs and credit funding costs.
- USAID to assist in the design and implementation of a Clean Energy Technology Obligation at the GEF.

ISSUES:

- OPIC/USAID shift to Finance.
- Some demonstration/buydown built into technology RD3 activities.
- Larger scale buydown for efficiency, fossil, nuclear, renewables is expensive.
- Have not pursued tax credit proposals of PCAST to date.

Finance

- **Technical Assessments (prefeasibility).**

- (EPA?) to conduct technical analyses of potential clean energy projects with host country decision-makers to identify opportunities for feasibility analysis.
- DOE to conduct technical assessments of appropriate mix of renewable and other technologies to meet their development strategies, resources, etc.

- **Feasibility Studies.**

- TDA to identify/inform US firms about project opportunities through definitional missions; to support feasibility studies; etc.

- **Market-based Financing.** to be determined. (USAID and OPIC?)

- **MDB Technical and Financial Assistance.**

- TDA to further encourage MDBs to increase financing for clean/efficient energy technology; support activities with trust funds for using US experts.

- **International Market Development**

- USAID to train country policy makers/entrepreneurs in energy-sector lending.
- DOC to conduct seminars/workshops for market-based finance of renewables; develop database of potential International Clean Energy projects.

Portfolio Balance

- **Project Size:** scalability, critical mass.
- **Countries:** Limit to a few large countries; focus on early success (mid-sized countries); target geographic leaders; identify sectoral opportunities; spread risk?
- **Near/Long Term:** Early success; building the foundation for long term leverage
- **End-Use Efficiency/Supply Sectors:** End-Use Efficiency generally gives largest, most cost-effective, and most rapid response. Supply sector near-term opportunities include rural electrification.
- **Agency Capabilities/Capacities:** Agency priorities; Linkages across agencies; Ability to ramp up; Base to build on.
- **Metric:** Metrics for key elements of the initiative to identify/quantify/compare leverage.

Administration Strategy

- New and additional funds? Agencies want to ensure the integrity of their base in FY2001 and in the outyears, particularly if funds are folded into their baselines.
- How to link the International Clean Energy Initiative with others under development? Trucks, Bioenergy, Environmental Exports?

Congressional Strategy

- Link with CCTI or keep separate?
- Build into program line items or keep separate to protect the integrity of the base?

The Window of Opportunity

- **Energy-sector restructuring and regulatory reform** will be largely completed over the next decade and will lock-in the mechanisms determining success or failure in the dual aims of attracting private capital and addressing public benefits;
- **Rapid Urbanization** will lock-in decisions about urban transportation networks, building design, and overall land-use--for a century or more
- **Time requirements for moving new technologies** through the innovation pipeline means that to affect deployments in the 2020s-2040s, the research has to be done in the next decade;
- **The technologies deployed in the 2020s-2040s** will strongly influence the trajectories of energy costs, GHG emissions, oil dependence, proliferation resistance, public-health impacts, and much else of the world energy system for most of the next century.

PCAST Revisited

This proposed revision would draw on much of the PCAST work to focus more narrowly on one key sector: electric power. Given that 2 billion people in the developing world now lack access to electricity (development); that growth in this sector over the next 30 years will be responsible for 35% of the global growth in emissions under BAU (climate); and that the US is very competitive in the global electric power market (trade/jobs), it makes sense to focus our efforts here. It also readily lends itself to the “reject the big idea” theme.

We would articulate our program in terms of three technology tracks:

- “Big Joules” - clean coal, CHP, RE, natural gas for grid
- Distributed power – renewables and clean fuels off grid.
- End use efficiency to reduce demand – industry, buildings

Four components of a \$200 million effort might be:

- Technology R&D priorities (EE/RE/FE)-- \$50 million
- Policy reforms and capacity building in key countries -- \$10 million
- Project development support (pre feasibility/feasibility cost shares) -- \$15 million
- Clean Energy Finance: EXIM/OPIC/USAID -- \$125 million leveraging \$1 billion/annum.

This sectoral approach lends itself to establishing metrics for the initiative – e.g., 5 GW of installed clean capacity by 2005, reducing annual GHG emissions by 50 million tons and generating \$2 billion in US exports and trade opportunities.

We should also designate 6-10 key countries where at least 60% of the resources would be spent -- helping get critical mass in key countries and making management easier – while keeping open the option of programs in non “key” countries.

We would pull key elements out of the proposed matrix to fill out each of the four components. The biggest challenge would be the finance proposal. DOE might gripe that some of their priorities (like sequestration) would be lost. OSTP would be OK with jettisoning the tome in favor of a slimmer more tractable proposal.

Roger:

Below are some comments on PCAST and beyond. I think our value added will be in helping package this the right way (simpler message, more tied to trade/investment theme) and generating a centerpiece in the finance area.

PCAST has done a lot of spade work, but the politics and vision of this effort need help if we are to mount a POTUS initiative. Yesterday's meeting demonstrated nervousness/reluctance on the part of agencies about playing this game and concern that the PCAST proposal has too many moving parts, too long term and needs to be brought into sharper focus for the short/medium term. Rosina suggested that if we strayed too far from PCAST recommendations we would lose the support of the business and NGO folks who have been part of the PCAST effort – a stretch at best.

Our message needs to be simpler and bigger. Either we 1) pick a technology sector or two and focus on that (eg electric power and transportation) or 2) we push a broad technology portfolio with a focus on moving the marketplace.

Option 1. The advantage of choosing a sector or two is that it is very concrete and can be talked about in terms of human impacts. It makes the initiative focussed and tangible. Electricity and transport are the two big ones – and we are better positioned to address electricity. We could easily go through the extensive PCAST matrix menu and select a group of programs and make that the initiative. The downside is that we lose some potential allies – and invite issues (nukes) we may not want to face.

Option 2. The message here would be that technology is key and we are going to propose more funding across a range of relevant technologies to help developing countries “leapfrog”. We would NOT propose huge increases in 200 line items in the budget, but more modest increases in several categories. Ernie Moniz was right to suggest yesterday that we need simpler themes rather than the eleven categories used by the PCAST panel. He suggested “Big Joules” (fossil, nukes); Transport; Distributed Generation as repackaging. His characterization downplays renewables (not “big joules”). We might add Bioenergy and Efficiency.

To accelerate commercialization of these promising technologies and promote the jobs/trade agenda, we would add a centerpiece package of finance and feasibility study support to help create “sustainable markets for sustainable energy”. This plays to the structural change /big idea vision.

I think the markets package should be some combination of additional “pipeline” priming (feasibility study cost shares and World Bank trust fund) coupled to a finance package.

The Task Force met yesterday with the coal industry who pitched us on the need for a finance support package for clean (coal) projects. ~~There may be an oppty to~~ The Craig bill calls for EXIM finance (at Treasury rates) for six international projects as an initial demonstration phase of a longer term program. We may well be able to build on that opening.

Options to explore: Pages 22/23 of the Baldwin matrix talks about a Demonstration Buy Down Facility and an USAID/OPIC finance initiative. Jeff Glueck has suggested EXIM could offer exchange rate risk coverage for clean energy projects. Brad Johnson is preparing a paper for next Monday on finance initiatives.

Greening capital flows: the role of ECAs and MDBs.

Privatization and energy sector reforms in the 1990s have dramatically increased the role of private capital and reduced the role of public finance in global energy infrastructure investments. Consequently, the direct role of the World Bank and other multilateral development banks (MDBs) in the energy sector has shrunk over the last decade, while the role of commercial lenders and export credit agencies (ECAs) has increased. The role of the World Bank as a standard setter, however, remains very important; World Bank environmental guidelines continue to serve as the reference case for power project developers (although they do not currently account for carbon emissions).

A strategy to “green” capital flows must focus first on the growing role played by ECAs and commercial lenders.

EXIM: EXIM has had environmental lending guidelines (based on World Bank) in place since 1994 and is the only ECA in the world to offer special incentives for environmentally beneficial projects. The “Environmental Exports Program” provides incentives for clean energy projects (longer repayment terms, local cost support, capitalization of interest during construction) and is considering offering exchange rate guarantees as an additional incentive for clean projects. EXIM also reports the carbon emissions for all fossil projects it finances.

Issue: Could more be done to level the playing field for cleaner energy technologies which have higher up front costs but lower life cycle costs?

G8: Beginning at the Denver G8 summit, the US has led the fight for environmental standards for ECAs. The Cologne summit in June 1999 agreed to work within the OECD for common environmental standards for ECAs by 2001.

Issue: It is unclear how climate considerations will factor in this effort, if at all. How to address local pollutant vs. climate trade offs?

Private lenders: Rather than trying to generate “Sullivan Principles” with project developers or technology vendors like Bechtel or Enron, we should consider going to the people that finance their deals: the banks and insurance companies. This might be attractive to lenders if there were additional public incentives for cleaner projects.

MDBs: While the direct financing role of MDBs has diminished (except for China and lending for transmission), the World Bank and regional MDBs play a critical role in setting guidelines, helping with policy reforms, and supporting non-traditional energy sector lending. The Bank just agreed to a new and greener energy strategy, but still does not include global externalities in lending decision making or environment guidelines.

Issue: Is there a role for the Bank in further “leveling the playing field” for cleaner technologies by establishing a long-term credit facility? Can the US do more to expand clean energy lending through increased use of US experts (trust fund) in bank project development?

Business List:

Ken Lay, Terry Thorn -- Enron

Roger Sant, Roger Naill -- AES

Tony Biddle Smith -- Chase Manhattan

Charles Condry -- Proven Alternatives

Sam Santos -- AIG

Brad Johnson -- Hawkins, Delafield & Wood

Martin Klapper -- Skadden & Arps

Terry Newendorp -- Taylor DeJongh

Larry Pappay -- Bechtel

Steve Schneider -- Southern

Ralph Peterson -- CH2M Hill

??? -- GE

?? -- Siemens

EXISTING COORDINATION AND OUTREACH MECHANISMS FOR CLEAN ENERGY EFFORTS TO PRIVATE SECTOR

White House

1) President's Export Council: the national advisory committee on international trade to advise the President on policies and promote export expansion. The Council reports to the President through the Secretary of Commerce. Current Chairman is Michael Armstrong, CEO of AT&T. Other members are Secretaries of Commerce, Labor, Agriculture, Treasury, State and Energy and the Chair of the Ex-Im Bank, the USTR and the Administrator of SBA. In addition, there are 28 private-sector members (list forthcoming) appointed by the President, including CEOs of energy, chemical, transportation, telecom and banking sectors. United Steelworkers and IBEW are represented on the PEC, plus 10 member of Congress.

PEC meets twice a year. This year's priorities were: trade education, advocating for a balanced approach to sanctions policy; WTO; OECD anti-bribery convention; IMF funding; China; Africa trade initiative; and encryption.

Department of Energy

1) DOE State Energy Advisory Board (STEAB) – DOE has one advisory board relating to clean energy. STEAB was established by law in 1990 to advise DOE on the operation of its federal grant programs and advises on energy efficiency and renewable energy programs. Attached is a memo detailing the responsibilities of the Board and its membership list.

2) Secretary's Ministerial Outreach Efforts

** African Energy Ministerial – scheduled for December 12-14, 1999 in Tucson, AZ. Business/industry outreach includes. Panel on Finance and Investment; Corporate Council on Africa Roundtable with CEOs (list under development.)

** APEC Energy Ministerial – scheduled for May 8-12, 2000. Business/industry outreach in development stage.

3) China Clean Energy Program (financed through Ex-Im Bank) - In March, 1999 the China Development Bank (CDB) agreed to a \$100 million clean energy program. An MOU was signed by US Ex-Im Bank, DOE, and CDB. Under the terms, both DOE and Ex-IM Bank plan to encourage US private industry to work with the relevant Chinese authorities to identify, assess and implement projects to showcase US clean energy technologies.

4) Office of Energy Efficiency and Renewable Energy – EERE administers a \$1 billion plus budget for efficiency and renewables and many of the programs work closely with industry. The five key offices within EERE, all with multimillion dollar budgets are: industrial technologies, transportation technologies, building technologies, state and community programs, power

technologies and federal energy management. A sampling of the types of programs are: [More details and budget numbers are available if desired.]

** *Climate Technology Initiative*

** *Technology Cooperation Agreement Pilot Project (TCAPP)*

** *Energy Star*: created by a partnership between DOE and EPA, the Energy Star program promotes energy efficient products and appliances through consumer labeling.

** *Building America*: in partnership with residential building industry, DOE helps reduce home energy use, construction time, and construction waste by 50 percent.

** *Clean Cities*: voluntary, locally-based government/industry partnership which expands the use of alternatives to gasoline and diesel fuel, accelerates the use of alternative fueled vehicles, and builds a refueling infrastructure.

- 5) Hemispheric Energy Initiative (HEI) Business Forum – The USG is among a major of countries in the Western Hemisphere that participates in the HEI Steering Committee which is comprised of Energy Ministers from the region. This year, the HEI encouraged the region's energy business sector to organize itself into a "Business Forum" with the Steering Committee serving a coordinating role to facilitate a dialogue between the region's public and private energy sectors.

Awaiting word from Dave Festa on this section:

Department of Commerce

- 1) Environmental Technology Trade Advisory Committee (ETTAC) –
- 2) Market Development Cooperation Program (MDCP)

US Agency for International Development

- 1) EcoLinks
- 2) AID-Business Council for Sustainable Energy (BCSE) cooperative agreement

Interagency

- 1) Environment Trade Working Group (DOC, OPIC, ExIm, TDA)

STATE ENERGY ADVISORY BOARD

The State Energy Advisory Board (STEAB) was established by Public Law 101-440 (The State Energy Efficiency Programs Improvement Act of 1990) to advise the U.S. Department of Energy on the operation of its Federal grant programs. The Board also advises on energy efficiency and renewable energy programs in general and on efforts of the Department relating to research and market deployment of energy efficiency and renewable energy technologies.

Specific responsibilities of the Board, by statute include:

- Make recommendations to the Assistant Secretary for the Office of Energy Efficiency and Renewable Energy with respect to:
 - the energy efficiency goals and objectives within the Federal grants programs; and,
 - programmatic and administrative policies designed to stimulate and improve Federal grant program effectiveness.
- Serve as a liaison between Federal and State governments on energy efficiency and renewable energy resource programs.
- Encourage the transfer of research and development results from activities carried out by the Federal Government with respect to energy efficiency and renewable energy.
- Submit an annual report to the Secretary of Energy and the Congress concerning the Board's activities for the prior fiscal year.

MEMBERSHIP

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Indiana Department of Commerce

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Energy and Environmental Study Institute

ECA Environment Mtg 7/12

- Ex-Im was only ECA w/
green standards. But some
developments.

1) "Info Sharing" - if not
guidelines, share
enviro info. Now
OECD resolution

2) G-8 summit calls for
OECD standards. But
how for common
guidelines.

- Steinberg into this.

- Next OECD mtg in September.

Climate

- OPIC/Ex-Im criticized
by NGO's.

- NGO's want ban on fossil/
fuel projects and required
renewable projects.

- On ban, problem is acting
unilaterally and giving up
business opportunities.

- Ex-Im subject to NEPA?

NO; have own rules that
are followed. But no clear
NEPA exemption.

- Don't do EFA unless tangible
environ. harm shown.

- ∴ don't do it on climate.

- question is a policy/
decision, about using U.S.
tax dollars to subsidize
clean technology over coal,
for ex.

EXISTING RELATED INITIATIVES/PROGRAMS

- ETWG (DOC, ExIm, OPIC, TDA, DOE?) (statutory; government only; developing proposals for environmental export initiatives).

Deliver message to the mto focus on energy

- ETTAC (Environmental Technology Trade Advisory Committee); public-private; advises DOC.

- China Clean Energy Program. (DOE)

- Market Development Cooperation Program. (MDCP) (DOC) ????

- USAID "EcoLinks". ???

PEC - Presidents Export Council

- NSTC Working group on PCAST report. ???

11/82 9-11 A.M.

- X • CEQ/NSC/NEC WTO efforts re: environment.

- X • [Same re: APEC?]

- X • Joint effort by ExIm, OPIC, TDA re: developing guidelines for environmentally friendly exports, special funds, etc. ???

- X • Office of Environmental Technologies Exports (ETE), part of ITA at DOC. *Runs ETWG and runs ETTAC*

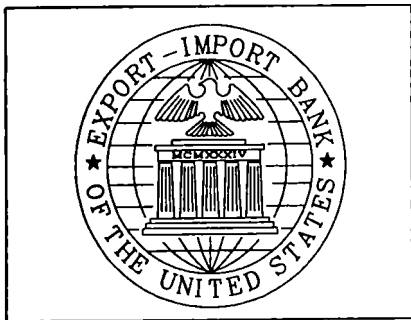
- EPA Climate Protection Division -- Energy Star. [any international angle?]

- EPA intl group (working ETWG)

- [Others]

- IETO - Interagency Environmental Technology Office (CEQ)

- Industry Sector Advisory Committee - ISAC - has energy sector



THE EXPORT - IMPORT BANK OF THE UNITED STATES

OFFICE OF THE CHAIRMAN

September 22, 1999

MEMORANDUM

TO: Assistant Secretary of Commerce Mike Copps

FROM: Jeffrey S. Glueck, Assistant to the Chairman

SUBJECT: ETWG (Environmental Trade Working Group) & the ETEPI (Environmental Technologies Exports Promotion Initiative)

Ex-Im Bank Support for the Initiative

Ex-Im Bank supports the goal proposed by the ETWG of dramatically increasing, even doubling, US environmental technologies exports between 2001 and 2004. Ex-Im Bank has placed a high priority on this sector; indeed it is the only industrial sector to which the US Congress has specifically mandated Ex-Im Bank give special support. Congress added the promotion of environmentally-beneficial exports to Ex-Im Bank's Charter in 1992, in recognition of their double value, supporting high-paying jobs while bringing global benefits from a cleaner environment.

We must answer the question, however, of how we propose to accomplish this radical shift; the goal cannot be reached by relying on simple "business as usual" trend lines. From Ex-Im Bank's point of view, progress will require not only enhancements on our part, but also significant changes in the practice of other agencies, including the Commerce Department, DOE and EPA.

At the same time, we cannot forget that in the final analysis, US environmental exports depend less on US government actions than on external factors, including: (1) the initiative of private US firms and associations, (2) the domestic policy decisions of foreign countries (enforcement of pollution controls, market access and trade liberalization, etc.), and (3) the vagaries of international growth rates (e.g., Asian power projects, both clean and otherwise, will be slowed by a medium-term glut of energy following the financial crisis).

ETWG's Four Questions

The ETWG meeting of June 10 resulted in a request for specific answers to four questions in designing the ETEI.

1. *What countries and regions should be targeted?* Our suggestion would be to work closely with the private sector environmental trade groups (ETTAC, and a broader set of associations) to define priorities; we felt some discomfort with the US government deciding this unilaterally. As well, we assume that the Commerce Department experts should inform the decision with their projections for which countries will have the highest demand levels for various categories of environmental goods and services (we would appreciate being directed to this data, to the extent it is compiled in one easily comparable place). Still, our unscientific opinion would suggest:

- **Latin America:** This region is by far the leader in environmental purchases financed currently by Ex-Im. Argentina is first in transaction number, and Venezuela in transaction value (over \$300M in the last three years, mainly wastewater treatment). For growth prospects, a focus on Mexico and Brazil makes sense; these are Ex-Im's two largest markets in the world for general Ex-Im financing, and they face severe environmental needs.
- **Eastern Europe:** These countries, particularly Czech Republic, Hungary, and Poland, are preparing for EU accession and improving environmental compliance, and have more purchasing power than many "developing" countries. TDA is already preparing a major conference for this fall, AID has launched its Ecolinks network, and DOE is building its P-H-D network to hunt for smaller projects. Our business development officers report that buyers there express interest, but complain that they are unfamiliar with US technology.
- **China:** In dollar terms, despite popular imagination, the near-term potential of this market is tiny compared to OECD countries, and it is an infuriatingly frustrating place to do business. We need, however, to continue to push there for sales of US environmental goods and services, particularly clean energy and energy efficiency, because China's size means its energy use profile has great impact on the global environment and US national interests.
- While these three regions/countries seem logical, other Asian countries (India, etc.) may also bear special attention.

2. *What sectors should the ETEI target?* As above, Ex-Im Bank is reluctant to see the USG reach for a micro-managing style of industrial policy, "picking winners," and so this seems an exercise that requires private sector input.

In our experience, US firms have been strong in air pollution control and monitoring, industrial and wastewater treatment, energy efficiency services (ESCOs), and even in certain renewable energy niches (e.g. photovoltaics, etc.), but this is constantly evolving. Rather than picking sub-sectors far in advance (competitiveness can shift quickly with acquisitions, new strategies, etc.), it would seem better to open incentives for the whole environmental sector, and empower FCS and Embassy staff to spend less time in areas where they discover no US firms seem to have interest or strong credentials (this may require continuous learning rather than two year inflexible workplans). Better data on US world market share by sub-segment would facilitate this, if widely shared in the USG. If this does not exist, Commerce

should ask for the funding to obtain it.

- Rather than select sectors or countries, however, it may be more valuable to decide the project sizes we will target, in particular to add more focus on **small business exporters**. Large businesses already have field networks and know of opportunities. For them, USG diplomacy may help ensure a level playing field in tenders, and has a role. Yet explosive growth in exports will only come if the USG (or private associations) can help US smaller businesses bridge their information gaps on opportunities abroad, as well as potential representatives and distributors overseas.

3. *How will Ex-Im Bank contribute to the plan based on current funding?* Ex-Im Bank today supports US environmental exports in a variety of ways:

- Environmental Export Program (EEP). Ex-Im is the only export credit agency (ECA) in the world to offer special incentives for environmental projects, including longer terms on loans and guarantees, financing of certain local costs, and capitalization of interest during construction.
- Environmental Business Development. Ex-Im is the only ECA in the world to have a dedicated staff (unfortunately, just one person) for promoting environmental exports.
- Environmental Guidelines for all Large Projects. Because Ex-Im Bank's Engineering and Environment Division has established procedures for reviewing major projects and requires projects to meet minimum criteria (pollution control, etc.), buyers often have to upgrade their projects to remain eligible for Ex-Im financing. Just in the past four years, over \$50 million in *extra* sales for US companies has resulted from such project additions and re-designs.
- Marketing MOU's. Ex-Im Bank has signed four well-publicized MOUs in the last two years for environmental credit lines, including with China, Colombia, Poland, and the Province of Buenos Aires, for amounts totaling over \$350M. These frameworks urge cooperation in promoting the availability of Ex-Im financing to public and private buyers, but do not promise more favorable credit terms.

4. *What could Ex-Im contribute in the event of additional funding?* We have set out below proposals for the ETEI in three areas:

- Enhanced Ex-Im Marketing and Outreach
- Innovative Financing Structures
- Improved Coordination among Agencies

A small amount of additional resources (approximately \$500K per annum in the administrative budget and \$14M in program budget¹) for Ex-Im in FY'01 could yield sizable dividends for US industry. The administrative budget funds would be used particularly for overseas deployment of Ex-Im representatives and an expanded

¹ Budget assumptions explained below.

travel budget, to put resources in the field capable of explaining our financing programs and their benefits to potential buyers and sellers.

A three-pronged ETEI strategy is described below:

A. Enhanced Ex-Im Marketing and Outreach

The proposed \$0.5M in additional funding would principally fund a more intensive *outreach campaign* to support US environmental exports—sales in this area are particularly dependent on access to reasonable financing (rates and terms), and yet many overseas buyers and small exporters are unaware of Ex-Im programs. Funding would enable us to:

- Add 1-2 additional business development staff in the US for outreach to US environmental exporters, and accompanying trade missions abroad.
- Increase the travel budget for environmental business development. There are many opportunities for our presence at trade shows and conferences that we do not attend for lack of budget, and many smaller companies still do not know us.
- Train FCS, FSN, and economic officers abroad, especially in Asia, for Ex-Im business development, both in the US and at post.

In addition, Ex-Im Bank, if its budget requests for FY2000 and FY2001 are fully funded by Congress, could deploy six or more international representatives to work in coordination with FCS and other USG actors to stir up interest among potential buyers. While these would not concentrate exclusively in environmental, health, and safety areas, these areas would be priorities. These trade finance specialists will be able to explain sometimes confusing financial offerings and train Embassy and related staff in ways not otherwise achievable. Anticipated locations include Mexico, Brazil, Eastern Europe, China, and Africa.

B. Innovative Financing Structures

Because many environmental investments are not inherently profit-generating (e.g. most pollution control), or promise financial returns which may not be as attractive as alternative uses of capital (e.g. renewable energy), sensitivity to financing terms among environmental buyers runs particularly high.²

² The importance of financing is only magnified by the nature of OECD Helsinki Arrangement rules which bind Export Credit Agencies, and have re-directed “tied aid” concessional financing towards “commercially non-viable” projects such as renewable energy or flood control. Hence US exporters in many environmental and energy-related fields face competitors backed by foreign government-subsidized financing, designed to favor foreign firms. Most US exporters are familiar with US Ex-Im Bank’s willingness to match foreign tied aid offers, although they may not be familiar with recent policy changes which make it easier for Ex-Im to approve matching offers, particularly in Africa. (For background on tied aid policy, see www.exim.gov/tiedaid.html).

Ex-Im Bank is considering creative solutions which may help expand the willingness of foreign buyers to “think USA” in purchasing decisions.

Foreign Currency Guarantees (FCG’s): Under current policy, Ex-Im can provide guarantees on financing on a variety of “hard currencies,” including Yen, Marks, and Euros. The Treasury Department recently authorized Ex-Im Bank to include for the first time a “medium hard” currency, the South African Rand (widely used for trade in Africa).

Unfortunately, few people inside or outside the USG are aware of our FCG capacity. This may be attractive to buyers for various sound economic reasons, including risk management (matching debt and income streams). Additionally, some buyers are susceptible to so-called “interest rate illusion.” Market rates in Japanese Yen, for instance, run around 2%, while the best market rates in the US fall around 7%. Some buyers, particularly state-owned entities, prefer lower interest rates even when one explains that these rate differentials incorporate the market’s view of expected exchange rate movements. We are particularly hopeful FCG’s will be helpful in countering Japanese tied aid offers of 0.75% financing to countries such as China, to the extent that US technology appears superior in specific areas and “worth the difference.”

With FCG’s, Ex-Im Bank covers repayment risk, *not* exchange risk, so the budget cost to the US taxpayer (in loss reserve requirements) is lower. Despite their lower cost, FCG’s are probably not be the right tool to catalyze a *dramatic* increase in environmental exports. This may require Ex-Im Bank to begin limited “local currency” financing, which in practice means assuming some exchange risk. Project sponsors in developing countries may be averse to purchasing foreign technology because this means foreign currency debts, which might rise overnight in value in the event of a devaluation, particularly problematic if the buyer’s revenues are denominated in local currency (e.g. Indian rupee or Malaysian ringgit). Already the UK’s ECGD is announcing willingness to finance in local currency for many of their Commonwealth partners. FCG’s are less effective in this area, because FCG’s are dependent on finding private banks willing to make medium-term loans in those currencies (again, in an FCG, the bank takes the currency risk, not Ex-Im); few private banks are willing if the buyer wants loans in “softer,” local currencies.

Local Currency Financing (LCF): Thus a more aggressive solution would have Ex-Im branch into local currency financing for environmental exports, at least those areas which promise “global” environmental benefits, such as clean energy and energy conservation.

To the extent OMB and Treasury concerns (particularly about budget cost) can be met, we could design a structure for particularly important target countries and exclusively for certain environmental exports, in which Ex-Im Bank would assume a capped portion of exchange rate risk. This could be done in ways consistent with current OECD Helsinki

Arrangement rules (no provision now exists to treat local currency financing, for instance, as concessional tied aid). The benefit of LCF is that it would help overcome resistance to adoption of US technology that derives from fears by project owners that potential devaluations will raise their debt loads. Since we are talking about a small fraction of trade credit, the “moral hazard” involved is minimal.

Costing such an effort requires difficult estimations, and is dependent on resolving issues with OMB around methodology for calculating budget cost. The current Black-Scholes option pricing method is open to criticism that it only charges for increased exposure risk in the event of devaluation, but not for potential decreased exposure if a currency appreciates.

To arrive at the \$14 M figure of incremental program budget for FY’01, we assumed that if environmental exports doubled in three years, the amounts financed by Ex-Im would similarly double. In the last two years, financing of environmentally-beneficial projects has around \$180M-\$210M annually, so we would assume EEP authorizations would grow to \$360M by FY’03. Half of this growth would come at a 10% budget cost under normal US dollar financing with environmental enhancements, while the other half under the new local currency scheme, with estimated 35% budget costs.

Year	Budget Cost (est.) for Environm. Projects
‘00	Baseline ³
‘01	Baseline + \$14M
‘02	Baseline + \$28M
‘03	Baseline + \$40M

Ex-Im could of course try to expand environmental financing without new program budget allocations, but this risks “crowding out” other sectors from the limited pot, including aircraft, mining, conventional power development, etc.

C. Improved Coordination among Agencies

The recommendation that would cost nothing may actually yield the greatest benefit, which implies a more cooperative and proactive effort among USG agencies.

1. **The government should emphasize more the role of “networking facilitator” for sellers and buyers.** For instance, Ex-Im’s experience has been that we receive more actionable referrals from OSTP and the EPA Office of Innovative Technologies than from the extensive FCS network. Commerce, EPA, DOE, TDA, OPIC, and Ex-Im

³ Budget cost of approx. \$20M in FY’98 and FY’99 (based on assumption of 10% of authorized amounts), although budget cost has run as high as \$40-\$50M for environmental projects in FY’95 and FY’96, when renewable power project sales were more frequent, in part due to oil prices being higher.

need to work together closely in arranging targeted conferences which create forums for contacts between US private firms and foreign buyers, and support powerful demonstration events. We do find that USEAC officials in a decentralized way generate referrals, but FCS officers need to call more on smaller international customers to let them know of US offerings, even if this means workplans for market reports may need to be extended.

2. **Agencies need to inform and invite each other to participate, and educate front-line people on relevant programs of other agencies.** There is a limit to the amount of time agencies should spend coordinating, but we have not reached it. To simplify communication, an environmental email network of key figures in ETWG agencies may work better than more meetings.

- By way of example, DOE and Ex-Im recently discovered that while we are partners in the China Clean Energy Program, parts of DOE were funding bilateral conferences with Chinese clean energy buyers and sending technical delegations to Beijing without informing Ex-Im. DOE leaders have promised to correct this and pledged to host an internal event where DOE staff could become more informed of the initiative. Even the best intentions from front offices do not filter down automatically.
- TDA has been more proactive in recent months, inviting Ex-Im to its very well-run conferences, and Ex-Im's Chairman has set a goal that Ex-Im attend more of these events than in the past.
- EPA has promised to include periodically Ex-Im in its department-wide China conference calls in the future, which should be beneficial.
- Ex-Im Bank can do more to be user-friendly and speed case processing, which will motivate other agencies to recommend us more; the Board is examining in particular how to accelerate post-approval credit administration.

3. **Diffuse Best Practice for Trade Events and Conferences.** We have seen some world class international events organized by agencies, and more can be done to ensure these become the norm.

- *Sales Pitch:* Too often US government seminars focus on the presence of government programs rather than their benefits, the practical and unique value they provide, with case studies.
- *Shared Planning:* Seminars must include DOC, EPA, Ex-Im Bank, TDA, and OPIC in their planning at some stage, as well as private trade associations.
- *Demonstrations:* The recent PCAST report emphasized that the diffusion and demonstration stages represent the biggest gap in USG support for clean energy progress. We constantly hear from foreign customers that they are unfamiliar with US technology. A great model for this exists in the EPA's Office of Technology Innovation (OTI):

- ❖ A recent OTI conference in Argentina demonstrated a variety of U.S. environmental technologies at a contaminated property in Buenos Aires (a YPF refinery). The Conference drew more than 470 participants from the public and private sectors in Argentina, an excellent venue for the 14 U.S. environmental technology vendors present. Ex-Im Bank presented its environmental finance incentives, and applications for several deals were received within a week of the event.
4. **Target small business exporters.** Large business already know about US federal programs and the large deals abroad attract attention more or less on their own. On the other hand, small business is less aware of foreign opportunities, or potential representatives for their services. The GTN network built by USAID holds great promise, and more inter-agency synergies are possible in capitalizing on its information.⁴
 5. **Solve the World Bank trust fund issue,** as suggested by the PCAST report. Other countries provide pools of grant financing at the World Bank for project managers to hire consultants and engineering firms to prepare specs and tenders. These *tied* trust funds in practice allow foreign governments to bias the designs towards foreign suppliers. Getting US firms involved earlier in the planning stages at the World Bank may yield substantial improvements in US procurement success there and similarly at other MDB's.
 - ❖ As the PCAST report emphasizes, the grants of the Global Environment Facility (GEF), housed in the World Bank offices, provide the optimal mode of incentivizing clean energy demonstration and deployment projects in the developing world. Most GEF projects in the energy area (such as the upcoming \$200M China Efficient Boiler Project) operate through the World Bank and IFC, which in turn have stated they seek additional sources of financing. Ex-Im Bank and other ECA's, operating fairly through international competitive tenders, can step in to act as a co-financier if private lending is not available.

While this memo provides a long read, we hope the substance—developed in wide consultation within Ex-Im Bank—stimulates a productive dialogue in the ETWG, and we look forward to responses and suggestions.

⁴ For instance, Ex-Im Bank would like to organize itself to track new buyers and exporters that appear active on the GTN system, and automatically generate a letter to them informing them of the availability of Ex-Im financing for developing/transition country buyers, as something that can be introduced during a sales pitch.

Memorandum

To Jeff Seabright
From John Armstrong & Shvetank Shah
Date September 22, 1999
Subject Markets for Climate Change Mitigation Technologies

It was good to meet with you yesterday. As discussed, Hagler Bailly would be delighted to expand the scope of our recent study for the International Trade Administration, *Markets for Climate Change Technologies and Services in Developing Countries*, along the lines of our discussion. This memorandum presents our technical approach, schedule, and budget, for the proposed enhancements to the original report.

Background

The report for ITA scoped out the GCC mitigation market in developing countries, described the technologies and services in demand, outlined the principal sources of funding and financing for GHG mitigation projects, recommended market entry strategies for U.S. exporting companies, and produced six country market profiles describing business climate and market drivers and opportunities for each country.

At the same time, there is a need to demonstrate to U.S. industry and policy-makers that a more aggressive pursuit of these market opportunities is needed in order not to lose ground to foreign competitors. This process would be enhanced by the dissemination of the size of the available market for such technologies and services, and its projected growth rate over the next 10 years.

Technical Approach

The climate change mitigation market ("the market") is driven by a variety of factors. Under a business-as-usual (BAU) scenario, factors such as cost effectiveness, environmental enforcement, power sector policies, indigenous energy resource base, etc. are all leading developing countries and their industries to adopt more climate-friendly technologies.

In addition, ratification and implementation of the Kyoto Protocol is estimated to lead to a sizeable increase in the demand for such technologies and services. These projects may be part of a developing country's domestic efforts under the national climate change mitigation program or may be initiated through international climate change mechanisms.

As a first step, we will estimate the size of the market in developing countries and its growth rate under the BAU scenario, as well as the significant increase that would occur were the Kyoto Protocol to be implemented. In conducting this quantitative analysis, we will synthesize from

Memorandum ♦

earlier research done by the OECD, the Energy Modeling Forum, RFF, WRI, and other groups who have modeled the economic impacts of different GHG mitigation scenarios.

Next, we will qualitatively assess the competition U.S. firms are facing in this market, and estimate the current U.S. market share for major categories of GHG mitigation technologies. We will review actions other countries have taken to promote this market to their domestic industries. We will also suggest strategies for both U.S. firms and policymakers to enhance the U.S. share of this important and growing market.

Schedule

Assuming a September 27th, 1999 kick-off, we will have a draft report for your review by Monday, October 25. The report will be finalized within a week of receiving your comments.

Budget

We propose to carry out the tasks described above for a fixed-fee of \$35,000.

Please call John at 703.351.0323 with your comments and questions. As both of us are scheduled to depart for a 2-week trip to India this Friday (9/24), we look forward to hearing from you soon.

Markets for Climate Change Mitigation Technologies and Services in Developing Countries

Final Report

Prepared for:

Office of Environmental Technologies Exports
International Trade Administration
U.S. Department of Commerce

Prepared by:

Hagler Bailly Services, Inc.
1530 Wilson Boulevard, Suite 400
Arlington, VA 22209



August 1999

EXECUTIVE SUMMARY

The growing international concern over climate change has launched a global effort to address this problem. Under the 1992 United Nations Framework Convention on Climate Change (UNFCCC), the nations party to the Convention have committed to formulating and implementing programs to mitigate global warming. The development of such country-specific programs creates market opportunities for U.S. companies to export technologies and services that contribute to greenhouse gas (GHG) emission reductions. Multilateral and bilateral donor projects currently dominate this market in terms of funding. However, the market opportunities are expected to be greatly enhanced by the implementation of the Clean Development Mechanism (CDM). The CDM is likely to make the private sector the main player in the climate change market in developing countries.

The climate change mitigation market is driven by a variety of factors. "Baseline" factors include cost effectiveness, environmental enforcement, power sector policies, indigenous energy resource base, etc. and define the existing market for GHG-reducing technologies and related services. The "additional" market is primarily driven by recent global climate change initiatives and consists of projects specifically designed to achieve GHG reductions. These projects may be part of a developing country's domestic efforts under the national climate change mitigation program or may be initiated through international climate change mechanisms. There is no clear line between the baseline and additional market, however, due to the complex interaction of all the drivers. This report covers both the "additional" market created by climate change initiatives and the "baseline" market for GHG mitigation technologies and services in general.

ES.1 THE MARKET

The report concentrates on mitigation technologies and related services for the following economic sectors:

- ▶ energy supply sector;
- ▶ manufacturing sector;
- ▶ commercial and residential sectors; and
- ▶ transportation.

The energy supply sector is often the largest contributor to GHG emissions. As power generation continues to grow in developing countries, there are multiple technology options that offer developing nations an opportunity to expand their energy supply while mitigating

their climate change impact. Exports of these technologies constitute a major market opportunity for U.S. suppliers.

There are four basic categories of GHG-reducing technologies for the energy supply sector:

- ▶ Switching to fossil fuels with a lower carbon content per energy unit (e.g., coal to natural gas)
- ▶ Power plant technology and combustion efficiency improvements
- ▶ Electricity transmission and distribution (T&D) efficiency improvements
- ▶ Renewable energy technologies

There is also a substantial market for consulting services in the energy sector, including assistance to governments in developing energy efficiency incentives for the power sector, and energy system planning for electric utilities.

The manufacturing sector is a fast-growing market for energy-efficient technologies, as industries in developing countries continue to invest in modern production processes. Industrial process controls have a wide range of applications and can be found in nearly all industrial sectors, especially in energy-intensive industries. Energy-efficient motors and boilers are other ways to reduce energy use in different industries. Industrial cogeneration technologies enjoy good market opportunities in countries that encourage independent power production. The five biggest energy consumers in the manufacturing sector are pulp and paper, chemicals, petroleum, primary metals, and cement industries. They all represent good potential markets for GHG mitigation technologies. The best opportunities for energy efficiency consulting services in industry include energy efficiency audits, training programs for operators of energy-intensive equipment, designing systematic maintenance programs, and specifying and installing relevant process equipment.

The commercial and residential sectors offer lucrative opportunities for energy-efficient equipment (lighting, air conditioners, and household appliances), improved building envelope technologies, and building energy use controls. Exports of energy-efficient lighting are likely to become the single largest market opportunity in this market segment, particularly in Asia. Consulting services to government agencies (in developing product energy efficiency standards), electric utilities (in developing demand side management programs), and individual commercial entities are also in great demand.

The transportation sector in developing countries currently provides limited but growing opportunities for both equipment exports (vehicles with improved fuel efficiency characteristics, clean fuel vehicles, and related equipment) and consulting services. The consulting services focus on designing and implementing transportation management systems (including travel pricing mechanisms, public transit planning, and appropriate spatial development) for major metropolitan areas in developing countries.

Exhibit ES-1 summarizes the geographical distribution of best market opportunities in developing countries for U.S. exports of climate change mitigation technologies and services.

Exhibit ES-1
Principal Developing Country Markets for GHG Mitigation Technologies

Sector	Technologies	Regions Presenting Best Opportunities
Energy Supply	Clean coal technologies	Asia, South Africa, Eastern Europe
	Advanced natural gas technologies	Middle East, Latin America, Eastern Europe
	Transmission/distribution improvements	Most developing countries
	Renewable energy technologies	Asia (China, India, Philippines), Latin America
Manufacturing	Industrial process controls	Asia (China, Taiwan, S. Korea), Latin America
	Industrial motors	Asia, Eastern Europe
	Cogeneration	Asia (China, Thailand), Latin America
	Efficient boilers	Asia, Eastern Europe
Commercial & Residential	Energy-efficient lighting	Asia, Latin America, Eastern Europe
	Building controls/HVAC	Asia, Middle East, Eastern Europe
	Building envelope	Asia, Latin America
	Household appliances	Asia
Transportation	Clean fuel vehicles	Large metropolitan areas in Asia, Latin America

ES.2 FUNDING AND FINANCING SOURCES

Since most developing countries do not have the financial resources available to implement climate change mitigation projects, external funding and financing are critical for U.S. exports of mitigation technologies and services.

The Clean Development Mechanism (CDM), the Kyoto Protocol's flexible mechanism for cooperation in GHG emission reductions between developed and developing countries, has a potential to generate substantial financial resources to cover the incremental costs of projects specifically designed to reduce greenhouse gases. In the form of co-financing within a larger project finance context, the CDM financing is expected to come exclusively from developed countries. For developing countries, the CDM would bring foreign investment and access to cleaner technology. For industrialized countries, it would provide a cheaper and more flexible

way to meet their emission reduction targets. And for technology exporters, it would bring market opportunities, new partnerships, and a better public image. The specifics of the CDM are not yet clearly defined but are expected to be finalized in the year 2000 as a result of detailed international negotiations.

The CDM envisions two options for project financing: pooled investments globally managed and allocated by a multilateral agency, or direct sponsor-host transactions at the project level. A mix of both options may well be adopted as a result of future discussions of CDM rules. The supply of CDM projects in developing countries will ultimately depend on individual countries' interest in participating in this mechanism and availability of other funding and financing sources for infrastructure investments.

While the CDM funding is not yet available, ***multilateral donor projects*** are presently the largest source of funds in the market. The Global Environment Facility (GEF), designated by the UNFCCC as its primary funding mechanism, is the leading multilateral entity promoting energy efficiency and renewable energy technologies in developing countries. The World Bank is in the process of establishing the Prototype Carbon Fund, a post-Kyoto financing mechanism that would complement the GEF funding. The Fund will operate in accordance with CDM procedures for obtaining GHG reduction credits from mitigation projects, once such procedures are established. Other World Bank programs, including energy efficiency and renewable energy initiatives, also create attractive market opportunities. In addition, large environmental improvement and infrastructure development projects of the regional multilateral development banks offer substantial opportunities for climate change-related technologies and services.

The United States Agency for International Development (USAID) is the principal U.S. ***bilateral donor*** for climate change programs in developing countries. Its Climate Change Initiative helps finance climate change projects by leveraging multilateral resources and private investment funds. USAID also supports the development of climate change-friendly government policies and promotes cleaner technology transfer. USAID currently has climate change-related activities in forty-four countries around the world. There are also many U.S. ***investment and export credit programs*** that U.S. companies can use to take advantage of market opportunities in developing countries.

Other funding and financing sources include debt financing from U.S. and local commercial banks, as well as vendor and local electric utility financing.

ES.3 BUSINESS STRATEGIES FOR U.S. FIRMS

In order to succeed in the developing country markets for climate change mitigation technologies and services, U.S. firms should be aware of the realities of doing business in

each country, know how to take advantage of particular market opportunities, and be able to use the available information support services.

Country market research is a key success factor. Knowing the local market characteristics and business climate is critical in prioritizing business development efforts. Marketing approaches depend on such country-specific countries as distribution channels, product knowledge, buyer concentration, and market barriers.

Local partnerships and representation are desirable for U.S. companies in order to have the advantage of learning about attractive market opportunities before the competitors. Methods for developing a local presence range from hiring a local consultant or agent to represent the firm, to establishing a local office or a joint venture.

As multilateral and bilateral donors currently represent the largest source of funding in the climate change market, companies should be prepared to bid for such projects. Understanding the donor's project cycle and bidding procedures, as well as tracking prospective projects are the key elements of successful marketing for donor-driven opportunities for technology and services exports. Whereas U.S. firms often have to compete with third-country as well as local companies for donor projects, they have a distinct competitive advantage under USAID bilateral funding.

As the rules of the CDM become finalized, U.S. companies can prepare themselves for possible market opportunities under both multilateral and direct private sector CDM funding options. It is essential to explore the field of potential U.S. investors in CDM projects, including electric utilities and large manufacturing firms. There are several information sources on potential CDM projects that are available to U.S. technology and services firms.

The U.S. Government has a number of programs designed to assist U.S. environmental and cleaner energy technology and services companies in penetrating developing country markets. These programs offer information support, trade promotion events, customized market research, identification of trade leads, selection of local partners, and other important services.

ES.4 SELECTED COUNTRY MARKETS

The report describes markets for climate change mitigation technologies and services in six developing countries: Brazil, Mexico, China, India, the Philippines, and South Africa. Exhibit ES-2 summarizes the qualitative assessment of the markets in the six countries and demonstrates the relationship between key market drivers and opportunities. It is evident from the exhibit that in the countries with more advanced climate change and energy policies and large-scale targeted donor funding, market opportunities are much stronger.

Exhibit ES-2
Climate Change Market Drivers and Opportunities in Selected Countries

	Brazil	Mexico	China	India	Philippines	S. Africa
Market Drivers						
Climate Change Policies	★	★	★	☆	★	★
Energy Policies/Programs	★	★	★	★	★	★
Targeted Donor Funding	★	★	★	★	★	☆
Market Opportunities						
Energy Supply	★	★	★	★	★	★
Manufacturing	★	★	★	★	★	☆
Commercial/Residential	★	★	★	★	★	★
Transportation	★	★	☆	★	★	☆

★ well-developed market drivers or opportunities

★ evolving market drivers or opportunities

☆ limited market drivers or opportunities

Brazil is actively developing its national climate change policies and intends to adopt a “fast track” for participation in the CDM. Brazil also has multiple energy efficiency programs and enjoys substantial donor support from the World Bank and the GEF for its climate change mitigation initiatives. As a result, Brazil represents a significant market for GHG-reducing technologies and services, particularly in the areas of renewable energy, industrial cogeneration and process controls, building envelope and controls, and clean fuel vehicles.

Mexico is one of the most advanced developing countries in terms of its climate change policies (the Mexican government has recently released the National Climate Change Action Program). There is also a well-developed institutional, regulatory, and programmatic framework for energy efficiency: Mexico is an active participant in joint implementation pilot projects and receives substantial amounts of U.S. bilateral assistance. All of these factors, combined with the favorable business climate in Mexico, make this country a particularly attractive climate change market for U.S. firms. The best opportunities exist in the energy supply sector (fuel switching, advanced natural gas combustion, and renewable energy technologies) and commercial and residential sectors (energy-efficient lighting).

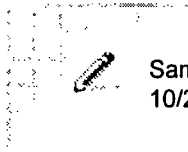
USAID-funded technical assistance projects create a large market for climate change-related consulting services in Mexico.

China has a long history of energy-efficiency programs but is just starting to develop its climate change policies. Donor funding is a major climate change market driver in China, as most of the government funding goes to macroeconomic programs. China has the biggest potential climate change mitigation technologies market in the developing world. This is due both to the size of the Chinese economy and population, and to the great potential for GHG emission reduction. The main elements of this market are advanced coal combustion technologies as well as energy-efficient technologies in the manufacturing, commercial, and residential sectors.

India has not yet developed a national climate change policy although it is very active in developing its renewable energy resources. India is a huge market for clean coal and renewable energy technologies in the power sector and energy-efficient technologies in the manufacturing sector. However, the “additional” climate change market is much smaller and is primarily donor-driven. The market of CDM projects is likely to be quite substantial but not in the short term, as it will take a few years for India to develop a national climate change/CDM program. The active role of USAID in promoting climate change mitigation in India creates a particularly favorable climate for U.S. firms in this market.

The Philippines has a substantial “additional” market for climate change mitigation technologies and services, mainly due to the active position of the Philippine government on climate change issues and its efforts to comply with the Philippines’ commitments under the UNFCCC. The Philippine government is also carrying out many energy efficiency and renewable energy programs. USAID is very active in mitigating GHG emissions from the Philippine power sector, creating market advantages for U.S. firms. USAID promotes more efficient electricity generation, distribution, and consumption, and encourages private investment in the natural gas industry and renewable energy development. These market segments represent the largest market potential for U.S. companies.

South Africa currently represents a relatively insignificant “additional” market for climate change mitigation technologies and services. This is explained by the absence in South Africa of large donor-funded projects specifically targeting GHG emission reductions, as well as the lack of specific government programs on climate change and energy efficiency. However, should the South African government decide to take an active part in the CDM, there is a substantial “baseline” market to be tapped, particularly in energy supply (clean coal technologies) and manufacturing (process improvements and process controls in the primary metals processing and petrochemical industries).



Samuel F. Baldwin
10/22/99 12:25:11 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP, Jefferson B. Seabright/WHCCTF/EOP@EOP
cc: Rosina M. Bierbaum/OSTP/EOP@EOP
Subject: Followup on the Environmental/Energy Export Strategy and Policy Meeting

Roger:

Per the discussion this morning, the key items we have in the works include:

--Formation of an NSTC Working Group on the PCAST international energy initiative, per the memo sent by the President in September. I am pasting the memo in below, and am attaching the current list of agency representatives and their staff support. We are planning to hold a meeting of these agency leads toward the end of next week, to review the work that their staff have been doing and to provide broader strategic guidance. This can support your cabinet-level idea.

--Development of an interagency budget following the PCAST recommendations. We have been working with staff at DOE, EPA, USAID, DOC, OPIC, TDA, ExIm, and others to develop an interagency budget initiative at the roughly \$250M level. This budget is intended to develop advanced clean energy technologies for international markets, building on domestic R&D efforts, and to provide aggressive support for their export.

--Policy Initiatives. John Holdren and Neal Lane briefed John Podesta in June concerning possible Executive actions that could build on the PCAST work; he expressed great interest and has subsequently asked about the status of these possible actions. I am attaching the original memo. As soon as we finish the most pressing work to develop the budget initiative, I will develop the initial ideas in this memo (which need considerable refinement) and add some further opportunities for consideration. For example, an effort might be developed with the G8 to strongly encourage the World Bank to increase support for clean, low GHG energy technologies and other actions for the environment.

Please let me know how I can help further.

Sam Baldwin
456-6073



NSTCWorkingGroupContactList.dP2FNLExecutiveOrdersFNLdr

THE WHITE HOUSE

Office of the Press Secretary
(Aboard Air Force One en route Hawaii)

September 14, 1999

MEMORANDUM FOR THE ASSISTANT TO THE PRESIDENT
FOR SCIENCE AND TECHNOLOGY

SUBJECT: Working Group on International Energy

The report of the President's Committee of Advisors on Science and Technology (PCAST), *Powerful Partnerships: The Federal Role in International Cooperation on Energy Innovation*, will help advance my Administration's goals for addressing energy-linked economic, environmental, and security challenges. As you point out in the synthesis of the report, our window of opportunity for moving the world off of its current energy trajectory -- which entails higher consumer costs, greater regional pollution, more pronounced climate disruption, and increasing risks to energy security -- is closing fast. Thus, we should act expeditiously on PCAST's recommendations for strengthening capacities for energy technology innovation, promoting technologies to limit energy demand and for a cleaner energy supply, and improving management of the Federal international energy research and development portfolio.

As a first step, I direct you to form a working group on international energy research, development, demonstration, and deployment under the National Science and Technology Council, as recommended by PCAST. The working group should build on the PCAST report and 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 FY 2001.

Please commend John Holdren, the members of his panel, and all of PCAST for its fine report on this important matter.

WILLIAM J. CLINTON

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**POWERFUL PARTNERSHIPS:
THE FEDERAL ROLE IN INTERNATIONAL COOPERATION ON ENERGY INNOVATION
Potential Presidential Directives or Executive Orders**

A number of PCAST high priority initiatives could be addressed through Executive actions such as Presidential Directives or Executive Orders. These could be bundled into a single EO or in a series broken out by agency, debt relief, the Multilateral Development Banks, and the NSTC, or by other crosscuts.

Energy Sector Restructuring: Countries around the world are restructuring their energy sectors, moving towards competitive markets to increase efficiency and performance. Competitive markets do not, however, adequately address the public interest in: (a) technology innovation (due to the long-term and high-risk nature of much R&D, and the inability of the private sector to fully appropriate the benefits of R&D); (b) addressing environmental and other externalities; and (c) assisting rural areas or the poor. Consequently, mechanisms to advance such public benefits must be built into the reformed energy-sector structure. Actions might include:

- **Direct USAID** officials to work with other countries to incorporate mechanisms in support of public benefits wherever possible and appropriate in their energy-sector restructuring activities.
- Within the **debt relief for the Heavily Indebted Poor Countries initiative**, designate a portion to help initiate Public Benefits Funds in support of innovative clean energy technology development, demonstration, cost buy-down, and deployment (RD³), and to advance other public benefits.
- **Direct the U.S. representative to the Global Environment Facility** to encourage the establishment within the GEF of a framework for the demonstration (the Demonstration Support Facility) and for the systematic “cost buy-down” through competitive mechanisms (the Clean Energy Technology Obligation) of targeted innovative clean energy technologies.
- **Direct the U.S. Executive Director to the World Bank**, to encourage the incorporation of mechanisms in support of public benefits in World Bank energy sector restructuring activities.

Clean and Efficient Energy Technologies: Clean and efficient energy technologies can often provide energy services at low cost while avoiding or reducing environmental impacts, oil-security risks, and other problems associated with conventional energy supply. The development and use of these clean and efficient technologies is frequently limited by: higher transaction costs; higher up-front costs (even with lower life-cycle costs); market fragmentation; lack of familiarity with the technology; and others. Actions might include:

- **Direct USAID** to support clean and efficient energy technologies wherever possible and appropriate.
- **Direct the U.S. Executive Director to the World Bank** to encourage the transition from subsidizing conventional energy technologies—which the private sector can support in a restructured energy sector—to supporting clean energy technologies that provide public benefits, such as energy efficient or renewable energy technologies; and to develop mechanisms for extending retail finance for these technologies.
- **Direct the U.S. Treasury to develop a tax package** in support of U.S. firms demonstrating clean and efficient energy technologies in international markets.

Strategic Management: To fully realize the potential of international cooperation on energy RD³, it is necessary to develop a strategic vision of the opportunities and goals; to clearly define programs to achieve those goals; to systematically develop effective partnerships to do the work; to coordinate across agencies to take advantage of their synergies; to closely link activities with the private sector; to review/evaluate programs; and to make a long-term commitment to build and maintain strong international cooperative energy programs. To accomplish this, actions might include:

- **Create an NSTC Working Group** with representatives from each of the primary agencies associated with international energy RD³; and establish an external Advisory Board to this Working Group. Direct this working group to conduct a portfolio assessment of energy RD³ needs (building on the work of PCAST) and to work with the agencies on internal and external program monitoring and evaluation.
- **Direct each agency** to identify clear and accountable management chains for international energy RD³; and to develop plans for how they are going to strengthen their international energy RD³ capabilities through training, targeted hiring, and the rotation of staff—such as from the national laboratories—into the agency.

Done

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- **Direct each agency** to work with the NSTC working group to develop budget proposals for the 2001 budget and to identify means of supporting multiyear commitments.
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Table ES-1: INITIATIVES AND BUDGETS

(Budget in \$Millions of Supplemental Spending Above Current Agency or PCAST 97 Levels)

Initiative	FOUNDATIONS OF ENERGY INNOVATION	FY01	FY05	Page
Capacity Building	--Increase support for regional centers of ERD ³ --Expand existing and develop new training programs on energy --(Interdisciplinary research—monitoring/evaluation/institutional change)*	\$20 M	\$40 M	3-10 3-15
Energy Sector Reform	--Technical/policy assistance for sector reform that gets “prices right,” including externalities, and advances public benefits --Assistance establishing evolutionary regulatory frameworks for gas grids	20	40	3-19
Demonstration And Buydown	--Encourage development of a Demonstration Support Facility --Award production tax credits for demonstrations that meet criteria --Assist in establishing a Clean Energy Technology Obligation	40	80	3-26
Finance	--Encourage MDBs to increase financing for clean/efficient energy technology; support activities with trust funds for using US experts --Facilitate market-based finance of clean/efficient energy technologies, including creating a fund administered by OPIC --(Technical, Financial, and Feasibility Analysis Assistance for US Firms)*	40	80	3-33 3-37
A PORTFOLIO OF ENERGY EFFICIENCY RD³				
Buildings	--Technical/policy assistance to develop/adopt efficiency standards, ratings, labeling of building equipment; assist testing programs, etc. --Testing/policy assistance to develop/apply building design tools/design competitions/energy codes/standards for new buildings; training; etc. --Encourage MDBs/GEF to support building/equipment efficiency --(Develop/Disseminate Improved Cookstoves)*	20	40	4-11 4-15
Transport	--Integrate/expand RD ³ on low-cost, efficient, clean power for vehicles --Encourage GEF/MDBs to help finance production/use of clean vehicles --Assist in analysis/implementation of vehicle emissions testing/standards --(New Technologies for Public Transport Systems)*	20	40	4-19 4-22
Industry	--U.S. Public/private/foreign cooperation to develop technology roadmaps for energy-efficient processing of energy-intensive materials --Cooperative development/implementation of technology roadmaps --Support for joint-venture creation, licensing, between U.S. firms/partners	10	20	4-28
Combined Heat and Power (CHP)	--Public/private U.S./foreign cooperation on information programs, etc. --Collaborative assessments of potential CHP sites, address regulatory and market barriers, attract funding for demonstrations, help secure finance --Support reforms to “level the playing field” for CHP and U.S. equipment	10	20	4-30
A PORTFOLIO OF ENERGY SUPPLY RD³				
Widespread Renewables	--RD ³ on industrial-scale biomass power/coproducts; restore degraded land --Develop integrated renewable/hybrid systems for rural areas --Accelerate deployment of grid-connected intermittent/hybrid systems --Assess renewable energy resources by region --(RD ³ on solar thermal electric; support strong domestic RD ³ efforts)*	40	80	5-12 5-14
Fossil Fuel	--Promote energy/environment reforms in support of coproduct strategies --RD&D on low-cost hydrogen production and byproduct carbon recovery --Carbon sequestration standards/regional assessments/ reservoir analyses --(R&D to exploit energy of methane hydrates in climate-friendly ways)*	20	40	5-21 5-23
Nuclear Energy	--Add international component to Nuclear Energy Research Initiative --Expand/strengthen international studies of spent fuel/high-level waste --Pursue new international agreement on fusion R&D --(Improve safety and security of nuclear facilities worldwide)*	10	20	5-27 5-29
A SET OF MANAGEMENT RECOMMENDATIONS				

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Agency Management	Establish NSTC working group (WG) on Strategic Energy Cooperation			6-13
	--NSTC WG would have interagency secretariat/external Advisory Board --WG would assess IERD ³ portfolio, guide/coordinate agency programs --WG would strengthen agency internal/external review capabilities --Agencies to use competitive solicitations to identify best approaches --Agencies identify accountable management chains with authority/budgets --Strengthen agency international capabilities by training/detailing staff --Establish Strategic Energy Cooperation Fund			6-15
TOTAL		250	500	

* Initiatives in parentheses are described in the chapters but not in the Executive Summary; budget totals include these initiative.

9/28/99

NEW ENVIRONMENTAL TECHNOLOGIES EXPORT INITIATIVE (ETEI) A MULTI-AGENCY TRADE EXPANSION PLAN

SUMMARY

An Environmental Technology Export Initiative

The time is right for a bold, new initiative to enhance exports of U.S. environmental technology. The global environmental market includes everything from pollution control to clean energy and water technologies. It is also projected to grow from \$473 billion in 1997 to \$600 billion by 2010. A new initiative would position American companies to be a major force in this growing market, creating new U.S. jobs and revenues, and helping to preserve our current strong economy. Just considering traditional environmental technologies like those used in pollution control, we believe a reasonable goal is to double our exports and generate an additional \$18 billion in U.S. exports and 130,000 new jobs in four years.

A major benefit of this initiative would be its impact on the global environment. More affordable and available environmental technology would improve living conditions and reduce pollution, including emissions of greenhouse gases. In short, this effort puts sustainable development into practice, improving environmental conditions while promoting economic growth. As such, it could help build support at home and abroad for this Administration's international environmental priorities.

The export-focused agencies that comprise the Environmental Trade Working Group (ETWG), e.g. DOC, ExIm Bank, OPIC, TDA, have been developing a proposal for an environmental exports initiative. This paper has benefitted from input and consultation with the agencies mentioned. However, it continues to evolve and should be considered a product intended to stimulate discussion and include additional agencies as well.

Objectives

Our efforts focus on addressing varied market conditions and trade barriers, and helping U.S. companies become effective competitors in the international environmental market. It has several objectives which include the following:

- * **Reduce trade barriers.** There are varied tariff and non-tariff barriers to trade in environmental goods and services. The Administration has already committed to using the upcoming WTO round to press this issue. In addition, there are important markets and countries where legal and institutional reforms need to be addressed in order to expand commercial opportunities for environmental technologies.
- * **Provide new capacity for early market access.** Involvement in planning and feasibility

studies, providing for capacity building, and technical assistance are critical to better position U.S. exporters. Many competing countries have programs and use their official contacts in multilateral development banks more aggressively to get their companies in the door early in the project cycle. We can and should do the same.

- * **Break down barriers for small but innovative environmental companies.** There are well documented obstacles in market information, start-up costs, communication, that put America's smaller yet innovative companies at a disadvantage. Greater efforts are needed in advocacy, trade promotion outreach, matchmaking, and other areas to break down their barriers. We can strengthen the public/private partnerships in the environmental sector through the DOC grants under the Market Development Cooperation Program (MDCP).

Actions

To accomplish these goals, we see the need for several actions.

- * **Improve staff resources.** The government has built up a wealth of expertise and we believe this can be honed through training, coordination and redeployment from other areas. In addition, there are areas where new staff and budget resources should be added.
- * **Increase funding available to high priority programs.** This Administration has the opportunity to build on tailored export credit and insurance products it has pioneered. In addition, the Administration should increase funds to undertake studies to pinpoint strategic market changes and opportunities that may direct future environmental technologies exports.
- * **Continue to support tariff liberalization.** The upcoming WTO round affords the opportunity to develop trade policy that supports the environmental sector through liberalization of trade in environmental goods and services. In addition to the WTO work, there is ongoing work in the APEC that should be coordinated and improved.

In the following pages, we provide more detail on the environmental sector, its challenges, and government support programs that have made a start. More needs to be done and some of the key actions are briefly outlined.

BACKGROUND

THE CHALLENGE

The development of international environmental markets is critical to achieving global sustainable development and to supporting greater U.S. economic growth, jobs, and exports. The environmental sector is one of the fastest growing industry sectors worldwide. The global market for envirotech was about \$473 billion in 1997 and is projected to reach \$600 billion by 2010. Competition for this burgeoning market is fierce. Despite the U.S. industry's vast experience and technological leadership in this sector, it is not realizing its full commercial potential in the international market. U.S. industry currently exports only 9% of the output of this sector, proportionally far less than our competitors. The United States is not well positioned to take advantage of this burgeoning market, and will incur a double loss in our ability to support environmentally sound development abroad and businesses and jobs at home. Tough competition from competitor nations armed with aggressive trade promotion and finance strategies makes urgent the need for an updated United States trade development approach in this sector and to export more aggressively to key emerging environmental markets in Asia, Latin America, and Central and Eastern Europe. These markets are rapidly growing at rates of 10-20 percent annually; our competitors (Japan, Germany, U.K.). Our competitors have been targeting these developing markets with effective marketing, technical assistance packages, and finance.

LEGACY OF COOPERATION

In 1994, an interagency environmental technologies export strategy was created to enhance the competitiveness of U.S. envirotech companies globally and to increase U.S. envirotech exports. This original strategy for expanding environmental technologies exports has been implemented with success. However, an expanded and updated approach is now needed. Based on our shared experience, we believe that as a first step, existing programs need to be sharpened and better coordinated. Staff may need additional training or be redeployed. In some case, additional resources must be found in order to more effectively meet the competitiveness challenge.

WHY THE ENVIRONMENTAL INDUSTRY?

The environmental sector is not one, but a cluster of many, varied industries. Often environmental businesses work at the leading edge of specific industries, gaining market share because they provide returns through enhanced efficiency. In targeting environmental technologies for export, we should broadly consult with private sector environmental trade groups. To make the most effective use of resources and establish priorities, we should develop separate strategies for: a) countries where markets are active and deals are likely; and b) countries whose market potential require pre-transaction market development. Opportunities

abound where U.S. agencies and the U.S. private sector can mutually engage in sound practices to assure market development for a profitable future. Recent examples include:

- * South East Europe. OPIC has developed an investment guarantee program; DOC and Treasury have worked to improve links to international financial institutions; AID's EcoLinks program facilitates enviro trade in connecting businesses to environmental projects.
- * Latin America. In disaster mitigation, AID and DOC have worked together to facilitate U.S. company contacts with host country ministries, and OPIC has worked to mobilize private investment.
- * Africa. USAID's Africa Trade and Investment Policy Program includes the objective of providing technical assistance to help African governments liberalize international trade and improve the investment environment for the private sector and to establish business links between U.S. and African firms.

ACTION PLAN

- Coordinate an interagency team of advocates in key markets. Technical and export assistance builds the human and institutional capacity needed to convert the need for environmental goods and services into the effective commercial demand. Over the past five years, field officers from DOC, EXIM, AID, and EPA have been deployed to provide the critical intelligence about needs and projects throughout the world. DOC created the Office of Environmental Technologies Exports (ETE), a first-time focus in the International Trade Administration (ITA) on this sector; EXIM created a special staff position focused on environmental technologies; Science and Technology Officers at State became Environment, Science and Technology officers; EPA's Office of International Activities has grown, and AID's Global Bureau has developed an extensive "Climate Change Action Plan" that references business development. U.S.-Asia Environmental Partnerships has put in place a network of technical representatives throughout Asia, to facilitate U.S. environmental technologies trade. The DOC and the Global Technology Network (GTN) of AID have provided trade leads to U.S. businesses. These advocates are already in place; but their numbers could increase.
- Create more effective U.S. advocacy and outreach within multilateral development banks. In the water sector alone, the world bank has loaned \$40 billion over the past thirty years for water-related projects and plans to lend another \$35-40 billion over the next ten years. These resources are critical for projects that require finance not available from commercial banks. But the process for businesses is onerous, time consuming and difficult, especially for SMEs. Under this joint effort, agencies should provide enhanced access to MDB projects through upgraded information, liaison services and results-based networking.
- Provide more resources for feasibility and prefeasibility studies for earlier access to potential projects. The Trade and Development Agency (TDA) has well documented that this works. Early exposure to potential clients greatly improves chances for continued trade; and chances of success are enhanced by exposure during the prefeasibility and feasibility stages of a project, well before commercial and financial resources are committed. In fact, it is in the

feasibility stages that a project begins to take shape and potential resources identified. Feasibility studies are indispensable in shaping foreign governments' development and procurement of environmental projects. Currently, our key competitors offer significantly greater levels of environmental technical assistance than does the USG. Businesses that do not have deep pockets or government largesse, will most likely lose out on projects.

- Tailor export credit and insurance products. Over the past five years, Eximbank, OPIC and TDA have made incremental progress toward developing standards and guidelines for enhanced support for environmental technologies exports. Exim has developed extensive environmental guidelines, while OPIC has been experimenting with special funds dedicated to different sectors and regions. These programs have evolved out of experience, and under long-standing USG policy that supports strict rules for commercial as opposed to concessional export finance. But more needs to be done. DOC supports EXIM's proposals for foreign currency guarantees and local currency financing. DOC also supports PCAST recommendations regarding co-finance for critical development projects if private lending is not available, and grants to support consultants and engineering firms to prepare specifications and tenders for World Bank project managers.
- Continue and enhance business outreach and matchmaking. These activities in environmental business sectors have grown during the last five years. In the process we have discovered that proactive government programs, such as DOC's environmental technologies exports promotion programs, OPIC's environmental outreach program, and the US-Asia Environmental Partnership Program, deliver best return for appropriated funds.

To develop better data on the U.S. world market share by sub-segment, DOC and EPA's Office of Innovative Technologies, and AID's Global Technology Network (GTN) could work together to design a joint data-collection process and analysis of environmental business development and activity.

“Option 4”

A fourth option (which might be pursued along with options 2 and 3) would be a major initiative by the U.S. to “green” private capital flows in energy and industrial infrastructure investment internationally. This effort would build on the recent PCAST analysis to help developing economies delink economic growth and ghg emissions. It would also acknowledge that, at least in the short term, Kyoto goals will not impact emissions significantly – while decisions about new power plants and other energy intensive infrastructure are being made daily around the world. China, for example, must build a new 500 MW power plant every month to meet growing demand.

This option would entail a major initiative to remove barriers to increased investment in clean energy technology, create incentives for clean investment, and leverage other public and private resources.

The elements of this cooperative approach would bring together U.S. trade agencies (Commerce, EXIM, OPIC and TDA) to advocate and incentivize US clean energy exports, while also engaging with the World Bank and other multilateral institutions to support increased “green” capital flows.

Export Agencies

- Streamline export assistance at EXIM (loans), OPIC (loans and insurance), TDA (feasibility studies) and Commerce (advocacy) for climate-friendly projects through advocacy and special programs (e.g. a dedicated climate fund at OPIC) in each of the agencies and a coordination mechanism among agencies.
- Of even greater value could be a special “technology fund” for incremental environmental costs; such a fund could buy down costs through extended terms and other credit enhancement tools.
- Follow-up on the effort begun at the Denver Summit to develop common Export Credit Agency (ECA) environmental guidelines – do no harm.

Private Sector

- Work with international power developers and private lending institutions to develop a voluntary code of conduct for power sector privatization, new energy sector projects, private industrial investment or financial sector investment.

Need more.

- Expand international public-private partnership activities to engage U.S. private sector leaders directly with counterparts in developing countries.

Technology Cooperation

- Per the recommendations in PCAST, increase joint technology cooperation in research, development and adaptation, including technical assistance and training.
- Expand the U.S. bilateral "Climate Change Technology Cooperation" pilot program and multilateralize it.

what does this mean?

Multilateral Development Banks

- Promote higher environmental standards in World Bank energy sector guidelines. This sets the benchmark for international private power developers and creates a critical "minimum acceptable level" for carbon-reducing technologies.
- Include environmental externalities in World Bank lending practices. The "carbon backcasting" study recently concluded by the Bank points the way to a "shadow" price of carbon that could be used to assess Bank loans. This would advantage cleaner, less carbon intensive projects – and would put the rhetoric of the new Bank energy strategy to the test.
- Increase support for energy sector policy reforms that reduce subsidies for fossil fuels, support environmental regulation and increase private sector participation in infrastructure investment.

Bilateral Assistance

- Create a fund for cost-sharing feasibility and pre-investment analysis for climate-friendly projects, including support for GEF grant assistance for "incremental" costs associated with climate benefit. This fund would help create a pipeline of projects for GEF and other funding.
- Use of "development credit authority" to leverage private sector capital for environmentally-beneficial projects through loan guarantees.
- Increase support for energy sector policy reforms that reduce subsidies for fossil fuels, support environmental regulation and increase private sector participation in infrastructure investment.

7

Implementing the "Big Idea": The Global Clean Energy Initiative

Building on the recent PCAST recommendations and the work of the Environmental Trade Working Group¹, an inter-agency group comprised of DOE, USAID, EPA, EXIM, DOC, and OPIC has generated a detailed proposal for an additional \$250 million in FY2001. This proposed initiative to expand U.S. trade and investment in "clean" energy technologies in developing countries is both a trade/jobs and a climate change/sustainable development effort. It will provide large export benefits to the United States at the same time as providing economic, environmental, and security benefits to our partners.

A detailed spreadsheet of agency funding cross-cuts is in circulation with a review meeting set for October 21. We should be ready for a senior-level meeting by the end of the month. Ron Minsk is on board with the concept and has sent a memo to Sperling, although he and some at DOE are concerned that this effort not be tied too closely to climate. I have argued that we need to make this a climate initiative, although we need not make it so exclusively or lead with it. This is the flagship to implement the President's "big idea" (which he repeats now almost daily) that developing countries need not emit more carbon to grow their economies. And because it is climate technology and trade but not Kyoto – just what Murkowski and BRT say they want – we need not hide the climate connection on the Hill.

Much of the effort to date has been focussed on technical agency input. We need now to provide the simple sound bite pitch on what this initiative will do: increase U.S. trade and investment in low-carbon technologies by \$ xx billion and mitigate xx million tons of greenhouse gasses over the next four years. I think we also need to focus our efforts predominantly on key countries and regions in the developing world that constitute both the biggest markets and the biggest emitters of greenhouse gasses: China, India, Brazil, Indonesia, Russia, South Africa, Philippines, Mexico, Korea, Argentina, Kazakstan.

This initiative would seek to remove barriers to increased private investment in clean energy technology and, where appropriate, create incentives for such investment by building our technology base, and by helping to open markets and close deals. The two basic components of the initiative are: 1. enhance technical cooperation on research and development and tie these efforts to capacity building and other institutional needs (PCAST); and 2.) bring together U.S. trade agencies (Commerce, EXIM, OPIC and TDA) to advocate and incentivize US clean energy exports (ETWG). Below is a brief summary of the elements of the initiative as it now stands (minus the nuclear piece):

Buildings: Two-thirds of developing country population growth is in cities, with urban populations expected to grow by more than 1.5 billion people over the next twenty years. This is resulting in unprecedented rates of construction and even greater demand for building equipment and appliances. The development, adaptation, and use of energy-efficient building design tools, building energy performance standards, and equipment and appliance energy standards and

¹ The ETWG was established in the 1992 "Jobs through Exports Act" to focus specifically on U.S. environmental exports and is the only statutory subcommittee of the Trade Promotion Coordination Committee. It is co-chaired by EPA and Commerce.

labeling could cut energy use by new buildings by 50 percent while strongly assisting U.S. technology exports.

Industry: Industrial energy use by developing countries grows even more rapidly than their overall economies as they use steel, cement, and other energy-intensive materials to build their infrastructures of roads, bridges, buildings, and factories. Industrial technology roadmapping, best practice programs, U.S.-foreign joint ventures, the use of Combined Heat and Power (CHP), and other technical and policy assistance could reduce industrial energy use by 40 percent and supply 20 percent of new power generating capacity over the next two decades while positioning U.S. firms to export high-performance industrial equipment—efficient motor drives, control systems, advanced processing equipment, CHP systems, and others.

Transport: In Brazil there is one car for 13 people, in Asia one for 200. Two- and three-wheel vehicles and buses help fill some of the huge demand for transport services, but cause very high levels of urban air pollution. The development and widespread deployment of advanced hybrid and fuel cell vehicles would reduce global oil demand and urban air pollution. U.S. companies are leaders in technologies key to such vehicles, e.g. electric drive trains, and will substantially benefit from a strong R&D and export program.

Fossil Energy Supply: Fossil fuels currently provide roughly 85% of global commercial energy and will continue to supply high levels of energy use for decades to come. Advanced coal gasification systems with combined cycle turbines or fuel cells can significantly improve efficiencies and lower air pollution. U.S. companies are global leaders in these advanced coal technologies, but their domestic market has sharply declined in the face of stiff competition from natural gas. In many cases, the survival of this U.S. business depends on its ability to penetrate developing country markets. This initiative provides high-leverage support to develop and deploy these coal technologies internationally.

Renewable Energy: The costs of renewable energy technologies such as photovoltaics and wind turbines have been reduced by as much as ten times or more over the past two decades. Today these systems are competitive in many remote locations and, increasingly, in grid-connected systems where solar, wind, or other renewable resources are good. This initiative will help clean renewable energy contribute as much to world energy supply in the second quarter of the 21st century as fossil energy contributes today. Most of the market for renewable energy technologies is overseas, which is particularly difficult for small innovative U.S. renewable energy firms to penetrate; this initiative will target and aggressively pursue these markets.

Foundations (Opening Markets): The research, development, demonstration, and large-scale deployment of these clean and efficient energy technologies require:

- Capacity building, to develop the human and institutional capacity required by research, public, and private institutions that will produce, market, install and serve these technologies, and to reduce policy barriers;
- Energy sector reform, to move towards competitive markets that can attract private capital, while protecting the public interest and addressing externalities;
- Technology demonstration and cost buy-down mechanisms, to reduce the costs of these innovative technologies to competitive levels.

Why?
Can't we
interest govts?

I thought this was
illegal.

Export Assistance (Closing Deals):

- Streamline export assistance at EXIM (loans), OPIC (loans and insurance), TDA (feasibility studies) and Commerce (advocacy) for climate-friendly projects through advocacy and special programs (e.g. notional lending "windows" as was done in the case of the EXIM MOU with China) in each of the agencies and a coordination mechanism among agencies.
- Increase funding for feasibility and pre-feasibility studies at TDA.
- Tailor export credit and insurance products at EXIM and OPIC to meet the needs of clean energy technologies, including foreign currency guarantees and local currency financing.

MEMO:

TO:

FROM: Sam Baldwin

RE: Overview of Work in Progress to develop the International Energy Initiative

DATE: October 27, 1999

Please note:

- These are early draft materials to indicate the overall direction of the initiative. These proposals have NOT been formally reviewed or approved by the agencies and further changes are expected.
- These early draft materials are being provided on the basis of building a dialogue between OSTP, the Agencies, and OMB on the best way to move the PCAST recommendations forward. A formal review process requires the presence of the Agency staff who know in detail the content of their programs and their capabilities.
- The appearance of overlaps between agencies in the summary table can be seen in the detailed table to actually be, in most cases, complementary activities with, for example, DOE doing technology development, USAID providing field support in the country, and DOC and the Trade Agencies providing export support. Another factor contributing to the apparent overlap in some cases is the expectation that some of the work will be done in countries where USAID does not operate but DOE and EPA do. In a few cases there remain some potential overlaps which are currently being addressed with the agencies to ensure that each agency has a clear role and responsibility in moving a clean energy technology forward.
- In a few cases, particularly for fossil and nuclear energy requests, the total initial Agency proposal is larger than the PCAST recommended funding. This is indicated in the table by showing the fraction of the Agency request within the PCAST recommended total in normal font and the request above the PCAST recommendation in *(italics)*. In a few cases, initial proposed activities lie outside the range that PCAST recommended and are described in *(italics)*.

INTERNATIONAL ENERGY INITIATIVE

The President requested OSTP to lead the definition of an interagency clean energy technology development and export initiative based on the recently published PCAST *Powerful Partnerships* analysis. Enhanced investment in this area is expected to generate high-value jobs and income in the United States; open very large international market opportunities for U.S. industry (with total global market value of perhaps \$10 trillion over the next 20 years); support international development; and reduce the local, regional, and global environmental impacts of energy supply and use. This initiative is an important example of how protecting the environment and growing the economy are mutually supportive. Achieving these benefits requires near-term action:

- A major round of energy sector restructuring is currently underway in countries around the world; it will probably be largely completed in the next 10 years. Technical and policy assistance now can ensure that this restructured environment allows for clean energy development and is open to U.S. exports.
- Energy technology markets are growing rapidly, with developing countries projected to account for two-thirds of global growth over the next 20 years and markets outside the United States accounting for 90% of global growth. In a number of important cases, U.S. companies must capture a significant portion of these markets to survive.
- The buildings, industry, transport, and energy supply infrastructures typically last 40-80 years or more. Failure to shift to clean energy technologies will leave polluting infrastructure in place through much of the next century. Failure to capture markets now forecloses opportunity for decades.

Initiative Structure: The design of this initiative is based primarily on the PCAST report. The initiative provides a coherent and systematic process for developing clean energy technologies in partnership with the private sector and foreign counterparts, demonstrating the technologies, driving down their cost through competitive mechanisms, and facilitating private sector finance of their large-scale deployment. The foundations for these actions include support for in-country policy reform that can open markets and attract private capital while protecting the public interest as well as for in-country capacity building.

Participants and Funding: \$250 million of new funding is proposed for the first year of the initiative, growing to \$500 million in year 5. Agency roles are based on their technical and international expertise:

- USAID activities build on its extensive network of missions to support technology development, demonstration, and deployment in the country, and its long-term experience with policy reform and capacity building.
- DOE activities focus primarily on Research and Development, building on their expertise in energy technology development, demonstration, analysis, and policy as well as experience with innovative financial mechanisms such as Energy Service Performance Contracting.
- EPA activities build on their environmental expertise—analytical, technical, and policy—as well as experience with non-regulatory approaches such as the Energy Star programs.
- Department of Commerce and the Trade Agencies—Export-Import Bank, Overseas Private Investment Corporation, and the Trade and Development Agency—provide a complementary mix of project analysis, development, finance, and trade supports to spur strong exports of these clean energy technologies.

INTERNATIONAL ENERGY INITIATIVE PROGRAM ACTIVITIES

This initiative develops advanced clean energy technologies for international markets, building on domestic R&D efforts, and provides aggressive support for their export. This initiative will be an important example of how protecting the environment and growing the economy are mutually supportive.

Energy use by developing countries is expected to double between 1990 and 2020, and quadruple by 2050, accounting for three-fourths or more of the increase in global energy use. Developing country energy use is expected to overtake that of the industrial countries by 2020 and be 2-3 times greater by 2050. The services this energy provides are critical for economic development—powering factories, lighting buildings, and fueling transport; failing to provide needed energy services would risk economic development and political stability. Conventional fossil energy technologies, however, generate serious local and regional air pollution, greenhouse gases, oil spills, and other environmental impacts; conventional nuclear energy technologies suffer from high costs, radioactive waste management, and concerns about safety and nuclear weapons proliferation. Increased demand for oil will give Middle East producers greater leverage over the world economy and risk new oil shortages and price shocks.

The development and widespread deployment of clean, low-greenhouse gas emitting energy technologies can avoid these problems while providing the energy services needed for economic development. This can also create tremendous economic opportunities for the United States. Global markets for energy supply technologies alone could total \$10 trillion over the next 20 years. U.S. firms need to capture a significant share of that market if they are to remain competitive. The President's Committee of Advisors on Science and Technology recently reviewed the economic, environmental, and security challenges of global energy use and identified high-leverage opportunities for meeting them together with the potential benefits to the United States and the world. This initiative responds to that challenge by developing energy technologies for these global markets through public-private partnerships and by systematically supporting their export and use.

Buildings: Two-thirds of developing country population growth is in cities, with urban populations expected to grow by more than 1.5 billion people over the next twenty years. This is resulting in unprecedented rates of construction and even greater demand for building equipment and appliances. This initiative will support the development, adaptation, and use of energy-efficient building design tools, building energy performance standards, and equipment and appliance energy standards and labeling in order to cut energy use by new buildings by 50 percent while strongly supporting U.S. exports of energy efficient materials, sensors and controls, and energy-efficient building equipment and appliances.

In rural and poor urban areas, more than two billion people cook their food over traditional open fires. This generates high levels of smoke in kitchens and households, and is a major contributor to respiratory disease, particularly women and young children. This initiative will support development of improved stoves and fuels to reduce the global death rate due to acute respiratory infections—estimated as high as two million people per year—resulting substantially from indoor air pollution from traditional stoves.

Industry: Industrial energy use by developing countries grows even more rapidly than their overall economies as they use steel, cement, and other energy-intensive materials to build their infrastructures of roads, bridges, buildings, and factories. This initiative will support industrial technology roadmapping, best practice programs, the use of Combined Heat and Power (CHP), and other technical and policy assistance to reduce industrial energy use by 40 percent and supply 20 percent of new power generating capacity over the next two decades while positioning U.S. firms to export high-performance industrial equipment—efficient motor drives, control systems, advanced processing equipment, CHP systems, etc.

Transport: In Brazil there is one car for 13 people; in Asia one for 200. Two- and three-wheel vehicles and buses help fill some of the huge demand for transport services, but cause very high levels of urban air

pollution. The development and widespread deployment of advanced hybrid and fuel cell vehicles, vehicle polluting emissions testing, assistance with policy and planning, and other supports would reduce global oil demand and urban air pollution. U.S. companies are leaders in technologies key to such vehicles, e.g. electric drive trains, and will substantially benefit from the strong R&D and export program that will be undertaken through this initiative.

Fossil Energy Supply: Fossil fuels currently provide roughly 85% of global commercial energy and will continue to supply high levels of energy use for decades to come. Advanced coal gasification systems with combined cycle turbines or fuel cells can significantly improve efficiencies and lower air pollution, and carbon sequestration technologies can sharply reduce greenhouse gas emissions. This initiative will make possible the economic use of fossil fuels with near-zero lifecycle carbon emissions and near-zero pollutant emissions. U.S. companies are global leaders in these advanced coal technologies, but their domestic market has sharply declined in the face of stiff competition from natural gas. In many cases, the survival of this U.S. business depends on its ability to penetrate developing country markets. This initiative provides high-leverage support to develop and deploy these coal technologies internationally.

Nuclear Energy Supply: Nuclear energy produces little conventional air pollution or greenhouse gases, but high costs, safety, radioactive waste, and nuclear proliferation concerns cloud its future. Collaborative research to address these concerns can help build an important role for nuclear power in our global energy future. Given the lack of a U.S. market for new nuclear power plants for the foreseeable future, the survival of the U.S. nuclear energy technology industry depends on the development of advanced reactors for international markets that meet these cost, safety, waste, and proliferation concerns.

Renewable Energy: The costs of renewable energy technologies such as photovoltaics and wind turbines have been reduced by as much as ten times or more over the past two decades. Today these systems are competitive in many remote locations and, increasingly, in grid-connected systems where solar, wind, or other renewable resources are good. These technologies could provide some two billion people in developing countries access to electricity and the opportunities of modern life for the first time, while creating a non-polluting energy infrastructure. Further development of these technologies and applications for developing countries under this initiative can open these new economic opportunities. This initiative will help renewable energy contribute as much to world energy supply in the second quarter of the 21st century as fossil energy contributes today. Most of the market for renewable energy technologies is overseas, which is particularly difficult for small innovative U.S. renewable energy firms to penetrate. This initiative will develop technologies for and aggressively pursue these markets.

Foundations: The research, development, demonstration, and large-scale deployment of these clean and efficient energy technologies require:

- Capacity building, to develop the capable staff required by research, public, and private institutions that will produce, market, install and serve these technologies, and to reduce policy barriers;
- Energy sector reform, to move towards competitive markets that can attract private capital, while protecting the public interest in technology innovation and addressing externalities;
- Technology demonstration and cost buy-down mechanisms, to reduce the costs of these innovative technologies to competitive levels; and
- Financial mechanisms to assist the large-scale deployment of innovative clean energy technologies.

This initiative provides for each of these activities, building the foundation for strong competitive markets that can rapidly develop and deploy clean energy technologies to meet the economic, environmental, and national security needs of all the world's people. The programs within this initiative are designed to catalyze and facilitate efforts of the private sector, and will launch advanced clean energy technologies into large international markets, free of the need for ongoing government subsidies. This will provide large export benefits to the United States at the same time as providing economic, environmental, and security benefits to our partners.

Draft					
Budgets are staff-level estimates and have not been formally reviewed or approved by the Agencies					
	AID	DOE	EPA	TRADE	TOTAL
Efficient Buildings	~7.0	~7.5	~4.0	~1.5	20
Combined Heat and Power	~2.4	~5.4	~0.2	~2.0	10
Efficiency Industry	~2.5	~2.5	~2.5	~2.5	10
Efficient Transport	~2.0	~6.5	~10.0	~1.5	20
Fossil Energy Supply	~1.0	~14.2 (+26)	~4 (+12)	~2	20 (+38)
Nuclear Energy Supply	~3.0	~7.0 (+18)	~0	~0.5	10 (+18)
Renewable Energy Supply	~17.	~11.	~8	~4	40
Capacity Building	~12	~3	~5 (+5.5)	~0	20 (+5.5)
Energy Sector Reform					20
Demonstration and Buy-down					40
Finance					40
TOTAL	~47+xx?	~57+xx? (+44)?	~33+xx? (+17.5)?	~14+xx?	250 (+61.5)?

Totals line up with PCAST recommended funding levels; (funding levels) in parentheses are agency initial proposals above the PCAST recommended levels.



Angela C. Mizeur

01/20/2000 06:39:57 PM

Record Type: Record

To: Roger S. Ballentine/WHO/EOP@EOP, Ian A. Bowles/NSC/EOP@EOP

cc:

Subject: 10am mtg list

Attendees:

Jeff

Clyde Robinson

David Goldwyn

Kate English

Mike Copps

David Hales

John Wilson (USAID)

Bill Anderson (USAID)

Ken Brill

Dan Balzer

Michelle Maynard (state)

Harvey Himberg

Tom Schehl

Harvey Himberg

Pending:

Nigel

AGENDA
INTERNATIONAL CLEAN ENERGY INITIATIVE
NSTC PRINCIPALS
Eisenhower Room, 2nd Floor
White House Conference Center
724 Jackson Place
November 22, 1999

9:00 Welcome and Introductions

9:10 Background and Context: PCAST and the global energy context
Overview of the budget package

9:20 Discussion of key issues

Agency Priorities. Each agency should speak for 2-3 minutes on their priorities and how to ensure that activities still link effectively across agencies.

Development of the Budget Initiative

- Balance between a few larger efforts versus more smaller ones—and for smaller efforts, how to ensure a critical mass of activity.
- Balance between quick impact and building a strong long-term foundation.
- Balance across the portfolio—efficiency, fossil, nuclear, renewables.

- Identifying baselines of Agency activities and ability to ramp up efforts.
- Identifying budget crosswalks for funding.
- Developing adequate metrics for measuring the impacts, costs, and benefits of the initiative and linking it to U.S. interests.

10:00 Overall Internal Administration strategy

10:30 Overall Congressional Strategy

10:50 Next Steps

11:00 Close

VP Statement on Report of the President's Committee of Advisors on Science and Technology

I am very pleased to release today the new report by the President's Committee of Advisors on Science and Technology, *Powerful Partnerships: The Federal Role in International Cooperation on Energy Innovation*. Prepared by distinguished leaders in business, academia, and science, this report recommends a strengthened partnership between American business and the federal government to step up to the global energy and environmental challenges of the next century.

International energy markets, already worth hundreds of billions of dollars a year, are growing dramatically to meet exploding demand in developing countries. This translates into big market potential for competitive U.S. energy technology companies. But it also poses a critical environmental challenge. If developing countries rely only on traditional energy technologies, we will lose the battle to limit greenhouse gas emissions and assure a livable environment in the coming century.

This report to the President highlights the strategic importance to the United States of maintaining scientific and market leadership in energy technology, and identifies many opportunities to improve energy efficiency in buildings, industry, transportation, and clean energy generation. The redoubled effort called for in this report will help reduce dependence on imported oil and spur economic growth in developing countries while minimizing emissions of greenhouse gases.

An earlier PCAST report provided the foundation for the Administration's Climate Change Technology Initiative. This new report extends that work and provides a global strategic vision for energy innovation. It comes at a time when increasing numbers of Americans and American businesses are recognizing the need to accelerate clean energy technologies for economic and environmental gains. This Administration is committed to active international engagement to address climate change and build new markets for American technology companies. I urge Congress to join with us in fully funding our Climate Change Technology Initiative and implementing key recommendations in this vital report.

American Wind Energy Association* Friends of the Earth
Solar Energy Industry Association* Geothermal Energy Association
Institute for Policy Studies* PERC

January 5, 2000

Mr. George Muñoz
President and Chief Executive Officer
Overseas Private Investment Corporation
1100 New York Avenue, N.W.
Washington, D.C. 20527-0001

Re: Request for Programmatic Environmental Impact Statement Analyzing Impacts
of and Alternatives to Actions that Contribute to Global Climate Change

Dear Mr. Muñoz:

The Overseas Private Investment Corporation ("OPIC") is uniquely positioned to play a crucial role in assisting U.S. private sector renewable energy and energy efficiency financing in developing countries. We believe that preparing now for increased funding of sustainable renewables will provide U.S. industries, including U.S. small businesses, with a significant competitive advantage over foreign counterparts in the global marketplace. More focus on sustainable renewable energy sources will help stimulate business for domestic companies as developing country partners see the growing value of our environmentally beneficial technology. The actions we propose will also create more U.S. jobs.

OPIC can play a key role in helping U.S. renewable businesses address growing energy demands internationally in a clean and profitable manner, but action must be proactive and bold. Our organizations write to respectfully urge OPIC to take initial steps towards a 20% shift of funding in your power and energy sectors towards sustainable renewable energy such as solar, wind and geothermal and energy efficiency projects. Such is good for U.S. businesses and job creation, good for the environment, and consistent with the mission of OPIC.

With this letter, the undersigned organizations respectfully urge OPIC to prepare a Programmatic Environmental Impact Statement ("PEIS") pursuant to the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321 et seq., and implementing regulations of the Council on Environmental Quality ("CEQ"). 40 C.F.R. Parts 1500-1508. A PEIS, must

identify the direct, indirect, and cumulative effects that lending by OPIC has on global climate change. The PEIS should also specify alternatives and mitigating measures that can be taken to eliminate or ameliorate negative impacts. In addition to improving the quality of the environment globally and domestically, a PEIS will substantially enhance OPIC's efforts to increase exports of U.S. environmental technologies that reduce global climate change. Such technologies include renewable sources of energy, such as solar power, geothermal energy and wind energy.

This request follows up on a report submitted to OPIC that evaluated the extent to which projects supported by OPIC during the past six years contribute to global climate change. That report demonstrated that many of these projects contribute to a substantial level of emissions of greenhouse gases into the atmosphere, either directly or indirectly. The report also set out several recommendations for reducing these emissions, including the preparation of a PEIS as required under NEPA. OPIC's response to the report so far has been to reject these recommendations and to deny that NEPA applies to OPIC's projects abroad. That position is particularly troubling because, based on disclosures under the Freedom of Information Act, 5 U.S.C. Section 552, it appears that OPIC is not complying with its own environmental assessment procedures pursuant to Executive Order 12,114 in connection with projects that may have impacts on the global commons. In light of this response, this letter sets forth the legal obligations that OPIC has to prepare a PEIS under NEPA.

I. The National Environmental Policy Act and the Obligation of OPIC to Prepare a PEIS Evaluating All Decisions about Projects that Contribute to Global Climate Change.

Enacted in 1970, NEPA requires all federal agencies to identify the harmful effects of projects they undertake, fund, or approve and to consider adoption of alternatives and mitigating measures that will avoid or reduce such impacts. To these ends, Section 102(2)(C) of the Act declares:

The Congress authorizes and directs that, to the fullest extent possible . . . (2) all agencies of the Federal Government shall – . . . (C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on – (i) the environmental impact of the proposed action” 42 U.S.C. § 4332(2)(C).

This mandate is intended to “inject environmental considerations into the federal agency's decision making process” and “to inform the public that the agency considered

The American Wind Energy Association, The Geothermal Energy Association
The Solar Energy Industry Association, Friends of the Earth.

environmental concerns in its decision making process.” Weinberger v. Catholic Action of Hawaii/Peace Education Project, 454 U.S. 139, 143 (1981). Because of its importance, the EIS provision only gives way in the face of a “clear and unavoidable conflict in statutory authority.” See Flint Ridge Development Co. v. Scenic Rivers Ass’n of Oklahoma, 426 U.S. 776, 788 (1976).

To implement the EIS requirement and other provisions of NEPA, the CEQ issued regulations in 1978 that are binding on all federal agencies. 40 C.F.R. Parts 1500-1508. Those rules established certain basic requirements governing preparation and public review of an EIS, and they required each agency to publish its own rules to supplement those of the CEQ. 40 C.F.R. § 1505.1. In pertinent part, the CEQ regulations define a “major federal action” under NEPA as, among other things, “systematic and connected agency decisions allocating agency resources to implement a specific statutory directive or executive directive.” 40 C.F.R. § 1508.18(b)(3). The regulations then direct each agency to prepare a comprehensive or programmatic EIS evaluating the impacts of such actions in one document. 40 C.F.R. § 1502.4. While a PEIS may be triggered by related actions, it is also required where distinct individual projects have similar cumulative impacts (so-called “cumulative actions”). 40 C.F.R. § 1508.25. Under the CEQ rules, the term “cumulative impacts” is defined to mean the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such action.” 40 C.F.R. § 1508.7.

Under these criteria, there is no question that support by OPIC of projects resulting in or indirectly leading to greenhouse gas emissions constitute a major federal action that significantly impacts the human environment and, therefore, requires preparation of a PEIS. Indeed, between 1992 and 1998, OPIC underwrote several billion dollars in financing for oil, gas, and coal projects around the world. These projects, over their lifetimes, will release several billion tons of carbon dioxide into the atmosphere. That investment in fossil fuel energy exceeds those of some multilateral development banks, including the European Bank for Reconstruction and Development (\$1.2 billion and 6.5 billion tons of carbon dioxide from 1992 to 1997), and it rivals that of the World Bank (\$13.6 billion and 37.5 tons of carbon dioxide between 1992 and 1998). While OPIC may dispute these figures, a PEIS is required even if one accepts the

OPIC would limit this figure by not including emissions from fossil fuel producing projects such as oil and gas projects and pipelines. Narrowing the analysis in this manner is inconsistent with the CEQ regulations, which requires all federal agencies to consider the “indirect impacts” of their actions on the environment. 40 C.F.R. § 1508.8. Moreover, even if OPIC were correct, it concedes that at least 4.2 billion metric tons of carbon dioxide will be directly released from projects it supports during the next 25 years. That quantity is more than enough to trigger the EIS requirement.

agency's lower estimates of greenhouse gas emissions. Indeed, OPIC has acknowledged that the cumulative impacts of "several large projects" it supports could conceivably have an impact on extraterritorial waters or the atmosphere sufficient to trigger the EIS requirement. See 63 Fed. Reg. 9696, 9699 (1998). As a result, OPIC must prepare a PEIS in connection with support for all programs involving projects contributing to global climate change.

Because OPIC has never prepared a PEIS or otherwise complied with NEPA in connection with any programs involving release of fossil fuel emissions, the agency has violated the statute's EIS requirement. To address this problem, OPIC must prepare a PEIS to fulfill their obligations under NEPA. No matter what form it takes, however, the document(s) must govern all programs resulting in greenhouse gas emissions from projects that receive financial assistance from each agency. In this context, it must be emphasized that support by OPIC of such projects need not await completion of this PEIS. Rather, as provided by CEQ's regulations, such actions may proceed if they are justified independently of the program, accompanied by an adequate EIS (or environmental assessment as the case may be), and will not prejudice the ultimate decision on the PEIS. Such prejudice may occur where interim action tends to determine subsequent development or limit alternatives available to the agency. See 40 C.F.R. § 1506.1(c). Moreover, as contemplated by the CEQ rules, development of a PEIS by OPIC does not in any way preclude applicants from formulating plans or designs necessary to support applications for financial assistance to OPIC. 40 C.F.R. § 1506.1(d).

II. The Legal Argument Advanced by OPIC to Forego Compliance with NEPA has Been Rejected by the U.S. Court of Appeals for the D.C. Circuit

OPIC refuses to comply with NEPA because, among other things, they claim that the EIS requirement does not govern decisions about financial assistance to projects overseas. That conclusion is grounded in a State Department opinion issued shortly following enactment of NEPA that federal agencies need not prepare EISs for projects occurring in foreign countries. In reaching that interpretation of NEPA, the Department relied on the "presumption against extraterritorial application of United States law" -- a rule of statutory construction which requires

OPIC would limit this figure by not including emissions from fossil fuel producing projects such as oil and gas projects and pipelines. Narrowing the analysis in this manner is inconsistent with the CEQ regulations, which requires all federal agencies to consider the "indirect impacts" of their actions on the environment. 40 C.F.R. § 1508.8. Moreover, even if OPIC were correct, it concedes that at least 4.2 billion metric tons of carbon dioxide will be directly released from projects it supports during the next 25 years. That quantity is more than enough to trigger the EIS requirement.

The CEQ regulations authorize two separate agencies (i.e., OPIC and EXIM) to act as "joint lead agencies" in the preparation of an EIS. See 40 C.F.R. § 1501.5(b).

legislation to be interpreted as applying only within the territorial jurisdiction of the United States unless Congress clearly expressed its intent that the statute should apply abroad. See Equal Employment Opportunity Commission v. Arabian American Oil Co., 499 U.S. 244 (1991). Although NEPA's EIS requirement applies to any action affecting the "human environment," a term that encompasses the environment outside the United States, the State Department concluded that this language was not a sufficiently express statement of extraterritorial intent to overcome the presumption against applying NEPA's requirements to projects abroad. While the CEQ subsequently rejected use of this rule of construction to interpret NEPA, has nonetheless consistently relied on the State Department's interpretation in refusing to comply with NEPA for projects abroad.

OPIC cannot take this position any longer. That is because the U.S. Court of Appeals for the District of Columbia Circuit eviscerated the legal underpinnings of the contention that NEPA does not govern federal decisions about projects overseas. Specifically, in Environmental Defense Fund v. Massey, 986 F.2d 528 (D.C. Cir. 1993) ("Massey"), the court found that the presumption against extraterritorial application of U.S. law does not apply to NEPA because the statute only regulates conduct occurring within the United States. The court observed that NEPA simply sets out procedures to ensure that federal agencies make environmentally informed decisions and it does not dictate agency policy or particular results. *Id.* at 532. As a result, "since NEPA is designed to regulate conduct occurring within the territory of the United States, and imposes no substantive requirements which could be interpreted to govern conduct abroad, the presumption against extraterritoriality does not apply" *Id.* Because the plain language of Section 102(2)(C) of NEPA "is clearly not limited to actions of federal agencies that have significant environmental effects within U.S. borders," *id.* at 536, the court found that NEPA governs federal agency decisions about projects in Antarctica.

In Massey, the court found that NEPA governs U.S. decisions about activities in Antarctica -- an area where sovereignty is disputed. *Id.* at 537. The Court's refusal to apply the presumption against extraterritorial application to NEPA, however, substantially undercuts the argument that the EIS requirement does not apply to projects in foreign countries. That is particularly true where, as here, the failure to comply with NEPA could have adverse effects within the United States. Indeed, the Massey court found that the presumption also does not apply where the failure to extend the scope of the statute to a foreign setting could result in adverse effects within the United States. *Id.* at 531. While that exception was not tested in the Massey case, there is no question that here the enormous quantity of emissions from oil, gas and coal projects supported by OPIC programs contribute to global climate change. The courts have

See Memorandum from Christian A. Herter, Department of State, to Russell Train, Council on Environmental Quality, May 4, 1970. Reprinted in *Administration of the National Environmental Policy Act: Hearing Before the Subcommittee on Fisheries and Wildlife Conservation of the House Committee on Merchant Marine and Fisheries*, 91st Cong., 2d Sess. 551 (1970).

recognized that climate change will, in turn, have adverse impacts in the United States. See City of Los Angeles v. NHTSA, 912 F.2d 478, 491-494 (D.C. Cir. 1990). Accordingly, reliance by OPIC on the presumption to avoid preparation of the PEIS requested herein is especially unwarranted.

III. OPIC Can Not Avoid Compliance With NEPA by Attempting to Distinguish Massey or by Claiming that Their Actions Contributing to Climate Change are Being Evaluated.

Despite the breadth of the court's reasoning in Massey, OPIC continues to assert that NEPA does not govern their decisions about programs involving projects abroad that contribute to global climate change. To that end, some invokes a 1981 Appeals Court decision, where there was no majority opinion, and two district court cases. None of these decisions, however, supports the argument of OPIC that the presumption still governs interpretation of NEPA. In fact, in Natural Resources Defense Council, Inc. v. Nuclear Regulatory Commission, 647 F.2d 1345 (D.C. Cir. 1981) ("NRDC"), both judges agreed that the presumption does not govern the Court's analysis of NEPA. Moreover, in Greenpeace, U.S.A. v. Stone, 748 F. Supp. 749 (D. Hawaii 1990), appeal dismissed as moot, 924 F.2d 175 (9th Cir. 1991), the court emphatically limited its holding to the "specific and unique facts presented" in the case (enjoining the removal of chemical weapons from Germany pursuant to a Presidential agreement). It declared that "in other circumstances, NEPA may require a Federal agency to prepare an EIS for action taken abroad." *Id.* at 761. Similarly, in NEPA Coalition of Japan v. Aspin, 837 F. Supp. 466 (D.D.C. 1993), the court also expressly narrowed its holding to finding that the presumption does not apply because "there are clear foreign policy and treaty concerns involving a security relationship between the United States and a sovereign power." *Id.* at 468. The court specifically left open the question "whether NEPA applies in other factual contexts." *Id.*

In addition, OPIC asserts that NEPA does not apply because Executive Order 12114 ("E.O. 12114" or "Order") represents the United States Government's "exclusive and complete determination" of those actions to be taken under NEPA for projects affecting the environment

Specifically, Judge Wilkey stated that the "extraterritoriality principle governs the construction of statutes which are sought to be applied in a manner which proscribes or prescribes activity in the sovereign territory of a foreign country, and would therefore be inapposite where the regulated conduct occurs within the United States." NRDC at 1356. While ultimately concluding that NEPA does not apply to the challenged action, Judge Wilkey declared that his decision was "not necessarily that the EIS requirement is inapplicable to some other kind of major federal action abroad." NRDC at 1366. Judge Robinson indicated that the "conduct regulated by the [NRC] licensing process is not extraterritorial in nature," and he rejected "NRC's claim that an export license would constitute an extraterritorial application of NEPA . . ." NRDC at 1377 and 1384, n. 138. Ultimately, he did not reach the "broad decision" of NEPA's "international scope" since that "precise question" was not before the Court. NRDC at 1385.

outside of the United States. The Order purportedly does not require OPIC to comply with NEPA in connection with their decisions about projects abroad. Once again, however, the agency has erred. It is well established that “an Executive Order cannot supersede a statute.” See Marks v. CIA, 590 F.2d 997, 1003 (D.C. Cir. 1978). Moreover, even if it could, E.O. 12114 actually requires OPIC to prepare an EIS under NEPA in the instant case. Under Sections 2-3 and 2-4 of the Order, federal agencies must prepare an “Environmental Impact Statement” for actions “significantly affecting the environment of the global commons outside the jurisdiction of any nation (e.g., the oceans or Antarctica).” There is no question that emissions from the numerous projects supported by OPIC programs are having an impact on the “global commons.” While the agency may attempt to argue that the EIS required under the Order is different than an EIS contemplated under NEPA, the history surrounding adoption of the Order and its plain language flatly rejects that interpretation.

OPIC next argues that they need not comply with NEPA because legislation enacted by Congress governing environmental review by the agencies is more than adequate to ensure protection of the environment. That legislation includes the Foreign Assistance Act, which requires environmental review of projects by OPIC. See 22 U.S.C. §§ 2191(3). Yet, these legislative initiatives do not relieve OPIC of the obligation to comply with NEPA. “Given Congress’ clearly expressed desire to ensure that all government actions are taken in accordance with NEPA, and its ability to expressly override the requirements of the Act, . . . even when substantive legislation is involved, repeal by implication [of NEPA] should only be found in the rarest of circumstances.” See Izaak Walton League of America v. Marsh, 655 F.2d 346, 367-368 (D.C. Cir. 1981). Here, there is no evidence whatsoever that Congress intended to repeal NEPA when it amended the Foreign Assistance Act. Consequently, while OPIC must evaluate certain

E.O. 12114 was designed to resolve a dispute principally between CEQ and the State Department over whether NEPA applied to projects with impacts in foreign countries. On the other hand, both agencies agreed that NEPA governed decisions about projects with impacts on the global commons. During a Congressional hearing shortly before adoption of the Order, a State Department representative testified that the Department and CEQ were reaching “agreement on certain basic concepts” for an Executive Order. He indicated that the “global commons, particularly the oceans and Antarctica,” were a “situation[] of paramount concern,” and that an EIS would be prepared for actions affecting such areas. In describing such provisions at the same hearing, the Chairman of the CEQ stated that “the solution which is emerging applies NEPA in full to activities abroad of Federal agencies which affect the global commons, such as the marine environment, the atmospheric environment” See Export-Import Bank Amendments of 1978: Hearings on S. 3077 Before the Subcomm. On Resource Protection of the Senate Comm. On Environment and Public Works, 95th Cong., 2d Sess. 200, 209.

The Massey court reached the same conclusion. The federal agency in that case (the National Science Foundation (“NSF”)) argued that it could not comply with NEPA because it was subject to different environmental

environmental impacts under those statutes, they must also comply with NEPA.

OPIC also suggested that environmental assessment under these statutory provisions serves as the “functional equivalent” of NEPA compliance. That doctrine, however, has been construed very narrowly and it certainly does not excuse OPIC from preparation of a PEIS under NEPA. See *Portland Cement Association v. Ruckelshaus*, 486 F.2d 375 (D.C. Cir. 1973) (“NEPA must be accorded full vitality as to non-environmental agencies . . .”). In fact, it is rather absurd for OPIC to make this argument since the record demonstrates that neither agency has ever evaluated the impacts of projects or programs that contribute to global climate change, as required by their own procedures. On June 22, 1999, Friends of the Earth (“FOE”) submitted requests under the Freedom of Information Act (“FOIA”), 5 U.S.C. § 552, to OPIC for all documents relating to determinations by the agency that certain projects or programs may have a significant effect on the environment of the global commons. While the environmental assessment procedures for OPIC call for such determinations, OPIC subsequently advised FOE that they possess no records “responsive” to these requests. The absence of such documents can only lead to one inescapable conclusion –OPIC has never evaluated the direct, indirect or cumulative impacts that projects they support have on the global environment or alternatives that may avoid such impacts.

IV. Compliance with NEPA Will Substantially Enhance the Efforts of OPIC to Encourage Exports of U.S. Environmental Technologies that Reduce Climate Change.

OPIC also resists complying with NEPA because, they claim, it will undercut their efforts to promote exports of U.S. goods and services. While conceding that environmental review is compatible with this mission, the agency suggests that only their existing environmental assessment procedures can achieve the “conscious and careful balancing” that their authorizing statutes demand. Yet, it is clear that the balancing contemplated by these statutes includes

assessment requirements. Finding that NEPA was compatible with the additional assessment requirements, the Court of Appeals rejected that argument. See *Massey* at 534-535. The same result applies here. Nothing in either the Foreign Assistance Act or Export-Import Bank Act is inconsistent with NEPA.

In support of this argument, some cite *Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995). In fact, that court did not excuse the federal agency there from NEPA compliance on those grounds at all. *Id.* at 1504, n. 10. Rather, it held that NEPA does not apply because Congress intended that the statute at issue (the Endangered Species Act) displace NEPA’s requirements and because the action at issue did nothing to alter the natural physical environment. Neither of those factors exists here.

See Letter from Laura Naide, FOIA Director, OPIC to Brian Dunkiel, FOE, July 8, 1999.

weighing various alternative actions based on their environmental impacts. Section 231(n) of the Foreign Assistance Act requires OPIC to “[r]efuse to insure, reinsure, guarantee, or finance any investment in connection with a project which the Corporation determines will pose an unreasonable or major environmental, health, or safety hazard, or will result in the significant degradation of national parks or similar protected areas.” 22 U.S.C. § 2191(k)(2).

Compliance with NEPA will further the agency’s mandate to make such determinations – not undermine it. The NEPA process will help OPIC identify impacts to the environment that may implicate these statutory criteria. Moreover, it will require OPIC to undertake a “rigorous” and “objective” evaluation of alternatives and mitigating measures that can eliminate or reduce impacts to the environment from a proposed action. 40 C.F.R. § 1502.14. That process entails identifying the environmental impacts of a proposal and alternatives in comparative form so that the issues are “sharply defined” and the decision-maker and public have a “clear basis for choice” among the various options. *Id.* Hence, in the context of evaluating programs that contribute to global climate change, OPIC will need to specify in the PEIS those renewable sources of energy (such as solar power, geothermal energy, and wind power) and energy efficiency programs that can serve as alternatives to actions that contribute to greenhouse gas emissions. The agency will then be required to compare the environmental impacts of these alternatives with the harm that results from programs supporting actions that lead to global climate change. Such an analysis is consistent with the Foreign Assistance Act.

In this context, OPIC asserts that they do not control the number or types of applications for financial assistance filed by private parties. As a result, the agency claims that they cannot establish a proactive program shifting funding of projects with greenhouse gas emissions to projects involving renewable sources of energy. The undersigned organizations respectfully disagree. While OPIC may not technically be a “development funding” agency, they are no different than any number of other agencies that review and grant applications from private parties to undertake particular projects. For example, federal agencies such as the U.S. Forest Service or the Interior Department do not select projects falling within their jurisdiction that private parties wish to pursue. Yet, in anticipation of receiving applications for such activities, these agencies periodically prepare a PEIS evaluating how such activities should proceed on a collective basis. There is no reason that OPIC cannot do the same thing.

Indeed, based on an analysis of projects supported by the agency during the past six years, OPIC can gain a relatively sophisticated understanding of the magnitude of annual greenhouse gas emissions arising directly and indirectly from decisions to grant financial assistance. Through the development of alternatives to this program, the PEIS can establish a decreasing cap on total greenhouse gas emissions for each year that arise from all OPIC programs. Once that level is reached for a particular year, the agency may no longer approve projects that result in or lead to global climate change. Rather, whatever amount of funding remains may only be utilized for support of U.S. renewable energy projects overseas. Through

this programmatic process, OPIC can, in fact, accomplish a 20% portfolio shift from projects involving fossil fuels to those involving renewable sources of energy and energy efficiency projects. Compliance with NEPA and preparation of the PEIS requested herein is the way in which OPIC can develop this strategy that will stimulate exports of renewable sources of energy. That result is not only authorized by the Foreign Assistance Act -- it is mandated by such legislation.

Thank you for your consideration of this request. In light of the urgent need to commence preparation of a PEIS evaluating OPIC programs that contribute to global climate change, the undersigned organizations respectfully request OPIC to indicate by contacting, Brian Dunkiel, Friends of the Earth's staff attorney [(802) 951-9094], whether they will commence the NEPA scoping process, or for any questions or communications regarding this letter.

Sincerely,

Randall Swisher
Executive Director
American Wind Energy Association

Karl Gawell
Executive Director
Geothermal Energy Association

Scott Sklar
Executive Director
Solar Energy Industries Association

Brent Blackwelder
President
Friends of the Earth

Daphne Wysham
Institute for Policy Studies

Doug Norlen
Pacific Environment & Resources Center

cc: Charles D. Toy, Vice President and General Counsel, OPIC
Dinah Bear, General Counsel, Council on Environmental Quality
Joan Edwards, Investment Development, OPIC

MEMO:

TO: Roger Ballentine

FROM: Sam Baldwin

RE: Agency Baseline Activities on International Energy Research, Development, Demonstration, and Deployment

DATE: November 17, 1999

USAID Programs include:

- Energy efficiency (buildings, industry, transport) and fossil and renewable energy supply demonstration, deployment, and outreach programs, with activities in Africa, Asia, and LACC.
- Capacity building, including the Energy and Environment Training Program which has trained some 10,000 people from 94 countries.
- Sector reform, including the Energy Partnership Program that establishes practitioner-to-practitioner partnerships between U.S. and developing country utilities and regulatory agencies, and the Technology Cooperation Agreements Pilot Project to reduce barriers and facilitate business activities in clean energy.
- Finance, including the Environmental Enterprise Assistance Fund.

DOE Programs in the international domain include:

- Energy Efficiency: building efficiency activities have been done with Russia, China, and a number of other countries. Industrial efficiency programs, such as efficient motors, have been done in China and elsewhere. Energy efficiency programs in the national labs are ongoing through efficiency centers (with support from USAID and EPA as well) in the Former Soviet Union, Asia, elsewhere.
- Energy Supply: Fossil supply activities include promotion of natural gas, advanced gas turbines, and fuel cells in Latin America, the Pacific, and Asia, cleaner coal in India and China, and establishing the oil and gas forum in Latin America. Nuclear fission activities include extensive work in the former soviet union countries. Renewable energy activities include grid-connected, distributed, minigrid, and offgrid systems with biomass, photovoltaics, and wind in some 20 countries. The Village Power Program is widely recognized as a world leader in moving rural electrification programs forward for the 2 billion people that currently do not have access to electricity.
- Capacity Building. DOE, through the national labs, has an extensive network of contacts with researchers in other countries, ongoing information exchange, and frequent exchanges of researchers. Has worked closely with EPA on the country studies program.
- Sector Reform. Provides technical assistance to foreign counterparts on sector reform, pricing, and related issues. Also support the TCAPP activity.
- Financing. Have worked on Joint Implementation and a range of financing issues with the Trade agencies.

EPA's programs include:

- Energy efficiency. Energy star labeling and other mechanisms to assist widespread deployment of efficient technologies. In transport, activities include vehicle emissions testing and planning assistance for transportation systems.
- Energy Supply activities include the Natural Gas Star program to reduce methane leakage, analytical support to estimate environmental externalities, and support for coal-bed methane recovery. Renewables activities include landfill methane recovery outreach, and minigrid/off-grid support through the ETI program
 - Capacity building. Activities include the Country Studies program to provide technical assistance to

developing countries in developing emissions inventories, conducting economic analysis, and considering policy choices; the Environmental Technology Verification program to evaluate the energy and environmental performance of technologies; and the Technology Cooperation Agreements Pilot Project which has been supported by EPA, AID, and DOE, as noted above.

- Sector reform includes support from the acid rain program to provide technical assistance on emissions trading, support for expanding natural gas use, and analytical and technical support on evaluating the environmental and health impacts of energy externalities.
- Finance activities include support for the US Joint Implementation Program

DOC, Export-Import Bank, Overseas Private Investment Corporation, Trade and Development Agency activities include:

- The US and Foreign Commercial Service, trade missions, reverse trade missions, trade shows, analysis, and a host of other supports to encourage trade and facilitate links between US and foreign businesses.
- Feasibility analyses and technical assistance to move projects into the finance pipeline.
- Loans and guarantees for US exporters.
- Political risk insurance and other financial supports for U.S. investors offshore.

David W. Rejeski 11/08/99 02:34:27 PM

Record Type: Record

To: See the distribution list at the bottom of this message
cc: See the distribution list at the bottom of this message
Subject: Doubling Meeting



Dear 2xfindings-2.doc Friends and Colleagues:

Below (and attached as a Word file) you will find a summary of the discussion we had at the October 21st meeting on doubling environmental technology exports. We have done our best to capture and condense a significant amount of material. Please let us know whether we have omitted some key ideas, need to clarify issues (some of this is ongoing), or sharpen our descriptions.

The Environmental Technology Trade Advisory Committee (ETTAC) is meeting at the Department of Commerce next week and will be discussing these ideas, so please get us feedback this week, if possible, so we can include your comments.

We are especially interested in any rank ordering you could provide on the lists (of technologies, hot markets, or doubling strategies). We will be working to define and sharpen a short-term strategy over the next month and look forward to working with you on this project.

Thanks again.

Dave Rejeski
Environmental Technology Task Force

**Government-Industry Dialogue on Environmental Technology
Exports
White House Conference Center
Washington, DC
October 21, 1999**

Representatives of the environmental industry, related non-profit organizations, and the federal government met to brainstorm on how to double the level of environmental technology exports (both goods and services), from approximately \$18 billion to over \$35 billion during the next four years. This goal builds on the previous doubling of environmental export levels, from \$9 billion to \$18 billion since 1993.

The meeting had three primary goals:

- Determine areas where U.S. technologies are clearly superior.
- Identify important emerging markets.
- Develop a number of short-term steps to help double environmental exports.

Areas identified by participants where U.S. environmental technology companies have substantial competitive advantage:

Technologies:

- Micro-level water and waste water treatment systems (especially de-centralized packaged systems using membrane filtration, reverse osmosis, molecular sieve, and hollow fiber separation technologies)
- Water/wastewater testing technologies (products used for testing)
- Real-time monitoring and characterization technologies (for liquid/solid waste flows and gaseous emissions)
- ? • Process control technologies (especially those with 4x or greater "multiplier" capabilities)
- ? • Control systems for electrical power generation and distribution
- Information technologies such as Geographic Information Systems and Decision Support Systems
- ✱ • Small wind turbines, i.e., 50 KW or less (European companies lead in large wind turbines)
- Pollution prevention/clean production technologies (replacement technologies for elimination of petroleum-based solvents, ODCs), and point-source reduction technologies such as clean coal gasification and gas turbines technologies)
- Alternatives to ozone depleting chemicals (i.e. CFC replacements, paint alternatives, fire suppressants)
- Soil and groundwater remediation and treatment technologies
- ? • Air pollution control technologies (such as FGDs)
- ? • Financing mechanisms
- ? • Technology bundling/integration services, including "whole package" financing and design/build/operate
- "Service monitoring" services
- "Packaged" engineering design solutions

why not
more
energy
stuff?

Areas where U.S. enviro tech firms have lost ground to foreign competitors:

- Hazardous waste treatment (i.e. incinerators)
- Industrial air purification
- Municipal infrastructure projects (i.e. large water treatment plants)

Hot Markets:

We agreed on three underlying criteria for "hot markets":

- 1.) Regions with existing problems and/or rising concerns about the environment.
- 2.) Regions with favorable laws, regulations, and trade policies.
- 3.) Regions with the ability to pay for solutions.

Current hot market countries/regions:

- The Middle East (primarily water treatment)
- Brazil
- Mexico
- Israel
- Japan, Europe (still represent the majority of U.S. exports)

China/India

Upcoming hot market countries/regions:

- China/India (by sheer demographics, Japan already laying the groundwork)
- Taiwan
- Southeast Asia (Indonesian, Malay, Thai economies bouncing back)
- Central Africa (with coming oil revenues)
- Russia
- Nigeria
- South Africa

Problem-based markets:

CFC replacements

Arsenic filtration systems for groundwater (in Bangladesh)

Swine/animal waste (in Taiwan, Malaysia, and Korea)

River-basin cleanups

Desalination (in the Middle East)

Water purification (i.e. cheap filters in Chinese market)

Greenhouse gas emissions trading systems

Strategies to double environmental exports:

Provide support for U.S. companies who move technologies to other countries as part of military operations and/or humanitarian aid (Roddy Tempest is creating a

short description of his experience in Albania).

Provide funding (perhaps through tax breaks) to small companies preparing bids for substantial foreign projects (check on Canadian model).

Empower foreign missions to boost U.S. environmental technology exports (In 1978, at the behest of the Carter WH, the Administrator of AID sent a cable to all missions asking them to develop renewable energy projects, which generated over \$100 million in sales)

more info

Debt-forgiveness as mechanism to support environmental purchases (check on this) (Also soft loans?).

Help small firms who are the primary innovators and patent holders but need help with the necessary infrastructure develop and sell their products (i.e. through more reverse trade missions, more financial and foreign assistance help, linking them with experienced large exporters).

Have dedicated enviro tech boosters in foreign embassies. Train U.S. representatives abroad (like the U.S. foreign exports commission State Department officials, USAID) about the enviro tech industry.

Create support centers to promote U.S. technology (i.e. UNDP project)

Provide sustained technical assistance to foreign countries to create a market for U.S. products (this has worked effectively for several European countries).

Employ more technically trained staff in foreign missions.

Create a comprehensive database/mailling list of diffuse environmental technology industry.

Create clearinghouse on all US Government programs that assist the industry.

Support translation of technical documents, manuals, etc.

Reexamine barriers to exporting dual-use technologies.

Revise SIC codes to include environmental technologies and improve tracking of market.

Support intellectual property right protection overseas

Change perception that Europe is enviro tech leader.

Combat perception that government support of boosting exports represents corporate welfare.



Inform local legislators of the size and nature of the environmental technology industry. By linking industry to economic development we should achieve the same level of influence as the steel or auto industry.

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 David Gardiner
09/10/99 05:59:01 PM

Record Type: Record

To: George T. Frampton/CEQ/EOP@EOP, Roger S. Ballentine/WHO/EOP@EOP

cc:

Subject: Strategic Thinking



new strategic thoughts.d

TO: GEORGE FRAMPTON
ROGER BALLENTINE

FROM: DAVID GARDINER
JEFF SEABRIGHT

RE: CLIMATE STRATEGY

September 10, 1999

In preparation for the Vice President's September 22 meeting with environmental leaders and for COP-5, it is timely to rethink aspects of our climate policy and consider changes. This memo considers approaches to international and domestic climate policy, and proposes changes. Since it would be highly unlikely that we could develop any new policy changes by September 22, you should seek approval to begin a broader process within the Administration to consider those changes. That would enable the Vice President to use the meeting to congratulate environmental leaders for strengthening public and congressional base of issue, to announce a process for developing new climate policy, and to seek input on the content of those new policies.

STRATEGIC CHOICES

*suggests "old" policy was a failure;
not acceptable.*

There are three possible approaches to shaping our international and domestic climate policy.

The first approach is to stay the course. We would continue to advocate a domestic agenda based on voluntary actions by businesses and other actors, dramatic expansion of clean technology R&D funding, and other small measures, while pushing an international approach of the Kyoto Protocol, with meaningful participation by key developing countries. This strategy may continue an approach that makes no one happy – the business community fears and opposes Kyoto, while the environmental community doesn't give the Administration much

credit for Kyoto and is upset with absence of mandatory domestic actions. More generally, there are also increasing concerns that Kyoto could not be ratified in its current form, even with developing country participation.

The second approach would be reenergize and refocus attention on the domestic climate actions. The Administration would develop and announce stronger domestic action for the transportation and electric power sectors. There are a number of options here for either sector or both, and most of the mandatory options would involve legislative action. Careful consideration would need to be given to the interaction between measures for climate change and steps that might be taken under the Clean Air Act. The environmental community would respond well to further mandatory domestic actions, while we could anticipate strong opposition from affected industries, their unions, and large elements of Congress. In particular, any action that we propose is likely to be labeled as "Kyoto implementation". Any additional domestic mandatory domestic action announced prior to COP-5 would be well received by other countries and would strengthen the US negotiating position on flexibility mechanisms and developing countries.

what does this mean?

The third approach would focus on proposing additional changes to the Kyoto Protocol to enhance its prospects for ratification. Most specifically, the US would call for a safety valve or a price ceiling to be set in the Protocol as part of compliance mechanisms. This action would almost certainly be interpreted as a "weakening" of the US position, and would encounter opposition from the environmental community, the European Union, and others. The business community would be likely to favor this move, although some opposed it several years ago because they thought it would mandate a world price at the ceiling price – something most economists would think contrary to normal market behavior. We could also anticipate that opponents in Congress and elsewhere will falsely accuse us of having instituted a mandatory tax.

RECOMMENDED COURSE OF ACTION

The recommended course of action is for the Administration to pursue both Options 2 and 3 simultaneously, and do so prior to COP5. We would have strong support in the environmental community for stronger domestic actions which may minimize their concerns about the safety valve. The business community would get a price guarantee on the costs of the Protocol to offset their concerns about mandatory domestic measures. The combined actions would reenergize the debate on domestic action, and continue progress from voluntary and incentive-based to mandatory.

With respect to timing for the decisions, any decisions taken prior to COP-5 would advance the US international negotiating stance. If the Administration believes that changes in policy are necessary sometime in the next two years, it would be highly preferable to make changes in 1999, rather than in 2000, to minimize charges that the Administration was politicizing the climate issue.

NEXT STEPS

If you share our views on the recommended course of action, we would urge four next steps be taken urgently. First, you should immediately schedule a meeting with the President's and Vice President's other senior advisors to discuss these approaches. Second, you should direct us to draft a memo from you to the Vice President regarding the meeting with the environmental community. Third, you should direct us to prepare an options memo for you regarding the possible domestic strategies for the transportation and electric power sectors. Finally, we should discuss the options for announcing these policy changes.

How about an option 4: Entirely "new" international program, not driven by State Dept, based on trade-based/market-based plan on international sustainable energy technologies. Build on PCAST, independent of Kyoto (although certainly could relate later), but intended to go forward irrespective of Kyoto. Maybe Commerce/Energy/Ag with lead, along with Ex-Im, EPA^{OTIS} somehow linked to ECAs.



**U.S. Government
Capacity Building Activities in
Trade and Environment**

November 1999

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Executive Summary

AT the third World Trade Organization (WTO) Ministerial, ministers from more than 140 countries will meet to set the agenda for a new "round" of global trade negotiations. While promoting a global economy continues to draw support, citizens around the world increasingly voice their concerns regarding the social, cultural, and environmental implications of increased trade liberalization. The WTO Charter and the WTO's just-released study of trade and environment issues make it clear that economic growth must be pursued in the broader context of sustainable development that integrates economic, social, and environmental policies. Environmental issues stand out as critically important to ensure the sustainability of this new "round" of negotiations.

One of the root causes for concern is that many developing countries lack the capacity to address environmental management issues associated with trade liberalization. The absence of environmental regulatory and management capacity can undermine long-term economic development and threaten ecological systems essential to sustainable development, leading to instability and conflict in the developing world, often threatening U.S. security and trade interests.

The fundamental linkage between trade and investment liberalization and environmental protection has been highlighted in international and regional forums. Ultimately, trade and investment liberalization will provide maximum benefit only if it is operating within a sound supporting domestic policy framework and pursued in tandem with environmental protection. Since financial and environmental problems have common roots in policy, market, and governance failures, it is critical to invest in building developing country capacity to address these failures. For developing countries to effectively address these linkages and participate in liberalized trade and investment discussions, there is a need for strengthening the analytical, policy, and institutional capacities within such countries with respect to trade, investment, and the environment.

Because of its fundamental commitment to sustainable development, the U.S. Government (USG) is as equally committed to the protection of the environment and environmental capacity building as it is to trade and investment liberalization.

Although developing countries ultimately are responsible for their own sustainable development, it is in the United States' interest to continue supporting capacity building efforts that specifically address environmental issues associated with trade and investment liberalization as well as efforts to strengthen underlying legal and regulatory systems. The USG actively undertakes capacity building efforts in the following three broad areas related to environmental protection:

1. Promoting integrated policies in developing countries to protect the environment while raising social and economic standards:
 - Integrating sustainable development policies

- Developing, implementing, and enforcing the rule of law
 - Formulating strong environmental policies and legal frameworks
2. Promoting environmentally sustainable international trade and investment liberalization:
- Building institutional capability in natural resources management and conservation
 - Negotiating and implementing multilateral and regional environmental agreements
 - Setting conditions and controlling environmental impact
 - Enhancing understanding of and participation in international institutional frameworks
 - Improving the environmental performance of international financial institutions and export credit agencies
3. Assessing and mitigating environmental impacts of trade and investment liberalization:
- Enhancing stakeholder understanding of and participation in the identification and resolution of trade, investment, and environmental conflicts

A common commitment in each of these areas is the promotion of transparent and open decision-making processes and the strengthening of the capacity of all segments of civil society to participate in an informed and meaningful way in decisions that affect their lives.

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identifying and taking into account environmental implications of the negotiations throughout the course of the negotiations. This will be done through a variety of means.

Environmental reviews are an important tool for identifying a negotiation's potential environmental effects, both positive and negative, and facilitating consideration of appropriate responses to those effects either in the negotiations, through other means, or both.

For the new round, we will perform a written environmental review of its likely environmental consequences, with public input and sufficiently early in the process to be taken into account in formulating our positions in the negotiations. We have encouraged all WTO members to perform such reviews and are pleased that several have indicated their intentions to do so.

We have also proposed that the WTO's Committee on Trade and Environment be given the role of helping throughout the round to identify, discuss, and inform national deliberations and the negotiating groups on the environmental implications of the negotiations. At the same time, each negotiating group must address the environmental issues relevant to its work.

It is also essential that environmental agencies continue to participate actively with other agencies in the trade policy-making process.

Transparency and Openness

Transparency and openness are vital to ensuring public understanding of and support for the WTO and all international institutions. The United States has been a staunch advocate for WTO reforms, including greater interaction and exchange of information with the public through the creation of consultative mechanisms; provision of timely access to a wider range of documents such as submissions to dispute settlement panels, the findings and conclusions of dispute settlement panels, and WTO meeting minutes; provision of avenues for the filing of amicus briefs; opening dispute settlement meetings in WTO disputes; and improvement of compliance with established notification requirements that provide access to information on national laws and practices. The United States will continue to pursue a strengthening of the WTO's consultative mechanisms with stakeholders, particularly during the course of the new round.

While these reforms are critical to ensure the public a role in the multilateral trading system, transparency and openness are no less important at home. To this end, it is essential to keep the public informed about the negotiations and engage in regular dialogue between governments and stakeholders. We are committed to maintaining such informed dialogue as an important part of the policy-making process, in particular for the new round of trade negotiations, and we encourage other countries to do so as well.

Relations with International Environment Organizations

We support strong and effective cooperation between the WTO and international environmental organizations, including UNEP and the FAO, to contribute to coherence between trade and environment policies. We welcome the experience and expertise that such organizations have contributed to trade and environment discussions in the WTO and believe that such collaboration should be deepened.

Acronyms and Abbreviations

APEC	Asia-Pacific Economic Cooperation
APHIS	Animal and Plant Health Inspection Service
CARICOM	Caribbean Community
CEC	NAFTA Commission for Environmental Cooperation
CICA	U.S.-Mexico Border Information Center on Air Pollution
CITES	Convention on Trade in Endangered and Threatened Species
CLDP	DOC Commercial Law Development Program
COMESA	Common Market for Eastern and Southern Africa
DEA	Drug Enforcement Administration
DOC	U.S. Department of Commerce
DOI	U.S. Department of the Interior
DOJ	U.S. Department of Justice
EBRD	European Bank for Reconstruction and Development
ECA	Export Credit Agency
EHP	USAID Environmental Health Project
EIA	Environmental Impact Assessment
ELP	USAID Environmental Law Program
ENRD	DOJ Environment and Natural Resources Division
EPA	U.S. Environmental Protection Agency
EPIQ	USAID Environmental Policy and Institutional Strengthening Indefinite Quantity Contract
EU	European Union
Ex-Im	Export-Import Bank of the United States
FAO	UN Food and Agriculture Organization
FBI	U.S. Federal Bureau of Investigations
FCCC	Framework Convention on Climate Change
FSIS	USDA's Food Safety Inspection Service
GEF	Global Environmental Facility
GTN	USAID Global Technology Network
HACCP	Hazard Analysis and Critical Control Point
ICITAP	DOJ International Criminal Investigative Training

	Assistance Program
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IFI	International Financial Institution
IICA	Inter-American Institute for Cooperation on Agriculture
INS	Immigration and Naturalization Service
IPPC	International Plant Protection Convention
ISO	International Organization for Standardization
ITA	International Trade Administration
MDB	Multilateral Development Bank
MEA	Multilateral Environmental Agreement
NAFTA	North American Free Trade Agreement
NGO	Nongovernmental Organization
NMFS	NOAA National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OAS	Organization of American States
OES	U.S. Department of State Bureau of Oceans and International Environmental and Scientific Affairs
OFDA	USAID Office of Foreign Disaster Assistance
OGP	NOAA's Office of Global Programs
OPDAT	DOJ Office of Overseas Prosecutorial Development, Assistance, and Training
OPIC	Overseas Private Investment Corporation
PIN	Pacific Island Network
POPs	Convention on Persistent Organic Pollutants
PROARCA	Proyecto Ambiental Regional Centroamericano
PRTRs	Pollutant Release and Transfer Registers
REC	Regional Environmental Center
SADC	Southern Africa Development Community
SPS	Sanitary and Phytosanitary measures
State	U.S. Department of State
TED	Turtle Excluder Device
TIPs	Technical Information Packages
Treasury	U.S. Department of the Treasury
UNEP	UN Environment Programme

US-AEP	United States-Asia Environmental Partnership
USAID	U.S. Agency for International Development
USDA	U.S. Department of Agriculture
USG	U.S. Government
WCD	World Commission on Dams
WSCU	SADC Water Sector Coordination Unit
WTO	World Trade Organization

USG Capacity Building Activities

THE USG provides technical assistance, training, and institutional development activities to developing countries worldwide in the policies, practices, and technologies needed to create “synergies” between trade and the environment. These capacity building efforts fall in three broad categories: (1) promoting integrated policies in developing countries to protect the environment while raising social and economic standards, (2) promoting environmentally sustainable international trade and investment liberalization, and (3) assessing and mitigating environmental impacts of trade and investment liberalization. Activities within the three categories fall into nine crosscutting areas. For the purposes of this document, each activity was placed below in only one of the nine areas:

Promoting integrated policies in developing countries to protect the environment while raising social and economic standards:

1. Integrating sustainable development policies
2. Developing, implementing, and enforcing the rule of law
3. Formulating strong environmental policies and legal frameworks

Promoting environmentally sustainable international trade and investment liberalization:

4. Building institutional capability in natural resources management and conservation
5. Negotiating and implementing multilateral and regional environmental agreements
6. Setting conditions and controlling environmental impact
7. Enhancing understanding of and participation in international institutional frameworks
8. Improving the environmental performance of international financial institutions and export credit agencies

Assessing and mitigating environmental impacts of trade and investment liberalization:

9. Enhancing stakeholder understanding of and participation in the identification and resolution of trade, investment, and environmental conflicts

Following is a discussion on the importance of each of the nine areas as well as a sampling of recent and ongoing USG activities.¹ For further information on

¹ This section is based on information from USG agencies and does not represent a comprehensive summary of USG activities. USAID actions alone represent an annual

specific USG activities, please e-mail trade/env@usaid.gov.

Promoting Integrated Policies in Developing Countries to Protect the Environment while Raising Social and Economic Standards

Integrating Sustainable Development Policies

Sustainable development requires the balancing of economic development, social considerations, and environmental protection. Economic, social, and environmental policies must be integrated to ensure that they are mutually beneficial and do not undermine each other.

U.S. Agency for International Development (USAID)

Central Asian Republics' Policy and Regulatory Reform Related to Water and Energy Resources. This activity promotes broad economic reform and sustainable water and energy resources management in the Central Asian Republics. Its major objective is to create policies and institutional environments that promote sustainable development and management of the region's resources and prevent worsening of a source of potential conflict. The activity provides technical assistance in developing, advocating, and implementing environmental and energy policy and regulatory reforms that will promote regional cooperation, reduce threats of political instability, foster sound and sustainable economic development, and establish a foundation for improving public health.

Caribbean Regional Strategy Development. This activity involves the preparation of a five- to eight-year environmental strategy for the Caribbean region (Caribbean Community [CARICOM] and associate CARICOM countries as well as Haiti and the Dominican Republic) that analyzes and prioritizes the region's environmental issues, including biological diversity conservation and ecosystem management, sustainable tourism, economic and social development and sustainable trade, and integrated water management.

Russia Far East Forestry. This activity promotes broad economic reform and sustainable natural resources management in Russia to create a favorable policy and institutional environment to strengthen market forces in Khabarovskiy Krai's forestry sector. This activity also promotes sustainable economic development through sound environmental management and use and enhances previous USAID efforts to package the developed forest policy reform model for replication in Russia.

investment in excess of \$500M.

Developing, Implementing, and Enforcing the Rule of Law

Countries cannot develop, implement, and enforce strong environmental policies without an underlying legal and judicial framework and experience. For example, a country cannot develop and prosecute an environmental crimes law without the experience of prosecuting more general criminal sanctions. Nor can the country hope to achieve its environmental goals without effective enforcement and fair, fully functioning judicial systems. In this way, the legal framework and rule of law structures are directly related to capacity building in the trade and environment arena.

U.S. Department of Justice (DOJ)

Foreign Justice Sector and Law Enforcement Training and Assistance Programs. A number of DOJ components have active foreign justice sector and law enforcement training and assistance programs:

- DOJ is working with the U.S. Department of State and the Organization of American States (OAS) to establish a judicial studies center in Latin America that will allow scholarly research and analysis and provide training in criminal law.
- DOJ's law enforcement components, including the U.S. Federal Bureau of Investigations (FBI), the Drug Enforcement Administration (DEA), and the Immigration and Naturalization Service (INS), participate in a number of international law enforcement training programs, such as State's International Law Enforcement Academies in Hungary and Thailand, which train investigators and police officials.
- The Office of Overseas Prosecutorial Development, Assistance, and Training (OPDAT) assists foreign prosecutors and judicial personnel by providing technical assistance and training support in Africa, Central and Eastern Europe, Latin America and the Caribbean, and the New Independent States. OPDAT runs an international visitors program for foreign officials interested in the U.S. legal system, provides legislative reform advice on proposed criminal justice legislation, assists in reorganizing and improving host country prosecutors' offices, provides training courses and mentoring programs for prosecutors and judges, and offers administrative assistance to foreign justice ministries.
- The International Criminal Investigative Training Assistance Program (ICITAP) also provides technical assistance and training to emerging democracies to enhance the capabilities of their police and law enforcement agencies. ICITAP projects have been conducted in Latin American and the Caribbean, Central Europe, Africa, the Middle East, and the New Independent States.²

² ICITAP's budget is totally based on project-specific funding by State and USAID.

Formulating Strong Environmental Policies and Legal Frameworks

Trade and investment liberalization will not promote sustainable development if developing country governments are not fully versed in developing, implementing, and enforcing environmental regulatory policies, practices, and legal frameworks. When policymakers fail to address the environmental consequences of economic growth, serious environmental problems can result. Many developing countries require institutional strengthening in developing market-based approaches that include requisite regulations and standards, ensure enforcement and compliance, and involve stakeholders. The purpose of these efforts is to achieve progressively higher levels of environmental protection.

DOJ

Environmental Protection Training and Institutional Development Activities. The Environment and Natural Resources Division (ENRD) provides environmental protection training and institutional development activities to developing countries. Relative to DOJ/ENRD's main legal work, participation is limited, occasional, and generally funded by other agencies. Additionally, many of these activities support capacity building efforts for enforcement of the Convention on Trade in Endangered and Threatened Species (CITES), Montreal Protocol, and other multilateral environmental agreements, referenced on page 12 below in the section "Strengthening Domestic Capacity to Participate in the Development and Implementation of Multilateral and Regional Environmental Agreements." DOJ/ENRD has participated in the following activities:

- U.S. Environmental Protection Agency (EPA) programs in the Central American Network, where work with Central American countries is conducted to build their capacity to develop, strengthen, and enforce domestic environmental law.
- EPA programs to provide training courses on principles of environmental enforcement and compliance. DOJ/ENRD has helped deliver courses in South Africa, Guatemala, and Thailand.
- Training courses sponsored by the North American Free Trade Agreement (NAFTA) Commission for Environmental Cooperation (CEC) held with Mexican officials, particularly concerning illegal trade in birds.
- U.S. Department of the Interior (DOI) training programs on foreign law enforcement training. DOJ/ENRD recently participated in training of Asian officials in wildlife law enforcement.
- A USAID capacity building program on environmental law and enforcement in Madagascar.
- USAID programs to train African, Latin, and Asian officials on environmental crime issues.

- Projects sponsored by international police organizations (e.g., Interpol) to train officials from developed and developing countries.

Overseas Private Investment Corporation (OPIC)

Assistance on Internationally Acceptable Environmental Protection Norms. OPIC is required by law to notify host governments of investments being considered for assistance that could affect the environment. All projects subject to this notification procedure concern an applicant's investment in the construction and/or operation of a particular project. OPIC is also required to provide the host country government with information about standards and guidelines applicable to such investments that have been developed by international organizations or by federal environmental regulatory authorities of the United States. These standards and guidelines generally are the applicable standards and guidelines developed by the World Bank and the EPA.

All projects that receive OPIC support are also subject to the environmental and health and safety laws of the host country. Through this notification process, OPIC provides host country governments with valuable information on the normative standards that the USG and multilateral development institutions would apply in executing the development project. This process increases the familiarity of developing country governments with internationally acceptable norms for protecting their environments.

USAID

Environmental Law Program (ELP). This activity provides environmental legal and policy support that promotes sustainable development and the rule of law in countries where USAID is active. Since developing countries each have unique and diverse environmental protection needs, ELP focuses on the specific issues USAID client countries identify. Program areas include sustainable urbanization, biodiversity and natural resources management, trade and economic growth, clean production policy, environmental impact assessment, and democracy and environmental governance. ELP trains local specialists in the design and implementation of a wide variety of legal and regulatory policy activities. Specific activities include:

- Contributing to the development of a plan of action for establishing a "Hemispheric Network of Experts and Officials in Environmental Law, Enforcement, and Compliance"
- Conducting a workshop on environmental policy in the Americas — combining the use of economic incentives and legal enforcement
- Developing a model program for Internet access to national and international environmental laws and standards between Central and South America

The Environmental Health Project (EHP). Under this project, USAID developed a system for monitoring and evaluating the health impacts of gasoline lead phase-out.

Egypt Environmental Sector Assessment. Under this activity, sector assessments provide the basis for understanding regulatory, policy, and institutional constraints to improved management and protection of Egypt's environment.

Egypt Policy Management Group. This activity consists of technical assistance to the Egyptian Environmental Policy Program in the development of environmental laws.

U.S. Environmental Protection Agency (EPA)

International Lead Phase-Out Program. EPA works with both governments and industries to commit to phasing out leaded gasoline, reducing non-gasoline sources of lead, and providing workers with safety training sessions. Countries and regions include China, India, Argentina, Brazil, Guatemala, Eastern Europe, Russia, and the Urals.

Proyecto Ambiental Regional Centroamericano (PROARCA). This activity, managed by USAID's Central America Regional Office in Guatemala City, supports the Central America Commission on Environment and Development with the development of a regional model for sustainable development. EPA has entered into a four-year cooperative agreement with USAID to provide technical assistance to strengthen legislative and regulatory regimes, one of PROARCA's three goals. The other two are protecting biodiversity and improving coastal zone management.

Internet Access for Chemicals Management Officials. With USAID Africa Bureau funding, EPA is conducting a pilot project in two African countries to provide Internet access to chemical management officials in developing countries. The project includes training on how to access chemical safety information on the Internet and how to reach counterparts in the Intergovernmental Forum on Chemical Safety by e-mail. Together with the UN Environment Programme, EPA hopes to expand this effort to a global program, given sufficient funding.

Promoting Environmentally Sustainable International Trade and Investment Liberalization

Building Institutional Capability in Natural Resources Management and Conservation

Sustainable management of natural resources depends on striking a balance between the preservation and renewal of resources and their use for economic well being. Developing country governments, institutions, and communities need access to the latest policies, practices, and technologies to promote the

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USG Capacity Building Activities

sustainable management of natural resources, providing the foundation for sustainable national economic development.

USAID

Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ). This contract builds the capacity of developing and transition countries in environmental protection. In Indonesia, for example, EPIQ supports the natural resources management secretariat and activities relating to improved forest resources and protected areas management. In Egypt, EPIQ is working to improve the nation's Nile River water distribution system efficiency through improved water allocation, including integrated water policy and institutional reforms.

Biodiversity Conservation Network. This USAID-supported program works in the Asia/Pacific Region to promote community-based conservation through community-based enterprises directly depending on biodiversity.

Sri Lanka Natural Resources and Environmental Policy Project. This project promotes environmental and natural resources management by providing services in environmental policy development, environmental institution strengthening in environmental impact assessments, pollution control and regulation, and project coordination.

Parks in Peril Program. In partnership with the Nature Conservancy, USAID supports the Parks in Peril Program to strengthen the management of national parks and protected areas throughout Latin America.

U.S. Department of Agriculture (USDA)/Forest Service

Forestry Training. The Forest Service and the South Pacific Forestry Development Program will collaborate in forestry-related work in the Pacific Islands that will include a series of watershed management and agroforestry workshops and technical assistance.

Fire Management. The Forest Service cooperates with Brazil, Russia, Mexico, and Indonesia to better understand the influence of fire on forest management and climate change and to incorporate fire mitigation strategies into forest management systems.

Remote Sensing. The Forest Service has developed international efforts to integrate remote sensing and field technologies to monitor the health and status of forests and to apply these technologies to specific management issues. It is based on existing cooperation with a number of countries, including Indonesia, Brazil, Mexico, and Russia. The objective is to develop more effective monitoring approaches using integrated, cost-effective technologies applicable to a range of forest types as well as address such issues as illegal logging, concessionaire performance, forest regeneration, carbon sequestration, fire impact, and indices of forest health.

Forest Health/Invasive Species. Building on existing activities in Russia, China, South America, and elsewhere, the Forest Service focuses on methods to prevent, control, or mitigate the damage of existing and potential forest pests and pathogens. Emphasis is placed on control of invasive species through biological control and habitat management measures.

Habitat Management/Biodiversity Conservation. The Forest Service also applies its scientific and land management expertise to habitat management, ecosystem restoration, and biodiversity conservation, particularly for migratory species. Activities include the restoration of degraded forest systems, particularly riparian areas; development of "migration strategies" to maintain biodiversity and other environmental benefits in managed forests; and conservation education and training. Forest Service scientists also work to ensure endangered species are protected in multiple-use ecosystems by assessing the impact of a wide range of management practices and developing habitat restoration programs.

Technical Assistance and Training Services. The mission of the USDA's Foreign Agriculture Service International Cooperation and Development Program is to provide technical assistance, training, and data/information services to cooperating countries and institutions to achieve sustainable agricultural production, mutual economic development, conservation of natural resources, and environmental services.

- Working with USAID, International Financial Institutions (IFIs), the UN Food and Agriculture Organization (FAO), the Inter-American Institute for Cooperation on Agriculture (IICA), and other international organizations and agencies and host-country governments to assist in the design and implementation of development activities and programs in food, agriculture, natural resources, forestry, and environment
- Developing integrated approaches to production, marketing, soil, water, and forest management policies and programs using a variety of USDA professional and data/information resources to address capacity building in food, agricultural, economic and trade policy, and environmental protection in cooperating countries
- Providing grants and research for technical exchange programs for U.S. and foreign scientists and business people, with special emphasis on creating continuing linkages between professional and business counterparts in the U.S. and host countries
- Providing international training "from the farm gate to the dinner plate" through the Cochran Fellowship Program, professional development, and trade and investment programs

USDA International Programs to Control Harmful Pests and Diseases. USDA is an active participant in a variety of international programs aimed at controlling and preventing the spread of harmful pests and diseases. Increasingly, these programs use new technologies,

including biological control methods, which are environmentally friendly and reduce dependence on chemical controls. For example, USDA's Animal and Plant Health Inspection Service participates in foreign programs to control screwworm; medfly; and, most recently, pink hibiscus mealybug in Mexico, Central America, and the Caribbean. These cooperative programs accomplish multiple objectives: allowing for the control of harmful pests, including invasive species, which may threaten agriculture and/or the environment; creating opportunities for safe trade while bringing high-risk pathways under regulatory control; and promoting the transfer of new technologies, including environmentally friendly control tools, among countries.

Animal and Plant Health Inspection Service (APHIS) Plant Quarantine Systems Training. APHIS conducts plant quarantine systems training to foreign regulatory officials from around the world, primarily from developing nations. The once-a-year course provides an overview of plant health by focusing on the following topics: fundamental concepts of plant protection and quarantine models, strategies, and functions; pest risk analysis; carries and commodity inspection; treatments; germplasm introduction; and export certification. Trade issues, biological control, and biotechnology are also covered.

APHIS Programs to Develop International Standards that Address Threats to the Environment. As a member of the International Plant Protection Convention (IPPC), the phytosanitary standard-setting body recognized by the WTO, APHIS has taken a lead in promoting standards that support the goal of protecting plant resources, including wild flora in the environment, from invasive species. For example, in 1995 APHIS helped develop an IPPC standard on release of biological control agents. In 1999, APHIS played a lead role in prioritizing the development of a global standard that would address pests associated with wood-packing materials, including pest threats to forests and the environment. The IPPC will continue to operate as an important international forum for developing science-based standards to guard against pest spread; establishing a predictable and transparent framework for trade; and promoting international cooperation in the area of pest control, including pests that are considered a threat to the environment.

The Ukraine Commercial Agriculture Development Project. This project provides direct, practical assistance to Ukrainian private farmers. Begun in 1996, it offers access to the full resources of the USDA technical agencies and the U.S. cooperating universities. The program has helped increase both the number and strength of viable private farms in selected raions and oblasts. Current project emphases include establishing cooperative service centers to provide farmers with desperately needed inputs, equipment, and credit. Six extension specialists from U.S. cooperating university systems are currently serving eight-month assignments in five regions in Ukraine.

Africa: Seeds of Hope. Seeds of Hope supports the development of agricultural research and extension centers in sub-Saharan Africa. The program combines the resources of USAID and appropriate USDA

agencies, especially the Cooperative State Research, Education and Extension Service. The program focuses primarily on developing sustainable agricultural practices among smallholder farmers, women farmers, and poor rural people in sub-Saharan Africa.

U.S. Department of Commerce (DOC)/National Oceanic and Atmospheric Administration (NOAA)

Sustainable Redevelopment Workshops in Honduras and Nicaragua.

In the aftermath of Hurricane Mitch, NOAA experts from the Sea Grant program will conduct nine workshops on coastal infrastructure development, watershed management, and sustainable eco-tourism for an estimated 300 leaders, resource managers, municipal administrators, academics, and other hurricane-affected residents.

Bi-National Agreement for Capacity Building with South Africa.

This ongoing activity provides information exchanges and training to the South African majority population in stock assessment, corrective action, strategic planning, and fishery economics. Additional programs promote educational partnerships between South African historically disadvantaged universities and U.S. historically black colleges and universities in conjunction with NOAA facilities and research institutions on the topics of marine and atmospheric science.

Central and Western Pacific Fishery Information Network. Assistance to the network helps island agencies design, implement, and share appropriate local fisheries monitoring, data collecting, analyzing, and reporting programs.

Migratory Fish Stocks Meetings. Funded meetings of the Multilateral High-Level Conference on the conservation and management of highly migratory fish stocks in the Western and Central Pacific.

Pacific Islands Protected Species Program. This activity supports development of sea turtle recovery coordination plans through meetings of officials and biologists from the Pacific Islands.

Pacific Islands Fishing Training. Supported a training program at the Maui Pacific Center related to the Pacific Islands fishing industry.

Climate Change Activities. In partnership with scientists and resource managers in developing countries and other U.S. government agencies, NOAA is working to realize the potential of climate prediction as a powerful tool for sustainable economic development and environmental stewardship. NOAA's Office of Global Programs (OGP) and the USAID Office of Foreign Disaster Assistance (OFDA) are jointly funding a number of projects that use climate forecasting technology to promote food security and reduce vulnerability to climate-related disasters around the world through NOAA/OGP's Pilot Program for the Application of Climate Forecasts. NOAA/OGP and USAID/OFDA have collaborated with regional institutions in Africa, Latin America, and Asia to improve the international institutional framework for consideration of seasonal forecasting and

applications issues by organizing a series of Regional Climate Outlook Forums.

China Marine and Coastal Management Program. This ongoing program promotes personnel exchanges for expanded management capacity of coastal and marine areas and resources, including management of protected sites through comprehensive management planning (e.g., coral, mangroves, wetlands), development of a national legislative and regulatory framework for integrated coastal management, and application of technologies to improve decision-making processes (e.g., Geographic Information Systems, monitoring, etc.).

U.S. Department of Interior (DOI)

Near East, South Asia, and Africa Capacity Building. Efforts have focused on strengthening local conservation institutions through research, management, training, and educational activities.

Russian Federation Capacity Building. Efforts have focused on providing staff training and grants assistance to nature reserves and national parks in the areas of wildlife law enforcement, conservation education, and public outreach.

Latin America and the Caribbean Capacity Building. Efforts have focused on training staff and strengthening institutions for sustainable resource use.

U.S. Department of State (State)/Bureau of Oceans and International Environmental and Scientific Affairs (OES)

Wetlands Management Training. OES funds projects aimed at capacity building and wetlands management training in Latin America. The goals of these activities are to enhance, protect, and preserve wetlands in the Western Hemisphere.

Arctic Council. The United States is the chair of the eight-nation Arctic Council, which supports efforts to develop the capacity of indigenous groups in Russia's Far North to address environmental protection and sustainable development challenges in the region. It also promotes Russia's overall capacity to protect the arctic region from land-based sources of pollution.

Capacity Building in Coral Reefs Management. State/USAID East Asia Environmental Initiative Fund will retrain people currently practicing destructive fishing. The capacity building efforts will develop sustainable certification programs for aquarium-bound coral reef species and promote aquaculture of coral reef species.

Sea Turtle Conservation. Supported a Sea Turtle Conservation Workshop in the Southeast Asia Region.

Regional Training. As part of the East Asia and Pacific Environmental Initiative, funds are available for a regional workshop on the Kyoto mechanism and a regional National Action Plans Conference.

The Global Ocean Observing System. The objective of this international effort is to provide the long-term ocean observations and predictions needed for constructive monitoring and forecasting of conditions and changes in the climate system, marine ecosystems, coastal zone environment, environmental quality, marine weather, and oceanographic services.

USG Joint Efforts

Pacific Island Network (PIN). PIN is a consortium of U.S. federal agencies that works with local and regional organizations to provide technical and educational information and expertise pertaining to the management and sustainable development of coral reefs and associated island resources.

South Pacific Regional Environment Program. This program's objectives are to protect the natural heritage of Pacific Island countries through conservation; minimize pollution and wastes; improve preparedness for pollution emergencies; and strengthen environmental education, training, and information systems.

Negotiating and Implementing Multilateral and Regional Environmental Agreements

Multilateral environmental agreements (MEAs) and regional environmental agreements are the international community's response to global environmental problems, such as transboundary air pollution and the loss of biological diversity. To achieve the goals of these international environmental agreements, all countries must possess the capacity to meet their obligations under them.

DOC/NOAA

Regional Training Course on Coastal Marine Water Quality Criteria and Methods of Wastewater Treatment. In response to a request by government members of the Plan of Action for the Protection of the Marine Environment and Coastal Areas in the Southeast Pacific, the NOS Center for Coastal Monitoring and Assessment has prepared and will direct a training course on the determination of water quality criteria. This activity is undertaken with the governments of Chile, Peru, Ecuador, Columbia, and Panama.

Assistance in the Development of an Indian Ocean Agreement for the Protection of Sea Turtles. NOAA, with State and several Pacific nations, has provided funds and assistance for the future development of such an agreement.

Activities under the Global Environmental Facility (GEF). NOAA provides capacity building assistance to the International Waters projects

of the GEF, in Africa and Asia and with emerging democracies in Eastern Europe. Marine-related projects are focused on seriously threatened waters, including the National Marine Fisheries Service (NMFS) designated Large Marine Ecosystems. These efforts promote regional international cooperation, avoid further loss of biodiversity, and protect transboundary resources. Efforts are focused on reversing downward trends in resources, environment, health, and socioeconomic benefits derived from ecosystems. Projects have included strengthened participation in multilateral agreements, management assistance, and research funding.

DOI

CITES Training. U.S. Fish and Wildlife Service has conducted training in developing countries to enhance the ability of government officials to effectively implement CITES. Training included components on the overall function of CITES, the issuance of CITES permits, the identification of wildlife parts and products that are commonly in the wildlife trade, and techniques to improve law enforcement. Since January 1998, the Service has participated in and/or coordinated the following CITES training programs.

- Asian Countries Law Enforcement Training at the National Conservation Training Center — 24 government law enforcement officers from 10 different Asian countries participated
- CITES training conducted in Bolivia
- CITES training conducted in China
- CITES law enforcement training conducted and coordinated by DOJ in Madagascar

EPA

Montreal Protocol on Substances that Deplete the Ozone Layer. EPA efforts in preparing national emission inventories and reports, identifying alternative chemicals and processes, and establishing the Multilateral Fund were instrumental in securing the adoption and implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer.

EPA/State

Capacity Building in Support of a Convention on Persistent Organic Pollutants (POPs). State has provided significant funding to the UN Environment Programme (UNEP), which is the Secretariat to the ongoing negotiations on a treaty to control 12 persistent organic pollutant chemicals. UNEP is conducting awareness-raising workshops to help countries understand the policy and implementation issues of the POPs

negotiations. EPA is helping UNEP conduct workshops in southern Africa and Asia and is conducting a bilateral POPs workshop with Egypt.

State/USAID/U.S. Department of Energy (DOE)/EPA

Climate Change Country Studies Initiative. The activity provides ongoing support for the development of country studies in states that have signed the Framework Convention on Climate Change (FCCC). These studies will lead to the development of inventories of greenhouse gas emissions, assessments of country-specific vulnerabilities to climate change, and development of response strategies for mitigating and adapting to climate change.

USAID

Nicaraguan Legislation Related to CITES. USAID has supported national workshops for the development of Nicaraguan legislation to implement CITES.

Nile Basin Initiative. An environmental transboundary opportunities and constraints analysis is being conducted in the Nile Basin to provide preliminary strategies and mitigation measures for potential support under the United Nations Development Programme-World Bank Global Environment Facility's basin-wide Shared Vision Program.

Regional Center for Southern Africa Water Protocol. The objective of this activity is to provide support to the Water Sector Coordination Unit (WSCU) of the Southern Africa Development Community (SADC) in implementing the 1995 SADC Protocol on Shared Watercourse Systems. Specific activities support the WSCU in bringing the Protocol into conformity with the United Nations Convention on the Law of Non-Navigational Uses of International Watercourses, publicize the Protocol, and elaborate steps necessary for effective implementation. This includes articulation of roles and guidelines for the management of shared watercourse systems, harmonization of national laws with the Protocol, and defining basins and agreeing on boundaries.

USAID/State

South Pacific Tuna Treaty. USAID funds and State administers the South Pacific Tuna Treaty.

Setting Conditions and Controlling Environmental Impacts

While increased trade and investment liberalization can result in global efficiencies, they can also result in increased intensity and scale of natural resources use. Developing countries need access to the latest policies, practices, and technologies necessary to set conditions, control, and mitigate environmental impacts for trade and investment activities.

DOC/International Trade Administration (ITA)

The DOC Commercial Law Development Program (CLDP). This program provides assistance in formerly Communist countries, the Middle East, and Africa in improving the development and application of industrial, sanitary, and phytosanitary standards and public procurement systems that will help nations more effectively consider and protect their environments. CLDP supports the establishment of economically sound regulatory systems and development of strong administrative skills to improve environmental and economic institutional capacity. Support for expanded economic growth and political stability facilitates adoption of environmentally sound policies.

Emerging Market Training Seminars. The ITA conducted several technical and training seminars that served to enhance technical capacity and skills in key emerging markets.

- Liberalization and trade policy.
- Trade promotion — organizing, planning, leading, or supporting more than 60 domestic and overseas envirotech conferences and trade events every year. High-level trade missions focused on the environmental sector have gone to the Middle East, Latin America, Africa, Asia/China, and Central/Eastern Europe.
- Technical seminars — ITA has developed or co-sponsored technical assistance training events that advance U.S. envirotech interests in specific markets (e.g., technical seminars in Argentina, Brazil, Colombia, Mexico, and China; technology demonstrations in Argentina; and conferences on water sector issues in Thailand).
- Advocacy — ITA advocacy resulted in about \$2.5 billion in envirotech-related contracts for U.S. companies between 1995 and 1997.
- Market research and regional priorities — Extensive market research is conducted to identify export opportunities and environmental needs in foreign markets.

DOC/NOAA

Developing Guidelines for Sustainable Harvest of Corals for Export. This activity has been undertaken with the Indonesian scientific authority and a private eco-labeling institute. This effort advances a broader international process on marine product certification. The NMFS has also undertaken translation of the Coral Identification Manual into Indonesian to assist their national efforts.

Catalyzing Action to Curtail Trade-Driven Cyanide Fishing. Activities to promote education and action on limiting destructive fishing practices have been pursued through Asia-Pacific Economic Cooperation (APEC) agreements, technical workshops, and a 1997 workshop on reef-destructive fishing practices in Mexico.

Transfer of Turtle Excluder Device (TED) Technology, and Turtle Conservation and Recovery Efforts. NOAA conducts numerous activities to promote the conservation and recovery of sea turtles. NOAA provides training and capacity building for developing countries in effective implementation of TEDs. This effort is targeted at developing countries with large shrimp production, with regional focuses in Latin America, the Caribbean, Southeast Asia, and Africa. Additional conservation efforts have involved enhanced resource surveys; improved enforcement capacity; and transferring biological technology, such as satellite telemetry techniques, for monitoring sea turtle movements.

Technical Assistance in Contingency Planning and Training Activities. This activity provides technical assistance and training in preparation of oil spill and hazardous materials contingency plans as well as training with state-of-the-art software tools. Projects have been undertaken in collaboration with China, Nicaragua, Honduras, Guatemala, El Salvador, and Panama.

Training in Hazard Analysis and Critical Control Point (HACCP) Standards. NOAA has engaged the government and seafood products industry in Morocco and Vietnam on improving training and implementation of these critical food safety procedures that reduce environmental impacts through reduced flow of waste products back to the marine environment.

Training in Coral Identification for Law Enforcement Officials. This activity involved providing technical assistance, workshops, and published training materials in Spanish and English to officials in Canada and Mexico for identification of coral reef organisms in international trade.

EPA

North American Regional Development Plan. EPA has worked with Canada and Mexico in developing a number of regional plans, including a program to phase down the use of PCBs and pesticides, such as DDT. These plans are part of the CEC's Sound Management of Chemicals Program, which is responsible for reducing the risks of persistent toxic substances to human health and the environment. These plans could be useful models for other developing countries.

Under its Clean Air Technology Center, EPA has established the U.S.-Mexico Border Information Center on Air Pollution (CICA). CICA transfers U.S. air pollution prevention and control technology information to Mexico by providing access to EPA technical expertise and data. EPA is now working to create a pollution prevention and control technology database with vendor organizations to provide easy access to information on U.S. air technologies. CICA also promotes international capacity building by providing the tools and information necessary for Mexican industry and government agencies to solve air pollution problems.

Brownfields Revitalization. This program has assisted the city of Ostrava in the Czech Republic to provide technical upgrades and closures

of four polluting coke ovens. The closures helped revitalize abandoned brownfield sites through the mobilization of \$43 million in Czech funds for remediation and redevelopment in downtown Ostrava.

Air Pollution Control. Agency efforts through USAID-funded programs in Russia and the New Independent States have resulted in a 25,000 ton reduction in annual CO₂ emissions at the Mosenergo Elektrostal Power Plant near Moscow; a 60 percent reduction in annual nitrogen oxide emissions at the Ladyzhin coal-fired power plant in the Ukraine; a 7 percent reduction in stationary source particulate emissions in Volgograd; a 75 percent reduction in bronchial asthma among children; and a 500,000 ton reduction in air emissions from mine waste at the Chermshansk site.

Municipal Wastewater Treatment Plant Improvements. A pilot project is improving municipal wastewater treatment plants' performance in three cities near Moscow. This program is being sustained through the establishment of a professional wastewater treatment plant training center in Smolensk. The center has helped disseminate best practice information to more than 700 treatment plant operators in the region.

Environmental Management Training Modules. As a key component of its international capacity building program, EPA has designed a series of 24 training modules that it uses to impart information on key environmental management techniques employed in the United States. Modules available are:

- Chemical Emergency Preparedness and Prevention
- Chemical Safety Auditing at Industrial Facilities
- Communications: Public Outreach
- Communications for Environmental Results
- Ecological Risk Assessment and Decision Making
- Economics of Environmental Decision Making
- Economic Incentives for Environmental Decision Making
- Environmental Compliance and Enforcement: Principles
- Principles of Environmental Impact Assessment
- Principles of Environmental Impact Assessment for Reviewers
- Principles of Environmental Policy
- Hazardous Materials Emergency Response
- Principles of Hazardous Waste Site Ranking
- Managing in an Environmental Organization
- Medical Waste Management
- Pesticide Disposal in Developing Countries

- Principles of Pollution Prevention
- Revenue Raising Mechanisms for Environmental Investments
- Principles of Risk and Crisis
- Communications Principles of Risk
- Management for Hazardous Waste Sites
- Principles of Solid Waste Management Planning

OPIC

Assistance in Controlling Impacts of Individual Investments. OPIC incorporates into the projects it supports adherence to World Bank/International Finance Corporation (IFC) environmental guidelines as well as other normative standards on internationally recognized protected areas. This demonstrates to host country governments, industries, and other stakeholders how economic development initiatives can be both ecologically sound and financially successful. The cleaner, more efficient, and environmentally sustainable production processes promoted by these international standards have the wider positive outcome of encouraging, promoting, and ensuring higher environmental standards in the activities of local contract suppliers and producers connected to OPIC supported projects.

USAID

Environmental Pollution Prevention Project. This activity addresses urban and industrial pollution and environmental quality in developing countries by effecting changes in policies and regulations; encouraging information sharing; training environmental professionals; and conducting institutional support for industry, local governments, nongovernmental organizations (NGOs), and industrial associations. This activity involves multi-year programs in Bolivia, Chile, Ecuador, Egypt, Indonesia, Jamaica, Mexico, Paraguay, Tunisia, the Czech Republic, El Salvador, India, Nicaragua, Peru, Sri Lanka, Thailand, Ukraine, and Zambia.

The Latin American Initiative for Environmental Technology. This activity, a collaborative effort with the Environmental Export Council, maximizes the benefits from increasing globalization, economic growth, and heightened environmental awareness. Its primary objective is to increase the role of the private sector in environmentally sustainable development through the formation of a series of innovative partnerships leveraging the resources of government, the private sector, industry associations, and NGOs. The result is a coordinated effort between the public and private sectors toward the mutually beneficial objective of environmentally sustainable economic growth and development. The program has succeeded in assisting more than 45 U.S. companies from 14 states working in 17 countries. Target sectors included industrial water and wastewater treatment, pollution prevention, and energy efficiency.

Clean Production in Central and South America. USAID co-sponsored the first hemispheric consultation on clean production (Brazil 1998) to share successful approaches and lessons learned, develop a draft strategy for clean production in the region, and launch a Central and South American clean production roundtable.

Mining, Investment, Trade, and Environment in Central and South America. USAID sponsored the first meeting of Central and South American mining ministers, industry, and private investors on "Mining Investment, Trade, and Environment" and contributed to the Bolivia Summit mining initiative, which included the commitment of mining ministers to ensuring environmental soundness of mining through:

- Development of guidelines for mining policy formulation
- Assessment of mining investments, requirements for clean technologies, and environmental liabilities to support greening of mining investments
- Development of the first comprehensive technical manual devoted to best practices in mining for clean production

Private Sector Investment as a Mechanism for Sustainable Forestry Development in Central and South America. USAID sponsored the first meeting of Central and South America ministers of forestry, industry, and NGOs on "Private Sector Investment as a Mechanism for Sustainable Forestry Development" and the launching of subsequent initiatives, including:

- Development of guidelines for sustainable harvest of non-timber forest products
- Assessment of economic benefits of, and constraints to, low-impact logging

Caribbean Hotel International Organization for Standards (ISO) 14000. USAID sponsored an international environmental standards (ISO 14000) workshop for Caribbean hotels.

Shrimp Aquaculture Trade, Environment, and Social Issues Assessment in the Latin American Region. USAID conducted the first assessment of shrimp aquaculture trade, environment, and social issues in the Latin American region, leading to the development of best management practices and an assessment of environmental legal frameworks for shrimp aquaculture.

India Industrial Clean Technology Initiative. This initiative's objective is to improve the environmental performance of select high-growth and polluting industrial sectors. Activities are aimed at strengthening emerging incentives in the marketplace and the corresponding capacity of industries to respond to these incentives. The participatory process allows members of the private sector to develop their own performance standards, determine their information needs, and improve environmental performance through better management practices and investment in cleaner technologies.

United States-Asia Environmental Partnership (US-AEP). This partnership provides assistance in the areas of policy analysis and technical support focusing on:

- Incorporating environmental considerations into Asian industrial/development programs
- Strategic planning, including regular environmental assessments
- Performance monitoring, data collection, and analysis systems development
- Information management and dissemination

ECOLINKS. This initiative seeks a practical, market-based solution to industrial and urban environmental problems in Central Europe and Eurasia. Activities include:

- Using state-of-the-art technologies and practices to clean up industrial and urban environmental problems from the past and sustain environmental quality for the future
- Employing effective environmental management systems in businesses and local communities
- Promoting and pursuing pollution prevention and waste minimization opportunities
- Expanding investments in clean and efficient production technologies and in processes yielding environmentally friendly products
- Carrying out strategies to reduce greenhouse gas emissions that may cause global climate change

Global Technology Network (GTN). This network of domestic and international partners assists U.S. small and medium-sized firms seeking access to emerging overseas markets. It facilitates the transfer of U.S. technology and services to developing countries by matching a local company's development needs with U.S. firms equipped to provide the appropriate technological solutions. GTN is operated out of USAID's Office of Business Development and focuses primarily on agriculture, communications and information technology, environment and energy, and health technology.

The GTN Regional Initiative, a new activity, provides electronic commerce linkages that facilitate domestic and regional trade in USAID-assisted regions worldwide. With USAID regional bureau or mission funding, GTN will install an electronic trade opportunity matching system and a communications network in selected host country organizations and train local staff on their use. The initiative complements USAID strategic objectives by creating a permanent link to domestic, regional, and U.S. markets.

Caspian Environmental Partnership Initiative. This activity addresses environmental aspects of Caspian oil development and transportation through a variety of partnerships linking entities in the United States and

the Central Asian Republics. Working closely with U.S. and international oil industry professionals, government representatives, local citizens' organizations, and other donors, USAID has identified partnership opportunities for potential USAID support in three areas: regulatory, educational, and NGOs. The partnerships' focus areas include oil spill response, environmental education, regulation, and information dissemination.

Caspian Comparative Risk Baseline Analysis. This activity consists of a six-month study comparing the environmental risks associated with various scenarios for development of oil and gas resources in and around the Caspian Sea. Impacts on human health and ecosystems are the focus of the analysis, with human welfare and economics a secondary theme. Once the study is complete, USAID will sponsor a stakeholders' conference in the region to present the results and start a discussion of the potential risks and management solutions.

Enhancing Understanding of and Participation in International Institutional Frameworks

To participate effectively in the global marketplace, developing countries need to fully understand forces affecting environmental and economic policy and to engage in international institutional frameworks.

Export-Import Bank of the United States (Ex-Im)

Participation in the World Bank-Led World Commission on Dams (WCD). Ex-Im participates in the WCD, which develops criteria for the future of large dam projects and how to address the worldwide social, environmental, and developmental challenges they raise. The WCD includes representation from the major NGOs and indigenous groups affected by dams as well as business, governments, and IFIs.

Participation in the Multi-Agency USG Development 2000 Effort. Ex-Im participates in this U.S./United Nations representative-spearheaded effort, setting principles for global development policy for the next century.

USDA

WTO Support Programs. USDA actively participates in efforts to help developing countries develop and enforce the necessary legal and technical frameworks within their institutions to fully implement WTO agreements. For example, USDA and USAID sponsor workshops for the Common Market for Eastern and Southern Africa (COMESA) nations aimed at building WTO capacity in these countries to ensure their full participation in the upcoming negotiations. USDA addresses the agricultural issues confronting members and offers further technical assistance in areas of mutual interest.

Other activities are related to helping developing countries prepare for the upcoming trade negotiations in Seattle. For example, USDA works closely with countries of sub-Saharan Africa to ensure that they are better able to take advantage of the benefits of trade liberalization. African exporters of agricultural products as well as consumers will benefit from the multilateral negotiations to eliminate export subsidies, discipline other trade-distorting export practices, establish improved market access, and ensure science-based procedures on sanitary and phytosanitary (SPS) measures and on trade in products of biotechnology.

Technical Assistance on Trade Aspects of SPS Standards. USDA hosts comprehensive programs on the trade implications of international sanitary and phytosanitary standards. The programs include seminars and workshops to review SPS and other food safety issues as well as the work of international bodies, such as the WTO and the Codex Alimentarius Commission. The objective of the programs is to provide government officials from developing countries with a better understanding of internationally accepted standards and to inform them of the importance of active participation in the international bodies that set these standards.

Codex Workshops. USDA conducts meetings with developing countries to raise issues of mutual concern that are before the Codex Alimentarius Commission and to encourage the active participation of these countries in Codex meetings. These efforts were extremely important in building a coalition between the United States and developing countries to address maximum aflatoxin levels in the European Union (EU) and Codex regulations. In addition, the cooperation and information gained from these sessions will help promote mutually beneficial trade between the United States and the countries of Africa.

Assistance in SPS Equivalency Determinations. USDA's Food Safety Inspection Service (FSIS) conducts several activities that assist developing countries in developing and implementing residue control programs to ensure that products exported into the United States do not contain illegal chemical residues. FSIS inspectors conduct annual on-site audits of each of the 36 countries that are eligible to export to the United States. Through the audits, FSIS offers guidance on improving the countries' export programs. FSIS also tests products for residues at the ports of entry in the United States and, when port violations are found, provides feedback to countries to assist them in improving control of illegal residues.

Improving the Environmental Performance of International Financial Institutions and Export Credit Agencies

Transparent structures within international institutions and export credit agencies play an important role in holding investors accountable for the environmental impacts of their projects.

Ex-Im

Environmental Procedures Technical Assistance. Ex-Im provides technical assistance to other Export Credit Agencies (ECAs) and Finance Ministry officials on the need to incorporate environmental procedures into ECA decisions. Common, "upwardly harmonized" guidelines are required to avoid competition toward the least common denominator. This involves educating other governments, through general meetings and case-specific dialogues, across ECAs, both bilateral and multilateral.

Environmental Impact Assessment Technical Assistance. The G7 ECAs have agreed to formalize the practice of requiring an environmental impact assessment for large multi-ECA-financed projects as well as of discussing environmental impact assessment (EIA) results to reach agreement on what environmental mitigation upgrades a given project design requires. If several large projects enter this information-sharing mechanism, Ex-Im's investment could approach at least \$500,000. These exercises not only help upgrade specific projects (and help determine whether they merit financing at all), but also represent time invested in teaching the staff and leaders of other ECAs to think in environmental as well as balance-sheet terms. This represents a radical change that may lead in the medium term to common guidelines.

OPIC

Assistance in Developing and Harmonizing Environmental Standards. OPIC encourages its foreign bilateral agency counterparts as well as its private sector partners, to recognize the importance of environmental management to the long-term success of the projects they support and to integrate environmental considerations into their investment decision making. This strategy is part of a larger U.S.-led effort within the OECD to encourage bilateral agencies and ECAs to develop and harmonize environmental standards for projects in developing countries.

Public Sector Political Risk Insurer Meetings. With respect to the public sector political risk insurers, OPIC hosted a technical panel of the Berne Union in March 1998. Environmental protection was a prominent agenda topic at this meeting, which included a presentation on the relationship between environmental management and political risk. Representatives of other public sector political risk insurance agencies from around the world attended the event.

OPIC also convened a meeting in July 1998 with private political risk insurers, dedicated exclusively to discussing environmental issues in political risk insurance. Representatives of the Administration and environmental NGOs made presentations on their efforts to promote common environmental standards among international financial institutions and ECAs. OPIC outlined how it incorporates environmental standards into sound underwriting practices. Finally, representatives of an international law firm discussed the current state of litigation abroad arising from environmental issues.

Consultations with Counterparts. OPIC's counterpart agencies in Canada, Germany, and Japan are in the process of examining the role that environmental considerations play in their investment's long-term success. Within the investment support and export credit agency communities, OPIC remains committed to consulting with its OECD counterparts on the benefits, for both foreign investors and host developing countries, of harmonizing environmental standards in development decision making.

OPIC maintains an active ongoing dialogue with these other bilateral institutions with the aim of encouraging them to adopt and implement internationally acceptable standards, such as the World Bank/IFC environmental guidelines, in the developing country projects that they support. Encouraging adherence to these state-of-the-art norms is important for achieving a "level playing field" among foreign investors in host countries and also increases developing country government's familiarity with, and acceptance of, environmental standards as an integral part of modern well-functioning economies. OPIC also consults regularly with multilateral agencies, particularly the IFC and the European Bank for Reconstruction and Development (EBRD), to continue improving its environmental procedures and performance.

Facilitating Common Standards for IFIs. OPIC strongly supports constructive dialogue on the host country level as an alternative to a debate among the IFIs about what standards to apply. If host countries raise their own standards, receive assistance from developed countries on improving enforcement, and establish greater transparency and consultation mechanisms within their own countries, then all investors will have to play by the same rules. There will no longer be a debate regarding whether U.S. companies are being held to a higher standard than their European or Japanese counterparts. At the September IFI meeting hosted by IFC, there was strong support for the World Bank Group taking a more active role in helping developing countries improve standards and enforcement.

U.S. Department of the Treasury (Treasury)

IFI Environment-Related Practices. Considerable progress has been made over the past 10 years on reducing the adverse environmental impact of projects and related policies in the IFIs. Due to concern that more work is needed to ensure trade liberalization proceeds in harmony with environmental protection, the Clinton Administration committed to undertake specific measures on environment-related issues in the IFIs.

- Promote an independent environmental advisory committee at the Inter-American Development Bank
- Press for a significant increase in direct lending for environment and natural resources management projects
- Scrutinize the compliance with and effectiveness of public information disclosure and participation requirements regarding environmentally sensitive projects

- Examine the practices of the existing Inspection Panels and establish panels at the remaining Multilateral Development Banks (MDBs)
- Continue to urge the IMF, in its program design and annual consultations with members, to consider the link between environmental and economic policy choices

Assessing and Mitigating Environmental Impacts of Trade and Investment Liberalization

Enhancing Stakeholder Understanding of and Participation in the Identification and Resolution of Trade, Investment, and Environmental Conflicts

A critical component of trade and investment liberalization is the ability of individual and group stakeholders to understand and participate in the identification and resolution of trade, investment, and environmental conflicts. Transparency, public participation, and stakeholder access to information are essential to ensuring that trade and investment activities give adequate attention to environmental and social needs.

EPA

Cleaner Production Networks and Information Systems. EPA supports the development of networks for cleaner production through which governments, NGOs, and a variety of industry sectors may exchange information on best practices, innovative programs, financing, new technologies, and training tools. EPA has also developed two cleaner production information systems available for use by the international community. The International Cleaner Production Cooperative is a network of publicly available on-line cleaner production information. The Agency is also developing an on-line resource on cleaner production practices and policies for industry sectors.

Pollutant Release and Transfer Registers (PRTRs). EPA has worked since 1992 to foster the development of PRTRs in other countries, especially in rapidly industrializing nations. The United States now chairs the PRTR Coordination Group, an international consortium created to share expertise and coordinate PRTR development activities among governments, multilateral organizations, industry groups, and NGOs.

EPA's Environmental Monitoring for Public Access and Community Tracking (EMPACT) Program. This program is a new approach to working with communities to collect, manage, and present environmental information. Though traditionally a domestic program, EMPACT plans to run pilot projects in international communities within the next year. Potential international projects include real-time monitoring of dioxin and other trace projects and time- and health-relevant monitoring methods for small particles.

Technical Information Packages (TIPs). Building on a repository of more than 7,000 scientific and technical publications, EPA has developed

TIPs on small community wastewater systems, hazardous waste management, air quality management, and other environmental challenges confronting developing countries. Targeted at an international audience, particularly developing countries, the TIPs are available electronically on EPA's Web site and in CD-ROM format.

Environmental Education. Through cooperative programs with the Institute for Sustainable Communities, the North American Association for Environmental Education, and other organizations, EPA is using technical assistance, training, and information dissemination to support the development of environmental education programs in Central and Eastern Europe, Central and South America, and, more recently, in parts of Africa. Under the "Blue Thumb" program, for example, lessons on environmental stewardship and water protection were taught to thousands of school children in many cities across Poland and Ukraine. Materials originally developed for use in Central and Eastern Europe are now being translated into Spanish for use in Latin America.

Newly Independent States Regional Environmental Centers. Building on the successful model of the Regional Environmental Center (REC) established in Budapest, Hungary, in 1990, EPA and the EU are assisting development of five new centers in Ukraine, Moldova, Russia, the Caucasus, and Central Asia. The REC's serve as NGOs that work with environmental NGOs, businesses, and government in raising awareness of key regional environmental issues related to the development of market-driven economies. The centers support the free exchange of information and promote public participation in environmental decision making.

Ex-Im

NGO Capacity Building. Apart from the significant time Ex-Im's staff invests in interacting with domestic and international NGOs to receive their concerns about specific projects being considered for financing, Ex-Im increasingly dedicates staff time to sharing information with NGOs operating internationally on broader technical and policy questions. Such cooperation aims to help the NGOs educate the public and government officials.

OPIC

Stakeholder Involvement Assistance. OPIC policies require investors to inform the public of proposed environmentally sensitive projects under consideration for OPIC support. For environmentally sensitive projects, investors are required to disclose for public review and comment, via OPIC's Web site, the availability of an environmental impact assessment of the proposed project. The goal is to promote transparency of information and reach out to as many affected stakeholder groups as possible to ensure that these groups are able to participate in the developmental decision-making process.

OPIC strongly encourages project sponsors to contact directly affected

communities to solicit comments during the EIA process. Specific guidance is provided, including an IFC manual developed for this purpose. OPIC recently required an investor to obtain comments and consult directly with indigenous and other local communities on the environmental and socioeconomic aspects of a pipeline project in Latin America. Often, OPIC's public disclosure process for environmentally sensitive project EIAs provides stakeholder groups with their first meaningful opportunity to make their concerns known and to participate actively in local and national development decision-making processes.

Peace Corps

Pacific Initiative. This activity enhances environmental awareness and management, strengthening indigenous NGOs and traditional organizations, preparing youth societal roles, and fostering volunteerism.

USAID

Latin America and Caribbean Trade and Environment Program. This activity is designed to enhance the understanding of, and promote action on, key trade/environment issues in support of environmentally sound trade and the Free Trade Area of the Americas. Activities include:

- Funding the first comprehensive regional analysis of trade and environment issues presented at the Hemispheric meeting in 1998 on Trade and Environment hosted by the Government of Costa Rica
- Sponsoring regional consultations by government, industry, NGOs, and investors for mining, forestry, and industrial exports sectors on "trade and environment" to discuss business benefits of clean production, market opportunities for eco-certified products, international environmental standards (ISO 14000), greening of private investment, and regulatory frameworks
- Co-sponsoring with IDB an international seminar in 1996, attended by government, industry, and investors, on "Trade and Environment: Environmental Competitiveness and Market Expansion for Paraguay"
- Contributing to the development, launching, and ongoing implementation of the Bolivia Summit governance initiative "The Inter-American Strategy for Public Participation in Sustainable Development"
- Supporting a consultation by government, private sector, and NGOs on trade-related environmental challenges and trade policy scheduled for October 1999

PVO/Natural Resources Management Project. This activity is designed to strengthen the technical and institutional capacity of NGOs working in Africa in natural resources management.



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Earth Negotiations Bulletin

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measures, including information on the possible use of insurance and other appropriate mechanisms. For more information contact the FCCC Secretariat: e-mail: secretariat@unfccc.de.

INFORMAL MINISTERIAL CONSULTATIONS:

Informal ministerial consultations were held in Warsaw, Poland on 20 September 1999. Participants considered three questions: what needs to be accomplished at COP-5; what ministers should do at COP-5 to set the stage for a successful COP-6; and how Parties should proceed from COP-5 to COP-6. Participants supported maintaining or increasing the momentum of the negotiations through the next year. Many participants said a package was needed at COP-6 that would encourage ratification. A number of participants noted that if certain Parties do not ratify the Protocol, it would not come into effect. Participants generally agreed on the need for a balanced outcome, with resolution of both FCCC and Protocol issues. Some participants listed the cooperative mechanisms, compliance, sinks, and participation of a broader number of countries under the Protocol as key issues that need to be resolved.

Given the number and complexity of the outstanding issues, a number of participants preferred to hold COP-6 in early 2001. Some also noted that this would allow the COP to consider the IPCC Third Assessment Report. However, others expressed a preference for COP-6 to be held in the fall of 2000. COP-5 must decide on the date of COP-6.

A number of participants sought parallel progress on those key issues. Some called for flexibility and urged Parties not to set pre-conditions for agreement. A few participants urged Parties to focus on the BAPA rather than introduce new issues.

Most participants acknowledged that areas of significant disagreement remained, but urged Parties to set aside as many of them as possible at COP-5 to permit progress on areas of convergence. They called for the development of negotiating text at COP-5 in areas such as national communications by both Annex I and non-Annex I Parties, the mechanisms, AII, and compliance. Many participants also urged continued constructive progress on capacity building and technology transfer. Ministers noted the need for the COP-5 high-level segment to provide political direction to the negotiations. They also called for additional high-level consultations to periodically assess progress and resolve outstanding issues. Such consultations could be held in the Spring of 2000 in New York during the Eighth Session of the Commission on Sustainable Development (CSD). For more information contact the FCCC Secretariat: e-mail: secretariat@unfccc.de.

WORKSHOP ON EMISSION FACTORS AND ACTIVITY DATA FOR THE IMPROVEMENT OF GREENHOUSE GAS (GHG) INVENTORIES: The FCCC Secretariat convened the second Workshop on Emission Factors and Activity Data for the Improvement of GHG Inventories from 6 - 8 August 1999 in Accra, Ghana, to provide a forum for the exchange of experiences in the development of emission factors and activity data for the estimation of inventories. Fifty participants from 26 countries attended this workshop, including representatives from national teams and international agencies who are experts in GHG inventories, especially in the energy and LULUCF sectors. The objectives of the workshop were: to continue a process that identifies strategies to improve the quality of emission factors and activity data for GHG inventories; to address related problems and gaps, with a view to improving the accuracy, consistency and comparability of GHG inventories; to prioritize immediate and longer term needs, including national, regional and global capacity-building; and to

propose and prioritize a list of project concepts on the improvement of emission factors and activity data in the energy and LULUCF sectors at the national, regional and global levels. Two working groups, one on the LULUCF, the other on the energy sector, reassessed and confirmed the related key sectoral issues identified at an earlier workshop held in Cuba. On this basis, 20 project concepts were proposed, aimed at improving the quality of national and regional emission factors and activity data. Two of the five project concepts proposed by the LULUCF sector working group, and eight of the 15 project concepts proposed by the energy sector working group, were ranked as high priority. For more information contact the FCCC Secretariat: e-mail: secretariat@unfccc.de.

AOSIS WORKSHOP ON CLIMATE CHANGE AND THE CLEAN DEVELOPMENT MECHANISM OF THE KYOTO PROTOCOL: The Alliance of Small Island States (AOSIS) Workshop on the Clean Development Mechanism (CDM) of the Protocol took place in Majuro, Republic of the Marshall Islands from 14 - 16 July 1999. The Workshop was organized and hosted by AOSIS and the Government of the Republic of the Marshall Islands. Over 50 participants attended, including country representatives from small island states, experts from various UN and regional organizations, an environmental NGO representative and special invitees from the Philippines, Mauritania, the US, the UK, Australia, Norway, New Zealand and Switzerland. Participants discussed elements of the CDM, including assessment of vulnerability and adaptation, use of renewable energy in the design of mitigation projects under the CDM, and capacity building for AOSIS member states.

Participants adopted the Majuro Statement on Climate Change, which will be brought to the attention of COP-5. The Statement highlights domestic action in achieving Protocol commitments; notes the need for the CDM to be a credible and viable mechanism; stresses the need for special capacity-building initiatives in the least developed states and small island developing states (SIDS); underscores the importance of vulnerability assessment and adaptation for AOSIS members; and resolves to work together to coordinate donor activities and domestic priorities to more effectively address SIDS' capacity-building and adaptation needs. The complete Sustainable Development report can be found at: <http://www.unfccc.de/aosis/>.

RENEWABLE ENERGY FOR THE DEVELOPING WORLD: This workshop ran from 28 June - 2 July 1999 in Carbondale, Colorado, US. Organized by Solar Energy International, the workshop explored different applications for renewable energy technologies in developing countries. Participants discussed how to successfully accomplish sustainable development projects with renewable energy. Methods for effective technology transfer, establishing infrastructure and the economics and financing of renewable energy projects, were presented. Participants heard case studies on solar cooking, rural household electrification, rural health care and micro-enterprises using renewable energy. For more information contact: Solar Energy International: tel: +1-970-963-8855; fax: +1-970-963-8866; e-mail: sei@solar-energy.org; Internet: <http://www.solar-energy.org/solarak.html>.

THINGS TO LOOK FOR TODAY

PLENARY: The COP-5 opening Plenary is scheduled to begin at 10:00 am in the Maritim Room.

SBI: SBI is scheduled to begin at 2:00 pm.

SBSTA: SBSTA is scheduled to begin at 4:00 pm.

Option 4

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

July 29, 1999

TO: Stephanie Streett

CC: John Podesta
Loretta Ucelli

FROM: Neal Lane, George Frampton, Roger Ballantine
Neal Lane

RE: Presidential Event 8/4 on **Clean Energy Future (highlighting PCAST study and Congressional budget cuts)**



Dear Stephanie:

The three of us remain united in urging a POTUS event for the release of the PCAST report on August 4. The PCAST report presents a good opportunity to contrast the Administration's environmental leadership on clean energy with Congress' anti-environmental riders and dramatic budget cuts to the Administration's clean energy technology programs.

Three years ago, the first PCAST energy report showed how increased investments in clean energy R&D would help clean the air and reduce greenhouse gas emissions while growing the economy. The Administration responded with the Climate Change Technology Initiative in FY99 and FY00, including significant increases for clean energy technology research and development. The new PCAST report shows that there is also an enormous economic opportunity for U.S. companies to export these clean energy technologies. (Projected energy technology markets over the next twenty years could total \$10 trillion --more than 80% of which will be outside the United States.) PCAST also recommends a number of steps to ensure that U.S. companies have full access to global markets and to ensure that clean energy development meets other national and international environmental goals. Clean energy development, both domestic and international, is good for the environment and for U.S. business. The industry leaders on the PCAST panel (e.g., the VPs of Bechtel Corporation and Enron) are ready to stand up with the President and say the same message.

In contrast, Congress is slashing the Administration's budget for Climate Change Technology Initiative and the international cooperative program that could promote clean energy development. For example, both the House and the Senate cut the Administration's request for DOE's solar and renewable energy programs by about 25%. The Senate and House mark for the Global Environment Facility is down 80% from the Administration request to \$25 million from

\$143 million. Further, the House did not include ANY of the Admin proposed 8 tax credits for efficiency and renewables. (Senate included only wind/biomass).

Congress' anti-environmental and anti-business budget is not only out of sync with the Administration's request and the PCAST recommendations, but with the business community. Last week, the Business Round Table issued a report (endorsed by Senator Murkowski and Rep. Dingell) that emphasized the importance of investment in advanced clean energy technologies--largely in-line with the Administration's proposals. We should build on the press from this event.

Together, these developments offer an excellent opportunity for the POTUS to reaffirm the Administration's support for strong domestic and international programs to develop and promote clean energy technology and to contrast that support with the anti-environment and anti-business actions of the Congress. He should challenge the Congress to restore the CCTI and funding for the Global Environment Facility. He can announce steps to implement PCAST's recommendations -- such as creating a "Strategic Energy Cooperation Committee" (an interagency group with private sector advice) to help U.S. companies capture the burgeoning global energy market. He can challenge Secretary Daley and Secretary Richardson to double environmental technology trade exports over the next 4 years.

Attached are some thoughts on how the event could proceed and the event memo submitted by the 3 of us to you at John Podesta's suggestion. We hope we can make this event happen before Congress leaves town--next week!

POTUS PCAST Event

Theme: Administration leading the way to combat global climate change and improve economic opportunity through accelerated technology innovation and international engagement; blast Congress for cutting these budgets.

The event: Total POTUS time—30-45 minutes.

POTUS gets briefing on the PCAST report, walks into Roosevelt room, gives 15 minute speech, departs. Top Administration officials (Daley, Frampton, Richardson, Ballentine and PCAST) answer questions. We pitch it as an event on clean energy development that highlights the PCAST study and calls for greater Congressional leadership both on our domestic budget and the international side. Leaders of Industry, academia, NGOs, and Members of Congress could stand with the POTUS and defend his sound FY2000 budget currently being dismantled by short-sighted Committees on the Hill.

Message:

- Global energy markets exploding: \$100 billion/annum market to meet burgeoning demand in developing countries. This translates into big market potential for competitive US energy technology and development companies.
- But it also poses challenge to global and local environmental quality. If developing countries rely on traditional fossil fuels and current technologies, we will lose the battle to limit greenhouse gas emissions in the coming century.

- This Administration has been leading the way to help developing countries grow without destroying the environment. At the World Bank, with our G-8 partners and through our bilateral programs. But we can and must do more.
- Three years ago, PCAST prepared a roadmap for technology innovation here at home to help meet the challenge of climate change and spur economic growth. Those recommendations formed the basis for our Climate Change Technology Initiative -- \$3.6 billion/5 years.
- Today's report prepared by distinguished leaders in business, academia, and science recommends a strengthened partnership between American business and the federal government to engage international markets, to accelerate energy technology innovation and expand global cooperation to meet the needs of developing countries in environmentally sustainable ways.
- This report comes at a time when increasing numbers of businesses are acknowledging the need and the opportunity to accelerate clean energy technologies for economic and environmental gains. {BRT, EEI, Murkowski bill}.
- In spite of the growing consensus on the need -- and opportunity -- for action, Congress has slashed our request for technology innovation under CCTI--critical energy budgets down 25%; GEF down 80%.
- Today, I would like to issue a dual challenge to the Congress:
 - 1] fully fund the Administration's request for CCTI; and
 - 2] support increased efforts to assert American leadership internationally.
 - 3] announce (see some options below)

Possible Deliverables for PCAST announcement:

- Announce FY2001 Admin budget will build on our CCTI and have funds to implement PCAST recommendations (DOE, USAID are ready to say this)
- Challenge Secretary Daley to develop a plan to double Environmental technology exports in 4 years
(He's ready to do this!)
- POTUS announces creation of an NSTC "Strategic Energy Cooperation Initiative" Working Group to integrate agency programs to access these emerging trillion dollar markets
- EXIM and OPIC may be ready to announce actions
- Possible industry pledges?

SCHEDULING PROPOSAL

DATE: July 21, 1999

_____ Accept

_____ Regret

_____ Pending

TO: Stephanie Streett
Assistant to the President and Director of Scheduling

FROM: Neal Lane
Assistant to the President for Science and Technology

George Frampton
Acting Chair, Council on Environmental Quality

Roger Ballentine
Deputy Assistant to the President for Environmental Initiatives

REQUEST: To host a message event on climate change and Congressional budget actions. The President would be briefed by top scientists on compelling new climate change evidence and the new President's Committee of Advisors on Science and Technology (PCAST) report, *Powerful Partnerships: The Federal Role in International Cooperation and Energy Innovation*. Afterward, the President could make a public statement condemning the attacks on his proposed energy R&D budget and other environmental riders in the Congress.

BACKGROUND: Significant cuts in the President's energy efficiency and renewable energy development budget highlight Congress' unwillingness to take the steps necessary to ensure our economic competitiveness and our environmental sustainability. Receiving the PCAST report will emphasize the Administration's commitment to mitigating the effects of climate change while at the same time providing economic opportunity for American business. *Powerful Partnerships* builds upon PCAST's earlier work, which formed the basis for the Administration's Climate Change Technology Initiative (CCTI) in FY 1999 and 2000. This new report highlights the need for the United States to actively engage in energy technology innovation, cooperation and deployment on an international level. PCAST also concludes that strengthening

North-South cooperation on clean and advanced energy technologies is a promising approach to securing developing country participation in an international framework for addressing global climate change – and for helping U.S. businesses increase export markets for their products and expertise.

DATE AND TIME: TBD

DURATION: TBD

LOCATION: Roosevelt Room/Rose Garden

PARTICIPANTS: Neal Lane, George Frampton, Roger Ballentine, John Holdren (Chair of PCAST panel), John Young (Chair of PCAST), Larry Papay (V.P. of Bechtel, Inc.), other industry TBD, Congressional TBD.

OUTLINE: POTUS receives briefing in Roosevelt Room, proceeds to Rose Garden for statement.

REMARKS: Yes

PRESS: Briefing closed press followed by press statement in Rose Garden

RECOMMENDED BY: Neal Lane 67116
George Frampton 65147
Roger Ballentine 61782

STAFF CONTACT: Rosina Bierbaum,
Associate Director for Environment,
Office of Science and Technology Policy, 6-6077

Executive Order

ENVIRONMENTAL REVIEW OF TRADE AGREEMENTS

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to further the environmental and trade policy goals of the United States, it is hereby ordered as follows:

Section 1. Policy. The United States is committed to a policy of careful assessment and consideration of the environmental impacts of trade agreements. The United States will factor environmental considerations into the development of its trade negotiating objectives. Responsible agencies will accomplish these goals through a process of ongoing assessment and evaluation, and, in certain instances, written environmental reviews.

Sec. 2. Purpose and Need. Trade agreements should contribute to the broader goal of sustainable development. Environmental reviews are an important tool to help identify potential environmental effects of trade agreements, both positive and negative, and to help facilitate consideration of appropriate responses to those effects whether in the course of negotiations, through other means, or both.

Sec. 3. (a) Implementation. The United States Trade Representative ("Trade Representative") and the Chair of the Council on Environmental Quality shall oversee the implementation of this order, including the development of procedures pursuant to this order, in consultation with appropriate foreign policy, environmental, and economic agencies.

(b) Conduct of Environmental Reviews. The Trade Representative, through the interagency Trade Policy Staff Committee (TPSC), shall conduct the environmental reviews of the agreements under section 4 of this order.

Sec. 4. Trade Agreements.

- (a) Certain agreements that the United States may negotiate shall require an environmental review. These include:
 - (i) comprehensive multilateral trade rounds;
 - (ii) bilateral or plurilateral free trade agreements; and
 - (iii) major new trade liberalization agreements in natural resource sectors.
- (b) Agreements reached in connection with enforcement and dispute resolution

actions are not covered by this order.

(c) For trade agreements not covered under subsections 4(a) and (b), environmental reviews will generally not be required. Most sectoral liberalization agreements will not require an environmental review. The Trade Representative, through the TPSC, shall determine whether an environmental review of an agreement or category of agreements is warranted based on such factors as the significance of reasonably foreseeable environmental impacts.

Sec. 5. Environmental Reviews.

(a) Environmental reviews shall be:

- (i) written;
- (ii) initiated through a Federal Register notice, outlining the proposed agreement and soliciting public comment and information on the scope of the environmental review of the agreement;
- (iii) undertaken sufficiently early in the process to inform the development of negotiating positions, but shall not be a condition for the timely tabling of particular negotiating proposals;
- (iv) made available in draft form for public comment, where practicable; and
- (v) made available to the public in final form.

(b) As a general matter, the focus of environmental reviews will be impacts in the United States. As appropriate and prudent, reviews may also examine global and transboundary impacts.

Sec. 6. Resources. Upon request by the Trade Representative, Federal agencies shall, to the extent permitted by law and subject to the availability of appropriations, provide analytical and financial resources and support, including the detail of appropriate personnel, to the Office of the Trade Representative to carry out the provisions of this order.

Sec. 7. General Provisions. This order is intended only to improve the internal management of the executive branch and does not create any right, benefit, trust, or responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any person.

THE WHITE HOUSE,