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Dr. Condoleezza Rice
National Security Advisor
The White House
1600 Pennsylvania Avenue NW
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Fax: 202-456-9300

Dear Dr. Rice,

The World Summit on Sustainable Development (WSSD) in Johannesburg, South Africa, affords the United States a historic opportunity to chart a positive course for global social, economic, and environmental development, and to dramatically improve our own military, political, and resource security.

I understand the Bush Administration is developing an energy initiative for WSSD that will focus broadly on the linkages with poverty and sustainability. This represents a meaningful step for wider U. S. engagement with developing countries on efforts to address core health, economic, and social concerns. These initiatives will simultaneously offer broad benefits of reduced international tensions over resource access, refugee problems, gender equity, improved means for regional conflict resolution, and reduced greenhouse gas emissions. The opportunity to have the United States government elevate the visibility and international action on these issues on a global scale is both a critical step and a rare opportunity.

I am writing to you today as a result of my work on efforts to foster energy, environmental, and social sustainability both in the U. S. and internationally. I hold a combination of faculty appointments, in the interdisciplinary Energy and Resources Group, the Goldman School of Public Policy, and in the Department of Nuclear Engineering, all at the University of California, Berkeley. I also serve as founding Director of the Renewable and Appropriate Energy Laboratory. Prior to moving to Berkeley I was on the faculty of the Woodrow Wilson School of Public Policy at Princeton University where I was the Chair of the Science, Technology and Environmental Policy Program. I have recently testified before U. S. Senate and House Committees on energy, climate, and development issues. Internationally I am a Permanent

Fellow of the African Academy of Sciences and have served as a Lecturer (Professor) at the University of Nairobi. My work ranges from studies of particular clean energy technologies in Eastern and Southern Africa and Latin America, to work on state, federal, and international energy and development policy, to work in the area of risk assessment. Details on all of these activities can be found on my web pages, listed in the letterhead. In these roles I offer you my comments, below, and an invitation to continue or expand on this dialog in any way that would be useful to the National Security Agency or to the wider set of federal agencies involved in the WSSD effort.

Among the areas where the Administration could focus their activities, I would like to highlight a few that have great – and largely untapped – potential for significant social returns, and where United States leadership and support is most critically needed.

- *Reducing Indoor Air Pollution by Programs to Support the Use of Improved Stoves*
  Respiratory infections resulting from exposure to the emissions from burning traditional cooking fuels (wood, agricultural wastes and dung) account for the single largest cause of illness and death in developing nations (Kammen, 1995). While this association has been suspected for years, my students and I recently completed a four year study in rural Kenya that quantified the 'exposure-response' relationship between fuel burning and respiratory illness (Ezzati and Kammen, 2001). Our research, and that of a number of colleagues working in this field, demonstrated the remarkably low cost of efforts to disseminate improved stoves that can significantly cut both fuel demand and pollutant exposure. In fact, transitions to improved stove use can cut illness rates at a tiny fraction of the cost of many other health programs and treatments.

  Many organizations, governments, and other institutions have been interested in this issue in different forms for decades. While pollutant exposure is often readily preventable in each individual case, it is a very complex one to solve on a large-scale. Failures of improved stove-health programs in the past have arisen due to the inability of the intervening groups to address the social nature of the problem, or because they lack support from local entrepreneurs and markets that could truly make solutions sustainable. The basic lesson is that we must tackle this problem not just on technological front, but as a health, economic, and environmental issue. The U. S. could establish an international stove support network, and provide the long-term stable backing needed to make headway in this deceptively complex arena.

  I support U. S. governmental involvement in this area, and hope that you will harness the needed expertise of relevant federal agencies. Foremost here are USAID, EPA and DoE. USAID has the network and expertise to develop a global initiative to support local stove programs. Their Global Village Energy Partnership is a part of the USG energy initiative. The EPA is a widely respected voice around the world in addressing environmental health issues, and has other expertise (e.g., health effects research; behavior change strategies for indoor air issues; technology verification) that will be essential for this initiative. The DoE could provide expertise on technology development initiatives.

- *Capacity Building for Environmental Entrepreneurs*
  Over 1.2 billion people worldwide do not have regular access to even the small amounts of water and energy needed to support and improve their lives and livelihoods. Meeting their

basic needs through new technologies and innovative institutions is at once an intellectual and a humanitarian challenge. An increasing range of environmental goods are now provided and controlled by private firms and market trades. This is especially true of developing countries, from groundwater markets in India and Mexico to solar and biomass electricity markets in Kenya, South Africa and Thailand. There is widespread concern about the compatibility of private provision, the public interest and environmental sustainability. Lessons are now emerging, however, on how to harness and utilize market forces in these areas. Consistently, public-private partnerships provide the needed mixture of market oversight and entrepreneurial innovation necessary to meet social needs with the minimum of public expenditures.

I support a U. S. initiative for *Green Entrepreneurs* that would provide training, grants and loans, and technical support to build a global network of innovators for the planet. The Ashoka Foundation of Arlington, VA, provides an example of the force for innovation that a larger U. S. program could bring to even more of the global community.

- *Expanded Partnerships for Local Energy Research & Development*
  The most important resource to address local challenges – where questions of sustainable development must ultimately be addressed – is the capacity to innovate and to implement. The provision of energy services is arguably the area where most nations – from the United States to the poorest – have the most costly and direct environmental impact. I would like to single out two studies that chronicle the degree of *under-investment* that the U. S. continues to make in energy research. In 1997 the President's Committee of Advisors on Science and Technology and, in 1999, I documented in *Science* the impact that declining U. S. investments in energy research have on both our domestic economy and energy security, and on the R&D efforts in both industrialized and developing nations. I described this situation to Vice President Cheney in a letter dated February 16, 2001.

  I support the development of a fund and a network of centers to support developing nations in efforts to innovate to meet local energy needs. Energy innovation requires sustained attention to not only technical issues, but also sociological and environmental questions of applicability, affordability, and interconnection to local practices and markets. The United States could legitimize and revolutionize research and practical implementation of programs to innovate sustainable energy systems around the world.

The remarkable feature of each of these proposals is that they are not only tremendously low-cost ways to improve the local quality of life and the tools for democratic self-determination, but that they *directly* contribute to U. S. economic, political, and environmental security. Please let me know if you would like more information on these recommendations, or if you would like to discuss further the wide array of similarly important initiatives that could be undertaken in the area of energy for sustainable development and global security.

Sincerely,

Daniel M. Kammen

Daniel M. Kammen

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