



Potsdam Memorandum

Main Conclusions
from the Symposium

“Global Sustainability: A Nobel Cause”,
Potsdam, Germany, 8-10 October 2007

We are standing at a moment in history when a great transformation is needed to respond to the immense threat to our planet. This transformation must begin immediately and is strongly supported by all present at the Potsdam Nobel Laureates Symposium.

The Need for a Great Transformation

The worldwide socioeconomic acceleration after World War II has pushed our planet into an unprecedented situation: humanity is acting now as a quasi-geological force on a planetary scale that will qualitatively and irreversibly alter the natural Earth System mode of operation — should business as usual be pursued.

As outlined by the IPCC, anthropogenic global warming through greenhouse gas emissions is the foremost of an entire set of emerging development, environment and security crises which require an integrated response. Yet climate protection ambitions appear to be on a collision course with the predominant growth paradigm that disconnects human welfare from the capacity of the planet to sustain growth forever. Humanity is faced with the major challenge of making a drastic reduction in GHG emissions, which will require transforming lifestyles in rich countries, while meeting urgent development and growth needs in the poorer countries, the home of the vast majority of humanity underlining the right to development. Ensuring that an estimated nine billion people can live a decent life requires, above all, access to affordable, sustainable and reliable energy services, which are currently based almost exclusively on fossil fuel resources and unsustainable use of traditional fuels. The issue of “carbon justice” and the urgency of the matter at hand require unprecedented cooperation and timeliness in response.

Is there a “third way” between environmental destabilization and persisting underdevelopment? Yes, there is, but this way has to bring about, rapidly and ubiquitously, a thorough re-invention of our industrial metabolism — the Great Transformation. This is an awesome challenge, yet we have one comparative advantage over all previous generations: an incredibly advanced system of knowledge production that can be harnessed, in principle, to co-generate that transformation together with courageous political leaders, enlightened business executives and civil society at large.

Crucial Sustainability Challenges & Responses

The Symposium placed the challenge of climate change and energy security firmly in the context of sustainable development, supported the rights of developing countries to social and economic development, and took careful account of interactions between climate policy and the challenges of development in the short, medium and long-term. In so doing it expressed its strong support for the Millennium Development Goals and the concepts of broad-based and multi-dimensional development that they embody.

A range of actions in the areas of climate stabilization, energy security and sustainable development are considered necessary:

1. In order to achieve **Climate Stabilization**, a post-2012 regime should comprise the following key elements:
 - Global target such as the 2°C-limit for planetary warming relative to pre-industrial levels or the (largely equivalent) halving of worldwide greenhouse emissions by 2050. It is useful to view those emissions as the product of two crucial factors, namely per capita emissions times population. Both of these must be appropriately addressed to attain the long-term stabilization target.
 - Series of consistent short and medium-term emissions reduction targets, essential to drive investment and technology and to minimize the need for greater action later.
 - Leadership role of industrialized countries, both regarding drastic emissions reductions and development of low/no-carbon technologies in order to give poor developing countries room for urgently needed economic growth within the boundaries of a global carbon regime.
 - Principle of carbon justice, i.e. striving for a long-term convergence to equal-per-capita emissions rights accomplished through a medium-term multi-stage approach accounting for differentiated national capacities.
 - Carbon price, as generated, for instance, through an international cap-and-trade system (of systems) based on auctioning permits.
 - Establishment of a powerful worldwide process supporting climate-friendly innovation and cooperation, combined with increased funding for RD&D including basic research, to facilitate technology transfer and proliferation.
 - Major contributions to a multinational funding system for enhancing adaptive capacities.
 - Scaled-up efforts to reduce emissions from deforestation and accelerate ecologically appropriate reforestation, achievable through the creation of new incentives for communities and countries to preserve and even increase their forests.
 - Reductions of non-CO₂ greenhouse gas emissions.

2. Energy demand is projected to grow dramatically. Efficiency and a range of readily-available low-carbon technologies are the key to offset the growth for energy services. In order to attain **Energy Security**, consistent with environmental integrity, an international strategy should have the following foci:
 - Systemic efficiency & productivity revolution, brought about by fuel switching, co-generation of heat and power, and the necessary, but not sufficient, adoption of an energy-saving lifestyle.

- Portfolio approach, consisting of a systematic exploration of the economic and technological potentials of all of the relevant mitigation options.
- Design of investment strategies based on the portfolio approach, highlighting intelligent energy systems, smart grid infrastructures, storage technologies, demand-side measures, and deployment of renewables such as solar with its already huge potential. Upfront investments, in addition to carbon finance, are needed to support emerging technologies and increase their market share (e.g. feed-in laws).
- Rapid implementation of demonstration projects for advanced solar energy and carbon capture & storage to foster ingenuity and drive down costs.
- Stabilization of long-term expectations of investors at capital markets and establishment of microcredit institutions in developing countries aimed at financing low-carbon technologies.

A Global Contract between Science and Society

There is overwhelming evidence that we need to tap all sources of ingenuity and cooperation to meet the environment & development challenges of the 21st century and beyond. This implies, in particular, that the scientific community engages in a strategic alliance with the leaders, institutions and movements representing the worldwide civil society. In turn, governments, industries and private donors should commit to additional investments in the knowledge enterprise that is searching for sustainable solutions.

This new contract between science and society would embrace many elements, yet three of them are critically important:

1. A multi-national innovation program addressing the basic needs of human beings (energy, air, water, food, health etc.) that surpasses, in many respects, the national crash programs of the past (Manhattan, Sputnik, Apollo, Green Revolution etc.).
2. Removal of the persisting cognitive divides and barriers through a global communication system (ranging from international discourse fora to a truly worldwide web of digital information flow). Part of this would be the emerging “Global Earth Observation System of Systems (GEOSS)” that could especially provide early warning about imminent natural or social sustainability crises.
3. A global initiative for the advancement of sustainability science, education and training. The best young minds, especially those of women, need to be motivated to engage in interdisciplinary problem-solving, based on ever-enhanced disciplinary excellence. The ambition is to win over the next generation for laying the scientific foundations for the well-being of the generations further down the line.