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DIALOGUES ON ENERGY

Energy and Sustainable Development: Where are we going?

CONCLUSIONS

For the organizers of the Dialogues held within the framework of the Universal Forum of Cultures – Barcelona 2004, the choice of energy as an area to be examined was a carefully considered one. Reflection in this area is crucial. What is most essential, however, is not that the subject be addressed by technicians, politicians and economists, but rather that all of the world's citizens and inhabitants focus on energy-related issues. Such issues are a global concern and affect us all. The irreversible repercussions of energy policies and decisions are more far-reaching than we were aware and will be noted sooner than we think.

In view of the vital importance of these issues, we call on all of those present to take the process of reflection and the conclusions reached in this forum to a wider audience: all citizens must be involved in the re-examination of energy policies and directions. It is they who must push politicians to adopt the decisions that will move us towards a new alternative energy policy. While this may seem a utopian vision, such an approach has worked in other equally important areas. Global changes occur only when citizens recognize the real problems we are faced with, act responsibly, and demand that political leaders take action.

The purpose of this overview of conclusions is not to reiterate the data and arguments presented in this Dialogue, which, within the framework of different visions, describe the current energy model and sketch out the basic principles of a new model.

Energy policy is evidently a complex area and countless details must be taken into account. There is, however, a clear consensus among the speakers who have taken part in this Dialogue. Despite having brought an unparalleled level of development to a quarter of the world's population, the current energy model cannot be maintained. This position has been supported by extensive data presented here, and is based on economic and social arguments, as well as the model's inefficiency, unfairness, environmental impact, and unsustainability. The energy model we are living with is an obese one.

The key points to consider in relation to this energy model and the outlook for the immediate future are as follows:

- 85% of the planet's inhabitants have insufficient access to energy. As a result, they cannot escape the cycle of poverty. In contrast, 15% of the world's population consumes 53% of energy resources. The existing model is therefore unfair and not based on solidarity.
- Energy sources are excessively centralized, and the amount of energy provided by alternative sources is minimal. This means a high-level of dependence on fossil fuels, which, in the medium term (just 40 years) will be high-priced and in short supply. The environmental impact of the use of fossil fuels, specifically on global climate, is increasingly evident based not only on technical and scientific data, but also on direct climatic evidence and observable physical phenomena.



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- Dependence on a narrow range of energy sources leads to energy insecurity. This is being demonstrated at present by continuous increases in the price of oil, which will have a notable short-term impact on developing countries. Sudden price increases also have a disruptive effect on stock markets and the global economy.
- Energy security and quality are legitimate concerns, but thinking is too focused on the short term. Long-term planning is needed to address these concerns.
- Political statements frequently indicate a will to move towards a new energy model, but such intentions are not adequately reflected in public and private investment in energy-related research and development.

The model outlined above is associated with a series of environmental repercussions, which have now been thoroughly analyzed. Despite these repercussions and the fact that resources are limited, a significant shift of direction has not occurred.

The most significant of the impacts analyzed is global warming. The Intergovernmental Panel on Climate Change estimates that by the end of the 21st century temperatures will have increased by between 1.4°C and 5.8°C, and sea levels will have risen by between 9 cm and 88 cm. The progressive process of climate change is also likely to affect a number of different ecosystems. Significant effects will be noted on coasts, agricultural crops, fisheries, the hydrological cycle, and in other areas. The risk of accelerated climate change is high enough to justify the application of the principle of precaution.

We have also seen that the environmental impact of power production using conventional energy sources is 31 times greater than that for renewable energies.

The multifaceted challenge facing humanity requires that we evolve towards a new, sustainable energy model based on a new energy culture and on the following principles:

- The only viable alternative to the current energy model is a scenario of sustainable demand and sustainable supply.

Sustainable demand is understood as that which adapts to energy supply. This means we cannot look ahead to unlimited growth in demand. Intensive public communication campaigns need to be carried out to make sustainable demand a reality.

Sustainable supply requires a process of technological development. This implies economic investment and a stable framework that ensures a good return on such investment. A good example of this approach is the promotion of renewable energies.

- There must be a decarbonization of the energy model, and energy sources must be diversified in order to move in the direction of decentralization and promote the search for lower-risk options that allow us to gradually give up energy sources associated with the greatest environmental impacts (conventional and nuclear).
- Raising social awareness globally to put pressure on political, institutional and economic sectors to take appropriate energy decisions. This should involve an intensive education



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campaign focusing on cost transparency and the real impacts of technologies, about which citizens are generally unaware.

- Promotion of energy savings and efficiency. It is estimated that energy consumption could be reduced by 30%. To accomplish this, it is necessary to overcome the cultural inertia of wasteful habits. This implies changing the notion that quality of life must be linked to a high level of energy consumption. Public funding will be needed for at least the next 25 years to provide incentives for specific actions aimed at saving energy and increasing efficiency.
- Strengthening and providing incentives for renewable energies, particularly solar. In Spain, the development of solar energy is lagging and renewable-energy technology may also be behind. It is still necessary to act decisively and with confidence. Fear cannot be allowed to act as a brake. Indeed, fear of phenomena such as climate change should push us to make decisions. We endorse the call made in Bonn to increase the percentage of energy generated by renewables to 20% of total energy production over the next 15 years.
- Promoting the development of practices at the regional and local level. We have seen that such practices are producing very good results thanks to energy agencies, local actions and cooperation projects.
- Providing incentives for research to improve existing technologies for the generation and storage of energy and to develop new technologies in this area.
- Measures to support access to energy technology in developing countries.
- Research and studies must continue to be carried out on the evolution of climate behavior. Integrated systems should be used to monitor, predict and provide warnings based on information provided by satellite sensors.
- Technological investments must be extended to all of the world's countries, including undeveloped and developing countries. This means reactivating funding mechanisms for cooperation and for carrying out projects based on visionary models such as those presented in this Dialogue. Such initiatives should receive the business and funding support they need.
- Despite uncertainties associated with emissions trading, this innovative system of negotiable CO₂ emission licenses should be strengthened. The system provides a means of achieving the commitments undertaken at the Kyoto Conference and a flexible approach for reducing emissions. We also believe that it benefits investment in technology, develops financial markets, and opens up new channels for negotiation. Nevertheless, emission criteria should be made more uniform and continuous monitoring is necessary.

We also wish to underline that energy management in cities is of vital importance. There are now 3 billion urban dwellers, representing 50% of the global population (75% in the most developed countries). In contrast, just a few decades ago, only 20% of the world's



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population resided in cities. This means that the design of cities is directly related to the demand for energy.

- It has been shown that spatially diffused and functionally segregated cities (which separate residential neighborhoods, commercial areas and production areas) are associated with high energy costs because of the distance between elements that functionally need to be close to each other.
- Low residential density and/or excessive dispersion of destinations encourage the use of individual private transportation, aggravating the problem. A profound change in the urban transportation and mobility model is needed.
- The application of bioclimatic architecture should become increasingly generalized until it becomes the norm and we reach a point at which an architectural approach that does not take into account energy-efficiency criteria is inconceivable.
The energy performance of buildings is equally crucial. Areas to consider include passive approaches (orientation, ventilation systems, insulation and thermal bridges), efficiency of management (air-conditioning, lighting, cogeneration) and active approaches (thermosolar, photovoltaic and even wind systems). Consumers also need to be oriented towards a culture of energy efficiency. They should be aware of the energy performance of buildings when choosing a home. This information would reorient the market towards energy sustainability.

It has been pointed out at this forum that while natural resources are limited, human creativity is not. We must use this creativity to change the existing energy system. We must take the view that commitments concerning energy production and consumption are feasible. Organizers and participants involved in this Dialogue hope to see such a commitment adopted at the Bonn Summit to ensure that 20% of world energy production is based on renewables by the year 2020. If such commitments are to be adopted and implemented, substantial investment is required. This should include the creation of a special global fund for reducing the cost of solar energy and other sources of renewable energy and generating rapid improvements in energy efficiency. If one government can come up with \$100 billion from one day to the next to finance a war in Iraq, we should be capable of investing \$50 billion over 10 years in a global fund. Such a fund would benefit both the developing world, where 2 billion people do not have access to electricity, and our cities, where the energy supply is increasingly vulnerable.

We appeal to the notion of utopia—the idea that has been the driving force for the expansion of human knowledge. We believe that another world is possible and that this new world requires a new, fairer energy model—one that is efficient, that is based on solidarity, and that takes the environment into account—in short, a model that is more sustainable.

Thank you very much.