

## **Germany's Energy Transition: A Collective Endeavor for the Future**

Prepared by the Ethics Commission for a Safe Energy Supply

Berlin, 30 May 2011

The Ethics Commission for a Safe Energy Supply

4 April – 28 May 2011

On behalf of Chancellor Angela Merkel

### Chairs

Prof. Dr. Klaus Töpfer

Prof. Dr. Eng. Matthias Kleiner

### Members

Prof. Dr. Ulrich Beck

Dr. Klaus von Dohnanyi

Bischof Dr. Ulrich Fischer

Alois Glück

Prof. Dr. Jörg Hacker

Dr. Jürgen Hambrecht

Dr. Volker Hauff

Walter Hirche

Prof. Dr. Reinhard Hüttl

Prof. Dr. Weyma Lübke

Kardinal Dr. Reinhard Marx

Prof. Dr. Lucia Reisch

Prof. Dr. Ortwin Renn

Prof. Dr. Miranda Schreurs

Michael Vassiliadis

### Assistance

Dr. Günther Bachmann (Text)

Dr. Ina Sauer (Organisation)

Secretariat of the Ethics Commission for a Safe Energy Supply in the Federal Chancellory

MR Dr. Rudolf Teuwsen

M.A. RR Gerd Thiel

## **Recommendations of the Ethics Commission for a Safe Energy Supply**

The Ethics Commission is of the firm conviction that phasing out the use of nuclear energy is possible within a decade with the measures for an energy transition presented here. This goal and the necessary measures to achieve it should be accepted as binding and must be carried out by society. Only on the basis of a clearly set time frame can the necessary planning and investment decisions be reached.

For politics and society, realizing within a decade the collective endeavor, “Germany’s Energy Future”, which is tied to difficult decisions and burdens but also to special chances, will be a major challenge.

This goal calls for a consistent, goal-oriented, politically-effective monitoring process (analysis, assessment, operational recommendations), the operation and institutions of which are described in more detail in the report.

The Commission makes the recommendation to immediately establish an independent Parliamentary Commissioner for an Energy Transition within the German Parliament and to set up a National Forum for an Energy Transition. Progress must be annually checked by the Parliamentary Commissioner for an Energy Transition based on the monitoring process.

The Ethics Commission makes this recommendation with the understanding that it is the Federal Government that will draw conclusions regarding the goal-oriented management of the energy transition and an efficient working together with the German states. The energy transition is organizationally an exceedingly ambitious task that will especially challenge the government and for which project management is essential.

Phase out is necessary and advisable to eliminate in the future the risks associated with nuclear energy in Germany. Phase out is possible because there are less risky alternatives. The phaseout should be designed in such a way that the competitiveness of industry and Germany as a location for doing business are not endangered. Science and research, technological development, and entrepreneurial initiatives promoting the development of new business models for a sustainable economy have given Germany alternatives: electricity generation from wind, sun, water, geothermal, biomass, greater

efficiency and higher energy productivity as well as climate-acceptable fossil fuels. Also altered lifestyles, which respect nature and conserve the fundamentals of Creation, can save energy.

“Phase out” means first of all the step-by-step removal of nuclear power plants from the grid. The Ethics Commission is, however, aware that after phase out, the nuclear power plants will still require intensive work ranging from the maintenance of their security to their decommissioning.

### **A Community Endeavor (“Gemeinschaftswerk”)**

The Ethics Commission emphasizes that an energy transition can only succeed through a common effort at all levels of politics, the economy, and society. That is the reason for the recommendation for a community endeavor, “Germany’s Energy Future”. This is a big chance, but also brings with it challenges. The international community is watching with great interest to see if Germany will succeed with phasing out nuclear energy. If the project is successful, it will have a big influence on other countries. If it fails, the consequences will be grave for Germany and will raise questions about many of the existing renewable energy successes.

The experiences of the last years show that it is not self-evident to speak of a community endeavor; it is completely justifiable to be concerned. There could be delays in the implementation of the energy transition. At the same time, it is also justifiable to expect that Germany relying on its creativity and learning aptitude, will achieve the phase out considerably faster than is currently happening.

Germany must follow the phase-out path with new confidence in its own strengths and a consistent process of checks and controls. Activities at the local level, within many enterprises, and within initiatives and civil society organizations shows the Ethics Commission that throughout the entirety of German society many are already well on the way toward a future that makes the use of nuclear energy unnecessary. This should be supported. The German economy attains its strength from its creativity and ability to manufacture products of the highest quality. An increasingly large number of enterprises are orienting their businesses in sustainable directions. A phase out of nuclear energy provides them with many new chances. Science in Germany is in an excellent position and can be expected to continue to provide innovative and efficient

solutions for the energy transition.

Therefore science and research have a special role in the energy transition. This is true both for the natural and technical sciences as well as for the humanities and social sciences. The Commission therefore welcomes very much the German Academy of Sciences Leopoldina's updated recommendations for an energy policy and comprehensive energy research. The phase out of nuclear energy in Germany will require further research related to the safety of nuclear facilities and the handling of nuclear waste—this also with the realization that we live in a world where in many states nuclear installations are used and new nuclear power plants are being built.

The National Forum for an Energy Transition proposed by the Ethics Commission should stimulate and intensify societal dialogue. In cities, communities, and enterprises, it is an individual decision whether phase out can occur more rapidly and if phase out and an energy transition can be successfully achieved. The Ethics Commission encourages the establishment of a National Forum for an Energy Transition. Citizens' dialogues and forums are appropriate instruments to advance decisions for the energy transition at all levels.

### **Monitoring and Management Process**

The fastest phase out possible of nuclear energy is ethically based; from the view point of the Ethics Commission, obligatory; and with the proviso that the measures proposed are implemented, possible. In the best case, the phase out should be possible in less than the ten years mentioned above.

The monitoring process and the Parliamentary Commissioner for an Energy Transition that are proposed by the Ethics Commission should annually provide the information necessary for decisions as to which nuclear energy plants can be shut down when.

The monitoring process shall early on call attention to instances of delay in the phase out and make suggestions for further measures to be taken so that the phase out can be completed within a decade. Progress in science and technology should be taken into account by the monitoring process.

### **The Order of the Shut-down Process**

For ethical reasons, nuclear energy plants should only be allowed to run until their energy supply can be replaced by less risky energy forms.

The today already unnecessary 8.5 Gigawatts of nuclear power should be removed permanently from the grid. The temporary shutdown of the seven oldest nuclear power plants and the Krümmel nuclear power plant show that their supply can be replaced by less risky energy forms. The electricity peaks in summer and winter must be secured through other capacities.

The order by which nuclear power plants should be taken from the grid should be determined by their level of residual risk and their importance in regional electricity grids except in the case that deeper analysis of reactor safety shows other or wider risks tied to nuclear power plants.

Planning security is a valuable commodity for the economy and society. It is very important to competitiveness and also plays a central role in calculations regarding the cost-effectiveness of investments. World-wide, Germany has an important leadership role and responsibility tied to the phase out of nuclear energy. The directional security for investments in energy supply systems and energy efficiency as well as the provision of infrastructure are important variables.

### **Nuclear Disposal and Safety**

Nuclear waste must be disposed of under the highest safety conditions and in such a way that it can be retrieved to assure future generations of the opportunity to reduce the risks and amount of radioactive waste when appropriate technologies become available.

The safety of nuclear power plants and the provision of future energy supplies are themes of high importance for the European and international politics and cooperation. The Ethics Commission recommends that the Federal Government push at the European and international levels for the promotion of nuclear safety globally and for the further development and alignment of the work of the International Atomic Energy Agency.

The Ethic Commission considers the improper provision of nuclear materials from

nuclear power plants as a very serious threat. The Commission urges the Federal Government to take further measures here as well.

### **Conclusion**

The many and complex recommendations regarding processes and measures and institutions for the energy transition make it clear that this is truly a collective endeavor.

The Ethics Commission sees the step-by-step phase out of nuclear energy as an extreme challenge for all involved and at the same time as a wellspring of new opportunities for the working together with citizens on decentralized decisions.