

Speech by
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The ethics of a speech should be to tell the truth. The truth of the global energy situation is: Our world faces a turning point. We are about to cross the borderline of the present global energy system:

- 1) The liquid oil and the natural gas resources – that is 60% of the present commercial energy supplies and demands are running out. Proposals to extend the life time of the fossil energy system by using so-called non conventional fossil energies will lead to tremendous price progressions and will definitely overburden the ecosphere.
- 2) Time is overdue for a general shift to Renewable Energies. This is the elementary challenge of our century. There is no time for further postponements.
- 3) The curve of cheap fossil reserves and therefore the possibilities of supply decrease. On the other hand the curve of energy demand will rise. It is alone Renewable Energy that can avoid a crossing of the two curves of demand and supply during the next decades.

If Renewable Energy is not introduced at a broader scale and in time, the dangers of global economic crisis and energy conflicts will be the consequence.

- 4) The atomic option remains a negative-vision. Even the usable uranium reserves will run out within five decades, based on the present number of atomic power plants. Stretching the fission material by reprocessing and fast breeders leads to incalculable additional costs and risks. It is irresponsible to leave the atomic waste management for more than 10.000 years to future generations. Furthermore, the peaceful use of atomic energy becomes more and more the bridge to the global proliferation of atomic weapons. That definitely has to be avoided. Which political system can be kept stable for thousands of years? It is

not the come-back of atomic energy which is at stake but the immediate acceleration of Renewable Energy.

- 5) The future option of atomic fusion is a non-option. No supporter of atomic fusion is asked and speaks about the costs, which will be at least three times higher than for atomic fission.

They ignore the prognosis of M.L. Lidsky, the former head of the Plasma Fusion Center of MIT, that "if the fusion program produces a reactor, no one is going to want to have it." Moreover, they ignore the fact, that there is no need for another energy option if we take advantage of the solar potential. The fusion perspective is unrealistic, the Renewable Energy perspective is real.

6. Because Energy is the basic need of life, we can't leave the basic decisions concerning the future energy supply to calculations based solely on actual energy costs and to the energy market. The costs for the outrunning conventional energies go up.

Renewable energy costs will go down, because they are almost exclusively technology costs, except for Biomass. Technology costs usually decline in the course of technological progress and mass production. The promotion of Renewable Energy is not an economic burden. It is a unique new economic opportunity.

7. Conventional fossil/atomic energies have multiple negative macroeconomic side effects - such as the increasing need to protect the globalized power lines against attacks; the high water consumption for mining, extractions and for heating power stations; the large amount of foreign currency spent for importation; and the environmental and health damages.

In contrast, Renewable Energy sources have multiple positive macroeconomic benefits, because they help to avoid all these negative-effects mentioned above. The practical challenge lies in the creation of policies for the transformation of these benefits into microeconomic incentives for application.

8. It is only with Renewable Energies that we can attain true energy efficiency. In the long global conventional energy chain from the mines and wells to the customers, sometimes over distances of more than 20,000 miles, there are many energy losses. Only with short energy chains based on the use of indigenous Renewable Energies, energy losses will be reduced radically. The central responsibility of Research and Development should therefore be to make short energy chains

feasible. That means absolute priority for new storing technologies, not only with hydrogen.

9. Conventional energies are politically privileged everywhere in the world by large amounts of public money for research and development; by military protection of the supply chain; by 300 billion Dollar of subsidies annually.

In contrast to this, Renewable Energies are up to now politically discriminated. Less than 20 billion dollars of the tax-payers money were spent in the last 30 years to promote Renewable Energy. On the international level, there exist several intergovernmental institutions for promoting atomic energy (the IAEA, EURATOM), but no single one for Renewable Energies. Time is overdue to overcome the double-standard against Renewables.

10. For 30 years governments and international institutions are aware of the limits of conventional energies and its broad damaging consequences. This is common knowledge since the oil-crisis in the 70ies, the Global 2000-Report of the Carter Administration in 1981, the UN Environment conference in 1982, the Rio-Conference in 1992 or the Johannesburg-Conference in 2002. But they avoided coming to the central point: the replacement of non renewable by renewable energies. One element to circumvent the central point is the wording on “sustainable energy”. Due to the assumption that only Renewables are – by definition – sustainable, let’s speak about it.

Governments and institutions worked on the assumption, that global problems would require common global actions. They tried to develop a global consensus for action. But consensus always means that the slowest move determines the speed of the entire process. The result was the attitude of “globally talking and nationally postponing”. It is a contradiction in itself to gain speed and have consensus at the same time. The consensus principle leads to a practical paralysis.

The remarkable achievements for Renewable Energies cannot hide the fact, that the global fossil energy consumption increases faster than the introduction of Renewable Energy. That means: up to now world civilization continues its run into the fossil energy trap and into an increasing energy dependency.

A realistic picture of the state of Renewable Energies shows clearly: To promote them must become a primary strategy everywhere.

The famous philosopher Schopenhauer identified three stages in the implementation of a new solution. At first it is ignored. Secondly there is strong opposition against it. In the end, former opponents and skeptics turn into supporters of the new initiative. The state of Renewable Energy development does not confirm this view: nowadays everybody speaks in favor of Renewable Energies. But at the same time too many oil supporters continue their blockades. There are too many lip services paid and too little concrete action. This situation betrays: Renewable Energies are not really accepted as a priority by a majority of decision makers in politics and economics. Numerous excuses are on the table: the expenses will be too high, the technologies won't be ripe, the market won't accept Renewables, and a lack of consensus does exist. However all these arguments only betray a lack of leadership and a lack of courage to set the right priority. Forceful speeding developments require driving forces. No one will become a driving force without courage, consistent concepts and new allies.

The reasons of the German success were the following:

1. The right concept. Our feed-in-law gave space for independent power supplies, protected them from the interferences of the conventional power supplies by a special market frame-work for Renewables out of the conventional market rules. It is based on a guaranteed access to the grid and on guaranteed feed-in-prices. It offered investment security for Renewables.

Wherever this concept was introduced, Renewable Energies gained momentum. Wherever, in contrast to this concept, a RPS-system was introduced, there was a much slower development and –by the way – less cost decline. The reasons are very obvious:

The costs of a project, let's say a wind mill, are not only the costs for the technology, but include the expenses for getting the permissions for installations. Only few can shoulder these expenses without an investment security, which means without a guarantee for implementation. That means no one can calculate these real costs when he participates in a call for tender. And that is the reasons, why many projects within a RPS-system were not realized.

2. The courage to overrule the conventional energy interests, that are everywhere deeply mixed with the governments. The initiatives in Germany came from within the Parliament, based on its constitutional duty and legitimacy to act for the common interest and not for special interest.

3. The mobilization of the common people. The general public is the best ally for Renewable Energies, as soon as the public has recognized that Renewable Energies work. Therefore it is a must to enlighten the people about the possibilities and the benefits for Renewable Energies and to challenge the will of the people to be responsible for our common future – and by offering an economic incentive in order to overcome social barriers. We have to promote Renewables by creating public confidence in Renewables and by referring to the two main values of the people: Individual freedom by getting energy independency for everybody and not only for a few, and social commitment, which means access to energy without damaging the life quality of others. This is only possible with Renewables.

4. The establishment of a new socio-economic alliance.

Two strong campaigns against our Feed-in-Law were waged in Germany. We countered these campaigns by two manifestations in front of the Parliament, carried not only by the Renewable Energy Associations and the RE protagonists in the Parliament but also by the economic-interest groups who see their own future with Renewables: the farmers associations, the association of small-and-medium enterprises, the association of machine manufacturers and the Union of the workers in the machine, electrical equipment and buildings construction industry. There never existed such an alliance of different groups in history.

It is only possible to mobilize these allies, if the society is the direct beneficiary.

Based on this experience I finally come to five general guidelines:

Guideline One: To develop scenarios of the total replacement of nuclear and fossil energies.

The possibility of completely covering energy demands by means of Renewable Energy sources should be demonstrated worldwide and for each country.

By highlighting this, it is not necessary to calculate it accurately. No serious economist is in a position to predict the future cost of new technologies. Nobody can predict the technological development and its impact on prices or the speed at which costs will decline as a result of mass production. It is only necessary to underline the ability of Renewable Energies to replace all conventional energies in order to overcome the prejudice that they are indispensable.

If society and its members become aware of the possibility of full-coverage being provided by Renewable Energies, more and more decision-makers will abandon the

obsessive idea that further large-scale investments with long-term capital tie-up for conventional energy plants will be needed.

The faster we rid our minds of this notion, the more space there will be for imagination and creativity and the more politicians, designers and businesses will start activities in the promotion of Renewable Energy.

Guideline Two: Take a broad view on energy:

To discuss energy as a separate matter is an intellectual illusion.

The CO₂ emissions are not the only problem of fossil energy. The radioactive contamination is not the only problem of atomic power. Many other dangers are caused by using atomic and fossil energies: from the polluted cities to the erosion of rural areas; from water pollution to scarcities and desertification; from mass migration to overcrowded settlements; from the declining security of individuals and states. Because the present energy system lies at the root of these problems, renewable energy is the solution to these problems. That means: nothing is macro economically better and cheaper than the substitution of conventional energies by Renewables. We need a hard-line strategy for soft energies.

Guideline Three: Consider whole energy systems, not only energy plants

The comparison usually drawn in energy economics between the investment costs per installed kilowatt-hour is analytically superficial.

Instead of comparing single technology applications, comprehensive energy systems need to be compared with each other, calculating the total costs for conventional energy in its long supply chain – in contrast to the costs for providing solar energy with only a short supply chain - if any. Between 70 and 80 percent of the costs for conventional power supplies are not attributable to the actual electricity generation costs. The productivity of utilizing solar power lies in the elimination – partly or totally – of these 70 to 80 percent.

And with new kinds of decentralized energy storage technologies, combined with information technologies, Renewable Energies will create a new technological revolution resulting in new efficiencies and synergetic solutions towards a real New Economy: the Solar Information Society.

Guideline Four: Motivate new business partners for Renewable Energies:

The highly concentrated conventional energy industry is not the only partner for a change. The energy industry, too, can switch from the role of energy supplier to that of a technology provider. But the conventional energy industry is unlikely to do so in the needed speed, because their interests are too strongly tied to the old structures and investment patterns.

Therefore the prime candidates are the industries whose current sphere of activity is relatively close to solar conversion technologies: the engine industry; the glass industry; the electrical appliance industry; the electronics industry; the building materials industry; mechanical and plant engineering companies; manufacturers of agricultural implements (for biomass harvesting equipment); and, last but not least, agriculture and forestry. Our farmers will become combined food, energy and raw material producers and they will be ecologically integrated. The agricultural economy will come to a revival with many new jobs. Our farmers will be the oil sheiks of tomorrow.

Guideline Five: Show the opportunities for fast implementations:

The conventional experience that a new energy source takes many years to establish itself, does not apply to Renewable Energies. While their provision requires large amounts of human capital, most Renewables do need the infrastructural outlay necessary for the nuclear and fossil energy chains.

The installation of a fossil or atomic power station requires up to ten years or more, the installations of a windmill including its basement takes perhaps one week. Renewable Energy is provided on a module basis. That means that renewable energies can be established much faster than conventional energy experts assume.

There is no faster way to overcome an energy availability crisis than by Renewable Energies. Renewable Energies offer, in contrast to the opinion of many conventional energy experts, short term solutions.

The question of how much time will be necessary to create the solar age is fairly easy to answer: not long if we act with self confidence, knowledge, courage and with the right allies.

Most people begin too early to start doing the important things too late. Due to the ongoing global energy crisis it is already very late. But with Renewable Energies it is possible to reverse the energy dilemma of our world – for a better future for everybody. Let's go along this road.