

THE ACCELERATION OF PV AND THE ROLE OF THE GERMAN PROGRAMME

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Mr. Chairman, dear friends. I speak to you in different capacities. One is as a General Chairman of the World Council for Renewable Energy. Last week, just before the International Governmental Conference on Renewables, we organized the Second World Renewable Energy Forum and adopted the World Renewable Energy Agenda. Moreover I speak in my capacity as President of EUROSOLAR, I think it is now the 11th time without exception that I spoke in the opening session of the European Photovoltaic Conference, since '89 in Freiburg. Therefore I can look back to the last 15 years of development. At last I speak to you as a member of the German Parliament and an initiator and co-designer of the first really implemented mass programme for photovoltaic. Just last week we had also the International Parliamentary Forum, and since the German parliament hosted this forum, I had the honor to chair this event. There we adopted the resolution "Renewable Energies - the challenge for the century". Some of my remarks are based on this resolution and on the former mentioned Worlds Renewable Energy Agenda.

In 1992 in Montereau at the European Photovoltaic Conference there was a panel discussion whether it is time for the mass implementation of photovoltaic. Some famous renewable energy or PV protagonists said, that time has not come yet. Others said: Yes it's time, because it is impossible to come to a broad and fast market introduction, to improve efficiency and to lower costs only through research and development in a laboratory. It is necessary to scale the production, and to organize learning stories, for the society in general, for the handcraft sector and for the normal consumers to apply renewable energies in order to recognize its real opportunities. This is a cultural and sociological question, which must be answered by market introduction. In 1991 we introduced the Renewable Energy Feed - in - Tariff Law in Germany but we could not succeed at this time to give an adequate fee for PV. It was a good push for wind and small hydro but the PV acceleration did not get the majority. That was the reason why I called for a 100 000 roof programme, a demand that subsequently entered the election programme of my party, the German social democratic party. It was not easy to involve this programme into the party platform because at the same time Green Peace announced that 100 000 would be too ambitious, 50 000 would be sufficient. It took five years until the 100 000 PV roof programme became reality. It started in 1999 based on a zero interest rate and of 12,5% subsidy . Furthermore it was issued to a total of 300 megawatts. Half a year later we could add to it a special fee within our Renewable Energy Act with a 20 year payment, starting with 50 cent per kilowatt hour and 5% decline for the new introductions in the next year and so forth. This accelerated the growth of the PV industry as a whole, in both European and global markets. Since the first of January 2004 we were able to extend this PV law as a result of the final implementation of the

100 000 roof programme. This realization happened one year earlier than expected. We introduced a new fee, differentiated from 45 Euro cent for free-land applications up to 62 Euro cent for applications. This year we expect to get between 300 and 400 Megawatt new installations. In the following year these figures could possibly be doubled. We are now in the time of a real industrial challenge. We are now in the situation that many customers who ask for an installation can't get modules because the industry can't provide enough supply. This challenge calls for solutions. Therefore I want to explain seven basic points.

The first point that I would like to address is: "who shall pay it?". In the German law renewable energies are not subsidized. The fee is paid by the electric power customers, and it is legitimated as a compensation for the zero emission power production. This is in the common interests of the people. This is accepted by the German voters as long as there is an increasing production rate in their own country for the creation of new jobs.

We would lose the public support for our PV policy if there was a decreasing number of domestic PV production and an increasing number of imported PV technologies. That means: We can only continue our driving role if the international PV companies, who have important market shares in Germany start own production facilities in Germany.

On a more abstract level, there are in principal two options to solve this question: The one is to set higher prices for conventional energy by taxes in order to internalize the environmental costs. The other option is to set up a special price for renewables by a general buying obligation. This option is much more realistic. It is cheaper for the conventional power companies. Rejecting the former as well as the latter option means not daring to give an answer to the big historical challenge of environmental destruction. We took the buying obligation, the more successful and more popular option. It costs one additional euro per month for all households, perhaps it will be two or three euro per month in next two or three years. This solution is popular: 80 % of the population supports it. We never had such a popularity for an energy option before. But it has to be said, that this solution is only possible for grid on-structures. For grid-off structures we need other answers to the question of who shall pay. One solution could be zero interest rates. Our World Forum as well as the Inter Parliamentary Forum called for the cancellation of the energy portfolios for fossil energies by the international development banks and concentrate the total energy portfolio to renewables and energy efficiency. This would be a big step in world development to the two billion people living off-grid. For example in India, if diesel generator subsidies were cancelled, then the renewable energy PV applications for the farmers would come immediately to a revolutionary implementation. The cost advantage for the PV would trigger this.

We should rectify the misinformation that renewable energies are dependent on large subsidies. The contrary is the truth. 300 billion dollars subsidies are annually spent for conventional energies worldwide. The total of public subsidies for renewable energies in the last 20 years amounts to only 60 billion dollars. If there was a pay-back of former subsidies for conventional energies, there would not be the need for special promotion for renewable energies.

Second point: All producers of PV modules should bring the production to the markets, because only this motivates governments and parliamentarians to start ambiguous PV programmes. They have to become aware of the additional advantage of job creation. One can't expect long term market support for PV without job creation. Therefore, it is necessary to bring markets and production together, to the greatest extent possible in the shortest amount of time.

Third point: The PV industry must immediately start activities for large scale solar silicon production. You have to mobilize all your strength in a cooperative way. This is much more necessary than four years ago when I made the same appeal in Glasgow.

The fourth point: It is necessary to look at the new products referring to the unique intelligence of PV. This is not only a matter of public promotion programmes, it has to do with research, not only by governments. Examples are power production, within a mobile telephone or a power book. These kinds of applications are much more important for photovoltaics than many people believe. In fact, 80 percent of the electric power costs are expenses for transmission and distribution and consequently 80 % of the final price of electric power is not power generation. These availability costs could be reduced step by step and often totally avoided by getting independent power productions within the devices. The potential is colossal; it meets 20-25% of the general electric power demand. This is a new technological revolution, which is not really running now. You should not forget this option for the acceleration of PV.

Fifth point: I recommend that you should support the establishment of an international Renewable Energy Agency. It is an imperative which has great potential. Let me elaborate this by looking at the promotion activities of many countries. There exists the International Atomic Energy Agency, promoting technology transfer for nuclear technologies. There is the International Energy Agency with the main mandate for fossil energy security. There is the same necessity to establish an International Renewable Energy Agency as an intergovernmental organization. This is more important for PV than for other renewable energy options. Solar energy application leads to the historical way from few conventional power suppliers to decentralized power suppliers and many self suppliers. That means you need more experienced people to handle the applications of renewable energies. Renewable energies need a home for consulting authorities for information, evaluations, certifications, common norms and standards and for mobilizing training and education activities. Not everybody who favors renewable energies does favor such an agency at this moment, but everybody who tries to block renewable energies, is against it.

My sixth point is to tear down the mental barriers. Until now, renewable energies and mainly photovoltaics are underestimated. Psychologically, the step from small rooftops to global energy system is a very difficult one

for many people. This leads to an inferiority complex of many PV protagonists. With such an inferiority complex it is impossible to design the future. We have to demonstrate that solar energy is the superior energy. In contrast to this all conventional energies are marginal.

Finally: In more than 30 countries of the developing world do the expenses for imported oil exceed the total export revenues. Those, and this is the majority, who don't have their own conventional sources, have the single opportunity to use the indigenous renewable energy sources. This is not an economic burden, it is a unique one. The only economic advantage for these countries could be renewable energies. This point is not in the mind of most of the decision makers. You don't need infrastructure for creating renewable energy implementations in the villages of the world. That means you can introduce it fast. Each module can work immediately. There is not a construction time of ten or fifteen years. Therefore PV is a fast, reliable energy access for the developing world.