A Plea for Innovation (English Version)

Claude Haegi

Abstract

This conference in the Globe of Science and Innovation is a clear sign of the high value that CERN attributes to innovation.

Ladies and Gentlemen,

Good morning and welcome to Geneva.

I would like to thank the Director-General of CERN for allowing us to hold this important meeting in the Globe of Science and Innovation. This Globe, a gift from the Swiss Confederation, is a sign of recognition to the international scientific community assembled here on the Franco-Swiss border, the results of whose work radiate throughout the world. This Globe is a universal symbol of leading-edge scientific research and sustainable development through its wooden structure and novel architecture.

CERN is a prestigious scientific project, a European rallying point, founded as a strong act of reconciliation after the Second World War. This project was supported by the French physicist Louis de Broglie at the European Conference on Culture in Lausanne at the end of 1949, organized by one of the founding fathers of European reconstruction, the Swiss Denis de Rougemont. The State Councillor and Genevan Minister, Albert Picot, and the Swiss physicist Paul Scherrer, totally convinced by the idea of creating this great laboratory, secured the establishment of CERN in Geneva at a meeting in Amsterdam in 1952. CERN is part of the identity of Geneva; it is even one of its main jewels. Its installation passed through the Caudine Forks of direct Swiss cantonal democracy. In 1953, through a referendum, 70 % of the electors of the canton supported the arrival of CERN, the European Organization for Nuclear Research.

Our citizens thus fashioned a Geneva of research and showed confidence in the human spirit. The population of Geneva also showed its great interest in 1955 and 1958 during the first two United Nations International Conferences on Atomic Energy "Atoms for Peace". During these meetings, Geneva was the world capital of atomic energy for peaceful purposes and its potential, most notably, for medical and industrial applications.

We must remember this in the face of attempts to turn back and slow down research and development in this field. Questioning of the maintaining of certain nuclear power stations is perfectly legitimate because of their danger, and of new security requirements, but research to find new outlets or to master current security problems should not be put into question.

The current nuclear industry does contain real risks, generally created by negligence, foolhardiness, or even a dangerous search for savings. This does not justify throwing the baby out with the bath water. It is not the science that is responsible for the different dramatic nuclear events that we have witnessed and that have negatively modified our perception of it, but the irresponsible methods described. Science progresses and with time knows how to respond to our needs.

The renowned CERN physicist Georges Charpak, Nobel Prize laureate, embodied this confidence in innovation carried out with human discernment to fulfil the energy needs of all the inhabitants of the planet, whilst at the same time preserving the biosphere and the whole of the natural environment. Georges Charpak, a man of justice, provided a scientific answer to allow the inhabitants of developing areas to improve their standard of living.

It was through this process that Carlo Rubbia, former Director-General of CERN and Nobel Prize laureate in physics, worked with his team to have a clean and safe energy by using thorium instead of uranium. The work done

Former President of the Government of the Republic and Canton of Geneva.

C. Haegi (✉)
international Thorium Energy Committee (iThEC), Foundation for the Economy and Sustainable Development of the Regions of Europe (FEDRE), Geneva, Switzerland

J.-P. Revol et al. (eds.), *Thorium Energy for the World*, DOI 10.1007/978-3-319-26542-1_3

by Carlo Rubbia and his colleagues was considerable, but their attempts to get their work to practical applications were regularly compromised for political and economic reasons. The realization of our future energy needs should make one understand that one should not dismiss such a promising project, which cannot be carried out in the short term, but should be considered in the long term.

Looking at the advantages: large and accessible thorium reserves, the safeness of installations, the absence of military usage and, a major argument, the destruction of nuclear waste; it would be irresponsible not to proceed further with such studies that represent a revolution.

This approach must become a global and visionary energy policy, starting with fundamental research, then onwards to applied research, and then, if possible, to becoming an industry.

Having a global and visionary energy policy is not so simple. Whatever they may pretend, the Europeans and the Swiss do not have such a policy, as the bosses of the largest energy companies pointed out recently in Brussels. At the moment, Europe is weakening, with the Americans becoming energy self-sufficient, and the Asians innovative and industrialized. Europe risks becoming dependent.

The answer to the energy question must be international and even global. Safe supplies and stable tariffs will give equilibrium to developed regions and those wishing to be so, thanks to an economic organization generating jobs and slowing down emigration. The quality of North–South relations depends on this. Fundamental research is expensive and the return on investment spans a long time period. For this reason the financing must be shared.

People say to me that the thorium track needs too much money and would penalize the progress of renewable forms of energy. That is not the idea. We must find properly adapted financial solutions, and the development of thorium must use diversified funds coming from the world's biggest consumers. The presence at this conference of representatives, in particular, from China, India, and Japan demonstrates the interest of these great and dynamic countries in the thorium solution.

A visionary energy policy does not remove the need for immediate concrete actions. In the short term, one can obtain significant energy saving results by consuming less, without giving up on comfort and at the same time creating economic activity.

The efficiency of renewable energy sources can also be considerably improved by an interdependent systemic approach, not limited to specific domains. This is the Smart Grid, which allows one to use the complementarity of renewable energy sources such as wind, sun, geothermal energy, biomass, or hydroelectricity in order to have a continuous supply. Certain countries have already developed this.

One can also, if one wishes, master the pollution generated by fossil fuels, especially gas, which one still needs.

The key is innovation thanks to research.

Cooperation and world scientific participation at CERN confirm its vocation to initiate truly societal projects. The work carried out at CERN on thorium must now be taken over by international actors capable of going on to the next steps. For this great project, scientific, industrial and political forces must be brought together in a new network.

Let us hope that this conference will be a decisive step in advancing the thorium channel, allowing for the destruction of existing and future waste and bringing about innovation to complete the range of energy sources, whilst preserving the environment.