

*Abstract Mr. Gérard Mourou*  
*1<sup>ST</sup> SESSION*

*Towards an inexhaustible and acceptable source of energy for the world*

Our planet with its 8 billion inhabitants needs 18TW to operate. 84% of this power is of fossil origin.

As predicted by the last Prix Nobel 2021, for the vast majority of climatologists it is undisputable that the anthropogenic greenhouse gas emissions accelerates global warming in addition of air pollution which is one of the leading causes of premature death in the world?

Today, our society faces the enormous challenge to replace in a very limited time our conventional means of energy production by CO<sub>2</sub>-free technology. It is an immense tall order if we are only considering, renewable energy such from solar, wind, hydro, biofuel, tidal which will cover only 10 to 20% of our needs. However it could be attainable if we accept to use nuclear energy by making it safe.

It is precisely the goal of my presentation to demonstrate that the use of safe and abundant nuclear energy could be developed by adopting the following strategy. First by trying to adopt a subcritical reactor architecture known as ADS(Advanced Driven System) proposed by C. Rubbia. Second by using the Thorium cycle instead of the Uranium to take advantage of its abundant world wide reserve over the Uranium. In addition the Thorium cycle, offers the advantage, that the quantity of long-lived minor actinides are far less than the Uranium cycle while exhibiting much shorter lifetimes.

So this presentation will insist and demonstrate the necessity to develop possible and acceptable nuclear energy to preserve our society.