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## ENERGY WHAT DOES IT MEAN AND WHAT IS THE MAIN CHALLENGE?

Lecturer: Dr Frederick Bordry is the former Director for Accelerators and Technology at CERN (until December 2020). Today, an honorary member of CERN, he is an advisor to the Director General of CERN.

He is scientific advisor to several institutions, industries, and start-ups. He is the CTO (Chief Technology Officer) of Gauss Fusion and scientific advisor to Transmutex.

He is an auditor at IHEST (Institute of Advanced Studies for Science and Technology: <https://www.ihest.fr/>).

He is scientific advisor to the OPECST (Parliamentary Office for the Evaluation of Scientific and Technological Choices).

To complete, see also the resume about F. Bordry in the attached file here below (Text informed by the Lecturer).

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abstract: Energy is, of course, at the heart of our life. It encompasses the ability to do work, for plants to grow, for animals to think or move and for machines to displace or fashion anything. Energy is the fundamental underpinning of life.

To have a constructive debate on energy, it is important to remember the definition of energy as a physical quantity and to not mix power and energy, to know the different sources of primary energy, what an energy vector—such as electricity—is, the orders of magnitude of these different energies and their CO<sub>2</sub> emissions.

After these reminders, the presentation will discuss the major challenge which is to reduce CO<sub>2</sub> emissions by 50 percent before 2030 and 100 hundred percent before 2050—today, 50 billion tons of CO<sub>2</sub> each year—by providing our civilisation with sustainable, carbon-free energies.

This presentation aims to introduce this day on energy and in particular the following talks on biofuels, hydrogen, fission and fusion nuclear energies.

**Presenter:** Dr BORDRY, Frederick

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