Climate change impact on the risk assessment of energy production plants

- **Context of the research**

Technical Systems, Structures and Infrastructures (SSI) of energy production plants ought to be designed to be safe under current but also future environmental (climate) conditions. Therefore, there is a need to rigorously identify procedures to systematically consider different climate conditions into the risk assessments of energy production plant, because these will directly affect not only their efficiency but also their safety. The research activity aims at proposing innovative risk assessment methodologies that account for the uncertainty affecting the climate projections models for different natural hazards, such as the increase of air temperature, sea level, wind speed, etc. We aim at i) assessing the trustworthiness of the prediction models predictions and ii) exploring ways of combining model uncertainty to gather confidence in the climate projections and in the ultimate risk assessment. The challenges arising from the activity will be tackled for solving the risk assessment problem under climate change of a Integrated Energy System (IES), where gas, coal, nuclear plants are connected with and dependent on the renewable plants, that are also to be modelled.

- **Objective of the research**

Methodology investigation, development and pilot case examination, with software implementation of the method explored.

For further information, please contact:
Prof. Francesco Di Maio, francesco.dimaio@polimi.it, 02 2399 6372
Prof. Enrico Zio, enrico.zio@polimi.it , 02 2399 6340