

Amendment to the Horizon 2020 Text

Chapter 3 Secure, Clean and Efficient Energy Paragraph 3.3 Broad lines of the activities

Text by the Commission

n/a

Proposed Amendment

*(c) Flexible and efficient fossil fuel power plants
– enabling intermittent renewables*

Activities shall focus on the research, development and full scale demonstration of technologies and/or materials enabling higher flexibility and efficiency of thermal power plants having to cope with the necessity to step in when intermittent renewables are not able to deliver to the system and to ensure grid stability.

Justification

Variable energy output from wind and photovoltaic energy threatens grid stability and hence the security of electricity supply. This can be remedied by balancing electricity from variable renewables with electricity from flexible conventional power plants, which thus also enable a higher integration of electricity from variable renewables into the grid. The challenge is that conventional power plants are currently designed to operate at base-load, whereas, when backing up renewable energy, they will frequently run at part-load. In this mode, they are less efficient with an impact on emissions. Research is needed to optimise the flexibility and efficiency of conventional power plants when operated part-load. The current market and policy are such that they do not incentivise investment, and commercial projects in this area are therefore limited in number and volume. Horizon 2020 offers an opportunity to fill the gap and ensure that flexible and efficient backup will be available to accompany and support the growth of renewable energy. Research from modelling to demonstration will be carried out by universities, equipment suppliers and plant operators and will focus on a large number of aspects, such as the expansion of load range and lower minimum load; improvement of load change rates; ability for frequent start/stop operation; improvement of overall efficiency at part load, etc.