

# *La Ricerca Nucleare in Europa*

**Jean-Pol Poncelet**  
Direttore Generale del FORATOM

Giornata di Studio AIN  
Roma, 5 giugno 2017



# Nuclear Energy in Europe



**28%**  
of EU's total  
electricity production



**131**  
Nuclear reactors in  
operation in the EU



**55%**  
of low-carbon  
electricity



Turnover of  
**70**  
billion/year



European nuclear  
industry supports  
**800,000 jobs**

# *the Euratom Treaty*

**Title I, Article 2:** *“The Community shall...(a) promote research and ensure the dissemination of technical information”*

**Title II, Article 4:** *“1. The Commission shall be responsible for promoting and facilitating nuclear research in the Member States and for complementing it by carrying out a Community research and training programme”*

**Article 7:** *“Community research and training programmes shall be determined by the Council, acting unanimously on a proposal from the Commission, which shall consult the Scientific and Technical Committee. These programmes shall be drawn up for a period of not more than five years”*

**Article 8:** *“1. After consulting the Scientific and Technical Committee, the Commission shall establish a Joint Nuclear Research Centre”*



# COUNCIL REGULATION (EURATOM)

**No 1314/2013 of 16 December 2013 on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 Framework Programme for Research and Innovation**

## **General Objective of the Euratom Programme:**

- to pursue nuclear research and training activities with an emphasis on **continuous improvement of nuclear safety, security and radiation protection**, notably to potentially contribute to the long-term decarbonisation of the energy system in a safe, efficient and secure way.

## Euratom Programme 2014-2018

*Indirect actions*  
**DG-RTD**

**Fusion R&D  
Programme**

**€ 728 million**  
(45 %)

*Indirect actions*  
**DG-RTD**

**Nuclear Fission,  
Safety and  
Radiation Protection**

**€ 315 million**  
(20 %)

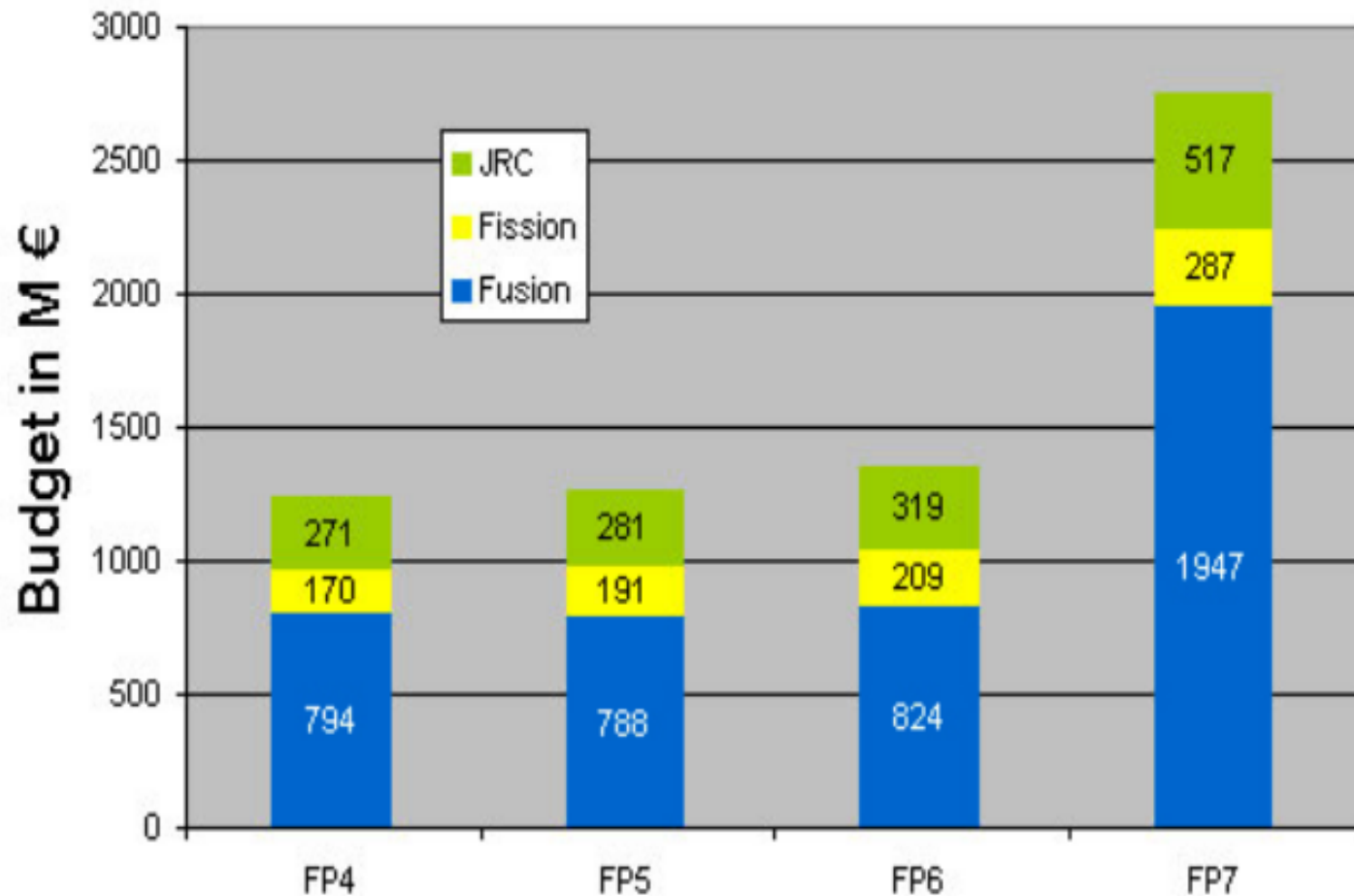
*Direct actions*  
**JRC**

**Nuclear Safety  
and Security**

**€ 560 million**  
(35 %)

**Total budget: € 1603 million**

## Euratom Framework Programmes budget comparison



### Euratom Framework Programs

The total budget allocated to FP7 has almost doubled in relation to the previous Euratom Framework Programme, FP6, due to the construction of the ITER Fusion project.

# *a Strategic Energy Technology Plan*

## Towards an Integrated Strategic Energy Technology (SET) Plan: Accelerating the European Energy System Transformation

COM(2015) 6317final, 15 September 2015

**Action 10:** *Maintaining a high level of safety of nuclear reactors and associated fuel cycles during operation and decommissioning, while improving their efficiency*

### **Strategic targets:**

*Safety [...]*

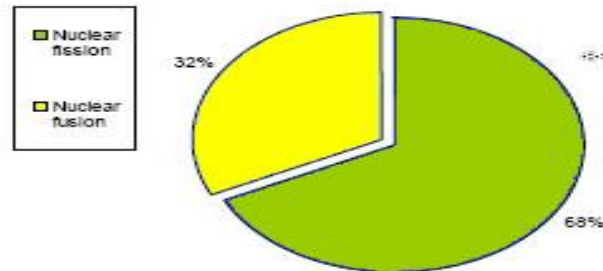
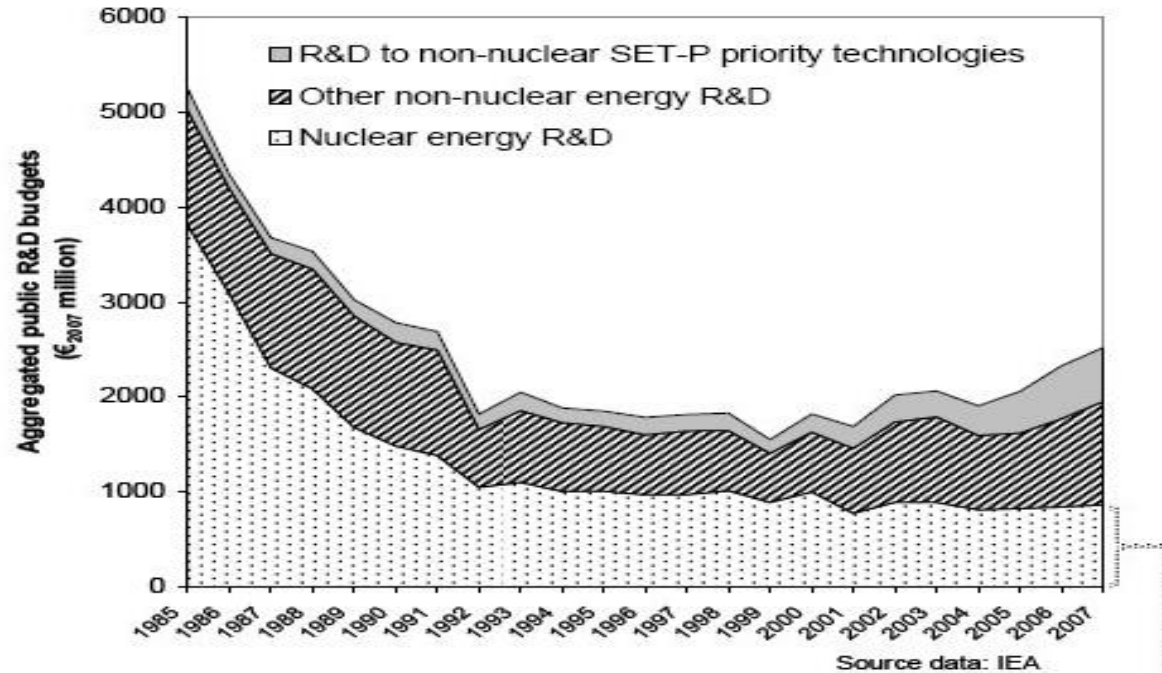
*Radioactive waste management and decommissioning [...]*

*Efficiency and competitiveness aspects [...]*

*Fusion ('implementation plan' already largely in place in view of ITER and the fusion roadmap) [...]*



Trends in the aggregated public energy R&D funding of EU Member States (1985-2007; excluding EU funds) and detailed breakdown for the year 2007



Source: R&D investment in the priority technologies of the SET-Plan



# FORATOM Position Paper of January 2017 in response to EC Public Stakeholder Consultation on the Euratom R&D Programme

## *Main priorities*

- a. **new reactor concepts:** more efficient, more sustainable and more economic (incl. small modular reactors, fast reactor and cogeneration concepts)
- b. R&D to **improve the safety and efficiency** of current (LWR) reactors
- c. better understanding of **ageing phenomena**
- d. improvements in **materials for reactor components and fuel** (able to better withstand radiation and higher temperatures)

# FORATOM Position Paper of January 2017 in response to EC Public Stakeholder Consultation on the Euratom R&D Programme cont.

- e. **waste management and disposal techniques** for non-standard waste streams
- f. **partitioning & transmutation technology** (reduce the long-term radiotoxicity of high-level radioactive waste, develop new fuels containing significant levels of minor actinides)
- g. **new recycling technologies** (fast reactor fuels with higher levels of plutonium and minor actinides at higher burn-up)
- h. **shared, large research infrastructures** of common interest

*[www.foratom.org](http://www.foratom.org)*