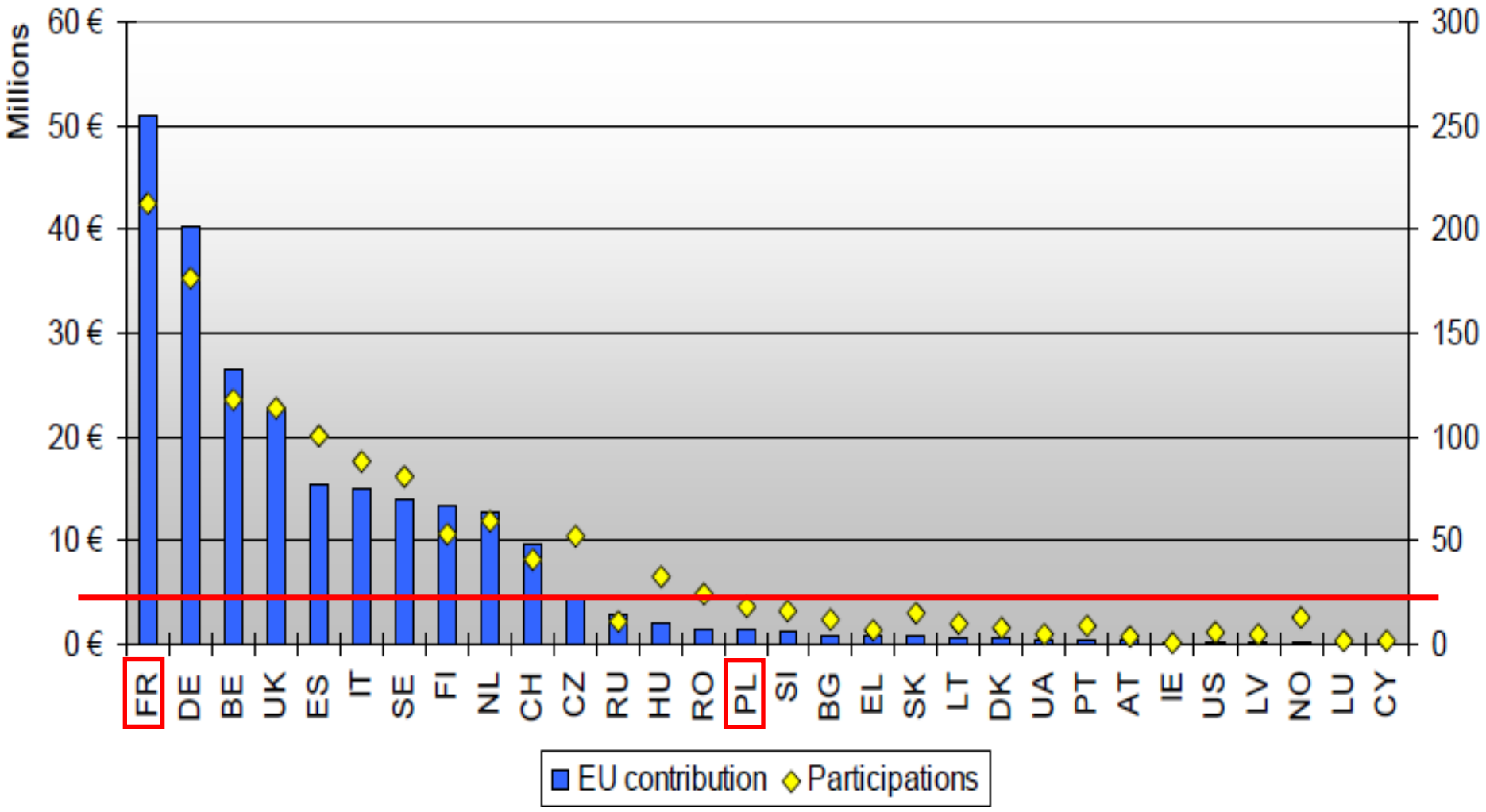
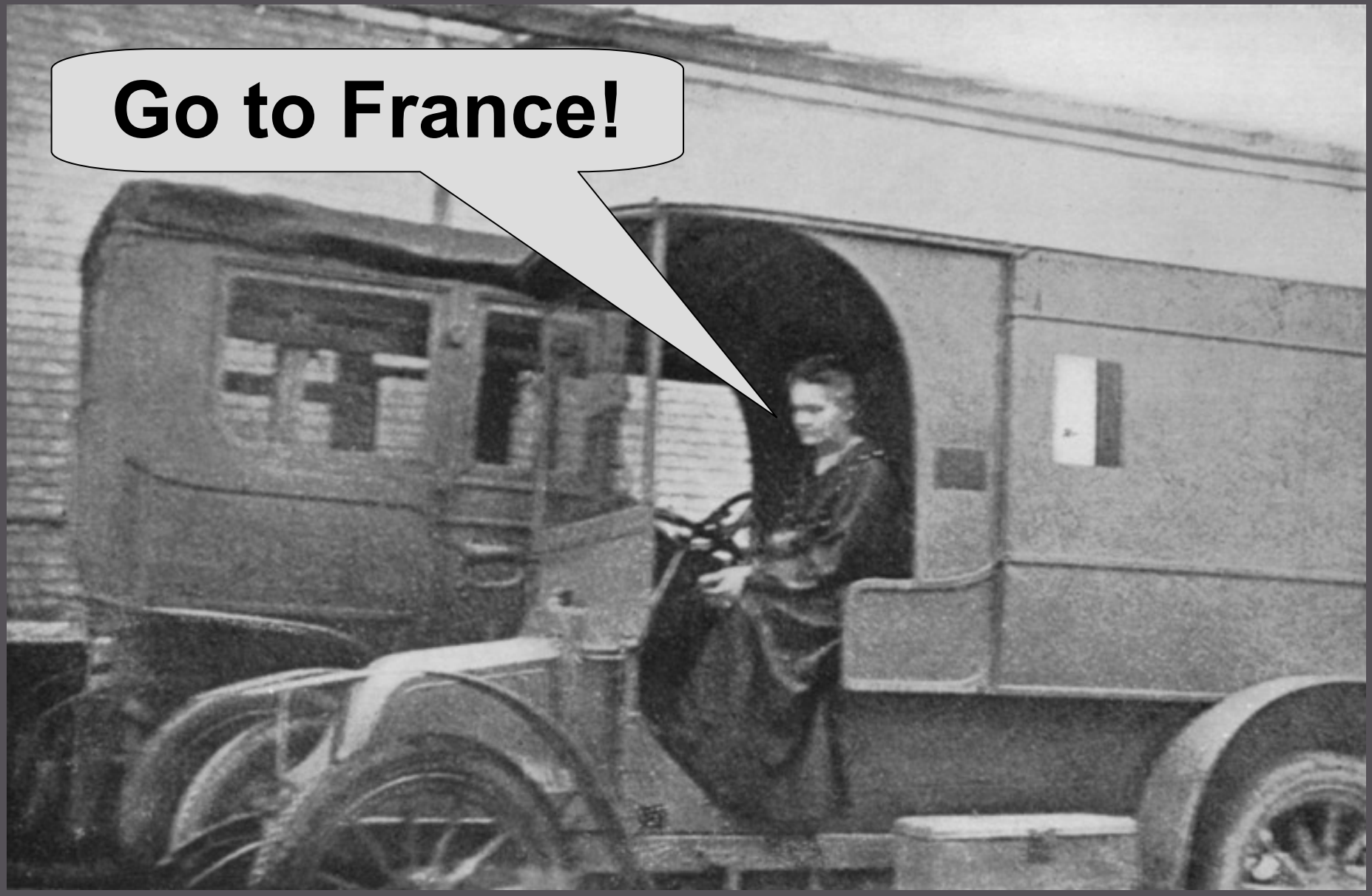
How to get funds for research on radiation & its applications

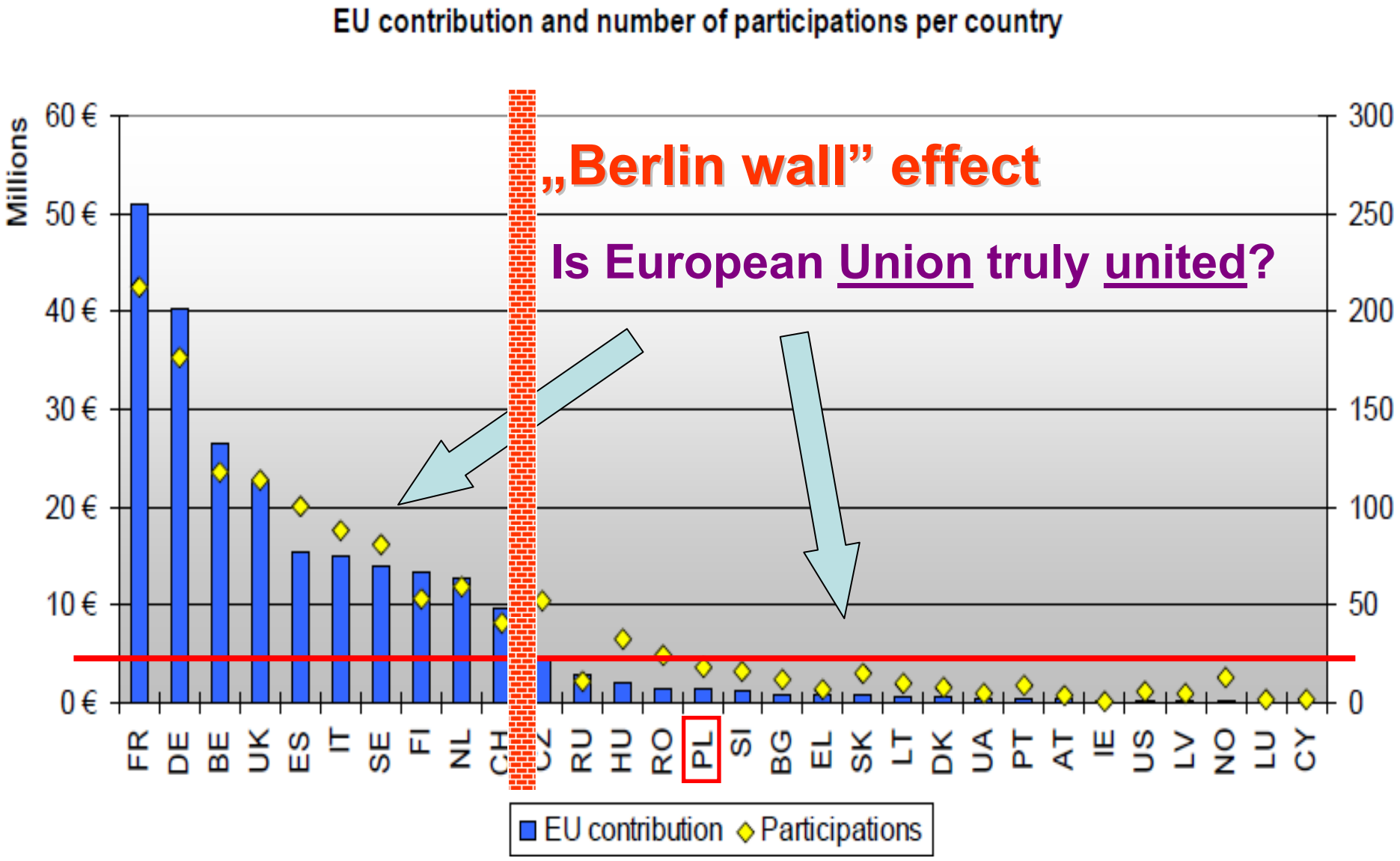
Grzegorz Wrochna
National Centre for Nuclear Research

Euratom Fission 2007-2011




Go to France!

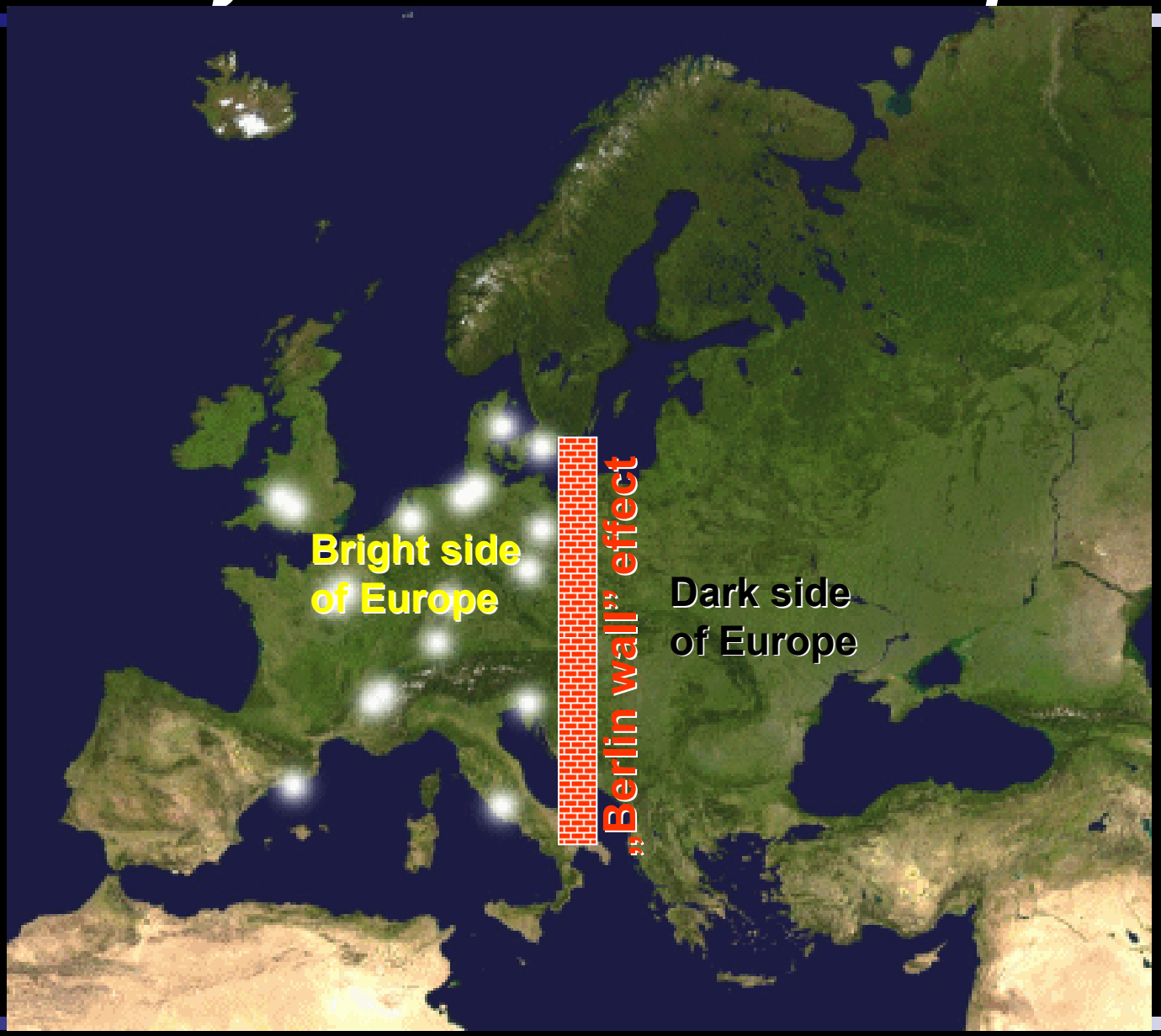
Euratom Fission 2007-2011



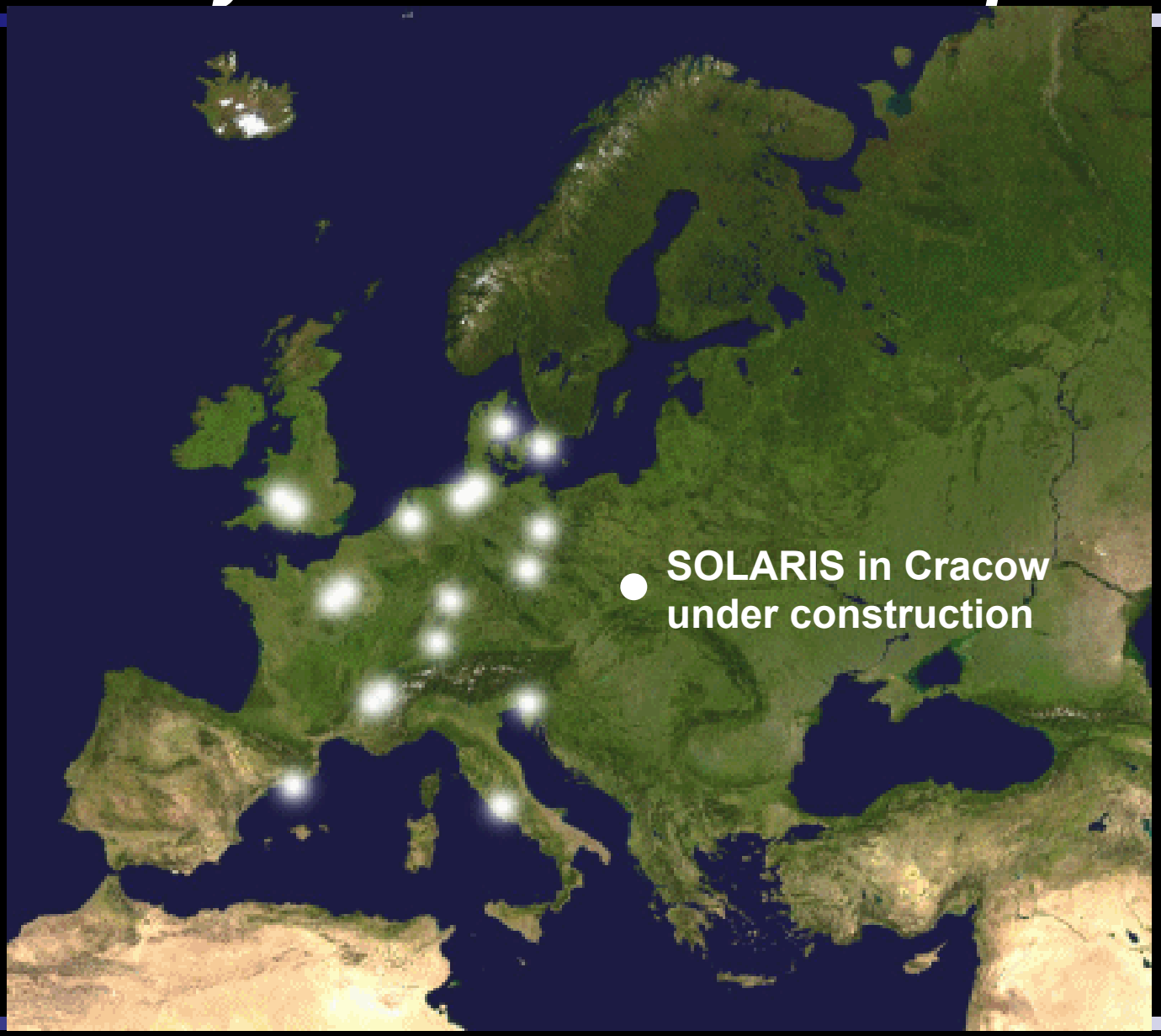
Dual speed Europe?

- **Why participation of new EU states in FP7 was much lower than EU15?**
- **Two major reasons:**
  - **Lower national funds for research**
  - **Lack of advanced research infrastructure**
- **EU15 coutries are better prepared to undertake ambitious projects**
- **In effect the EU research funds increase the gap (contrary to the intention)**

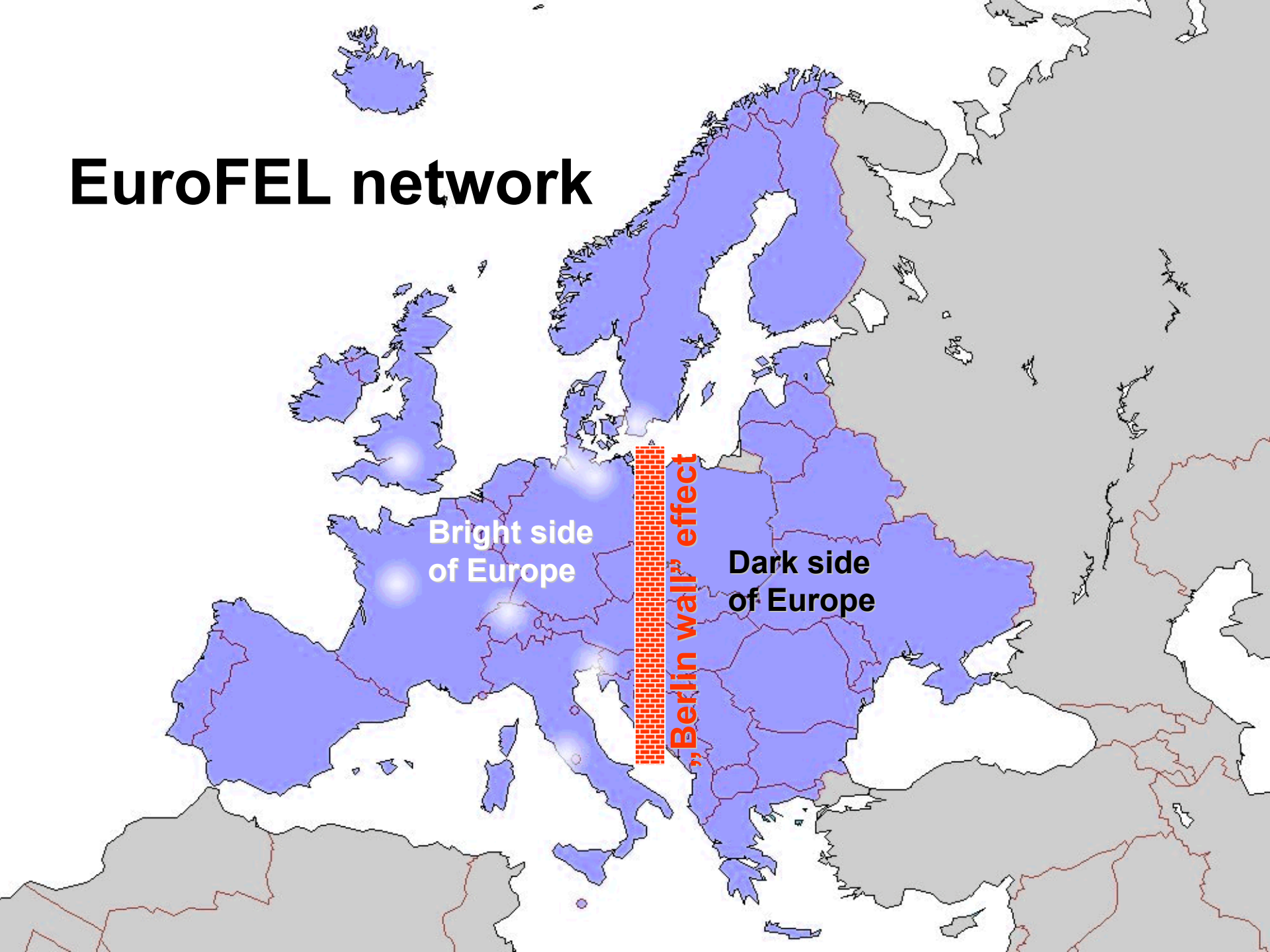
Synchrotrons in Europe



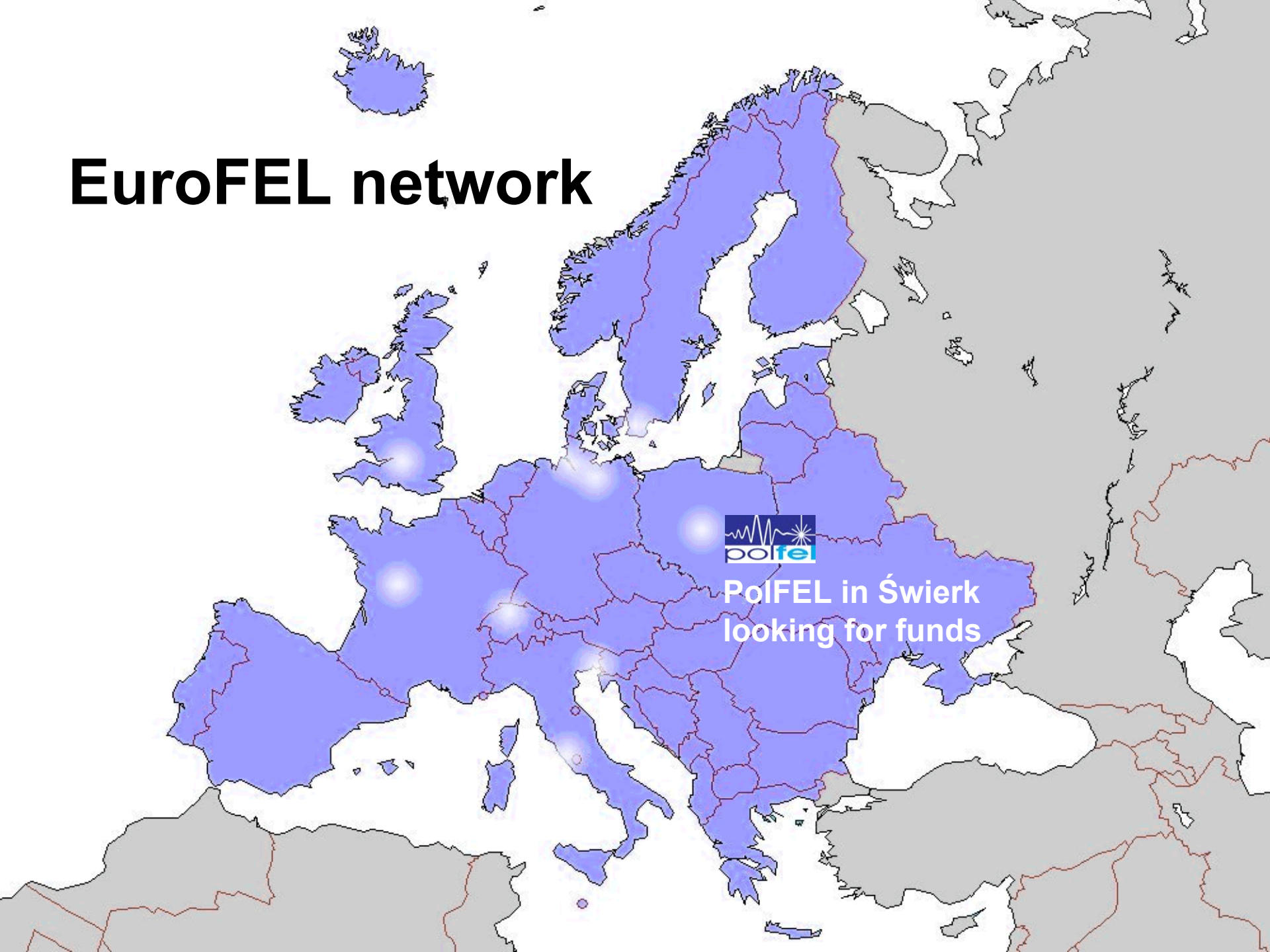
Synchrotrons in Europe



EuroFEL network

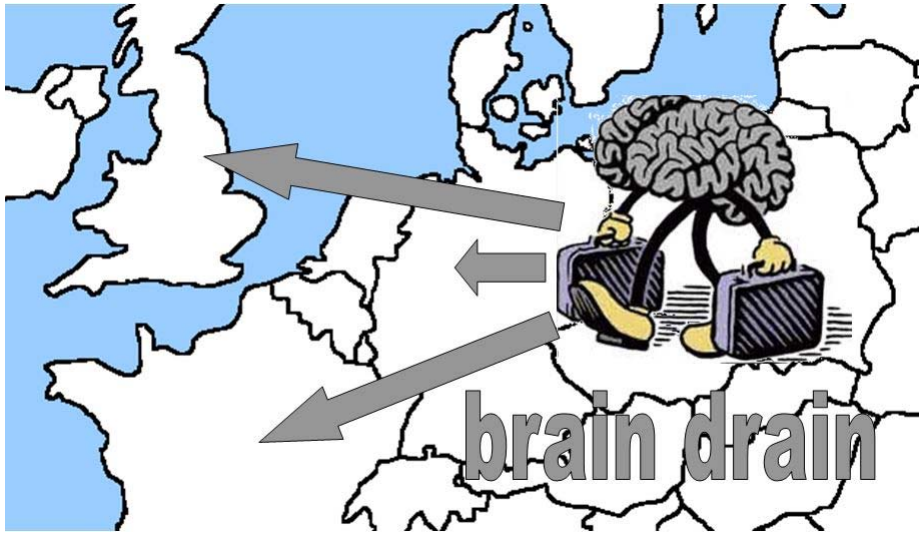


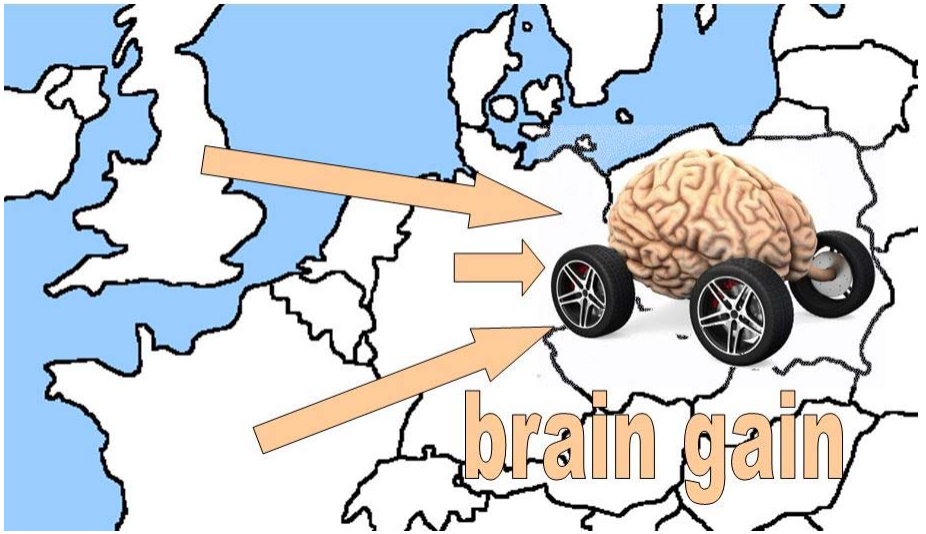
EuroFEL network



EU and regional research infrastructures

- **System with large R.I. in only a few countries is not sustainable**
- **Researchers from other countries must have possibility to make careers & educate new generations at home**
- **Otherwise, it is just brain-drain**
- **We have to reverse this trend**





Need for regional cooperation

- **Physicist point of view:**
  - **momentum = speed × mass**
  - **If we have lower speed, we need to increase the mass to get higher momentum**
- **The only way for new EU states to compete / cooperate on equal footing with EU15 is to join forces and work together**
- **The first examples:**
  - **ELI – Extreme Light Infrastructure**
    - Czech Republic, Hungary, Rumania
  - **V4G4 – Visegrad-4 for Generation-4 reactors**
  - **BRILLIANT**
    - Estonia, Latvia, Lithuania, Poland, Sweden

Visegrad-4 for Generation-4 reactors

V4G4

phase I

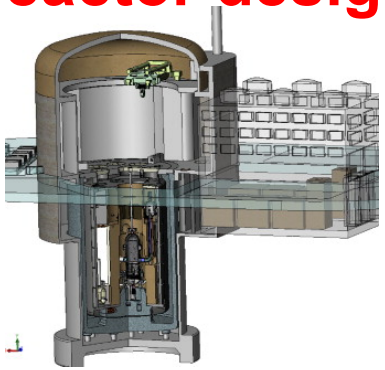
capacity building

know-how infrastructure

Allegro

phase II

reactor design



other projects

France: **Technology input**

Slovakia: **Reactor design & safety**

- safety concept, design basis, simulation and numerical analysis

Chech R: **Research laboratory on technology related experiments**

- thermophysics, aerodynamics, helium technology, reactor physics, etc.

Hungary: **Laboratory on the closed fuel cycle and fuel issues**

- PIE of ceramic fuels, separation of minor actinides, fuel fabrication, etc.

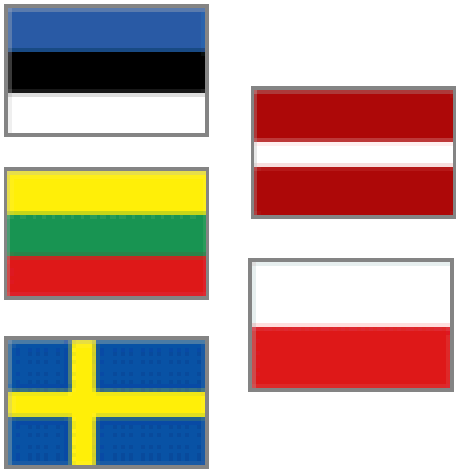
Poland: **Material research laboratory**

- irradiation by reactor & accelerators, structural & functional material analysis

BRILLIANT

Baltic Region Initiative for Long Lasting InnovAtive Nuclear Technologies

Estonia
Latvia
Lithuania
Poland
Sweden



Local problems:

- Relatively small power systems & no justification for autonomous handling of nuclear wastes
- Basic technical level of heavy industry & diminishing number of qualified workers
- Poor nuclear research infrastru-cture & competence gap between old and new nuclear programs

Towards regional solutions:

- Analysis of electric power systems
- Regional cooperation on nuclear waste and fuel cycle
- Macroeconomic impact of nuclear programs
- Nuclear R&D capacity building

Euratom Workprogramme 2014-2015

NFRP 14 – 2014: Regional initiative aiming at nuclear research and training capacity building

Specific challenge: Maintaining competence in fission safety remains of interest for a number of Member States especially in the Baltic and **Eastern European region**. Discussions have started at these various regional levels with the aim to develop jointly sustainable applications of fission for e.g. new and safer research reactor technology, radioactive waste management and training and education in these fields.

Scope: The aim is to support the **exchange of scientific staff and the sharing of equipment, knowledge and competences** between private and/or public research laboratories **within the region and with similar organisations in other EU Member States**. This action should take advantage of and develop synergies with on-going and future Euratom projects in particular those offering access to research infrastructures in conjunction with education and training. A strong involvement of appropriate public bodies from the Member States concerned is essential, as well as links with relevant platforms such as SNETP and IGD-TP. This action should also aim at **examining how Structural Funds could possibly be mobilised to further develop regional cooperation in the area**.

Expected impact: The capacity building at regional level for nuclear research and training through cooperation and networking will **reduce regional disparity** in the European Union. Such effort will reinforce the EU excellence in fission relevant applications and in particular in nuclear safety and radioactive waste management.

Be proactive!

NFRP 14 was added to Workprogramme 2014-15:

- **After presentations of V4G4 & Brilliant initiatives at FISA 2013 conference during Lithuanian EU presidency**
  - **Minister of Economy of Lithuania**
- **On requests of ministries of science of Hungary, Lithuania & Poland expressed in letters to DG R&I EC**
- **Following many discussions with EC officers**

Where workprogrammes come from?

FP4,5,6 – bottom-up approach:

- **EU funded projects proposed by scientists**

FP7, H2020 – top-down approach

- **Workprograms are created „on request" by:**
  - **member states (ministries)**
    - Polish MNiSW represented in Euratom-Fission Program Committe by Maciej Kiełmiński & GW
  - **technology platforms**
    - Sustainable Nuclear Technology Technology Platform: CLOR, IChTJ, IFJ PAN, NCBJ, WPT are members, Tomasz Jackowski in Executive Committee, GW in Governing Board

Sustainable Nuclear Energy Technology Platform

www.snetp.eu

SNETP Sustainable Nuclear Energy Technology Platform

Grown from 35 to 101 EU organisations

Industry:

AnsaldoNucleare A Finmeccanica Company · AREVA · CEZ GROUP · Deloitte. · EDF · EnBW · endesa · Enel · e·on Kernkraft · Fortum · GDF SUEZ · IBERDROLA · IBM · LGI CONSULTING · RWE The energy to lead · serco bringing service to life · ŠKODA JS a.s. · Studsvik · VATTENFALL · TVO · Westinghouse

Research / Engineering:

amec · AEKI · BAY-LOGI · BNEN · cea · Ciemat · cnrs · MANCHESTER 1824 The University of Manchester Dalton Nuclear Institute · Del Fungo Giera Energia · EMPRESARIOS AGRUPADOS · Forschungszentrum Dresden Rossendorf · ENEA · ichtj · RAAN ICN PITESTI · IEA · IFIN-HH · imdea materiales · INRNE · itn · fpf · University of Latvia Institute of Physics · ISPESL · JRC EUROPEAN COMMISSION · JÜLICH FORSCHUNGSZENTRUM · MPA Universität Stuttgart · National Nuclear Laboratory · NTech Lehrstuhl für Nukleartechnik · NRG · PSI PAUL SCHERRER INSTITUT · SCK·CEN · SINTEC · sogin · Tecnatom · ÚJV · VGB PowerTech · VTT · vüje · Wrocław Technology Park

Academia:

IKE Universität Stuttgart · KIT · Lappeenranta University of Technology · Politécnica · Sapienza Università di Roma

Technical Safety Organisations:

AVN · GRS · IRSN

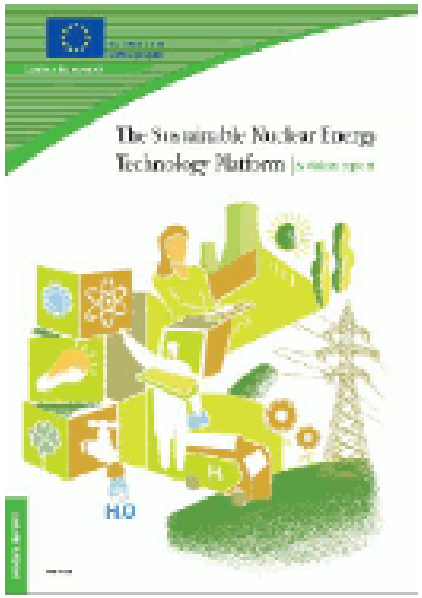
Non-governmental Organisations:

AEPN · cogent · Confrontations Europe · Sauvons Le Climat

Others:

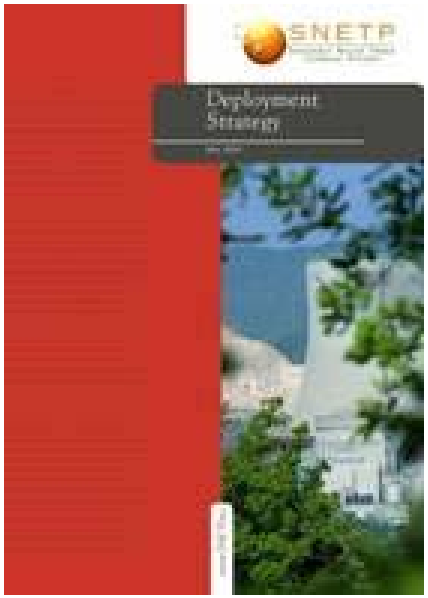
CEN European Committee for Standardization · enen · FORATOM for nuclear energy in Europe

SNE-TP strategy documents

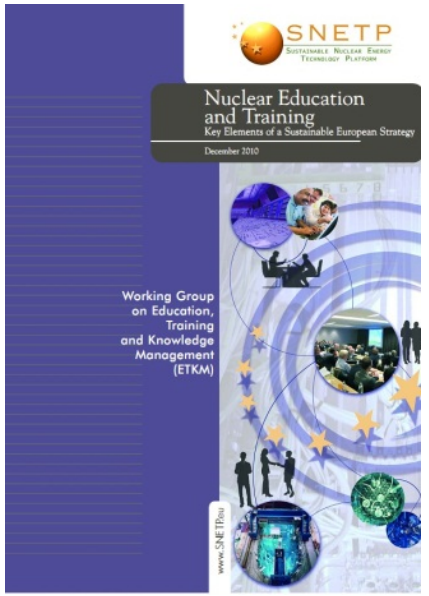


Vision Report
2007

Strategic Research Agenda
2009 / 2013



Deployment Strategy
2010



Education & Training
2010

SRA Annex: Thorium cycles and Thorium as a nuclear fuel component - 2011
SRA Annex: Molten Salt Reactors – 2012

Download: www.snetp.eu

Prints: <secretariat@snetp.eu>

When workprogramme is ready …

- Workprogramme contains <20 topics
- Typically 1-4 projects per topic are allowed
- Usually, large pan-european consortia are formed for each topic
- In practice, once workprogramme is announced, consortia are already formed
- Only those have chance, who have international collaboration before the call is launched

Conditions to get H2020 funds

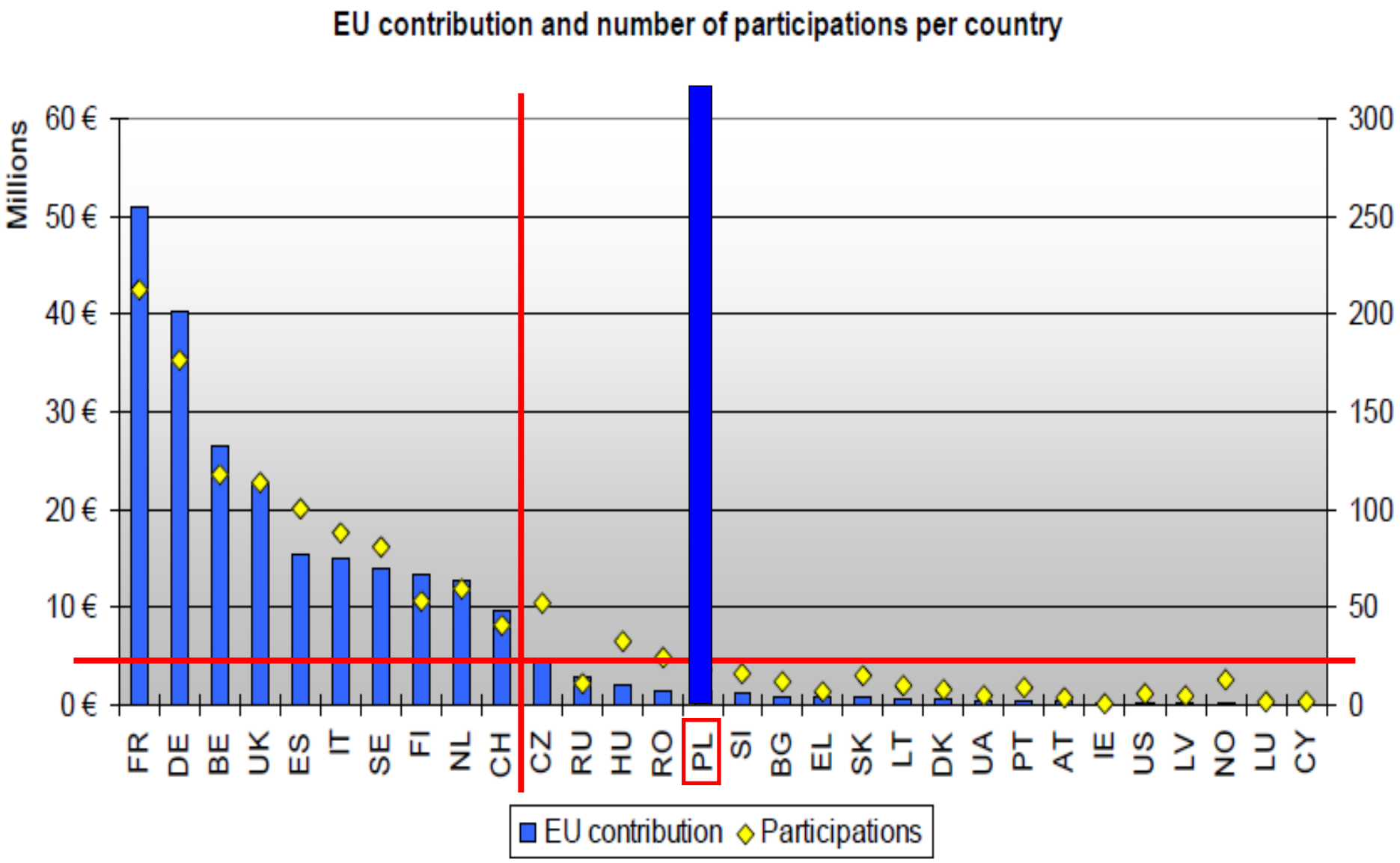
- **Research infrastructure suitable for European level study**
- **Experienced research group with stable national funding**
- **National research programme in the area of interest**
- **Established long-term international collaboration**
- **Support of Ministry of Science in dialog with EC**

Who will get most out of H2020?

- **Excellent scientists are in every country**
- **Those will get most out of H2020 who will be supported by their governments with:**
  - **top-class research infrastructures**
  - **stable funds for national programmes**
  - **ministries promoting national research priorities in EC**

- **Others will follow Maria Skłodowska--Curie using mobility grants**

Euratom Fission → H2020



Good luck in H2020 applications!