



Meeting on Chapter 25 “Science and Research” Nuclear R&D Acquis

Brussels, 11 March 2019

**DG Research and
Innovation**

These slides accompany the explanation of the acquis to Albania and North Macedonia and can only be used for that purpose. Their content is subject to further development of the acquis and interpretation by the Court of Justice of the European Union.

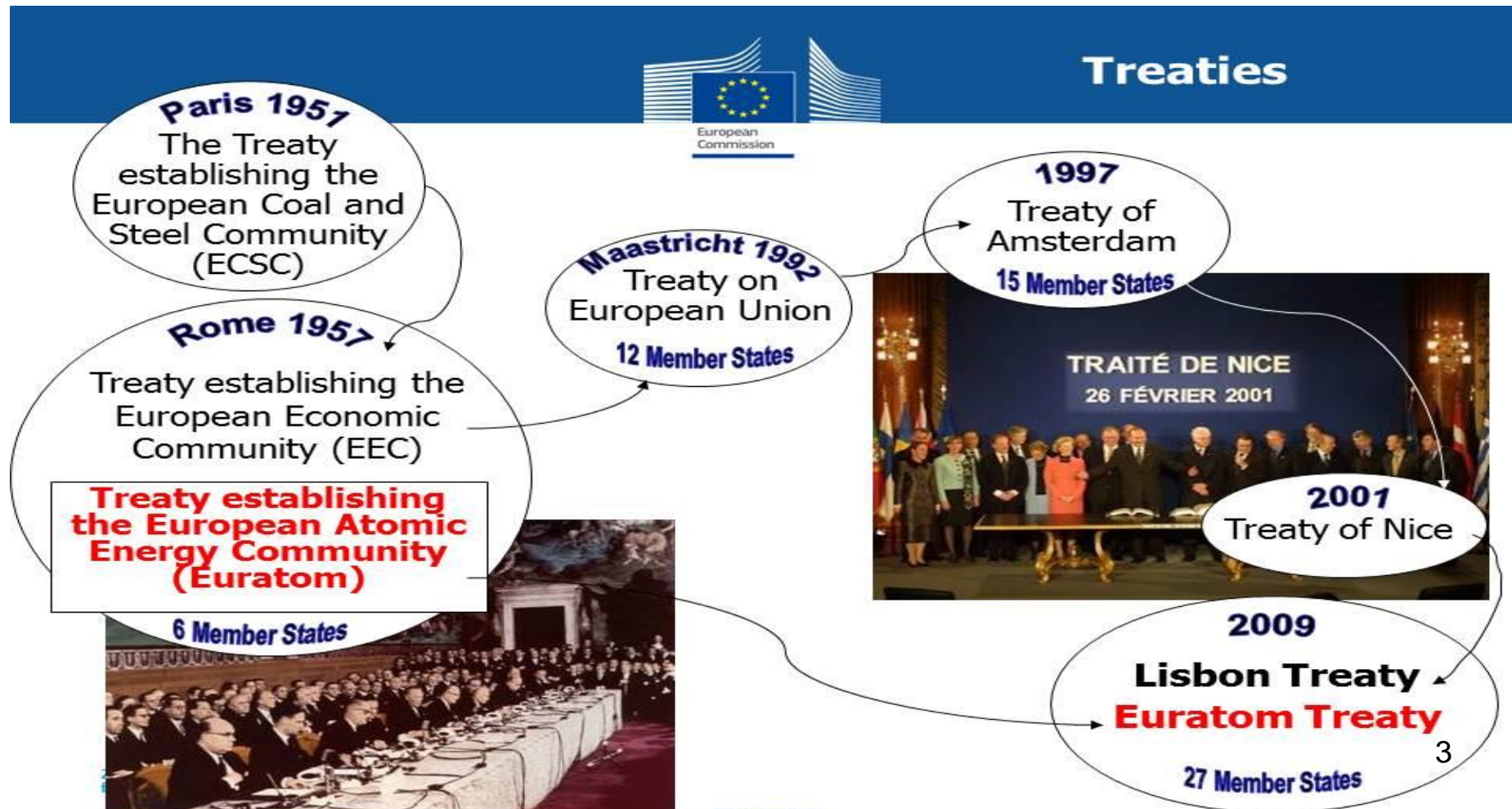
Primary Law: Euratom Treaty (Rome, 25 March 1957)

The European Atomic Energy Community (Euratom) is one of the three founding Communities. It was set up in 1957, by the Euratom Treaty, which to the difference of the EEC Treaty, did not change over the decades.

Title II “Provisions for the encouragement of progress in the field of nuclear energy”:

- **Chapter 1 “Promotion of the research”, Art 4-11** provisions on nuclear research and on Community Research and Training Programmes, the EC coordinates and complements MSs research through these Programmes (Art 7)
- **Chapter 10 “External Relations”, Art 101-106** - provisions on International Agreements, *“The Community may, within the limits of its powers and jurisdiction, enter into obligations by concluding agreements or contracts with a third State, an international organisation or a national of a third State”*
- **Other provisions, related for research:** e.g. Art 134 (establishing the Scientific and Technical Committee), Art 45-51 on Joint Undertakings

Euratom Treaty (25 March 1957) and the other Treaties' evolution



Acquis structure

I. Primary Law

Euratom Treaty: research and external relations' relevant provisions, namely:

- Chapter 1 "*Promotion of the research*", Art 4-11
- Chapter 10 "*External Relations*", Art 101- 106

II. Secondary Law (in force):

- **COUNCIL REGULATION (Euratom) 2018/1563 of 15 October 2018 on the Research and Training Programme of the European Atomic Energy Community (2019–2020)** complementing the Horizon 2020 Framework Programme for Research and Innovation, and repealing Regulation (Euratom) No 1314/2013

-**COMMISSION IMPLEMENTING DECISION** of 14.12.2018 on the **financing of indirect actions** within the framework of Council Regulation (Euratom) No 2018/1563 and **on the adoption of the work programme for 2019-2020**

• **REGULATION (EU) No 1290/2013** OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 laying down the **rules for participation and dissemination in "Horizon 2020** - the Framework Programme for Research and Innovation (2014-2020)"

•**III. International Agreements of Euratom in fission and fusion research: Cooperation Agreements and Association (to the Euratom R&D programmes) Agreements**

Secondary legislation: COUNCIL REGULATION

**2018/1563 of 15 October 2018
on the Research and Training Programme of the European Atomic Energy
Community (2019-2020) complementing the Horizon 2020 Framework
Programme for Research and Innovation**



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As Regulation it is binding in its entirety and directly applicable in MSs.

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.

Council Regulation 2018/1563 of 15 October 2018 on the Research and Training Programme of the European Atomic Energy Community (2019-2020) - I

Regulation is divided in 3 Titles (Establishment, implementation, Final and Transitional provisions), 4 Chapters, 24 articles, some of them are as follows:

- **Art 1 establishes the Research and Training Programme of the European Atomic Energy Community for the period from 1 January 2019 to 31 December 2020 (the '2019–2020 Programme'), and lays down the rules for participation in that Programme**
- **Art 2 provides definition of R&I activities, Public Private Partnership, Public Public Partnership, as well as of Direct actions –R&I activities undertaken by the Commission through its JRC and Indirect actions – R&I activities to which the Community provides financial support and which are undertaken by participants**
- **Art 3 Objectives: general ones and specific ones for direct and indirect actions (in next slides)**
- **Art 4 Budget (in a next slide)**
- **Art 5 Association of third countries (in a next slide)**
- **Art 6 Management and forms of Community support – through indirect actions (namely grants, prizes, procurement and financial instruments) and through the JRC direct actions; Commission may entrust implementation of indirect actions to bodies created under H2020 FP; the Commission shall adopt implementing acts (decisions) on the funding of the indirect actions**
- **Art 7 Rules for participation (RoP) and dissemination of research results (linked to the Regulation 1290/2013 on RoP)**
- **Art 8 Cross-cutting activities (refers to objectives under this Programme and H2020; usually with FI/FU relevance)**
- **Art 9 &10: gender equality; ethical principles**
- **Art 11 Work programmers (WP): Adopted by Commission decision implementing indirect actions (separate WP for JRC), contains the essential elements of implementation of the indirect actions, detailed objectives, funding, multiannual approach and strategic orientations**

Council Regulation 2018/1563 of 15 October 2018 on the Research and Training Programme of the European Atomic Energy Community (2019-2020) - II

- **Art 12 & 13 – establishes a Committee of MSs representatives to assist the Commission in two configurations (FI-related and FU-related aspects); regular information to the Committee**
- **Art 14 –external advice and societal engagement**
- **Art 15, 16 &17 Refer to specific fields of actions, as SMEs, PPPs, international cooperation with 3rd countries and IOs (the Programme is open to 3rd countries and IOs, targeted actions are possible, the reciprocity principle and the fair treatment of IPRs are stated)**
- **Art 18 is on information communication, exploitation and dissemination activities, as an integral part of the actions**
- **Art 19&20 – control and audit, protection of the financial interests of the Union**
- **Art 21&22 – Monitoring (by the Commission) and Evaluation (of the Programme and its results)**
- **There are two Annexes to the Regulation: one on Activities (rationales, objectives for direct and indirect actions, international cooperation) and another one – on Performance Indicators (spin-off, patent applications generated, etc.)**

According to the Regulation 2018/1563 the Euratom indirect actions shall have the following specific objectives:

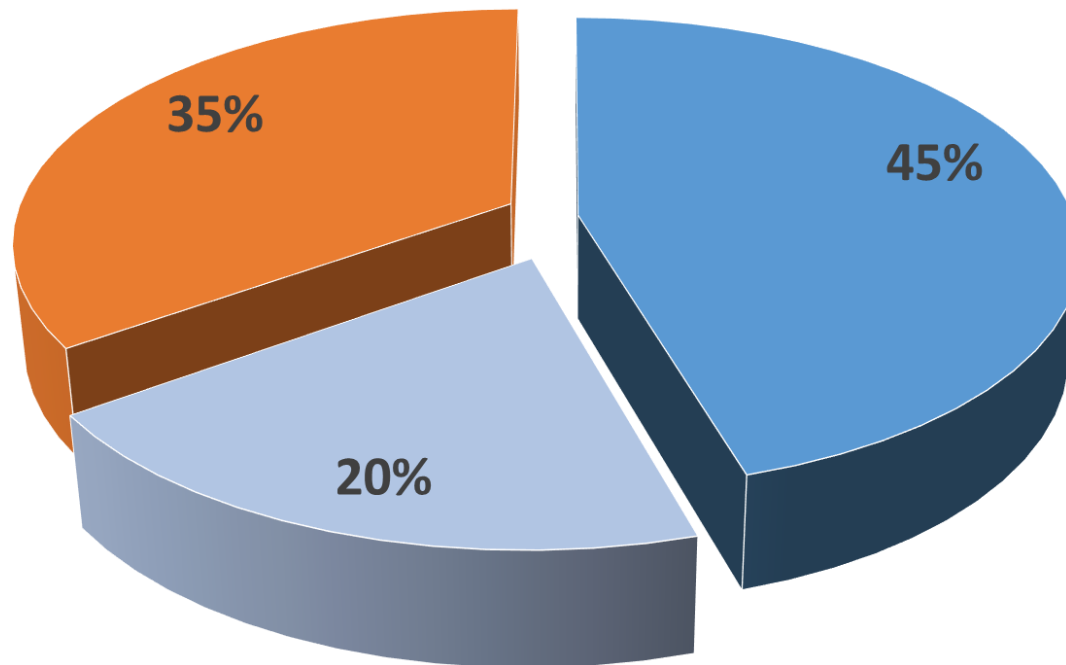
- (a) supporting the **safety** of nuclear systems;
- (b) contributing to the development of safe, longer term solutions for the management of ultimate **nuclear waste**, including final geological disposal as well as partitioning and transmutation;
- (c) supporting the development and sustainability of nuclear **expertise and excellence** in the Union;
- (d) supporting **radiation protection** and development of medical applications of radiation, including, inter alia, the secure and safe supply and use of radioisotopes;
- (e) moving towards **demonstration of feasibility of fusion** as a power source by exploiting existing and future fusion facilities;
- (f) laying the foundations for **future fusion power plants** by developing materials, technologies and conceptual design;
- (g) promoting **innovation** and industrial competitiveness;
- (h) ensuring availability and use of **research infrastructures** of pan-European relevance.

According to the Regulation 2018/1563 the Euratom direct actions shall have the following specific objectives:

- (a) improving nuclear safety, including: nuclear reactor and fuel safety, waste management, including final geological disposal as well as partitioning and transmutation; decommissioning, and emergency preparedness;
- (b) improving nuclear security, including: nuclear safeguards, non-proliferation, combating illicit trafficking, and nuclear forensics;
- (c) increasing excellence in the nuclear science base for standardisation;
- (d) fostering knowledge management, education and training;
- (e) supporting the policy of the Union on nuclear safety and security.

Euratom Research & Training Programme 2019 - 2020

Total Budget: € 770 million



■ DG RTD
Indirect actions
Fusion R&D Programme
€ 350 million

■ DG RTD
Indirect actions
Nuclear Fission, Safety & Radiation Protection
€ 152 million

■ DG JRC
Direct Actions
Nuclear Safety & Security
€ 269 million



Euratom Work Programme 2019-2020

*European Commission Implementing Decision
C(2018) 8412 Adopted on 14.12.2018*

Published on the 'Funding and Tenders' website:

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-search>



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Euratom Work Programme 2019-2020 European Commission Implementing Decision C(2018) 8412

- **Implementing act on the financing of indirect actions** within the framework of Council Regulation (Euratom) No 2018/1563 and on **the adoption of the Work Programme for 2019-2020**
- The WP supports both research and training in FI and FU R&D
- Considerable part of the WP is devoted to the the Fission Call NFRP 2019-20 launched under the WP (each topic's description has the following structure: specific challenge, type of action, expected impact, budget)
- The Fusion part of the WP deals with the EUROfusion consortium, as most of the funding in fusion research is dedicated to supporting implementation of the Euratom programme through the EUROfusion. The WP allocates funding for specific contracts to provide industrial expertise to EUROfusion. The WP also deals with the contract for the operation of the Joint European Torus (JET), the SOFT Innovation Prize and the supply of expert industrial competences for the pre-conceptual design activities of the European fusion demonstration reactor.

WP 2019-2020 General Annexes

- A.** List of **countries eligible for funding**
- B.** Standard **admissibility conditions**, page limits and supporting documents
- C.** Standard **eligibility conditions**
- D.** **Types of action:** specific provisions and **funding rates**
- E.** Model Rules of Contest (RoC) for **prizes** => reference to Participant Portal
- F.** Technology Readiness Levels (**TRL**)
- G.** **Evaluation rules**
- H.** **Budget** flexibility
- I.** Actions involving **classified information**
- J.** Actions involving financial support to **third parties**
- K.** Conditions related to **open access to research data**

Annex D: Research and innovation actions - RIA

Description: Action primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. For this purpose they may include basic and applied research, technology development and integration, testing and validation on a small-scale prototype in a laboratory or simulated environment.

Projects may contain closely connected but limited demonstration or pilot activities aiming to show technical feasibility in a near to operational environment.

Funding rate: 100%

Annex D: Coordination and support actions - CSA

Description: Actions consisting primarily of accompanying measures such as standardisation, dissemination, awareness-raising and communication, networking, coordination or support services, policy dialogues and mutual learning exercises and studies, including design studies for new infrastructure and may also include complementary activities of strategic planning, networking and coordination between programmes in different countries.

Funding rate: 100%

Annex D: Innovation actions - IA

Description: Action primarily consisting of activities directly aiming at producing plans and arrangements or designs for new, altered or improved products, processes or services. For this purpose they may include prototyping, testing, demonstrating, piloting, large-scale product validation and market replication.

Projects may include limited research and development activities.

Funding rate: 70% (except for non-profit legal entities, where a rate of 100% applies)

Annex D: European Joint Programme (EJP) Cofund actions

- **European Joint Programme (EJP) Cofund actions**

Participants in EJP Cofund actions must be legal entities owning or managing national research and innovation programmes

Such EJP Co-fund actions are: the one existing in fusion, **the EUROfusion consortium**, the on-going EJP in radiation protection field **CONCERT** (duration 2015-2020), and the European Joint Research Programme in the management and disposal of radioactive waste under creation in frame of the Euratom WP 2018

Funding rate: The Euratom Programme contribution will be limited to 70% of the total eligible costs of the action, unless otherwise specified in the call conditions

- **Prizes** -another form of funding

Nuclear Fission & Radiation Protection (NFRP) 2019-2020 Call

Implementation of Fission research is organized by Calls for Proposals (CfP). Main areas of the fission topics under the NFRP 2019-2020 Call are:

- A. NUCLEAR SAFETY**
- B. DECOMMISSIONING AND ENVIRONMENTAL REMEDIATION**
- C. RADIOACTIVE WASTE MANAGEMENT**
- D. EDUCATION & TRAINING**
- E. RADIATION PROTECTION AND MEDICAL APPLICATIONS**
- F. RESEARCH INFRASTRUCTURE**

WP 2019-2020 Calendar

Links to Euratom and H2020 NCPs (National Contact Points):

<https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/ncp>

<https://erc.europa.eu/national-contact-points>

WP Adoption:	<i>14 December 2018</i>
Call Open:	<i>15 May 2019</i>
Submission deadline:	<i>25 September 2019,</i> <i>17.00.00 Brussels local time</i>
Evaluation:	<i>November 2019</i>
Info to the applicants:	<i>January–February 2020</i>
Signature of GAs:	<i>May 2020</i>

NB! Please disseminate the information and encourage your national R&D entities to participate – the best way of learning the practicalities and the acquis, best opportunities for networking with other stakeholders.

Commission proposal for
Horizon Europe

THE NEXT EU RESEARCH & INNOVATION
PROGRAMME (2021 – 2027)

#HorizonEU



Horizon Europe Research and Innovation Programme 2021-2027

- The Commission has published in June 2018 its proposal for Horizon Europe, an ambitious €100 billion research and innovation programme that will succeed Horizon 2020.
- Several building blocks, among which Euratom Regulation
- Links to how the Horizon Europe is designed, legal frameworks, factsheets, reports :
- https://ec.europa.eu/info/designing-next-research-and-innovation-framework-programme/what-shapes-next-framework-programme_en

The HE Euratom Regulation (2021-2025)

- Proposal for a COUNCIL REGULATION establishing the Research and Training Programme of the European Atomic Energy Community for the period **2021-2025** complementing Horizon Europe – the Framework Programme for Research and Innovation
- **COM/2018/437 final**
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1540388338852&uri=CELEX%3A52018PC0437>

Euratom Research and Training Programme (2021-2025)

The **indicative budget** for 5 years 1,68 bln €

- 725 mln € for fusion research and development
- 331 mln € for nuclear fission, safety and radiation protection
- 620 mln € for direct actions undertaken by the Joint Research Centre

The Euratom Cooperation Agreements (specific fusion and fission research related)

Table 1: Bilateral Euratom research Cooperation Agreements (CAs).

	Fusion research Cooperation Agreements	Fission research Cooperation Agreements
Argentina		1997 Peaceful Uses of Nuclear Energy*
Brazil	2013	
Canada	(1995 - expired in 2005)	1998 Nuclear Research
China	2008 R&D Cooperation in Peaceful Uses of Nuclear Energy	
India	2010	Under negotiation **
Japan	1988, 2007 (Broader Approach)	
Kazakhstan	2004	2003 Nuclear Safety
Russia	2002	2002 Nuclear Safety
South Korea	2006	
Switzerland	(1979 + amended in 1982, suspended in 2014)	
Ukraine	2002	2002 Nuclear Safety
US DOE	2001	2003 Nuclear technology R&D***
US NRC		2009 Nuclear safety research***

Year of signature or entry into force of the agreement.

(*) In substance R&D agreement.

(**) R&D Cooperation in Peaceful Uses of Nuclear Energy, under negotiation.

(***) Technical Exchange and Cooperation Agreements.

Association Agreements: Euratom R&T Programme 2019-2020

Switzerland and Ukraine

Article 5

Association of third countries

1. *The 2019–2020 Programme shall be open to the association of:*
 - (a) *acceding countries, candidate countries and potential candidates, in accordance with the general principles and general terms and conditions for the participation of those countries in Union programmes established in the respective framework agreements and decisions of association councils or similar agreements;*
 - (b) *European Free Trade Association (EFTA) members, or countries or territories covered by the European Neighborhood Policy, that fulfil all of the following criteria:*
 - (i) *a good capacity in science, technology and innovation;*
 - (ii) *a good track record of participation in Union R&I programmes;*
 - (iii) *fair and equitable dealing with intellectual property rights;*
 - (c) *countries or territories associated with the Seventh Euratom Framework Programme or the Euratom Research and Training Programme 2014–2018.*
2. *Specific terms and conditions regarding the participation of associated countries in the 2019–2020 Programme, including the financial contribution, based on the gross domestic product of the associated country, shall be determined by international agreements between the Union and the associated countries.*

Implementation of **international cooperation in R&D** through:

A. Euratom Programme (2019-2020) - Indirect actions

FI Calls: Participation of entities from third States

FU: INCO in European Joint Programming with consortium EUROfusion

FU: INCO at tokamak JET → Euratom in-kind contribution to EUROfusion

B. Inter-governmental Agreements

FI & FU: Bilateral R&D Cooperation Agreements (CAs) with Third States

- FU: Nine CAs in force are active

- FI: Five CAs active on nuclear research or nuclear safety research

FU: Eight IEA-FPCC Technology Collaboration Programmes (ex-IAs)

FI: Generation IV International Forum (GIF) Framework Agreement

FI & FU: Associated countries to the Euratom Programme: CH and UA

C. International forums (IAEA, OECD/NEA, OECD/IEA ...)

FI: Euratom-IAEA MoU on Nuclear Safety Cooperation

FU: Fusion R&I

FI: Fission R&I

FISA AND EURADWASTE CONFERENCES (Pitesti, Romania, June 2019)



Meeting the most important European and some international stakeholders in nuclear safety and waste management research and training

Useful links (1/2)



European Consortium for the Development of Fusion Energy

<https://www.euro-fusion.org/>

Sustainable Nuclear Energy Technology Platform

<http://www.snetp.eu/>

NUGENIA association (Gen II&III)

<http://www.nugenia.org/>

Strategic Energy Technology Plan

http://ec.europa.eu/energy/technology/set_plan/set_plan_en.htm

European Energy Research Alliance

<http://www.eera-set.eu/>

Useful links (1/2)



Implementing Geological Disposal of Radioactive Waste Technology Platform

<http://www.igdtp.eu/>

Multidisciplinary European Low-Dose Initiative - MELODI

<http://www.melodi-online.eu/>

EERA: Joint Programme on Nuclear Materials:

<http://www.eera-jpnm.eu/>

European Nuclear Education Network

<http://www.enen-assoc.org/>

Strategic Energy Technologies Information System

<https://setis.ec.europa.eu>

THANK YOU FOR YOUR ATTENTION !