



# EUROPEAN NUCLEAR EDUCATION NETWORK, ITS ACTIONS IN FAVOUR OF **E**DUICATION, **T**RAINING, **I**NFORMATION AND TRANSFER OF EXPERTISE

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European Nuclear Education Network*

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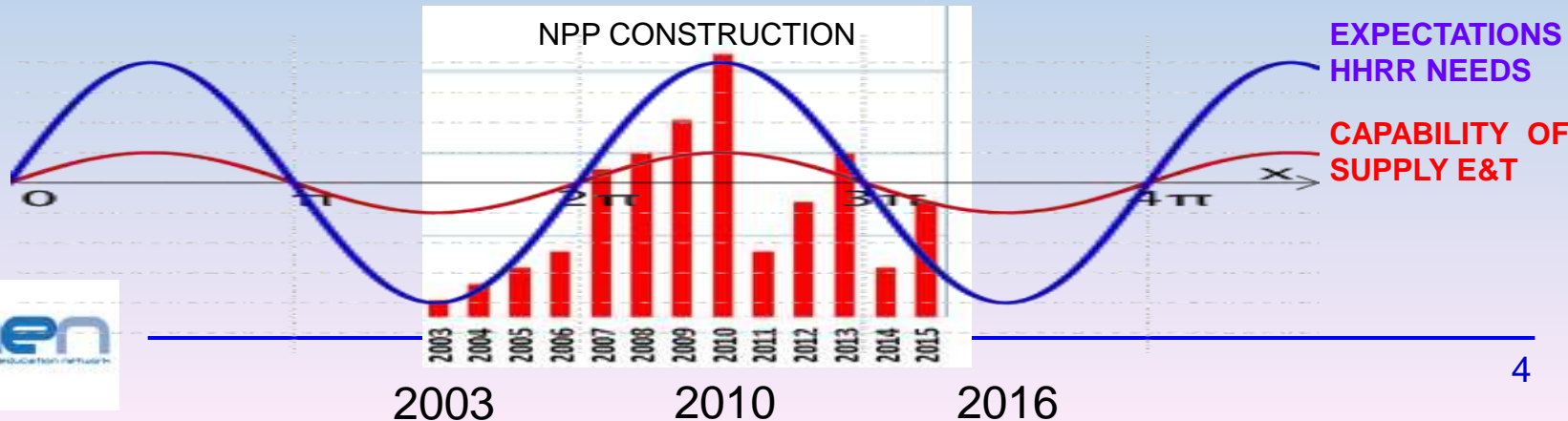
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# INTRODUCTION

- Among the motivations to establish ENEN in 2003, there was the lack of attractiveness of nuclear careers in Europe for young generations of engineers
- Periods of lower popularity of nuclear energy have several negative consequences on maintaining a stable transfer of knowledge, skills and competencies
- In such an environment, nuclear industry faces difficulties in expanding and developing new products, resulting in phases of market starvation in which it is quite difficult to attract new talents to the nuclear field
- *Offering courses needs to develop and maintain knowledge, skills and attitudes of teachers, instructors and facilitators, is a process whose duration can be measured in decades*

# INTRODUCTION (cont'd)

- The experience of “nuclear renaissance” shows instead that when attractiveness is provided by considerable plans for hiring new personnel in industry, gifted students enroll in the university courses related to nuclear matters
- In those periods, anyway, it is unavoidably discovered that the capability of universities and training centers to provide the requested manpower has become dramatically low
- This unstable behavior results in a waste of resources and in a lack of effectiveness in the development of the opportunities offered by nuclear energy



# INTRODUCTION

The **mission** of ENEN is the preservation and the further development of expertise in the nuclear fields by higher Education and Training.

## Board of Governors for 2015-2016:

Jozef Stefan Institute, Slovenia

Aalto University, Finland

Université de Lorraine

Westinghouse, Belgium

CEA-INSTN, France

SCK-CEN, Belgium

Czech Technical University in Prague, Czech

Imperial College London, United Kingdom

Universidad Politécnica de Cataluña, Spain

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Board Member

Board Member

Board Member

Board Member

Board Member

Board Member

Board Member

## Secretariat of the Association:

Mr. Pedro Dieguez Porras

Mr. Thierry Desaleux

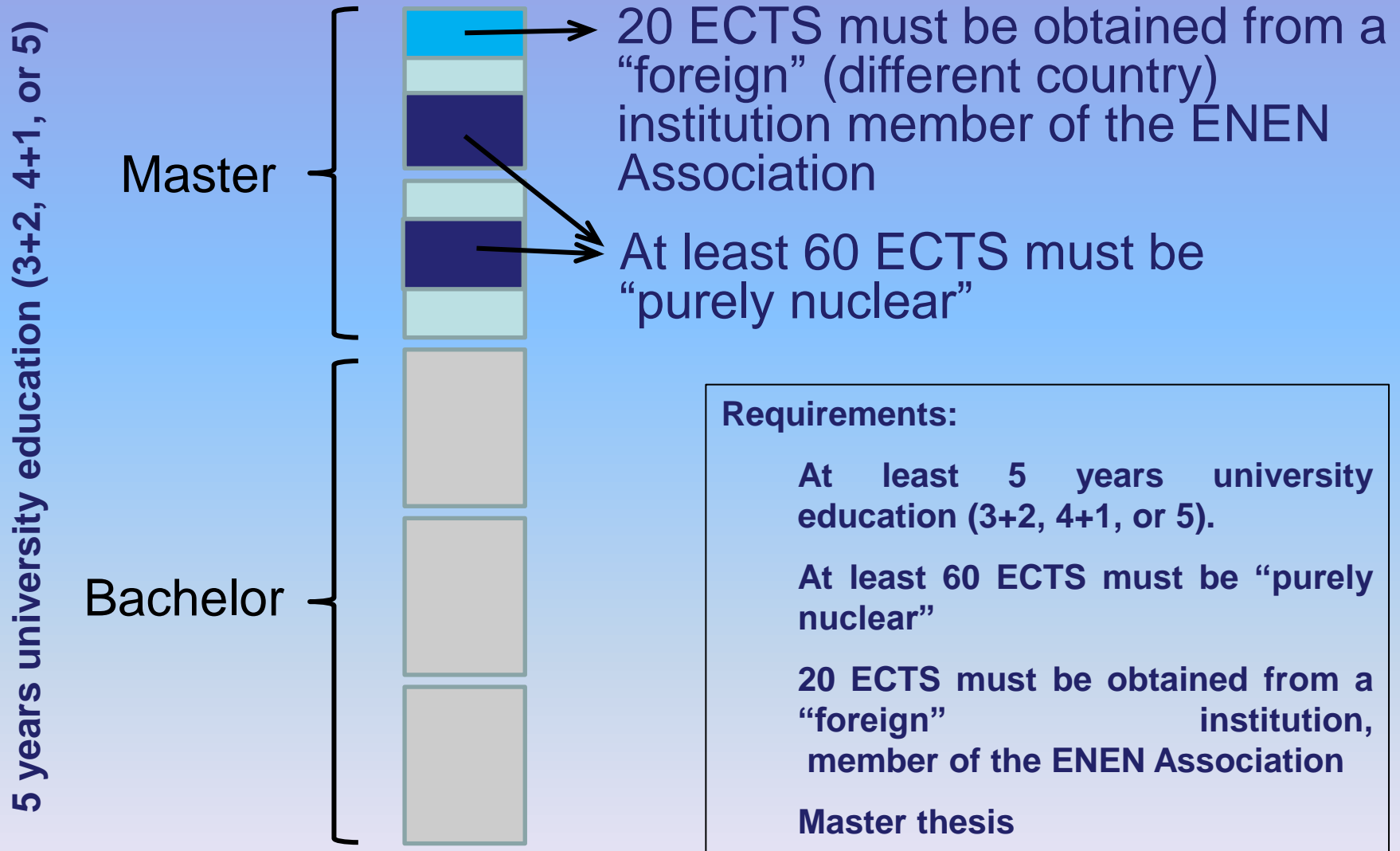
Secretary General

Treasurer

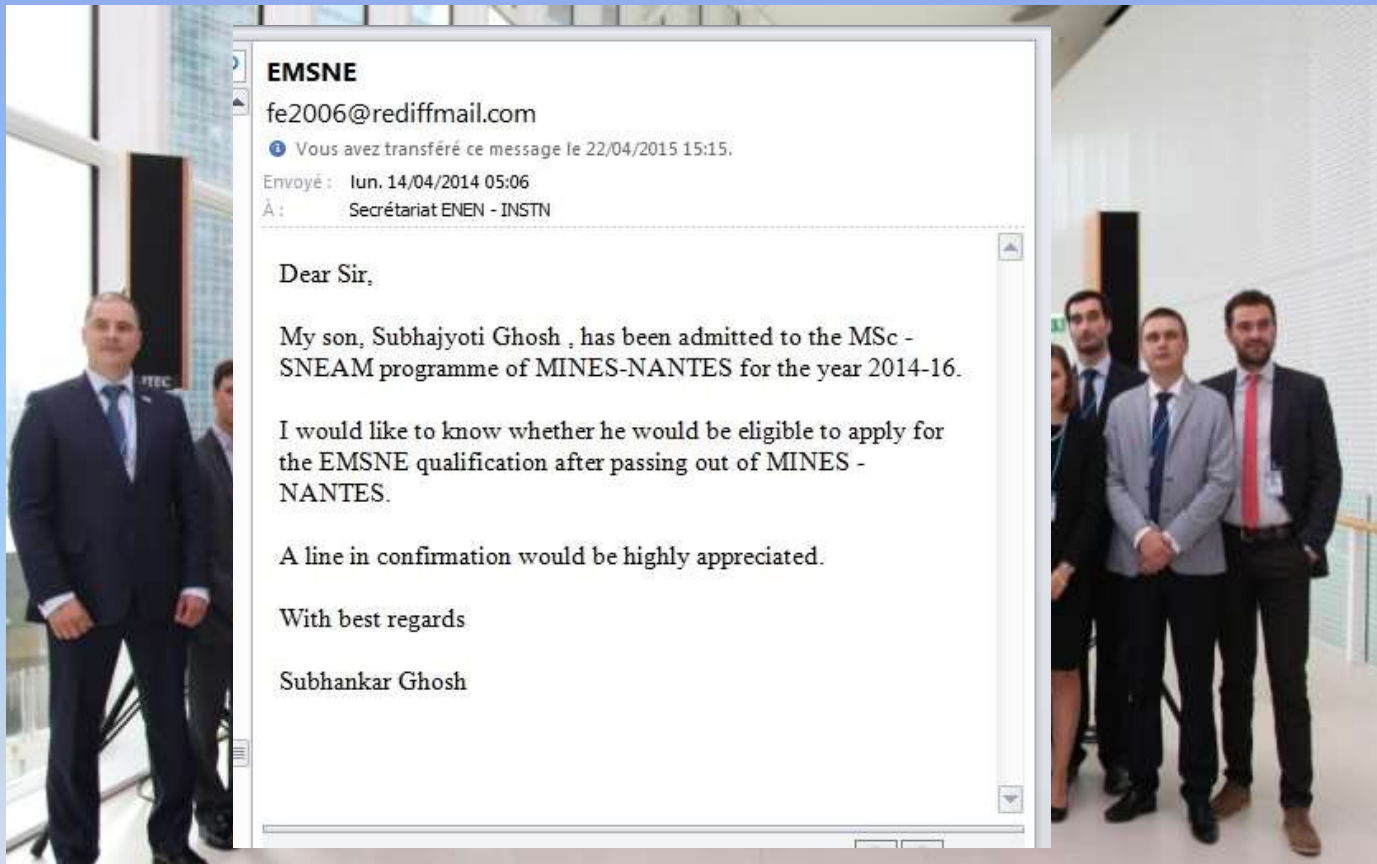
# OWN ACTIVITIES OF ENEN

- Also as a product of previous European Projects, initiatives have been established for promoting mutual recognition and establishing certifications at the MSc and the PhD levels
- **The European Master of Science in Nuclear Engineering (EMSNE) Certification** represents an important achievement of European collaboration, which has among others resulted in a re-markable number of Alumni.
- **Requirements:**
  - At least 5 years university education (3+2, 4+1, or 5).
  - At least 60 ECTS must be “purely nuclear”
  - 20 ECTS must be obtained from a “foreign” institution, member of the ENEN Association
  - Master thesis

# Master level: European MSc in Nuclear Engineering



# OWN ACTIVITIES OF ENEN



**Latest EMSNE Award Ceremony at IAEA in Vienna in September 2015**



# OWN ACTIVITIES OF ENEN

- ENEN PhD Event and Prize, whose last edition was celebrated at the International Congress on Advances in Nuclear Power Plants (ICAPP) 2015 in Nice, France, 5-6 May, 2015.
- In this event, doctoral students present their activities and results to a Jury selected among ENEN members and compete for prizes
- Also this initiative has become a successful tradition and in October 2016 it will be held at the ENC Conference in Warsaw.



# ONGOING EUROPEAN PROJECTS



*“ENEN defended the support to the Education and Training in the nuclear field as a necessary contribution to assure the Nuclear Safety throughout Europe and beyond, together with the promotion of a healthy Nuclear Safety Culture”.*



*“The NUSHARE Project, as a service to the European citizens, aims at enhancing and better spreading of nuclear safety culture principles, in line with the emphasis on this aspect in the proposed amendments to the new Nuclear Safety Directive”.*

# ONGOING EUROPEAN PROJECTS



# ONGOING EUROPEAN PROJECTS

## NUSHARE

to develop and implement Education, Training and Information programmes strengthening the competences required for achieving excellence in Nuclear Safety Culture.

**MEDIA EDUCATIONAL PACKAGE**

**RESOURCES FOR JOURNALISTS**

**INFORMATION DRILLS**

**KEY NOTE SPEAKERS**

**EMOBILE LEARNING FOR TOP MANAGERS**



# ONGOING EUROPEAN PROJECTS

## NUSHARE



Single Beneficiary



Target Group 1

**Policy decision  
makers &  
opinion leaders**



Target Group 2

**Nuclear  
Regulatory  
Authorities &  
TSOs**



Target Group 3

**Electric utilities,  
suppliers, &  
providers of  
Nuclear services**





# ONGOING EUROPEAN PROJECTS

## PETRUS-III

To promote E&T in the field of **geological disposal of radioactive waste**.  
ENEN's role is to support the development of certifications applicable in the field of geological disposal, and to provide long term sustainability to the PETRUS Consortium.



# ONGOING EUROPEAN PROJECTS

## PETRUS-III

To promote E&T in the field of **geological disposal of radioactive waste.**



# ONGOING EUROPEAN PROJECTS

## ENEN RU-II

- "Strengthening of Cooperation and Exchange for Nuclear Education and Training between the European Union and the Russian Federation" (36 months, from July 2014 to July 2017)
- Coordinators: **ENEN** and **ROSATOM**
- **CURRICULA COMPARISON**
- **DATABASE OF INFRASTRUCTURES**
- **GRANTS FOR STUDENTS TO ATTEND TO SPECIALISED JOINT-COURSES IN RUSSIAN FEDERATION AND EUROPE**





# ONGOING EUROPEAN PROJECTS

## CORONA-II

Development of a state-of-the-art regional training network for VVER competence (CORONA Academy)

Supporting transnational mobility and lifelong learning amongst VVER operating countries

The role of ENEN in this frame will be to provide sustainability to the related training academy in the long term.

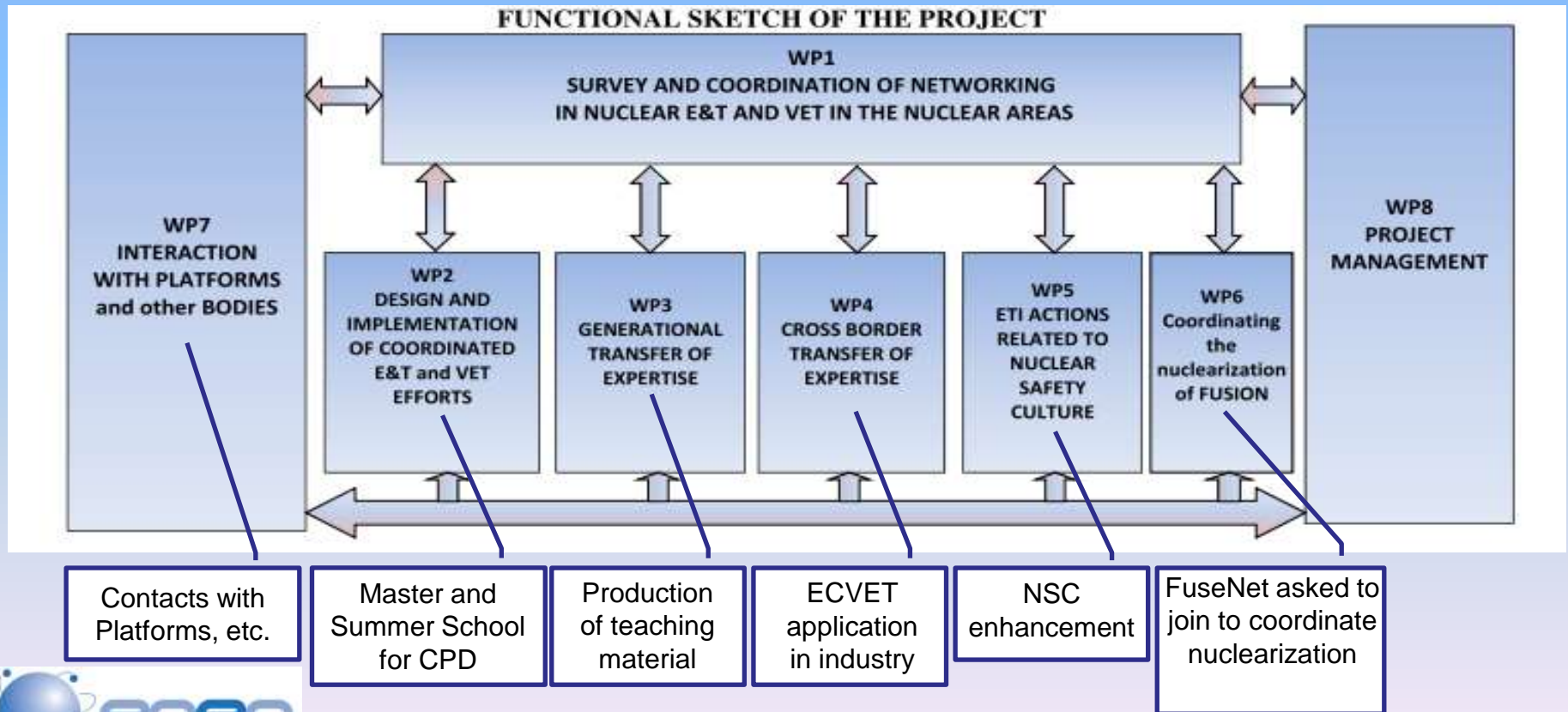
**COORDINATED  
ACCESS TO  
INFRASTRUCTURES  
IN TRAINING  
SESSIONS**



# ONGOING EUROPEAN PROJECTS

## ANNETTE

**Advanced Networking for Nuclear Education and Training and Transfer of Expertise.** Aimed at promoting a better level of coordination among the different actors in the nuclear Education and Training fields.



# ACTIVITIES BEYOND EUROPE

## EACEA EUJEP 2

The EUJEP 2 project allows for exchanges of students and teachers between ENEN Members and a group of Universities (TokyoTech and Fukui and Kyoto Universities), together with JAEA.

This project represents a very good opportunity for students of both sides to enrich their culture about different geographical areas and spend a fruitful period of study and research abroad.

- EU: 20 students for a total of 100 months
  - ✓ **Grant: 1500€ (trip) + 5000€ for a 5 months stay**
  - ✓ 8 faculty staff for a total of 16 weeks
- Japan: 20 students for a total of 100 months
  - ✓ 18 faculty staff for a total of 36 weeks

# ACTIVITIES BEYOND EUROPE

## TIGHT CONTACTS WITH IAEA

**ENEN has since many years cooperation agreements with IAEA and its regional networks: this constitutes a bridge for ENEN to reach out the broader world of nuclear education and training**



2009



2013

***FOR the STUDENTS: Different perspective of the Nuclear fields,  
international possibilities  
and the preserved glamour of Nuclear outside Europe***

# A NEW LEVEL AND NEW ROLES

## New level in coordination

- The European Nuclear Education Network is achieving a **new level in its service** in the fields of nuclear education and training.
- Proposing coordination in the frame of **ANNETTE** represents a major step; the present initiative, born after checking the availability to join or support ENEN in this effort by the most important actors in the field, will try to achieve a better tightness and harmonization

## Better connection between course providers and stakeholders

- The worth of ANNETTE will be also in the attempt to deepen the **dialogue** between course providers (e.g., academia and research centers) and stakeholders (e.g., industry and plat-forms).
- It is expected that this renewed cooperation will be a profitable channel of exchanges that will suggest **joint and better** coordinated actions

# A NEW LEVEL AND NEW ROLES

## **Long term sustainability of European projects**

- One of the roles of ENEN emerged in different ongoing and concluded projects is to offer long term sustainability to actions that would otherwise remain unexploited after project completion.
- It is the case, for instance, of the TRASNUSAFE project
- Similarly, also the actions planned within the PETRUS-III and the CORONA-II projects represent attempts to provide sustainability to actions that will have a long term wake for their useful products.
- ENEN can play this role of becoming the home for such initiatives.

## **Transnational certifications**

- In similarity with the role played through the EMSNE, ENEN can host or facilitate the development of transnational certifications that can be released to different categories of professionals to testify for the acquisitions of knowledge, skills and competencies
- This can be achieved by the involvement within ENEN of groups of experts that will recognize the acquisition of the related credits (in agreement with the ECVET system, in particular) according to specific bylaws.



# CONCLUSIONS

- **The European Nuclear Education Network is nowadays the result of 13 years of work performed by its Members and its Staff**
- **The actions described herein testify for the vitality of the Association, even in a difficult period for education and training in the nuclear fields**
- **In these difficult periods, the worth of the existence of an Association like ENEN is mostly felt**
- **ENEN represents achievements already in place and provides a platform for many opportunities, vital for the sustainable future of the nuclear power in Europe**



# Thank you for your attention

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