



# European Nuclear Society



## ENS & EU Taxonomy

*Prof. Emilio MINGUEZ*

*President of ENS*





## **Emilio MINGUEZ**

- Emeritus Full Professor Chair in Nuclear Engineering (since 2020)
- Universidad Politécnica de Madrid (UPM)
- Vice- Rector (Vice-President) of the UPM for 10 years (2004-2014)
- Dean of the School of Industrial Engineering of the UPM (2014-2018)
- President of the European Nuclear Society ( 2020, 2021)



# SUPPORTING SCIENTIFIC EXCELLENCE

**21 Member Societies, 12.000 Members**



**Austrian Nuclear Society**



**Croatian Nuclear Society**



**French Nuclear Energy Society**



**Israel Nuclear Society**



**Netherlands Nuclear Society**



**Romanian Nuclear Energy Association**



**Swedish Nuclear Society**



**Belgian Nuclear Society**



**Czech Nuclear Society**



**German Nuclear Society**



**Italian Nuclear Association**



**Slovak Nuclear Society**



**Nuclear Society of Slovenia**



**Swiss Nuclear Society**



**Bulgarian Nuclear Society**



**Finnish Nuclear Society**



**Hungarian Nuclear Society**



**The Nuclear Institute**



**Polish Nuclear Society**



**Spanish Nuclear Society**



**Ukrainian Nuclear Society**



# SUPPORTING SCIENTIFIC EXCELLENCE

## 28 Corporate Members

ALPIQ

ANDRITZ

ANSALDO  
NUCLEAR  
Ansaldo Energy Group

ATOMTEX

edf

EIMV

engie  
Electrabel

enusa

EPZ

framatome



Kernkraftwerk  
Gösgen

KKL  
Kernkraftwerk  
Leibstadt

L3HARRIS  
FAST. FORWARD.

group  
m  
v m

NRG

NUCLEAR<sup>21</sup>  
PERSPECTIVE FOR YOUR DECISIONS

NUKEM  
Technologies

PAUL SCHERRER INSTITUT  
PSI

ROSATOM

SAPHYMO

sck cen  
Exploring  
a better tomorrow

Synatom

tecnaTom

TVO

TRACTEBEL Engineering  
edf auez

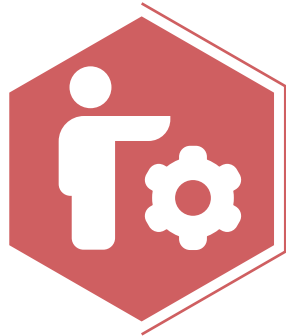
VATTENFALL

Westinghouse





# OUR MISSION



**Support  
member  
societies and  
gather their  
individual  
members**



**Support  
knowledge  
exchange,  
professional  
development,  
and networks**



**Nuclear  
advocacy  
and public  
awareness**



**Promote the  
development and  
the  
understanding of  
nuclear science  
and technology**





## The European Green Deal

On **December 11, 2019** , the European Commission presented **The European Green Deal**

- This is a roadmap for making the EU's economy sustainable for climate and environmental
- Represent opportunities for making the transition energy.

### Executive Vice-President Frans Timmermans:

*"The European Green Deal is an opportunity to improve the health and well-being of our people by transforming our economic model. Our plan sets out how **to cut emissions**, restore the health of our natural environment, protect our wildlife, **create new economic opportunities**, and improve the quality of life of our citizens. We all have an important part to play and **every industry and country** will be part of this transformation. Moreover, **our responsibility is to make** sure that this transition is a **just transition**, and that **nobody is left behind** as we deliver the European Green Deal."*



## What is the taxonomy?

- It is a **package of regulations** that governs investment in activities environmentally friendly.
- It is like an EU dictionary of what activities **may and may not be called sustainable**
- The EU produced the taxonomy to help meet climate and energy targets for 2030 and reach the objectives of the European Green Deal
- Published in December 2019 to make Europe the first climate-neutral continent by 2050.
- **The taxonomy restricts which investments can be classed as green.**

### Investment:

Additional yearly **260 billion euros** for achieving current 2030 climate and energy targets



## What about nuclear energy and taxonomy?

A report published on **March 2020** by a European Commission technical expert group

**omitted nuclear energy** from its recommendations on the taxonomy rules, saying it was **unable to conclude that the industry's value chain does not cause significant harm** to other environmental objectives.

**The European Parliament on June 2020 approved Green finance legislation**

This will **restrict which investments can be classed as green** and force providers of financial products to disclose which investments meet the criteria, **from the end of 2021**.

**The nuclear industry and scientific organisations as ENS are calling since then for this to be reviewed**



## ENS activities

1. **Letter to Executive Vice-Presidents** Timmermans and Dombrovski, and Commissioner Ms. K. Simson , on April 2020, with the following subject:

‘Assuring the Backbone of a Carbon-Free Power System by 2050. Call for a Timely and Just Assessment of Nuclear Energy’

2. **Letter on December 14, 2020 to the EC DG.**

We participated in the EC public consultations

3. **A letter to all Members** to include recommendations in the report before end of December2020.

We encouraged them to act also on the Ministerial level.





## ENS activities

**4. ENS signed in 2019 a MoU with JRC, EC Scientific Body** , who advised EC to include nuclear for sustainable financing labelling.

**5. ENS has organised several webinars in 2020**, and prepares position papers:

### HYDROGEN:

-EC see hydrogen as one of the key players under the Green Deal strategy, but in the report never assumes generation using nuclear power.

-EC Hydrogen strategy: 'Up to 2030, hydrogen needs to become an intrinsic part of an integrated energy system with a strategic objective to install at least 40GW of renewable hydrogen electrolyzers by 2030 and the production of up to 10 million tonnes of renewable hydrogen in the EU29'

Source: [https://ec.europa.eu/energy/sites/ener/files/hydrogen\\_strategy.pdf](https://ec.europa.eu/energy/sites/ener/files/hydrogen_strategy.pdf)

➤ **ENS HSC prepares a comprehensive position paper on how to achieve the 10 million tonnes of low-carbon hydrogen on a economical way**



## ENS activities

➤ **HSC virtual Workshop on November 2020**

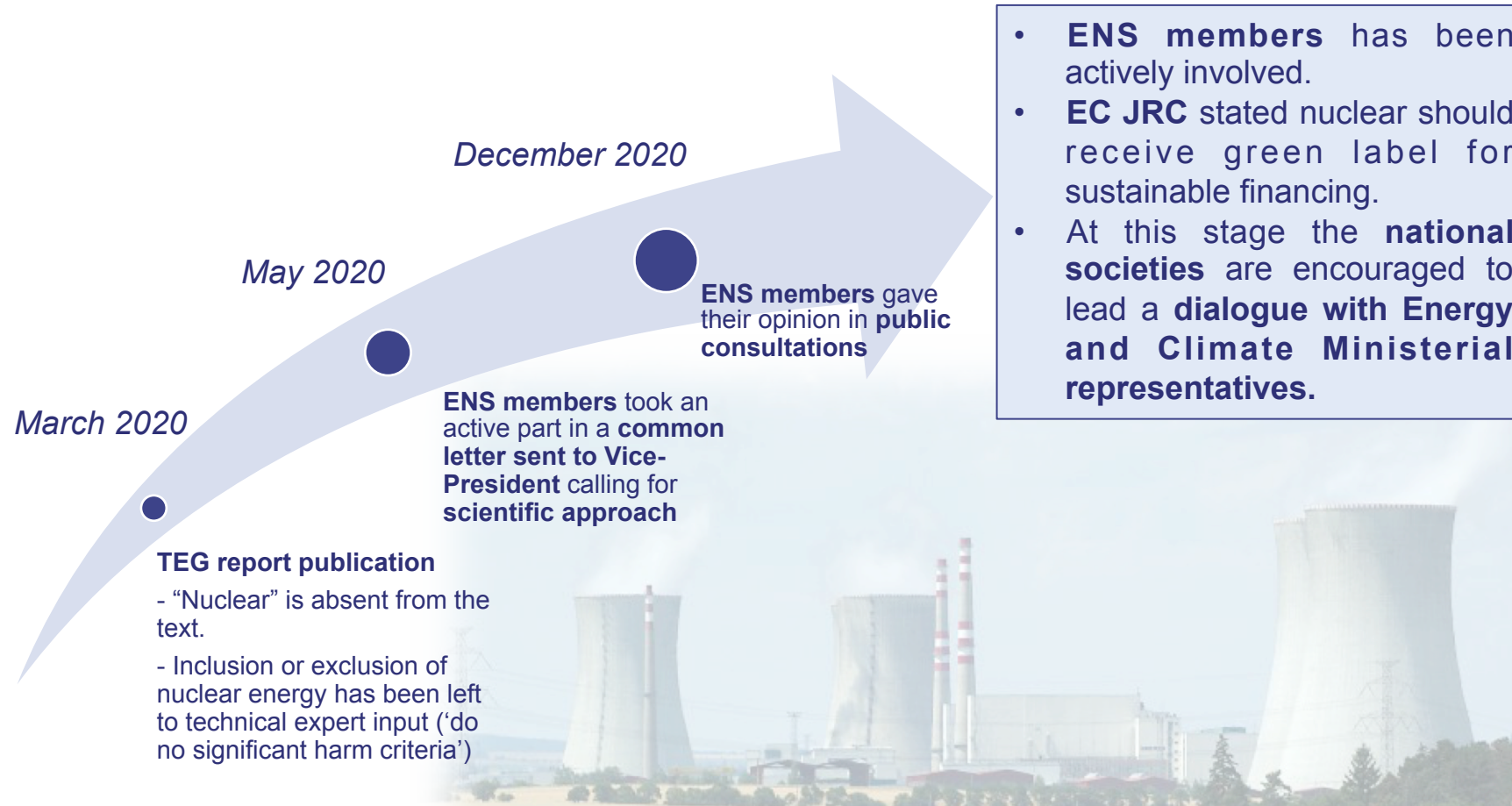
“The potential role of hydrogen in low carbon energy mixes and the possible contribution of nuclear energy to low-carbon hydrogen production”

➤ **Webinar about Hydrogen on December 2020**

➤ **Webinar on Small Modular Reactors** in a decarbonized European power grid .  
by Anicet Toure. Tractebel. April 2020.

## ENS activities for taxonomy

A common classification system for sustainable economic activities, especially important for new-build projects





**On April 2021**

❖ The European Commission announced its decision **to include nuclear energy in a complementary Delegated Act of the EU Taxonomy Regulation.**

The decision follows the recent publication of the **Joint Research Centre's report confirming nuclear is as sustainable as other taxonomy-compliant energy technologies.**

**JRC has already reviewed and qualified as sustainable**

❖ Now nuclear energy status is subject to the opinion of 2 expert groups:

Euratom Article 31 experts

Scientific Committee on health, environment and emerging risks.

**Decision by June 2021**

❖ Latest developments on taxonomy:

<https://world-nuclear-news.org/Articles/Nuclear-to-be-included-in-Delegated-Act-of-EU-taxo>

ENr



# JOINT RESEARCH CENTRE

**ENS  
&  
EC JRC**



**Linking ENS members  
to European Initiatives**  
MoU with EC JRC on KM  
and open infrastructure  
for researchers



**EHRO-N**  
European Human Resources  
Observatory in Nuclear



**Scientific Webinars**  
ENS members are  
invited to talk about  
their innovative  
research projects





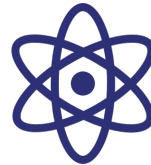
# #NetZeroNeedsNuclear

## N4C Position Paper

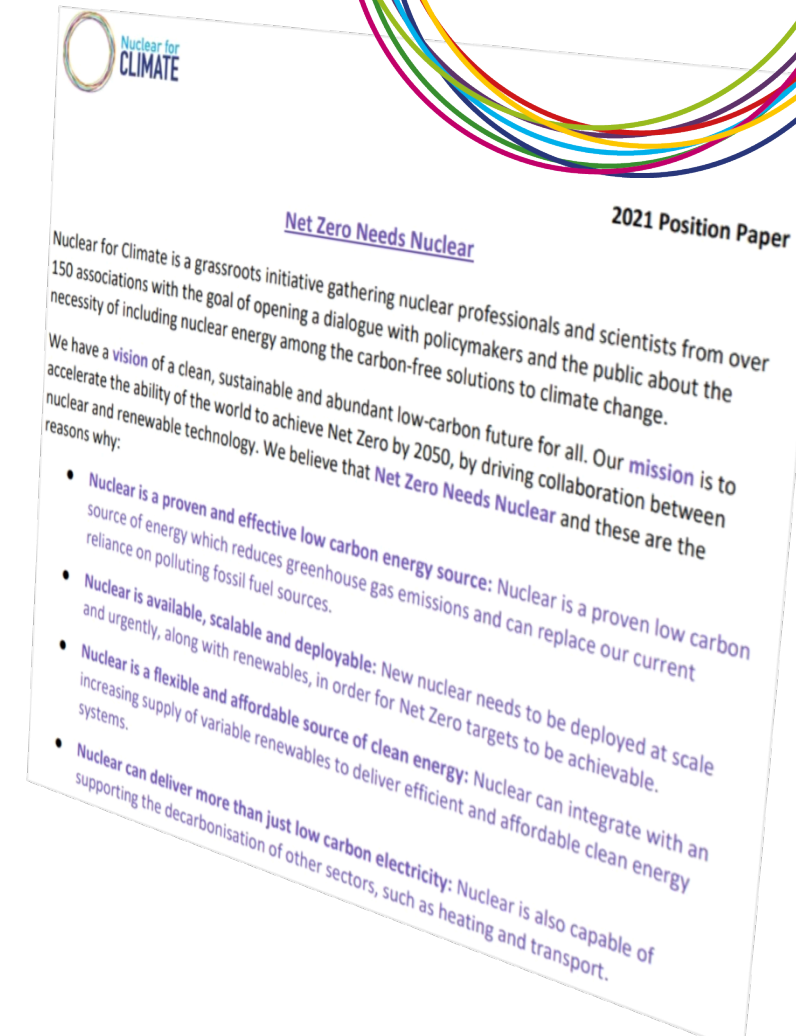
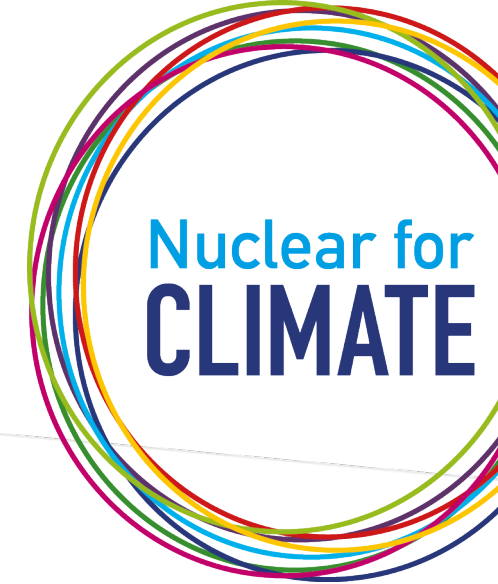
**Nuclear for Climate** gathers nuclear professionals and scientists from over 150 associations.



**Mission:** support nuclear energy among the carbon-free solutions to climate change.

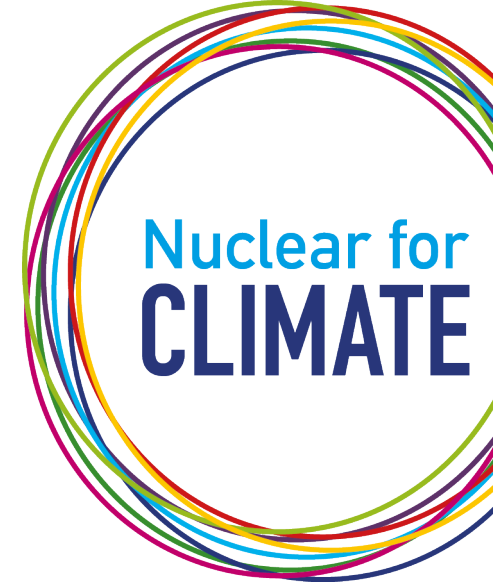


**Net Zero by 2050 =  
Collaboration between nuclear  
and renewable technology.**





# #NetZeroNeedsNuclear Petition



Nuclear for Climate started this **petition** calling on **COP26** to take a **scientific and technology-neutral approach** to energy policy and financing

Promote sustainable collaboration between nuclear and renewables.



**Sign the petition!**



# Have you played your part yet?

Support N4C action online!



Lindsay Tilley, Omar Nusrat, Akira Iokuhira, Eric G. Meyer  
#YGN #ClimateChange #COP26 #UnitedNations #Nuclear #Nuclear4Climate  
#NetZero #NetZeroEnergy #LowCarbon #ConferenceOfTheParties  
#NuclearEnergy #NuclearPower #Renewables #RenewableEnergy #ClimateAction  
#Environment #Energy #ProtectOurPlanet #TogetherforourPlanet

“

Climate change and air pollution threaten the future of humanity and all life on earth.

The world needs New Nuclear now more than ever to reach NetZero

Osama Baig

Managing Director Clean energy and specialist services at Lavenham nuclear  
Cavendish Nuclear are proud to support #NetZeroNeedsNuclear  
To find out how you can get involved and to sign the petition check the website :  
<https://lnkd.in/dHayQRf> ...see more

“

Nuclear is a reliable low carbon source of power.

But to reach net zero, we need to produce much more low carbon power, especially as heat and power will be electric. We need to do it now.

Nuclear, alongside renewables, must become the backbone of the energy system.

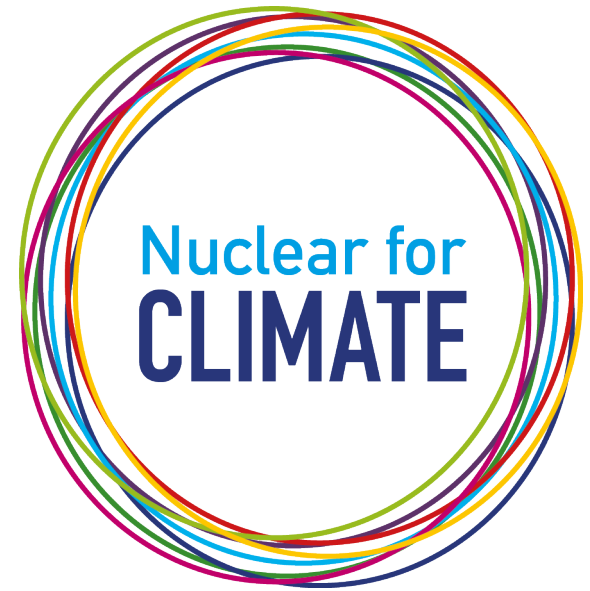
Mick Gornall, MD  
Clean Energy & Specialist Services.

Help the Nuclear Institute Young Generation Network fight for the future of the Nuclear Energy Sector  
1. Sign the call to action: ...see more

“

Net Zero needs New Nuclear to realistically meet the growing energy demands as a result of continued electrification

Alanna Mullan



“

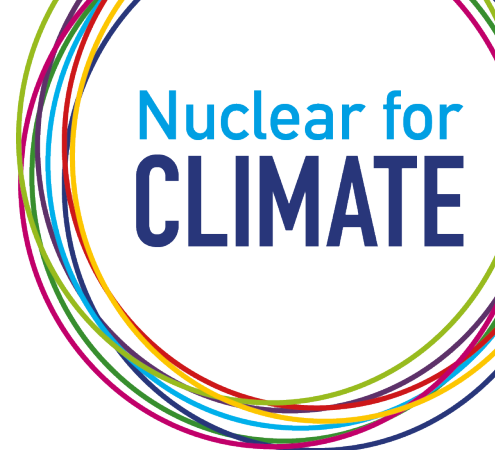
We need to stop putting off NetZero as tomorrow's problem. We need the solution today! Nuclear is part of that solution.

Frances Yates

#NetZeroNeedsNuclear



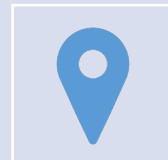
# #NetZeroNeedsNuclear Get involved!



**SHARE THE  
POSITION PAPER  
MESSAGES**



**SIGN THE PETITION**



**BE PART OF THE  
SOCIAL MEDIA  
CAMPAIGN**

<https://www.netzeroneedsnuclear.com/>



# Can we achieve a clean energy transition without nuclear power?

To satisfy the COP21 -Paris, it will be needed

Clean energy requirement of 85% by 2040

Increase 80% of global nuclear power by 2040

*Source: Nuclear Power in a Clean Energy System. IEA , May 2019*

***Nuclear Power Must be Considered in any Low Carbon Energy Mix Worldwide,***

*because...*



# Nuclear Power is important for...

## ENVIRONMENTAL

- Impact on the climate change
- Impact on ecosystems
- Waste generation
- Water and land impacts

## ECONOMICS

- Resources
- Energy return on investment
- Generation costs
- Financing energy
- Energy supply security

## SOCIAL

- Impacts on human health
- Employment
- Education and training

**INNOVATION TECHNOLOGY  
&  
INNOVATIVE DESIGNS**

## Summary

- ENS is involved in reviewing the taxonomy to consider nuclear energy as a carbon-free energy and its industry's value chain doesn't cause harm.
- There are innovative safer and cheaper designs of new reactors: GENIV, SMRs, microrreactors.
- Nuclear waste management has solutions using storage or in new advanced reactors.
- Nuclear energy is compatible with renewable energy to have security in the supply of continuous energy
- Extend applications for non-electricity final product: desalination, industry, cogeneration, hydrogen, with carbón-free emission