

# Net zero needs nuclear

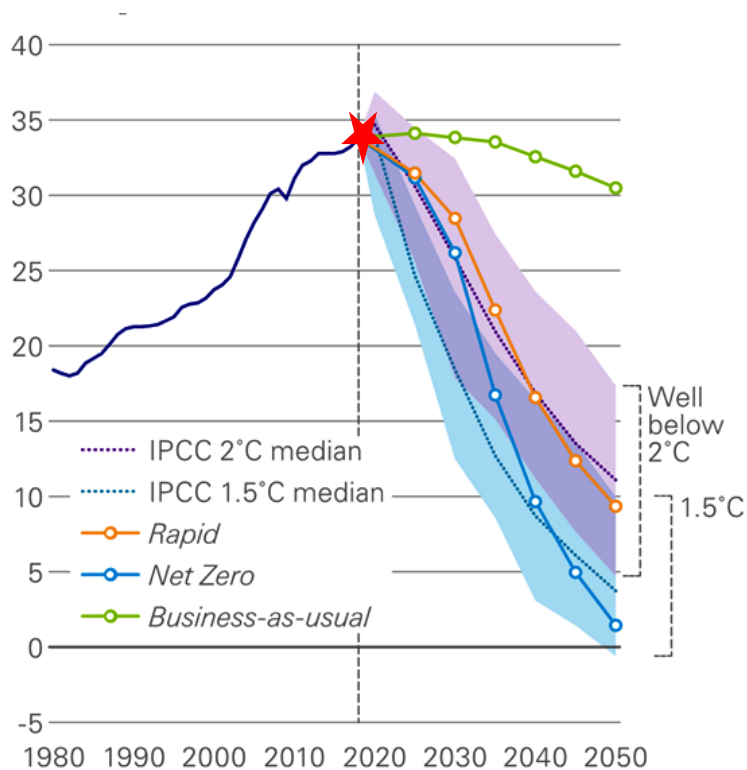
## Nuclear regulation needs harmonization



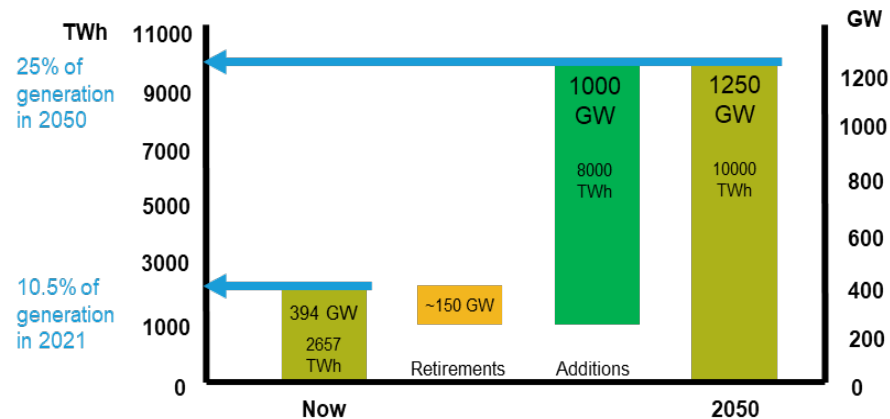
**Dr. Sama Bilbao y León**  
Director General

Thursday, March 10<sup>th</sup>, 2022  
34<sup>th</sup> Annual  
Regulatory Information Conference

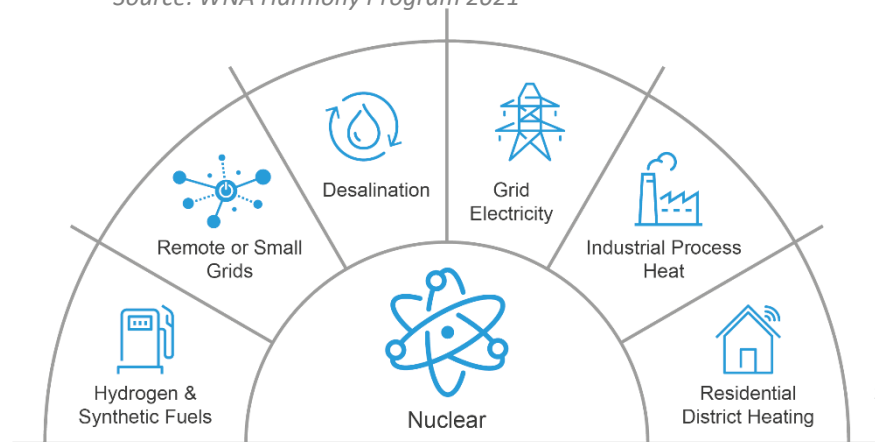
# Nuclear energy is essential to address the urgency and enormity of the climate change challenge



Source: BP Energy Outlook 2020/IPCC



Source: WNA Harmony Program 2021





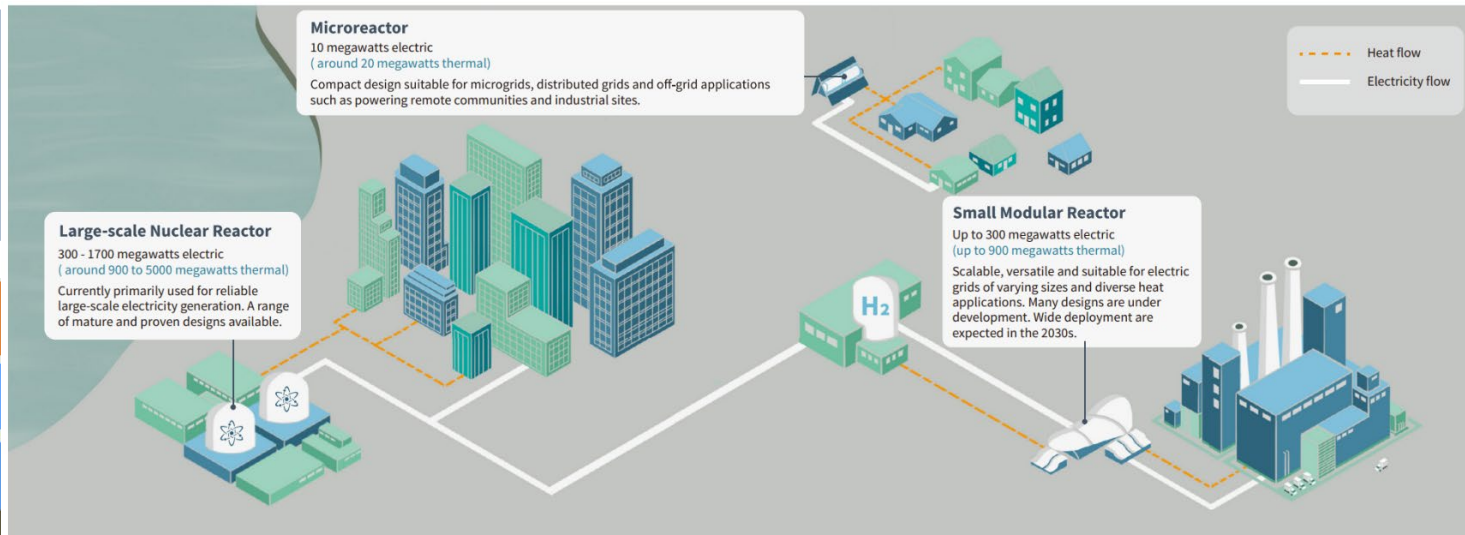
FINANCE



PERCEPTION



SAFETY  
REGULATION



## ELECTRICITY GENERATION



Nuclear power plants can produce reliable 24/7 electricity or operate flexibly as required. Dispatchable electricity sources are essential for keeping the costs of the overall system low.

## HYDROGEN



Nuclear power can be used to produce low-carbon hydrogen via several process:

- Low-temperature electrolysis - using nuclear electricity
- Steam electrolysis - using nuclear heat and electricity
- Thermochemical process - using nuclear heat at above 600 °C

## PROCESS HEAT FOR INDUSTRY



High-temperature heat from nuclear plants can be transformative in decarbonising hard-to-abate sectors.

## DISTRICT HEATING



Nuclear plants are a proven source of heat for urban district heating that have operated successfully in a number of countries.



## Raising Awareness

Recognise that nuclear power is a source of low-carbon energy and heat that can help decarbonise energy systems



## Promoting Acceptance

Develop policies that instill confidence and facilitate the wider application of nuclear power to decarbonise electricity and energy intensive industries



## Incentivising Finance

Develop financing frameworks that instill confidence and incentivise affordable public and private investment in support of new nuclear power projects

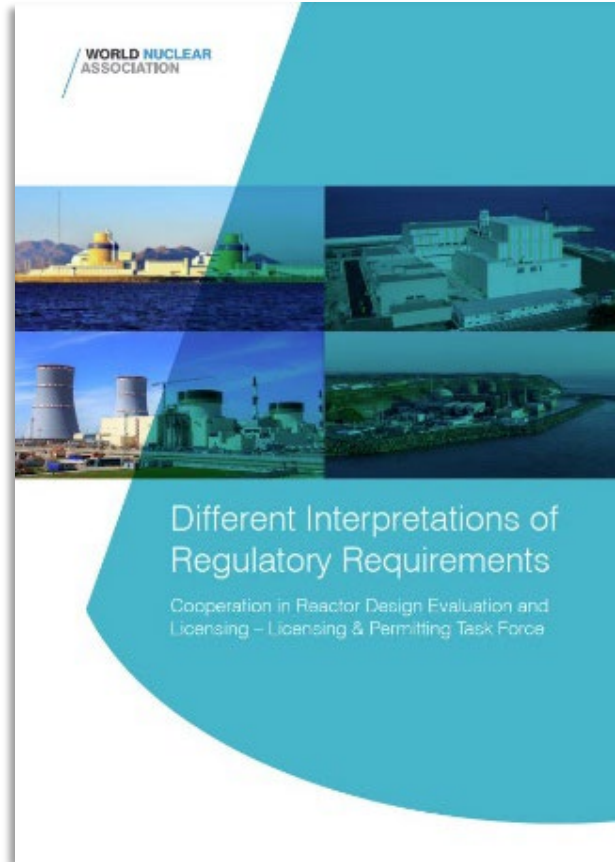
# Nuclear Regulation Needs Harmonization



Olkiluoto 3



Flamanville 3



Taishan 1&2



Hinkley Point C  
(artist rendering)

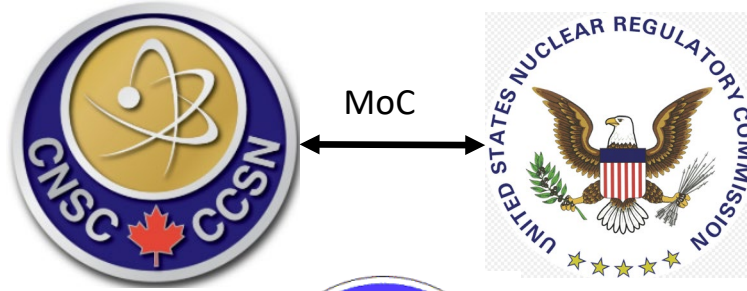
**Added Uncertainty and Risk to the deployment of new nuclear reactors**

## Timely and cost-effective new nuclear deployment needs licensing and regulatory streamlining

- SMR deployment is predicated on the same reactor design leaving the factory
  - Emergence of a global market
  - Consolidation of global supply chains
- Harmonized licensing processes between countries would facilitate this deployment
- The world has changed, we must change with it...



There have been many efforts to achieve  
harmonization in nuclear regulation...



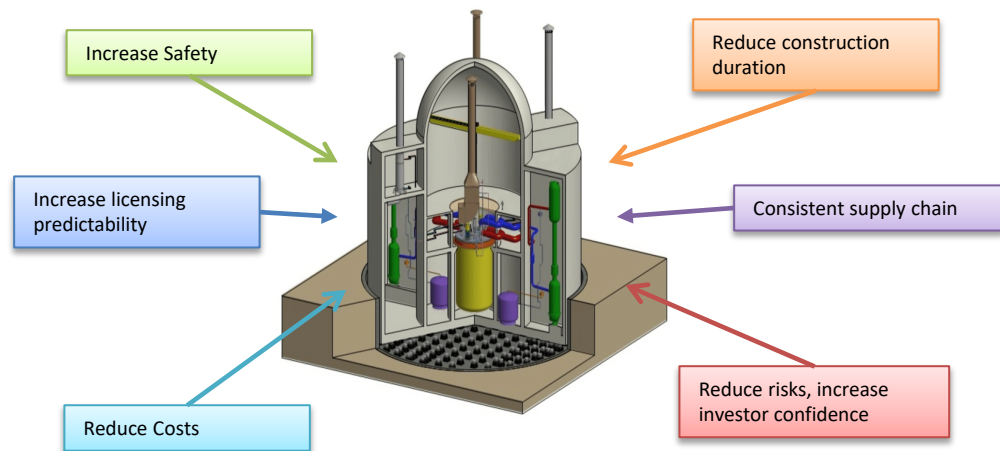
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... but much work is still needed to be successful

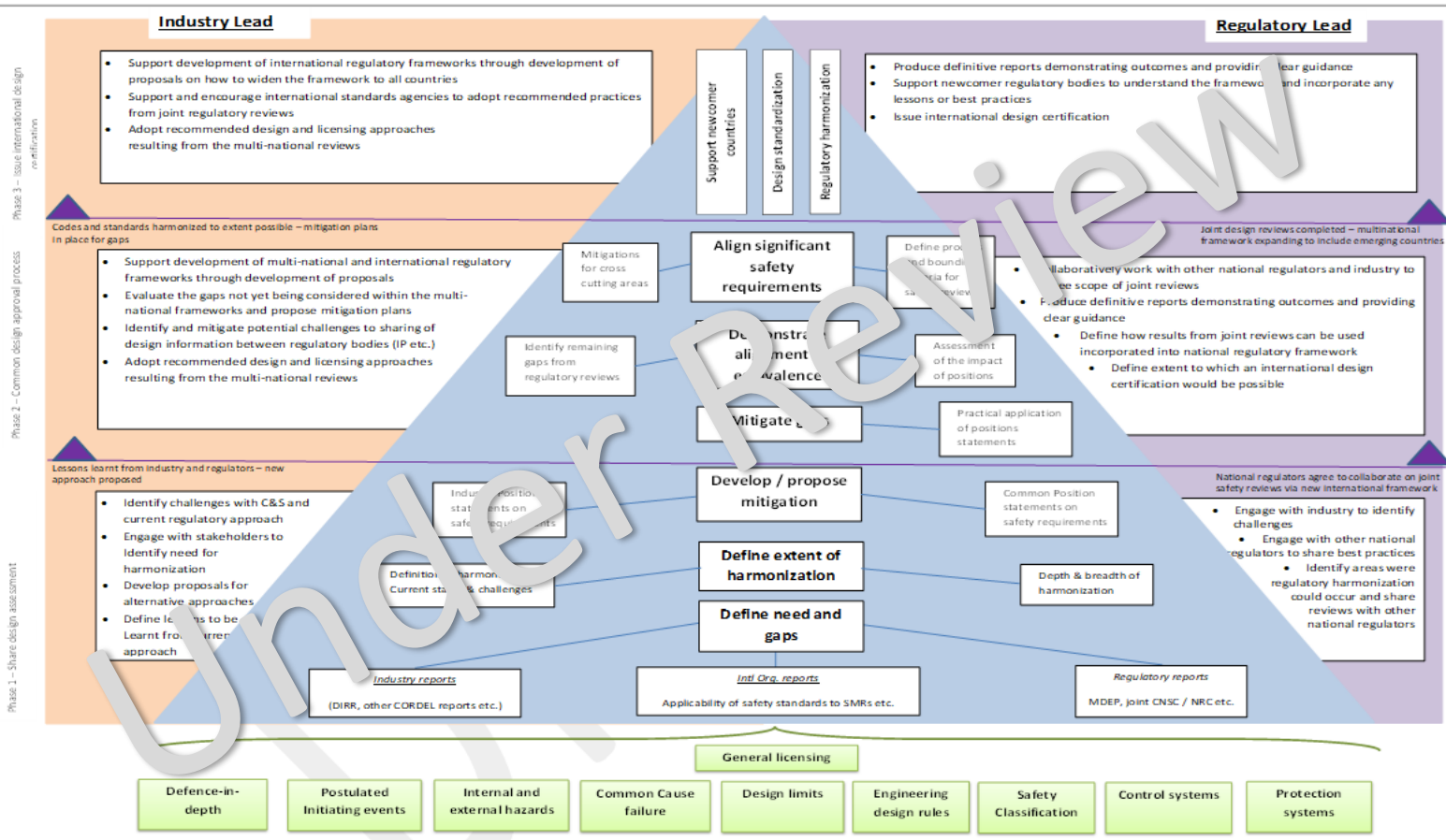
# Cooperation in Reactor Design Evaluation and Licensing (CORDEL) is the industry approach to harmonization

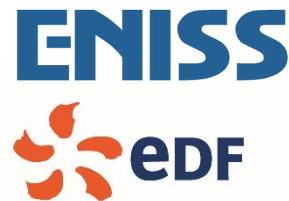
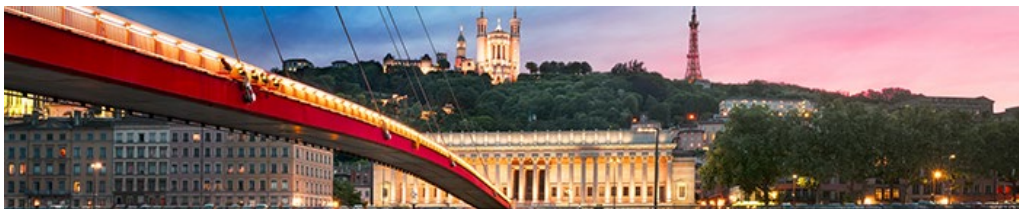
- CORDEL has:
  - Defined the need
  - Developed collaborative relationships with governments and international industry and regulatory fora
  - Addressed some of the specific challenges in relevant reports



Download them at <https://www.world-nuclear.org/our-association/publications/online-reports.aspx>

# A potential international framework to streamline international licensing and regulation





## Harmonization to support the operation and new build of NPPs including SMRs

- Lyon, France 18<sup>th</sup> to 20<sup>th</sup> May 2022 – [Registration currently open](#)
- Topical subjects:
  - Harmonization of Safety Requirements Implementation/Licensing
  - Standardization in Design, Manufacturing and Construction
- Technical tour of Framatome's Le Creusot and Saint-Marcel facilities

# There is an urgent need to move forward together

- Government leadership for the development of suitable legal frameworks, policies and capabilities
- Effective collaboration among international organizations, regulators, and industry to streamline international licensing and regulatory frameworks
  - Develop pragmatic innovative approaches to align licensing and regulation of WCR technologies large and small
  - Make use of lessons learned in harmonization when developing new regulations for advanced technologies
  - Support newcomer countries to optimize their approach to regulation



[www.world-nuclear.org](http://www.world-nuclear.org)