



Consequences and Lessons learned for Europe

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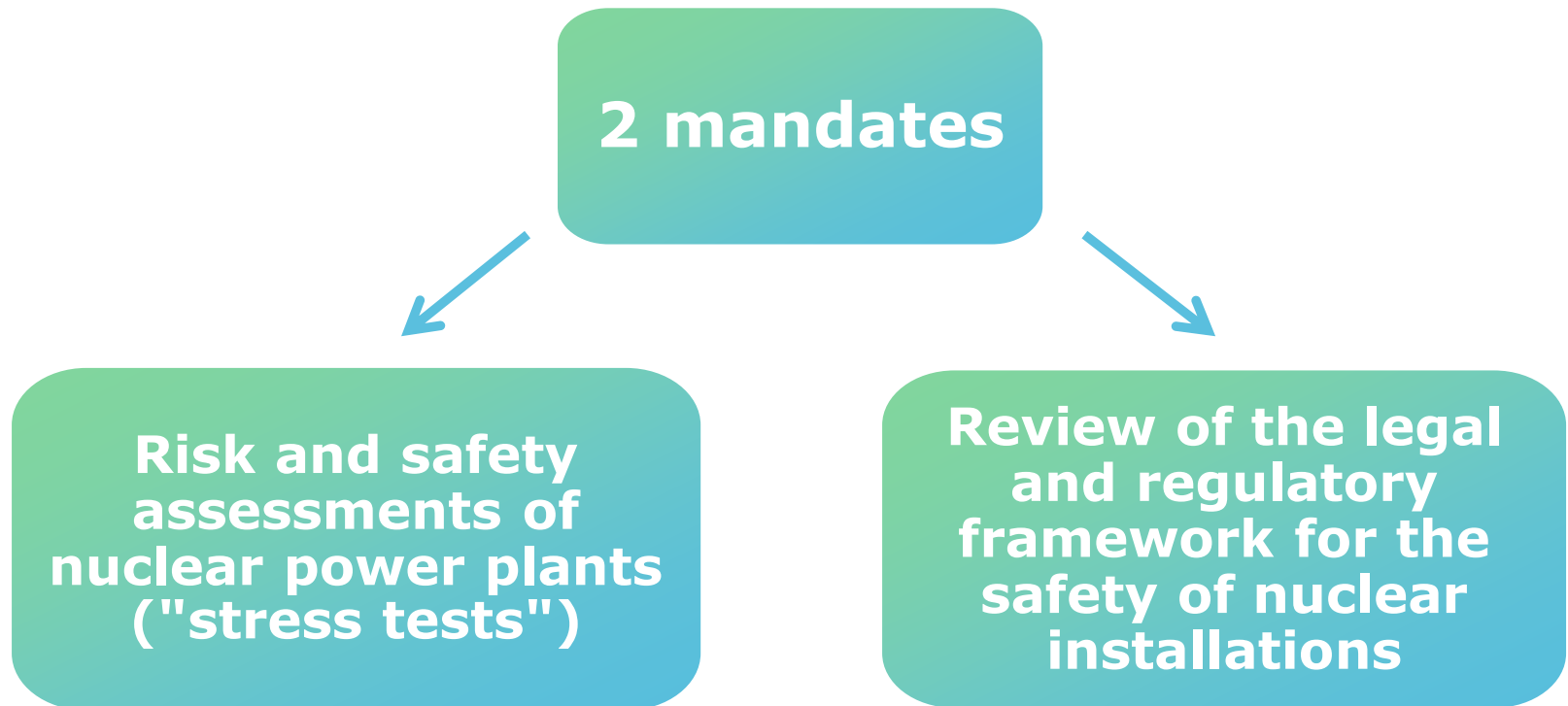
**DDG, Directorate-General
for Energy
European Commission**

Public Awareness and Anti-Nuclear Sentiment

- The Fukushima nuclear disaster changed the international debate **over energy policy** almost overnight.
- It caused **deep public anxiety** throughout the world and **damaged confidence in nuclear power**.
- Globally, it generated **uneven outcomes**, including in the EU, where it shaped differently the nuclear energy policy in the different Member States (Germany, France, Belgium etc.).

The EU Response to Fukushima

- High-level Conference on 15 March 2011
- Council Mandates of 24-25 March 2011



Response 1 - Implementation of Stress Tests

- They go **beyond safety evaluations** during the licensing process and periodic reviews.
- The aim is a targeted reassessment of the **safety margins and robustness of plants**, in light of the Fukushima accident.
- Conducted **in three steps**:
 - licensees (nuclear operators)
 - independent national authorities (safety regulators)
 - international peer reviews
- Transparency:
 - All reports have been **published**, stakeholders closely involved.

Response 1 - Stress Tests Results

Main Conclusions:

- While the assessments found that the safety standards of nuclear power plants in Europe **were generally high**, further improvements were recommended.
- The EU Stress Tests have been carried out **in a transparent manner** and the results actively shared.



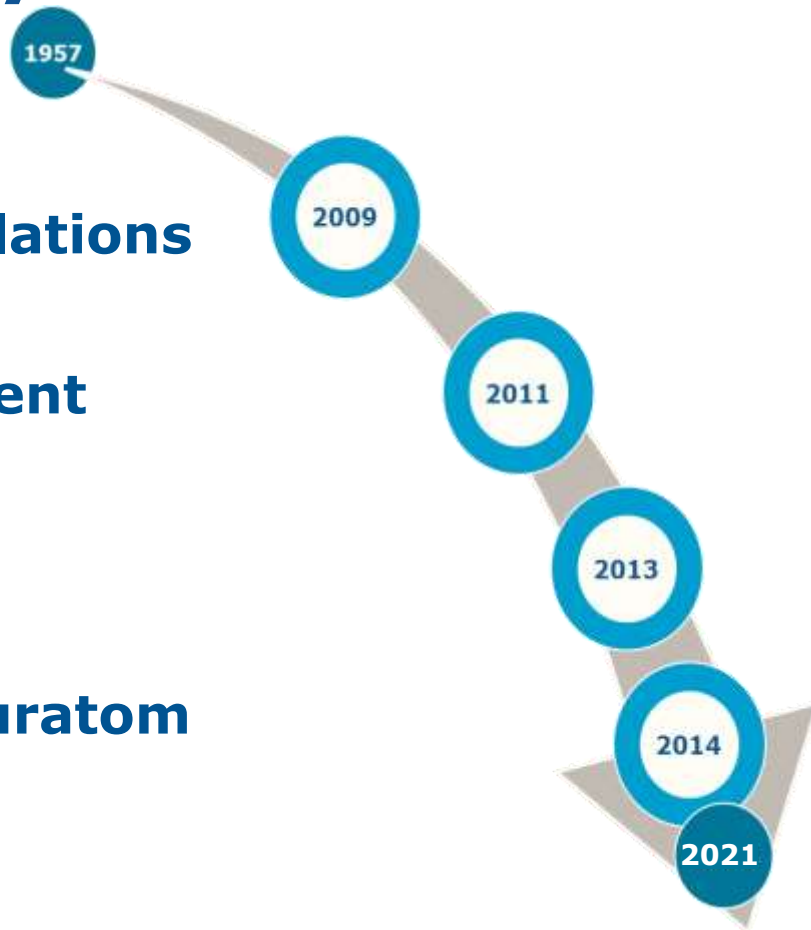
Response 2 - Strengthening the EU Regulatory Basis

Directive 2009/71/Euratom
Nuclear Safety of Nuclear Installations

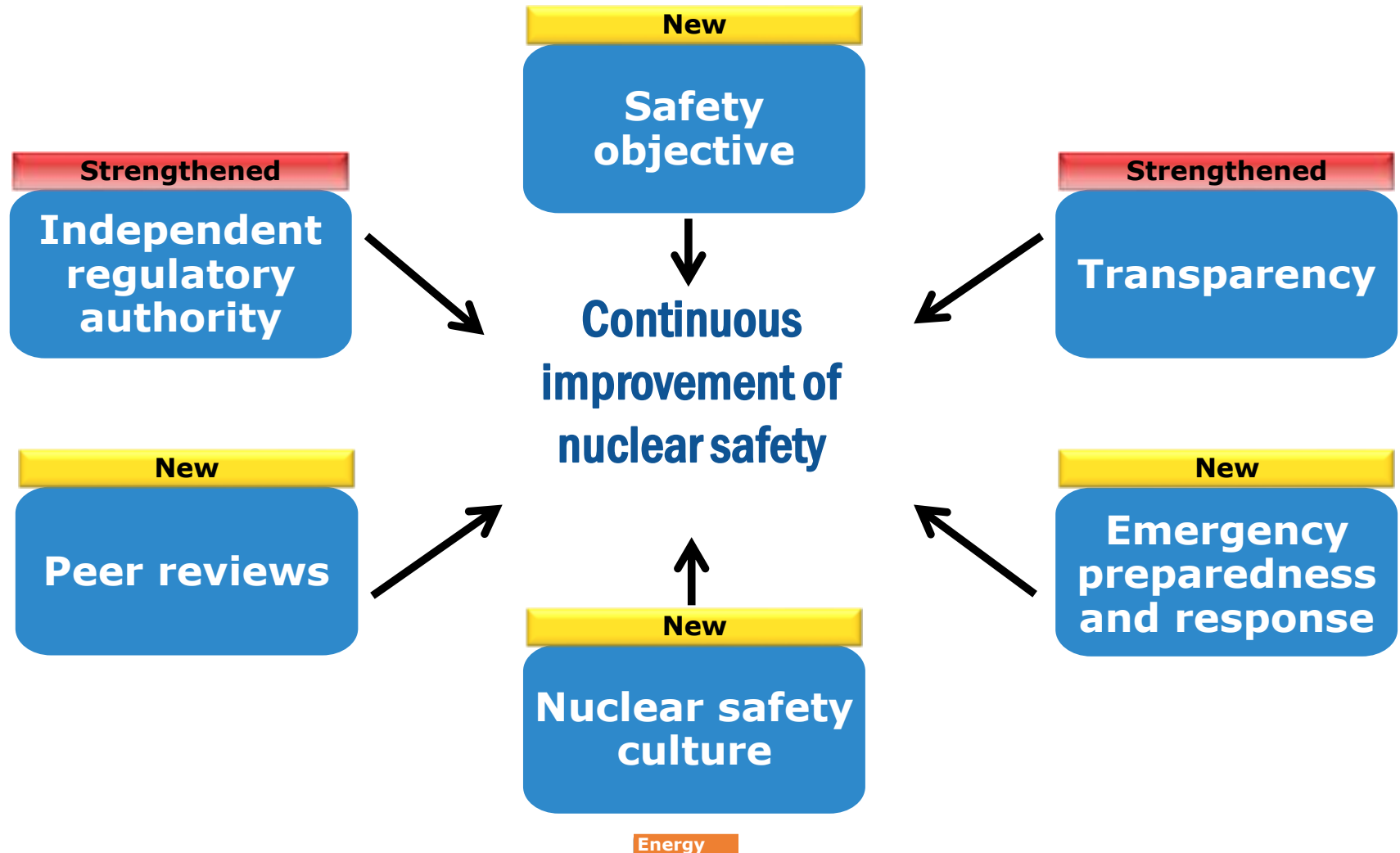
Directive 2011/70/Euratom
Spent Fuel and Waste Management

Directive 2013/59/Euratom
Basic Safety Standards

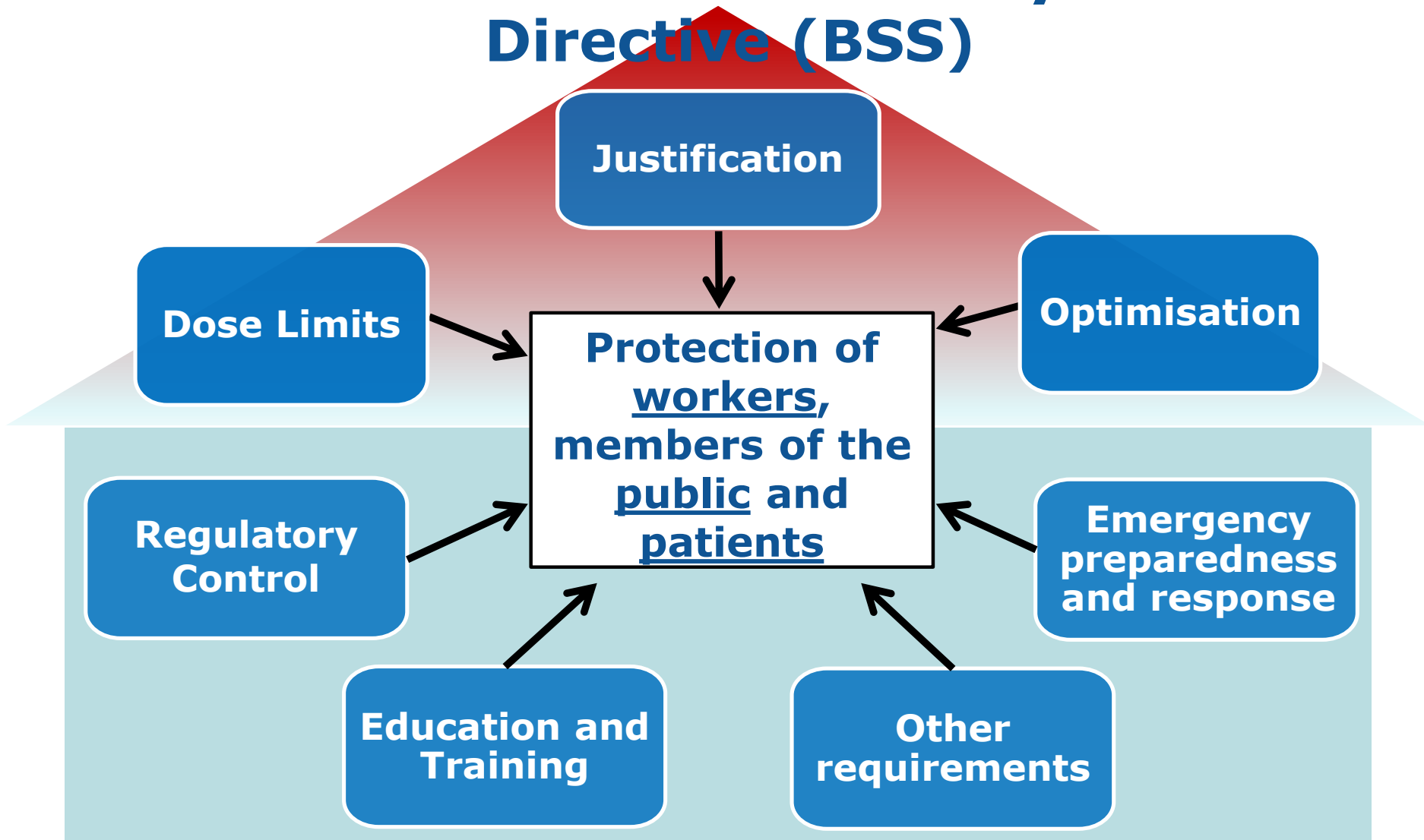
Directive 2014/87/Euratom
Amending Directive 2009/71/Euratom



Amended 2014 Nuclear Safety Directive



Radiation Protection Basic Safety Standards Directive (BSS)



How these provisions apply on-site and off-site



Provisions of Nuclear Safety Directive

Provisions of Basic Safety Standards

- Design to avoid early, large releases
- Defence-in-depth
- Accident prevention, management, mitigation
- Organisational structure
- Assessment of emergency situations
- Management emergency exposures
- Emergency response plans, protective measures, notification, emergency workers
- International cooperation
- Information to the public
- Transition from emergency to existing exposure situation.

EU Funding Activities in Nuclear Safety

The Commission is funding relevant activities and projects in both fission and fusion under the **Euratom Research and Training Programme**:

- to pursue nuclear research and training activities with an emphasis on the **continuous improvement of nuclear safety**, security and radiation protection.
- to further develop technological leadership and expand R&D capabilities, with a priority for research dedicated **to the safety of operating NPPs**.

Strengthening Nuclear Safety beyond the EU



- **Memorandum of Understanding** with the International Atomic Energy Agency (IAEA) on nuclear safety
- Participation in the **review meetings** of the **Convention on Nuclear Safety** (CNS)
- Support for the objectives of the **Vienna Declaration on Nuclear Safety** adopted by the Contracting Parties to the CNS (2015)
- Implementation of EU stress tests **in third countries**: Taiwan (2013), Armenia (2016), Belarus (2018), Iran (ongoing), Turkey (soon planned)

European Instrument for International Nuclear Safety Cooperation (EI-INSC)

- EI-INSC proposed by EC on **14 June 2018**.
- Focus on **EU neighbourhood**, but worldwide instrument.
- **3 pillars:**
 - Nuclear Safety and Radiation Protection
 - Safe management of spent fuel and radioactive waste
 - Effective safeguards for nuclear material
- Thanks to a **wide expertise**, the EU external assistance programme supports the **improvement of nuclear safety around the world**.

A Safe Nuclear Energy in the context of the Green Deal



- The Commission recognises **the role of nuclear** energy and its contribution to energy security and reaching decarbonisation targets in those countries that decide to use nuclear energy.
- Nuclear-generated electricity is expected to remain EU-wide **at around 15% by 2050.**
- The Commission can play a role in supporting the safety of nuclear energy in the EU and beyond.

Conclusion

- The Commission attaches great importance to the highest standards of nuclear safety, not only within the EU but also beyond.
- We have an advanced EU/Euratom legal framework for nuclear energy, ensuring that those MS who chose nuclear are complying with the highest safety, radiation protection and safeguards standards.
- The transition to a fully decarbonised economy requires progress in research, development and innovation – in making it competitive and safer.



European
Commission

Thank you for your attention!