Resilience of the nuclear sector in Europe in the face of pandemic risks

6th ENSREG conference on nuclear safety in Europe – 20 June 2022

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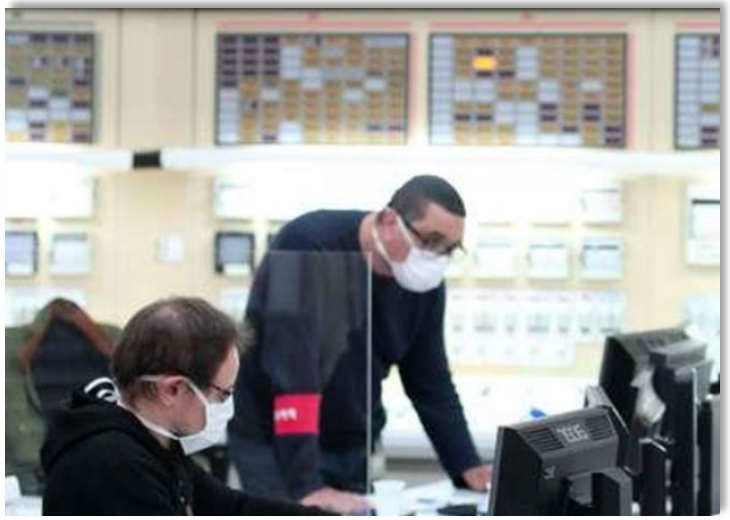
Early 2020:

Infection risks, quarantine, lockdowns, travel restrictions…



- Member States, national regulatory authorities, licensees, European institutions **reacted quickly**: assessing potential impacts, updating and enacting business continuity plans, monitoring the pandemic, taking mitigating measures
- **Immediate concerns**: maintaining essential energy production, staff availability, supply of medical radioisotopes, transboundary movements - free movement of people, delivery of essential goods
- Paramount importance of **maintaining nuclear safety**

Survey of ENSREG members, March 2020

- Priority to **electricity production** while **maintaining nuclear safety**
- **Business continuity plans** activated
- Ensuring **minimum staff presence** for operations, maintenance as per licence conditions
- **Regulatory oversight** continuing, including through teleworking. Focus on major installations, some delay on other uses of radiation (medical, industry)
- Some licensees **re-scheduling outages** for refuelling and maintenance to minimise interruptions
- **organisational challenges**, changes in work process, communication means, safety systems inspections, cybersecurity
- **Medical radioisotopes supplies** a concern due to disruptions to air-freight, delays due to re-routing, enhanced border controls for road transport
- Ensuring continuity of **EP&R** arrangements

Examples of EU-level actions

- EC **guidelines to facilitate the free cross-border movement of critical workers** and to ensure the availability of goods [C(2020) 2051 final, 30.3.2020]

- Based on MS's experiences across sectors - 'Commission Staff Working Document, **Energy Security: good practices to address pandemic risks**' [SWD(2020)104 final, 2.6.2020]

- Facilitating information exchange amongst European nuclear safety regulators (**ENSREG**) on nuclear safety aspects

- Monitoring impact of the COVID-19 pandemic on **medical radioisotope production and transport** (ESA)

- **Liaising and coordination with European and international organisations**, industry groups (IAEA, NEA, WANO, Foratom) (JRC/ENER).

Commission SWD, Energy Security: good practices to address pandemic risks across the energy industry

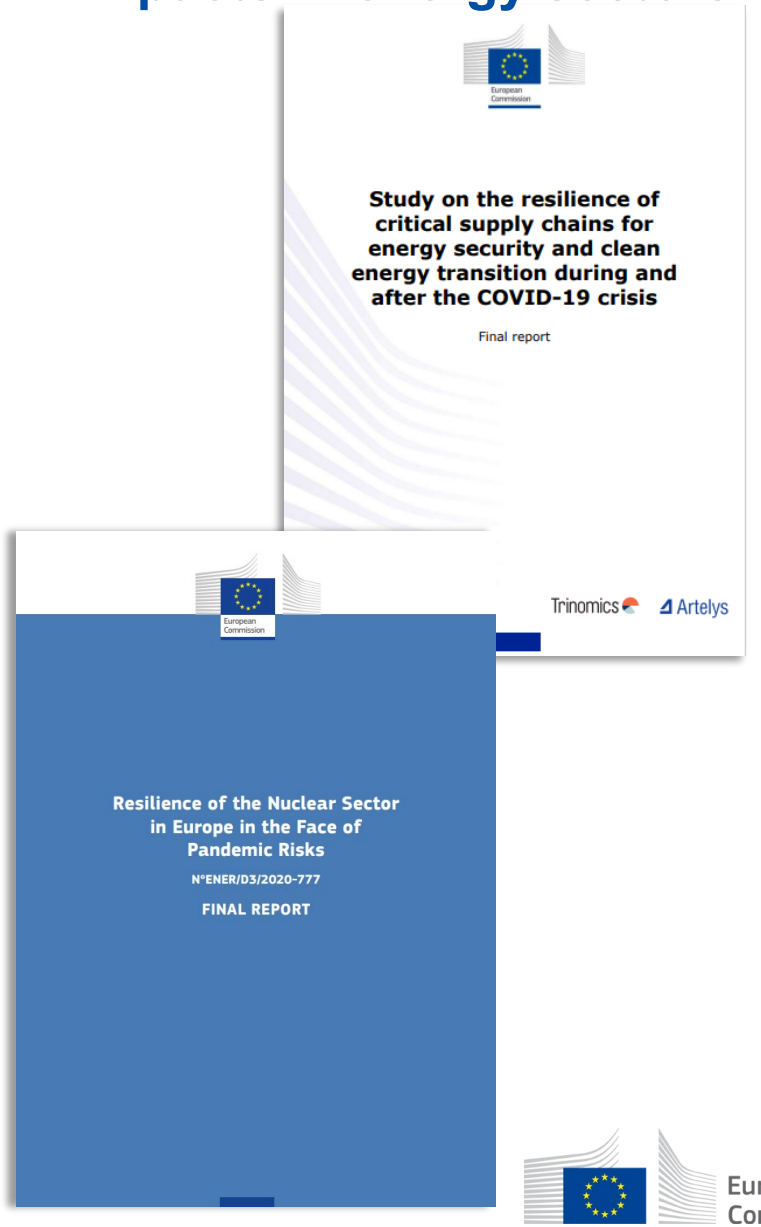
- Recognising the energy sector as an **essential service**;
- Preserving the free **movement of specialised energy workers**;
- Promoting strong **business continuity/contingency plans**;
- Preserving **essential transport flows** to maintain energy supply chains;
- Supporting **cross-border cooperation**, coordination, communication and information sharing;
- Highlighting **pragmatic risk based approaches**;
- Alerting on **economic impact** on energy companies, subcontractors, investors.

2021-2022: EC studies to assess actual and longer-term impacts in energy sectors

- "***The resilience of critical supply chains for energy security and clean energy transition during and after the COVID-19 crisis***" (Trinomics and Artelys)
  - Study focus on the identification of the energy production, supply chains and vulnerabilities. Nuclear fuel supply chain not included in the study

- "***The resilience of the nuclear sector in Europe in the face of pandemic risks***" (NucAdvisor)
  - Study focus is on: Operation continuity, nuclear safety, supply chain, radioisotopes production and distribution

(Both studies are available on https://energy.ec.europa.eu/publications_en)



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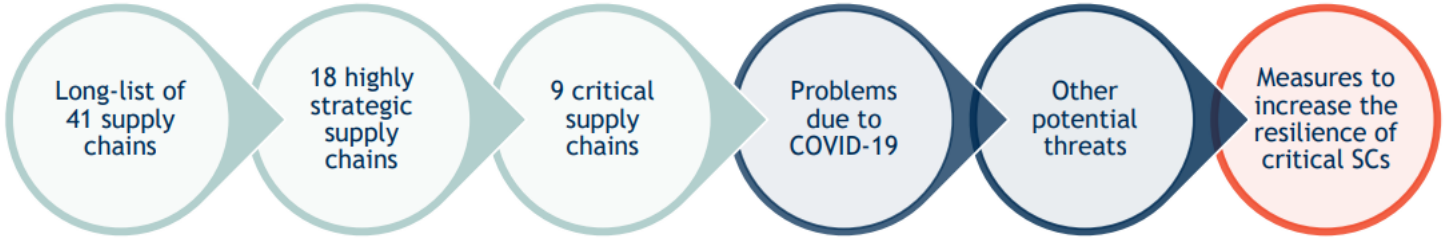
Study findings – resilience of critical supply chains for energy security and clean energy transition

- Study focus on **overall energy production supply chains and vulnerabilities**.



- Transport of supplies
- Staff availability
- Some spare parts production relocated
- Dependency on raw material import, market concentration (iron ore, zinc, nickel, chromium and nickel alloys).

Study findings – resilience of nuclear sector

No immediate safety impact, potential risks/challenges:

- Availability, movement of **critical workers**, access to medical equipment (PPE), testing
- Industry: **access to specialist components**, equipment, **resilience of workforce** in the long term, some supply chain bottle-necks
- Industry and regulators: **vigilance for potential longer-term safety impacts** e.g. due to delayed maintenance, new or modified working methods, inspection challenges
- Covid impact on non power uses; **transport of radioactive material** (eg medical radioisotopes).
- Possible future evolution of pandemic – long term impacts in Europe (e.g delaying new build projects)

Opportunities for mutual learning from crises and disruptive events

(Aarhus Convention Roundtable 2022, session on "*Drawing from the lessons learned from COVID, the emerging challenges for Emergency Preparedness & Response*)

- COVID crisis response provides learning opportunities for long term post-nuclear accident scenarios, e.g. on economic impacts, social services, communication, cross sector response
- Importance of **transparency, trust and communication** - trust building starts before and not during/after an accident
- Benefits of **involving public and stakeholders** in preparedness for managing post-event situations

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Challenges and lessons learned

- Expect **future crisis events**, impact on energy sector
- **Workforce is crucial - Free movement,** maintain **resilience**
- Secure access **to specialised components/equipment**
- **Prepare for transport** sector disruptions
- **Look at longer term impacts,** e.g. large project delays, investments
- Risk assessments, business continuity plans
- Cross-border coordination, contingency/emergency planning, involve staff
- Understand and improve resilience of supply chains, especially across borders
- Work with sector on essential transport flows, functioning of internal transport market
- Attention to potential safety and economic impacts

Conclusions

- **European energy sector** has shown a **good overall resilience**
- **Nuclear sector** remained **resilient thanks to established risk assessment and preparedness culture,** quick **response capacities**
- **Fewer vulnerabilities in the supply chain than in other sectors** (existing diversification geographically, stockpiling)
- **Long term impacts still to be evaluated** (delays in works schedules, economic impact on commercial actors, etc) – **the pandemic is not over**
- **Continued vigilance and preparedness** needed for future pandemic/crisis events

Thank you

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