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ENERGY SECURITY: GOOD PRACTICES TO ADDRESS PANDEMIC RISKS

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1) INTRODUCTION

This document identifies a series of 20 good practices to address risks in the energy sector that are associated with a pandemic, such as COVID-19. It has been prepared following the 'Videoconference of EU Energy Ministers on preparedness and recovery in the energy sector' (28 April 2020).

Society and the economy need a stable and secure supply of energy at all times. The current pandemic is a reminder of how vital reliable access to energy is for citizens and businesses, not to mention hospitals and other essential services. Up to this point, the European energy system has been resilient to shocks stemming from the pandemic, and there have been no disruptions to supply. This is largely due to robust preparedness in Member States and the framework of the European Energy Union.

The nature of the different risks associated with a pandemic are fundamentally new for energy security, and are directly dependent on the pandemic's intensity and duration. Measures regarding distancing, confinement, isolation, remote operation can largely be implemented in the energy sector, this is in contrast to other sectors such as health. At the same time the sector faces unique constraints as regards the continuity of critical operations, safety and the immediate cascading effects across sectors and Member States in case of incidents.

The Member States and the Commission, within their respective fields of competence, have taken the necessary measures to monitor the evolution of the situation, anticipating and mitigating possible impacts. The national competent authorities have made a significant effort to preserve supply to vulnerable customers, including via special social measures, and therefore avoid socially damaging implications of reduced access to energy.

The energy industry implemented exceptional business arrangements to ensure the continuity of critical operations, whilst protecting the health of their workers. Nuclear power plant regulators and operators ensured that there was no adverse impact on nuclear safety and supported continued Euratom Safeguard verifications by the European Commission, as far as safely possible.

This document takes stock of exchanges in the relevant expert groups created through European legislation. These include the Electricity, Gas, and Oil Coordination Groups, as well as the European Nuclear Safety Regulators Group, and the European Offshore Authorities Group. These groups of experts consisting of representatives of Member States, national regulators and relevant European associations have been regularly activated by the European Commission since the beginning of the pandemic. These European fora have played a key role during this pandemic, as well as over the past years. This can be seen in terms of information sharing and collaboration amongst Member States, system operators and relevant energy agents to ensure risk preparedness and cross-border coordination.

This document also integrates the key lessons drawn from the experience of the members of different European associations of stakeholders, and in particular the European networks of transmission system operators for electricity and gas (ENTSO-E and ENTSOG).

The aim of the publication of this document is to contribute to the spreading of good practices to address pandemic risks across the EU. This includes supporting progressive deconfinement measures in Member States and economic recovery, as well as contributing to improved levels of preparedness for possible new or long-lasting waves, and new future pandemics.

2) RISKS AND CHALLENGES FOR THE ENERGY SECTOR

The fight against the COVID-19 pandemic has had a worldwide impact and nearly all countries implemented quarantine measures and social distancing strategies. It has also modified domestic and industrial energy consumption patterns, reducing demand dramatically, notably for the transport sector.

Maintaining energy supply and continuous operation of critical energy infrastructure whilst ensuring health and safety have become the new challenging norms for the energy system. Moreover, these conditions must be maintained within the context of radically new patterns of consumptions and the accompanying risks of instabilities and oversupply, which led or could lead to negative energy prices, an unprecedented situation for the oil and gas markets.

It is worth noting that the steep reduction in electricity demand during the COVID-19 pandemic has led to a higher share of renewables in the electricity mix, while the electricity system and balancing continued operating normally. Moreover, the observed changes in behaviour and business operations have the potential to generate a lasting reduction in energy demand.

The physical closure of borders was another unprecedented challenge. Restrictions to movement and disruption of production in the wider internal market raised concerns over the availability of specialised energy workers and Euratom inspectors, as well as critical and standard components and raw materials. This was also relevant regarding the supply of protective equipment and medical testing for workers performing essential functions in the energy sector. Nevertheless, the internal energy market proved to be resilient, owing also to good preparedness plans and cross-border coordination.

Whilst operational challenges must be addressed to ensure business continuity and manage a deep reduction in demand, the rebound of energy demand could be even more challenging. Therefore, the energy sector has to prepare accordingly.

Furthermore, cyber-attacks and hybrid threats may attempt to take advantage of the crisis by exploiting fear surrounding the pandemic, expanded teleworking, as well as difficulties in patching remotely connected endpoints and defence gaps.

In the medium and long term, the uncertainty of a long-lasting pandemic with associated restrictions of movement could lead to additional energy security concerns, particularly challenging during summer or winter seasons with high level of demand. This is due to possible postponed maintenance, specialised workforce unavailability or lower resilience of workers after long-time shifts or isolation, amongst other issues. The occurrence of simultaneous contingencies, such as technical stresses, human errors, malicious acts or extreme weather events, might challenge the overall resilience of our energy system.

The reliability of critical supply chains will be vital in order to keep the EU energy industry and energy sector functioning. In this regard, the Commission has launched in May 2020 a study to map critical supply chains for the energy sector, in particular for renewable energy sources and grid technologies, in order to improve the sector’s resilience against pandemic and other

threats and ensure energy security and the clean energy transition. This will help to identify the key measures and investments to improve the resilience of these chains.

As a result of the measures put in place to fight against COVID-19 and preserve business continuity, there have been technical delays in works and maintenance operations. For example non-essential maintenance has been postponed and the construction, refurbishment, authorisation and connection of new energy projects to the grid has been delayed. One can expect these delays to stop or reduce progressively as deconfinement measures are unrolled.

However, some large project delays and investment reductions may also be the result of the economic impact of the crisis on energy companies, subcontractors and investors. These delays need to be further assessed to understand its impact as there could be a risk of underinvestment in energy infrastructure and for the achievement of EU climate objectives.

Emergency oil stocks are usually calculated on the basis of the consumption of the previous year. The reduced consumption during the pandemic could therefore reduce the level of emergency stocks when the energy consumption rebounds. The Directive on minimum oil emergency stocks[1] offers Member States flexibility to build future stocks which are more representative of the country's future needs than estimations based on 2020 consumption. The Directive also allows emergency oil stocks to be released to mitigate the impact of bottlenecks in the distribution of certain oil products. This can be the case for domestic fuels, gasoline, or diesel in case of local transport and logistical problems.

Finally, the possible need for revenue of strategic assets may lead to purchases by foreign entities. In these circumstances, where the control of key energy infrastructures and technologies is at stake, there could be an impact on security and public order.

RISKS AND CHALLENGES at a glance:
Short-term: – ensuring energy supply, – movement and availability of specialised energy workers, – movement and access for Euratom safeguards inspectors, – access to components and raw materials that are critical for energy, – access to protective equipment and medical testing for energy workers, – business continuity of critical energy infrastructure, – preparedness to rebound of energy demand, – cyber and hybrid threat preparedness.
Long-term: – uncertainty regarding the duration of the pandemic, – specialised workforce unavailability or lower resilience, – additional unexpected contingencies, including extreme weather events, – reliability of critical supply chains, – impact of delays of postponing maintenance, – large project delays and investment reductions, – non-realistic emergency stockholding for upcoming calendar years, – loss of control of critical energy assets.

[1] https://eur-lex.europa.eu/eli/dir/2009/119/oj

3) GOOD PRACTICES IN THE ENERGY SECTOR

According to the particularities of each energy activity, key practices were identified by different actors to strengthen preparedness in the energy sector and address the pandemic risks and challenges outlined in the previous section.

The Electricity[2] and Gas[3] Directives require Member States to take the necessary measures to protect 'vulnerable' customers in the context of the internal energy market. Energy companies and national authorities (or national regulators depending on the Member State) cooperate closely and carefully in their duty to protect the energy supply to vulnerable customers. This includes monitoring the situation of low-income households, enacted or extended moratoriums on disconnections for households and small businesses in arrears, as well as credit extensions or deferral of bill payments. Vulnerable energy consumers can also be supported indirectly by the national social programs.

In order to ensure the free movement of specialised workers inside Member States and across borders, stakeholders consider it crucial that the energy sector is declared as an essential service when applying national measures against a pandemic. Preserving free movement for specialised energy workers is considered as a priority for inspection, operation and maintenance of energy system installations. This was highlighted in the Commission guidelines regarding the free movement of workers[4], which stress the need to ensure free movement within the EU borders for energy engineering professionals and technicians. This guideline aims to ensure that the relevant expertise can be delivered where required in all Member States, for example in the maintenance of offshore wind farms or in the refuelling of nuclear plants. Special efforts were made to guarantee the continuation of the Euratom safeguard verifications, which ensure the peaceful use of imported nuclear materials.

Preserving essential transport flows within energy supply chains is also key for the sector. This was highlighted in the Commission guidelines on border management and green lanes[5], which supports the access to critical components and raw materials for the maintenance and well-functioning of energy facilities and the development of new projects.

In addition, a well-functioning internal energy market remains vital to ensure energy supply, along with strong risk preparedness plans and business continuity and contingency plans for the energy sector, particularly for critical operators.

The pandemic highlighted how important it can be to leverage the security of supply tools in a spirit of solidarity between Member States: this entails not only solidarity in case of an energy emergency but also cooperation and mutual assistance to prevent crises as it is already envisaged in the regulatory framework. In this regard, the Regulation on risk-preparedness in the electricity sector[6] already identifies the main actions for implementing relevant preparedness measures, in particular on the assessment of crisis scenarios and the adoption of risk preparedness plans by the national competent authorities. Similarly, the Regulation concerning measures to safeguard the security of gas supply[7] requires the adoption of national

[2] https://eur-lex.europa.eu/eli/dir/2019/944/oj
[3] https://eur-lex.europa.eu/eli/dir/2009/73/oj
[4] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020XC0330(03)
[5] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020XC0316%2803%29
[6] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2019.158.01.0001.01.ENG&toc=OJ:L:2019:158:TOC
[7] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32010R0994

preventive action plans and emergency plans for the gas sector based on national and regional risk assessments. Both legal acts also include concrete terms and obligations regarding the provision of solidarity and mutual assistance among Member States.

In the short term, and where safety can be assured, teleworking was made mandatory for non-shift activities and non-essential activities. All non-essential maintenance works and training activities, including emergency drills, could be rescheduled, as soon as they would not jeopardise the energy system, while taking into account the future peak energy consumptions and possible prolongation of the pandemic. However, for the nuclear sector, any changes must be with the agreement of regulatory authorities and must respect licence conditions.

When teleworking was not possible, access to facilities was limited and shifts were reduced to the minimum necessary. Hygiene and sanitary measures were put in place to protect operational staff, including the one of subcontractors, such as intensified cleaning and disinfection, reinforcing air renovation, maintaining social distance, access to protective equipment, paperless procedures with digital signatures and regular medical tests and temperature scans, and always following the competent health authority instructions. Training on hygiene protocols and the wearing of personal protective equipment is relevant for all the staff.

For critical activities, redundancy of control rooms and remote control was applied, where possible. In some cases, establishing isolated base camps and reserves of volunteers for critical infrastructure was considered as appropriate, as well as providing dedicated training aimed at updating the skills of personnel currently working in different areas but with prior experience in control, to increase the pool of personnel available to operate control rooms. Cross border assistance, cooperation and training for operators could also be essential in supporting the energy system, especially for the most affected Member States.

Where possible operators limited the regular exchange of personnel, by reducing the staff to the minimum necessary or by the extension of shifts. In certain key installations, such as offshore platforms or LNG plants, pre-confinement of staff before accessing premises and action plans, including early detection and evacuation measures, was put in place. Specific psychological support to workers staying long-time in isolated places and working long shifts has been suggested.

Cybersecurity becomes essential, as teleworking and remote operations increase. The horizontal Directive on the security of network and information systems[8] and the Commission Recommendation on coordinated response to large-scale cybersecurity incidents[9] apply to the energy sector. The Commission Recommendation on cybersecurity in the energy sector[10] identifies more energy-specific measures needed for implementing relevant cybersecurity preparedness in the sector. In addition, the future Network Code on cybersecurity and electricity will be an important contribution in this regard.

In the nuclear sector, especially where practices are adapted to the current pandemic situation, the main priority is maintaining both a high level of plant safety and Euratom safeguard verifications. This includes conducting maintenance in accordance with regulatory approvals, ensuring emergency response capability at all times and, when possible, on-site supply of fuel for more extended periods for some nuclear power plants.

[8] https://eur-lex.europa.eu/eli/dir/2016/1148/oj

[9] https://eur-lex.europa.eu/eli/reco/2017/1584/oj

[10] https://eur-lex.europa.eu/eli/reco/2019/553/oj

The need was felt to address the economic impact on energy companies, subcontractors and investors, as well as the protection of critical assets following the Commission guidelines on the protection of critical European infrastructure and technology.[11]

GOOD PRACTICES at a glance:

- preserving supply to vulnerable customers,
- declaring the energy sector as an essential service,
- preserving free movement for specialised energy workers,
- preserving essential transport flows moving to ensure energy supply chains,
- well-functioning of the internal energy market,
- strong risk preparedness plans,
- strong business continuity and contingency plans,
- solidarity and cross-border coordination, communication and information sharing,
- teleworking for non-shift activities and non-core activities,
- rescheduling non-essential maintenance works,
- hygiene and sanitary measures, as well as training on hygiene protocols,
- cross border assistance, cooperation and training for operators,
- redundancy of control rooms and implementation of remote control,
- establish base camps and reserves of volunteers for critical infrastructure,
- reduction of regular exchange of personal,
- pre-confinement of staff before accessing isolated locations,
- in key locations, early detection, evacuation measures, specific support to workers,
- reinforce cybersecurity measures and cooperation,
- pragmatic risk-based approach by national regulators, in particular the nuclear sector,
- attention to the economic impact on energy companies, subcontractors and investors.

4) CONCLUSIONS

The current energy preparedness and security regulatory framework provides a strong structure to ensure energy security of supply. This includes clear responsibilities, risk assessments and preparedness plans, contingency measures, cross-border coordination, cybersecurity and minimum emergency oil stocks, amongst others; even greater detail is provided as regards nuclear safety.

Owing to good preparedness over the past years, the energy system has proven resilient to this point. Nevertheless, it is important to remain vigilant as the nature of pandemic risks for energy is fundamentally new and add new constraints to a system which must remain fit to deal with the traditional energy security risks like external supply disruptions, accidents or attacks.

To address these risks and be better prepared, it is up to the different actors in their different fields of competence to redouble the coordination and information flows through coordination groups and other existing communication platforms.

[11] https://eur-lex.europa.eu/legal-content/GA/TXT/?uri=CELEX:52020XC0326(03)

The current crisis has shown how important it is to consider extreme scenarios, such as pandemic risks, possibly combined with climate-induced energy supply crises, when designing preparedness plans. Cross-border preparedness, cooperation and mutual assistance between Member States, regulators, and operators are essential to prevent and manage possible crises in the energy sector.

Redundancy of critical elements and secured digitalisation of activities constitute key elements of the energy security policy, together with strong risk preparedness and business continuity plans of Member States and the energy industry. The pandemic has evidenced the importance of considering the impact of possible prolonged or renewed waves of the pandemic, the implementation of supranational safeguard verifications, and potential restrictions on the mobility of energy workers and supply chains as part of these plans.

Finally, the rebound of demand and the resilience of critical supply chains will likely require in the recovery that all stakeholders remain attentive; this applies to system operators and energy companies as well as to competent authorities, including within the relevant EU expert groups.