A resilient Europe with shockproof electrical installations

Electrical contracting sector's contribution to energy security and preparedness | Briefing

This is EuropeOn's first attempt to assess our sector's role in strengthening Europe's energy security and preparedness. *From a business and association perspective, it aims to spark internal work on developing knowledge and solutions to mitigate risks within our remit. From a policy perspective, it intends to provide our sector's input for, inter alia, the EU's ongoing implementation of the* ***Preparedness Strategy***[1]*, the forthcoming* ***Energy Security Framework review****, and* ***NATO's call for Allies*** *to dedicate up to 1.5% of GDP annually to critical infrastructure and civil resilience*[2]*.*

1. Introduction and context

Energy is far more than a commodity; it is the backbone of our economy and the enabler of our European way of life. Any disruption, either malevolent or accidental, can have devastating consequences for both society and the economy. The Iberian blackout, the attacks on Ukraine's energy system, and the weaponisation of gas supplies against the EU are stark reminders that energy is a matter of security, and vice versa.

Energy security means ensuring that all types of actors have continuous access to reliable, affordable, and sustainable energy, even in the face of shocks or disruptions. And it goes beyond power plants or energy networks. It must reach all the way to end-users so that hospitals stay operational, traffic lights keep cities moving, factories continue producing, citizens can still rely on their fridges and heating systems, and so that everybody gets high-speed communication coverage.

In all these examples, **electrical and digital installations are central and will become a strategic consideration as Europe electrifies end-uses and phases out imported fossil fuels**. Electrical and digital installations refer to all the electrical components, systems and infrastructure that enable the safe and efficient flow of electricity to and within buildings, public spaces and infrastructures such as transport and telecoms. They encompass not only electrical grids and conventional electricity generation systems but also clean technologies such as solar photovoltaic, wind energy, storage, charging infrastructure, heat pumps and smart control devices.

Safeguarding the resilience of electrical and digital installations must become a focal point of the EU's preparedness effort to ensure continuity of energy services for end-users, even during disruptions. Such installations are designed, installed, and maintained by qualified **electrical contractors, over 2.7 million professionals working in 420,000 companies across Europe** (mostly small companies)[3], who are reporting rising expectations from end-users to make their installation more resilient to shocks. Our sector's role is versatile and indispensable to ensuring as little disruption as possible for all end-users:

- **We provide advice and concretely implement the energy transition through electrification.**
- **We build the relevant workforce and skills.**
- **We digitalise the economy and society in a secure way.**
- **We stand ready to provide operational response.**

2. The electrical contracting sector's contribution to energy security

A first mapping of the electrical contracting sector's (realised and potential) contributions to energy security is presented below. Note that some contributions will only materialise if upstream stakeholders request our sector to act (such as electrical contractors' work on grids).

Advising consumers and implementing the energy transition through electrification

- Implementing the energy transition through electrification, digitalisation, decentralisation of energy systems, and energy efficiency by designing and installing electrical systems.
- Providing advice to end-users on which technologies to install.
- Building, maintaining and extending power grids and other infrastructures (telecoms, IT, transport).
- Decongesting the grid with flexible or off grid installations, incl. self-consumption and storage.
- Participating in standardisation to ensure cost-effective and high-quality installation standards.

Building the relevant workforce and skills

- Attracting and employing millions of workers.
- Training millions of workers in Europe with ever-changing technologies and in view of new security threats.

Digitalising the economy and society in a secure way

- Building and operating digital infrastructure, ensuring its availability, high-quality and high-speed connectivity.
- Installing/maintaining infrastructure compliant with cybersecurity and resilience requirements.
- Providing advice to end-users on cybersecurity.

Being ready for operational response

- Providing advice to policymakers and value chain stakeholders in risk-preparedness (incl. stockpiling).
- Providing advice to policymakers and value chain stakeholders on emergency plans and crisis recovery.
- Designing shock-proof installations (including island mode).
- Enabling rapid on-site response thanks to 420,000 companies spread across territories.

A selection of best practices from national associations of electrical contractors:

FINLAND
Electrical contractors are part of the Finnish Emergency Supply Agency to develop preparedness strategies & plan exercises

SWEDEN
- Electricians may be called to compulsory civilian training by the Transmission System Operator
- Guidance on businesses & personnel at war

NETHERLANDS
Sector produced a report assessing 3 crisis scenarios with checklists for installation companies, employees and trade associations to provide resilient solutions to end-users

NORWAY
Brochure on cybersecurity for electrical contracting businesses

SPAIN
- Lessons learnt post April 2025 blackout & guidance on storage
- New trainings in preparation

DENMARK
Awareness campaign: "We look after Denmark's critical infrastructure" + guidance on working for the military

3. First policy recommendations

Building on this mapping exercise, EuropeOn has developed initial policy recommendations for national and EU policymakers, to be refined and expanded as our reflection progresses.

Improve energy security through accelerated electrification and policy continuity

- Implement Green Deal legislations fully and on time, without reduction of agreed targets.
- Ensure EU's upcoming Electrification Action Plan supports demand for electricity, in line with the Clean Industrial Deal's KPI of 32% of electricity in the EU energy mix by 2030.
- Prioritise electrification and resilient electricity/telecom infrastructure within the 1.5% defence-related investment set out in NATO's Hague Summit Declaration from June 2025.

Include the electrical contracting sector in risk-preparedness frameworks

- Include electrical contracting representatives in risk-preparedness stakeholders' consultations, e.g. in Article 10 and Annex of Regulation (EU) 2019/941. Foster systemic public-private cooperation inspired by best practices such as the Finnish Emergency Supply Agency[4].
- Grant necessary operational support to electrical contractors working on critical infrastructure.

Address workforce and skills shortages to strengthen preparedness

- The availability of workforce and skills must be part of all risk-preparedness assessments, which should be followed by corrective measures[5].
- Actively promote technical professions and education through large-scale attractiveness campaigns, updated training curricula, and targeted financial incentives.

Curb cybersecurity threats across the energy value chain

- Support social partners in expanding cybersecurity training for installers.
- Involve our sector in the implementation of NIS2, CER, the Cybersecurity Act, etc.
- Inquire into risks of potential remote control of (clean) technologies by non-European entities.

Enable island-mode operation

- Develop EU guidance on resilient design and minimum functionalities for buildings and electric charging infrastructure. Include electrical contracting representatives in the design.
- Mainstream the ability of photovoltaic systems and/or Battery Energy Storage Systems (BESS) to include certified, seamless island mode operation, with incentives for local energy communities.
- Financial support to islanding should fall under the 1.5% GDP investment targeted by NATO.

Raise public awareness on energy security

- Launch awareness campaigns and practical guidance for citizens, businesses, and local administrations to contribute to energy resilience and cybersecurity through electrification, maintenance, and preparedness. Include electrical contracting representatives in the design.
- Include resilience criteria in public procurement.

4. EuropeOn's next steps on energy security

- Refine evidence and policy asks in our upcoming **White Paper**.
- Further collect and disseminate **best practices** from our sector.
- Engage in dialogue with the wider **electrification value chain** on energy security.
- Produce a **thematic report** exploring one specific dimension of our sector's contribution to mitigating energy security risks with guidance for the sector and policy recommendations.
- Learn from and cooperate with **non-profit associations active in restoring power in emergency zones.**

References

[1] European Commission's webpage on preparedness (LINK)

[2] The Hague Summit Declaration - 25 June 2025 (LINK)

[3] EuropeOn (2024): Electrical Contractors: Problem solvers in a fast-changing Europe (LINK)

[4] Finnish Emergency Supply Agency website (in English) (LINK)

[5] Electricians are identified as a profession facing shortages in 22 European countries, according to the European Labour Authority (LINK)