TRANSNET BW

THE **POWER** BRIEF

Your briefing on the energy transition.

Sustaining the Momentum

TOWARDS F-GAS-FREE GRIDS

Power grids are the backbone of the energy transition. But some grid technologies still rely on harmful fluorinated greenhouse gases (F-Gases). The EU F-Gas Regulation (2024/573) is driving Europe towards a cleaner grid by phasing out F-Gases. Let us build on this momentum which incentivises clean grid technologies.

Europe's energy transition is accelerating.
Every day, new wind farms, solar parks, and digital grids are connecting EU citizens to clean power. But behind the scenes, a quiet revolution is underway: the transformation of the humble electrical switchgear—essential for keeping the lights on and emissions down.

The F-Gas Regulation (2024) is already driving this change.
It sets ambitious, clear targets to phase out the most potent greenhouse gases, like SF_6, from our grids. Grid operators are on board, investing in innovative, climate-friendly alternatives and working with manufacturers to deliver a secure, affordable, and sustainable energy future.

But that path risks derailing as new proposals are being called on the table:
Should electrical switchgear also be subject to the Ecodesign for Sustainable Products Regulation (ESPR)? At first glance, it appears like a win for the environment. Now, dig deeper, and the story is less clear-cut.

3D visualization of the new gas-insulated system – nitrogen/oxygen (N2/O2) alternative gas mixture 'CleanAir' distributed by Siemens Energy

Why layering rules could backfire

- **The Overlap Dilemma:** Overlapping rules across the F-Gas Regulation and the ESPR framework result in confusion, risk legal uncertainty, and can slow-down grid upgrades—just when Europe needs speed and clarity.
- **Innovation at Risk:**
  The F-Gas Regulation already incentivises greener (F-gas-free and Per- and Polyfluoroalkyl Substances-free) solutions. The inclusion of electrical switchgear into the ESPR framework would impose a life-cycle assessment. This, however, is nothing more than a backdoor within the ESPR framework to favour technologies that appear climate-friendly (i.e. low carbon footprint) but still rely on F-gases, thus undermining the very ambition of the F-Gas law.
- **Strategic Autonomy Matters:** Some alternative insulation gases, like Fluoronitrile (C4FN), are currently only produced in China. More red tape could deepen this dependency, at odds with Europe's push for supply chain resilience.
- **Bureaucracy vs. Progress:** ESPR requirements on top of the existing F-Gas requirements would come along with monitoring and reporting obligations and some proof of life cycle assessments. The details would still have to be specified, adding red tape besides uncertainty.

The facts

- **SF_6 is 23,500 times more potent than CO_2.** The F-Gas Regulation is already phasing it out, with clear deadlines for every voltage level.
- In the EU, **80% of high-voltage air-insulated switchgear already meet GWP <1 standards**, which means their insulation gases have a global warming potential equal to or less than carbon dioxide. The industry is advancing, so let's keep up the momentum.
- **Monopoly warning:** Some technologies have only one supplier. The F-Gas Framework needs to balance innovation incentives for manufacturers with costs for EU citizens.

A consistent path forward

Europe's grid operators are not asking for less ambition. They're asking for consistent and forward-looking regulation that keeps the momentum going, while keeping risks and costs for grid operators in check:

- **Accelerate the planned market assessment** for high-voltage switchgear (F-Gas Art. 35(5)).
- **Extend the two-year limit** on the "monopoly clause" to keep competition alive.
- **Focus on what works:** Let the F-Gas Regulation do its job.

The bottom line

The implementation of Article 13.13 of the F-Gas Regulation, which proposes to regulate electrical switchgear under the ESPR, would obstruct the clear path already set out by the F-Gas Regulation. Policymakers should resist the efforts that seek to undermine the current regulatory progress, ensuring that the momentum towards a greener grid is not derailed by unnecessary policy overlap.
Europe's energy transition depends on a grid that is not just green, but also secure, affordable, and innovative. Let's keep our eyes on the prize: a resilient, climate-neutral power system — without tripping over our own red tape.

Further information

For the full picture, please read this Statement by Grid Operators on the potential inclusion of switchgear into the ESPR framework.
On our TransnetBW Policy and Regulation homepage you will find our current contact persons as well as further thematically organized information, position papers and concept studies.