

Ksandr Live XL 2025

The Ksandr logo is displayed in the center of the image. It consists of a blue stylized 'K' followed by the word 'sandr' in a dark blue serif font. The background is a faded image of high-voltage power lines and pylons.

Ksandr

Het collectieve brein voor de instandhouding
van het Nederlandse elektriciteitsnet.

AAN DE SLAG MET DE FGAS VERORDENING

**MARTIJN HILDEBRAND
ROBERT VOSSE**



2024/573

20.2.2024

REGULATION (EU) 2024/573 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 7 February 2024
on fluorinated greenhouse gases, amending Directive (EU) 2019/1937 and repealing Regulation (EU)
No 517/2014

(Text with EEA relevance)

Article 13

Control of use

7. From 1 January 2035, the use of SF₆ for the maintenance or servicing of electrical switchgear equipment shall be prohibited unless it is reclaimed or recycled, except if it is proved that reclaimed or recycled SF₆:

- (a) cannot be used on technical grounds; or
- (b) are not available in the event of an emergency repair situation.

In such cases, the user shall provide evidence, upon request, setting out the justification for use to the competent authority of the Member State concerned or to the Commission.

This paragraph shall not apply to military equipment.

9. The putting into operation of the following electrical switchgear using, or whose functioning relies upon, fluorinated greenhouse gases in insulating or breaking medium shall be prohibited as follows:

- (a) from 1 January 2026, medium voltage electrical switchgear for primary and secondary distribution up to and including 24 kV;
- (b) from 1 January 2030, medium voltage electrical switchgear for primary and secondary distribution from more than 24 kV up to and including 52 kV;

.....

20. The operator shall keep documentation establishing the evidence referred to in paragraph 19 for at least 5 years and shall make it available, upon request, to the competent authority of the Member State concerned or to the Commission.



Europe | June 25, 2025

France blows a fuse over EU rules handing switchgear market to Germany

The dispute revolves around environmental rules that phase out sulphur hexafluoride (SF₆).

FAQ

on switchgear as regulated by the F-gas Regulation (EU) 2024/573

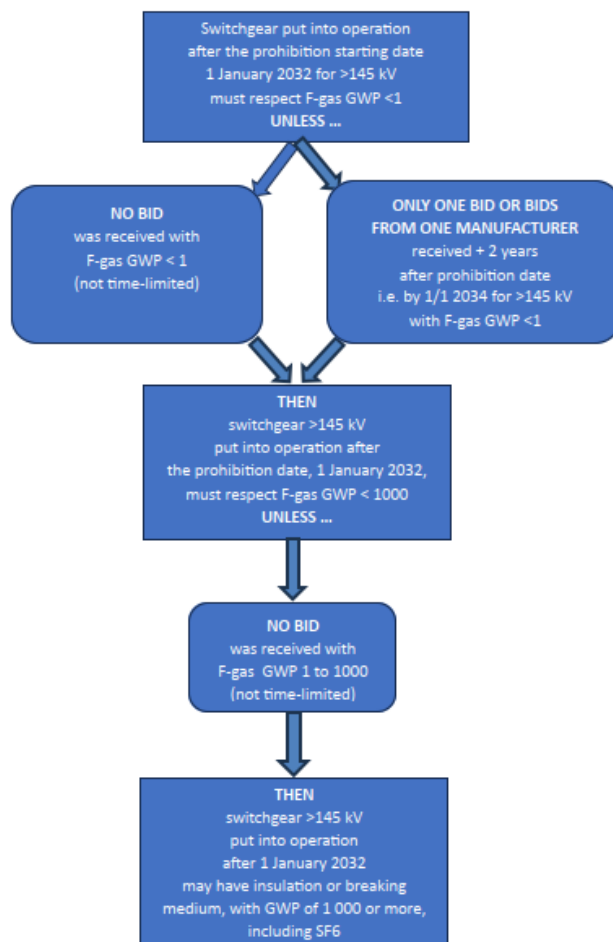
DISCLAIMER: The information here is intended to contribute to a better understanding of the EU F-gas rules relating to switchgear and to ensure a uniform enforcement of the rules, the Member States. The competent authorities in the F-gas Committee have been consulted on the FAQ. However, it does not replace the F-gas Regulation 2024/573 which is the only text with legal force. Furthermore, only the Court of Justice of the European Union can make binding interpretation of EU legislation.

Q1: What is meant by switchgear in the F-gas Regulation?

The definition of what constitutes switchgear under the Regulation is rather broad: “Electrical switchgear” means **switching devices and the combination of such devices** with associated control, measuring, protective and regulating equipment, and **assemblies of such devices and equipment** with associated interconnections, accessories, enclosures and supporting structures, intended for usage in connection with the generation, transmission, distribution and conversion of electrical energy (Art 3(33)).

https://climate.ec.europa.eu/eu-action/fluorinated-greenhouse-gases_en

Figure 1: Illustration of the cascaded restrictions for the use of F-gases for high voltage switchgear with a rated capacity of more than 145kV (Article 13(11)-(13))





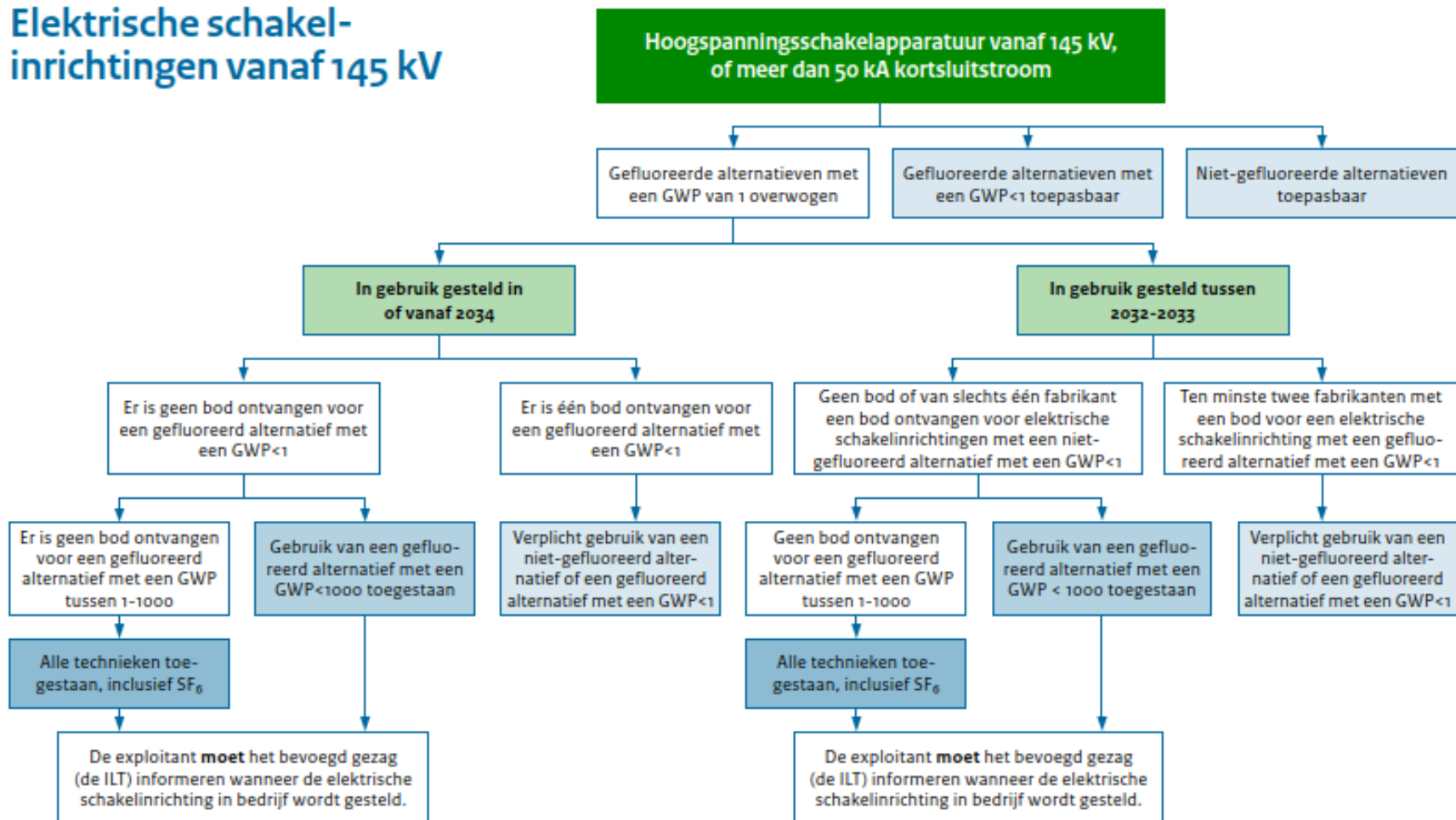
Rijksoverheid

Beslisboom voor SF₆ in midden- en hoogspanningsschakelinstallaties

Overzicht van regels die het gebruik van gefluoreerde broeikasgassen, zoals SF₆, in elektrische schakelrichtingen conform Artikel 13 van de F-gassenverordening (EU 2024/573) beperken.



Elektrische schakelinrichtingen vanaf 145 kV



SF₆ in midden- en hoogspanning

De belangrijkste veranderingen vanuit de F-gassenverordening

SF₆ en de F-gassenverordening: wat mag wel en wat mag niet (meer)?

De herziene F-gassenverordening regelt het gebruik van SF₆ in elektrische schakelapparatuur en kent regels voor het in bedrijf stellen van elektrische schakelinrichtingen.

Zo mag volgens de verordening met ingang van **1 januari 2035** in principe alleen nog maar **geregenereerd of gerecycled SF₆** worden gebruikt voor het onderhoud of de service van elektrische schakelapparatuur.





Informatiepunt Leefomgeving

Experts in Omgevingswet en leefomgeving

iplo.nl

MARKET

Almost every year, a new SF₆ free switchgear product is introduced in the market with ever-increasing voltage and continuous/short circuit current ratings - the most recent and highest, for now, being 550kV SF₆ free GIS by Hitachi Energy

MARKET

Considering the various factors, from the regulatory changes and net-zero ambitions to technology milestones and successful trials, it is safe to say that the future of gas-insulated switchgear is SF₆-free



SF₆-free gas-insulated
switchgear:
Are we at the tipping
point of adoption?

Siemens Energy to Test SF₆-Free Circuit Breakers in Norway and France

20 August 2025

Siemens Energy has developed a prototype 420 kV SF₆-free circuit breaker that will be pilot tested in Norway and France as part of the EU-funded MISSION project, coordinated by SINTEF Energy Research.



EU FGAS CONSULTATION FORUM
21 OKTOBER 2025
BRUSSELS (HYBRID)

Delen van kennis en ervaringen

- Ksandr SF₆ werkgroep & NB NL
- Impact & successen
- Organisatie
- Samenwerking



Impact en successen

Welke veranderingen heeft de verordening teweeg gebracht en welke successen zijn er geboekt?

- Netbeheerders proactief aan de slag
- DSO's hebben zich voorbereid voor de eerste verbodsdatum ≤ 24 kV
- Intensief contact met leveranciers
- Verschillende pilots gestart
- Participatie in kennisinstituten zoals Cigré

Vraag: wat is er nodig om de successen een vervolg te geven en deze met elkaar te delen?



Organisatie

Is jullie organisatie er klaar voor en wat is er nog te doen?

- ≤ 24 kV goed voorbereid
- Levertijd SF₆-vrije apparatuur loopt op (≤ 24 kV)
- Inpassing componenten > 24 kV
- Beschikbaarheid alternatieven > 24 kV
- Volwassenheid technologieën
- Onzekerheid omtrent ontwikkelingen (Pfas)

Vraag: met welke scenario's houden jullie binnen je organisatie rekening?



Samenwerking

Op welke onderwerpen zou je willen samenwerken?

- Ervaring delen over gebruik van nieuwe installatie, alternatieven gassen en technische uitdagingen
- Duidelijkheid en toelichting op de verordening

Vraag: op welke onderwerpen is eventueel nog verheldering nodig?

