**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)).

**Q2: Which switchgear are subject to restrictions under the F-gas Regulation?**

Those electrical switchgear with one or more fluorinated greenhouse gases (F-gases in Annex I to III of the F-gas Regulation), whether alone or in mixtures. The Global Warming Potential (GWP) of each F-gas is included in the Annexes I-III to the Regulation, and has to be calculated in accordance with Annex VI in case of mixtures. The F-gases that are currently relevant for switchgear are sulphur hexafluoride (SF6), 1,1,1,3,4,4,4-heptafluoro-3-(trifluoromethyl) butan-2-one (also known as fluoroketone and C5FK), and heptafluoroisobutyronitrile (2,3,3,3-tetrafluoro-2-(trifluoromethyl)- propanenitrile) (also known as fluoronitrile and C4FN).

**Q3: How is the use of F-gases restricted in “new” switchgear?**

There are general restrictions for putting switchgear into operation from a certain **starting date** at **four different voltage levels.** Later dates were set for voltage levels for which less alternative equipment choice is currently available. The use of F-gases in the insulation or breaking medium is either prohibited (no F-gas) or allowed only with a GWP of less than 1(Article 13(9)). These general restrictions are subject to derogations, see Q4 and Q5.

**Table 1. General restrictions (subject to derogations)**

|  |  |  |
| --- | --- | --- |
| **Rated Voltage level** | **F-gas rules for**  **insulation/breaking medium** | **Prohibition starting date**  **for putting into operation** |
| <= 24kV | No F-gas | 1.1.2026 |
| >24kV to <=52kV | No F-gas | 1.1.2030 |
| >52kV to (<= 145kV and <=50kA) | Only F-gases with GWP < 1 | 1.1.2028 |
| >145kV or > 50kA | Only F-gases with GWP < 1 | 1.1.2032 |

The operator of the switchgear is responsible for the compliance. The operator is the undertaking exercising actual power over the technical functioning of the switchgear. Where switchgear is put into operation by an undertaking, this undertaking is deemed to be the operator until legal handover to another undertaking which then becomes the operator responsible for compliance. Since there may be delays in putting equipment into operation (considering constraints across construction, manufacturing, delivery, installation, commissioning stages), operators that are planning to put into operation switchgear before the prohibition date that would not be in line with these limitations from the prohibition date, are well advised to contractually regulate who will bear the costs of delays in such a case. Also, since derogations are possible depending on the outcome of the procurement process, it may be useful to ensure that such tenders cover switchgear technologies that would be compliant after the prohibition date (see Q5). In case of non-compliance, the national authorities will decide on the level of sanctions, if applicable.

**Q4: Under what conditions do these general restrictions not apply?**

The general restrictions (Art 13(9)) do not apply in the following cases:

1. **Temporary taking out of operation and subsequent putting into operation** of switchgear at another location in the EU (Art 13(10)).[[1]](#footnote-2)
2. **Order of switchgear** placed before the application date of the Regulation (11 March 2024) (Art 13(14)).
3. **Extensions of switchgear** where the extended device is not compatible with the existing installation and a replacement of the entire installation would be necessary to meet the restriction (Art 13(15)).
4. **Switchgear parts** installed for servicing or repair of existing switchgear (Art 13(18)).
5. If, under the **Ecodesign for Sustainable Products Regulation** a methodology is put in place that establishes that *life cycle CO2 equiv*alent emissions are lower than restriction-compliant switchgear (Art 13(13)). Currently, this derogation cannot be used as such a methodology is not in place.
6. Adoption of a **Commission Decision to temporarily exempt certain equipment** that establishes that the use in line with the general restriction would, for certain equipment, entail disproportionate costs (note, the criteria related to ‘availability of alternatives’ is not relevant due to the derogation mechanism if there is no bid, see Q5) (Art. 11(5)).
7. **Non-availability of equipment for the specific use proven through the procurement outcome** (Art 13 (11) and (12)), see Q5.

Documents relating to the use of these derogations (except the one on spare parts (D)) are to be kept for five years and submitted, upon request, to the Competent Authority or to the Commission.

Also, the operator must notify the Competent Authorities if they use the derogations in B, C and G. Such a notification should, as best practice, be done after the tender procedure has established that a derogation can be used and the decision has been made by the operator to use the derogation, but at the latest when the putting into operation takes place. An early notification may be in the interest of the operator (to avoid high costs at a later stage), in case the Competent Authority should object to the use of the derogation in a particular case.

**Q5: How does the link to the procurement process in the exemption related to non-availability of equipment or low competition work?**

To ensure sufficient availability of switchgear **for the specific purpose and location where it is to be used**, and to prevent abnormally high prices due to low competition on the market, the general restrictions specified in Article 13(9) are subject to derogations that are linked to the outcome of the procurement.

The general restrictions do not apply if the operator demonstrates during the **switchgear procurement process** that:

1. switchgear compliant with the general restrictions is not available after the relevant prohibition starting date, i.e. if **no bid is received**, or, if (until two years after the starting date) **only one bid or bids from only one manufacturer** with compliant equipment were received. If one of these conditions is met, **switchgear using an insultation or breaking medium with a GWP lower than 1000 is allowed,** e.g. fluoronitrile (C4F7N)  mixtures(Art. 13(11)).
2. If the **lack of bids** demonstrates that such technology can also not be obtained for the specific use and equipment, then **any technology can be used, including SF6** (Art. 13(12)).

The derogation linked to the case of no bids received during the procurement processes will remain relevant as long as availability of switchgear meeting all the restrictions for all applications in the EU has not been reached.

The operators must notify the competent authorities when they use this type of derogation and they must keep documents relating to the use of the derogation for five years and submit them, upon request, to the competent authority or to the Commission.

Only one tendering process is needed to demonstrate the absence of alternatives for paragraphs 13(11) and 13(12), i.e. successive tenders over time for the different derogation steps are not needed: The lack of sufficient bids for technologies fulfilling the general restriction or the GWP<1000 as a response to a tender would allow the use of Article 13(12) directly, i.e. use of conventional technology with SF6.

Tenders may not set unnecessary technical criteria with the aim to discriminate against restriction-compliant switchgear where this is not technically required for the specific use.

Figure 1 below illustrates these rules, when applied to high voltage switchgear with a rated capacity of 145kV or more, for which the general restriction for putting into operation starts in 2032. They rules apply in analogy also to the other voltage levels, albeit with different starting dates and initial F-gas limitation (i.e. no F-gases, rather than GWP<1 for medium-voltage switchgear).

Switchgear put into operation

after the prohibition starting date

1 January 2032 for kV 145+

must respect F-gas GWP <1

**UNLESS …**

M

1

**ONLY ONE BID OR BIDS**

**FROM ONE MANUFACTURER**

received + 2 years

after prohibition date

i.e. by 1/1 2034 for kV 145+

with F-gas GWP <1

**NO BID**

was received with

F-gas GWP < 1

(not time-limited)

**THEN**

switchgear 145+ kV

put into operation after

the prohibition date, 1 January 2032,

must respect F-gas GWP < 1000

**UNLESS …**

M

1

**NO BID**

was received with

F-gas GWP 1 to 1000

(not time-limited)

**THEN**

switchgear 145+ kV

put into operation

after 1 January 2032

may have any insulation or breaking medium, including SF6

UNLESS IF

M

1

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

**Q6: The prohibition starting date refers to “putting into operation”. At what point is switchgear “put into operation”?**

Putting into operation is the moment of handover of the equipment to the operator for use/exploitation, after completion of any necessary tests of functionality, performance or other, and any required inspections. On the other hand, energization or connection to the grid is not a requirement.

**Q7:** **What is meant by the phrase “placing the order” Article 13(14)?**

The relevant date is the date when order of the specific equipment was signed. This could be the date of signing a framework agreement if it is specifically determining the equipment and its delivery.

**Q8**: **What do I need to observe when operating switchgear?**

In addition to the obligation to prevent emissions to the extent feasible, there are also other rules that aim at preventing emissions, they include:

* ***Repair and check for leakage***

If a leakage is detected, it shall be **repaired without delay**. (Art. 4(5)).

**Leakage checks** must also be **performed with a certain frequency** if the switchgear **contains 6 kg** **or more** of F-gases as listed in Annex I (SF6 and C4F7N (fluoronitrile)) and is not having either a tested leakage rate of less than 0.1 % per year (and is labelled accordingly); or a pressure or gas density monitoring device with an automatic alert system while in operation.

If leakage checks are required the frequency depends on the amount of gas, see below:

* up to 50 tonnes of CO2 equivalent at least every 12 months,
* between 50 and 500 tonnes of CO2 equivalent every 6 months, and
* over 500 tonnes of CO2 equivalent every 3 months. If a leakage detection system is in place, the control periods double.

For reference 50 tonnes of CO2 equivalent corresponds to 2kg of SF6 and 18.2 kg of C4F7N (fluornitrile).

* ***Ensure recovery***

The recovery of fluorinated greenhouse gases (SF6, C4F7N (fluoronitrile), C5F10O (fluoroketone)) from electrical switchgear is mandatory for the operator and may only be carried out by certified personnel.

* ***Use certified technicians***

Persons carrying out installation, maintenance, servicing, repair and decommissioning of stationary electrical switchgear containing SF6, fluoroketone or fluoronitrile and recovery of any F-gas from stationary electrical switchgear must be certified in accordance with [Commission Implementing Regulation (EU) 2025/627](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202500627).

There are further rules in the F-gas Regulation that are relevant for switchgear, e.g. on labelling.

**Q9:** **How about the use of SF6 for servicing existing equipment?**

There is a new provision in the Regulation on the use of SF6 for the maintenance or servicing of electrical switchgear (Art 13(7)). **From 1 January 2035, only reclaimed or recycled SF6 may be used** for this purpose. In the Regulation ‘reclamation’ means the reprocessing of recovered SF6 to the equivalent performance of a virgin substance, considering its intended use, in an authorised treatment plant (Art 3(13)). Recycling, on the other hand, requires only a basic cleaning process, including filtering and drying (Art 3(12)).

An exception is possible in case of emergency repair if reclaimed or recycled SF6 is not available or cannot be used on technical grounds (Art 13(7)). In ­this case, supporting evidence must be kept and presented to the competent authority and the Commission upon request.

**Q10:** **Are private (company) networks covered by the F-gas prohibitions?**

The prohibition rules in Art. 13(9)(a) and (b) also apply to grids that are owned and/or operated privately, e.g. on the grounds of private enterprises. The terms “primary and secondary distribution” are not meant to exclude such grids, but rather to indicate that the rules apply to all types of grids in the medium-voltage sector.

1. In such a case, the strict emission prevention rules pursuant to Art. 4 must be observed. The release of F-gases must be limited to the greatest extent possible. [↑](#footnote-ref-2)