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EC public consultation on the revision of the F-gas regulation

A Eurelectric response paper

December 2020

Eurelectric represents the interests of the electricity industry in Europe. Our work covers all major issues affecting our sector. Our members represent the electricity industry in over 30 European countries.

We cover the entire industry from electricity generation and markets to distribution networks and customer issues. We also have affiliates active on several other continents and business associates from a wide variety of sectors with a direct interest in the electricity industry.

We stand for

The vision of the European power sector is to enable and sustain:
- A vibrant competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

We are committed to lead a cost-effective energy transition by:

investing in clean power generation and transition-enabling solutions, to reduce emissions and actively pursue efforts to become carbon-neutral well before mid-century, taking into account different starting points and commercial availability of key transition technologies;

transforming the energy system to make it more responsive, resilient and efficient. This includes increased use of renewable energy, digitalisation, demand side response and reinforcement of grids so they can function as platforms and enablers for customers, cities and communities;

accelerating the energy transition in other economic sectors by offering competitive electricity as a transformation tool for transport, heating and industry;

embedding sustainability in all parts of our value chain and take measures to support the transformation of existing assets towards a zero carbon society;

innovating to discover the cutting-edge business models and develop the breakthrough technologies that are indispensable to allow our industry to lead this transition.

Dépôt légal: D/2020/12.105/73

WG Technology
WG Environmental Protection

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Evaluation and Impact Assessment of the F-gas Regulation

Fields marked with * are mandatory.

Introduction

Fluorinated gases (F-gases) are strong, man-made greenhouse gases that contribute to global warming. The most relevant F-gases are hydrofluorocarbons (HFCs), as well as perfluorocarbons (PFCs) and sulphur hexafluoride (SF6). Since 1990, EU emissions of F-gases almost doubled until 2014, after which they started to decline due to EU legislation. They are used in various applications (e.g. refrigeration, air-conditioning, insulation foams), but also in some industrial processes and electrical transmission (SF6).
The current F-gas Regulation (Regulation (EU) No 517/2014) applies since 2015 and aims at reducing EU F-gas emissions by two-thirds by 2030, compared to 2010 levels.
The F-gas Regulation preceded the passing of both the Paris Climate Agreement and the Kigali Amendment to the Montreal Protocol on substances that deplete the ozone layer, where Parties agreed to limit progressively the production and consumption of HFCs. More recently, the EU Commission adopted the European Green Deal Communication and proposed a European Climate Law establishing the framework for achieving the objective of climate neutrality by 2050, including increasing the ambition of 2030 climate targets. Ambitious action to avoid emissions of high global warming potential (GWP) greenhouse gases such as F-gases is key to reaching these objectives.
The inception impact assessment on the F-gas Regulation can be found here.

The purpose of this open public consultation (OPC) is to determine public opinion on the performance of the existing F-gas Regulation to date and on the choice and potential impacts of future policy options. As the evaluation of the current Regulation will be conducted back-to-back with the impact assessment of the Commission proposal for revising the rules, this consultation will cover both.
This questionnaire is split into three parts: general awareness of F-gas (policy) (Part 1), general views on the F-gas Regulation (Part 2) and specialised views on the choice and impacts of the envisaged policy options (Part 3).

About you

* Language of my contribution

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- Croatian
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- ○ Finnish
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- ◉ Business association
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- ○ Consumer organisation
- ○ EU citizen
- ○ Environmental organisation
- ○ Non-EU citizen
- ○ Non-governmental organisation (NGO)
- ○ Public authority
- ○ Trade union
- ○ Other

* First name

Sarah

* Surname

Herbreteau

* Email (this won't be published)

sherbreteau@eurelectric.org

* Organisation name

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Eurelectric

* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

Transparency register number

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- Antarctica
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- Armenia
- Aruba
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- Clipperton
- Guam
- Guatemala
- Guernsey
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- Guinea-Bissau
- Guyana
- Haiti
- Heard Island and McDonald Islands
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- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
- Italy
- Jamaica
- Nepal
- Netherlands
- New Caledonia
- New Zealand
- Nicaragua
- Niger
- Nigeria
- Niue
- Norfolk Island
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- North Macedonia
- Norway
- Oman
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- Palau
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
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- United Kingdom
- United States

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- Rwanda
- Saint Barthélemy
- Saint Helena Ascension and Tristan da Cunha
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The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

- **Anonymous**
  Only your type of respondent, country of origin and contribution will be published. All other personal details (name, organisation name and size, transparency register number) will not be published.
- **Public**
  Your personal details (name, organisation name and size, transparency register number, country of origin) will be published with your contribution.

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Are you involved in any of the following activities with respect to F-gases?

	yes	no
Manufacture/trade/sale of gases	○	◉
Manufacture/trade/sale of equipment	○	◉
Use of equipment	◉	○
Installing, maintenance, leakage checks	◉	○
Recovery, recycling, reclamation or destruction	○	◉
Training and certification	○	◉
Manufacture/trade/sale of equipment with F-gas alternatives	○	◉
Use of equipment with F-gas alternatives	◉	○
Other	○	◉

Which F-gas sector are you active in?

- ☐ Stationary refrigeration/AC
- ☐ Mobile AC
- ☐ Transport refrigeration
- ☐ Fire protection
- ☐ Electronics manufacture
- ☑ Switchgear and related equipment
- ☐ Aerosols
- ☐ Foams
- ☐ Other

Part 1 - Awareness of F-gases

Part 1 seeks to explore your general awareness of F-gas policy

1. Are you informed about:

	Very well informed	Reasonably well informed	Poorly informed	Not informed
Different types of F-gases, their sources, uses and emissions	◉	○	○	○
Impact of F-gases on climate change	◉	○	○	○

EU F-gas policies	◉	○	○	○
International F-gas policies	◉	○	○	○
General international and EU climate policies (Paris Agreement, European Green Deal)	◉	○	○	○

2. Are you familiar with:

	Very familiar	Somewhat familiar	Not very familiar	Not familiar
Containment of F-gases	◉	○	○	○
Training and certification for F-gas personnel	◉	○	○	○
Restrictions related to use of F-gases and equipment	◉	○	○	○
Quota system for F-gases	○	○	○	◉
Company reporting and verification	◉	○	○	○

Part 2 - General views on the F-gas Regulation

Part 2 seeks to gather general views as regards the performance of the F-gas Regulation and the need for any changes

3. What impact has the F-gas Regulation had with respect to its objectives?

	Very positive	Positive	Neutral	Negative	Very negative	Cannot say
Contribute towards meeting the EU's climate targets	◉	○	○	○	○	○
Facilitate the agreement to phase down HFCs under the Montreal Protocol	○	○	○	○	○	◉
Discourage the use of F-gases with high GWP in the EU	○	◉	○	○	○	○
Promote the use of alternative substances or technologies	○	○	◉	○	○	○
Prevent leakage and ensure proper end-of-life treatment of equipment	○	◉	○	○	○	○
Stimulate innovation and develop green technologies	○	◉	○	○	○	○

4. To what extent does the F-gas Regulation contribute to recent related EU or international objectives?

	Contributes strongly	Some contribution	Neutral	Adverse contribution	Cannot say
European Green Deal	○	◉	○	○	○
Montreal Protocol (Kigali Amendment)	○	○	○	○	◉
Paris Climate Agreement	○	◉	○	○	○

5. To what extent has the F-gas Regulation been coherent with other EU and international legislation?

	Fully coherent	Somewhat coherent	Not coherent	Cannot say
Montreal Protocol (Kigali Amendment)	○	○	○	◉
Paris Climate Agreement	◉	○	○	○
Mobile Air Conditioning (MAC) Directive	○	○	○	◉
Ozone Regulation	○	○	○	◉
Ecodesign Directive	○	○	○	◉
WEEE Directive and other waste legislation	○	○	○	◉
Customs legislation	○	○	○	◉

Please elaborate:

1000 character(s) maximum

All answers refer to SF6 only.

6. Does the F-gas Regulation cover all relevant sectors and sub-sectors using F-gases?

- ○ Yes
- ○ No
- ◉ Don't know

7. To what extent have the Regulation's requirements been effective regarding its objectives (see question 3 above)?

	Very effective	Effective	Not very effective	Ineffective	Cannot say

Containment	○	◉	○	○	○
Recovery and producer responsibilities schemes	○	◉	○	○	○
Training and certification	◉	○	○	○	○
Labelling	○	◉	○	○	○
Restrictions on use and equipment	○	◉	○	○	○
HFC quota system	○	○	○	○	◉
Reporting and verification	○	○	◉	○	○
Collection of emissions data	○	○	◉	○	○

Please elaborate:

1000 character(s) maximum

"Containment" measures are effective but they do not consider the increasing quantities of electrical switchgear.
"Recovery" measures are effective in general because of the users' own responsibility. Yet, end-of-life treatment differs, depending on whether the switchgear owner is a large electric utility or a member of the more fractured private market.
On "reporting and verification" there are no provisions in the Regulation for SF6 usage and end-of-life treatment. In some countries (e.g. Germany, Switzerland), reporting & verification and collection of emissions data are part of voluntary agreements which have proven to effectively contribute to the Regulation's objectives.

8. Have the following factors presented important challenges for implementing the F-gas Regulation?

Please rate from 1 (= no challenge) to 5 (=very serious challenge)

	1	2	3	4	5	Cannot say
Lack of technical solutions	○	○	○	◉	○	○
Lack of information and awareness	◉	○	○	○	○	○
General economic situation	○	◉	○	○	○	○
F-gas policies in non-EU countries	○	◉	○	○	○	○
Unjustified barriers in safety standards and codes	○	○	○	○	○	◉
Lack of training on F-gas alternatives	○	◉	○	○	○	○
Illegal imports	○	○	○	○	○	◉
Misuse of quota system	○	○	○	○	○	◉
High number of new market players	◉	○	○	○	○	○
COVID-19 pandemic	◉	○	○	○	○	○

Other challenges:

1000 character(s) maximum

The factors mentioned above have rather a limited influence on the implementation of the F-gas Regulation, except for the lack of technical solutions which represents an important challenge for implementing the regulation.
It is important to note that the Covid-19 crisis impacted research & development on alternative solutions. Delays are estimated to approximately one year. In addition, the Covid-19 crisis weakened companies' financial capacities in R&I. More generally, the pandemic also highlighted existing risks of EU dependency to non-EU suppliers.

9. Have the following measures been effective in preventing illegal activities?

	Very effective	Effective	Not very effective	Ineffective	Cannot say
Inspections	○	○	○	○	◉
Penalties	○	○	○	○	◉
Customs control	○	○	○	○	◉
Market surveillance	○	○	○	○	◉
Reporting and verification	○	○	○	○	◉

Please elaborate:

1000 character(s) maximum

10. Has the F-gas Regulation been flexible enough to respond to:

	Yes	No	Cannot say
Delays in technological developments and/or market disruptions	○	○	◉
New or emerging issues	○	○	◉

11. In what way has the F-gas Regulation impacted:

	Very positively	Positively	Neutral	Negatively	Very negatively	Cannot say
EU competitiveness	○	○	○	○	○	◉
Trade with third countries	○	○	○	○	○	◉
Better stewardship of F-gases by equipment operators	○	◉	○	○	○	○
F-gas policies by other countries	○	○	○	○	○	◉
EU credibility in this area	○	○	○	○	○	◉

12. Has the COVID-19 crisis negatively impacted any F-gas sectors?

- (●) yes
- ( ) no

Please elaborate:

1000 character(s) maximum

The Covid-19 crisis impacted research & development on alternative solutions. Delays are estimated to approximately one year. In addition, the Covid-19 crisis weakened companies' financial capacities in R&I. More generally, the pandemic also highlighted existing risks of EU dependency to non-EU suppliers.

13. Have the costs of the following measures been justified to achieve the objectives (see question 3)?

Please rate from 1 (benefits significantly outweigh the costs) to 5 (Costs significantly outweigh the benefits)

	1	2	3	4	5	Cannot say
Containment	( )	( )	( )	( )	( )	(●)
Training and certification	( )	( )	(●)	( )	( )	( )
Recovery and producer responsibilities schemes	(●)	( )	( )	( )	( )	( )
Labelling	( )	( )	( )	( )	( )	(●)
Restrictions on use and equipment	( )	( )	( )	( )	( )	(●)
HFC quota system	( )	( )	( )	( )	( )	(●)
Reporting and verification	( )	( )	( )	( )	( )	(●)
Collecting emissions data	( )	( )	( )	( )	( )	(●)
National enforcement actions	( )	( )	( )	( )	( )	(●)

14. How costly have the following measures been for business?

Rate from 1(marginal costs) to 5 (very high costs)

	1	2	3	4	5	Cannot say
Containment	( )	( )	(●)	( )	( )	( )
Training and certification	( )	( )	(●)	( )	( )	( )
Recovery and producer responsibility schemes	( )	( )	( )	( )	( )	(●)
Labelling	( )	( )	(●)	( )	( )	( )
Restrictions on use and equipment	( )	( )	( )	( )	( )	(●)
HFC quota system	( )	( )	( )	( )	( )	(●)
Reporting and verification	( )	( )	( )	( )	( )	(●)

16. Is the F-gas Regulation

Rate from 1 (fully agree) to 5 (absolutely not)

	1	2	3	4	5	Cannot say
..clear?	○	◉	○	○	○	○
..consistent?	○	◉	○	○	○	○

Please elaborate:

1000 character(s) maximum

Our assessment is only based on the provisions of the F-gas regulation dealing with electrical switchgear and related equipment.

17. The F-gas Regulation has

Rate from 1 (fully agree) to 5 (absolutely not)

	1	2	3	4	5	Cannot say
..levelled the playing field across the EU	○	○	◉	○	○	○
..increased the level of policy ambition across the EU	○	○	○	○	○	◉
..improved consistency of relevant safety standards and codes across the EU	○	○	○	○	○	◉

18. Do you consider that the F-gas Regulation may lead to an increased accumulation of persistent chemicals in the environment?

- ○ Yes
- ◉ No
- ○ Cannot say

Please elaborate:

1000 character(s) maximum

This assessment only concerns electrical switchgears. The current F-gas regulation allowed for great improvements. But there are currently no satisfying non-SF6 solutions which can lead to stronger requirements in a new F-gas regulation. As a matter of fact, some alternative solutions with manufactured gases (fluorinitriles, fluoroketones) are already available but without a full assessment of their non-toxicity for targeted production.

19. Any other comments

5000 character(s) maximum

Please include any further information useful for this evaluation and impact assessment. In particular, please provide public references to relevant studies, position papers, and case studies or upload relevant documents.

Eurelectric is supportive of the EU commitment to reduce global greenhouse gas emissions towards the achievement of climate neutrality by 2050, as part of the European Green Deal objectives, and is willing to commit further efforts to reduce emissions of fluorinated gases (F-gases) as far as possible.

System operators and generators are ready to support the introduction and deployment of climate-neutral SF6-free technologies where it is cost-effective, technically feasible, toxicologically assessed and where reliable alternatives are available.

All technical grid equipment must meet strong reliability criteria during the entire life-cycle to ensure the security of electricity supply at all times. This also applies to electrical switchgear. In this context, the revision of the F-gas regulation should consider that time is needed to adequately evaluate the reliability during operation of alternative solutions. Any future SF6-free technical solution must be proven to be as reliable as SF6 technology. The availability of suitable and reliable alternatives to SF6 switchgear for use on the distribution networks is a prerequisite to gradually shift away from SF6 use.

Currently, very few manufacturers have made SF6-free products commercially available for voltage levels above 12 kV and in many cases they do not fulfil the same or at least comparable operational suitability and reliability requirements of SF6 solutions. Especially in urban areas it will be challenging to install alternative technologies in certain cases due to spatial constraints. Furthermore, Eurelectric would like to particularly draw attention about the insufficient knowledge on the toxicology associated with alternatives to SF6 gas, as certified studies on targeted quantities have not yet been carried out.

Considering the willingness of system operators and generators to continue and extend their R&D activities together with switchgear manufacturers, the revision of the F-gas regulation should acknowledge that further experience need to be gained with regard to integrating newly developed technologies into the electricity grid. Furthermore, the revision shall also take into consideration national specificities, as different operational environments throughout the European Union require different technical solutions.

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Part 3 - Specialised views on policy options

Part 3 seeks to gather specialised views on the existing regulatory provisions and considered changes to the existing rules. It requires detailed technical knowledge of the F-gas Regulation.

Information for stakeholders:
The following policy options are under consideration:

1. Seeking alignment with the Montreal Protocol
    - Add new phase-down steps beyond 2030
    - Remove some exemptions and thresholds not foreseen by the Montreal Protocol
    - Make separate HFC production phase-down
    - Add flexibility to align with future Montreal Protocol decisions
2. Raising ambition in line with European Green Deal

- Increase HFC phase-down ambition
- Prohibit the use of F-gases where feasible

3. Improve implementation and enforcement
   - Training on non-F-gas alternatives
   - Detailed rules for customs and surveillance authorities,and facilitating the use of the EU Single Window environment for customs
   - Strengthen obligations of economic operators to prevent illegal trade
   - Limit the market players to legitimate participants
   - More comprehensive monitoring

20. Do you agree that the following review objectives are relevant:

Rate from 1 (fully agree) to 5 (strongly disagree)

	1	2	3	4	5	Cannot say
Ensure EU long-term compliance with Montreal Protocol	○	○	○	○	○	◉
Raise ambition in light of the Green Deal and technological progress	○	◉	○	○	○	○
Improve implementation and enforcement	◉	○	○	○	○	○

21. Do you see any other main objective for the revision, keeping in mind that a large number of changes may delay the negotiations and thus prevent quickly fixing urgent implementation issues? Please elaborate:

1000 character(s) maximum

The revision of the F-gas regulation should aim at:
- Supporting, by clear policy measures, alternatives to SF6 which have a low global warming potential in order to induce a stepwise phasedown of SF6 in electrical equipment.
- Proving the alternative solutions' harmlessness on toxicology aspects regarding REACH regulation and promoting fully natural alternative solutions without any fluorinated molecules
- Controlling and managing the end-of-life of SF6 equipment with mandatory waste recovery and recycling
- Reinforcing EU's strategic technology autonomy

22. Do you think the original objectives of the F-gas Regulation (see question 3) and the proposed policy options (see information above) could be better achieved at EU Member State level?

- ○ Yes
- ◉ No
- ○ Cannot say

Information for stakeholders: The EU Single Window Environment for Customs involves establishing automatic links between the F-gas Portal and the IT systems of the Member States' customs authorities via a central system supported by the Commission. This will facilitate the customs clearance process by enabling automatic checks of data in customs declarations with data in the F-gas Portal. Further, it would allow for quantity management of F-gases imported in the Union and help to prevent illegal imports.

23. How important are the following measures for improving implementation and enforcement?

Rate from 1 (very important) to 5 (not important)

	1	2	3	4	5	Cannot say
Training of technicians on F-gas alternatives	○	○	◉	○	○	○
Strengthen the role of customs and facilitate the link with the EU Single Window Environment for customs	○	○	○	○	○	◉
Strengthen obligations of economic operators to prevent illegal trade	○	○	○	○	○	◉
Limit the market players to legitimate participants	○	○	○	◉	○	○
More comprehensive monitoring	○	◉	○	○	○	○
Minimum requirements for penalties at Member State level	○	○	○	○	◉	○

Any other relevant measure for improving enforcement, please specify:

1000 character(s) maximum

Regarding policy options to reduce emissions, a monitoring of SF6 leakage can demonstrate they represent a limited rate of emission compared to other sectors.
The control of entities involved in the disposal of F-gases and regulated substances should be strengthened and the staff performing maintenance of equipment containing F-gases and regulated substances should be regularly retrained.

24. To what extent will the following policy options reduce emissions?

Rate from 1 (large savings) to 5 (no benefit)

	1	2	3	4	5	Cannot say
Increase HFC phase-down ambition in line with technological development	○	○	○	○	○	◉
Prohibit the use of HFCs in applications where they are no longer needed	○	○	○	○	○	◉
Prohibit the use of other F-gases (i.e. SF6, PFCs,..) in applications where these gases are no longer needed	○	○	◉	○	○	○

25. To what extent will the following policy options impact administrative costs?

	Reduce significantly	Reduce	No impact	Increase	Increase significantly	Cannot say
Add new HFC phase-down steps beyond 2030	○	○	○	○	○	◉
Remove some exemptions and thresholds not foreseen by the Montreal Protocol	○	○	○	○	○	◉
Make separate HFC production phase-down	○	○	○	○	○	◉
Add flexibility to align with future Montreal Protocol decisions	○	○	○	○	○	◉
Increase HFC phase-down ambition	○	○	○	○	○	◉
Prohibit the use of F-gases in products or equipment, where these gases are no longer needed	○	○	○	◉	○	○
Technicians training on non-F-gas alternatives	○	○	○	◉	○	○
Detailed rules for customs and surveillance authorities	○	○	○	◉	○	○
Strengthen obligations of economic operators to prevent illegal trade	○	○	○	○	○	◉
Limit the market players to legitimate participants	○	○	◉	○	○	○
More comprehensive monitoring	○	○	○	◉	○	○

26. Where you expect administrative costs to be significant, please quantify them (EUR or person hours) per relevant option:

1000 character(s) maximum

It is complicated to evaluate the cost of non industralised solutions. As as example, developing an alternative solution for primary substations' switchgears costed the French DSO Enedis € 8 million (without taking into account a purchase price 30% higher per unit).

27. To what extent will the following policy options impact operational costs?

	Reduce significantly	Reduce	No impact	Increase	Increase significantly	Cannot say
Add new HFC phase-down steps beyond 2030	○	○	○	○	○	◉
Remove some exemptions and thresholds not foreseen by the Montreal Protocol	○	○	○	○	○	◉
Make separate HFC production phase-down	○	○	○	○	○	◉
Add flexibility to align with future Montreal Protocol decisions	○	○	○	○	○	◉
Increase HFC phase-down ambition	○	○	○	○	○	◉
Prohibit the use of F-gases in products or equipment, where these gases are no longer needed	○	○	○	◉	○	○
Technicians training on non-F-gas alternatives	○	○	○	◉	○	○
Detailed rules for customs and surveillance authorities	○	○	○	○	○	◉
Strengthen obligations of economic operators to prevent illegal trade	○	○	○	○	○	◉
Limit the market players to legitimate participants	○	○	○	○	○	◉
More comprehensive monitoring	○	○	○	◉	○	○

28. Where you expect operational costs to be significant, please quantify them (EUR or person hours) per relevant option:

1000 character(s) maximum

If alternative solutions have higher maintenance costs and a reduced life time in operation, extra costs can be considerable.

As an example, alternative solutions imply monitoring once a year, extra costs are estimated to €50 million more per year for the French DSO Enedis. Reducing the switchgear life time to 30 years can cost Enedis up to €12,5 million. These extra costs are only one part of the problem because additional operation will occur extra technical interventions and works which will increase carbon footprint.

29. Do you expect any of the policy options to impact on:

	Significant effect	Slight effect	No effect	Cannot say
EU competitiveness	○	◉	○	○
Trade with non-EU countries	○	○	○	◉
Employment	○	○	○	◉
Consumer prices	◉	○	○	○
R&D and innovation	◉	○	○	○
Internal market	○	◉	○	○
Specific regions	○	◉	○	○
Non-EU stakeholders and international relations	○	○	○	◉
SMEs	◉	○	○	○
Public health and safety	◉	○	○	○

Where significant, please describe effect for the relevant option:

1000 character(s) maximum

It is clear that a gradual transition to non-SF6 products will incur additional costs for DSOs and generators. However, DSOs are regulated entities which recover their costs through network tariffs. In this context, the additional costs incurred by DSOs for shifting away from SF6 use will feed back into final customers.

A gradual transition to non-SF6 products will push R&D and innovation to develop new, optimised solutions. First alternative solutions are now available. But market development and maturity for alternative solutions differ from voltage level. For HV levels, alternative products still need to be developed and piloted. Fostering R&D and innovation as well as experimentation is thus instrumental to the development of SF6-free technologies for these voltage levels.

A quick evolution of the policies on F-gases can have a negative impact on SMEs for the benefit of major companies. This will drastically reduce the number of suppliers and so hinder competition.

Contact

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Eurelectric pursues in all its activities the application of the following sustainable development values:

Economic Development

- Growth, added-value, efficiency

Environmental Leadership

- Commitment, innovation, pro-activeness

Social Responsibility

- Transparency, ethics, accountability

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