

PRESS RELEASE

PRESS RELEASE15 November 2019 || Side 1 | 4

Launch of user centered study on alternatives to the greenhouse gas SF6 in the energy sector

Fluorinated gases (F-gases) are a family of man-made gases used in a range of commercial and industrial applications. One of it, sulphur hexafluoride (SF6), plays an important role in electrical switchgear. And it is a powerful greenhouse gas, with a global warming effect of 22 800 times greater than carbon dioxide (CO2), when released to the atmosphere. The Fraunhofer Institute for Energy Economics and Energy System Technology IEE and the Grenoble Ecole de Management are performing a research study to investigate extend and socio-economic impact of the usage of SF6 in medium voltage power distribution grids.

This month Grenoble Ecole de Management (GEM) will launch a user acceptance study: New alternatives to SF6 for medium voltage (MV) gas-insulated switchgear installations have not yet penetrated the market. Thus, empirical analysis cannot draw on observed adoption behavior in the market. GEM Energy Management team is using a unique methodology to provide insights into the future market development of new products and services under various scenario assumptions.

GEM carries out a survey including stated preferences choice experiments (SPCE). SPCEs involve constructing hypothetical choice scenarios where alternatives (e.g., products, solutions) are described by a range of attributes (e.g., price, environmental impact, size). Respondents are expected to make trade-offs between these different attributes and select their most preferred alternative. This allows estimating importance weights and willingness-to-pay for multiple attributes, including SF6-free alternatives.

The survey and experiment are targeted at customers of MV switchgear in five different EU countries (France, Germany, UK, Spain and Poland). Respondents are ideally company representatives who have a leading role in the switchgear procurement process. GEM expects a minimum of 1500 survey respondents from the targeted countries.

Furthermore, the yearly emissions of SF6 and greenhouse gas impact will be derived from a detailed asset based model developed by Fraunhofer IEE. This methodology gives the possibility to investigate the impact of future trends and policy measures like grid extension and network developments or incentives and regulations to reduce the use of fluorinated gas (F-gas) in power distribution systems. Using its expertise in power system development and operation Fraunhofer IEE follows a bottom-up approach to calculate the actual installations of medium voltage (MV) switchgear in Germany, France, Spain and Poland. Thus, top-down reporting can be verified. On

Press contact

Uwe Krengel | Phone +49 561 7294-319 | uwe.krengel@iee.fraunhofer.de |
Fraunhofer Institute for Energy Economics and Energy System Technology IEE | Koenigstor 59 | 34119 Kassel | Germany
www.iee.fraunhofer.de

FRAUNHOFER INSTITUTE FOR ENERGY ECONOMICS AND ENERGY SYSTEM TECHNOLOGY IEE

the basis of the calculation the overall SF6 emissions from MV switchgear in Europe will be extrapolated.

The research started in March 2019. Results will be made available for the EU regulatory action to control F-gases as part of its policy to combat climate change. The final results will be presented in a publicly available white paper.

PRESS RELEASE15 November 2019 || Side 2 | 4

For more information, please contact:

Dipl.-Ing. Wolfram Heckmann
wolfram.heckmann@iee.fraunhofer.de

Phone +49 561 7294-126

Fraunhofer IEE
Königstor 59
34119 Kassel
Germany

The **Fraunhofer Institute for Energy Economics and Energy System Technology IEE** in Kassel researches for the national and international transformation of energy supply systems.

We develop solutions for technical and economic challenges in order to further reduce the costs of renewable energies, to secure the supply despite volatile generation, to ensure grid stability at today's high level and to promote the success of the energy transition business model.

With the help of our scientific, technical and operational offerings and solutions, we support our customers and partners from politics and industry.

About Grenoble Ecole de Management (GEM) and the Energy Management Team: GEM is a higher education institution in Management. It delivers 40 national and international programs from the undergraduate to the Doctoral level for about 6000 students.

The [GEM Energy Management team](#) combines research on strategic management, technology innovation and energy policy to create and share knowledge that will help businesses and society move towards a low-carbon future. GEM has developed an expertise in Energy Technology Innovation, in particular employing state-of-the-art quantitative methods to analyse drivers and barriers of adoption.

The **Fraunhofer-Gesellschaft** is the leading organization for applied research in Europe. Its research activities are conducted by 72 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs a staff of 25,000, who work with an annual research budget totaling more than 2.3 billion euros. Of this, 2 billion is generated through contract research. More than 70 percent of the Fraunhofer-Gesellschaft's contract research revenue is derived from contracts with industry and from publicly financed research projects. The international collaboration is supported by branches in Europe, North and South America and Asia.