

SF6 Programme & Learning Event 2023

Technologies for decarbonization of Electrical Transmission and Distribution Grids through F-gas regulations and policies

5 to 7 July 2023, In-person, Berlin, Germany

Background

The global energy system is the largest source of CO₂ emissions. To limit global warming to below 2 degrees Celsius, rapid, and deep reductions in the energy system are essential. System-wide transitions should take place across the energy system value chain with a complete shift in paradigm in production, conversion, and energy usage. Given the complexity and urgency of system transformation, the CTCN is, working together with countries, committed to accelerating support in building a resilient and clean energy system, set as one of 5 areas in the third Programme of Work for 2023-2027.

The recent commitment¹ of the EU Commission to phase down Sulfur Hexafluoride (SF₆) signals that the SF₆-free technologies will accelerate the region's net-zero goal in the energy system. SF₆, which is used as an insulation material in switchgear, is 25,200 times more potent than CO₂ and has an atmospheric lifetime of up to 3,200 years. Therefore, the continued use of SF₆ and other fluorinated gases in high, and medium-voltage insulation is of pressing concern to the energy industry. According to the US Environmental Protection Agency, around 80% of the total SF₆ emissions worldwide are from the switchgear industry. The recent trend of increasing demand in substations for renewable energy systems is even accelerating the use of SF₆.

However, decision-makers, utility companies and T&D manufacturers² who are in a time of consideration of installing new grids or updating them might not be aware of available technology options and their lifetime benefits. SF₆-free technologies are now available with numerous companies in the market for high, medium, and low-voltage applications.

In addition, international and regional regulations which accelerate the development of technology in the EU do not exist in most emerging countries. For instance, among 187 countries that submitted Nationally Determined Contributions (NDCs), only 50 countries covered SF₆ in their GHG mitigation targets.

Objectives

Against this backdrop, the CTCN with the National Designated Entity (NDE) of Germany organizes a 3-day programme/learning event for relevant stakeholders in ministries, energy utilities, and/or power equipment manufacturers nominated by the NDEs, with following objectives:

1. share the EU's best practices on F-gas regulation and enforcement

¹ [Fluorinated gas emission reductions to advance EU fight against climate change](#)

² [Switching Gears for Net Zero Alliance](#)

2. facilitate a site visit to SF6-free technology facilities and training in Siemens and Nuventura
3. create an opportunity where relevant stakeholders can strengthen their knowledge of available technology options and take informed actions for decarbonization pathways in their countries.

Country Participants

Chile, Thailand, Vietnam, Mexico, Kenya, Ghana, Lebanon, Timor Leste, Uganda, Egypt, Senegal
(refer to Annex for the 'List of Participants')

Agenda

Day 1 (Wednesday, 5 July 2023)

Location: Room "Saal 5" (Day 1) Federal Ministry of Economic Affairs and Climate Action (BMWK), Scharnhorststraße 34-37, 10115 Berlin, **Entry at Building Nr. 34 (Tor 3)**

Introduction	
Moderator: Valentin Rudloff, <i>CTCN</i>	
10:00~10:15	Opening Remarks Valentin Rudloff, Climate Technology Specialist, <i>CTCN</i>
	Welcome Remarks Malte Bornkamm, Director, Head of Division, <i>German Ministry of Economic Affairs and Climate Action</i>
10:15 - 10:30	Roundtable Introduction of Participants <i>In chronological order of country name and the expectations</i>

Session 1: Introduction to F-gas Regulations	
Moderator: Claudia Becker, <i>NDE Germany</i>	
10:30~11:00	F-gas – Impact on climate and energy systems, global efforts to mitigate emission Dietram Oppelt and Anders McCarthy, <i>NDE Germany</i>
11:00~12:00	F-gas regulations and implementation (EU and Germany) Dr. Cornelia Elsner, <i>German Environmental Agency</i>
12:00~12:30	Status of F-gas/SF6 regulations in developing Countries Daye Eom, Capacity Building and Network Specialist, <i>CTCN</i>
12:30 - 13:00	Discussion
Lunch break (75 minutes) Location: BMWK	

Session 2: Introduction to SF6-free Technologies in Energy Systems	
Moderator: Claudia Becker, <i>NDE Germany</i>	
14:15~15:00	Presentation: SF6 free technologies in operation - 50 Hertz (Frank Richter)
15:00~17:00	Presentation on SF6 free technologies by German/ European technology providers <ul style="list-style-type: none"> • Siemens AG (Medium Voltage), Thomas Duerr • Nuventura (Medium Voltage), Nicholas Ottersbach, Senior Business Development & Marketing Manager • Siemens Energy AG (High Voltage), Mark Kuschel

Off-site event (optional)

18:00~19:00	1-Hour City Sightseeing River Cruise (Sponsored by NDE Germany)
19:30~21:00	Dinner (on own costs) Location: Weltwirtschaft, John-Foster-Dulles-Allee 10, 10557 Berlin

Day 2 (Thursday, 6 July 2023)

Meeting point: Federal Ministry of Economic Affairs and Climate Action (BMWK), Scharnhorststraße 34-37, 10115 Berlin, **Entry at Building Nr. 37 (Tor 1)** (refer to the map in Logistic Note)

Session 3: Site Visits	
08:00	Departure by bus from Federal Ministry for Economic Affairs and Climate Action from the Meeting point
09:00~10:30	Siemens Energy AG (High Voltage) Address: Paulsternstr. 26, 13629 Berlin Presentation, visit of technology plants & labs Speaker: Mark Kuschel Q&A
11:00~12:30	Siemens AG (Medium Voltage) Address: Nonnendammallee 104, 13629 Berlin Presentation, visit of technology plants & labs Speaker: Thomas Duerr Q&A
Lunch Break (90 minutes) Location: Siemens AG Canteen	
15:00~16:30	Nuventura (Medium Voltage) Address: Wollenberger Str. 4f, 13053 Berlin Presentation, visit of technology plants & labs Speaker: Bettina Bross Q&A
Off-site event	
19:00~21:00	Dinner (sponsored by NDE Germany) Location: Zollpackhof, Elisabeth-Abegg-Straße 1, 10557 Berlin

Day 3 (Friday, 7 July 2023)

Location: Room “**Eichensaal**” Federal Ministry of Economic Affairs and Climate Action (BMWK), Scharnhorststraße 34-37, 10115 Berlin, **Entry at Building Nr. 37 (Tor 1)** (refer to the map in Logistic Note)

Session 4: Discussion on International Cooperation on Implementation and Financing	
Moderator: Claudia Becker, <i>NDE Germany</i>	
09:00~10:00	Introduction to International Cooperation and Voluntary Carbon Markets for Worldwide Mitigation of SF6 emissions Philippe Lempp, <i>GIZ</i>
	Technical/environmental aspects in the context of international cooperation Karsten Burges, <i>Independent Expert</i>
	Flexible Market mechanisms / Article 6 for SF6 emission mitigation Axel Michaelowa, <i>Perspectives Climate Group</i>
10:00~10:15	Coffee Break
10:15~11:00	Export credit financing options (Requirements for bankable projects, project examples) Dr. Philipp Laass, <i>Euler Hermes</i>
11:00~11:45	International climate financing options Richard Amor, <i>European Investment Bank</i>
11:45~12:15	Discussion
Lunch Break (75 minutes) Location: BMWK	
Session 5: Discussion with NDEs on Next Steps – Road towards COP28	
Moderator: Valentin Rudloff, <i>CTCN</i>	
13:30 - 13:45	Wrap up Day 1 - 3 Dietram Oppelt, Anders McCarthy and Lennart Pantel, <i>NDE Germany</i>
13:45 – 15:00	Opportunities and Challenge Mapping Idea generation workshop Participants will reflect on opportunities and challenges along 3 stations: <ul style="list-style-type: none"> - Regulation: Where do you see the biggest challenges in terms of setting up a regulatory framework for F-gases / SF6-free technologies?

	<ul style="list-style-type: none"> - Infrastructure: What are the technology capacity needs in your country? - Financing: What are the financial needs in your country to regulate and introduce SF6-free technologies?
15:00~16:00	Discussion with NDEs on Potential Projects Round table discussion
16:00~16:15	Concluding remarks by BMWK Malte Bornkamm, Director, Head of Division, <i>German Ministry of Economic Affairs and Climate Action</i>