



## Call for Abstracts

The Focus Group  
“Low Carbon and Energy Efficiency” of ESTEP  
is pleased to announce  
the webinar & workshop

### Low carbon heating technologies – current state and outlook

October, 15, 22, 29 &  
November, 05, 2021

#### Deadlines

Submission of abstracts

Sponsor requests

Information of abstract acceptance

Opening online registration

**September 3, 2021**

**September 3, 2021**

**September 17, 2021**

**September 20, 2021**

This webinar, which concludes with an interactive workshop, is aimed at stakeholders involved in low-carbon heating technologies for the steel industry, such as steel manufacturers, solutions providers, academics, research institutes, policy makers.

## BACKGROUND

The main focus regarding the GHG emission reduction in the steel industry currently is in most discussions on the iron reduction and steelmaking processes, where fossil raw materials are mainly used as reducing agents. However, to reach the goals of GHG emission reduction set by the European commission for 2050, it will be important to also implement low carbon technologies for process heating in the steel plant (e.g. ladle and tundish heating) as well as downstream processes, in which fossil sources mainly act as fuels.

The share of GHG emissions of reheating furnaces in rolling mills, strip annealing or galvanizing lines as well as heat treatment furnaces will increase in significance, when emissions of reduction and smelting are reduced by the envisaged transition to carbon free steelmaking technologies. In EAF steel plants the reheating furnaces in rolling mills already are responsible for a considerable share of the energy consumption and GHG emissions.

Green electricity and green fuels like hydrogen, ammonia or biogas, green liquid or solid fuels but also hybrid solutions are options to implement low carbon heating technologies for process heat generation. However, sustainable scenarios for guiding an energy transition process must be identified also taking into account a comprehensive life cycle approach, where measures of impact cover variation of operating cost, final product quality, ESG reporting and safety aspects.

## ABSTRACT SUBMISSION

Authors wishing to present a contribution are asked to prepare an abstract about 1,000 characters. Figures and references can be included (max abstract length 2 pages). Please submit the abstract to the ESTEP Secretariat by e-mail to: [D.Snaet@estep.eu](mailto:D.Snaet@estep.eu). In addition, please indicate the topic and the intention (or not) to submit a paper.

## SCIENTIFIC COMMITTEE

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## PARTICIPATION FEE

The fee is used by ESTEP for workshop organization as well as generation and provision of the proceedings and related publications.

Workshop participation (session 4) is free for all people who participated in at least one webinar session.

- Free for speaker in the related session
- 50 € per person for 1 session
- 150 € per person for all 4 sessions

## TOPICS

### 1. State of the art in low carbon heating solutions

The topic is focused on the already available solutions to implement low carbon heating technologies like electrical, green fuel and hybrid or high efficiency combustion solutions (e.g. high-efficiency recuperative, regenerative and oxy-combustion). Contributions of all stakeholders (plant operators, equipment suppliers, RTO's, academia) are welcome including but not limited to:

- Overview on CO<sub>2</sub> emissions in heating processes and reduction potential by low carbon heating technologies;
- State-of-the art electrical, green fuel and hybrid heating solutions;
- Best practice examples or implementation studies from plant operators.

### 2. Outlook on current developments and upcoming low carbon heating technologies

Outlooks on latest developments in low carbon heating technologies also taking into account the impact of the ongoing energy transition in the iron and steel industry (enhanced EAF scrap/DRI route) are welcome.

### 3. Energy markets and sustainable business cases for low carbon heating

The topic mainly concerns the current and future development of energy markets regarding availability and prices of electrical energy and low carbon fuels as well as possible business cases e.g. for hybrid heating solutions. Digitalization and innovative data analysis techniques applied to the use of energy mix allow to define further optimization of existing assets, as well as highlight potential improvements achievable with the application of low carbon heating technologies on existing assets. Envisioned business cases leveraging the application of data mining, machine learning, digital twins and other digital techniques to the definition of sustainable production scenarios are necessary in order to identify possible transition routes with significant derisking for steelmakers.

### 4. Workshop

The final session will be an interactive workshop in which available solutions and developments as well as missing factors for a wider application of low carbon heating solutions will be discussed. The target is to elaborate first ideas of a roadmap in which requirements for technology developments but also opportunities and risks of the implementation of low carbon heating technologies are collected.

#### Student fee (all 4 sessions)

- 60 € per student (only for first 30 registered students – further students can participate to the workshop paying the standard fee - the student status, e.g. bachelor, master and PhD, must be certified); a certificate of attendance will be released to all the students.

#### Company fees (all 4 sessions)

- 250 € for 2 persons
- 300 € for 3 persons
- 350 € for >3 persons (max 25)

## SPONSORSHIP OPPORTUNITIES

Members of ESTEP interested in sponsoring the event (cost 1,000 €) are invited to contact the ESTEP Secretariat via e-mail: [D.Snaet@estep.eu](mailto:D.Snaet@estep.eu)