



**IEA Bioenergy**  
*Technology Collaboration Programme*

## **ExCo86 e-Workshop**

# **Contribution of sustainable biomass and bioenergy in INDUSTRY TRANSITIONS towards a circular economy**

**19-20 October 2020\***

**Workshop organized by IEA Bioenergy, in collaboration with ADEME**

*\*The workshop was originally scheduled to be in Lyon (France), but due to COVID-19 restrictions it was decided to have an online workshop.*



34 MW biomass heating facility in Lyon. <https://www.usinenouvelle.com/>

## INTRODUCTION

According to IEA's Sustainable Development Scenario (SDS), the use of bioenergy in industry will grow substantially, from approximately 8 EJ today to 24 EJ in 2060. This implies that the industrial sector will be the greatest user of bioenergy after the transport sector, replacing fossil sources in both low- and medium-temperature applications (e.g. for hot water production or for drying), as well as for higher-temperature (HT) applications (such as HT steam supply and for direct use in cement kilns and glass furnaces). Moreover, in the transition to a circular economy, which needs to be increasingly based on recycling and renewable resources, chemicals and materials produced from biomass will play a key role in chemical and process industries.

While there are significant opportunities, the relatively low price of fossil feedstocks as well as its volatility, together with optimized fossil-based production processes and infrastructures, has hampered acceleration in the required transitions to a more biobased economy. The industry sectors seeks good practice examples, access to financing, as well as more dedicated support policies to reach the goals as defined in the IEA Sustainable Development Scenario in a circular bioeconomy.

The workshop intends to share examples of strategies and initiatives of biomass use in industries in their transition to a more circular economy, thereby increasingly moving towards recycling and renewable resources. The aim is also to formulate recommendations to facilitate the deployment of such applications.

To facilitate remote attendance, the online workshop is split up in three parts, with separate focus:

1. Monday 19 Oct, 2-4 pm CEST: Biomass for medium and high temperature heat in industry
2. Tuesday 20 Oct, 10-12 am CEST: Biomass in energy intensive industry sectors like steel and cement industries
3. Tuesday 20 Oct, 2-4 pm CEST: Biomass in chemical/process industries

There will be extended Q&A sessions at the end of each session. Workshop participants can enter their questions through the webinar system, and an interactive tool (SLIDO) will be used to gather input from the audience.

## Monday 19 October 2020

14.00 CEST	<b>Intro &amp; Part 1: Biomass for medium and high temperature heat in industry</b>
	<p>This first session of the workshop will start with introductory presentations of ADEME and IEA on the role of biomass in industry, and will then go into a number of cases and strategies to use biomass for medium to high temperature heat (e.g. steam supply) in industry. The focus in this session is on opportunities to defossilize low- of medium scale industries, such as food industries.</p> <p>Moderators: Jim Spaeth, US DoE (United States); Mark Brown, University of Sunshine Coast (Australia)</p> <ul style="list-style-type: none"><li>- David Marchal, ADEME: the French biomass policy framework</li><li>- IEA - International Energy Agency: the role of biomass in industry in IEA SDS scenarios (name to be confirmed)</li><li>- Olle Olsson, SEI - Stockholm Environmental Institute (Sweden): Market opportunities and effective ways to address barriers for high temperature biomass heat in industry</li><li>- Jaap Koppejan, Pro Biomass (Netherlands): Case studies of biomass providing medium to high temperature heat in industry</li><li>- Minh-Hiep Nguyen, Nestlé (France): General strategies to include biomass heat in food industries</li><li>- Richard O Shea / Jerry D Murphy, SFI MaREI Centre for Energy, Climate and Marine (Ireland): Decarbonisation of whiskey production using circular economy bioenergy system</li><li>- Moderated Q&amp;A</li></ul>
16.00 CEST	End of part 1 of the workshop

## Tuesday 20 October 2020

10.00 CEST	<b>Part 2: Biomass in energy intensive industries - steel &amp; cement sectors</b>
	<p>This session will consider opportunities of biomass in larger, energy intensive industries. Examples are energy provision in cement industries, or provision of sustainable carbon sources in steel industries. There are also options to capture CO2 in these industries and convert them into fuel or products.</p> <p>Moderators: Daniele Thrän, DBFZ/UFZ (Germany) ; Paul Bennett, SCION (New Zealand)</p> <ul style="list-style-type: none"><li>- Ilkka Hannula, VTT (Finland): Prospects for the use of biomass in the steel industry</li><li>- Samane Maroufi, University of New South Wales (Australia): Alternative sustainable carbon sources as substitutes for metallurgical coal</li><li>- Wim Van Der Stricht, ArcelorMittal (Belgium): Turning carbon emissions from blast furnace gas into bioethanol at ArcelorMittal Gent</li><li>- Elliot Mari, ADEME (France): the role of biomass in decarbonization of cement industries</li><li>- Vesa Helanti, VALMET (Finland): Biomass gasification for industrial kilns</li><li>- Dou Kejun, CNREC - China National Renewable Energy Center (China): Biomass in Chinese industry</li><li>- Moderated Q&amp;A</li></ul>
12.00 CEST	End of part 2 of the workshop

**Tuesday 20 October 2020**

14.00 CEST	<b>Part 3: Biomass in chemical/process industries</b>
<p>In the transition to a circular economy, which needs to be increasingly based on recycling and renewable resources, chemicals and materials produced from biomass will play a key role in chemical and process industries. This session will highlight some cases and strategies to reduce reliance on fossil resources in chemical industries and move to biobased products/chemicals.</p> <p>Moderators: Kees Kwant, RVO.nl ; Ed de Jong, Avantium (Netherlands)</p> <ul style="list-style-type: none"><li>- Stéphane Ledoux, AllEnvi (France): Transitioning to biobased in the chemical industry</li><li>- Cas König, Chemport Europe (Netherlands): Green Hydrogen Hub of Europe - Northern Netherlands ten years ahead of the Paris Agreement</li><li>- Michael Duetsch, UPM (Germany): Pulp &amp; paper industries moving to biobased chemicals</li><li>- Amit Goyal, Southern Research (USA): Renewable Acrylonitrile for Carbon Fiber Production</li><li>- Nelo Emerencia, Biobased Industries Consortium (Belgium): Moving forward in biobased industries (to be confirmed)</li><li>- Moderated Q&amp;A</li><li>- Luc Pelkmans, IEA Bioenergy: Summary and conclusions of the workshop</li></ul>	
16.00 CEST	Closure of the workshop

### **Participation:**

Participation to the different parts of the workshop is free of charge, but pre-registration is required (separate for each session).

[Registration part 1](#) - Intro & Biomass for medium and high temperature heat in industry

[Registration part 2](#) - Biomass in energy intensive industries

[Registration part 3](#) - Biomass in chemical/process industries

### **More information:**

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