

STEELANOL

Production of sustainable, advanced bio-ethANOL through an innovative gas-fermentation process using exhaust gases emitted in the STEEL industry 656437



Programme:
H2020 Energy

Topic:
LCE-12-2014

Call for proposals:
H2020-LCE-2014-2

Duration:
01/05/2015 to 31/10/2018

Funding scheme:
IA

Total cost:
€14,560,737

EU contribution:
€10,192,516

Coordinator:
ARCELORMITTAL BELGIUM NV

Project website:
<http://www.steelanol.eu/>

Project description on CORDIS:
http://cordis.europa.eu/project/rcn/195267_en.html

The STEELANOL project's goal is to produce biofuels from the exhaust gases from the steel-making. It particularly aims to demonstrate the possibility to produce biofuels through an innovative gas fermentation process using exhaust gases emitted by the steel industry. The blast furnace to basic oxygen furnace (BF/BOF) gaseous emissions are an unavoidable residue from the steelmaking process and are currently either used for electricity production or flared. Nevertheless, they can be used to produce bioethanol, thereby reducing the usage of fossil fuel molecules and thus significantly reducing greenhouse gases (GHG) emissions.

The process that STEELANOL wishes to demonstrate consists of using a microorganism to ferment the CO contained in the exhaust gases. The microorganism will be able to produce both bioethanol and bio-based raw materials. The steel industry exhaust gases present a high concentration of CO (24%-56%). The STEELANOL technology is expected to uptake around 90% of the CO to produce around 50 kg of biomass (mainly bioethanol) per tonne of steel produced.

A demonstration plant of approximately 25,000 tons of ethanol per year will be built in the ArcelorMittal facilities in Belgium; the first of its kind in Europe, and the largest facility built to date utilising this technology globally. The technology is supplied by LanzaTech and the engineering work will be performed by Primetals. E4Tech develop a sustainability life-cycle assessment of the product.

If fully deployed, this technology could entail the production of 2.5 million tonnes of bioethanol in Europe with emission reductions of 65% compared to fossil fuels and at a competitive cost.

Participants:

AM Belgium
AMMR
PMT
LANZATECH
E4tech UK Ltd

Country:

BE
FR
AT
UK
UK

EU contribution (in €):

€6,615,000.00
€198,590.00
€2,170,962.50
€1,129,258.73
€78,704.50