

*Welcome to the third edition of SIDERWIN e-Newsletter. People registered to the Special Interest Group will receive periodically this email to be informed about the main challenges of the project.*

### SIDERWIN building up of the pilot plant

The building is ready for commissioning of the SIDERWIN pilot at ArcelorMittal facilities in Maizières-lès-Metz (France). We are working on a video showing the building up of the pilot. As soon as it was ready, it will be share on our website and social networks. In the hope that the exceptional situation caused by #Covid19 will not delay the work too much.



SIDERWIN pilot plant building

### M30 General Assembly

The 26-27<sup>th</sup> of March SIDERWIN partners were intended to attend to the M30 General Assembly in Lausanne (Switzerland) where the main achievements of the different work packages during the last 6-month period were going to be discussed and planned the activities for the next months. Finally, due to the health decisions related to the evolution of the Covid-19 virus force us to reduce travel, and the physical meeting in Lausanne was cancelled. Instead, a teleconference Steering Committee took place on the 26<sup>th</sup> of March, while the Executive Committee for reviewing **in detail** the WP developments will be postponed until a safely face to face meeting could take place. We hope it would be as soon as possible.

### SIDERWIN webinar (2020/09/22)

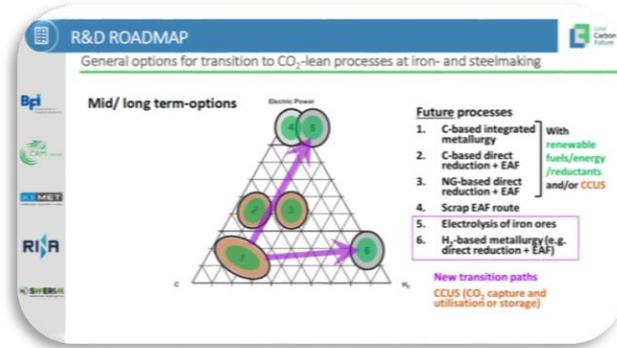
The SIDERWIN webinar is announced for **Tuesday 22<sup>nd</sup> of September 2020**. Soon it will be available in the web and social media the link to register for this interesting event, where the different partners will explain the developments made until date. Stay alert and save the date in your calendar

## Low Carbon Future RFCS Final Webinar

The 24<sup>th</sup> of March 2020 took place the final webinar of the RFCS project *Low Carbon Future* where short-mid and mid-long term-options were identified for the transition to CO<sub>2</sub>-lean processes at iron and steelmaking.

The *electrolysis of iron ore* was identified as one of the main technologies in the mid-term industrial deployment for carbon direct avoidance (CDA).

The target scenario for 2050 is the reduction of the Greenhouse Gas Emissions (GHG) by 80-85% compared to 1990 levels.



Source: RFCS LowCarbonFuture - Final Webinar - Summary and Roadmap\_20200324

## WP6 meeting

Our colleagues from WP6 had a technical meeting in Aveiro on the 11<sup>th</sup> of February 2020 where a thorough discussion on mechanism of iron electroreduction from iron ore and Bauxite Residue\* (BR) suspensions in aqueous NaOH solutions were taken place. They scrutinized, from thermodynamic point of view, all the potential routes of iron electroreduction from ores and BR, discuss the results of “synthetic” BR as a raw material for iron production as well as the electroreduction from Bauxite Residue pellets. Then, the bottlenecks on iron production from BR suspensions were identified and some possible routes that could be helpful on increasing the process efficiency were proposed. The results from some of them were showed and it was realized that, possibly, the application of magnetic field on cathode has a positive effect on electrolysis efficiency.

The general conclusion is that Bauxite Residue has been proved to be a possible raw material for iron production and the milestone MS6 was validated, achieving in lab scale iron electrorecovery from BR with a current efficiency higher than 60%.



Mytilineos's Bauxite Residue storage area

*\*Bauxite Residue (BR) is produced as a red slurry (hence the common term “red mud”) from the Bayer process cycle. It is estimated that for each ton of alumina produced 0.9- 1.5 tons of solid residue is generated depending on the initial bauxite ore grade and alumina extraction efficiency. The current BR production level in the EU is 6.8 Mtpa (million tons per year); while the cumulative stockpiled level is a staggering >250 Mt (dry matter). In Europe, alumina refineries operate in Bosnia Herzegovina, France, Hungary, Germany, Greece, Ireland, Romania, Spain and Ukraine, while significant BR deposits from refineries that have stopped their operations (legacy sites) exist in Italy, France, Germany, Hungary and other countries. The large volume of BR is an ever-growing concern to all alumina producers. In cases where land availability is becoming limited, the ever-growing demand for BR disposal space, ultimately threatens the longevity of established alumina refineries.*

### WP7 meeting

The 6<sup>th</sup> of February 2020 took place in Paris, the WP7 meeting, where our partner N-Side communicated its decision of phasing out of the SIDERWIN project, because of strategic considerations. Recoy – a partner company of N-SIDE – was suggested as the best candidate to continue the significant work started by N-Side in developing the economic model of the SIDERWIN plant.

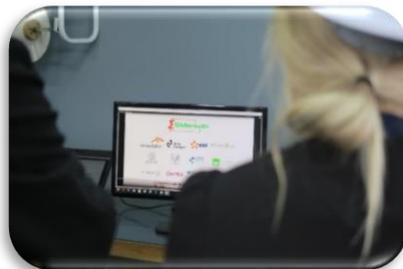
Recoy is a Dutch company based in Amsterdam (The Netherlands) and focuses on valorizing flexibility within the production processes of mainly large industrial sites. Flexibility has a value against the background of volatile electricity prices. Recoy provides a range of short-term electricity forecasts as well as analytical modelling techniques. It has a varied portfolio of customers such as Tata Steel, Nouryon, Nyrstar, Gasunie, Paper-manufacturers, Horticulturists, Equipment manufacturers, Renewable electricity producers etc.

Last week the consortium organized the M30 Steering Committee by teleconference due to #Covid19. The partners approved the joining of Recoy into the Consortium. The corresponding amendment will be sent to the EC.



### Visit of the European Investment Bank

At the beginning of March, our Project Coordinator, Hervé Lavelaine, explained the representatives of the European Investment Bank: Maria Lundqvist, Marc Tonteling and Hervé Lescoeur, the main developments behind the SIDERWIN project. They had the opportunity of visiting the SIDERWIN building at ArcelorMittal facilities.



Visit of European Investment Bank representatives

### SIDERWIN in ECEEE conference

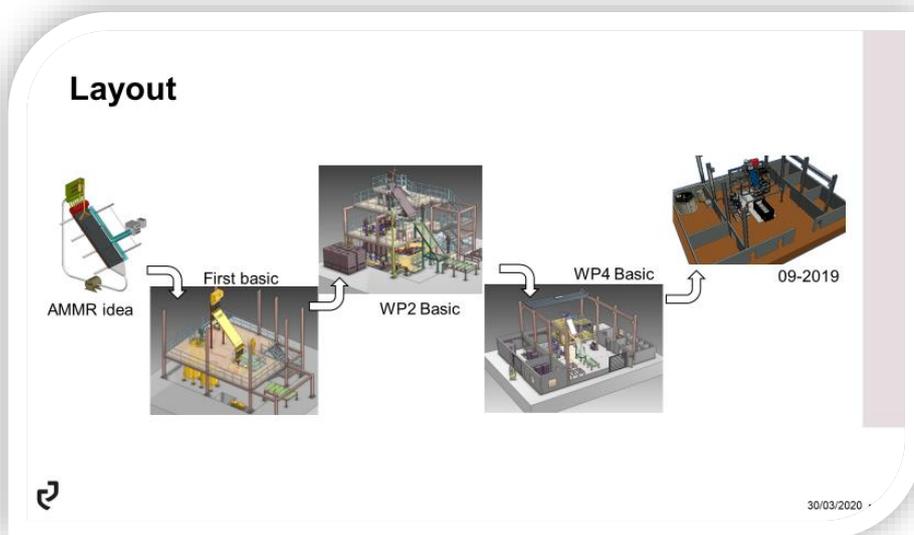
Our colleagues from EDF will attend the Industrial Efficiency 2020 conference organized by the European Council for an energy efficient economy, initially scheduled for June and finally postponed till the 14–16 September 2020, in Gothenburg (Sweden) due to the difficult situation because of the COVID-19 virus and the resulting travel restrictions. The conference paper will communicate the potential benefits, the methodology and the data used in its study about the integration of SIDERWIN industrial development in the future European power system.



Logo linked to ECEEE

### WP4 closing meeting

The WP4 closing meeting scheduled for 16/03/2020 at Maizières Les Metz (France) was replaced by a teleconference due to #Covid19 situation. A very interesting meeting took place on the 25<sup>th</sup> of March, where the main achievements of each task were summarized. The figure below shows the evolution of the layout of the pilot plant, from the first idea to the final design that will be commissioned.



Evolution of the layout of the pilot plant from the initial idea

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