Retrofitting Equipment for Efficient Use of Variable Feedstock in Metal Making Processes - REVaMP

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Lead Beneficiary: **BFI / LSA**

Authors:

Partner	Name
BFI	**Bernd Kleimt**
NCBJ	Martyna Grodzicka-Kobyłka, Tomasz Szczęśniak
SYSKON	Henryk Zastawny
POLON	Andrzej Gajderowicz
Fraunhofer ILT	Cord Fricke-Begemann
LSA	**Markus Dargel**
AMB	Jan Bartel
SIDENOR	Iñigo Unamuno
SIDENOR I+D	Diana Mier
EURECAT	Manel da Silva López
GRUPAL ART	Tomas Baldi, Francesc Peregrín
AZTERLAN	Clara Delgado
GHI HORNOS	Alain Campo
REFIAL	Represented by INATEC
INATEC	Greta Minelgaite
RWTH AACHEN	Felix Kaiser
CARTIF	Clemente Cárdenas
EXIDE	Nuria Jimeno

Dissemination level

PU public ☒

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The REVaMP project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 869882.

1. About REVaMP

The main objective of the project “Retrofitting Equipment for Efficient Use of Variable Feedstock in Metal Making Processes” (REVaMP) is to develop, adapt and apply novel retrofitting technologies to cope with the increasing variability and to ensure an efficient use of the feedstock in terms of materials and energy.

For this purpose, existing metal production plants shall be retrofitted with appropriate sensors for scrap analysis and furnace operation. Furthermore, the selection of the optimal feedstock in terms of material and energy efficiency shall be improved by application of appropriate process control and decision support tools. Also, a solid scrap preheating system operated with waste derived fuel shall increase the energy efficiency of the melting processes. To monitor and control the process behaviour in an optimal way, model-based software tools will be developed and applied.

The retrofitting solutions will be exemplarily demonstrated within three different use cases from the metal making industry, namely electric and oxygen steelmaking, aluminium refining and lead recycling. The performance of the different technologies will be assessed, and the benefits will be evaluated in terms of economic and ecological effects, as well as cross-sectorial applicability in other process industries.

2. Introduction and Summary

The hereby described deliverable D9.3, “Final exploitation workshop” is part of the WP9 “Dissemination, valorisation and exploitation of the project results” within the project. Together with D9.4 “Final dissemination event: joint dissemination workshop with other projects” it is a part of the Task 9.3: “Organisation of Dissemination and Exploitation Events”.

The workshop was planned and prepared in cooperation between Fraunhofer ILT and LSA GmbH, with support from BFI as project coordinator and all other partners.

As part of this hybrid event, the results of the project were presented and discussed with the on-site and on-line participants. After the presentations, the ILT premises and laboratories were visited in a guided tour and the LIBS system was shown as a live demo from the LSA site using a video link.

3. Final exploitation workshop

ILT and LSA organized and conducted the workshop in close cooperation with BFI. The workshop was held in a seminar room on the top floor of the ILT site.

On the one hand, there was enough space for those participants physically attending on site, and on the other hand there was the possibility to participate via Teams with a live stream of presentations and videos.

The workshop was advertised in advance by means of the flyer shown in **Figure *1***, which was distributed by all project partners to potentially interested companies and institutions.

Figure 1: Invitation flyer of the Final exploitation workshop

The agenda of the workshop was as follows:

09:00 Welcome address at ILT (ILT)

09:10 General introduction of the REVaMP project (BFI)

09:20 Software solutions for charge mix and process optimisation (RWTH, EUT, BFI)

09:50 Software solutions for process monitoring and control (BFI, CAR)

10:20 Discussions & Questions Part I

10:30 Coffee Break

10:40 Scrap Preheating System (REF, GHI)

11:00 Alu Q Melt Quality Equipment (AZT)

11:20 Neutron Sensor for metal scrap analysis (NCBJ, SYSKON)

11:50 Presentation of LIBS Sensor for metal scrap analysis (LSA, ILT)

12:20 Discussions & Question Part II

12:30 Lunch break

13:00 Visit of ILT Laboratories & LIBS Live Demo (ILT, LSA)

14:30 End of the Workshop

Each developed solution was presented by the partner who developed it or played a key role in its development. Short discussion rounds were held after each presentation and rounded up by a panel discussion after each thematic block.

The workshop was attended by 15 participants on site, with 4 external participants from industrial companies outside the consortium. In addition, around 35 participants joined the meeting online. **Figure 2** shows a photo of the meeting room during the workshop, with presentation slides and video screen for on-line participants.

Figure 2: Meeting room with live presentation and video screen for on-line participation

The slides of the individual presentations were made available as PDF files to interested participants after the event.

4. Conclusions

Even though the sheer number of participants was not very high, there was a lively discussion after each presentation and many questions were asked and comments made by the interested participants. In particular, the tour of the laboratories and the live demonstration of the LIBS system led to lively conversations and discussions, which were continued also after the laboratory visit. Also, the distribution of the presentation slides allowed to discuss the REVaMP solutions internally within the participating companies and institutions.