



I4-GREEN

I4-GREEN
SME project follow up report
D2.4
21/03/2024

ICAMCYL



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

General information			
Work Package	WP2- SME Engagement and Interregional Industrial Ecosystem Creation		
Deliverable	SME project follow up report		
Due Date	M12 31 October 2023		
Submission Date	M17 21 March 2024		
Deliverable Lead	ICAMCYL		
Dissemination Level	X	Public (PU)	Confidential (CO)
Document Nature	X	Report (R)	Other (O)
Description of the related task and the deliverable. Extract from DoA	<p>Our consortium has already launched and managed third-party funding and cascade calls (see references). In short, managing the Open Call will entail the following steps:</p> <p>(a) Launch of Open Call: Following EC approval, the call and associated material will be published on various platforms, I4-GREEN website and media (WP7), the running innosup project MINE.THE.GAP platform (https://h2020-minethegap.eu/), and the EC portal. A Q&A mail and a detailed FAQ Section (using non-technical language) will be made available to prospective participants. Two members of the project- team will constantly monitor questions from the two channels and ensure prompt reply. Other experts from the consortium will also address questions of a more technical nature as to provide the best possible guidance to SMEs.</p> <p>(b) Evaluation: The pool of evaluators will be formed by external evaluators and will benefit from the best lessons learnt in the evaluation procedure in MINE.THE.GAP coordinated by ICA. A call for interest will be published on the platform to source a pool of external evaluators with diverse profiles (innovation experts, successful entrepreneurs, technology experts, CE experts, etc.). They will be selected based on demonstrated expertise, impartiality and the absence of conflict of interest. Once the open call deadline has passed, the call management team will scan all proposals for eligibility and possible exclusion. Two external evaluators will assess the quality of each eligible proposal, scoring key criteria defined by the call management team. Selected SMEs will be contacted, and grant agreements signed.</p> <p>(c) Grant agreement signature: Grant Agreements will be signed and collected from SME awardees. Applicants may be requested to provide additional documentation and teams on the waiting list would be activated in case a selected team would not complete the grant agreement within the established timeframe. In cases an applicant would fail to provide such documentation or in case the documentation provided is false or incomplete, the I4- GREEN consortium reserves the right to remove the project or SME from the project, and to invite the successive applicants from the ranking list to sign a contract.</p> <p>(d) Monitoring project implementation: 15 SME projects will be funded and linked to both industrial investment Pilots in Extremadura</p>		

	and Andalusia regions (WP3 and WP4). The projects will thus materialize into 15 crossregional innovation projects aiming for upscale and deployment. Each project will be monitored by an Expert from a full I4-GREEN partner (excluding the two Pilots) to ensure Grant Agreement delivery and compliance. Experts will monitor technical and financial items and support SMEs to tap into value generation opportunities for the targeted regionals ecosystems.			
Authors	ICAMCYL			
Reviewers	GEVORA, LEONORE, ATALAYA, LAIN			
Status		Draft	X	Final

Revision History				
Version	Date	Author	Organisation	Status
1	06/03/2024	Antía Fernández	ICAMCYL	Draft
2	15/03/2024	-	GEVORA, LEONORE, ATALAYA, LAIN	Draft
3	21/03/2024	Antía Fernández	ICAMCYL	Final

List of Figures	

List of Tables	

Glossary	
Acronym	Meaning



TABLE OF CONTENTS

1. Executive Summary 5

2. ANNEXES..... 6

1. EXECUTIVE SUMMARY

The purpose of this deliverable is to gather the progress of the SMEs projects awarded in the I4-GREEN Open Call during the first 3 months of its implementation.

The projects awarded in the I4-GREEN Open Call have total duration of 6 months. These projects started on M13 (November 2023) once the sub-Grant Agreements with participating SMEs were signed. As a result, D2.3 (submitted on November 2023) and D2.4 were delayed considering the deviation of the launch of the open call explained in the previous task.

In total 12 SMEs have been awarded, 6 in Pilot 1 IHO (Extremadura, ES) and 6 in Pilot 2 E-LIX (Andalucía, ES).

The summary of the progress done by each SME are collected in the following Annexes.

2. ANNEXES



I4-GREEN

ANNEX I

Pilot 1 IHO (Extremadura, ES) SMEs project follow up reports



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.



INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

**Coverage of the summary: November
2023-January 2024 (M1-M3)**

Project acronym – MINECARE

Date – 20/02/2024



**Funded by
the European Union**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
MINing Environmental and lifeCycle Assessment and Resource Evaluation			
PROJECT ACRONYM			
MINECARE			
AXIS (I, II, III or IV)	I	PILOT (1 or 2)	1
VOUCHER ID (e.g., Voucher 1a)	Voucher 1a		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
FORCERA	FORCERA, LDA	Centro (PT16)	Portugal	ICT

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	João Pereira
CONTACT PERSON ORGANISATION	FORCERA
CONTACT PERSON EMAIL	jcp@forcera.pt
CONTACT PERSON PHONE	+351 926950038

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

To address Voucher 1a (Pilot 1, Axis I), the proposed MINECARE project will employ a Life Cycle Assessment (LCA) methodology and the resulting model will be utilised by the LCInsight Platform to provide visualisation features of the sustainability and life cycle aspects of the mining plant. This approach will assess the environmental risks, energy consumption, and associated carbon emissions of iron ore mining, processing, and transportation activities. With the goal of establishing sustainable mining practices, this comprehensive analysis aims to yield invaluable insights for the I4-GREEN Iron Holm Oak (IHO) Pilot in Extremadura, Spain, with the potential for broader application within the European iron ore industry.

During the first part of the project, FORCERA focused mainly on two tasks. The first task (T1) consisted of a characterisation of activities that take place in Pilot 1 to understand the actions and tools utilised in the considered mining life cycle, in collaboration with the I4-GREEN consortium. This task comprised the assemblage and structuring of all relevant data regarding the mining process, from drilling, blasting, or excavating to haulage and transportation of material.

The second task (T2) regards the Environmental Profiling and modelling phase, which is still ongoing. In T2, the IHO Pilot's environmental footprint model (based on the LCA methodology) is being developed and will be detailed in a deliverable report. The final environmental model will be used to generate an explanatory sustainability analysis based on the LCInsight platform.

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

During the reporting period, several deviations from the planned process have emerged, significantly impacting the development and implementation phases. A primary challenge encountered has been the limited information provided by the IHO Pilot concerning the mining processes. This lack of detailed data necessitated assumptions, such as the iron ore extraction processes, which can potentially affect the accuracy and reliability of our findings.

The impact of these issues on the achievement of project targets cannot be understated. Specifically, the gaps in data have introduced uncertainties in our LCA study, making it challenging to attain the high level of precision and factual accuracy we were aiming for. This situation has required a strategic pivot towards synthesising operational data to fill these gaps. However, this approach carries the inherent risk of producing results that may not fully reflect the actual environmental footprint of the mining operations.

In response to these challenges, FORCERA has undertaken several measures to mitigate the impact on project outcomes. Firstly, we have intensified our communication with IHO Pilot officials to bridge the information gap, advocating for greater transparency and data sharing. Simultaneously, we are exploring modelling techniques to enhance the robustness of our synthesised data, thereby facilitating the LCA study under the constraints imposed by the available information.

Furthermore, this period has necessitated a review and adjustment of our risk management strategy. New risks have been identified, particularly concerning data accuracy and its implications on project credibility. We have promptly elevated these from potential risks to active issues requiring immediate attention.

In conclusion, while the limitations posed by incomplete data from the IHO Pilot present significant challenges, FORCERA remains committed to delivering the best possible outcomes for the project. Through adaptive strategies, we are determined to navigate these challenges effectively and contribute meaningful insights towards sustainable mining practices.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	
	João Pereira, CEO
PLACE AND DATE	FRATEL, 20/2/2024
SIGNATURE*	<div style="text-align: right;"><small>Assinado por: João António Pires Mendes de Campos Pereira Num. de Identificação: 13912706 Data: 2024.02.20 18:24:55 +0000</small></div>

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023-January 2024 (M1-M3)

Project acronym – **Axis 2a .
Hydrological Assessment**
Date – **February 15, 2024**



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
Hydrological Assessment			
PROJECT ACRONYM			
PILOT 1. Axis II. 2a.			
AXIS (I, II, III or IV)	II	PILOT (1 or 2)	1
VOUCHER ID (e.g., Voucher 1a)	2a. Hydrological Assessment		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
Aurora Moreno	AM Global Consultores SL	Andalucia	Spain	Environment

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	Arturo Gutiérrez del Olmo
CONTACT PERSON ORGANISATION	Aurora Moreno
CONTACT PERSON EMAIL	agdelolmo@outlook.es
CONTACT PERSON PHONE	+34 638222961

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

Two objectives were identified from Axis 2A. Hydrogeological Assessment. A hydrological and hydrogeological assessments followed by technological solutions to optimise process water recovery

The project is located within an existing quarry also embracing abandoned operation where Iron Holm Oak focus its value proposition on the Section C exploitation of granodiorites for the recovery of magnetite. The site is located within a Nature 2000 SPA (code ES0000330 Embalse de Valuengo) designated under the EU Directive on the Conservation of Wild Birds and a special area of conservation (SAC SCI Rio Ardila).

With the technical knowledge base gathered from all project components and following the site visit performed supported by Project Sponsor in consultation with other discipline (geology, mining, mineral processing) experts, the project was defined as a 55Mt reserve with head grades in the range of 35-45% Fe and mining recoveries in the range of 50 to 80% depending on exploitation type, which was assumed as a mix of an open pit startup followed by underground development. As such, an average of 100Mmt of mine waste is expected over a 15-year Life of Mine (LOM). Processing could take place at an average ~2,5Mt/year to produce ~1.0Mt/y of a marketable plus 62,5% iron concentrate and 1,5Mt/year of tailings, which assumed as filter cake amount some 12Mm3 of tailings over the 15-year LOM, minimising freshwater consumption to a 2 Mm3/year, available from project internal sources, thus also minimising the need to access external fresh water sources. In parallel, testing performed reports that tailings dewatering allows to recover process water of quality to minimise make-up requirements. Process water requirements, make up water quality and the impact of the waste valorisation (Pilot 1, 1C) scheme proposed will be built into the assessment one concluded.

Surface water sources are driven by the Valuego gravity dam, built around 1950 in relatively close valley holding Ardila River and its tributaries (Parrilla San Lázaro creeks) occupying nearly 253 Ha holding an average 19,30 Hm3 with a seasonal hydrological regime, supporting the protected habitats and the fresh water supply, also minimum irrigation, to the nearby Valuengo distric.

A comprehensive review of water resources, focusing on water bodies, focussing on both qualitative (identifying sources as well as potential pollution sources) and quantitative (ensuring sufficient water for wildlife, irrigation, industrial or human consumption) is under way. The proposed approach is all inclusive, integrating an understanding of the requirements concerning the integrity of entire ecosystems while identifying project potential impacts. Such potential effect will be minimised as mine footprint and mine dewatering activities could supply the remaining fresh water required as make-up water for process purposes. Such study is also under development to estimate the withdrawal of such waters and the likely impacts to nearby sources or users.

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

Access to surface waters for industrial use is possible though a formal hydrogeological study and conformance with the EU Water directive is required. In permitting terms, a concession shall be granted by the River Basin Authority by virtue of which the holder is granted the right to use public waters for the Project.



Prior to the application for the Concession for the use of public waters, and as a result of an overall analysis of the Project, the Water Authority likely request for the Project to apply and obtain exemption from article 4.7 of Directive EU/60/2000, Water Framework, which requires the prior declaration of Overriding Public Interest. The execution of these works will require prior municipal planning permission as well as an application to the Territorial Mining Authority for a declaration of Overriding Public Interest. Such complex procedure requires a much wider technical support than the preliminary hydrogeological assessment object of this study. Assessment which will identify and scope the requirements to the maximum level of detail possible. In any case, the assessment will secure the Project will be driven within the goals of a water-smart industrial approach, this will try to validate water usage to align the project with circular economy and the water framework Directive.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENTS WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	Aurora Moreno Pedrero, AM Global Consultores, S.L:
PLACE AND DATE	Sevilla, Sevilla, Spain February 20, 2024
SIGNATURE*	  <p>Firmado digitalmente por 75518803M JUAN MARTIN (R: B21607973) Nombre de reconocimiento (DN): 2.5.4.13=Reg:21007/Hoja#25506/Tomo:1138 / Folio:148/ Fecha:16/11/2019 /Inscripción:1, serialNumber=DCEES-75518803M, givenName=JUAN, sn=MARTIN CORONEL, cn=75518803M JUAN MARTIN (R: B21607973), 2.5.4.97=VATES-B21607973, o=PROYECTOS TECNICOS Y MONTAJES INDUSTRIALES ONUBENSES SL UNIPERSONAL, c=ES Fecha: 2024.02.22 10:47:51 +01'00'</p>

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023-January 2024 (M1-M3)

Project acronym –

Date –



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
NO TITLE -CONGEO			
PROJECT ACRONYM			
AXIS (I, II, III or IV)	I	PILOT (1 or 2)	1
VOUCHER ID (<i>e.g., Voucher 1a</i>)	VOUCHER 1C		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
	CONSULTORÍA GEOLOGICA, S.L. (CONGEO)	ASTURIAS	SPAIN	MINING & ENVIRONMENT

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	Francisco Ruiz Allén
CONTACT PERSON ORGANISATION	Consultoría Geológica, S.L.
CONTACT PERSON EMAIL	fruizallen@congeo.es
CONTACT PERSON PHONE	+34 633144294

Please, note that the information you provide in sections 2 (progress of the project) and 3 (deviations and solutions) of this document will be made public for communication and dissemination purposes, to make the results of the I4-GREEN project available.

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

Regarding the characterization of tailings and mine wastes, in the first 3 months, the following tasks were planned in the proposal:

- a. Geological information of the deposit and the different lithologies will be collected and a site visit will be paid.
- b. Water analysis, if any, on the area will be collected from the client.
- c. A sampling and testwork plan will be developed so that samples can be taken from the metallurgical tests (tailings) or the drill core (mine waste), according to lithologies/alteration(texture).
- d. Coordination and technical advice will be given to the laboratory.
- e. Laboratory test work.

The following tasks are completed: a) 2 site visits; b) the client has sampled springs and streams in the area around the mine c) a geochemical sampling and testwork plan was prepared and distributed to the client and the laboratory; d) technical advice is ongoing; e) laboratory testwork is starting on: drill-cores, waste dump samples.

2. Preliminary assessment of potential applications.
This task is ongoing.

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

Issues:

- .

Deviations:

- Geochemical laboratory test work is 1 month behind the schedule.

Risks:

- No risk is expected in mine wastes characterization for being 1 month behind. Samples are in the laboratory and timing for the interpretation and risk classification is not in risk.

Solutions:

- Congeo is in permanent contact with the client and the laboratory to control timing.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	CONSULTORÍA GEOLÓGICA, S.L.
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	FRANCISCO RUIZ ALLÉN (MANAGING PARTNER)
PLACE AND DATE	Oviedo, 21st of February, 2024
SIGNATURE*	 <p>Firmado digitalmente por 09416872M FRANCISCO RUIZ (R: B33253923) Nombre de reconocimiento (DN): 2.5.4.13=Reg:33029 /Hoja:AS-865 /Tomo:2163 / Folio:12 /Fecha:16/01/2013 /Inscripción:8*, serialNumber=IDCES-09416872M, givenName=FRANCISCO, sn=RUIZ ALLEN, cn=09416872M FRANCISCO RUIZ (R: B33253923), 2.5.4.97=VATES-B33253923, o=CONSULTORIA GEOLOGICA SL, c=ES Fecha: 2024.02.21 10:50:37 +01'00'</p>

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023-January 2024 (M1-M3)

Project acronym – **Axis 1 c .**

**Valorisation solutions and
recollection of analysis**

Date – **February 15, 2024**



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
ACHIEVING THE MOST OPTIMAL ENVIRONMENTAL FOOTPRINT			
PROJECT ACRONYM			
PILOT 1: Iron Holm Oak (1c)			
AXIS (I, II, III or IV)	1	PILOT (1 or 2)	1
VOUCHER ID (e.g., Voucher 1a)	1c. Valorisation solutions and recollection of analysis		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
Espejo	Indumine	Andalucia	Spain	Environment

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	Arturo Gutiérrez del Olmo
CONTACT PERSON ORGANISATION	Jose Antonio Espejo
CONTACT PERSON EMAIL	agdelolmo@outlook.es
CONTACT PERSON PHONE	+34 638222961

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

Three objectives were identified for Axis 1C “waste valorisation”. Minimise tailings and secondary waste production, define a preliminary plan or method or technology for valorisation and recover critical raw materials or other valuable materials. To minimise valuable materials reporting to wastes streams, the comprehensive review of the existing information available have been supported by recent liberation and separation test work performed by GTK to define a marketable iron ore (magnetite) concentrate and assess process tailings aiming valorisation to produce a suitable by-product while minimising waste streams.

From the testwork, Magnetite recoveries (MAG stream) are reported to be 87,5% in the 28-61µm range producing a 70,5 – 71,5 % Iron (Fe) grade concentrate by wet low intensity magnetic separation (WLIMS) with less than 0,05% Sulphur (S) and little need for further concentration by flotation, which adds 2% in Fe recovery. Tailings dewatering allows to recover process water of quality to minimise make-up requirements.

With the knowledge in mind and in parallel to the information review, a site visit was performed supported by Project Sponsor and other discipline (geology, mining, mineral processing) experts, the project was defined as a 55Mt reserve with head grades in the range of 35-45% Fe and mining recoveries in the range of 50 to 80% depending on exploitation type, which was assumed as a mix of an open pit startup followed by underground development. As such, an average of 100Mmt of mine waste is expected over a 15-year Life of Mine (LOM). Processing could take place at an average ~2,5Mt/year to produce ~1.0Mt/y of a marketable plus 62,5% iron concentrate and 1,5Mt/year of tailings, which assumed as filter cake amount some 12Mm³ of tailings over the 15-year LOM, minimising freshwater consumption to a 2 Mm³/year, available from project internal sources, thus also minimising the need to access external fresh water sources.

Rare Earth Elements (REE), particularly Cerio (Ce) and Lantano (La) associated to epidote, report to the nonmagnetic fraction, this is the tailings stream. Current process is based in a Non-MAG and WLIMS Non-MAG streams, both mainly amphiboles and feldspars/plagioclases, though also collecting pyrite and quartz, specially the former. The latter shows epidote and apatite which could be subject to subsequent separation by gravity separation. A preliminary flowsheet is being drafted with the corresponding mass/water balances to trigger not only additional test work but a preliminary process capex/opex estimate to justify its separate beneficiation to produce a preconcentrated reject as by-product.

To date process test work provides feasibility to produce a suitable concentrate by WLIMS, with little value added by flotation. The tailings streams collect valuable minerals which requires preconcentration which will be assumed using typical process data for its economic evaluation while further test work is proposed.

Mine waste characteristics are following a separate chemical, geochemical, physical and mineralogical characterisation and opportunities for its management will be done during the second half of the project.

Note: PRELIMINARY FLOWSHEET OF THE GRAVIMETRIC SEPARATION PROCESS (ANNEX I)

Note: FLOWSHEET DESCRIPTION (ANNEX II).

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

Although it was known that REEs could be valued from the tailings stream, especially on the magnetic separation rejects, the amount of deleterious elements present requires a careful reassessment of the preconcentration requirements Gravity concentration takes advantage of the high specific gravity range, 2.9–7.2, of the REE minerals, compared with 2.5–3.5 for most accessory gangue minerals.

With pyrite running above 6% the gravity concentration may imply pyrite separation, which in turn may also be an added value to separate non-inert from reactive species. As such, beneficiation process flow sheets cannot readily be standardized because the unit operations and equipment selection are dependent on the tailing's constituents.



In addition, with a p80 of 45um, the separation of the different fractions will widely impact on REE recoveries that with the given head grades may pose a challenge on the feasibility of the process if moving to highly technological leaching or hydrometallurgical options.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

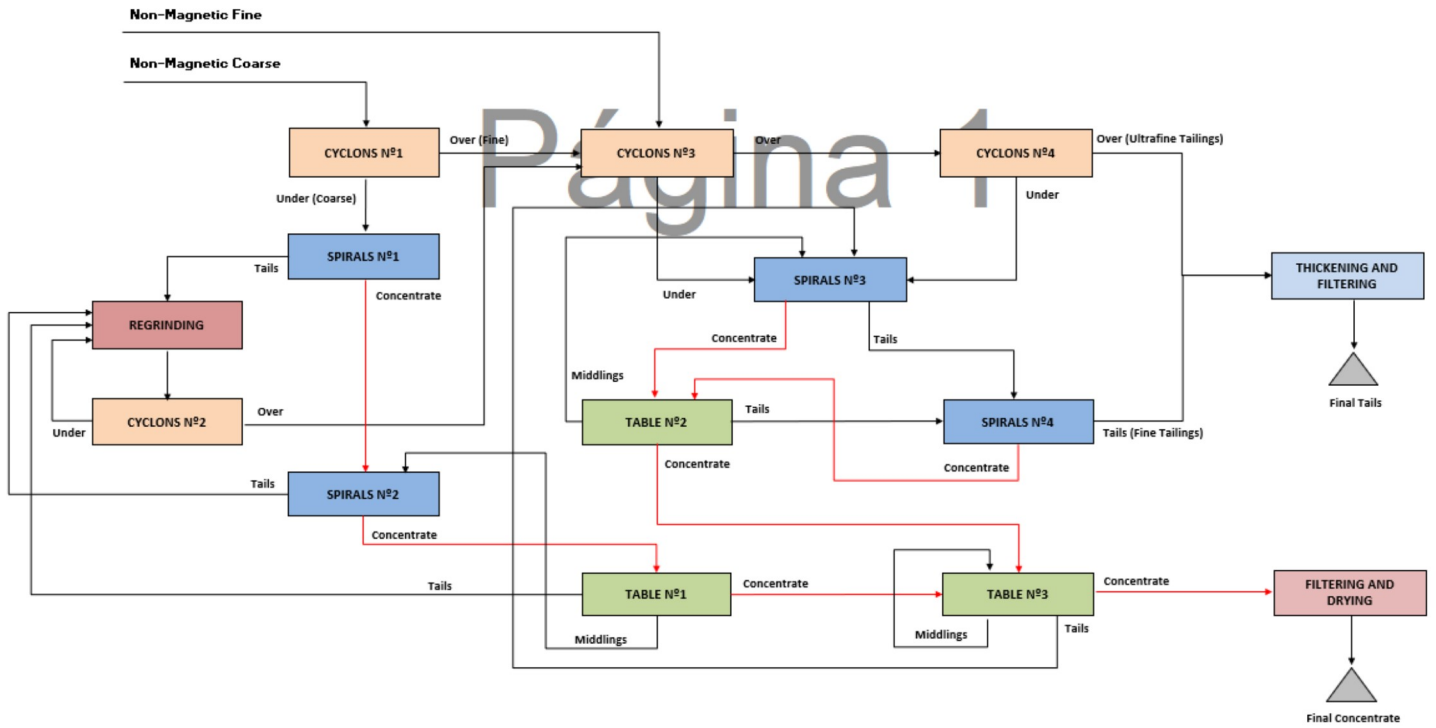
ORGANISATION NAME	
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	Jose Antonio Espejo, Indumine
PLACE AND DATE	Jerez de la Frontera – Cádiz – Spain February 20, 2024
SIGNATURE*	  <p>Firmado digitalmente por 75518803M.JUAN MARTIN (R: B21607973) Nombre de reconocimiento (DN): 2.5.4.13=Reg:21007/Hoja:H-25566 / Tomos:1138 /Folios:148 /Fecha:18/11/2019 /Inscripción:1, serialNumber=IDCES-75518803M, givenName=JUAN, sn=MARTIN CORONEL, cn=75518803M.JUAN MARTIN (R: B21607973), 2.5.4.37=VATES-B21607973, o=PROYECTOS TECNICOS Y MONTAJES INDUSTRIALES ONUBENSES SL UNIPERSONAL, c=ES Fecha: 2024.02.22 10:48:30 +0100'</p>

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company

ANNEX I: PRELIMINARY FLOWSHEET OF THE GRAVIMETRIC SEPARATION PROCESS



ANNEX II: BRIEF FLOWSHEET DESCRIPTION

The Non-Magnetic streams (coarse and fine) from the sulphide flotation will be pumped to a gravimetric process plant. Non-Magnetic coarse stream will be pumped to a primary hydrocyclones battery (CYCLONS N°1). Hydrocyclons underflow will gravitate to a bank of coarse roughing spirals (SPIRALS N°1). Spiral concentrate will pass to further stages of gravity concentration and rougher tailings will be reground in close circuit with a Vertimill (regrinding) and a battery of hydrocyclones (CYCLONS N°2).

Primary hydrocyclons (CYCLONS N°1) overflow will flow via gravity to a pump where it will be mixed with the reground coarse rougher spiral tailings (coming from the overflow of regrinding hydrocyclones battery (CYCLONS N°2) and with the Non-Magnetic fine stream from the sulphide flotation. This slurry will be pumped to a secondary hydrocyclones (CYCLONS N°3) battery. Overflow will be pumped to a third ultrafine hydrocyclones battery (CYCLONS N°4) while the combined hydrocyclones underflow will flow to a second bank of fine rougher spirals (SPIRALS N°3).

Concentrate from coarse rougher spiral (SPIRALS N°1) circuit will be pumped by vertical pump to cleaner spirals (SPIRALS N°2). Cleaner spiral tailings will be reground the Vertimill regrinding circuit while the cleaner concentrate will be pumped to a battery of shaking tables (table N°1). In shaking tables three products will be generated:

- Table tailings that will be pumped to the Vertimill regrinding circuit.
- Table middlings that will be pumped to the head of cleaner spirals (SPIRALS N°2).
- Table concentrate that will be pumped to the last scavenger shaking tables stage (TABLE N°3).

Concentrate from the bank of fine rougher spirals (spirals N°3) will be pumped by vertical pump to a secondary battery of cleaning shaking tables (table N°2). In these shaking tables three products will be generated:

- Table tailings that will be pumped to a bank of scavenger spirals (SPIRALS N°4).
- Table middlings that will be pumped to a head of fine rougher spiral (SPIRALS N°3).
- Table concentrate that will be pumped to a scavenger shaking table (TABLE N°3).

Concentrate from the cleaning shaking tables (TABLE N°2) will be pumped by vertical pump to a scavenger shaking tables (TABLE N°3). In these shaking tables three products will be generated:

- Table tailings that will be pumped to the bank of fine rougher spirals (SPIRALS N°3).
- Table middlings that will be pumped to a head of scavenger shaking tables.
- Table concentrate that will be a final concentrate.

Final concentrates (Rare Earth) will be pumped to a filtering and drying final stage.

Final tailings from the scavenger spiral (SPIRAL N°4) and overflow from hydrocyclones (CYCLONS N°4) will be pumped to a thickening and filtering final stage.



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

**Coverage of the summary: November
2023-January 2024 (M1-M3)**

Project acronym – Interregional investment
for the sustainable supply of raw materials
in the EU Green Energy Transition

Date - 22nd February 2024



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
Interregional investment for the sustainable supply of raw materials in the EU Green Energy Transition			
PROJECT ACRONYM			
I4-GREEN			
AXIS (I, II, III or IV)	I	PILOT (1 or 2)	1
VOUCHER ID (e.g., Voucher 1a)	1b		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
Juan León Coullaut Sáenz de Sicilia	Ingeniería y Consultoría en Recursos del Subsuelo, S.L. (CRS Ingeniería)	Community of Madrid	Spain	Engineering and consultancy mining

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	María José Claramonte
CONTACT PERSON ORGANISATION	CRS Ingeniería
CONTACT PERSON EMAIL	mjclaramonte@crsingenieria.es
CONTACT PERSON PHONE	+34 91 534 91 83

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

The geological model of the site has been created in Leapfrog format, determining the geological units based on the available information. The morphology of the modeled deposit and its spatial layout will be some of the conditions that will determine the most appropriate exploitation method.

Based on the available information and based on the geological model created, the block model of the deposit is being built.

The results of the geotechnical laboratory have been received, with the results of the tests carried out. The properties of the intact rock are being determined based on the tests. To this end, a statistical study is being carried out on the data acquired from the trials, ruling out anomalous values. Additionally, compliance with the application standard is being checked for each of the geotechnical tests carried out.

In parallel, an estimate of the best applicable exploitation method has been made, applying the Nicholas methodology, allowing the development, from a theoretical point of view, of a preliminary estimate of the suitability of the method, based on preliminary geometric aspects, distribution of the grade, mechanical characteristics of the mineral rock masses, roof and wall and exploitation costs. It has been concluded that open-air exploitation is the most appropriate, considering, in the event of environmental conditions, that the best alternatives for underground exploitation would be sublevel stopping or sublevel caving if sufficient fill material is available to use in the generated gaps, controlling the deformations of the massif..

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

The loss of a samples series when sent to the geotechnical laboratory has meant a small delay in carrying out the statistical studies to determine the properties of the intact rock, because it has been waiting for the possibility of having the entire results. Finally, it has been decided to proceed with the use of the available information, considering that the existing data is enough to determine the resistant properties of the materials.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	Ingeniería y Consultoría en Recursos del Subsuelo, S.L.
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	Juan León Coullaut Sáenz de Sicilia CEO
PLACE AND DATE	Madrid, 22 nd February 2024
SIGNATURE*	02173489N JUAN LEON COULLAUT (R: B86362100) <small>Firmado digitalmente por 02173489N JUAN LEON COULLAUT (R: B86362100) Nombre de reconocimiento (DN): 2.5.4.13=Reg:28065 /Hoja:M-530531 / Tomo:29478 /Folio:1 / Fecha:26/12/2011 /Inscripción:1, serialNumber=IDCES-02173489N, givenName=JUAN LEON, sn=COULLAUT SAENZ DE SICILIA, cn=02173489N JUAN LEON COULLAUT (R: B86362100), 2.5.4.97=VATES-B86362100, o=INGENIERIA Y CONSULTORIA EN RECURSOS DEL SUBSUELO SL, c=ES Fecha: 2024.02.22 17:36:04 +01'00'</small>

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023-January 2024 (M1-M3)

Project acronym – RECIRCLE PRO

Date – 15TH February 2024



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
RECIRCLE PRO			
PROJECT ACRONYM			
RECupeRaTion of Iron and Rare Earth eLEments PRoCess			
AXIS (I, II, III or IV)	III	PILOT (1 or 2)	1
VOUCHER ID (e.g., Voucher 1a)	3a		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
ATI	AZCATEC TECNOLOGIA E INGENIERÍA S.L.	Andalusia	Spain	ENGINEERING / INDUSTRY / CONSULTANCY

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	Luis Azaña Caro
CONTACT PERSON ORGANISATION	AZCATEC Tecnología e Ingeniería S.L.
CONTACT PERSON EMAIL	lazana@azcatec.com
CONTACT PERSON PHONE	0034627956274

Please, note that the information you provide in sections 2 (progress of the project) and 3 (deviations and solutions) of this document will be made public for communication and dissemination purposes, to make the results of the I4-GREEN project available.

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

From the list of deliverables in the project, we have completed more than 50% of them:

- Project planning and schedule:** establish a work plan for the 6 months of duration, delivering the following items:
- Design Criteria and Process Description:** Where we established comprehensive design criteria, outlining the standards and benchmarks for the project. The process description was done to detail all the steps involved in retrieving and valuing iron and rare earth elements based on previous experience, lab studies and state of the art publications.
- Mass and Water Balance:** We conducted a thorough analysis to establish the mass and water balance, ensuring optimal resource allocation and efficiency throughout the extraction process.
- Block Flow Diagram (BFD):** A detailed BFD was created to visually represent the various processes involved in extraction, offering an overview of each stage for a better understanding and efficiency.
- Process Flow Diagram (PFD):** The PFD outlines each step of the process in detail.
- Equipment Selection, Dimension, and Design:** Our team meticulously selected equipment based on efficiency, safety, and performance criteria. Each piece was dimensioned appropriately to fit within operational parameters.
- Balance of Energy (BoE):** We calculated the energy balance to ensure optimal energy distribution for optimizing operational efficiency throughout the process while minimizing energy waste.

Next, we are working in progress the following remaining activities:

- List of instrumentation (LOI) and control philosophy
- Process & Instrumentation Diagram (P&ID)
- 2D Lay-out drawings including footprint in (m²) using AutoCAD
- 3D Model (3DM) of the plant and main equipment and utilities.
- Capex and opex estimation

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

The main risk is related to the incoming information from third-party experts, such as specific machinery experts or the research analysis from the mining technological center from Finland GTK, whose laboratory experiments and results were missing before the start of the project. We are still waiting for their delivery, which is crucial for finding a techno-economical solution. We would like to emphasize that AZCTEC is not liable for any delays caused by external factors beyond our control. However, we are fully committed to delivering the project on time and in accordance with the GA. In the unlikely event that GTK fails to provide the required information within the available time frame, we have a contingency plan in place: ATI will propose its own REE rare earth extraction process, which will ensure that we meet the proposed date (month 6) and the maximum quality standards.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	AZCATEC Tecnología e Ingeniería S.L.
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	Luis Azaña Caro, Innovation Project Manager.
PLACE AND DATE	15/02/24
SIGNATURE*	

** All the signatures requested must be included in the space provided, being only valid:
Option A) Digital signature
Option B) Handwritten signature + stamp of the company*



I4-GREEN

ANNEX II

Pilot 2 E-LIX (Andalucía, ES) SMEs project follow up reports



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023-January 2024 (M1-M3)

Project acronym - **ELIXSWMD**

Date - **February 21, 2024**



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
E-LIX SUSTAINABLE WATER MANAGEMENT SYSTEM DESIGN			
PROJECT ACRONYM			
AXIS (I, II, III or IV)	II	PILOT (1 or 2)	2
VOUCHER ID (e.g., Voucher 1a)	2b		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
Emilio Hormaeche Bigorra	Soluciones, Concentradores y Procesos de Ingeniería, S.L.	Asturias	Spain	Engineering

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	Emilio Hormaeche Bigorra
CONTACT PERSON ORGANISATION	SCYPI, S.L.
CONTACT PERSON EMAIL	emilio@scypi.es
CONTACT PERSON PHONE	+34 673 99 87 32

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

At the beginning of the project, several significant challenges were identified in the water treatment systems at the "fresh" and "tails" ends of E-LIX. These challenges mainly revolve around three key objectives: achieving zero liquid discharge to the environment, implementing a robust strategy for reusing intermediate and final water derived from the complex process, and employing robust and proven technologies.

To ensure the optimal performance of the ELIX System, it is essential that the water supplied at the beginning of the process is of the highest possible purity. To achieve this, a series of tests were conducted using water samples from the Rio Tinto mine.

These tests, including Jar-Test, Total Suspended Solids (TSS), and particle size distribution, have provided a detailed understanding of the quality of raw water from the mine. The results of these tests are significant as they provide a broad understanding of the quality of the water being introduced to the processing plant.

This information not only deepens the comprehension of the fundamental characteristics of raw water but also has paved the way for the implementation of a pre-treatment system optimized to obtain osmotized or pure water.

After obtaining analytical results from the mine water, a comprehensive review of available technologies in the market was conducted. This review encompassed both conventional and innovative technologies, including filtration, distillation, reverse osmosis, nanofiltration, among others.

By combining the results of analytical tests on mine water with a detailed study of possible technologies used for obtaining pure water, the best treatment process has been selected for obtaining osmotized water that meets the rigorous requirements established by the plant.

This detailed approach ensures that the selected treatment is not only effective but also perfectly suited to what the plant needs.

Likewise, risks associated with managing rejects from the treatment plant selected, with potential environmental challenges, have been identified. However, a strategic opportunity has been envisioned by proposing an integrated waste management approach, considering options such as valorisation, controlled disposal, or reuse.

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

Initially, the treatment of downstream process water was prioritized over the treatment of feedwater, raw water. However, the crucial importance of obtaining ultrapure water for the proper functioning of the ELIX system has been recognized.

This acknowledgment has led to a redirection of the report's focus towards the study of raw water and the identification of the most appropriate technologies for obtaining it.

This change in focus could impact the achievement of the initial project objectives, as it involves focusing on raw water rather than the waters resulting from the process. Under this new approach, crucial aspects related to potential risks and opportunities have been identified.


- The possibility of considering additional technologies to mitigate fluctuations in the quality of captured water.
- The importance of exploring alternative technologies, in addition to those already selected, in case the treated water is of lower quality what provides greater flexibility in optimizing system performance and reducing operating costs.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	Emilio Hormaeche Bigorra, SCYPI
PLACE AND DATE	Oviedo- Asturias- Spain February 21, 2024
SIGNATURE*	Emilio Hormaeche Bigorra  Firmado digitalmente por Emilio Hormaeche Bigorra Fecha: 2024.02.21 13:30:11 +01'00'

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

**Coverage of the summary: November
2023-January 2024 (M1-M3)**

Project acronym – **SAFE-MINING**

Date – **08/02/2024**



**Funded by
the European Union**

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
SAFEty assessment on fire protection systems in the MINING processes			
PROJECT ACRONYM			
SAFE-MINING (Safety Assessment on FIRE protection systems in the mining processes)			
AXIS (I, II, III or IV)	III	PILOT (1 or 2)	2
VOUCHER ID (e.g., Voucher 1a)	3d		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
Cubicoff	CUBICOFF INGENIERIA ABIERTA, S.A	Andalusia	Spain	Engineering

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	David Pérez Sigüenza
CONTACT PERSON ORGANISATION	Cubicoff
CONTACT PERSON EMAIL	david@cubicoff.com
CONTACT PERSON PHONE	+ 0034 661 725 364

Please, note that the information you provide in sections 2 (progress of the project) and 3 (deviations and solutions) of this document will be made public for communication and dissemination purposes, to make the results of the I4-GREEN project available.

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

We are following our planned schedule. We are currently approaching the completion of WP2 by the end of February. Furthermore, WP1, WP2, and WP3 are currently in progress, as illustrated in the following schedule:

Work Packages and Tasks		M1	M2	M3	M4	M5	M6
		nov-23	dec-23	jan-24	feb-24	mar-24	apr-24
WP1	PROJECT MANAGEMENT						
T1.1	administrative and Financial Management						
T1.2	Technical coordination, risk and innovation management						
WP2	ADVANCED SIMULATION OF FIRE SCENARIOS						
T2.1	Definition of fire scenarios in the pilot						
T2.2	Extinction strategy simulation						
T2.3	risk analysis based on limulated data						
T2.4	pre-testing and optimization of extinguising systems						
WP3	ROADMAP FOR THE ACCREDITATION OF THE PILOT WITH EU REGULATION						
T3.1	research and analysis of EU regulations						
T3.2	simulation and tests on the fire protection system						
T3.3	development of a system technical manual						
WP4	DEMOSTRATION AND IMPACT ASSESMENT						
T4.1	testing and pre-pilot verification						
T4.2	roll out and demonstration						
T4.3	evaluation and impact assesment						
WP5	BUSINESS INNOVATION REPLICATION						
T5.1	Explotation and business innovation planning						
T5.2	replication planning						

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

At this stage of the project, we haven't identified any substantial deviations that need to be highlighted or examined in detail.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	Cubicoff Ingenieria Abierta SL
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	David Pérez Sigüenza; CEO
PLACE AND DATE	Seville 08/02/2024
SIGNATURE*	07490961E DAVID JOSE PEREZ (R: B91810077) Firmado digitalmente por 07490961E DAVID JOSE PEREZ (R: B91810077) Fecha: 2024.02.22 18:02:15 +01'00'

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary:

November 2023–January 2024
(M1-M3)

Project acronym – **SULCATE**

Date – **22/02/2024**



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
Safe and sUustainable LCA-based Tactics for mining			
PROJECT ACRONYM			
SULCATE			
AXIS (I, II, III or IV)	I	PILOT (1 or 2)	2
VOUCHER ID (e.g., Voucher 1a)	Voucher 1d		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
ISABEL CARRERO MORA Managing Director	QUALIFICA2 S.L. (QF2)	Andalucía	Spain	Training & Consulting in mining and industry

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	ISABEL CARRERO MORA
CONTACT PERSON ORGANISATION	QUALIFICA2 S.L. (QF2)
CONTACT PERSON EMAIL	INFO@QUALIFICA2.ES
CONTACT PERSON PHONE	+34 606 923 388

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

SULCATE proposes the development of a Life Cycle Thinking methodology that closely monitors the environmental and safety performances of the E-LIX process by identifying hotspots within the metallurgic process and across the upstream value chain. The information collected from this identification process is then used to map concerns in both safety and environmental terms that can then be addressed by the pilot owners by means of risk assessments and responsible sourcing strategies. The resulting outputs from SULCATE prepare the E-LIX process to be highly adaptable and responsive to industrial regulations and environmental legislation.

During the first period, solid progresses have been made regarding Task 1 - Literature review of baseline scenarios and Task 2 - Primary data inventory acquisition. In order to initiate the work, a total of 3 meetings were held between QF2's and LAIN Technologies (LAIN-T) teams with the following purposes:

1. Kick off meeting. The specific objectives of the project and the proposed methodology were introduced to LAIN-T, together with the potential benefits and impact of the utilised approach.
2. Setting the goal and scope of the study. Thanks to the better understanding gained through the first meeting, in the second one, it was jointly defined a set of scenarios to be studied in order to maximise project outputs. Particularly, a cradle-to-gate approach was proposed under three different production schemes, summarised as follows:
 - Business as usual (BaU): Mineral processed in China through pyrometallurgical methods.
 - In-house Zn refining: Mineral processed by E-LIX to refine Zn + Cu-concentrated mineral processed in China through pyrometallurgical methods.
 - In-house Zn & Cu refining: Mineral processed by E-LIX to refine Zn and Cu.
3. Understanding the E-LIX process. To start building the questionnaires to gather the life cycle inventories LAIN-T provided a simplified flowchart that was further explored and complemented through a meeting.

With all this information, the work of QF2 focused, in parallel, on the literature review, and on the construction of questionnaires and support to data gathering. Regarding the former, a first search was accomplished to characterise the baseline. Only 27 scientific contributions were found under the keywords "LCA" and "Copper refining" through the Web of Science, and 12 out of 27 were devoted to the secondary production, instead. Fortunately, three of the consulted sources compiled detailed inventories of primary production from copper ore, thus BaU scenario can be calculated through LCA methodology, complementing the information with Ecoinvent data. For instance, Figure 1 shows the mineral pyrometallurgical refining process adapted from Lu et al (2022), that is being implemented in SimaPro® software to establish the comparative framework.

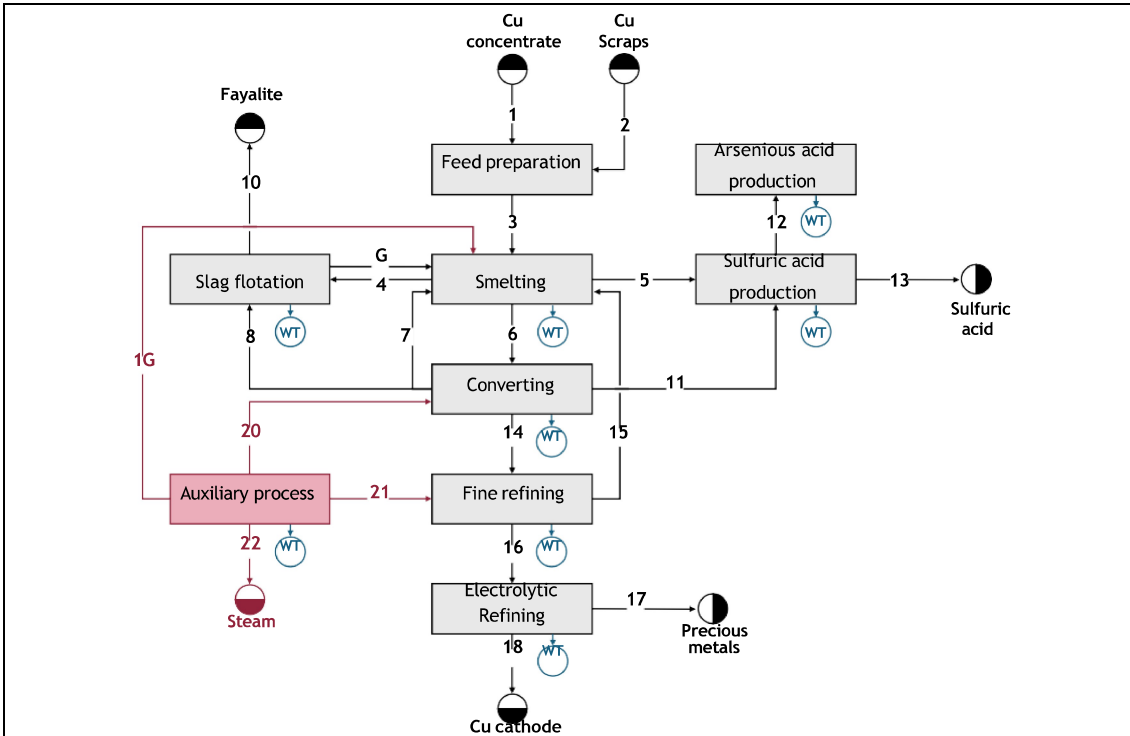


Figure 1. Flowchart of Cu refining from pyrometallurgical routes. BaU scenario. Adapted from Lu et al., 2022.

Regarding the inventory's construction, after the third meeting with LAIN-T, a tailored questionnaire was composed and sent back to LAIN-T in order to provide primary data of the E- LIX process. Figure 2 shows a screenshot of the developed material. Weekly meetings and follow up exchanges are taking place to guide and fine-tune data collection.

PROCESO UNITARIO		ALIMENTACIÓN		
ENTRADAS: MATERIALES				
Nombre	Cantidad	Unidad (kg, L, etc.)	Distancia proveedor (km)	Modo de transporte
Concentrado de Flotación PRT				
Indique la cantidad de cada materia prima, material y/o producto intermedio requiero por el proceso unitario para producir la unidad funcional (celda C12 en hoja de información general). Indique aquí también cualquier flujo de materiales auxiliares, agua, aire comprimido u otros consumidos por el proceso.				
Agregar tantas líneas como sean necesarias				
ENTRADAS: ENERGÍA				
Nombre	Cantidad	Unidad (kWh, L, m3, etc.)		
Electricidad (especificar compañía eléctrica)			Indique la cantidad de electricidad y/o de combustibles consumidos para producir la unidad funcional	
Energía renovable para autoconsumo (especificar)				
Calor				
Combustible (especificar)				
Combustible (especificar)				
Agregar tantas líneas como sean necesarias				
SALIDAS: PRODUCTO Y SUBPRODUCTOS				
Nombre	Cantidad	Unidad (kg, L, etc.)		
Concentrado de Flotación PRT			Indique la cantidad de producto principal obtenido o la salida del proceso unitario (en relación a la unidad funcional) y de cualquier otro subproducto obtenido (si es el caso)	
Subproducto 1 (especificar)				
Subproducto 2 (especificar)				
Agregar tantas líneas como sean necesarias				

Figure 2. Example of questionnaire sheet for E-LIX process data collection.

References

Lu et al. Journal of Cleaner Production 370 (2022) 133458

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

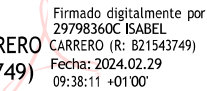
Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

Risk 1: Finding pertinent literature for the assessment of the BaU scenario.

Solution1: Several literature sources were found successfully resolving the issue. Indeed, the modelling of the scenario presented in the previous section was adapted from the work presented by Lu, et al., 2022.

Risk 2: Due to the required thoroughness of the primary data for the elaboration of the Life Cycle Assessment of the E-LIX process, a slight delay has arisen in the collection of this information. This delay may suppose a risk in the development of the assessment, affecting the time availability for it.

Solution 2: The information has, however, been verified with LAIN-T and is due to be disclosed to QF2 in brief. Consequently, QF2 will intensify staff effort on the carrying out of the assessment, to make up for compromised time.

ORGANISATION NAME	QUALIFICA2 S.L
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	
	ISABEL CARRERO MORA – Managing Director
PLACE AND DATE	
SIGNATURE*	29798360C ISABEL CARRERO (R: B21543749) 

* All the signatures requested must be included in the space provided, being only valid:

- Option A) Digital signature
- Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023–January 2024 (M1–M3)

Project acronym – PE-RAS

Date – 22/02/2024



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
PROYECTO ELIX - RED DE AGUA DE SERVICIO			
PROJECT ACRONYM			
PE-RAS			
AXIS (I, II, III or IV)	II	PILOT (1 or 2)	2
VOUCHER ID (e.g., Voucher 1a)	2b		
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECT END DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
ROYECTOS TECNICOS MONTAJES INDUSTRIALES ONUBENSES SL	GRUPO UMACO	HUELVA	ESPAÑA	INDUSTRIA

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	JUAN LUIS MARTÍN BORRERO
CONTACT PERSON ORGANISATION	INGENIERO INDUSTRIAL
CONTACT PERSON EMAIL	jlmartinb@umaco.e
CONTACT PERSON PHONE	+34 655989291

Please, note that the information you provide in sections 2 (progress of the project) and 3 (deviations and solutions) of this document will be made public for communication and dissemination purposes, to make the results of the I4-GREEN project available.

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

This project was supply, installation and commissioning this Pumping Systems, pipe and other hydraulic elements:

1. Pumping Treated Water:

The pressure increase system has been considered for a flow rate of 13 m³/h at a pressure of 3 bars, composed of a double pressure equipment, with 1+1 operation, with an integrated variator to obtain the necessary setpoint.

Including necessary valves, pressure gauge...

2. Osmosis Water Pumping:

The pressure increase system has been considered for a flow rate of 13 m³/h at a pressure of 3 bars, composed of a double pressure equipment, with 1+1 operation, with an integrated variator to obtain the necessary setpoint.

Including necessary valves, pressure gauge...

3. Pumping Treated Water:

The pressure increase system has been considered for a flow rate of 2.5 m³/h at a pressure of 3 bars, composed of a double pressure equipment, with 1+1 operation, with an integrated variator to obtain the necessary setpoint.

Including necessary valves, pressure gauge...

These equipment, pipes, valves and presumption meters are all installed. The project is being launched locally, and this month it will be delivered to the client.

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.



There are no deviations or issues in the project.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	PROYECTOS TECNICOS Y MONTAJES INDUSTRIALES ONUBENSES SL
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	JUAN MARTIN CORONEL – ADMINITRADOR UNICO
PLACE AND DATE	HUELVA A 22 DE FEBRERO DE 2024
SIGNATURE*	  <p>Firmado digitalmente por 75518803M.JUAN MARTIN (R: 821607973) Nombre de reconocimiento (DN): 2.5.4.13=Reg:21007/Hoja:4-25566/Tomo:1138 / Folio:148 /Fecha:18/11/2019 /Res:cpIdem1; serialNumber=IDCES:75518803M, givenName=JUAN, sn=MARTIN CORONEL, cn=75518803M.JUAN MARTIN (R: 821607973), 2.5.4.97=vATES=821607973, o=PROYECTOS TECNICOS Y MONTAJES INDUSTRIALES ONUBENSES SL UNIPERSONAL, c=ES Fecha: 2024.02.22 12:26:44 -0'100'</p>

** All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



I4-GREEN

INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023-January 2024 (M1-M3)

Project acronym – PMF

Date – 27/02/2024



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
PROJECT ACRONYM			
AXIS (I, II, III or IV)		PILOT (1 or 2)	
VOUCHER ID (<i>e.g., Voucher 1a</i>)			
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECTEND DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
Eduardo Moretón Vázquez	FSI FILTRACION SL	ANDALUCÍA	ESPAÑA	INDUSTRIA

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	Eduardo Moretón Vázquez
CONTACT PERSON ORGANISATION	Eduardo Moretón Vázquez
CONTACT PERSON EMAIL	emoreton@fsi-filtracion.com ; mramos@fsi-filtracion.com
CONTACT PERSON PHONE	34 91 564 31 46

Please, note that the information you provide in sections 2 (progress of the project) and 3 (deviations and solutions) of this document will be made public for communication and dissemination purposes, to make the results of the I4-GREEN project available.

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

The project progress during M1-M3 was as planned. The 2 pressure filters were installed and the equipment commissioning has just started.

For the last two months, the project erection has just finished with the mechanical equipment, electrical, instrumentation and control installation completed.

First tests were done on a dry basis (pre - commissioning) in order to make sure the control loop systems, communications and interlocks were fully tested before moving to cold commissioning.

Once the pressure filters were ready to be tested with material, the cold commissioning started running the equipment with water. A few issues showed up on this stage which required some fine tuning and modifications. After some time with the equipment running, the hot commissioning was ready to start.

At this moment the project status is to test the pressure filter with material (or slurry) produced in the hydromet. plant. First few tonnes have been tested so far through the pressure filter membranes and some control philosophy modifications are required.

The aim for the pending project months will be to make sure that the pressure filters are able to achieve the design criteria in terms of capacity treated and solid liquid separation efficiency. It is a key area for the hydrometallurgical plant success.

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

As explained above, only minor issues have occurred so far with the pressure filters commissioning.

Most of them were related to the control system philosophy and some maintenance minor issues that were tackled straight away.

The next months will be key to prove that the filters were properly design to achieve the design criteria; total capacity and solid - liquid separation efficiency. This is part of the hot commissioning that has just started.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	FSI FILTRACION SL
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	
PLACE AND DATE	MADRID 27/02/2024
SIGNATURE*	12215052M EDUARDO MORETON (R: B82112871) <small>Firmado digitalmente por 12215052M EDUARDO MORETON (R: B82112871) Nombre de reconocimiento (DN): 2.5.4.13=Ref:AEAT/AEAT0310/PUESTO 1/57189/17022023130918, serialNumber=IDCES-12215052M, givenName=EDUARDO, sn=MORETON VAZQUEZ, cn=12215052M EDUARDO MORETON (R: B82112871), 2.5.4.97=VATES-B82112871, o=FSI FILTRACION SL, c=ES Fecha: 2024.03.01 08:59:48 +01'00'</small>

**All the signatures requested must be included in the space provided, being only valid:*

Option A) Digital signature

Option B) Handwritten signature + stamp of the company



INTERMEDIATE SUMMARY OF FUNDED PROJECTS DEVELOPMENTS

Coverage of the summary: November
2023-January 2024 (M1-M3)

Project acronym – **SACS**

Date – **04 MARZO 2024**



Funded by
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EISMEA. Neither the European Union nor the granting authority can be held responsible for them.

1. GENERAL INFORMATION

BASIC INFORMATION			
PROJECT TITLE			
PROJECT ACRONYM			
AXIS (I, II, III or IV)	III	PILOT (1 or 2)	2
VOUCHER ID (e.g., Voucher 1a)			
PROJECT DURATION	6 months		
PROJECT START DATE (unless another date is notified, start date is fixed: 01/09/2023)	01/11/2023	PROJECTEND DATE (unless another date is notified, end date is fixed: 29/02/2024)	30/04/2024

APPLICANT(S) INFORMATION				
APPLICANT	ORGANISATION NAME	REGION	COUNTRY	SECTOR
JUSTO CUEVAS GALLEGO	MONTAJES INDUSTRIALES Y MECANICA SEVILLANA, S.L.	ANDALUCIA	SPAIN	INDUSTRY

MAIN CONTACT INFORMATION	
CONTACT PERSON NAME	ANTONIO DEL REY
CONTACT PERSON ORGANISATION	ADMON-SUBDIRECCION
CONTACT PERSON EMAIL	administracion@mimese.es
CONTACT PERSON PHONE	600039765

Please, note that the information you provide in sections 2 (progress of the project) and 3 (deviations and solutions) of this document will be made public for communication and dissemination purposes, to make the results of the I4-GREEN project available.

2. PROGRESS OF THE PROJECT

2.1. REPORT SUMMARY

Please provide a short overview of project progress during M1-M3. Maximum 1 page.

The project progress during M1-M3 was as expected. The review of the detailed engineering & PIDs generated for the sedimentation and clarification system was finalized and confirmed that the system was properly designed. The list of equipment was prepared and order for further erection.

The main equipment has already been purchased and arrived to site.

For the last few weeks the work force has been organized and started mobilization to the mine site.

At this moment the project erection is about to start. It is planned that it will take 8 weeks to be fully erected. After that, the sedimentation and clarification system will be commissioned.

3. DEVIATIONS AND SOLUTIONS

3.1. RISKS, ISSUES, DEVIATIONS AND SOLUTIONS

Describe any issues or problems that have impacted on the development and implementation of the project during the reporting period. Detail what impact any issues may have on the achievement of project targets, and set out how you plan to tackle these issues. In this section you can list whether there has been changes in risks, whether they have become issues and whether new risks have been identified. Maximum 1 page.

No mayor issues have occurred for the last months.

Only minor issues related to workforce mobilization and finalizing the bidding process for some of the equipment required.

The next months will be key to prove that the sedimentation & clarification system was properly design to achieve the design criteria; total capacity and solid - liquid separation efficiency.

BY SIGNING THIS DOCUMENT, I DECLARE ON MY HONOUR:

-THE ACCURACY OF THE INFORMATION I'M SUBMITTING ON THE I4-GREEN INTERMEDIATE SUMMARY OF FUNDED PROJECTS

AND

- THAT I AM AWARE OF THE SECTIONS 2 (PROGRESS OF THE PROJECT) AND 3 (DEVIATIONS AND SOLUTIONS) OF THIS DOCUMENT WILL BE MADE PUBLIC FOR COMMUNICATION AND DISSEMINATION PURPOSES, TO MAKE THE RESULTS OF THE PROJECT AVAILABLE.

ORGANISATION NAME	MONTAJES INDUSTRIALES Y MECANICA SEVILLANA, S.L.
NAME AND POSITION OF THE SIGNATORY, BEING AUTHORISED TO REPRESENT THE ORGANISATION	ANTONIO JESUS DEL REY TORO
PLACE AND DATE	SEVILLA A 04/03/2024
SIGNATURE*	28590058T JUSTO CUEVAS (R: B90116427)

**All the signatures requested must be included in the space provided, being only valid:
Option A) Digital signature
Option B) Handwritten signature + stamp of the company*