# DT1.4.4. The SMART PHOENIX guidebook

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# SUMMARY

# 1 INTRODUCTION

With the decline of metallurgical and industrial activities and the progressive relocation of these activities outside Europe, many metallurgical sites and deposits have been left abandoned in North-West Europe (hereafter named "Past Metallurgical Sites and Deposits – PMSD). In 2013, the number of metallurgical sites with metal recovery potential was estimated at 100000 by JRC. Given that the European supply of metals and raw materials is at risk of being undermined, these past metallurgical site and deposits could a new source to recover secondary raw materials. However, this emerging opportunity faces many challenges.

There is currently a lack of standardised framework that would allow public and private stakeholders to make economically informed decisions to launch a raw material recovery project on PMSD. Besides, traditional methods assessing the viability of a recovery project are expensive and require costly analyses and sampling. Moreover, the available inventories for PMSD were rather created to contain information useful for the rehabilitation of these sites (remediation, environmental aspects, history, etc.), but they did not necessarily address the potential of these sites for the recovery of secondary materials.

The NWE-REGENERATIS project therefore seeks to tackle the territorial challenges highlighted above and focuses two key objectives. Firstly, the creation of the REMICRRAM methodology (i.e. the NWE-REGENERATIS methodology) intend to provide a cost-effective and quick way to estimate the potential and methods for site valorisation. Secondly, the project aims to assist stakeholders in creating inventories and databases that are tailored to the PMSD, including all the necessary fields for material recovery projects, and which will enable efficient management of the data needed for REMICRRAM methodology tools to function effectively.

## 1.1 THE REMICRRAM METHODOLOGY

The NWE-REGENERATIS project has created a 3-step methodology named REMICRRAM to evaluate the site potential for material recovery. This process determines whether further investment is worthwhile, thus preventing unnecessary expenses when the site recovery potential is insufficient. The 3-step methodology involves using 3 tools, one at each step (see Fig. 1):

- Step 1: SMARTPHOENIX - a generic site selection (quick scan) tool
- Step 2: SMARTIX - an AI-based technical and economical site and processes selection tool
- Step 3: Business cases software - a complete cost-benefit analysis tool that includes evaluating the economic, social and political impacts of a given project

The site's interest is determined based on 4 different types of materials:

- The metal recovery potential of a site
- The mineral recovery potential of a site
- The potential for improving soil fertility at a low cost to grow biomass, a.o. for ecocatalysis production
- The potential for ecocatalysts production at the site

REMICRRAM provides a quick and cost-effective estimation/quantification of a site's material recovery potential. This methodology 1) facilitates the selection and characterization of PMSD, 2) demonstrates the recovery potential of secondary raw materials from PMSD, and 3) enables the creation of site-specific plans using an AI tool called SMARTIX.

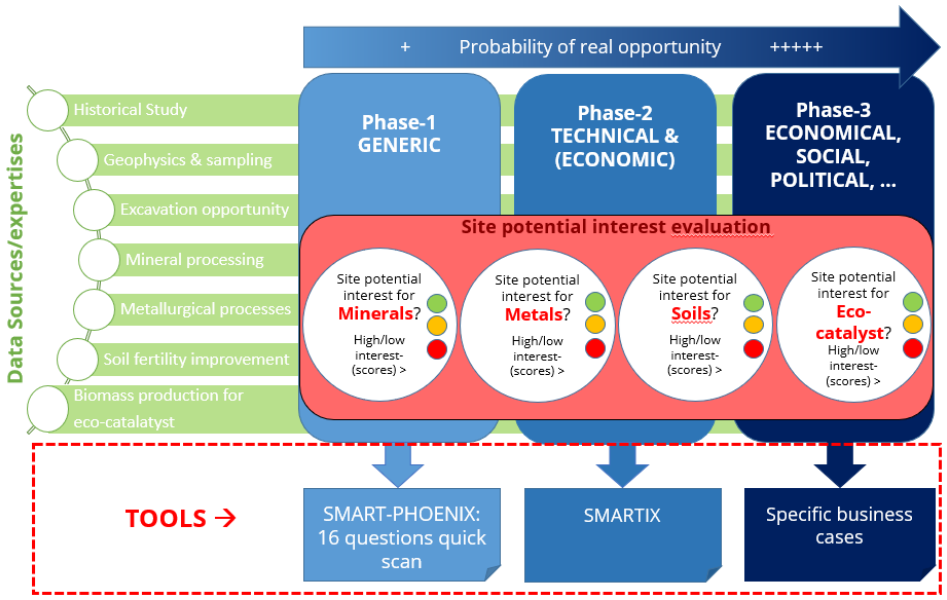


*Figure 1: REMICRRAM general overview*

## 1.2 About this guidebook

This guidebook is the user-friendly manual for the SMART PHOENIX tool, which is the step 1 tool of the REMICRRAM methodology. It provides a detailed overview of the tool's structure, its back-end functioning, and a description of the questions and fields that are included in the tool. Additionally, it offers guidance on how to interpret the results obtained. The guide concludes with an example of a completed SMART PHOENIX assessment for one of the three pilot sites of the NWE-REGENERATIS project: the DUFERCO site (La Louvière, Belgium).

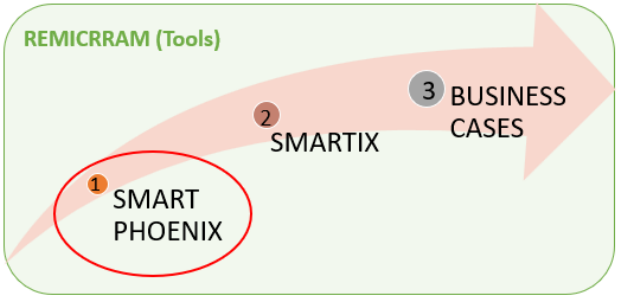


*Figure 2: how this guidebook fits in the REMICRRAM methodology*

# 2 THE SMART PHOENIX TOOL

## 2.1 GENERAL DESCRIPTION AND BACK-END FUNCTIONNING

The SMART PHOENIX tool works in the form of an Excel file, and is available either on its own or as part of one of the NWE-MESIS tabs. It is a user friendly tool that allows, with only 16 questions, to quickly identify and sort out the interesting sites for material recovery, from those that are not. As the NWE-REGENERATIS project mainly focus on evaluating a site's potential to recover 4 categories of materials (cf. section 1.1.), the interest of a site should be declined into these 4 categories.

To do so, each answer to each question in the SMART PHOENIX tool is associated with 4 different scores, representing the relative interest for each category of material considered. The total score for one category is obtained by adding up the scores obtained from the 16 questions. An overall score is also given, which is a weighted sum of the total score for each category (Figure 3).

Practically, the ranking weight for each response for each material category were set by 1) applying the SMART PHOENIX for a number of sites with known recovery potential (including sites from SPAQuE database), 2) fine-tuning the weights so that the calculated scores reflect the potential of the sites.

The list of weights for each question and answers are shown in appendix A.

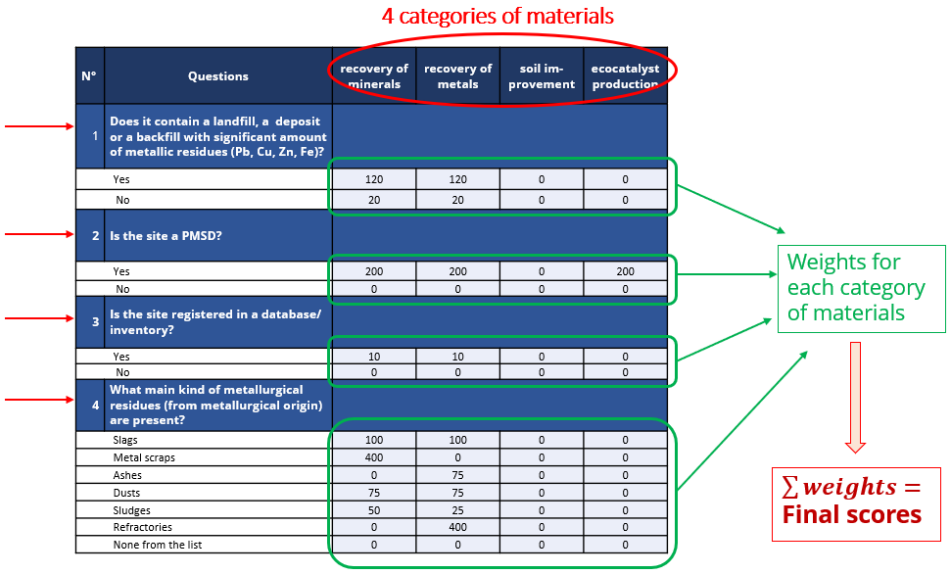


*Figure 3: Back-end calculation of scores for each material category*

The SMART PHOENIX tool estimates the material recovery potential of one site by answering 16 questions and attributing a score based on the answers given. When multiple sites are evaluated, this tool can also be used to rank sites according to their relative interest.

An option to indicate confidence in each answer is given, according to the following 5 levels:

- Very high (100%)
- High (75%)
- Medium (50%)
- Low (25%)
- I do not know (0%)

At the end of the questionnaire, the user will be notified of the number of questions for which the confidence level is not indicated and for which the indicated confidence is less than or equal to 50%. In this way, it allows users to verify the validity of the calculated total score. For example, if the user is only 50% sure of the answer given for half of the questions, it is reasonable to assume that the total score will not be totally reliable and will require additional accurate information to increase the reliability, i.e. through historical studies, site survey and lab tests.

## 2.2 QUESTIONS AND ANSWERS DESCRIPTION

This section of the report provide a comprehensive description of the questions and their corresponding answers, in the aim to assist users in providing the expected responses. Out of the 16 questions, questions 1, 2, 4, and 5 carry more weight, as they are considered crucial for assessing the potential for metal recovery.

Appendix A provides the weight assigned to each question.

## Question 1 : Does the site contain a landfill, deposit or backfill with significant amount of metallic residues (mainly Pb, Cu, Zn and Fe)?

A yes or no answer is expected to this question. This is one of the most important questions as it allows more weights to be given to sites and deposits where there is a higher probability of finding metal residues. The user can normally answer to this question with great accuracy, as he obviously has some information about the site he wants to rank. A site containing no landfill, deposit and/or backfill has no significant interest for recovering metals and materials.

## Question 2 : Is the site a Past Metallurgical Site and Deposit (PMSD)?

Past Metallurgical Site and Deposit (PMSD) are either :

1) sites where metallurgical activity has taken place at some time and where waste were stored,
2) sites that contains a deposit of metallurgical origin or a backfill coming from a surrounding industry.

Regarding 1), one of these activities have to be registered (keywords): metallurgy, steel industry, iron factory, blast furnace, foundry, steelworks, forges, rolling mill, pyrometallurgy, hydrometallurgy, metal preparation, metal transformation. This question is also one of the most important, as the NWE-REGENERATIS project methodology has been specifically developed for PMSD. The question of whether the site has historically contained metallurgical activity(ies) and whether a deposit is present will be crucial in assessing the material recovery potential of a site.

Regarding 2), some information about the buried materials must be found somewhere. There are site which have been historically backfilled with a large amount of valuable materials, even if the origin of the backfill is forgotten.

## Question 3: Is the site registered in a database?

It requires a yes or no answer. We assume that, if a site is registered in a database, some more or less detailed information is readily available and can be used, potentially reducing the costs of preliminary investigations. However, it has a very minor impact on the total score for metals and minerals.

## Question 4 : What main kind of residues (from metallurgical origin) are present?

6 types of metallurgical waste were identified as having potential for material recovery. The presence of one or more of these on a PMSD is related to the possibility of recovering materials present in these waste types. The 6 types of residues identified are[1]:

- Slags: stony waste material separated from metals during the smelting or refining of metal, or from other industrial/metallurgical processes, and resulting from the reaction of a flux with impurities in the ore or metal.
- Metal scraps: remnants of metal produced in cutting up or casting.
- Ashes: powdery residue, left after metallurgical combustion process.
- Dust: metallurgical solid matter in a fine state (dust), which may be produced by metallurgical operations or smoke/gas purification.
- Sludges: a mixture of some finely powdered substance and water formed as waste in various industrial processes. It can be finely crushed ore mixed with water or metalliferous slime.
- Refractories: materials that are resistant to high temperature, used in furnace for metallurgical processes.

If the type of metallurgical waste present in the deposit does not fall into any of these categories, you may select the option "none from the list".

## Question 5: Estimated total volume of the residues from metallurgical origin ($m^3$) in the deposit

To this question, the user can freely indicate a numerical value corresponding to the estimated volume of residues. It is one of the key data, as the potential for resource recovery (metals/minerals) in a deposit increases with the volume of metallurgical residues, and as the fixed costs of the works will be distributed on a larger quantity. In this way, the number of weights assigned increases according to 3 classes :

- Up to 100,000 $m^3$
- Between 100,000 $m^3$ and 500,000 $m^3$
- Greater than 500,000 $m^3$

## Question 6 : Estimated surface occupied by the deposit ($m^2$)

The user is advised here to provide a numerical value corresponding to the estimated surface occupied by the residues inside the site. While this information is not as crucial as volume for material recovery, it is useful to evaluate the possibility to grow metal-accumulating plants on a deposit and to know the average thickness of the waste. For instance, if a deposit is deemed suitable for growing such plants , a wider distribution of the deposit over a larger area makes it more attractive for cultivation on a large scale. Thus, if a deposit has been considered suitable

[1] Definitions adapted from the oxford English online dictionary (https://www.oed.com/) and ScienceDirect (https://www.sciencedirect.com/)

for growing such plants (e.g. metallurgical waste in a grain size distribution suitable for plant growth), the more widespread the deposit is over a large area, the more interesting it will be for growing a large area. In the same way as for volume (see question 5), the weights are assigned via 3 groups:

- Up to 10,000 m²
- Between 10,000 m² to 100,000 m²
- Greater than 100,000 m³

## Question 7: Are the residues clearly separated from each other, or mixed?

You have the option to specify whether the residues are mixed or separated in response to this question. Indicating that the waste is mixed implies that separating the residues may be more challenging (requiring more equipment/ facilities, and additional steps in the process).

## Question 8: Surface occupied by constructions:

For this question, the user must select the site area occupied by the constructions, by choosing among these 3 categories:

- Up to 50%
- 50 to 75%
- Greater than 75%

Starting a earthwork project on a site without any existing buildings is significantly easier and cheaper. Therefore, the weightage has been allocated in a manner that imposes a penalty on the overall score for sites with larger built-up areas.

## Question 9 : Surface occupied by trees:

This question is useful to assess whether the site will be costly to clear or not, as a lower surface percentage occupied by trees will typically results in reduced land clearing costs. The presence of valuable biomass at an environmental point of view will also impact the project feasibility. The expected answer has to be the area occupied by trees, which can be selected from 3 categories:

- Less than 50%
- Between 50 and 75%
- More than 75%

## Question 10 : Is there historical data available?

It is a medium impact question that requires a simple yes or no answer. The purpose is to ascertain whether relevant historical information is accessible, which can help minimize the expenses associated with preliminary assessments by enabling a prompt determination of the site's material recovery potential (such as quickly identifying past deposit locations and metallurgical processed used, linked with metal and mineral contents).

## Question 11: Is the site easy to access for trucks and heavy equipment?

The accessibility of the site and the deposit for heavy equipment and trucks is an important parameter to evaluate the cost of the works, as the cost of road construction can be high. There are four answer options available to choose from, with the highest weighting given to those describing easier access to and on the site:

- Easy access to the site
- Easy access on (inside) the site
- Easy access to the site and on the site
- Not accessible

## Question 12: Is the site considered as hazardous?

Evaluating the hazardousness of a site is important as the detection of hazardous substances on the site could potentially lead to the implementation of specific measures. For instance, the presence of dangerous substances, such as asbestos, can be very expensive and challenging to remove while ensuring the safety of workers.

The site can be classified into three risk levels:

- Low risk: a site without any identified industrial activity or pollution
- Moderate risk : a site with moderately hazardous contamination, such as a deposit rich in heavy metals
- High risk site: a site with particularly hazardous substances (e.g. tar, asbestos, toxic chemical products, ...), requiring the use of special measures or equipment

It's worth knowing that the presence of residues with high potential for metal recovery, such as slag or scrap, generally results in a medium-risk classification due to the presence of heavy metals. Therefore, it's almost impossible for a PMSD to be a low-risk site due to its metallurgical history, even if the metals are encapsulated into a solid matrix. Most PMSD where material recovery is feasible will typically fall under the medium-risk category.

## Question 13 : Must the site / an area of the site be rehabilitated?

The rehabilitation of the site or a portion of it is often costly due to pollution caused by the former metallurgical activities. Rehabilitation typically only occurs when prompted by an event, such as a legal requirement to clean up the site or the desire to repurpose it for urban planning, commercial value, or biodiversity. Material recovery from the site is usually considered in conjunction with its rehabilitation and is encouraged by the presence of a trigger event.

In that way, respondents can choose among 3 possibilities answers:

- Yes, from an environmental/legal perspective.
- Yes from others  other perspectives (urban planning, biodiversity, etc)
- No, it is not necessary to rehabilitate the site.

A positive impact on the score for metals and minerals is expected if the site needs to be rehabilitated because costs will have to be engaged in any way. However, the production of

ecocatalysts is not encouraged in the event of a rehabilitation project since it entails planting vegetation.

## Question 14 : Is there a known interest for the reconversion of the site (public or private projects/ interests)?

A yes or no answer is required. Similarly to question 13, the rehabilitation of a site will be catalysed by the presence of public/private interest in the conversion of the site. Thus, a favourable response will similarly have a positive impact on the recovery score of metals/minerals, and a negative impact on the ecocatalyse and soil score.

## Question 15: Surface occupied by low vegetation:

To determine if a site is suitable for plant production (e.g. if one wishes to use these plants later for the production of ecocatalysts), the percentage occupied by low vegetation should be estimated, according to 3 ranges:

- Less than 25%
- Between 25 and 50%
- Above 50%

As a result, a high percentage occupied by low vegetation indicates high fertility.

## Question 16 : Current use of this surface, regardless of the official use of the deposit

One crucial factor to consider when initiating a materials recovery project is the current use of the surface area occupied by the metallurgical deposit. Starting a project on an abandoned site is much easier than on an area already occupied by industrial activities, or located in a protected area, or used by local people for recreational activities (despite the possible existing hazards). Therefore, users are requested to indicate the current use of this surface, by choosing from one of the following three options:

- Abandoned area, but not protected from environmental point of view
- Abandoned area, but protected from environmental point of view
- Activities still ongoing (industrial activities, recreational activities, residential area, etc.)

## 2.3 How to interprete the results?

Figure 4 shows an example of the results and graphs obtained after completion of all the questions. The example shown is obtained from filling in the information for the La Louvière DUFERCO site, in the SMART PHOENIX included in NWE-MESIS[2] (completed SMART PHOENIX shown in Appendix B).

**Commenté [l1]:** Explanations on MESIS only given in the footnote so as not to confuse the user. The MESIS guidebook access link must be added in the footnote ( xxx to be replaced by the link were we could access to the deliverable)

In the example below (Figure 4), a score for each material category and a total score are shown. The user is supported in the interpretation of each score by using the legend, which indicates the threshold value at which a score is considered satisfactory (Figure 5). These threshold values are given for each material recovery category and for the total score.

For further support to the user, a color code accompanies the score for each material category. It is green when the score exceeds the threshold value defined in the legend, and red when it is below. For the total score, three categories instead of two, are defined to determine the adaptability of a site for the recovery of materials: good, average and bad. The orange light has therefore been added to qualify an average total score.

Another indicator is also shown in addition to the score, the corresponding ranking (in %), which expresses the positioning of the site's deposit compared to a deposit where the recovery potential is absolutely ideal: the higher the ranking for a category, the higher the interest in collecting that specific material. This helps to quickly identify whether or not it is relevant to recover these types of materials. In the example in Figure 4, it can be seen that the ranking is excellent for the recovery of metals and minerals (100%), i.e. it is highly relevant to investigate/characterise the deposit in more detail regarding metal/mineral recovery possibilities and thus move to step 2 of the REMICRRAM methodology. On the other hand, it can be seen that the prima facie estimate of the site's fertility is not that optimal (ranking of only 50%, with a score just above the threshold value). Since soil fertility improvement and ecocatalyst production are related parameters, a poor estimate of soil fertility implies a prediction of poor potential for ecocatalyst production. Therefore, it will be impossible to achieve maximum potential for ecocatalyst production if the soil fertility estimate is poor. Thus, it can be infered that the potential of this deposit for ecocatalyst production would not be excellent either, which is indeed the case. Despite the score for ecocatalyst production being above the satisfactory threshold, its ranking is 78%. All ranking for each material recovery category are graphically displayed.

In conclusion, the analysis of the total scores and for each category of material of the DUFERCO deposit shows that all scores are sufficient to reasonably assign a favourable diagnosis to further investigate the potential of this deposit for material recovery. It is therefore appropriate to proceed to step 2 of the REMICRRAM methodology: the SMARTIX.

[2] NWE-MESIS is the inventory structure developed by the NWE-REGENERATIS project, that contains key parameters for the development of material recovery project from PMSD. Among other various drivers which may be economic, environmental, social, it also include other information coming from historical studies, site visit and pre-investigation estimates. The SMART PHOENIX is included in NWE-MESIS and shown here. For more detailed information on NWE-MESIS, please consult xxx

**YOUR SCORE:**

| | DEPOSIT 1 | | DEPOSIT 2 | | DEPOSIT 3 | | DEPOSIT 4 | | DEPOSIT 5 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | SCORE | RATING (%) | SCORE | RATING (%) | SCORE | RATING (%) | SCORE | RATING (%) | SCORE | RATING (%) |
| METAL recovery potential score | 910 | 100% | | | | | | | | |
| MINERAL recovery potential score | 910 | 100% | | | | | | | | |
| SOIL improvement (for the growing of ecocatalyst) potential score | 100 | 50% | | | | | | | | |
| ECOCATALYST production potential score | 310 | 78% | | | | | | | | |
| TOTAL SCORE | 3895 | 93% | | | | | | | | |
| CONFIDENCE LEVEL | | 100% | | | | | | | | |

**WARNING: Make sure your confidence level is high enough in order to ensure your score is meaningful!**

| | DEPOSIT 1 | DEPOSIT 2 | DEPOSIT 3 | DEPOSIT 4 | DEPOSIT 5 |
|---|---|---|---|---|---|
| number of questions whose confidence is below or equal to 50% | 0 | | | | |
| number of questions whose confidence is not indicated | 0 | | | | |

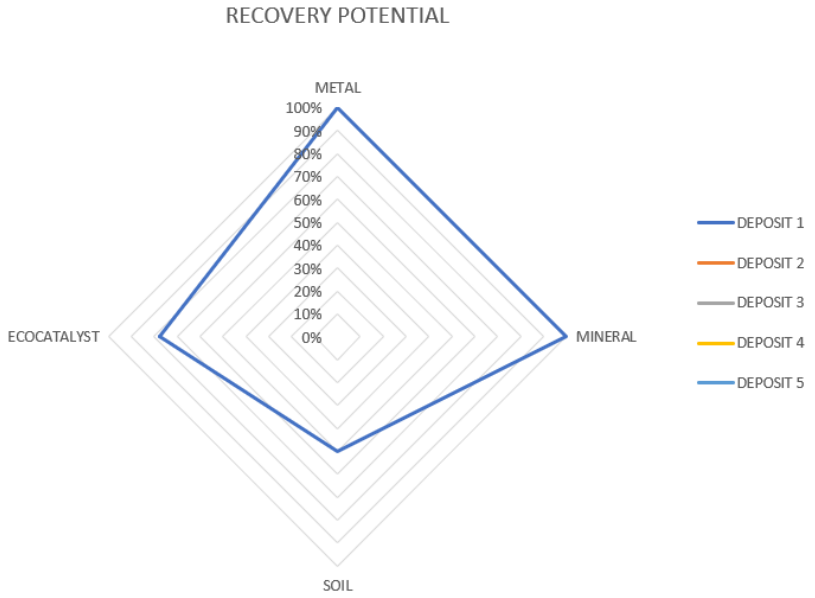


*Figure 4: Scores obtained after filling in after completion of the information for the DUFERCO site for the deposit that is being investigated in the NWE-REGENERATIS project (All completed questions shown in Appendix B)*

LEGEND : Score above which the site has an interesting recovery potential

| | |
|---|---|
| Metal | >450 |
| Mineral | >450 |
| Soil | >100 |
| Ecocatalyst | >200 |

TOTAL SCORE

| | |
|---|---|
| Bad | 0 - 2100 |
| Medium | >2100 |
| Good | >3000 |

*Figure 5: Legend to be used to interpret the results of the scores obtained*

# 3 APPENDICES

## APPENDIX A : WEIGHTINGS

**List of weights in the SMART PHOENIX for each 16 questions:**

| N° | Questions | recovery of minerals | recovery of metals | soil im-provement | ecocatalyst production |
|---|---|---|---|---|---|
| 1 | **Does it contain a landfill, a deposit or a backfill with significant amount of metallic residues (Pb, Cu, Zn, Fe)?** | | | | |
| | Yes | 120 | 120 | 0 | 0 |
| | No | 20 | 20 | 0 | 0 |
| 2 | **Is the site a PMSD?** | | | | |
| | Yes | 200 | 200 | 0 | 200 |
| | No | 0 | 0 | 0 | 0 |
| 3 | **Is the site registered in a database/inventory?** | | | | |
| | Yes | 10 | 10 | 0 | 0 |
| | No | 0 | 0 | 0 | 0 |
| 4 | **What main kind of metallurgical residues (from metallurgical origin) are present?** | | | | |
| | slags | 100 | 100 | 0 | 0 |
| | metal scraps | 400 | 0 | 0 | 0 |
| | ashes | 0 | 75 | 0 | 0 |
| | dusts | 75 | 75 | 0 | 0 |
| | sludges | 50 | 25 | 0 | 0 |
| | refractories | 0 | 400 | 0 | 0 |
| | None from the list | 0 | 0 | 0 | 0 |
| 5 | **What is the total volume of the residues from metallurgical origin (m3)?** | | | | |
| | 0 to 100 000 | 0 | 0 | 0 | 0 |
| | 100 000 to 500 000 | 10 | 10 | 0 | 0 |
| | > 500 000 | 20 | 20 | 0 | 0 |

| | | | | | |
|---|---|---|---|---|---|
| 6 | **What is the site area occupied by residues/ backfill from metallurgical origin (m2)?** | | | | |
| | 0 to 10 000 | 10 | 10 | 10 | 0 |
| | 10 000 to 100 000 | 10 | 10 | 10 | 20 |
| | > 100 000 | 10 | 10 | 10 | 20 |
| 7 | **Are the residues/backfill clearly separated or mixed?** | | | | |
| | visually separated | 20 | 20 | 0 | 0 |
| | mixed | 10 | 10 | 0 | 0 |
| 8 | **what is the surface still occupied by constructions?** | | | | |
| | 0 to 50% | 20 | 20 | 20 | 20 |
| | 50 to 75% | 10 | 10 | 10 | 10 |
| | > 75% | 0 | 0 | 0 | 0 |
| 9 | **What is the surface still occupied by trees?** | | | | |
| | 0 to 50% | 20 | 20 | 20 | 20 |
| | 50 to 75% | 10 | 10 | 10 | 10 |
| | > 75% | 0 | 0 | 0 | 0 |
| 10 | **Is there historical data easily available?** | | | | |
| | Yes | 20 | 20 | 20 | 20 |
| | No | 10 | 10 | 10 | 10 |
| 11 | **Is the site easy to access for trucks and heavy equipments, from a physical point of view?** | | | | |
| | To the site and on the site | 20 | 20 | 20 | 20 |
| | On the site (deposit) but not to the site | 10 | 10 | 10 | 10 |
| | to the site but not on the site | 10 | 10 | 10 | 10 |
| | not accessible | 0 | 0 | 0 | 0 |
| 12 | **Is the site considered as hazardous?** | | | | |
| | low risk (no industrial activity identified and no pollution) | 20 | 20 | 20 | 20 |

| | | | | | |
|---|---|---|---|---|---|
| | moderate risk (usual risk, e.g. moderately hazardous contamination such as heavy metals) | 20 | 20 | 20 | 20 |
| | high risk (contamination that requires the use of special measures or equipment, e.g. asbestos, tar, toxic chemical products) | 10 | 10 | 0 | 0 |
| | unknown | 10 | 10 | 0 | 0 |
| 13 | **Must the site/an area of the site be rehabilitated/ valorised ?** | | | | |
| | Yes, from environmental/legal point of view | 20 | 20 | 10 | 10 |
| | Yes, from others point of view (urban planning, biodiversity,etc.) | 20 | 20 | 10 | 10 |
| | No it musn't | 10 | 10 | 20 | 20 |
| 14 | **Is there a known interest for reconversion of the site (public or private projects/interests)?** | | | | |
| | Yes | 10 | 10 | 0 | 0 |
| | No | 0 | 0 | 10 | 10 |
| 15 | **What is the surface still occupied by low vegetation - grass, bushes (i.e. soil suitable for ecocatalyst)** | | | | |
| | 0 to 25% | 0 | 0 | 10 | 10 |
| | 25 to 50% | 0 | 0 | 15 | 15 |
| | > 50% | 0 | 0 | 20 | 20 |
| 16 | **What is the current use of the area occupied by metallurgical residues (mentionned in the question no. 6)?** | | | | |
| | Abandoned area, but not protected from environmental point of view | 20 | 20 | 20 | 20 |
| | Abandoned area, but protected from environmental point of view | 10 | 10 | 10 | 10 |
| | Activities still ongoing (industrial activities, recreational activities, residential area, etc.) | 0 | 0 | 0 | 0 |

# APPENDIX B : SMART PHOENIX COMPLETED WITH INFORMATION FROM THE DUFERCO SITE

| N° | QUESTIONS | SITE | | DEPOSIT 1 | |
|---|---|---|---|---|---|
| | | Answer | Confidence | Answer | Confidence |
| 1 | Does the site contain a landfill, deposit or backfill with significant amount of metallic residues (mainly Pb, Cu, Zn and Fe)? ① | Yes | Very high (100%) | | |
| 2 | Is the site a PMSD*? ① | Yes | | | |
| 3 | Is the site registered in a database? ① | Yes | Very high (100%) | | |
| 4 | What main kind of residues (from metallurgical origin) are present? ① | | | | |
| | Slag | | | Yes | Very high (100%) |
| | Metal scraps | | | Yes | ↑ *please only indicate confidence just above for all types of residues* |
| | Ashes | | | Yes | |
| | Dust | | | Yes | |
| | Sludges | | | Yes | |
| | Refractories | | | Yes | |
| | None from the list | | | No | |
| 5 | Estimated total volume of the residues from metallurgical origin ($m^3$) in the deposit ① | | | 1000000 | Very high (100%) |
| 6 | Estimated surface occupied by the deposit ($m^2$) ① | | | 1000000 | Very high (100%) |
| 7 | Are the residues clearly separated from each other, or mixed? ① | | | Mixed | Very high (100%) |
| 8 | Surface occupied by constructions: ① | 50 to 75% | Very high (100%) | | |
| 9 | Surface occupied by trees: ① | 0 to 50% | Very high (100%) | | |
| 10 | Is there historical data available? ① | Yes | Very high (100%) | | |
| 11 | Is the site easy to access for trucks and heavy equipment? ① | Easy to access to the site and on the site | Very high (100%) | | |
| 12 | Is the site considered as hazardous? ① | Moderate risk (usual risk, e.g. moderately hazardous contamination such as heavy metals) | Very high (100%) | | |
| 13 | Must the site / an area of the site be rehabilitated? ① | Yes, from others aspects (urban planning, biodiversity, etc.) | Very high (100%) | | |
| 14 | Is there a known interest for the reconversion of the site (public or private projects/interests) ? ① | Yes | | | |
| 15 | Surface occupied by low vegetation: ① | 0 to 25% | Very high (100%) | | |
| 16 | Current use of this surface, regardless of the official use of the deposit ① | | | Activities still present (industry, use by people, etc.) | Very high (100%) |