Sustainable Technologies for Calcined Industrial Minerals in Europe

Work Programme Topic Addressed: NMP.2012.4.1-1
New environmentally friendly approaches to minerals processing

D8.2 Publication Materials

Publication materials will be produced throughout the project, including publications in scientific and technical journals, press releases, posters and brochures for conferences.

Verification criteria - Copies of publications available (P12).

Due date of deliverable: June 2016 (M42)
Actual submission date: FINAL version September 2016

Project Start date: 2 JANUARY 2013
DURATION: 4 years

Dissemination level:

PU (PU = Public)
Dissemination and exploitation plan.

The dissemination and exploitation of results from STOICISM is included in WP8 and its objective is to disseminate the outcomes to audiences across the EU and beyond as well as to develop plans for the exploitation of the results for the benefit of EU industry, industrial mineral sector in particular, society in general as well as assess the potential to expand beyond the industrial minerals.

The Dissemination and Exploitation plan is part of Description of Work (DoW Proposal Part B) and it is designed to ensure that the societal, environmental, developmental and economic impacts of the project are met within the satisfactory timescale of the STOICISM project.

The Dissemination plan includes the following sections:

1. Dissemination strategy as validated by the steering group in April 2013 and consists of five steps:
   a. Clear rationale and objectives for dissemination and exploitation to multiple target groups (scientific, industry, academia, policy makers, ...) Figure 1.
   b. Strategy to identify which results to disseminate and to which audiences.
   c. Determine organisational approaches of different stakeholders and allocate responsibilities and resources within the consortium.
   d. Implement the dissemination strategy by identifying results to be communicated and selecting events to promote the project and network for follow up projects and collecting feedback and fine tune further research.
   e. Monitor and evaluate the effects of the activity and modify dissemination to improve effectiveness.

Figure 1. Illustration of the information flow from the various Work Packages to target audiences.
2. Exploitation: a detailed analysis of the exploitation strategies is presented in the DoW. In summary, an Initial Exploitation Plan was formulated and was followed by the Consortium to ensure the impacts of the outputs of STOICISM are maximised. Also, a specific session was organised in the Mid-Term Review consortium meeting to assess the status of exploitation and knowledge management across the various WP of the STOICISM project to optimize and refine the work related to dissemination and further exploitation. David Moseley (from Imerys), has the role of Exploitation Manager and supervises all the tasks supported by the project manager.

3. Intellectual property: IP management lies in the Steering Group and it is consolidated in the Consortium Agreement. A detailed description of the IP management strategies is in the DoW and two consortium meetings were organised with the EC consultant to address any outstanding issues related to IP ownership between consortium partners.

4. Management of knowledge: This is overseen by the Steering Group. Knowledge is captured in tangible forms such as peer-review papers, reports (Master thesis, PhD thesis), literature surveys, position papers, presentations, posters and so on. In order to streamline the sharing of the data generated by consortium members and gathered from the different work packages the steering group has approved all the communications which was publicly presented in scientific, technical meetings/events/congresses which were national or international.

Based on the dissemination strategy described above the following achievements can be reported:

*STOICISM findings in ten peer-review papers in multiple International and in one National journal:*

13 papers have been submitted in peer-review international journals. Ten papers have been accepted and already published; two are accepted and will be shortly be on-line and another will be submitted in September 2016. University of Lorraine (Lorraine) has submitted 8 papers, followed by University of Exeter (Exeter) with three and University of Aalto (Aalto) and Technical University of Delft (Delft), both with one paper (Fig. 2).

![Peer review publications](image)

Figure 2: Share of peer-review papers accepted/published and university leadership.

The peer review papers are based on the work of one PhD students from Lorraine University (France) and Delft (the Netherlands), two master students from University of Aalto (Finland)
and University of Exeter UK). To address linguistic barriers and to enlarge the dissemination and boost uptake of STOICISM findings, the University of Lorraine prepared one paper in French for an industry review magazine. In annex 1 a list of the international papers and national paper with their complete references are provided.

**STOICISM supports 2 PhD and 33 master students towards breakthrough innovation**

Two PhD students and 33 master students across multiple European Universities have generated a wealth of data covering the lifetime of a mine starting with prospection, mining, waste management, raw material processing up to the final end uses. Around 20 contributions in national or international conferences are based on the work of the master students only. 25 master students are from Exeter (5 students in 2013; 8 students in 2014, 5 students in 2015 and 7 students in 2016), Six students from Aalto University and two students from Delft University (Figure 3). The list of their master thesis is provided in Annex 2. STOICISM boosts research at University and closes the gap towards breakthrough innovation.

![33 Master thesis](image)

Figure 3: Figure shows the share of the master students between the different Universities.

**STOICISM presented in 37 events:**

- The results of the different STOICISM partners have been accepted and presented in 36 international/national events/conferences/scientific or industry meetings as shown in Figure 4A. Figure 4B, shows the location of the 36 events where the STOICISM was presented and promoted with a coverage of 12 European countries (27 events in total) and five non-European countries with (nine events in total in Australia, Canada, South Africa, Brazil & Turkey). The selection of the events is carefully made within the consortium for the European events as well as in close collaboration with the project officer for the non-European events. The audience within these events is a mix of mining industry (industry events and exhibitions) researchers/universities, (EU) policy makers, machinery manufacturers, as well as specialists in mining and processing to foster discussion and stir ideas towards a tailored dissemination.
A. The number of conferences attended per year as well as the number of cumulating events during the entire STOICISM project; Figure 4B. The location of the events where STOICISM was presented and promoted.

- Multiple STOICISM partners have been very active to disseminate the findings of the STOICISM. University of Lorraine and Exeter have been the most active disseminators with 9 events each, followed by Delft, IMA-Europe 6 events, IMERYS presented in 5 events and Alto with 3 events as shown in Figure 5.

Figure 5: Conferences attended by each of the STOICISM partner.

- From 37 events in total, 27 were as platform presentation and 10 as poster presentations. The audience in multiple events is a mix of industry, researchers/universities, EU policy makers, machinery manufacturers, as well as various industry events and exhibitions. The share of efforts in communication and dissemination for each partner is presented in Figure 6 under Platform (Oral) presentations and Poster presentations. In annex 3 a full list of all the events and the references as well as the presenter (in bold) is provided for transparency and completeness.
During the dissemination plan and in order to overcome the barriers which were identified which are linked to language, some of the STOICISM introductory web pages are already translated in German, French and Spanish in addition to the all website which is in English and regularly updated especially in relation to the dissemination activities. In addition, Dr. Dehaine from the University of Lorraine has prepared multiple presentations and one paper in French which was published in a French industry magazine (see annex 1 under national publications).

**STOICISM Awards for PhD and Master student:**

Breakthrough findings and novel technologies used during the STOICISM project are awarded by two awards by two different Jury’s.

   Platform presentation made by Quentin Dehaine (Université de Lorraine, France) entitled: “Critical metals (La-Ce-Nd-Nb, W) and Sn as co-products from the production of Kaolin in Cornwall, UK: Identification and characterisation of the most valuable fractions” received the SIM 2014 award in the category «PhD student». Société de l’Industrie Minérale SIM2014 Congress is the event of the Industrial minerals sector in Europe. 500 experts in charge of the exploitation of a mine, quarry, industrial mineral, cement factory and recycling plant, and more than 4000 visitors took place in Bordeaux (France) from 7-10 October 2014 is an annual event.

   Rachael Tierney’s master dissertation “Targeting Kaolin Deposits with Discrete Fracture Networks”, which was supervised by Prof. Hylke Glass (University of Exeter, UK), was awarded the first prize of the 2014 Midland Valley Digital Field Mapping competition. Application of Midland Valley Move software with appropriate geological inputs addressed the prediction of the degree of kaolinisation of granite.
in the shallow subsurface. Reconciliation of simulated kaolinisation with actual data measured by Imerys showed a promising correlation, suggesting that the chosen approach is efficient at identifying exploration targets.

STOICISM Identity:
Creation of a visual identity (logo) for STOICISM was finalized in consultation with all consortium partners back in March 2013 and the logo and acknowledgement statement has been used in all external and internal communication.

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Project website:
The STOICISM project website www.stoicism.eu has been operational since June 2013 and includes two sections:

1. Public section dedicated to general non-confidential information (project description, consortium information, links to project dissemination events, non-confidential information about results exploitation, relevant European events and project area useful links etc.); All press releases for each of the events were STOICISM was promoted/presented can be found under ‘Past events’ for the previous years (2012-2015), and under ‘News’ for the ongoing year.

2. Member Area dedicated to the exchange of project documents, reports, meeting minutes, progress results, internal training sessions, forum, etc. In addition, a research archive area (member area) contains raw data and supplementary results to be preserved and accessed as necessary beyond the closure of the project. All events related to member activities and internal consortium meetings are being regularly updated in the sections “Events”; “News”.

Ensure STOICISM visibility within STOICISM partners and industry:
Apart from the website, to gain visibility the website is already linked to multiple other websites working in the field of innovation and technological break-through so that search engines can lead newcomers to the project website. The main channels used to achieve high visibility are the following: Industrial minerals-producing companies, downstream manufacturing industries (e.g., coatings, plastic, rubber, brewing, construction, etc.) and their trade associations, consumers, the EU Institutions, EU innovation initiatives and cross sectoral initiatives (e.g. A- SPIRE, the European
Innovation Partnership (EIP) on Raw Materials), national authorities, specialised media, academia, technological institutes, regulatory bodies, potential customers, SME.

- **STOICISM Partners promotion:**
  - Exeter: [http://emps.exeter.ac.uk/csm/staff/lp337](http://emps.exeter.ac.uk/csm/staff/lp337)
  - University of Lorraine: [http://en.calameo.com/read/00464732620da12a6dac8](http://en.calameo.com/read/00464732620da12a6dac8)

- **Industry Journals or machinery suppliers:**

- **Website of policy makers:** The communication channels of policy makers or conference organizers (CORDIS, European Bureau for Conservation and Development, ...) are also promoting the STOICISM project.)
ANNEX 1: Peer review publications

**International Journals:**


**National journals:**

ANNEX 2: List of PhD and Master thesis (grouped by university recent submission year, first)

PhD thesis:

2. Dehaine, Q. (Quentin), 2016. Rare Earths (La, Ce, Nd) and rare metals (Sn, Nb, W) as potential by-product of kaolin production, St Austell, UK. Submitted for the title Doctor of Sciences at the Université de Lorraine. Pp. 1-268. In English with French abstract and foreword. Defense March 2016.

Master thesis Aalto


Master thesis Delft University


Master thesis Exeter University

2016

9.


**2015:**


**2014:**


2013:


ANNEX 3: List of events sorted by year and alphabetic order within the year. In bold presenter

2016:


2015:


**2014:**

22. **Dehaine Q.**, Filippov L. 2014. Rare Earth (La, Ce, Nd) and rare-metal (Sn, Nb, W) recovery from wastes of a kaolin production plant, Cornwall: Definition and characterisation of the most valuable waste stream. 3\textsuperscript{rd} International Symposium on Sustainability through Resource Conservation and Recycling (SRCR 2014), 12-14 June in Falmouth (UK). Platform presentation.


2013:

32. Baricot M., 2013. STOICISM: Research, development and innovation technologies for the processing of and along the value chain of some industrial minerals. MANUFUTURE 6-8 October, Vilnius (Lithuania). Platform presentation.


**2012:**
