Development, accreditation and implementation of doctoral school on social licence to operate (SLO)

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DEVELOPMENT, ACCREDITATION AND IMPLEMENTATION OF DOCORAL SCHOOL ON SOCIAL LICENCE TO OPERATE (SLO)

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Key Words: education, doctoral school, Social Licence to Operate, micro-credentials, curriculum

INTRODUCTION

The European raw materials sector is crucial for the continent's green and digital transformation. However, many raw materials projects face significant delays or cancellations due to community opposition, rooted in concerns over social, environmental, and ethical issues. This resistance underscores the importance of Social Licence to Operate (SLO), a concept that involves obtaining and maintaining community approval for projects. Currently, European engineering education lacks specialized content to address these SLO challenges, which hampers the sector's ability to operate sustainably and effectively engage with local communities.

The EIT funded PRO-SLO project aims to bridge this educational gap by developing a specialized PhD school dedicated to Social Licence to Operate. The project's core objectives include: (1) Designing and accrediting a comprehensive PhD curriculum on SLO; (2) Implementing the course through two pilot schools in Bosnia and Herzegovina (2025) and Greece (2026); (3) Ensuring long-term sustainability of the program by integrating it with SLO conferences and adapting based on feedback.

The expected outcomes include enhanced competence among future industry leaders to manage SLO challenges, ultimately leading to more sustainable and community-oriented raw materials projects.

This work is presented on behalf of the entire PRO-SLO team, which includes experts from various institutions who have made significant contributions to the development and forthcoming implementation of the PhD School. The team's collective expertise in Social Licence to Operate and raw materials management has been crucial in shaping the PhD School.

EXPERIMENTAL PART

Course Development

The PRO-SLO PhD school will be conducted in a hybrid format having 3 phases: (1) Online phase (one week of online instruction will introduce participants to SLO concepts and frameworks); (2) Independent work phase (two months of independent work on case studies, allowing students to apply their knowledge to real-world scenarios); (3) Onsite phase (one week of onsite engagement at selected industrial partners' sites for hands-on experience).

The curriculum is designed using innovative teaching methods, including field work, behavioral experiments, and challenge-based assessments. Learning outcomes, course structure, and instructor roles have been outlined, with ongoing refinement of assessment methods and ECTS credit allocation.

Accreditation Process

The EIT Label, which recognizes courses addressing critical issues in the raw materials sector, is sought for the PRO-SLO PhD school. The accreditation process involves: (1) Aligning with EIT's Quality Framework, which includes standards on purpose and sustainability, course design, teaching and learning, and equality and inclusion; (2) Ensuring learner-centeredness and practice-based approaches through needs assessments and market analysis; (3) Meeting specific requirements, such as providing international and intersectoral exposure and integrating diverse environments into the course.

Pilot Schools

The selection of the pilot schools is based on their relevance and unique contexts. The Bosnia and Herzegovina pilot will utilize Vares silver project owned by Adriatic Metals as a case study, addressing specific community challenges and historical issues. This selection allows for testing and refining the curriculum in a real-world context, particularly given the region's complex social dynamics resulting from past conflicts. The Greece pilot will offer a different industrial and community context, further enhancing the program's adaptability.

RESULTS AND DISCUSSION

Expected Impact

The PRO-SLO PhD school aims to produce graduates who are well-prepared to manage SLO challenges. By equipping students with the necessary knowledge and skills, the course will contribute to more effective community engagement and sustainable project management in the raw materials sector. This initiative is expected to benefit both students and industry by developing future leaders who can navigate and address complex SLO issues.

Pilot Implementation

The application period for the inaugural PRO-SLO PhD school will run from October to December 2024, with the course scheduled from January to May 2025. The onsite component will take place in April 2025 at the Adriatic Metals site in Vareš, Bosnia.

Metrics for evaluating the pilot programs will include: (1) completion rates (targeting the graduation of at least 20 PhD students annually); (2) feedback (collecting and analyzing feedback from industry partners and participants); (3) assessment effectiveness (evaluating the impact of case studies and assessments on learning outcomes). Metrics from the pilots will be used to refine the course content and delivery methods, ensuring continuous improvement and relevance.

Post-pilot, the PRO-SLO PhD school will aim to integrate with the SLO conference to ensure long-term sustainability and continued relevance. The project will focus on maintaining and expanding its impact through ongoing updates and industry engagement.

ACKNOLEDGEMENT

Funding and Support

The PRO-SLO project is funded by the European Institute of Innovation & Technology (EIT), which supports the development and accreditation of innovative educational programs in the raw materials sector.

Collaborators

The project is led by Montanuniversität Leoben, Austria, with contributions from the following consortium partners: AGH University of Science and Technology; Luleå University of Technology; Mineral and Energy Economy Research Institute of the Polish Academy of Sciences; National Technical University of Athens; Technical University in Graz; TU Bergakademie Freiberg; Polytechnic University of Madrid; and University of Zagreb Faculty of Mining, Geology and Petroleum Engineering. Each institution plays a critical role in the development and implementation of the PhD school, contributing their expertise and resources. Special thanks to all the project members for their dedication and expertise. This presentation is made possible through their collective efforts and support.