



ContaminatEd land Remediation  
through Energy crops for Soil Improvement  
to liquid biofuel Strategies

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## PRESS RELEASE

### 3<sup>rd</sup> physical meeting of the EU research project CERESiS at Glasgow, UK

17-18 May 2023

CERESiS partners organized another physical meeting, this time in Glasgow, hosted by the University of Strathclyde, on 17<sup>th</sup> and 18<sup>th</sup> of May. CERESiS being in its last year of research has seen great progress and accomplished significant results. Therefore, the main scope of this meeting was to present the work that has been achieved so far. Partners had the opportunity to discuss and exchange knowledge based on the outcomes of the experiments and the research done within the different tasks of the project. Insightful presentations and videos from field trials provided the means for a “debate” among the partners where different questions were set and answered facilitating the discussion.

During the first day of the meeting, CERESiS partner INTRASOFT, held a workshop where they presented the Decision Support System mockups and explained how one can navigate through, in order to collect feedback for improvement. This showed that significant progress has been made and that the DSS, which is one of the three project pillars, is being developed. At the end of the workshop a questionnaire was distributed among both the physical and the online participants to provide feedback and reflect on the work done.

Furthermore, the technological pillar showed notable improvements. In terms of the Supercritical Water Gasification (SCWG) technology, the modified SCWG plant has been tested and is currently being optimized with respect to increasing gasification efficiency. Regarding the related contaminant separation technologies development, the experimental campaign for the Membrane Gas Absorption (MGA) process development and parametrization has been completed achieving selective H<sub>2</sub>S or combined CO<sub>2</sub> and H<sub>2</sub>S removal under specific operating conditions. A numerical model is currently being developed to match the MGA experiments. Experiments on ECF (Electrocoagulation Flotation), have been performed in a newly developed lab pilot unit to investigate Pb removal from a simulated SCWG brine. Moreover, In terms of the Fast Pyrolysis (FP) technology, experiments investigating optimal operating conditions with respect to maximizing bio-oil yield are in progress. Optimal operating conditions for pyrolysis gas combustion in MILD conditions have been defined. Finally, an “in-house” mechanism has been modified to simulate chemical kinetics in high pressure SCWG conditions. An integrated SCWG chain process model has been developed focusing on identifying key operating conditions and optimum scenarios



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with respect to: (a) increasing end-product diesel - like yield and (b) achieving a self – sustained process.

Last but not least, CERESiS project was thrilled to participate at this year’s EUBCE conference in Bologna, Italy. A number of CERESiS partners gave insightful presentations between the 5-9 of June. The National Technical University of Athens (NTUA), the University of Strathclyde (UoS), and Karlsruhe Institute of Technology (KIT) were actively participating through presentations covering a number of subjects such as, energy crops cultivation in contaminated land, gasification of contaminated biomass under supercritical water conditions, supply chain Optimisation etc. NTUA also presented at the Live Stage where partners discussed the research done within the project so far, covering all three pillars. Finally, CERESiS joined an open-access event on Tuesday 6<sup>th</sup> of June focusing on revamping the SET plan, following a panel discussion between other bioenergy and renewable projects.

A **highlight** of the meeting was the visit to the field trial of the University of Strathclyde, where native perennial grass crop – Reed Canary Grass - is grown. The partners had the opportunity to see the fields at which biomass (Reed Canary Grass – *Phalaris Arundinacea*) production and harvesting are taking place. Reed canary grass is able to stabilize soil, tolerate contaminants and is also used in the biofuel industry. Therefore, it is hoped that growth of the grass crop will reduce the quantity of eroded mine soils moving downstream.

### Photos



A view of the fields of UoS where Reed Canary Grass (*Phalaris Arundinacea*) is grown to serve as biomass for CERESiS



A view of the meeting room at the UoS where the M30 meeting took place



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