Dissemination and fostering of plasma based environmental technological innovation

Main results of work package 3 of the PlasTEP project:

Plasma-based technologies, sustainability analysis and integration into the education process

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plasma for environment protection

Aims of work package

Sustainability analysis of plasma technologies

- Sustainability analysis of plasma based technological application for environment protection
- Analysis of plasma-based environmental protection solutions with respect to environmental performance and research/marketing integration potential
- *Sustainability analysis and evaluation of environmental performance was implemented through the analysis of the emission inventories for plasma technologies in BSR and through the eco-efficiency and cost-benefit analysis of plasma technologies*

Aims of work package

Dissemination and education

- Dissemination the information about the plasma-based environmental protection solutions
- Implementation information about plasma technologies into the educational processes

- *The dissemination was implemented through the seminars, workshops, summer courses, information materials etc.*
- *The collected information was integrated in to the educational process through renewed university environmental courses*

Implementation

Analysis of emission inventories for plasma technologies in the BSR

- The data base of main producers of environmental pollutants (NOx, SOx, VOC) that may be subjected to plasma treatment
- Responsible partner - Vilnius Gediminas Technical University (Lithuania)
- The analysis of the main pollution sources in the BSR is the basis for the cost – benefit analysis and to define the main targets for plasma treatment

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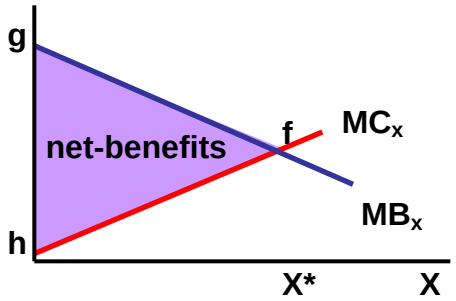
Implementation

Sustainability analysis of plasma technologies

- Eco-efficiency analysis of plasma technologies
- Responsible partner – Kaunas University of Technology (Lithuania)
- The plasma based treatment technologies was evaluated by their impact to the environment, both positive and negative. This was assessed by multiple environmental analyses, such as environmental impact assessment, life cycle analysis, etc.
- Three areas of environmental pollution have been researched: treatment of combustion flue gases to reduce the NOx/SOx concentrations, treatment of emissions to reduce concentrations of VOC and disinfection of drinking water. For each of these three categories, plasma technologies have been compared to the conventional end-of-pipe technologies

Implementation

Sustainability analysis of plasma technologies



- Cost-benefit analysis of plasma technologies
- Responsible partner – Riga Technical University (Latvia)
- The cost estimation of plasma technologies was performed and compared to “traditional” treatment technologies. The analysis was performed in micro- and macro-economical level. The total expected costs was compared with the total expected benefits of plasma technologies
- The main task of this study was to determine whether a particular investment or technology is effective in economic terms or not, from the perspective of sustainable development

Implementation

Knowledge transfer (dissemination and education)

- Responsible partner – all project partners
- Dissemination the available knowledge on plasma treatment technologies to the appropriate target groups including trainings, seminars and workshops for possible end-users (industry, energy sector enterprises, decision makers, scientists etc.)
- A set of lectures for knowledge transfer in universities, for the summer schools
- A web-based tool, capable of providing industrial specialists or decision makers on the selection of plasma technologies for treatment of pollutants

Main results of work package

Relations with the environment

- Database on emission inventories of main polluters and pollutants that may be subjected to plasma treatment in BSR
- Report on eco-efficiency analysis of plasma-based technologies for treatment of pollution
- Report on cost-benefit analysis of plasma technologies

Main results of work package

Dissemination and education

- Summer schools: 2010 in Latvia; 2011 in Poland; 2012 in Lithuania
- Training courses 2011 in Poland and 2012 in Lithuania
- Presentations at the International Conferences and Fairs, over 40 in 2010-2012
- Workshops for SME's 2010-2012 in Germany, Poland, Finland and Baltic countries

Main results of work package

Dissemination and education

- Handbook for plasma application for environment protection
- The results from all prepared reports, education materials was used to develop a specific wiki with the main terminology about plasma application for environment
- Set of lectures/presentations for plasma application for environment protection
- The main project results and information are downloadable from the project web page www.plastep.eu and from the project partners pages

Thank you for your attention!

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