Ref. no: 15-P	Project title	**Bioethanol Production from Agricultural Wastes for Waste Minimization and Carbon Budget Analysis**					
Name of legal entity	**Country**	**Proportion carried out by legal entity (%)**	**No of staff provided**	**Name of client**	**Origin of funding**	**Dates (start/end)**	**Name of consortium members, if any**
Sustainable Development and Cleaner Production Center (SDCPC)	Turkey	100	5	The Scientific and Technological Research Council of Turkey (TÜBİTAK)	The Scientific and Technological Research Council of Turkey (TÜBİTAK)	August 2011 - August 2015	

Detailed description of project	**Type of services provided**
Directive of Renewable Energy 2009/28/EC aims at achieving a 20% share of energy from renewable sources by 2020. Besides, the Landfill Directive 1999/31/EC obliges Member States to reduce the amount of biodegradable waste that they landfill to 35% of 1995 levels by 2016. In the scope of EU adaptation process of our country, the proposed study aims to achieve the production of renewable bioethanol fuel with an almost 30MJ/kg calorific value for transportation sector (lab scale) derived from the selected agricultural wastes (wheat straw and corn stover) which has a high energy content (17.9- 18.5 MJ/kg) and cannot be disposed properly in Turkey. Laboratory scale bioethanol production will be achieved from selected agricultural waste by enzymatic hydrolysis/fermentation methodology with the application of different enzymes and pretreatment methods and process efficiency will be evaluated The process residue (lignin) with an almost 13.4 Mj/kg heating value will be evaluated as a feeding fuel for electricity production in order to increase system efficiency. The produced fuel ethanol will be characterized according to the EN 15376 -AB bioethanol standard in order to indicate the suitability of the biofuel for transportation sector. The bioethanol fuel will be blended with petrol with the ratio of 5% and the emission tests will be applied, the improvement in motor emissions will be evaluated.	- Characterization of feedstocks - Laboratory scale bioethanol production from the selected agricultural wastes (wheat straw and corn stover) - The evaluation of the process residue (lignin) as a feeding fuel - Characterization of fuel ethanol according to EN 15376 - Evaluation of E5 fuel emission level