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THE CENTER FOR SUSTAINABLE UTILIZATION OF RESOURCES: QUANTIFYING CLIMATE CHANGE IMPACTS OF MANAGING WASTES

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ABSTRACT

The environmental impact and potential for utilization of the billions of tons of used products and materials discarded each year by humanity is immense. The sheer magnitude of the materials and complexity of waste management and reuse make the issue of quantifying impacts and best practices all the more difficult. In recognition of this task, the Earth Engineering Center (EEC) of Columbia University and the Environmental Engineering Group of North Carolina State University combined resources in 2008 to form a research organization that is focused on defining and promoting best practices for sustainable waste management. This is the Center for Sustainable Use of Resources (SUR; wwwSURcenter.org) and its mission is to quantify the greenhouse gas emissions and other life cycle impacts of various "waste" management practices; and use this information for advancing the best practical means for managing used materials, in the U.S. and globally. The SUR Center builds on the strengths of past research at Columbia and North Carolina State on recycling, composting, waste-to-energy, and landfilling. This paper describes some of the research work completed and underway at the Center.

1.White Paper on Organics Diversion Study

In 2008, SUR researchers completed an assessment of the state-of-the-practice of food waste composting in North America. The diversion of food waste from landfills represents a large potential opportunity as it is estimated that less than 2% of food waste generated in the U.S is recovered for composting. With this opportunity comes the challenge to develop implementation strategies that can be scaled up and are economical.

Food waste is generated in the residential, and commercial, institutional and industrial (ICI) sectors. The easiest material to collect is that from large generators of reasonably pure material as is generated in the ICI sector (e.g. grocery stores, farmers markets, food processing facilities, large restaurants). In each case, training and commitment is required on the part of the waste generators to insure a feedstock that is largely free of contaminants. If a pure feedstock can be source-separated, there are multiple several proven technologies for the aerobic or anaerobic treatment of food waste. The product of each technology has the potential