

Summary of the Lomellina Energia Project and Review of the Capacity Upgrade Project

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Introduction

This paper presents a summary of the historical performance of the Lomellina Energia ("LE1") project near Milan Italy and discusses the design improvements to the second unit ("LE2") that will be implemented during the capacity upgrade project in 2006/2007.

The LE1 project, developed by Foster Wheeler Italy ("FWI"), is a 200,000 ton per year (tpy) municipal waste combustor (MWC) project that accepts municipal solid waste (MSW) from the Lombardi region near Milan and processes the MSW into refuse derived fuel (RDF) for combustion in a Foster Wheeler circulating fluidized bed (CFB) boiler. The processing portion of the plant recovers ferrous metals, non-ferrous metals and organics during the fuel preparation process. The steam created during combustion is used in a nominal 18 MW Ansaldo steam turbine/generator and condensed with an air-cooled condenser.

The facility went commercial in September 2000 and has operated as expected for much of the past five years. Presented herein are the requirements and results of the LE1 acceptance tests and the quantities of net electricity generated, equivalent availability factors, MSW received, MSW processed, and recovered material quantities for the past four years.

Due in part to the technical success of the existing LE1 Project; in part to the electricity generation incentive programs and the need for additional disposal capacity in the regions around Milan, the LE2 project is being developed as a capacity upgrade project that will add a new CFB boiler, steam turbine generator, air-cooled condenser and all necessary auxiliaries to provide for a 180,000 ton per year expansion of the facility. The LE2 project will incorporate a number of design improvements to the boiler and air cooled condenser as well as changes to the basis of design due to the lessons learned from the first five years of operation of the existing facility.

Presented is a summary of LE1 historical performance, a description of the LE2 project including how the design basis and actual design differs from the existing LE1 facility, a summary of the projected performance of the new LE2 system. Conclusions are made that include the following:

- CFB technology can be successfully employed for combustion of RDF and generation of steam for electrical generation or process steam needs;
- Conservative design basis, technical considerations and other