

POWER GENERATION INTEGRATED IN BURNERS FOR PACKAGED INDUSTRIAL/COMMERCIAL BOILERS

Carlo Castaldini¹, Avtar Bining²

*¹CMC-Engineering, 2900 Gordon Avenue, Suite 100, Santa Clara, CA 95051
Phone(408) 730-1300; Fax (408) 735-0564
Email: carlo@cmc-engineering.com*

*²California Energy Commission, 1516 9th Street, Sacramento CA 95814-5512
Phone: (916) 657-2002; Fax (916) 653-6010
Email: abining@energy.state.ca.us*

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ABSTRACT

CMC-Engineering (CMCE, Inc) together with Coen Company, Lawrence Berkeley National Laboratory (LBNL) and Elliott Energy Systems (EES, Inc.) is developing and demonstrating new industrial burners with integrated capability for low-cost and fuel efficient distributed power generation. Under a program funded by the California Energy Commission and Southern California Gas Company (SCG), CMC-Engineering and Coen will engineer, assemble and demonstrate a novel ultra low-NO_x burner coupled with an Elliott Energy Systems microturbine generator modified and embedded in the windbox to generate 80-kWe of power, sufficient to render small to mid-size packaged steam generators more efficient and independent of grid power. By emphasizing thermal heat recovery the goal is to minimize capital investment for the prime mover and maximize fuel savings to make small-scale distributed generation (DG) more cost-effective and better integrated in the industrial process equipment and user practices. This paper describes the hardware selection and assembly and presents the benefits of this approach compared to more conventional distributed generation combined heat and power (CHP) systems.