

**BUSINESS AND SUSTAINABLE DEVELOPMENT IN BRICK PRODUCTION****F. Moedinger<sup>1</sup>, G. D'Anna<sup>2</sup>**<sup>1</sup>*Ziegelei Gasser GmbH S.r.l., Naz Sciaves, Italy*<sup>2</sup>*ANDIL ASSOLATERIZI - Italian National Association for Brick and Tile Producers, Italy*

The search for alternatives to the classical, mainly fossil, energy sources within a high-energy consumption process as brick making can certainly be very rewarding. Within this framework the production of biogas by anaerobic digestion of locally available biomasses has been integrated in a brickyard. Experimental tests have been carried with different biomasses, mainly with fruit processing wastes and kitchen residues. The generation of biogas from biomasses within a brickyard permits a considerable reduction of fossil fuels consumption and allows a profitable use of all fermentation wastes, both liquid and solid. The fermentation wastes, about 3% in weight of the total dry substance fed to the plant, can be used as pore forming agent without any major influences on the quality or chemical composition of the green or fired bricks. On the contrary, it appears from the tests that the organic sludge tends to increase plasticity of the feedstock on extrusion. The investment for the biogas plant itself and the ancillary equipment is rapidly amortized: gate fees for the disposal of waste and missed purchase of primary fuels and last not least the considerable image gain. In certain countries, like for example in Italy, the substitution of renewable fuels is further financially incentivated by the government. CO<sub>2</sub> emission certificates trade can also generate a considerable additional income.