

**TECHNICAL FACTSHEET | n. 1**

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## **ECONOMICK INTERMITTENT KILN**

# ECONOMICK

## INTERMITTENT KILN

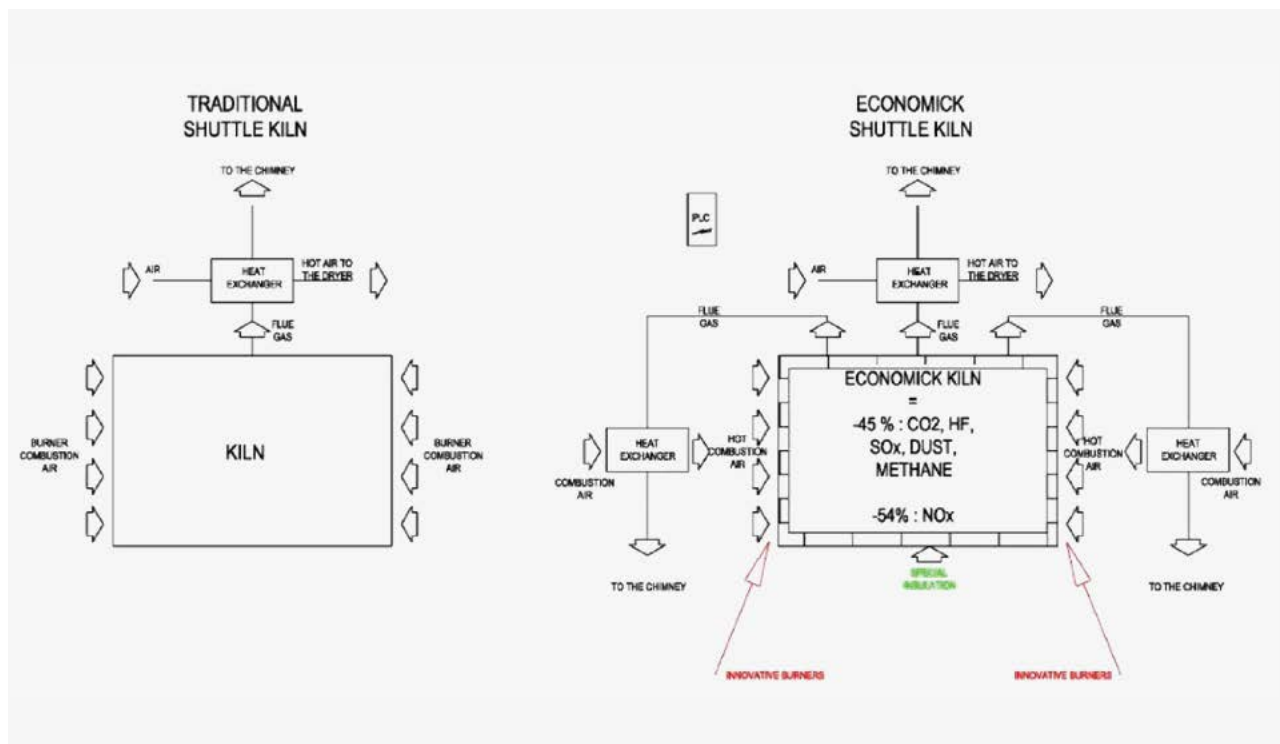
### SHORT DESCRIPTION |

The Life ECONOMICK project, launched in July 2016 and led by Italian company SE.TE.C, has the ambitious goal of developing a shuttle kiln for firing ceramic pieces, with similar level of specific fuel consumption similar to those of a tunnel kiln.

The ECONOMICK kiln is addressed to about half of the ceramic market, including abrasives, refractories, sanitaryware, tableware, and minor sectors like ceramic art and terracotta floors.

Through the Life ECONOMICK project, the Consortium aims to reduce the fuel consumption of shuttle kilns by 45%, bringing significant economic and environmental benefits.

### PROCESS SCHEME |



## ADDED VALUE |

In the ECONOMICK kiln, the Consortium focuses on the critical aspects of shuttle kilns, namely heat recovery and insulation.

Heat recovery and air/fuel ratios is optimised using a dedicated software package developed by SE.TE.C.

The insulation was chosen as the best possible compromise between weight and thermal conductivity. This results in lower consumption, faster cycles (2 a day) and greater comfort for personnel working close to the kiln.

## INNOVATIVE FEATURES |



### INTEGRAL REUSE OF THE HEAT FROM FLUE GASES

An Ipeg patented technology is used to recover heat from flue gases to pre-heat combustion air. Significantly, this technology does not use flues or additional pipes and above all does not alter the fluid dynamics of the flue gases in any way, which therefore remain identical to those of a traditional shuttle kiln.

This advantage, together with the possibility of adjusting the flame speed, is vitally important as it optimises the flue gas/ piece thermal exchange and does not affect either uniformity of firing or energy savings at low temperatures.



### INNOVATIVE BURNERS

This patented technology allows to use preheated combustion air and to reduce max temperature in the burner body, adjusting flame speed.



### NEW AIR/GAS SETTING SYSTEM

SE.TE.C. software allows to maintain a preselected air/gas ratio and to use different values in function of the firing cycle



### NEW KILN INSULATION

The study, based on a dedicated software package, allowed for a careful selection of the refractory materials, resulting in a lining that minimises thermal inertia and at the same time has a cool wall temperature of below 60°C.

## PARTNERS |

SETEC GROUP

| [www.setecsrl.it](http://www.setecsrl.it)

LIFE CYCLE ENGINEERING

| [www.lcengineering.eu](http://www.lcengineering.eu)

KERASAN

| [www.kerasan.it](http://www.kerasan.it)

## PROJECT DESCRIPTION |

ECONOMICK project will develop an innovative shuttle kiln for ceramic production, which consumes about 45% less energy than actually existing ones and, consequently, allows the industry to reduce costs, CO<sub>2</sub>, NO<sub>x</sub>, HF, SO<sub>x</sub> and dust emissions, and raw materials.

Intermittent (or shuttle) kilns are used in about 50% of the ceramic sectors, excluding only tiles industry. Producers of sanitary and table ware, refractory or artistic ceramics use a shuttle kiln for refining ceramic artefacts with some defects, while smaller factories use such a kiln also for first firing, alternatively to a tunnel kiln that requires high production levels.

Thanks to a computerized management of air and gas flow, the almost complete reuse of warm air from cooling and advanced materials for thermal insulation, the ECONOMICK kiln will ensure a specific consumption of 1300-1400 kcal/kg of firing product, comparable to the performance of a good tunnel kiln.

By substituting their tunnel kilns with ECONOMICK kiln, European industries- in particular SMEs – will drastically reduce their costs. This will strongly boost their capacity to maintain or improve their market share, especially in the high-end market.

[www.economick.eu](http://www.economick.eu)

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