

Energy consumption and CO₂ and NO_x emissions Minimised in an Intermittent Ceramic Kiln

The ECONOMICK project developed and validated an innovative intermittent kiln for ceramic production, with important savings in terms of environmental impacts and economic costs, as well as benefits from a social perspective.

MAIN RESULTS OF THE ECONOMICK PROJECT

SANITARYWARE FIRING

3 360
pieces

SANITARYWARE RE-FIRING

125
pieces

TABLEWARE FIRING

30 800
pieces

LCA, LCC and S-LCA based on data collected from the experimentations performed during the project

ENVIRONMENTAL ACHIEVEMENTS

SANITARYWARE FIRING TOTAL LIFE CYCLE*



Fossil Global Warming
Potential (CO₂eq)

-44%

* in 20 years life

AIR EMISSION FROM NATURAL GAS CONSUMPTION

Hydrofluoric
Acid (HF)

Sulfur Oxides
(SO_x)

Dust

Nitrogen
Oxides
(NO_x)

-49%

-53%

SANITARYWARE RE-FIRING



CO₂eq natural gas

-48%

TABLEWARE FIRING



CO₂eq natural gas

-49%

ECONOMIC ACHIEVEMENTS

SANITARYWARE FIRING



Energy cost per kg

-33%

Savings over the kiln
service life



-28%

corresponding up to
€ 970 000

SANITARYWARE RE-FIRING



Energy cost per kg

-33%

TABLEWARE FIRING



Energy cost per kg

-35%

SOCIAL ACHIEVEMENTS

A Social Life Cycle Assessment
was carried out on the
Innovative ECONOMICK kiln
and the traditional shuttle kiln.

The main benefits identified
are:

reduction
of workers'
exposure to high
temperatures
during the working
time, thanks to
a lower external
temperature of kiln
walls;

opportunity of
avoiding night
shift, thanks to
shorter firing
cycles



www.economick.eu