



QE Energy International Company Limited

Saving energy for your future

**Energy Saving Project
using XPlate® Technology**



Cut



XPlate® (Xenogenic Plate) is the innovative fuel saving proven technology of over 10 years of intense research applied for the UK patent in 2008 and international patent in 2009.

It is a device which is flexible and easy to install at various process applications such as boilers, thermal power stations, cement, ceramic kilns, steel plants, gasification units, or any industry that uses any fuel for combustion with oxygen. This proven technology has been used by many government and private organizations around the world.

XPlate® performance was tested and verified in 2010 by The Coal Energy Technology Institute (CETI) of the National Academic of Science (NAS) Government of Ukraine.

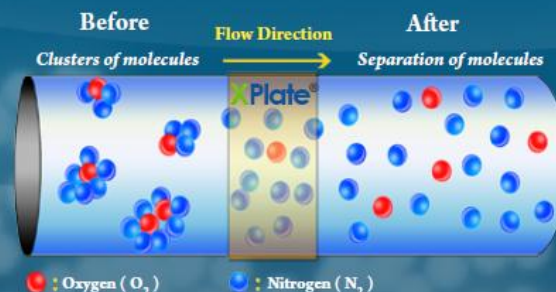
Technology Principle

When gaseous fluids such as air flow in any pipe, the molecules naturally move and interact, or hit each other on the side wall of pipe. The interactions that occur between the atoms of a molecule with the other atoms of the other molecule cause the attractive and repulsive forces to occur. These forces are known as intermolecular forces that cause the molecules to adhere together and form molecular clusters.

These molecular clusters of the passing air can be separated into single molecules of O_2 and N_2 by installing Xplate® on the surface of pipe. This device will neutralize the pipe surface. As a result, O_2 and N_2 are separated from the clusters. Now more free O_2 is available for complete combustion.



XPlate® Technology is relatively different from the other existing technologies in the market. Regardless of fuel type used we basically just provide more reactive oxygen for combustion.



Boilers & Power Stations

XPlate® can be used in both conventional and CFB boilers applicable to industries like thermal / captive power generation, food processing, paper & pulp, textile, pharma, and rubber industries. Fuel savings can be achieved between 2% - 5%. Major benefits are less fuel usage and considerable amount of reduction in CO₂, NO_x and SO_x.

Flame Test – Coal boiler, Philippines Without XPlate®



With XPlate®



CFB Boiler, China



Coal Boiler, China



Power Station, South Korea



GAS Boiler, UK



GAS Boiler, Russia



Cement Rotary Kilns

Cement plant,
Thailand



XPlate® application in cement clinker production will reduce fuel energy consumption (Kcal/Kg) at least more than 2%. It can be used with the wet and dry processes, with satellite coolers or with pre-calciner type.



Photographs taken from a stable rotary kiln operation.

Before XPlate® installation (Without)



After XPlate® installation (With)



Steel Reheating Furnaces

XPlate® application in reheating furnaces improves combustion applicable with various fuel types such as natural gas, syngas, LPG, fuel oil, used oil, etc. in steel reheating furnaces. Fuel savings range from 2% to 6%.

Billet RHF plants, Thailand



Billet RHF plants, Vietnam



Ceramic Kilns / Spray Dryers

Ceramic tile kiln process XPlate® application will save natural gas or syngas in range of 2% - 5% of gas consumption. In spray drying process XPlate® benefits are gas saving and less powder moisture.



Ceramic Tile kiln, India



Spray dry, Vietnam

Tile kiln, Indonesia

Tile kiln, Thailand



Coal Gasification Process

Chemical reactions of carbon, oxygen and steam in gasification process have great benefits from XPlate®. The more free molecules of oxygen and water can react more effectively with the porous coal granules, enhancing more CO, H₂ and CH₄ production in syngas. Typically the syngas calorific value increases at least by 1% with less coal consumption.

Coal gasification plant, Vietnam



Gasifiers



Gasification, Vietnam



Steel Oxygen Converters / Smelting Furnaces

XPlate® is highly beneficial in Basic Oxygen Steelmaking (BOS) and non-ferrous smelting furnaces. A special XPlate® is designed to treat O₂ clusters and frees molecules which increases O₂ surface area for better chemical reaction inside furnace to achieve at least 1% more yield in metal production.

BOS, Ukraine



EAF, Thailand



Copper smelting furnace, Russia



Basic oxygen converter



Environmental Benefits

XPlate® helps in reduction of greenhouse gas (GHG) emission by improving combustion efficiency of fuel carbon.

CO₂

- ✓ By carbon mass balance, reduce carbon fuel reduces CO₂ outlet (Ton/day)

NO_x

- ✓ By nitrogen mass balance, reduce N₂ inlet reduces NO_x outlet (Ton/day)

SO_x

- ✓ By sulfur mass balance, reduce coal fuel inlet reduces SO_x outlet (Ton/day)

XPlate[®]
Technology

Technology Advantages

- New energy saving technology with low Return on Investment (ROI)
- XPlate® technology can be used in any kind of combustion where oxygen is needed as one of reactants.
- Performance warranty of 1 year
- Instant use. No downtime.
- Reduce electricity consumption at air fans
- Reduce CO₂, NO_x, SO_x
- Provide more stable combustion
- Easy maintenance

COMPANY PROFILE

QE Group of Companies (QE) specialise in innovative engineering, manufacturing and technology. We have invented a technology to treat air as a single molecule which on entering a combustion zone results in fuel savings and reduce pollution. The technology is applied to coal, fuel oils and gas by our clients in a range of industries such as; cement and ceramic kilns, food processing plants, gasification units, power stations, steel furnaces and mill by our representatives in 14 countries.

Our Mission:

To provide considerable fuel savings and reduce green house emission worldwide

Our Vision:

To be recognized as the world leading player in fuel saving and green house emission reduction technology

