

# IGCC

## A practical route for combined production of hydrogen and power from fossil fuels

As we reported in the last issue of *FW News*, interest in gasification technologies is gathering momentum.

Integrated Gasification Combined Cycle (IGCC) is a commercially-proven technology which combines the production of hydrogen and electric power from fossil fuels, such as coal, coke and heavy residue oils.

Soaring natural gas prices, growing demand for hydrogen for hydrotreating to produce cleaner fuels, and the need for steam are major incentives for refiners to consider gasification.

Coke gasification is also getting more attention as a strategic investment for an increasing number of refiners, particularly in the USA where there is a growing appetite for heavy crudes and coking units.





When associated with CO<sub>2</sub> capture and sequestration facilities, the IGCC plant can help meet strategic targets, such as:

- A clean and environmentally-compatible use of high sulphur and heavy metal contents fuels
- Large size plants for competitive electric power and hydrogen production
- A low cost of CO<sub>2</sub> avoidance
- A flexible design to meet different capacity requirements

Luigi Bressan (pictured), technology director, based in our Milan office, recently presented a paper on IGCC at the 3rd Bottom of the Barrel Technology Conference & Exhibition in Antwerp. The paper described an IGCC plant based on an oxygen-blown entrained bed gasification unit sized to produce a large amount of hydrogen and to feed an F technology gas turbine.

The overall performances and investment costs were estimated and used to evaluate the cost of electricity assuming a selling price for hydrogen. From the comparison of the economic data for plant configuration with and without CO<sub>2</sub> capture, the cost of CO<sub>2</sub> avoidance was also determined.

We expect to see improvements in IGCC efficiency and investment costs as turbine, gasifier and air separation unit technology continues to evolve. This will make the combined production of hydrogen and electric power from IGCC plants more and more attractive.

**FW infobase**

To download a copy of Luigi's paper, visit:  
**[www.fwc.com](http://www.fwc.com)**