



## The peculiar case of the Italian power industry

Andrea Clavarino, President of Assocarboni (Italian Association of Coal Operators), Italy, discusses the Italian energy problem, the future role of coal as a possible solution, and the Italian lead in developing clean coal technologies.

Although Italy has one of the most developed economies in the world, it is dependent on imports for almost 85% of its energy requirements. This heavy reliance on foreign oil and gas, from sources such as Libya, Algeria and Russia, has made energy security and diversification one of the country's top concerns. This is behind the increase in coal consumption. From an admittedly low base, coal use is expected to have gained a 14% share in electricity production by 2010.

In Europe, an average of 60 - 70% of power production is generated from a mix of coal and nuclear power; in Italy gas is predominant. In 2006, 56% of electricity generation was gas-fired, while 12% was oil-fired. Only a further 12% was coal-fired, with renewables making up the rest (20%). Italy is thus the only country in the world that depends on foreign gas for more than 50% of its electricity generation.

That dependence will grow gradually but constantly over the next years.

While the rest of Europe will continue to produce at least 60% of its electricity from nuclear and coal, Italy will move,

by the same percentage, to natural gas. In doing so, the Italian electricity system is forced to accept prices fixed by the gas "duopoly" of Algeria and Russia, as there are no competitive alternative sources.

There are also infrastructural deficits, which mean that Italy could not cope with an energy crisis should one occur. There is only one regasification plant in the country: the 2 billion m<sup>3</sup> capacity Pagaglia plant in Liguria. With forecasted gas imports in 2007 of 85 billion m<sup>3</sup>, this would be completely inadequate to meet the needs of the Italian power industry.

Consequently, the industry is and will remain the most vulnerable to oil and gas price trends. For example, a variation in Brent quotation of US\$ 10/bbl would result in an Italian electricity bill increase of 38% compared to 6% in the UK or to 3% in France.

### How can Italy improve safety of supply and competitiveness?

The latest generation of nuclear power could be a solution, but in Italy popular consensus would come only with an oil barrel price

beyond US\$ 300. Moreover, nuclear power is not popular even in the rest of the world: in the next ten years only a few nuclear power plants are projected to be built.

This author suggests that coal would be the best choice to reduce Italy's dependence on foreign oil. All the main international energy players will invest in coal-fired

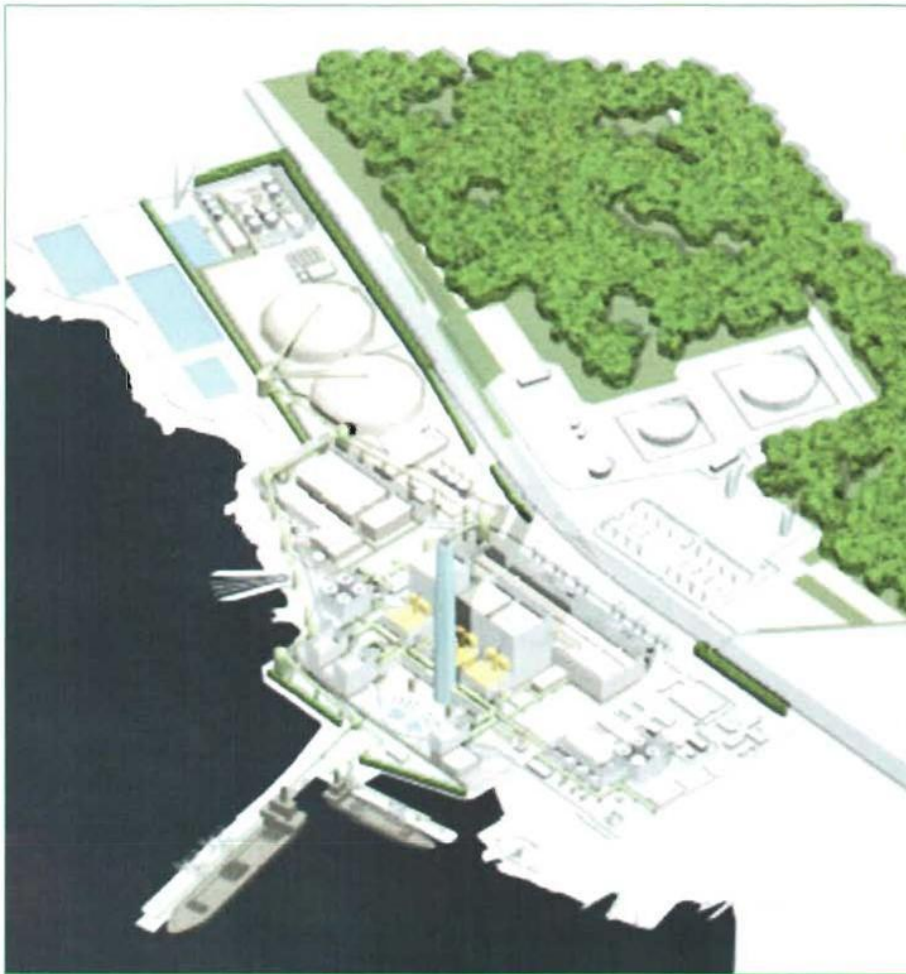
power plants across Europe. For example, in the UK, RWE has obtained a permit to build a new 2000 MWh power plant, even if coal already accounts for the 35% of the UK's energy mix.

Over the next five years, Italy will increase its reliance on coal from 14% to 20%. Coal-fired power generation by Enel will rise to 50%. Italy is not alone in its return to coal: driven by rising demand, record high oil and natural gas prices, concerns over energy security and an aversion to nuclear energy, European countries are slated to build about ten coal-fired plants over the next five years, plants that will be in use for the next four decades. And this is to say nothing of the fast-expanding emerging economies of India and China, where coal remains a major fuel source for more than two billion people.

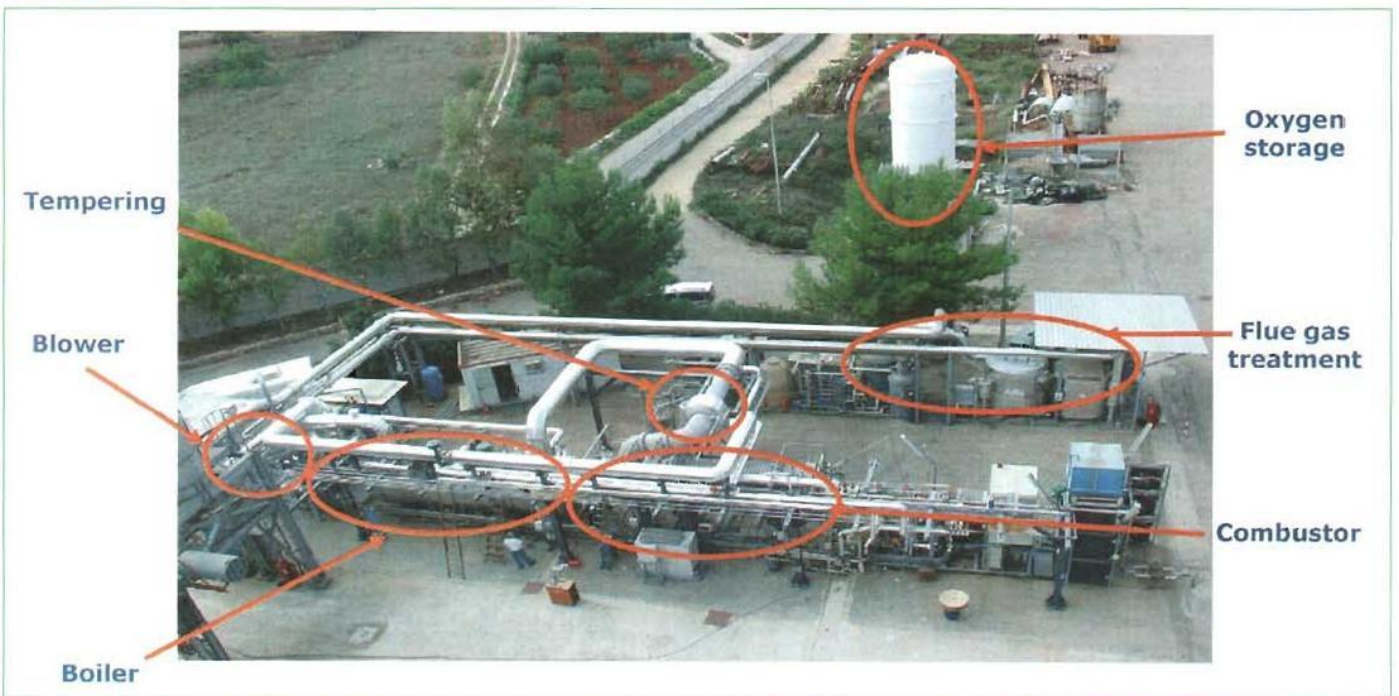
### Energy efficiency and clean coal

As a consequence, the author suggests that energy efficiency represents the main global challenge in coming years. Technologies for clean coal technology (CCT) and carbon capture and storage (CCS) are required and should be introduced at the soonest possible moment. If implemented on a large scale, these technologies could greatly contribute to reducing CO<sub>2</sub> emissions. In this respect, the role of the EU and of national Governments is fundamental in order to create the conditions for a safe and low-carbon energy system.

Assocarboni concurs with the importance given to CCS technologies as it believes they represent a strategic element for



Torrevaldaliga Nord power plant.



Oxy-coal pressurised combustion at the Gioia del Colle 5 MW pilot plant.