AFTER FOSSIL FUELS: WHAT NEXT ?

In the expanding industrialisation of the West, and with the drive to industrialise and/or expand industrialisation in the developing countries of the world, specifically the developing countries of Asia and the Middle East, and not forgetting the underdeveloped countries of the world, in particular North Korea, more and people are looking for alternative sources of power to generate electricity in order to keep the lights switched on and the factories, churning out product.

Wind power has been proved, at this time, at least, not to be cost-effective when weighed against the generation of power, using conventional petroleum as the fuel source.

Other sources of power, photovoltaic, solar, wind, etc, have continued to be proved not to be competitive when costed out against the generation of power, using fossil fuels.

Which leads one in direction to nuclear energy.

Many international banks have long toyed with the idea of trying to ascertain whether or not investments in companies, building nuclear power plants, are good investments: The conclusions that have been reached appear to vary from one international bank to another.

One thing is certain, however: As long as the real cost per barrel for crude oil is below $US28, nuclear energy does not have a look-see stacked up against conventional, power-generation power plants, the energy sources, being fossil fuels.

Despite all of the obstacles, real and imagined, the Government of the People's Republic of China (PRC) has determined that it is ready and able to finance not fewer than 30, new nuclear plants in order to meet the growing needs of the country over the next 4 decades or so.

No doubt, the PRC's nuclear reactors will be constructed on the relatively *'new'* technology, known as *'European Pressurised Water Reactor.'*

Latest statistics indicate that the entry cost of such a reactor would be about €38 per megawatt hour by the year 2010.

That would, most likely, be cheaper than a gas-powered reactor after the introduction of Emissions Trading System.

Translated, it suggests an entry price of a nuclear generating station of about €679 million.

However, it is generally accepted, internationally, that, should the price of a barrel of crude oil slide below the price of $US28, then, nuclear energy would not be competitive against conventional, fossil-fuel generation plants in pure economic terms.

A factor in respect of the construction of a nuclear power-generating plant is the initial, high fixed costs.

Currently, a new nuclear power plant has a useful life of between 40 years and 60 years, at most.

Decommissioning of a nuclear power plant is a factor, albeit a smallish one, relative to the commissioning of a plant, that has to be taken into consideration in investing in a nuclear, power-generating station due to the inherent risks with regard to the radioactive waste, which has to be entombed for a number of years after being removed from a decommissioned reactor.

A factor, very much in favour of a nuclear, power-generating plant, is that it is an absolute protection from the price and supply volatility of fossil fuels.

With the cost of a barrel of crude oil, breaking one record-high price after another, back-room, pen-pushers in scores of financial institutions are churning out statistics in an effort to make determinations in respect of the future with regard to nuclear energy versus the generation of power, using oil-fired furnaces and coal-fired furnaces.

The conclusion, having been reached, is that nuclear energy appears to be very attractive, considering crude-oil prices at their present high levels.

Further, the non-depletion of the fuel to power nuclear plants is a real plus, compared with the depletion rate of natural gas and petroleum-based products.

In Europe and the US, today, the types of operational reactors are known as BWR and PWR: *'**B**oiling **W**ater **R**eactor'*; *'**P**ressurised **W**ater **R**eactor'*.

These reactors have a maximum life expectancy of 60 years without any major technical problems.

The life expectancy of a nuclear power plant is the key to the feasibility and viability of the construction of a facility.

Politics

The world has not forgotten, and it is unlikely to be forgotten in a hurry, the disasters of Three Mile Island and Chernobyl.

Three Mile Island is an island in the Susquehanna River in southeast Pennsylvania southeast of Harrisburg.

It was the site of a major nuclear accident on March 28, 1979, when a partial meltdown released radioactive material and forced the evacuation of thousands of nearby residents.

Chernobyl is a city of north-central Ukraine, north-northwest of Kiev.

It was the site of a major nuclear power plant accident on April 16, 1986. The human population of Chernobyl in 1986 was 12,000.

The creation of new nuclear, power-generating plants often conjures up mental recollections of the above-mentioned disasters.

However, by and large, nuclear energy plants have an extremely good safety record.

Nevertheless, Italy and Sweden have both phased out their respective nuclear power-generation plants.

Germany and Belgium are in the process of shutting down their nuclear plants.

Which raises the question as to whether or not the PRC has the necessary personnel to ensure the safety of its proposed, 30 new nuclear, power-generating plants.

Because of the accidents at the Three Mile Island and Chernobyl nuclear power plants, Europe has a very negative image to nuclear power.

In view of the exemplary safety record of Western nuclear facilities, such facilities will, in the course of time, be embraced by investors and consumers alike in the face of the ever-rising costs of energy, which are generated, using fossils fuels.

Whenever there is a suggestion that a Western government is desirous of building a nuclear power plant, or a series of nuclear power plants, or an application is received from private enterprise to construct such a plant, the determination will boil down, not to an economic one, but a political one.

In Europe, it has been proved that wind power is not competitive in pure cost terms.

Thus governments have to subsidise wind-generating plants.

The same is true of more renewable energy sources in today's world.

But because renewable energy sources fulfill a political goal, they are encouraged in spite of the heavy recurrent costs to consumers of such facilities.

In other words, consumers, whether or not they realise it, are subsidising every wind-generating plant, directly or indirectly.

Thus, nuclear energy is the obvious economic choice as a method of generating electricity without reliance on fossil fuels with their inherent gyrating costs.

-- E N D --

If readers feel that they would like to voice their opinions about that which they have read in TARGET, please feel free to e-mail your views to editor@targetnewspapers.com or targnews@hkstar.com. TARGET does not guarantee to publish readers' views, but reserves the right so to do subject to the laws of libel.