The coal-to-oil option

The coal-to-oil (CTO) option proposed by Bharadwaj *et al.*[1] deserves attention at least now. India could have had some CTO plants already in operation today, had the Government listened to pioneers like A. Lahiri (former Director, Central Fuel Research Institute (CFRI), Dhanbad). As a news reporter, I had seen an experimental CTO plant at CFRI based on Fischer–Tropsch synthesis that Lahiri had built some 35 years ago. He was using the product from this plant to drive office vehicles. He had submitted a feasibility report for a 1 million tonne commercial plant, which he mentioned would have needed Rs 260 crores then. India's first science plan prepared by the National Committee on Science and Technology (NCST), New Delhi had also listed the CTO technology among the priorities, but successive governments failed to act on the recommendation. Lahiri himself was a dejected man when he resigned as director and left the country. It is not known what happened to his experimental plant, but CFRI itself does not exist anymore; it has been merged with another CSIR institute.

Examples of such missed opportunities for India's energy security are abound. In the 1980s, T. K. Ghosh (Indian Institute of Technology, New Delhi) pioneered the technology for converting rice straw into alcohol and was building the country's first pilot plant with assistance from UNDP. After UNDP withdrew, the newly formed Ministry for Non-conventional Energy Sources (MNES) stopped funds and the pilot plant was shut down after Rs 10 million had already been spent on it. It is ironic that the same Ministry is today advocating fuel alcohol for motor cars; something that H. B. Mathur (IIT(D)) was urging the Government to do in the 1980s. He had an Ambassador car engine running in his laboratory fuelled by alcohol and also ammonia, a gas that can be synthesized from air and water using electricity from nuclear plants that do not emit CO_2. C. Subramaniam, the driving force behind NCST as India's first Science Minister in 1974, had announced in Parliament that the Government would set up a solar energy research institute. His promise was not fulfilled. So was another NCST recommendation: magneto-hydrodynamics (MHD) power generation from hot gas that was claimed to be less polluting and more efficient than conventional thermal plants. The question is whether India's energy planners will walk through some of the forgotten paths or limit their option to striking a nuclear deal with the United States in the hope that shipments of uranium alone will solve the energy problem.

1. Bharadwaj, A., Tongia, R. and Arunachalam, V. S., *Curr. Sci.*, 2007, **92**, 1234–1241.

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Science in public media

Generally, public knowledge about science comes from the media – mainly television, newspapers and, last but not least, the Internet. These sources have quite an impact on public opinion. That a source focuses on one scientific field and neglects other fields may cause the public to become either unfamiliar with the other topics or to lose interest in them. In this way, some people may appear not to be interested in the environment, but be 'fans' of technological novelties; others may be familiar with health science – so popular nowadays – but totally unfamiliar with technology; etc. To find whether science indeed is treated differently by the various news sources, let us carry out a brief survey of chosen webpages, usually connected with popular international newspapers.

The *International Herald Tribune* provides a health/science column. Indeed, news presented therein mainly refers to health and science. The policy of joining health and science may also be found in *The Times of India*. *The New York Times*, on the other hand, has separate columns for science, health and technology; interestingly, news from the health column also has links with the science column. The *Timesonline*, webpage of *The Times* and *The Sunday Times*, has no direct column on science. In contrast, the *Guardian Unlimited* provides various science columns, including environment, technology, science, education, and life and health. In the *USA Today* there is a health and behaviour section in the news column. *The Washington Post* has a news column with technology and health sections. Finally, *BBC News* provides health, science/nature, and technology sections in the news column.

Thus there is a significant diversity in the approach to presenting science news and stories. Some sources do not give a quick and easily noticeable link to science, or they neglect many scientific fields, focusing, for instance, on health sciences. That in some sources health goes with science suggests that disciplines of science other than those related to health might be neglected. Readers who are loyal to their favourite sources most likely acquire their knowledge of science from these sources. To be up-to-date then, one would have to read several sources – nowadays, however, this is seldom possible because of limited time one can spend on reading. Therefore, for science to reach the common reader, which is an important issue in education as well as scientific activity, news sources should publish results and news from a wide range of scientific fields.

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