

before the ancient histories of China can remember. Along its bank are monasteries, shrines and temples, some carved into the cliff faces or hewed from rocks in the middle of the river. There are also natural formations which evoke their own mythology. The misty landscape of traditional Chinese paintings are copies of the nature of this region. The upper sides of the gorges are often lost in cloud, while the valleys of tributaries which join the great river are guardians to waterfalls, pools and grottos. The dam may not be a biblical flood, but it will destroy the icons of those who worship nature, while creating an idol for those who bow before the great god Progress.

The farmers of the Yangzi are those most affected by resettlement. Their houses stand singly or in clusters, set against slopes or atop ridges. They are proudly substantial, often double-storey stone buildings, painted white, with surrounds of banana and citrus trees. The banks are rich in deposits of silt, and every metre in which a farmer can stand is cultivated. Vegetable patches are naturally angled towards the warm sun breaking through the mists. Fruit trees and vines mingle on the steeper slopes, and even a ridge on a cliff is likely to have some crop planted. Along the water edge are small fenced inlets where ducklings are bred, and on the rocks, jutting into the fast flowing current, fishermen scoop nets through the yellow water.

Industries which have evolved for centuries have also stamped their trademarks on the river: shipyards, which build, refit and recycle the river craft; mine shafts and quarries; grimy coal dumps and dusty cement stores. Factory complexes, which would dominate the skyline of a plain, are here tucked into a chasm where the smokestacks cannot mark the horizon and fumes are mingled with the mists. Pump houses gulp the river water, pushing it to the world above from where it will trickle down after irrigating the crops. Another legacy of civilization is seen in the drains which cough their waste into the water already laden with mud and silt. Rainbow slicks of oil and rafts of conglomerated plastic swirl and gyrate to the tempo of the currents. The damming of the Yangzi will still the waters, causing massive problems of silting and clogging.

According to the Chinese Authorities, of the 1.3 million people who will be forced to resettle, half will be moved to a

new world hundreds of metres above their current homes, while the other three-quarters of a million will be taken thousands of kilometres to the north-west, to Xinjiang Province, where a concerted programme of resettling Han Chinese has already begun. This resettlement is causing anger and hostility amongst the native Uigur population, who speak Turkish and practise Islam. Some suggest that the resettlement programme may be Beijing's way of quelling the challenges to Chinese rule which have been heard in this region in recent years.

The people from Yangzi will be offered generous terms to resettle in this area of desert and climatic extremes. But the mists and flow of the Yangzi are in their veins, the slopes of its banks dominate their lives, its bounty sets their menu, so that adjustment to the harshness of a former nuclear test zone will be difficult.

The views of those who will be flooded out of the Yangzi Gorges are not forthcoming, particularly after Tian An Min, but I was asked by a passenger on a ferry who was a native of the area, why I wanted to journey up the river. He was answered by his companion, with sadness in his voice, 'Because this will be the last time ever to do so!'

Murray Tai

Power Games

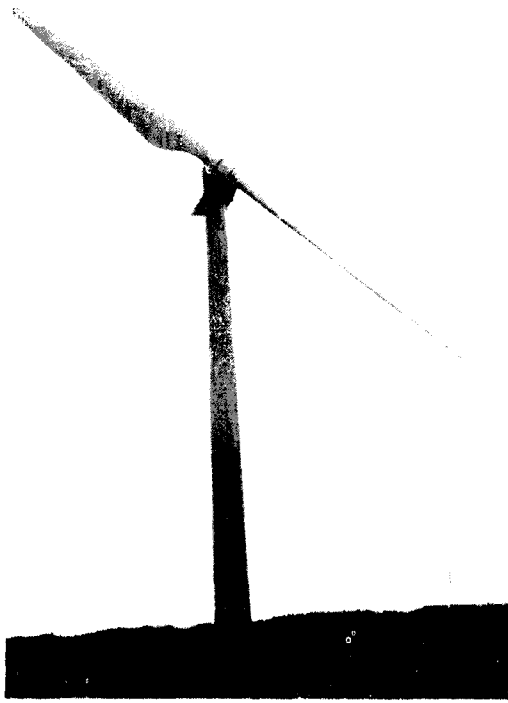
What ever happened to the case for soft-energy paths? Even with the threat of global warming, the ecological, social and economic arguments in favour of non-nuclear renewable energy sources (such as solar, wind and biomass) have been buried in the bog of the Australian energy debate, squashed by the elephantine feet of mega coal-fired electricity plants.

But don't despair, the month of June heralded some promising renewable energy initiatives in Australia. The newly formed Sustainable Energy Industries Council of Australia (SEICA) — the first peak organization to represent the Australian renewable energy and energy efficiency industry — was launched in Melbourne and Sydney. Representing wholesalers, manufacturers, retailers, consultants, and researchers in the renewable/efficiency energy sector, SEICA is committed to furthering the growth and profitability of the industry in ways that are consistent with the principles of ecologically sustainable

development. These principles are broadly defined to include social equity, intergenerational equity, the protection of ecosystems and species, a cautious approach to risk assessment and a global perspective.

In the same week as SEICA's Melbourne launch, the Environment Branch of the Commonwealth Department of Industry, Technology and Regional Development (DITARD) held the first of a series of three workshops (in Melbourne, Perth and Sydney) on the Australian renewable energy industry. The workshops were to advise an ad hoc government-industry working group which will present a long-term renewable energy industry plan to the Industry Minister, Alan Griffiths, by September this year. DITARD invited representatives from the renewable energy industry (principally solar thermal, solar photovoltaic, mini-hydro, windpower, biomass and renewable energy conversion systems) to attend the workshops as part of a government-industry consultation process designed to identify the barriers to industry growth at the individual enterprise, general industry and broader institutional levels.

Perhaps the most interesting feature of the DITARD initiative is that it seeks to side-step the current impasse in the Australian energy debate. Despite the intensive media hype surrounding the Greenhouse '88 national conference link-up, the federal government's National Greenhouse Response Strategy and National Ecologically Sustainable Development Strategy (both released in December 1992 after a lengthy neo-corporatist consultation process) were disappointing. In particular, the narrowly framed 'no-regrets' Greenhouse Strategy concentrated only on those measures that are economically feasible and minimally disruptive in the short term. Not surprisingly, the absence of any firm commitment to targets and timetables in the two Strategies generated considerable disillusionment and cynicism in the environment movement. The recession, the economic might of the Australian coal industry, over-investment in coal-fired power stations following over-optimistic forecasts for energy demand, and severely distorted pricing signals resulting from hidden subsidies in the electricity market left little room for the vigorous promotion of renewable energy options — even though this might have appeared to an innocent bystander



to be the obvious response to the greenhouse problem. Indeed, in an earlier draft of the National Greenhouse Response Strategy, one unnamed state averred that the renewable energy industry was 'a threat to the Australian economy'.

It was partly against this background that enlightened officers in DITARD's Environment Branch found a way of bypassing the much bogged-down energy debate. They did this by looking at renewable energy options as part of an industry (rather than energy) policy that would, among other things, build an export industry to address Australia's international obligations to transfer environmentally sound technologies to developing countries (while also helping to reduce greenhouse gas emissions in Australia — we have the dubious distinction of being in the top league of emitters on a per capita basis).

The DITARD workshops showed that the renewable energy industry is a highly diverse and segmented one, made up of small- and medium-size companies. Australian renewable energy technologies are highly sophisticated and, in some cases, international leaders, particularly in photovoltaics, which are used in Telecom's outback phone boxes. Moreover, the industry provides skilled employment, is high 'value-added' and is well situated in relation to Asian markets. Even for industry ministers primarily interested in 'bottom lines', this green industry could potentially strengthen Australia's weak

manufacturing base and improve the terms of trade. From deep greens to economic hard-heads, from the Australian unemployed to Asian villagers, the renewable energy industry seemed to offer something for everyone, appealing simultaneously to hand (work), brain (money?) and heart (environment).

So why has such an initiative been so long in coming? As the DITARD workshops discovered, there are many barriers to industry growth — some relatively small and surmountable, others large and, for the time being, considerably entrenched.

Here, as in so many other areas of science policy, the familiar Barry Jones lament holds (i.e., we have the bright ideas and inventions but lack the enterprising culture and commercial follow up). Other barriers identified by the workshop participants included lack of business training, shortage of skilled personnel, lack of reputable and reliable consumer information, lack of clear labelling and industry certification of products, an absence of cheap consumer financing schemes to overcome the deterrent effect of high up-front costs (especially for solar hot water heaters), lack of co-operation between firms to enable the sale of integrated and customized products and services, and lack of positive tax incentives. Moreover, until the formation of SEICA, the renewable energy industry had not had a peak industry association to represent its interests, although there have been associations representing particular sectors of the industry, such as the Australian Solid Fuel and Woodheating Association (led by a Mr Kevin Wood).

Most of these smaller barriers can be easily removed or lowered by an array of fiscal and regulatory measures that would make up a relatively uncontroversial industry plan: a range of new tax incentives, attractive consumer financing schemes, business advice and export assistance, active government procurement programmes based on full-life cycle costing, standard accreditation and performance auditing. There is no doubt that an industry strategy developed along these lines would provide a considerable boost to the renewable energy industry.

It also became apparent in the workshops that existing energy policy could not be ignored. Indeed, most participants singled out the established non-renewable energy sector as one of

the most significant barriers to growth in the renewable energy sector. The problem is particularly acute for the renewable energy sector, as the development of export markets is largely dependent on growth in the domestic market. It is here that the solar/wind/biomass power of the fledgling renewable energy industry is no match for the economic power and political clout of the established electricity industry, despite the fact that renewables seem destined to generate more dollars at less overall cost in the long run.

As the 1980s have shown, the environment movement has found it relatively easy to build campaigns on appealing 'green' or 'nature' issues (forests, wilderness, coastlines) but much more difficult to capture the imagination of the public and politicians on 'brown' issues such as industry or energy policy. This is not due to the lack of a comprehensive campaign strategy on the part of environment organizations. Quite the contrary, the environment movement has promoted alternative energy strategies ever since the days of the Lake Pedder campaign in the early 1970s which began the assault against Tasmania's long-standing policy of hydro-industrialization. The relative lack of success has more to do with the strength of opposition, forged by the pattern of economic development of the Australian states, particularly through decades of inter-state competition to attract large-scale heavy industry by bidding down, among other things, electricity prices to levels that were (and still are) well below their full cost to society.

In the current moves towards a national electricity grid, we are likely to witness an interesting 'power play' over pricing policies. The high levels of state debt and general over-investment in coal-fired plants suggests that the playing field will continue to favour the dinosaurs. How-ever, if full-cost accounting were applied to the Australian energy market (that is, accounting that incorporated social and ecological 'externalities' over a broader time horizon), the much maligned notion of a level playing field would ironically serve the renewable energy industry well. In the meantime, the DITARD initiative provides more than a promising step towards a renewable future.

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