

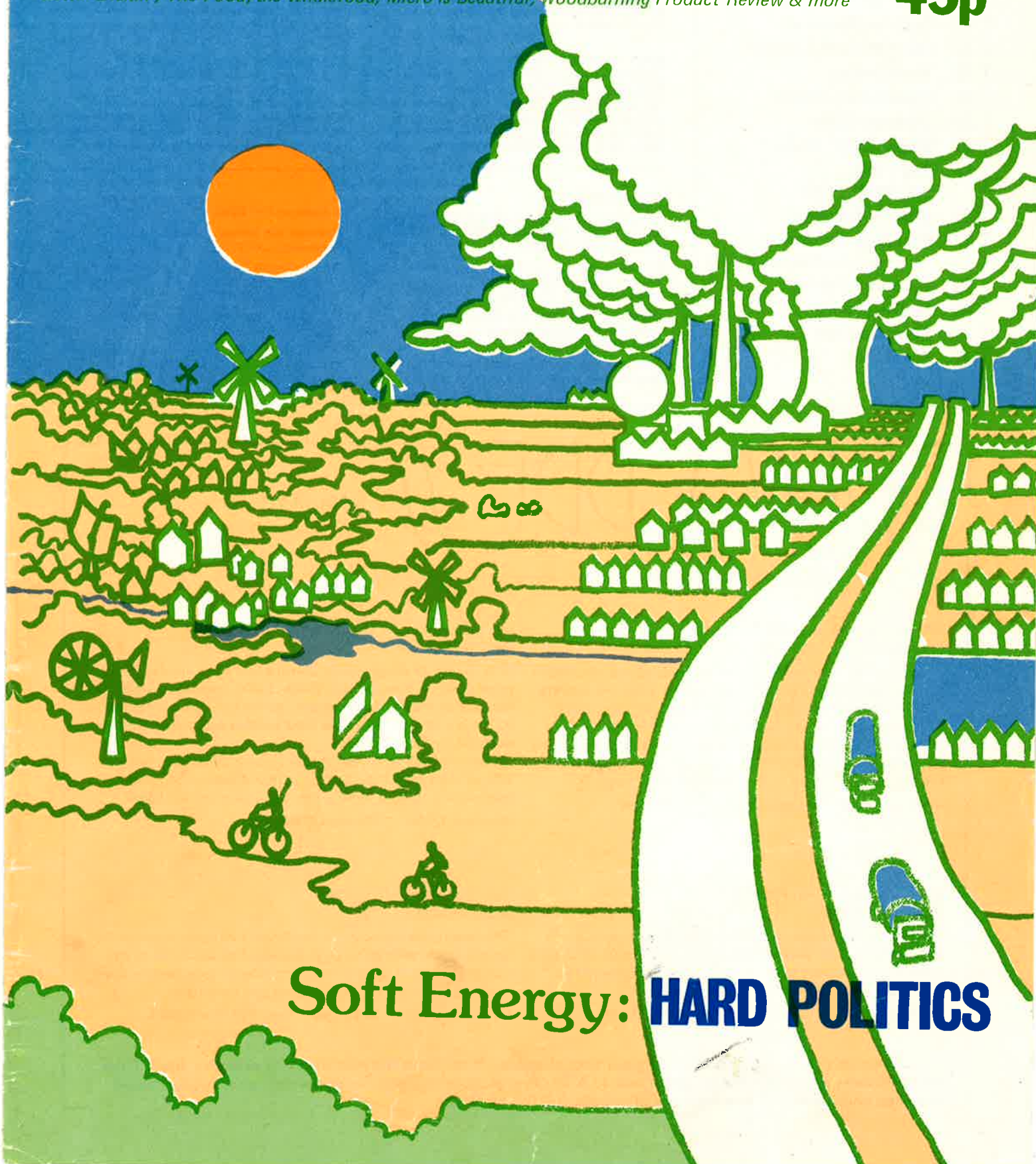
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Soft Energy: **HARD POLITICS**

SOFT ENERGY HARD POLITICS

Amory Lovins' book *Soft Energy Paths* has rightly been acclaimed by the environmental movement, says Brian Martin. But in this friendly critique of Lovins' work, he argues that Lovins is wrong when he says that the 'Soft' and the 'Hard' energy paths are mutually exclusive, and that if 'we' choose the soft path a decentralist political system will follow almost automatically. If we're not careful, says Martin, we might end up with a mixture of 'soft' and 'hard' energy systems, both of them controlled by the 'hard' political system we all know and love.

AMORY LOVINS' BOOK, *Soft Energy Paths*¹, is a valuable contribution to the environmentalists' cause. Lovins' eloquent and well-documented argument is in favour of a *soft* energy future — one in which renewable energy sources and diverse and accessible technologies, appropriately matched to their end-uses, form the basis for a pluralistic, non-repressive and participatory social and political framework. The alternative, which Lovins

effectively criticises, is a *hard* energy future — in which expanding energy consumption from coal, oil and nuclear power, utilising complex and capital-intensive technologies, forms the basis for an increasingly centralised, environmentally destructive, and non-democratic social and political formation.

Environmentalists can hardly disagree with Lovins' preferences, both for technologies and for the associated

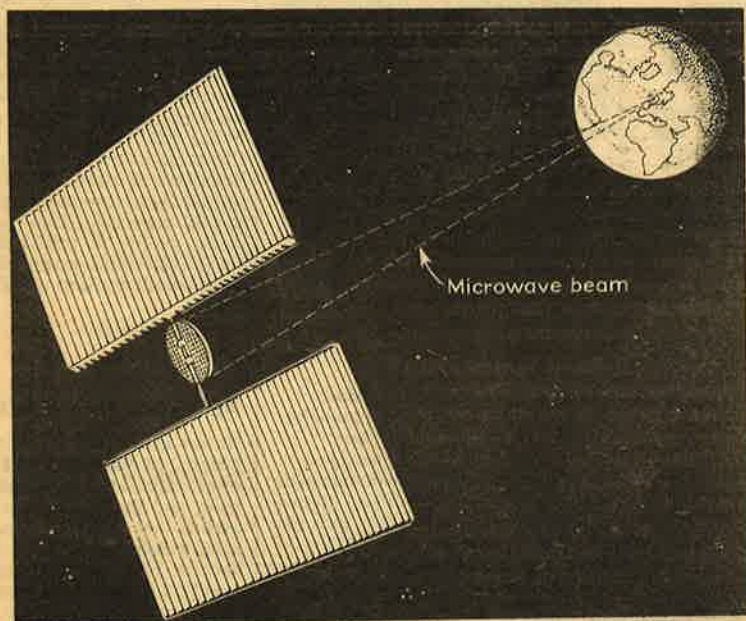
political forms. However, some of the political assumptions underlying the form and orientation of Lovins' argument are, I believe, open to question. While Lovins and I probably would agree about many of our goals, our disagreement (or difference in emphasis) would be over how these goals are most likely to be achieved. But let me stress that I have no qualms about the value of Lovins' work. I have recommended it highly to my friends (especially scientists) and personally delivered copies to them. Also, because we agree about many fundamental goals, I will not be concerned about technical criticisms, carping or otherwise — which are in any case likely to reflect differences in basic assumptions between the critic and the criticised. My aim is to present a political perspective on technological and social change, not as a dismissal of Lovins' (implicit) view, but as a complement to it.

The political roots of technological choice

It is becoming increasingly accepted that the reasons for the development, choice, and promotion of particular forms of technology are as much political and social as they are technological and economic.² Particular technologies tend to lead to particular types of social and political change, such as fostering equality or inequality. Therefore, technologies are selected in large part because they serve the social, political, and economic goals of those who promote them. And because powerful groups in society have the greatest control over technological innovation, the goals which have guided their choice of technologies include fragmentation and powerlessness of the labour force, maximisation of profits and bureaucratic growth, and ideological justification for inequalities in wealth and in decision-making power.

For example, nuclear power is an appropriate way to produce energy *if* it is also important to maintain centralised control over investment and production, keep decisions in the hands of experts and their employers, and maintain a habit of passive consumerism in the populace. On the other hand, research and implementation of technologies for local collection and use of solar energy has been neglected for years mainly because these technologies cannot easily be placed under monopoly control, and hence are unattractive to energy utilities.

Moreover, once a preference for one type of technology becomes institutionalised, it becomes even harder for alternatives to compete. Nuclear electricity has not only benefitted from immense research and other subsidies, but also has the advantage of a large, already-existing electrical grid system, and a built-in consumer dependence on electricity through appliance design and



1 This sketch is based on an imaginative proposal by P. E. Glaser of Arthur D. Little Inc., in which huge arrays of solar cells in stationary orbit round the Earth collect the Sun's energy. Each array here measures 3 km by 4 km and falls within the Earth's shadow on only 80 days of the year and then for at most 72 minutes a day. A microwave transmitter (centre) beams the energy to Earth, for direct conversion to electricity.

resistance heating. All these factors tend to make centralised energy relatively cheap. In terms of political and economic power, this economic advantage is reflected in the enormous industrial and bureaucratic organisations associated with electrical goods and services, which have a vested interest in opposing decentralised solar technologies.

A Hard Choice?

Lovins has spelt out many of the technological and economic problems associated with high technologies, based in part on their high costs, their environmental effects, the risks of major breakdowns, and ultimately on lack of citizen control over their development.

But a soft energy path which included widespread adoption of locally-controlled technologies would pose real dangers to existing political and economic structures. People might be encouraged to take control over their lives in many ways: working conditions, education, health, and perhaps eventually choice of goods produced and control of production itself.

From the point of view of existing political and economic structures, there seems then to be a difficult choice: either a hard energy path beset by technological and economic difficulties and rising public discontent and opposition; or a soft energy path creating the conditions for a major challenge to the current political and economic structures. But this choice is *falsely posed*, because particular technologies do not necessarily lead to particular types of social and political change. That is, while particular technologies *lend* themselves to particular social and political structures, the connection is not *automatic*. For example, local production of solar heaters is easier than local production of nuclear reactors; but adoption of solar heaters does not necessarily lead to local production: centralised production would still be possible. Similarly, economic equality will be *easier* to achieve in a society with universal public transport, but equality is not necessarily promoted by adoption of universal public transport.

These considerations suggest a possible alternative to Lovins' hard and soft energy paths: a gradual transition to a combined system of hard and soft technologies, the transition to soft technologies occurring as soon as they can be introduced in a form that maintains the essentials of present social, political, and economic structures.³ Already we can see plans for expansion of nuclear power generation and serious research into massive orbiting solar collectors, and a rapid increase in energy conservation measures (recycling, insulation) and the beginning of a boom in application of solar energy. Extrapolating from present

trends, it seems quite conceivable that a transport system may develop which is based partly on bicycles and alcohol-powered buses, and partly on cars powered by petrol synthesised from coal.

To conclude that soft technologies will be introduced only when they are politically 'safe' may seem like an extremely pessimistic evaluation. But similar developments have occurred before in the history of Western liberal democratic capitalist societies — for example in the introduction of universal education, the democratic franchise, and industrial unionism. Each of these developments was thought by many at the time to pose a major threat to current political and economic structures. But thanks to the efforts of reformers in overcoming enormous resistance by vested interests, the changes were brought about in a way that both protected and solidified the essentials of the established structures of the society.⁴

(The actions of vested interests, reformers, and other decision-makers in society should not be attributed to conscious plotting to thwart or produce particular types of change. Powerful groups in society understand their motivations and actions in terms of a set of concepts and assumptions which explain reality from their point of view. This perspective serves as a justification, in terms of serving community interests, for maintaining current structures of power and privilege and avenues for change.)

What then are some of the significant features of present society which vested interests will attempt to maintain in the transition to a soft energy path? Some of the most important are:

- * private control over production;
- * economic inequality;
- * political inequality, in particular the control over the design of society by a few.

Component 1: energy conservation.

This component of an energy strategy challenges none of the essential features of present society. It is likely to be opposed only by the few groups directly affected adversely, such as electric utilities and uranium mining companies.

Component 2: solar energy for heating.

This highly touted alternative to coal, oil, and electricity does not really threaten present institutions *as long as the physical hardware is centrally produced, the units purchased on the market and used by individual households*. Of course the widespread introduction of solar energy will be strongly opposed by energy utilities, oil companies, and other proponents

of centralised high technology. But as the ecological and economic, and hence political, disadvantages of hard energy paths become more apparent, reformers will fight for the necessary regulations to promote solar energy — in terms that don't threaten basic economic and political patterns.

The challenge to existing institutions presented by solar technology is that it is relatively easy to develop the technology so that it can be understood and eventually produced by individuals or small groups. Furthermore, it is more sensible to use solar technology in conjunction with small *groups* of households (with, for example, a common reservoir of hot water), a development which might foster *collective action*. Finally, the basic resource, energy from the sun, cannot be monopolised or easily used for profit.

If, on the other hand, solar energy is to be introduced *without* disturbing current societal structures, it is likely that its widespread adoption will be deliberately delayed, and that:

- * emphasis will be on research into more sophisticated applications (such as electricity from solar energy);
- * solar technology will be designed and regulations drawn up (for example, building regulations) so that the technology must be bought on the market at a relatively high price;
- * developments in other areas (such as tax concessions) will ensure that the benefits of solar energy go first to the wealthier portions of the population

Even with present social arrangements, it is apparent that the better-off suburbanites (with more land and sufficient money to install solar systems) stand to benefit from solar technology much more than inner city dwellers. With appropriate regulations concerning safety and visual amenity, a relatively sophisticated technology, and centralised organisation of installation, distribution, and use systems (solar systems as part of conventional house construction), the encouragement for self-management will be minimised.

Component 3: less energy for transport.

The present transport system depends heavily on private control over centralised production (cars, oil, roads) and also promotes economic and political inequality.⁵ These characteristics can be maintained temporarily by smaller cars, production of liquid fuel from coal, and eventually perhaps use of alcohol as fuel.

One change which might seem more threatening to current structures would be the introduction of widespread public transport. However, conventional public transport systems are capital-intensive and require centralised planning.

ing and control, as well as still being relatively energy-intensive. Indeed it can be argued that a centralised public transport system which provided a mobility similar to the present system would be a major form of social engineering, reducing the effective choice and control by the 'consumers' of transport. This matter deserves further thought and consideration. But certainly it is possible to have public transport systems which, through their rate structures, routing, and differing qualities of service, maintain inequality as well as reserving decision-making about the system to the planning 'experts'.

An approach to transport problems which *would* require drastic changes in present societal structures would probably involve a strong reliance on

- * bicycles;
- * vehicles which are simple, slow, resource-efficient, multi-purpose; and capable of being locally produced;
- * redefinition of work roles, so that much production, education, recreation, etc. could be done in local areas.

Component 4; collective goods and services, produced and managed, as much as possible, in local communities. Examples are local production of food in community lots, low-cost local laundries, community movie/TV, and heavy power tools, trucks and boats for use by any community members. In as much as design of the technology were such as to permit easy use, redesign, and multiple applications, then the problems of planned obsolescence would be overcome as well as those of multiple versions of goods for different individuals. It is apparent that such a component of an energy strategy, if widespread enough to involve more than the affluent or disaffected few, would be severely detrimental to the maintenance of current economic and political structures.

Component 5: less military production and less production of luxuries for the rich.

Since the military establishment is an integral part of the current organisation of society, and since economic inequality is an integral feature of it, this possible component of an energy strategy is likely to be left completely unmentioned by any except those challenging the political and economic organisation of society.

Hard and Soft Times Ahead

This analysis could be applied to other components of an energy strategy, from recycling to wind power. It demonstrates that what is important is to look at the *political and economic*

implications of any energy strategy, not just whether it is hard or soft.

My basic conclusion is that a slow transition to a combination of hard and soft technologies is possible, in which the soft components are introduced in such a way as to maintain private control over production, maintain economic inequality, and maintain lack of local control over the design of society.

The changes necessary to attain any soft energy path, even if they come about, are not going to come about easily. The forces backing and benefitting from hard energy paths are enormous, and they are only likely to give in as it becomes apparent to economic and political leaders that the safer soft energy future is possible without major structural changes in society. It is likely to be the case that, in the eyes of decision-makers, the strongest argument in favour of soft technologies will be their very preservation of the system against collapse resulting from the difficulties of a hard energy future. At the same time, the attention and effort of many social reformers will be directed towards preventing a hard energy future. One consequence of this is likely to be a lack of attention towards the political and economic circumstances in which the soft components are adopted (or rather, an implicit assumption that political and economic structures are to be maintained as much as possible).

Limitations of the Lovins Approach

The possibility of widespread use of soft technologies in a 'hard' political framework is not really considered by Lovins. The main reason is that he does not see it as a significant possibility: "... a centralized management approach to a soft path simply would not work." (p.149). My argument is that such an approach not only could work but is a likely possibility, because of the way existing political and economic systems operate.

As I said before, Lovins' goal of a soft energy future does not differ greatly from my own (especially in its more democratic political structures and control by individuals and local communities over their own lives). The question is whether Lovins' analysis is more effectively geared towards bringing about that future, or whether it is more suited towards introducing soft technologies within a 'hard' political framework. There are at least three reasons why I think the latter possibility is more likely.

I discuss these not in order to be especially critical of Lovins, but because his approach is typical of many others who approach matters from the technical side. Indeed, it is because his work is so powerful and successful in this vein that special attention needs to be

drawn to the assumptions underlying its style and content.

'Rationality'

First, Lovins addresses the possibility of change in terms of rationality rather than in terms of the power struggle that must occur to bring change about. One can look in vain for a significant mention in *Soft Energy Paths* of: (1) how change will occur in terms of altering institutions; (2) historical perspective (why powerful governmental and business constituencies, which now promote and benefit from hard technologies, came into existence⁶); or (3) the existence of substantial citizen movements.

This restriction to 'rational' argument is nowhere more apparent than in Lovins' extensive chapter on "rebooting the nuclear genie". The rationality (in terms of the interests of humanity) of stopping proliferation and of eventual disarmament and world peace has been apparent for decades if not millennia. But the forces behind the arms race are not motivated by rationality, or at least not by a rationality rooted in the best interests of all people. These forces include the quest by power elites for economic, political, and military dominance; the institutionalisation of planned waste⁷; and the need for social and political stability created by the possibility of overwhelming disaster⁸. 'Rational' discussions, at least among decision-makers and their apologists, serve mainly as moral justification for decisions made for reasons of power and self-interest⁹.

A good example of this is given by the Australian Government's recent announcement of its decision to allow mining and export of uranium. It is apparent to all familiar with the situation that the primary motivation for the decision is the profits likely to be reaped by a few companies: even in a depressed future market, the sale of Australia's high-grade uranium should be profitable. Naturally, the Government explicitly denies this motivation, and cites a "moral responsibility" to supply uranium to energy-hungry countries of the world (Europe, U.S., Japan), a concern about proliferation of nuclear weapons, and a desire to help stop the introduction of the fast breeder reactor. Such arguments are pitifully weak, and are obviously only a moral smokescreen for naked vested interests. No amount of rational argument refuting the Government's 'reasons' would have altered matters — except to the extent that it promoted the citizen's movement that has become the main obstacle to mining and export.

Lovins' work is valuable for precisely this last purpose — altering people to the absurdity and non-necessity of current directions. However, when he calls for "a fresh start at attacking the tensions and inequities that are at the root of the East-West and North-South

arms race" (p.216), we can only agree but look elsewhere for advice on how to go about it.

Orientation to decision-makers

A second major limitation of Lovins' approach is its orientation to decision-makers and not to citizens and activists. When Lovins mentions what "we" can do (as he often does), "we" obviously refers to policy-makers and not to workers in a mass movement. (For example, "... we are obliged to start committing money now to long-term replacement technologies for the coming decades . . ." (p.19). Lovins is long on what policy-makers can and should do ("... properly using the markets we have . . . may be the greatest single step we could take toward a sustainable, humane energy future" (p.35)), and short on what the implications are for concerned citizens.

Furthermore, Lovins more or less explicitly adopts the value system of top decision-makers (especially in chapter 2, which originally appeared in *Foreign affairs*, an impeccably establishment journal), so as to expose inconsistencies in their position and not disturb them with threatening changes in social structure. The problem with this is that the result is selectively useful to decision-makers who want to preserve existing economic and political structures — namely by bringing in soft technologies in a 'safe' way as described earlier — and much less useful to activists who (like Lovins) consider "that today's values and institutions are imperfect" (p.15).

The consequence is that Lovins gives almost all his attention to technical fixes and other politically non-disturbing facets of an energy strategy. Even when he mentions social changes as a way to do more with less energy, it is in terms of such things as car-pooling, dressing to suit the weather, and recycling, and not such fundamental changes as self-managed production, collective use of goods, or reduction of the military establishment.

In this vein, it is notable that Lovins, like those he so effectively criticises, never questions *what* is produced, but is concerned with how to obtain in a rational manner the energy for production and consumption as they are presently organised. It is clear the planned obsolescence, manufactured demand, and military hyperproduction are major reasons for high energy use. But not only does Lovins assume no fundamental changes in lifestyle; more fundamentally, he does not argue for (or even mention) changes in production relations.

Technical change and social change

Lovins takes the view that the urgency of introducing soft energy strategies is paramount, and that changes in social structure can come afterwards. The idea is that action

from the top is needed for quick results now, and that once soft energy strategies are undertaken, it will be easier to bring about beneficial social and political change.

The trouble with this view is that soft technologies are not introduced in isolation, but in a social and political context.

Just the opposite approach needs to be taken by any people's movement seeking significant institutional change in society: political demands must be intimately linked with demands that command wide support from conventional perspectives. The reason for this is that awareness of the need for structural change grows most easily out of actual struggles which demonstrate the *possibility* of alternatives and the *impossibility* of attaining them within societal structures as they exist. The strength and potential of the anti-nuclear movement arises from its linking of concerns over radiation and the environment with the wider issues of centralised control over planning and development, civil liberties, and community decision-making.

Critiques are notoriously inadequate when it comes to suggesting positive actions, and this one is not an exception. Here I only briefly summarise some of the ways in which activists can link the struggle for political change with the struggle for a soft energy future.

(1) **Emphasise the political and social objections to a hard energy future and their inseparability from environmental issues:** the centralisation of economic and political control, the requirement for social and political stability and repression to prevent environmental disasters, sabotage, or economic collapse.

(2) **Emphasise the political and social advantages of a soft energy future:** more personal security due to freedom from breakdowns or sabotage of centralised technologies, more control and satisfaction from work and community decision-making.

(3) **Concentrate on the issues that really concern people:** jobs, employment, and work (rather than just environmental issues); the quality of, and participation and control over work conditions, education, health services, and community planning (rather than just the technologies and techniques involved); the distribution of income, benefits and losses in a soft energy future (rather than environmental benefits alone, which often are seen as middle class concerns).

(4) **Organise within the workplace, unions, schools, community groups, and neighbourhoods, and formulate a set of positive alternatives, demands, and strategies, based on a vision of a just and equal society and how to attain it, which both lead to beneficial**

changes and increase the strength of the movement for institutional change.¹⁰

(5) **Practise (as much as possible) the principles of the future society within the movement for institutional change:** develop democratic, self-managed organisational forms for struggle, develop non-violent strategies and tactics.¹¹

Portions of this article have been adapted by the author from a review of Lovins' article ("Energy strategy: the road not taken?", *Foreign affairs*, October 1976) entitled "Amory Lovins: the line not taken?", by Brian Martin, in *Chain reaction* the quarterly magazine of Friends of the Earth, Australia (No.3(2),1977). *Chain Reaction* is available from 51, Nicholson St., Carlton, Victoria, 3053, Australia. Cover price is \$ 1 (Aust).

1. Amory B. Lovins, *Soft energy paths: toward a durable peace* (New York: Ballinger, 1977; Harmondsworth: Penguin, 1977).
2. David Dickson, *Alternative technology and the politics of technical change* (London Fontana, 1974); Stephen A. Marglin, "What do bosses do? The origins and functions of hierarchy in capitalist production", *Review of radical political economics*, 6 (Summer 1974), 60-112.
3. Lovins would probably call this possibility a hard path, because he considers social and political relations to be fundamental to the definition of an energy path.
4. Samuel Bowles and Herbert Gintis, *Schooling in capitalist America* (New York: Basic Books, 1976), Part III; G. William Domhoff, *The agony of the American Left* (London: Andre Deutsch, 1970), ch. 1; Alan Wolfe, *The seamy side of democracy: repression in America* (New York: David McKay, 1973), ch.8.
5. Ivan Illich, *Energy and equity* (London: Calder and Boyars, 1974).
6. For example, Lovins says that "centralized energy systems have been built by institutions in no position to ask whether those systems are the best way to perform particular end use functions — an omission reinforced by our consistent underpricing of all forms of energy . . . and by utility regulation which automatically increased profits in proportion to capital invested." (pp. 140-1). But he does not explain why institutions were structured this way or why regulations were drawn up this way. On the creation of regulatory commissions by the businesses they are supposed to regulate, see Domhoff, *op. cit.* (note 4) and Gabriel Kolko, *The triumph of conservatism: a reinterpretation of American history, 1900-1916* (New York: The Free Press of Glencoe, 1963).
7. Paul A. Baran and Paul M. Sweezy, *Monopoly capital: an essay on the American economic and social order* (New York: Monthly Review Press, 1967).
8. Herbert Marcuse, *One dimensional man* (London: Routledge and Kegan Paul 1964)
9. Saul D. Alinsky, *Rules for radicals: a practical primer for realistic radicals* (New York: Random House, 1971).
10. Andre Gorz, *Strategy for labor: a radical proposal* (Boston: Beacon Press, 1967).
11. John M. Swomley, Jr., *Liberation ethics* (New York: Macmillan, 1972); George Lakey, *Strategy for a living revolution* (New York: Grossman, 1973).