

EMERGING ENERGY POLICY PRINCIPLES

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Decisions affected by energy and material resources can no longer be made in traditional ways because of fundamental changes occurring in global resource availability and patterns of use. Recent studies of worldwide energy resources reveal that available non-renewable energy supplies are smaller than previously believed, and are being exhausted faster than previously anticipated.

This has been compounded by a widespread error in computation which failed to take account of the increasing energy required to get energy to the consumer. The resultant price increases, as energy becomes more difficult and costly to get, is forcing reduction in all energy related activities. As these changes occur, the following effects are requiring major changes in planning policies:

1. Political, economic, and military power is shifting from nations with large energy consumption to nations with large energy resources.
2. Social, economic, and environmental instability is developing because of the dependence of industrialized nations upon rapidly depleting resources.
3. Ending of a temporary period of easy energy availability is causing a fundamental change in conditions necessary for economic viability. Economic survival now requires change from a material growth outlook to an orientation towards soundness, stability, and efficiency.
4. Global levels and patterns of population and resource use currently supported by massive use of inexpensive energy cannot be sustained in the foreseeable future.

Responsible policy development must also recognize the following implications of these changed energy realities in order to maintain social, economic, and environmental viability under these conditions:

1. Rapid development of ANY energy source now foreseeable, on the scale necessary to significantly augment or replace the highly concentrated and inexpensive sources currently approaching depletion, is economically impossible.
2. Balance between supply and demand will occur automatically through reduction in energy use as prices rise from supply limitations and as declining net energy causes monetary inflation. This means that all current estimates for growth in any activity are wrong, and all planning projections based on continued growth must be revised to recognize these trends
3. An orderly transition from dependence on depleting non-renewable energy sources to the use of safe, inexhaustible, income energy sources, and to the level of consumption they can support, must be made.
4. Orderly transitions must begin BEFORE these reductions in energy use are forced, if social and economic disruptions are to be minimized and if the most time and resources possible are to be available to make the transitions.
5. The sooner we can make these transitions the better. Energy, and therefore monetary, savings from early action will be cumulative, the life of remaining non-renewable energy reserves will be extended, and the costs and difficulty of making changes will be less the sooner we make them.
6. Demand reduction is the most effective means of achieving balance with available energy - economically, energetically, ecologically, logistically, and ethically – and in both the short and long run.

Our demands are far greater than our needs, and reduction of demand for non-renewable energy on the order of 10% per year is possible through a) less wasteful use, b) recycling of materials, c) reduction of demand for goods and services, and d) conversion to income energy sources.

7. The true value of the use of any exhaustible resource is not in the enjoyment of its use but its legacy. Responsible use of remaining non-renewable resources must determine a) how we can survive their depletion and b) in what way their use can move us to new and better ways of life sustainable by a future stable resource budget.
8. To the degree that a region gains political, economic, or military power through the use of its exhaustible resources, its capacity for future power is decreased.
9. Investment in any operation dependent upon high energy use will be lost as that energy becomes unavailable, and will make transition to kinds of operations sustainable on less energy more difficult. Investment in human resources, renewable natural resources, in the extension of the life of exhaustible resources, and in operations that operate less on energy resources than on human resources are the only feasible investments under these conditions.
10. The true source of our wealth is natural and human resources. The capabilities of available energy and material resources define the REAL constraints on what is possible at any time, and the human resources determine what is achievable. Any effective planning must recognize and accurately monitor these capabilities.
11. Our monetary systems do not account for the vast amounts of work done for us by natural systems, or account for the value of that work, which is done free for us. Energy accounting is necessary to understand and value these benefits.
12. The greatest range of options is maintained for us when the true and total costs of all actions are known and kept visible.
13. Comprehensive energy-based information and decision-making tools are essential to generate detailed policy which can minimize social, economic, and environmental disruptions during these necessary transitions, while keeping available to us the widest range of possibilities.
14. Maintenance of the health of the biophysical systems that support a society is necessary for prolonged existence of any society, and is a fundamental responsibility of its government.

15. Wise use of human resources is more important when less energy and material resources are available, and full and rewarding employment is more easily achieved under such conditions than when plentiful and inexpensive energy is available to replace human skills.
16. Internal commerce and external trade must be buffered from world market instabilities if economic and social soundness is to be maintained during transitions.
17. All cultural institutions function differently under conditions of growing or stable energy supply. Least disruptive transition for all cultural systems (social, political, educational, legal, economic, etc.) through the transitional period into stable configurations appropriate to the new level and stability of available energy budgets must be insured.
18. Per capita wealth can be sustained only by population limitation. Prudent policy must insure that available energy budgets result in high quality of life rather than merely a large population.
19. Equitable access to limited energy supplies, goods, and services among all segments of society must be attained to minimize social and economic disruption. It is increasingly difficult to maintain inequality in interconnected systems. Our best insurance of survival is to insure the survival of all.
20. Large scale organization can only be maintained with high energy use. Transition must be made to smaller scales of organization appropriate to available energy levels.
21. Piecemeal actions cannot resolve interrelated energy, material, and economic problems and still maintain the flexibility of the system and stimulate the creativity of every person to find new answers to our problems.
22. Monetary and fiscal policies that do not reflect energetic realities inevitably generate instabilities in the marketplace.

We all seek the most rewarding life possible – individually, as a nation, and as a planetary community. That possibility is determined by our available energy and material resources and the wisdom and ingenuity with which we can align our actions with them.

We always continue to try what has been successful in the past as long as there is any possibility of its working. We only attempt fundamental changes when it is clearly apparent that no other action can successfully resolve our problems, and when all other explanations and actions have failed. This is wise and prudent, but does not remove the necessity for those changes when called for.

As individuals, nations, and as a whole planet, we have not recognized that the growing demands we have placed upon our neighbors, ourselves, and the physical energy and material systems of the planet are approaching limits of what is tolerable or possible, and that failure of those systems will result unless major reversals in the trends of our action occur.

We have sought and experienced progress towards ever more plentiful material satisfaction of our wants. Though further increase is improbable in our material wealth, the potential remains open to us – and becomes even more attainable – for qualitative rather than quantitative improvement in the material dimension of our lives, and for vast development in our personal growth and in the social, cultural, and spiritual dimensions of our lives.

Progress towards the achievement of these goals promises us vastly greater potential for living rewarding lives than the goals we rightfully have pursued when materials and energy were abundant and development of the material dimension of our lives brought us great rewards.