

# *COSMIC ECONOMICS*

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A clear understanding of the fundamental relationships between energy, prices, and inflation is essential before state, regional, or national energy policies can be intelligently formulated.

Most of the fossil fuel energy that has powered our culture has come from concentrated and easily obtainable reserves. Now we must dig deeper, transport further, upgrade dilute energies (uranium, oil shale, etc.) to obtain our energy supply.

Although more total energy is produced each year, an increasing fraction of that energy is used up in obtaining the net energy available to the consumer. The consumer, in turn, must pay the cost of this increasing amount of "energy-getting energy" in addition to the energy cost of producing the goods and services he consumes. Everything that uses energy will cost more and more as net energy declines. This is the principal force driving world inflation.

At the same time that finite world energy reserves are being depleted, world demand and dependence upon them is accelerating. This greater competition for smaller and smaller reserves of energy is raising the monetary value of the remaining reserves, further increasing the price of energy. All the major new energy processes (oil shale, nuclear, coal gasification, etc.) being developed to replace present fuels are even more costly than the fuels they are replacing, since they will require more energy and therefore more dollars to get the energy available to the consumer (i.e., they will generate even less net energy than traditional fuels)

Any energy policy which does not take net energy into consideration will bring about increasing economic instability. THE MORE SUCCESSFUL THE U.S. IS IN MAINTAINING OR INCREASING ITS TOTAL ENERGY CONSUMPTION, UNDER CONDITIONS OF DECLINING NET ENERGY, THE MORE RAPIDLY INFLATION, UNEMPLOYMENT, AND GENERAL ECONOMIC INSTABILITY WILL INCREASE. THE DISRUPTIVE EFFECTS OF AN INAPPROPRIATE ENERGY POLICY WILL BE SEEN IN TERMS OF "ECONOMIC CRISIS" RATHER THAN "ENERGY CRISIS".

Once this is recognized, the only prudent policy direction is to undertake an orderly transition away from exhaustible energy sources to inexhaustible energy sources (sun, wind, agriculture, tides, hydro, etc.) and to the level of consumption these sources can support.

while individual actions to conserve energy and materials are possible, and intrinsically worthwhile, it is unrealistic to expect such voluntary measures to occur on a large scale in our society. Unilateral conservation and slowdown on the part of individuals, states, or regions should not be viewed, however, as self-sacrifice while others continue high-level consumption. Quite the contrary, those who attempt continued growth as net energies decline are merely creating the conditions for a sharper and more disruptive economic transition for themselves the longer they wait to adjust their consumption to what will inevitably be required of them.

The most direct and least disruptive way to ease these energy and economic transitions for society as a whole is through the enactment of two economic balancing mechanisms:

**1. A UNIFORM TAX LEVIED ON THE POTENTIAL ENERGY CONTENT OF ALL DOMESTIC EXHAUSTIBLE ENERGY SOURCES AT THE POINT OF EXTRACTION.**

The resulting tax revenue and increase in energy price will bring about the following:

- Allow us more time to make transitions by slowing the depletion of our remaining exhaustible energy reserves.
- The use of our remaining exhaustible energy to finance and develop the structures and processes necessary to permit increased use of inexhaustible energy sources.
- The conversion of wasteful processes to lower and more efficient energy use (e.g. the development of mass transit systems).
- Equitable access to limited energy supplies, goods, and services among all segments of society through use of energy tax revenues for income support for people on low or fixed incomes.
- The displacement of machines by human skills and labor, assuring full opportunity for employment.
- More efficient use of energy in our goods and services lowering their cost of production and making them more competitive in foreign markets.

- Slower depletion of our domestic exhaustible energy reserves so they can be maintained as strategic stockpiles for emergency use, assuring our continuing economic, political, and military independence.
- A lessening of the stresses placed on environmental systems by our industrial processes, reducing the energy and money required to prevent damage and restore vitality to our environment.
- Improvement in the performance and durability of buildings and manufactured goods.

**2. AN EXTRACTION TAX PLACED ON THE REMOVAL OF ALL DOMESTIC RAW MATERIALS FROM NATURAL STORAGE.** The resulting tax revenue and increasing price of extracted materials will facilitate the desired results of the uniform energy tax, and will lead to the following additional changes:

- A marketplace incentive for replacing our open-ended organic and inorganic material flow with recycling processes, reducing the increasingly large amounts of energy needed to locate, concentrate, and process raw materials.
- Encourage more efficient use of materials.

Implementation of a tax on energy and materials will eliminate piecemeal responses to our interrelated energy and economic problems, and can relieve the need for many existing taxes.

Patterns of energy use inevitably adjust to the net energy levels available for goods and services. When net energy is increasing, it is necessary to expand total energy consumption in order to maintain economic and social viability. Now, with net energy declining, the ground rules for energy use require us to lower our total energy consumption.

The primary mechanism of adjustment to declining net energy will be the slowing of energy consumption through accelerating prices. Although the proposed energy and materials extraction tax measures would ease this transition considerably, social and economic disruptions are inevitable. The severity of these disruptions will largely depend upon our ability to understand and accept the emerging requirements for stability.

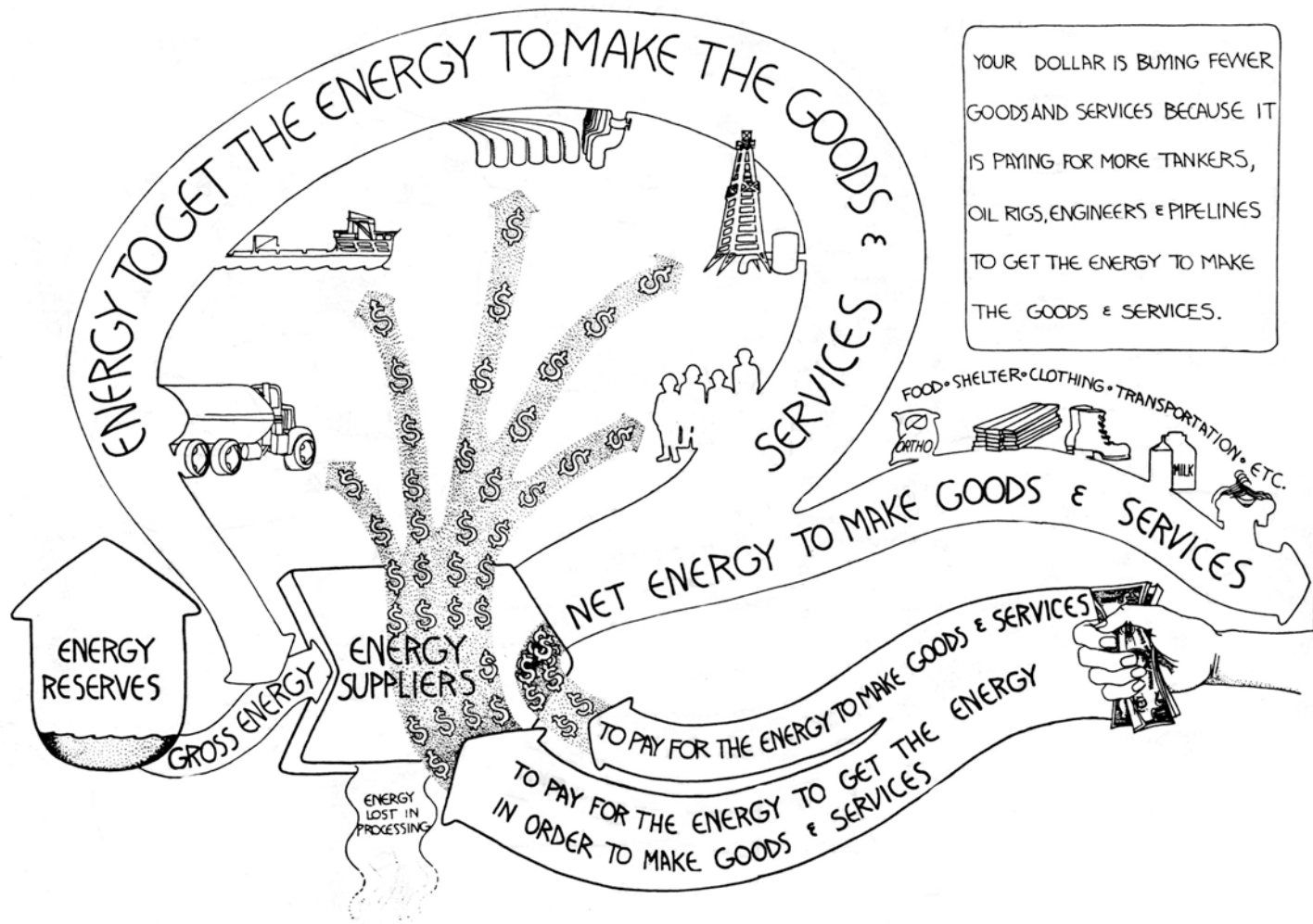
It will also depend upon our capacity to see that the quality of our lives can actually improve as energy and materials prices increase. Lower energy use can lead to higher efficiency, greater opportunities for creative expression and individual freedom, and a stable climate for vigorous cultural evolution:

- Fresher and more nutritious food, as small scale, localized, and organic-based production replaces production processes dependent upon massive inputs of expensive fossil fuel energy and chemicals.
- Fewer accidents, as speeds are reduced in all of our activities.
- Better health, as sedentary and tension-producing work is replaced by more physically active work.
- Less unemployment, as the increasing energy costs of machines restore the value of humans kill and labor.
- More worthwhile roles for older people as the need for their special skills and wisdom makes their contributions more valued.
- More integrated personal and family life, as work and family roles are less separated by space, time, and organization.
- Less reliance on formal and abstract education separated from the rest of life, as high educational costs stimulate processes such as apprenticeships where people are productive while learning, and as greater independence and self-respect renew ability to learn from oneself as well as from external standards.
- Higher quality surroundings, as the energy to disrupt large scale environmental systems becomes unavailable.
- Stable prices and fewer inflationary pressures, as net energy levels stabilize.
- More dignified death, as elaborate attempts to prolong and postpone inevitable processes become prohibitively expensive.
- Less guilt about future generations and other parts of the world as our capability of decreasing their options lessens.

- Less preoccupation with material goods and more with personal growth as our capacity for production of material goods approaches its limit and as we recognize the only direction infinite human desires can be channeled in a finite material world.
- More opportunity for craftsmanship and creativity, as independence and smaller scale of work organization gives more opportunity for self-directed and controlled experimentation, resulting in more original and durable goods.
- More personal independence and freedom, as the higher costs of large-scale organization and economic and political centralization become prohibitive.

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Those who are early to recognize the fundamental relationships between energy, prices, and inflation will have an enormous advantage in moving toward a higher quality, lower energy way of life.



YOUR DOLLAR IS BUYING FEWER GOODS AND SERVICES BECAUSE IT IS PAYING FOR MORE TANKERS, OIL RIGS, ENGINEERS & PIPELINES TO GET THE ENERGY TO MAKE THE GOODS & SERVICES.