

## The Oil Drum: Net Energy

### Discussions about Energy and Our Future

#### Welcome to The Oil Drum: EROI

Posted by [David Murphy](#) on December 28, 2008 - 6:17pm in [The Oil Drum: Net Energy](#)

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We welcome all readers to the newest TOD sub-domain: "The Oil Drum: EROI" – or *Energy Return on Investment*. This sub-domain will be administered by Professor Charles Hall and his Ph.D. Student, David Murphy (EROI Guy) as well as by many of the other editors and contributors from TOD that write about net energy analysis and biophysical economic concepts.

We have at our school (SUNY – College of Environmental Science and Forestry) an “[EROI Institute](#)” (web site is operational, but still undergoing development) which is basically three offices, two relatively large, and a bunch of books and computers. There are roughly 8 graduate students at any one time and usually about half a dozen undergraduates hanging around. We all work on sweating out various analyses related to energy. We have only quite minimal funding and work on a shoestring although many students are supported by NSF fellowships, teaching assistantships or funding that we do have for tropical research. So with that introduction, let us turn our attention briefly to describing why we think EROI is important.

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Net energy is sometimes called energy surplus, energy balance, or, as we prefer, energy return on investment (Hall 1972, Hall and Cleveland 1981, Cleveland et al. 1984, Cleveland and Kaufmann 1986). Its advocates, including us, believe that net energy analysis offers a very useful approach for looking at the advantages and disadvantages of a given fuel and offers the possibility of looking into the future in a way that markets seem unable to do. Its advocates also believe that in time real market prices must approximately reflect comprehensive EROIs, at least if corrections for quality are made and subsidies removed. Thus can we make market decisions based on biophysical, rather than market, economic analysis? At a minimum we believe that biophysical analysis can add a great deal of insight to traditional market analysis.

The current literature on net energy analysis, such as it is, tends to be mostly about whether a given project is or is not a net surplus, that is whether there is a gain or a loss in energy from, for example, making ethanol from corn (see [June 23, 2006 issue of Science Magazine](#) for a fairly thorough discussion of this issue). The general criteria used by much of the current debate is focused on the “energy break-even” issue, that is whether the energy returned as fuel is greater than the energy invested in growing or otherwise obtaining it. The general argument goes like this: if the energy returned is greater than the energy invested then the fuel or project “should be done”, and if not then it should not be done. Obviously this issue is clearest when one might be discussing whether the fuel requires more energy for its production than is delivered in the product, but we believe that EROI can be extended even further.

The applications of EROI are many-fold, and hopefully through TOD: EROI we will see how it is applied to many different aspects of the energy/economic world. So with that brief introduction to us and the importance of EROI, we ask that you please stay tuned for our next post, which deals

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