

What are “clean” electrical production technologies?

These sources must be capable of providing electricity with minimal short- and long-term environmental damage or pollution, with the most efficiency for a given region, per dollar invested.

The cost factor is crucial because:

- a) different regions will necessitate resource-specific energy solutions;
- b) just as the climate change crisis is global, so is the energy crisis – and both developing and industrial nations must manage their energy needs cost-effectively in order to stem global warming;
- c) for any region or nation, the lower cost for a given clean energy source, the more energy per dollar can be gained toward the goal of global warming abatement.

Examples of clean energy sources:

Wind** The Cape Wind project off the coast of Massachusetts, which plans for 130 wind turbines to be erected in Nantucket Sound, will replace the burning of approximately 113 million gallons of oil per year for electrical production. Studies now foresee offshore “wind farms” along the eastern seaboard providing most or all of the electrical capacity needed for that region. (capewind.org)

Solar** As the Hall and Moskow Realty Trust's 60 kilowatt photovoltaic (PV) installation at Newburyport's Tannery mall demonstrates, businesses can see a simple payback for their PV investment in as little as five years. (Check out the Massachusetts Technology Collaborative (at mtpc.org).

Hydro** Currently providing only 3% of New England's power, large hydro installations can cause serious environmental damage such as land inundation and soil erosion. However, smaller so-called “low head”, or “micro” hydro systems can be installed with a minimum of environmental consequence, at as little as one tenth the cost of PV systems of comparable output.

Energy Efficiency** Sometimes referred to as “energy mining”, efficiency measures such as building insulation, and the use of energy-efficient motors, fixtures, and bulbs, together comprise the least-cost energy “source” -- at less than one tenth the cost of energy production.

These clean energy technologies are seven times more effective at reducing global carbon than atomic power – per dollar invested.

(Keepin and Kats, Rocky Mountain Institute, rmi.org)

For information of other low-impact sources of electrical energy, such as **Geothermal and Hydrogen**, go to the Renewable Energy Policy Project (at repp.org)

What's not clean about atomic power?

-- Radiation releases to the environment are a regular occurrence at normally operating atomic reactors.

-- BEIR VII confirmed that there is no threshold radiation level below which humans are not at risk of harm. (“Biological Effects of Ionizing Radiation”, 7th report to Congress, National Research Council, 2006)

-- The State of Massachusetts Department of Public Health has signed off on two reports showing, in two separate locations, proximity to an atomic power reactor is linked to increased risk of diseases such as cancer and Down's Syndrome.

-- In the sixteen years of Seabrook's operation, it has generated more than 300 tons of high-level radioactive waste (HLW). Because this waste is both extraordinarily deadly and long-lived (500,000 year toxic life), and because HLW contains needed constituents of nuclear bombs, this material must be kept in secure isolation from the environment virtually for all time.

-- Humankind has not devised a working long-term storage system for HLW, this material is stored on site – at Seabrook, as well as more than 100 commercial atomic reactors nationwide. Whether in “wet pool” (Seabrook) or dry cask (?), together these ad hoc HLW dump sites constitute the nation's most dangerous and vulnerable terrorist target.

(See Spent Fuel Presentation at the C-10 website, c-10.org)