Why Do "Enviros" Care About Electricity and Energy Efficiency?

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The Big Picture

- Electric power plants are the single **largest** industrial source of some of the worst air pollutants:
  - 67% of Sulfur Dioxide (SO_2)
  - 40% of Carbon Dioxide (CO_2)
  - 33% of Mercury (Hg)
  - 25% of Nitrous Oxides (NO_x)

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What Does This Mean?

- Power plant emissions linked to:*
  - 30,000 annual deaths
  - 600,000 asthma attacks per year
- Mercury accumulates in food chain – developmental delays and birth defects.
- CO_2 – Global warming. Greenhouse gases trap excess heat in our atmosphere. Higher temps translates to extensive ecological impacts.

* From Abt Associates report, 2000.

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What Does This Mean?

- NO_x – major contributor to ozone formation (smog)
- SO_2 and NO_x – form acid rain that can damage forests and kill fish.

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Up and Downstream Impacts

- Adverse impacts from coal, gas, oil extraction:
  - Groundwater and surface water pollution
  - Air emissions
  - Harm to previously unimpacted areas
- Massive cooling water needs impact local aquatic ecology.
- Nuclear waste issues unresolved.

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Grandfathering and You

- Old power plants "grandfathered" from many stringent air pollution regulations.
- Grandfathered plants can legally emit:
  - 10 times more NOx and SO2 than modern coal plants.

NRDC and many others seeking legislation to reduce power plant emissions. Often called "4P bill" (NO_X, SO_2, CO_2, and Hg)

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The Good News

- Controls exist to capture emissions from older, dirtier plants.
- New "combined cycle" gas plants are much cleaner and being built.
- Energy efficiency and "DSM" are cleaner, cheaper, and faster alternatives to new power plants.
- Renewables – clean source of new power. Prices coming down.

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Energy Efficiency 101

- Through better equipment design and installations, use less energy to get equal or better performance.
- Sacrifice nothing. May have higher first cost, but have fast paybacks. Saves money.

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Energy Efficiency 101

- Examples:
  - Resource efficient clothes washer – 60% less energy, 40% less water; shortens drying time.
  - CFLs – saves ~$25/bulb. Lasts 10 times longer, fewer bulb change hassles.
  - EE HVAC system – no duct leaks, more comfortable, save big bucks.

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Regulatory Issues

Need sound set of supporting/enabling legislation and regulatory policy.

- System benefits charge – assured funding for energy efficiency.
- Regulatory policy that rewards rather than penalizes utilities for selling "less electricity" and promoting energy efficiency (decoupling)
- Integrated resource planning that requires serious consideration of cost effective efficiency and renewable resources.

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The Details

- Need to assure full cost recovery for legitimate energy efficiency expenditures.
- Provide for some allowable earnings for energy efficiency savings ("Nega-watts").
- Evaluation – verify that savings were achieved.

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Conclusion

- Power production is a major source of U.S. pollution.
- Energy efficiency can replace power provided by older, more polluting plants and meet additional power needs.
- Energy efficiency is a very cost effective and clean alternative.
- Well thought out regulatory policies needed to make this work.

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