



# Energy and Business

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## What Business Is – And Isn't – Doing To Address Our Energy Challenges

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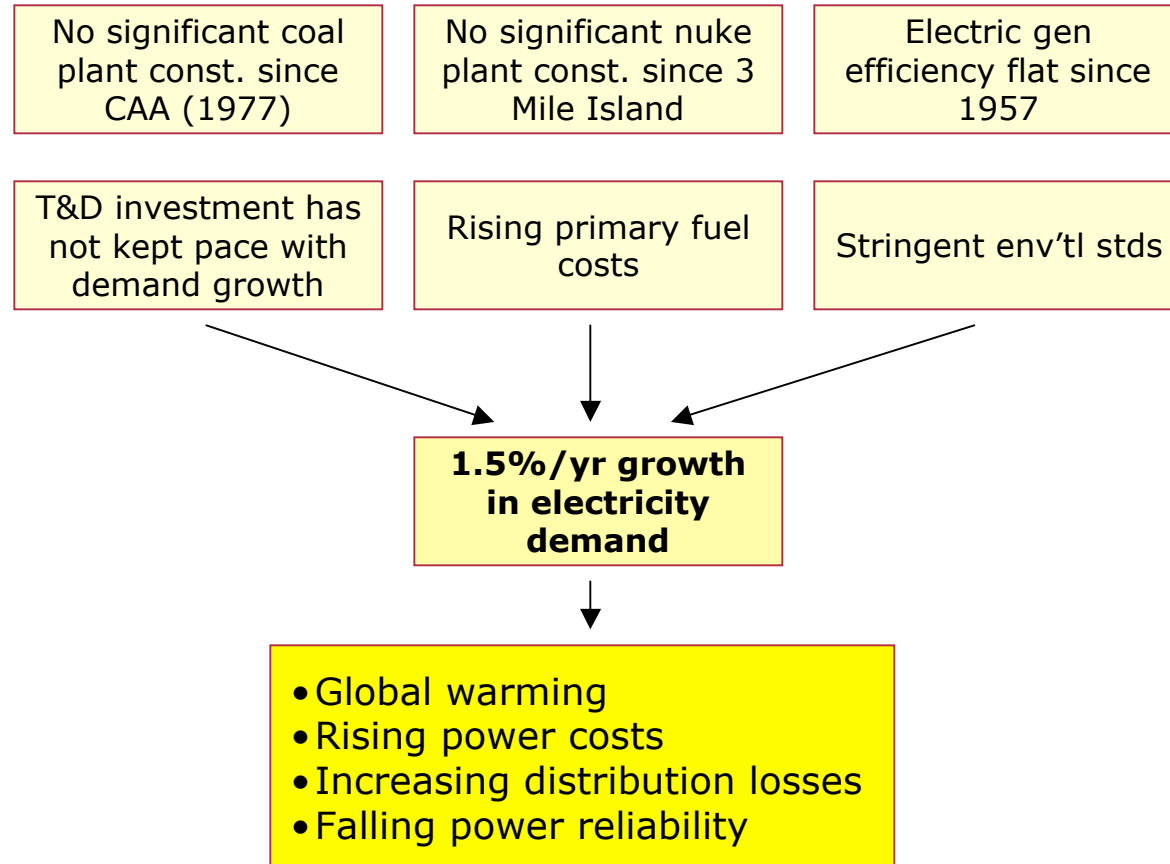
*Recycled Energy Development, LLC*

**October 12, 2007**

**Dartmouth Energy Symposium**

**Hanover, NH**

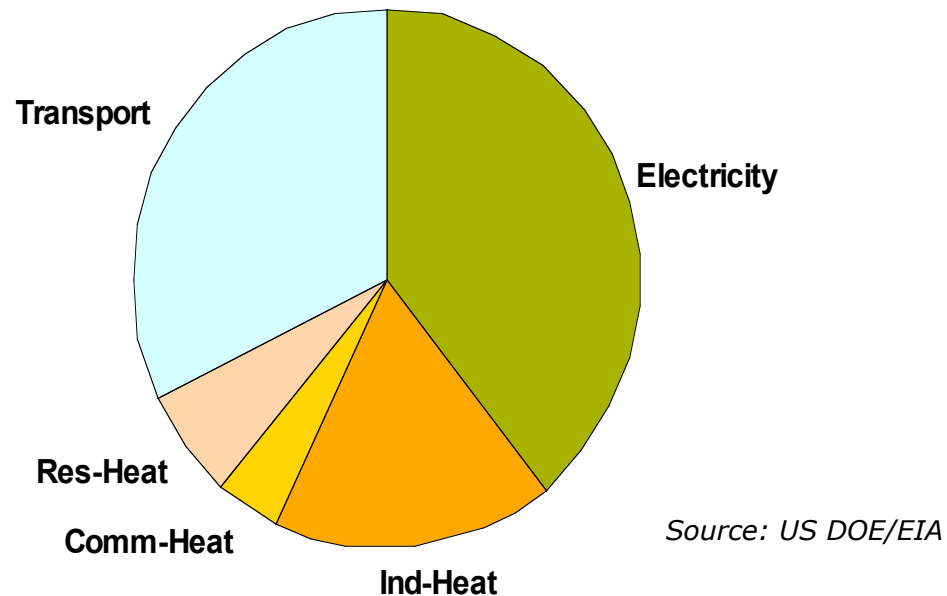
## Our energy challenges (power)



***Load-sited energy efficiency addresses all underlying issues – and can be done by private sector.***

## Over two-thirds of US GHG emissions come from heat & power generation

US GHG Emissions, by Source (2003)



**GHG not the only issue, but a good surrogate for all others, from nat'l security to water use, since it scales with rates of fossil fuel combustion.**



# Power/industrial more amenable to private sector action than transport/residential/commercial.

## Energy Costs Significant Fraction of Capex

- ~ high capacity factor
- Common to power applications, industrial 2 – 3 shift/day operations
- Can justify energy investments on purely financial terms (with limits – see next)
- Best way to accelerate change is to remove barriers to market forces

## Energy Costs Insignificant Fraction of Capex

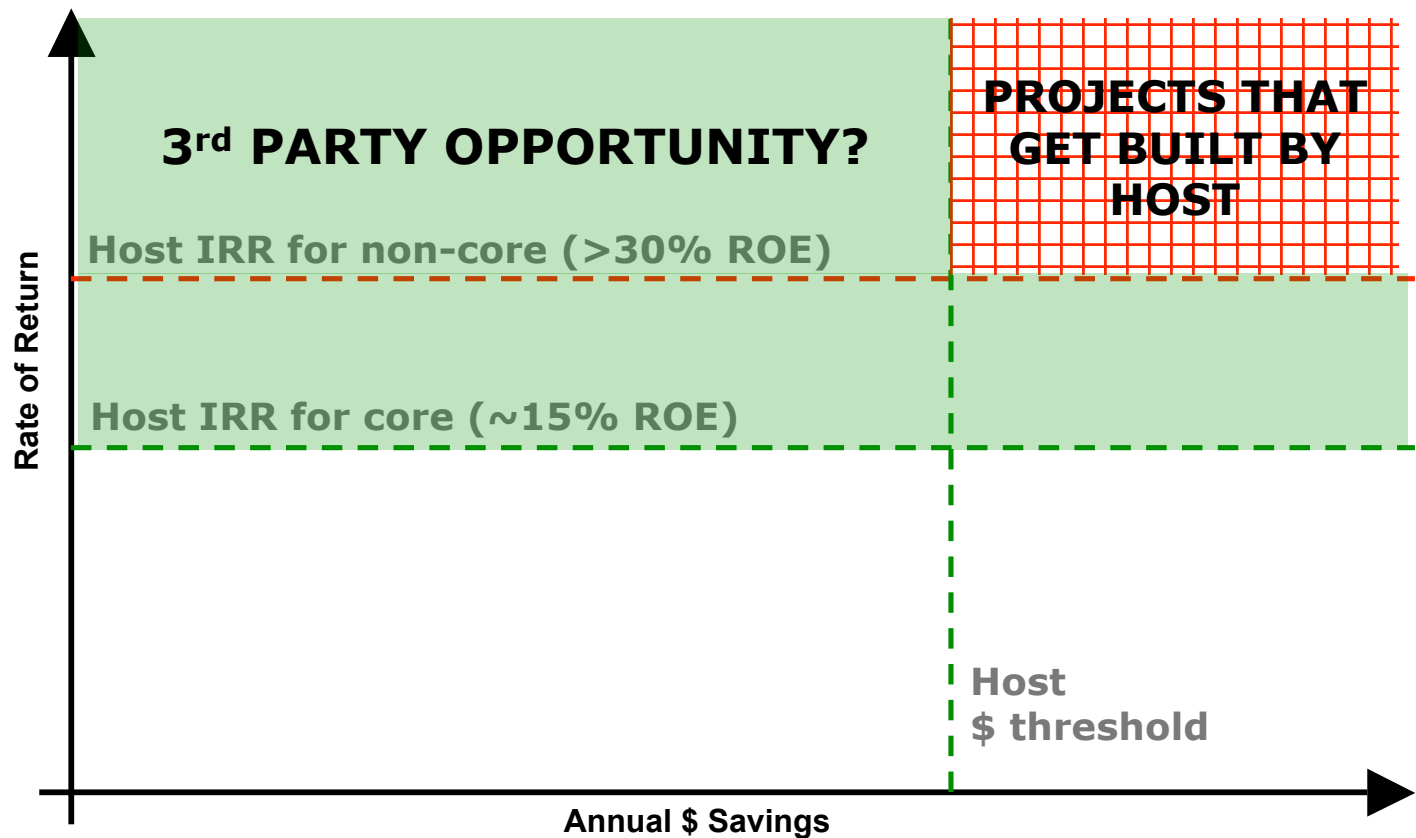
- ~ low capacity factor and/or relatively high capex
- Common to transport, residential, commercial operations
- Proof1: \$2 increase in gas costs = increased demand
- Proof2: 3-fold difference in electric rates between states doesn't significantly affect use of air conditioners, refrigerators, plasma TVs
- Best way to accelerate change is through regulation (CAFE, appliance stds, etc.)



## What business has done – and will continue to do – to lower energy use

- Good: Without energy efficiency deployment since 1970, total US primary energy consumption would be 3X current levels.
  - This makes EE by far the most significant source of new “load” – driven almost entirely by the private sector. (ACEEE)
- Good: Almost 90 GW of CHP deployed by private sector since 1980 (approx = total nuke fleet, but in less time, with fewer consequences and without public \$)
- Good: Dow, BP others show that carbon reduction creates shareholder value (Dow: “The media still doesn’t get it.”)
- Bad: Deindustrialization of US economy is in large part a response to rising energy costs (Ayres)

## BUT... most high-return projects don't get built

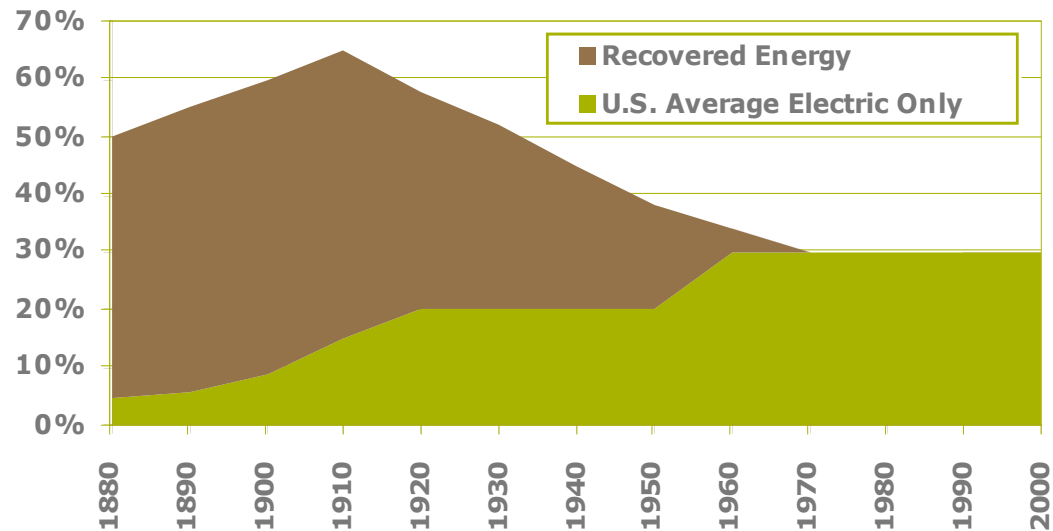


3<sup>rd</sup> parties would seem like a no-brainer, except that it is illegal for them to capture most of the value they create...



## The elephant in the room: our biggest industry (\$450B/yr) is demonstrably hostile to EE

US Electric Industry Fuel-Conversion Efficiency



The electric industry is not a “business” except in the sense that they have shareholders and profits. At core, this is a regulatory problem.



**Thank you.**