



June 6, 2006

Representative Steven M. Costantino
Chairman, House Finance Committee
120 Courtland St.
Providence, RI 02909

Dear Representative Costantino:

I write in support of House bill H7778 now in consideration by the Rhode Island Legislature. Our company, Turbosteam Corporation, is a Massachusetts-based company that has deployed over 180 projects in the last 20 years that recycle previously-wasted energy to produce fuel- and emissions-free power for our customers. To date, we have deployed 129 megawatts (MW) of these on-site generators in 33 U.S. states and 18 countries, and these generators have saved our customers over \$200 million in energy bills while simultaneously reducing CO₂ emissions by approximately 3.5 million tons. These projects – which build fuel-free power generation at the point of electric consumption to minimize the cost and geographic needs of the transmission and distribution network – are cheaper and cleaner than the utility power they displace, often by a factor of two or greater. And yet, their deployment is often constrained by regulatory barriers that treat non-utility generation as an unfair competitive threat to the revenue of regulated utilities rather than as an integral part of a low-cost, reliable electric system.

We are a small company in this market (nationwide there are almost 83,000 MW of so-called “combined heat and power” plants like ours installed), but our experience is quite typical. Indeed, a recent study by consulting firm Energy and Environmental Analysis (www.eea-inc.com) found that there is currently 23,000 MW of further technical potential for this technology in the Northeastern US alone – roughly the peak summer demand of the New England power grid. These generators are privately funded, thereby providing no risk to electric rate payers (unlike utility investments) and are both cleaner and more efficient than the central generation it displaces, leading to reductions both in pollution and fuel use. This ought to make them central to any long-term energy policy, but instead they face numerous regulatory barriers, which have been erected primarily to protect utility shareholders from the competitive pressure of these technologies, in spite of the benefits that these technologies create for all ratepayers.

These regulatory barriers exist at both the federal and state level, and include punitive rate design, unreasonable interconnection requirements to the utility grid and criminal penalties for those who would attempt to privately distribute locally-produced power independent of the utility system. Taken in whole, they erect substantial barriers to market entry that prevent the emergence of innovative technologies like ours from gaining greater market traction. If such barriers still existed in the telecommunications sector, we would never have seen cell phones,

broadband internet access or voice-over-internet-protocol. Similar waves of innovation could modernize our electricity infrastructure, but only if state and federal regulations are changed to remove the historic barriers to market participation.

It is noteworthy that in recent months, many New England states have proceeded down just this path. Last year alone, both Connecticut and Vermont passed bills that aimed in part to “level the playing field”, and have attracted new energy entrepreneurs to those states. Specifically:

- In 2005 in Connecticut, HB 7501, “An Act Concerning Energy Independence,” created financial mechanisms whereby on-site generation could earn financial credit for the benefits it created by easing load-congestion on overburdened transmission capacity, which can reach as high as \$500/kW. Prior to this act being passed, such benefits still occurred, but the value stream never reached the relevant investors, thereby leading to an under-deployment of potential CHP resources.
- In Vermont, Act 61 compelled the state utility commission to take a holistic approach to least-cost planning, explicitly comparing utility investments in new distribution (which must necessarily utilize upstream transmission, generation and fuel procurement to be effective) to load-sited reductions in load, either through energy efficiency or on-site generation. Historically, utility commissions have considered utility investments independently of other unregulated investments, often leading to a bias for the most expensive investments to serve new load.
- Both the Connecticut and Vermont bills direct the state utility commissions to pursue “decoupling” hearings that would change the basis for utility revenues to un-link their profits from kWh sales. These provisions are directly responsive to the problem of throughput-based rates, which give regulated utilities a perverse incentive to discourage their customers from making investments in energy efficiency.¹

The bills contain much else worthy of emulation, but the Rhode Island bill under consideration in H7778 is on a par with these bills for the level of modernization it will bring to local electricity markets, and – if passed – will firmly establish the state and the broader New England region as a leader in national energy policy. It will also bring a flood of new investment to the region, directly from new investments in on-site generation and indirectly by exposing the state’s utilities to the competitive pressures that drive all other businesses towards steady improvements in efficiency, reliability and price.

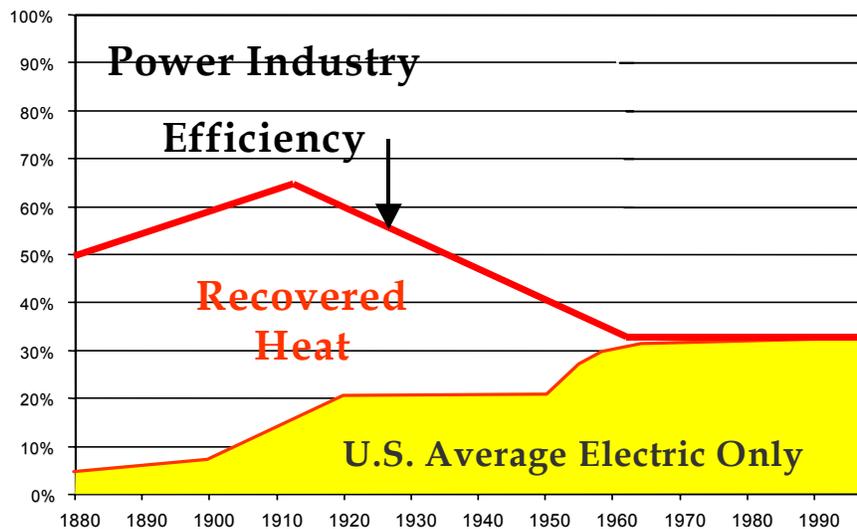
Background

In the past year, little talk of energy has been positive. Prices are up. Supplies are tight. The threat of blackouts continues. Underlying causes include hurricanes, China, growing gas dependency in the power sector and a failure of transmission investment to keep up with rising electricity demand. Less notably, we are approaching the limits of a 100-year regulatory framework that was designed to electrify our nation, but has proved much less appropriate for current market realities. In aggregate, these underlying pressures in the electric sector have caused retail electric prices to rise every year for the last five, reversing a 25-year trend.

¹ I use the term energy efficiency broadly. Demand side management (DSM) programs have been established to compensate utilities for customer investments in more efficient electric appliances, but have not been applied to on-site generation, which therefore face the same market challenges that other energy efficient appliances faced prior to the creation DSM programs.

These issues are national and global, and there is relatively little that state regulators or local utilities can do to address these core issues in the short term. That's the bad news. The good news is that Rhode Island energy consumers have an abundance of options at their disposal to control their own energy costs. They can reduce or shift their electric load to less costly hours. They can upgrade to more efficient machinery and appliances. Most notably (and most frequently overlooked), they can generate their own electricity at a fraction of the cost of local electricity, by recovering the waste heat from their power plants to serve their heating loads, and by bypassing the costs and inefficiencies of the electricity distribution infrastructure. However, they will do so only to the extent that such investments are in their economic self-interest – and this self-interest is too often blocked by current electric regulation.

Interestingly, this economic self-interest was directly responsible for many of the early advances in our electric power system. Thomas Edison's first power plant in Manhattan was built next to the load, and recovered waste heat from his plant to sell to neighboring industrials. Competitive entrepreneurs like George Westinghouse, Nikolai Tesla and others sought to gain market share by devising ever-more efficient generators (and thereby producing lower-cost electricity), thus leading to steady improvements in electric industry fuel-efficiency from 1880 to 1910. Then a (darkly) funny thing happened – we regulated the power industry. For reasons having to do with our desire to rapidly electrify the nation, we passed laws granting utilities a guaranteed monopoly franchise in exchange for cost-based rate structures designed to ensure that they would not reap uncapped monopoly profits. This may have been a sensible decision at the time, but in retrospect it created a predictable – and rather disastrous – outcome. With cost-growth and load growth as the only legal routes to greater revenues, utilities basically stopped pursuing energy efficiency, as seen below:



Note the impact – the electricity sector today is less efficient than it was in 1880, and only half as efficient as it was in 1910! In other words, if *all we did* was deploy 100 year old technology, we would cut fuel purchases in half, slash electricity rates comparably and drastically reduce emissions of multiple air pollutants, including greenhouse gases. Put another

way, virtually all of the problems currently faced by our electric grid could be resolved in an economically-beneficial way. This is precisely what businesses do when they invest in combined heat and power technology. Typically, these businesses are not deploying particularly high-technology solutions; they are simply deploying the old, proven technology that the electricity industry has been disincentivized from deploying since it came under cost-based regulation early in the last century.

These investments are made by individual business ratepayers for their own self-interested reasons, but they create substantial economic and environmental benefits to other ratepayers. When individual rate payers reduce overall power demand, they ease price pressures on tight electricity markets, reduce transmission congestion and allow regulated utilities to serve rising load growth with less investment, thereby lowering the rate-base costs for all electricity consumers. They also create jobs and stimulate the local economy as engineers, contractors, manufacturers and bankers are all intimately involved in the design, construction and finance of these capital projects. Environmentally, these economically-motivated investments in greater efficiency lead to less fuel combustion, thereby lowering air pollution and CO₂ emissions throughout the region.

So why doesn't the private sector make these sound investments more often? Simplistically, because utility regulation – having been long-focused on utility costs – has often come to perceive utility revenue reduction as a problem to be prevented, rather than as a competitive incentive to pursue greater efficiency. When my business loses a customer, it galvanizes my employees to work harder to win the next one. When a utility loses a customer, it instead galvanizes them to seek redress through revenue adjustments at the utility commission. For example:

- Utility rates are often designed with the implicit assumption that revenues must be held constant. Indeed, in Rhode Island, Narragansett Electric frequently notes that they are presently under a “revenue freeze”, and thus any reduction in sales to one customer must be compensated by increased charge to another. While this assertion may be narrowly true in the context of recent rate filings, it bears noting that if you push this logic too hard, it would suggest raising rates to every Rhode Island business that may be going through an economic downturn and correspondingly reducing their electric purchases this month! Nonetheless, this logic shapes much of current ratemaking practice, leading to rates that penalize customers who would consider investments in energy efficiency.
- Electric market rules allow utilities to sell power at a substantial premium over that which other, unregulated parties can offer. This often leads electricity customers with thermal loads to undersize their generator investments so as to eliminate the potential for electricity export, thereby realizing value only from displaced (expensive) utility power rather than trying to sell (cheap) power back to the utility.

H7778 takes specific steps to address these barriers, including:

- Creating “net metering” laws that set a consistent value for all kWh, rather than artificially depressing the value of kWh produced by non-utility generators. This will substantially increase the incentive for local entities to provide local solutions to power price and supply issues, to the benefit of all electric ratepayers.
- Forcing all new grid investments to be evaluated on the basis of their total societal impacts, rather than looking simply at their impacts on the profits of the regulated utility. This rule will compel utility regulators to ensure that the grid is designed for

the maximum benefit of electricity users, rather than artificially elevating the interests of utility shareholders over that of the public at large.

- Compelling utility regulators to ensure that new load is served in the most cost effective manner, including not just “generators and wires,” but also competing customer-sited investments in energy efficiency or on-site generation. This mirrors recent legislation passed in Vermont and California, and is directly responsive to the fact that deregulation has reduced the jurisdiction and control of utilities (who no longer control upstream generation, transmission or end use investments) without making any concomitant change in their responsibilities.
- Taking a more holistic view of energy efficiency by expanding existing incentive funds to apply not only to efficient energy consumption, but also to efficient energy generation.

There is more than can and should be done, including addressing existing prohibitions on private wires crossing public thoroughfares. Nevertheless, H7778 is clearly in the best interests of Rhode Island’s citizens. It will help shield Rhode Islanders from the growing volatility in global energy markets. It will create white- and blue-collar jobs for Rhode Islanders. It will enhance the State’s economic competitiveness. And perhaps most important, it will provide options to Rhode Island consumers, who are currently economically prohibited from taking proactive control of their energy future.

Respectfully Submitted,

/s/ Sean Casten

Sean Casten
President