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NEPGA
NEW ENGLAND POWER GENERATORS ASSOCIATION, INC.

Fact Sheet No. 6:

Why the New England States' Power Grids are Operated as a Single System[1]

Are there reliability benefits associated with operating the New England grid as a single system?

Yes. Power systems across New England, and the entire eastern United States, operate on an interconnected basis. This system allows different regions to provide energy to each other in times of shortfalls and emergencies. Regional power grids, such as that operated in New England, also allow utilities effectively to share their reserves, which improves the reliability of the electric system for everyone cost effectively.

Since the New England transmission grid operates as a single system, its operations must be coordinated minute to minute. ISO New England is the transmission operator for the New England region. It operates the transmission grid and also acts a bit like a regional air traffic control center, making sure that safety limits are not breached by having too many people try to do the same thing at once, just as an air traffic control tower must prevent too many planes from flying in the same airspace.

ISO New England has been successful in operating the region's power grid reliably. For example, the lights stayed on in almost all of New England during the August 2003 system failures that blacked out much of the Northeast, Midwest, and Canada.

Are there cost savings from operating as a single system?

Yes. In an integrated regional system, a single set of resources can be used to maintain reliability across the entire New England region. In fact to do it this way is more cost effective than duplicating these functions in each of the utility service territories. Additionally, under the region-wide competitive wholesale market that began operation in 1999, all of the region's generating resources can now be operated together to provide energy in the most economically efficient manner. So if generators in Maine can be used to provide power more cheaply than those in Connecticut to meet additional load, they will be. This "economic dispatch" ensures that the costs paid by customers are minimized.

There are also benefits in terms of investment. A regional system can be operated reliably with a smaller number of power plants held in reserve, since various parts of the region can send power to the other parts when they are short of capacity. The integrated New England grid has also been a boon to investment. A large amount of clean and efficient generation has come online in New England since ISO New England began operations. Due to these efficient new plants, wholesale electricity prices in New England (adjusted

for fuel costs and inflation), have declined by 16.5 percent over the four years 2001-2004.[2]

Are there environmental benefits to operating as a single regional system?

Yes. Efficient production generally implies lower fuel use and lower emissions. The big environmental benefit in New England was triggered by the wave of new investment created by opening up the market, as these new power plants typically use more efficient and cleaner-burning natural gas technology. In New England between 2000 and 2004, emissions of nitrogen oxides (NOx) fell by 32%, emissions of sulfur oxides (SOx) fell by 48%, and emissions of carbon dioxide (CO_2) — a substance that is thought to contribute to global climate change — fell by 6%. So despite a significant rise in electricity demand, the market-driven investment in new technology reduced emissions significantly.[3]

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[1] This information is drawn from ISO New England's website, www.iso-ne.com.
[2] *Ibid.* We have adjusted for inflation ISO New England's fuel-adjusted nominal value of 11 percent to yield a real decrease of 16.5 percent.
[3] *Ibid.*