

**Testimony on Wind Power: Opportunities and Impediments**  
**New York City Council Oversight Hearings**  
**Committees on Environmental Protection & Technology**  
**250 Broadway, Hearing Room, 16<sup>th</sup> Floor**

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Good afternoon. I am Nancy Anderson, Ph.D., Executive Director of the Sallan Foundation. The Foundation's mission is advancing useful knowledge for greener cities and I appreciate the invitation to offer testimony at this City Council oversight hearing.

Today, the US faces a four-part crisis: climate change and rising emissions linked to energy consumption; volatile energy prices and affordability; energy security; and electric power reliability in the face of spiraling demand. I will focus on the opportunities and impediments for facing this crisis as related to wind power for New York City.

Earlier this month, the Sallan Foundation co-sponsored *Smart Grid For Smart Cities*, a conference held at the NYU Wagner School of Public Service. It plugged into the potential for 21<sup>st</sup> century power system solutions at the urban scale that must be integrated with a 20<sup>th</sup> century legacy. The take-away message from this conference is that smart, sustainable cities need smart electric power grids. This means smart cities need smart policies to tap into renewable power like wind and to harness the power of innovative pricing. In turn, smart cities need smart, energy efficient buildings able to capture the value of reducing the stress on our maxed out electric power grid. It's just dumb to stay vulnerable to black outs and ever increasing demands to add expensive new power and new distribution capacity

So what can a smart grid do for us? It can lower electric power costs through creation of system-wide efficiency improvements. Without system-wide IT capability, New York faces utility bills growing by 20% and peak power demand soaring by a third. Improved electric service reliability and smaller environmental impacts will be major benefits of a smart grid and the probability of building the smart grid that New York City needs rests on funding and forging a robust political consensus.

Here are three opportunities a smart grid offers for wind power. First, since the power of wind is stochastic, the power-source switching capacity of a smart grid would improve reliability and service by integrating electric power from multiple sources. Second, development and deployment of electric power storage batteries would permit the seamless integration of wind into the power grid and facilitate demand management. Third, IBM is analyzing its smart grid pilot project in Washington State's Olympic Peninsula to gain insights into customer behavior when confronted with new rate structures that vary with time of day and system wide power demand. This analysis should prove useful for making wind power consumer friendly and making regulators better informed.

Such opportunities raise the question of whether our current regulatory regime is the right tool or an impediment to growing a smart grid for a smart city. In her 2010 State of the City address, Council Speaker Quinn called on the City to "cultivate an economy of innovation" and this will mean attracting clean tech venture capital here. In this context, Speaker Quinn called for a "Renewable Energy Investment Initiative" and envisioned a burgeoning green tech sector bringing much-needed good green jobs to New Yorkers. These jobs include the design, installation and maintenance of energy efficient building components and clean renewable energy systems that are easy to connect with Con Ed's distribution grid. Similarly, at the *Smart Grid Smart Cities* conference, James Gallagher, the Mayor's point-man on energy policy, linked utility regulation to the goals of PlaNYC 2030, the City's "greener greater" building legislation and the simple fact that smart grids need smart buildings.

One of most visionary opportunities for urban energy is a shift from macro power generating and distribution systems with centralized operations and controls to decentralized micro-grids that combine heat and electric power generation. Researchers at Columbia University have identified the potential for creating new clean energy networks with New York City's current building stock. Energy guru Amory Lovins calls such developments "disruptive technologies" that would unleash new business models and attract innovative competitors into the electric power market place. In turn, these forces could drive strategic public policies and investments to make energy efficient building equipped with renewable power New York's new normal. Imagine disruptive technologies like wind-power friendly, demand-response enabled/real time pricing electric meters, efficient and affordable battery technologies for storing electricity until it's needed and a city able to plug into a network of distributed heat and electric power generators.

Now it's up to us to look over the horizon, seize our opportunities and get them right. We might not get another chance and Council members Gennaro and Garodnick's legislative proposal to streamline approvals for environmentally beneficial technologies, design and construction techniques, materials and products would be a good place to start.