

Creating a Replicable Model for Community Perfect Power

The Galvin Electricity Initiative (The Initiative) is undertaking the task of demonstrating and open sourcing an improved design for the delivery of electric power. By applying continuous improvement methods to the elements of the United States power grid, the Initiative hopes to achieve the universal adoption of a system design that will meet the power needs of every consumer. This ultimate state is called ‘Perfect Power’. The Initiative intends to demonstrate that delivering Perfect Power is not only attainable, but is ultimately the most cost-effective option.

In 2005, former Motorola chairperson Robert W. Galvin formed the Galvin Electricity Initiative to design and promote a power system that cannot fail the end user. By applying Six Sigma quality principles and available technology to enhance the efficiency, reliability and security of our dynamic power system, The Initiative intends to demonstrate that it is both economically plausible and practical to deliver “Perfect Power” to the consumer. The ultimate goal is to meet the needs of the end-user – perfectly, primarily by eliminating outages at the consumer level and lowering costs.

Oak Park will serve as a model for a more consumer focused electricity system. The Galvin Electricity Initiative and Oak Park have joined forces with local universities, technology/service innovators, and regional government leaders to develop a replicable model of the electricity system of the future – Perfect Power. The **goal** of this project is to develop and prototype innovative programs, design approaches, and financing that enable a transformation to Perfect Power. A transformation that achieves the following specific goals:

1. Dramatic improvements in reliability, similar to what Naperville accomplished (i.e. 70% reduction in average outage duration without raising costs)
2. Dramatic improvements in conservation and carbon while empowering consumers to manage their costs (see Figure 1)

Recognizing that cities are very pragmatic and results oriented, this proposal focuses on rapid prototyping of the following key Perfect Power **strategies**:

- Daniel Burnham demonstrated the power of a plan and vision through his life’s work. The first step in the path to a consumer focused electricity system is the development of simple replicable plan. One with clear goals and a blueprint for achieving these goals. A plan that will specify the methods, approaches, and steps need to continuously move closer to Perfect Power. A plan that can be utilized by others as a foundation for their journey to Perfect Power.
- Perform research to identify and resolve barriers to Perfect Power and educate legislators on policy reform opportunities that will enable and facilitate investment and innovation into advanced technologies. This includes leveraging best practices from other states. (e.g. community financing, net metering (see Figure 2), retaining distribution money locally, etc...)
- Develop a community long-term financing initiative to accelerate the integration of local energy efficiency, renewable generation, low carbon natural gas fired generation, and home automation (see Figure 3).
- Develop community and building aggregation programs that enable consumers to gain market power and generate revenue from ancillary services. This will allow consumers to implement distributed generation and procure generation sources that meet their needs while also implementing dynamic pricing strategies that maximize conservation and shift usage to lower cost base-load periods, lowering consumer costs and the cost electricity procurement.
- Develop Perfect Power infrastructure investment and development conceptual design and implementation plan. This includes integration of key Perfect Power features such as undergrounding utilities, looping for redundancy, automation, and intelligence.

The expected benefits to the Village of Oak Park include:

- Local green jobs to implement energy efficiency, local generation, and home automation. Local efficiency and generation investment could reach about \$50 million for installation and service over the next five to seven years.
- Attract business and residents who will want to relocate to a Village with more reliable power, greener power, and options for managing their energy costs.
- Reduced outage impacts and costs – average outage durations would drop from about two hours to 30 minutes.
- Each resident and business could reduce their annually energy costs by \$200 to \$700 annually. The attachment reveals savings of up to 2 million mmbtu annually or \$10 million per year nominally. These savings would be used to pay for the investments in efficiency and clean local generation.
- Oak Park as a community could reduce its peak load, allowing the community to buy lower cost and lower carbon baseload power. Savings could reach 1 cent per kWh or \$3.5 million annually.

The Galvin Initiative estimates that the Perfect Power system will lead to dramatic reductions in fossil fuel use, carbon emissions, and electricity demand (see **Figure 1**).

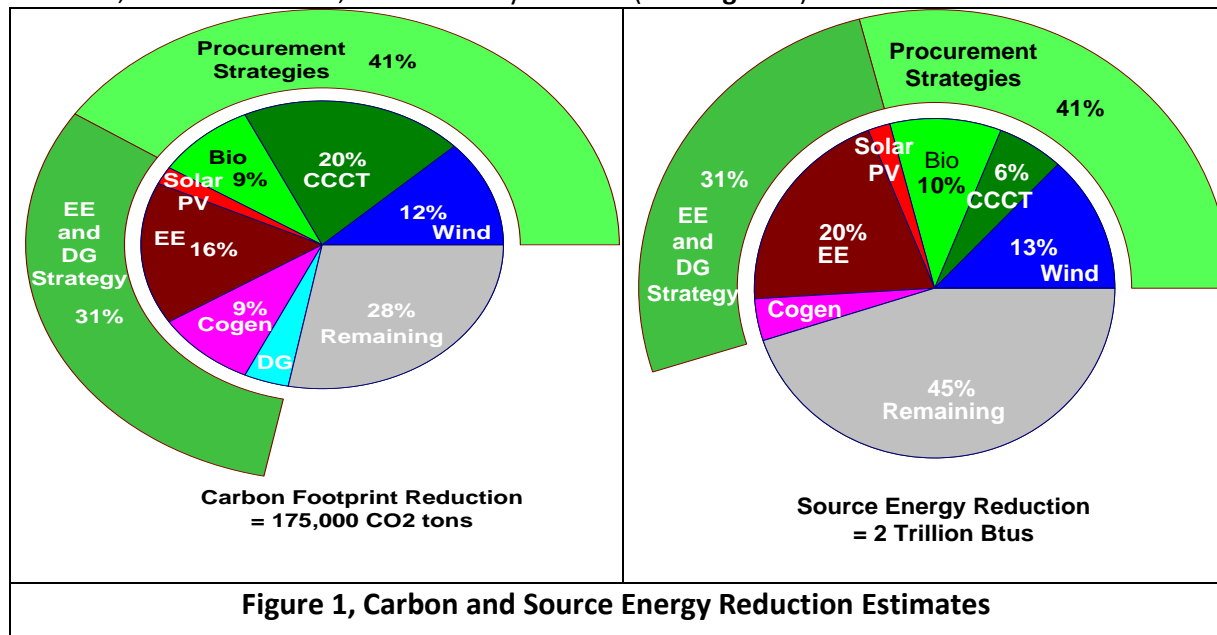


Table 1 provides estimates of the cost for developing and implementing a replicable community Perfect Power prototype. The Initiative will collaborate with the Illinois Institute of Technology, University of Illinois, Northwestern University, Citizens Utility Board, and several leading technology/service providers. These organizations will provide expertise, in-kind services, and resources.

Table 1 - Program Initiative Budgets

Task	Description	Budget
1	Program Goals and Management	\$ 300,000
3	Illinois Regulatory Reforms	\$ 600,000
4	Oak Park Community Financing Program	\$ 300,000
5	Oak Park Aggregation Program	\$ 600,000
6	Oak Park Infrastructure Improvements	\$ 400,000
7	Village Takeover of Local Grid	\$ 800,000
	Total	\$ 3,000,000

Community Perfect Power Model Scope of Work Summary

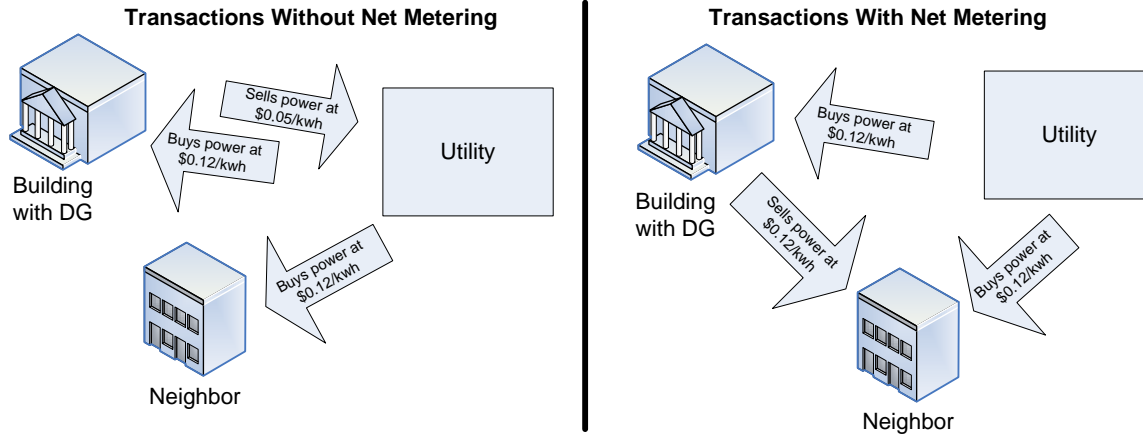


Figure 2, Net Metering Transactions

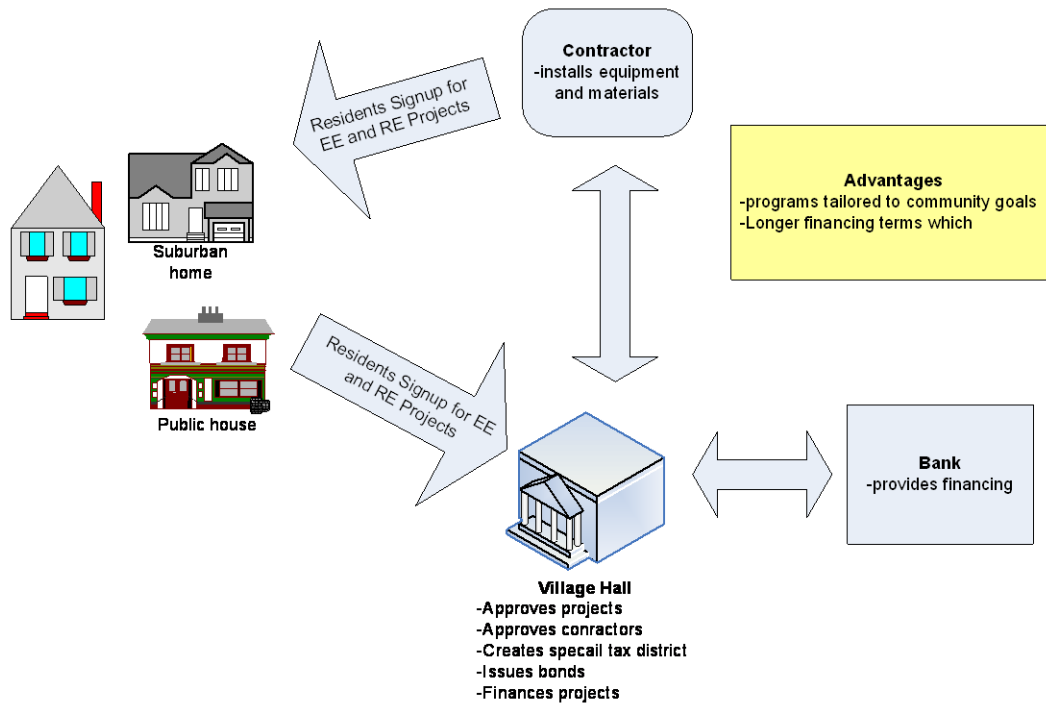


Figure 3, Community Financing Program Overview