

City of Minneapolis Energy Vision 2014

This Energy Vision identifies Minneapolis' long-term energy goals that guide the Minneapolis Energy Systems Pathways Study, authorized by the City Council on April 12, 2013. The Energy Vision was developed after a thorough inventory of existing City policies, actions, and programs, then enhanced and clarified through stakeholder discussions. It is an aspirational document, intended to bring City residents and businesses together around a common set of goals, serve as a foundational document for the Pathways work to follow and may guide future decision-making about Minneapolis' energy system.

I. Vision Statement

In 2040, Minneapolis's energy system will provide reliable, affordable, local and clean energy services for Minneapolis homes, businesses, and institutions: sustaining the city's economy and environment and contributing to a more socially just community.

II. Vision Narrative

The vision narrative is an example of how the City's energy system could look in 2040, assuming successful implementation of all elements. The narrative helps define the city's desired future, and along with the vision statement and elements, is a guide for making implementation decisions.

A. Reliable and Affordable Energy Services

All city residents and businesses are supplied with reliable, affordable, and high quality electric and natural gas service. Through a combination of highly efficient end-use of energy and efficient energy delivery and generation, Minneapolis is a national leader in low cost and high quality energy services. Disparities in the relative cost of energy services for low-income households are aggressively mitigated. Rates are competitive, so that existing businesses in the city thrive and new business activity is attracted to the city.

An efficient and "smart" grid infrastructure seamlessly integrates distributed generation, energy storage, electric vehicles and other distributed energy resources. Smart infrastructure ensures high levels of reliability, promotes energy efficiency, and enables high levels of local interaction and coordination while protecting customer privacy. High power quality helps make Minneapolis a competitive location for power-sensitive industries.

B. Clean Energy

The total carbon emissions and other waste products from the energy supply that serves the city have substantially declined. Electricity supply is almost carbon emission free in 2040. Heating and cooling services come from a variety of clean and efficient energy sources. Improvements in energy

efficiency mean that many buildings can often generate all needed energy on-site.

C. Essential Energy Services for All

The energy infrastructure serving the city affordably meets the basic needs of residents, such as adequate heating, cooling and lighting. Race, ethnicity, income, and age are no longer indicators for who bears pollution impacts or receives economic or environmental benefits.

D. Local Resources

Local renewable energy resources (including solar, biomass, hydro and wind) are increasingly used within the city. Solar contractors are thriving, and the city is home to a number of businesses that provide equipment or services within the energy efficiency and renewable energy supply chain. Academic and business interests choose to locate in Minneapolis because it is seen as a leader in advanced energy infrastructure.

Efficient community scale heating and cooling systems are integrated into many high density developments across the city. Combined heat and power facilities provide efficient energy in district energy and industrial applications in many areas of the city.

E. Market Integration of Efficiency

Energy use and efficiency data is seamlessly available to building owners/managers, neighborhoods, city government and customers. Businesses and residents consider energy information in economic decisions from making additional energy efficiency investments, making purchasing decisions, or renting or buying property. Residents and businesses have simple and affordable tools to finance energy efficiency and renewable energy improvements. Buildings are constructed with energy efficiency as a primary objective, and new homes and businesses regularly achieve net-zero energy status. Residents and business can participate in community renewable energy projects.

F. Collaborative Progress

The resource planning and investment decisions of the energy utilities that serve the city reflect and support the city's climate action, economic development, and social equity goals. Utility managers and city administrators seamlessly and routinely collaborate to meet those goals. Improvements to or maintenance of energy infrastructure in city rights of way (ROW) are coordinated with other ROW improvements. The city's development and redevelopment plans incorporate protection and development of local energy sources. City infrastructure is a model of energy efficiency and uses largely renewable energy.

III. Elements of the Energy Vision

Minneapolis' energy vision identifies the desired state of the Minneapolis energy system, where the goals of the city and its energy providers are aligned. The vision addresses how energy is supplied, delivered, and used in Minneapolis. Moreover, the energy vision addresses how energy services affect: the climate and other components of the natural environment; the health, social equity and economic opportunity of residents; and, the creation of economic value and Minneapolis' competitiveness as a place to do business. The following are elements of a fully realized energy vision:

A. Social and Economic Elements

1. **Improves social equity** - The City's energy providers minimize service costs to city residents and businesses, and provide opportunities to: lower energy bills through energy efficiency; to control energy cost volatility; and improve access to energy services that empower low-income residents through efficiency, conservation, and renewable energy.
2. **Reduces economic and health disparities** – Changes to the energy system reduce the health and economic disparities between Minneapolis communities (racial, ethnic, economic, age) and improve health economic outcomes for all residents.
3. **Improves participation** – Decision making regarding energy services in the city is structured for all members of society to have opportunity for meaningful participation.
4. **Expands economic development** – Investment and management of the energy system encourages investment in new local energy-related business and new opportunities for existing businesses without diminishing economic opportunities of others.
5. **Support current residents and businesses** – Energy system improvements are planned and structured in a manner that provides benefits to residents and businesses in the city at the time of the improvement, and current residents are safeguarded against displacement as a result of those improvements.

B. Energy supply

1. **Low or no Carbon** – Reduced carbon intensity throughout the resource supply line is a primary component of clean energy.
2. **Clean** – Energy generation creates few or no waste products or pollutants.
3. **Affordable cost** – Supply costs, including life cycle costs, are kept affordable in creating a supply portfolio.
4. **Reliable** – The supply mix is protected from unexpected unavailability.

5. **Predictable cost** – Supply is minimally subject to price volatility.
6. **Diversified** - The supply system uses multiple energy sources with different availability and price risks.
7. **Local** – Policies maximize opportunities for local generation and ownership.

C. Distribution System

1. **High level of reliability** – The system is redundant and resilient in regard to a wide range of risks.
2. **High level of safety** – The system is safe for consumers, utility workers, and contractors.
3. **Supports consumer choice** – The system supports on-site generation, on-site energy storage, aggressive energy efficiency implementation, and other distributed and renewable energy resource choices.
4. **Minimizes conflicts** – The distribution system is increasingly underground, location and design of substations and distributed generation reduces nuisances, and natural systems (air, green space, water) are protected.
5. **Establishes a 21st century distribution system** –The system supports opportunities for microgrids, electric vehicles, distributed generation, smart meters and other distributed energy resources.
6. **Efficient and accessible** –The system efficiently uses space available in rights-of-way and allows access to the distribution system (electric, gas, thermal) for local energy production.

D. Energy Use

1. **Highest level of efficiency** – Buildings and facilities incorporate all lifecycle cost-effective efficiency measures, across all neighborhoods in the city.
2. **Maximizes efficiency's societal benefits** – Efficiency and retrofit priorities address participation barriers for underserved customer classes, including renters.
3. **Supports end-user self-sufficiency** –Buildings and facilities can use energy efficiency, on-site generation and on-site energy storage to achieve net-zero energy use.
4. **Delivers equity in rate structures** – Rate structures for end users set appropriate price signals, maintain competitive rates, recognize residential customers' ability to pay, and minimize cross subsidies.
5. **Transparency** –Energy users can conveniently access their own energy consumption data, while ensuring consumer privacy.