

#14: RENEWABLE ENERGY

CORE METRIC FOR CATEGORY A & B & C CITIES

Bold, green font indicates data elements that are eligible to be recognized at Step 5 if improvement is demonstrated.

DATA ELEMENTS

- 14.1 **Number of city owned and private renewable energy generation sites**
- 14.2 **Generation capacity at city and at private renewable energy generation sites (kW)**
- 14.3 Annual production at city owned renewable energy generation sites (MWhr/yr)
- 14.4 **Annual renewable energy purchases, city (MWhr/yr)**
- 14.5 Number of private entities participating in renewable energy purchasing/green power programs (count)
- 14.6 Percent of total city energy use that is generated and purchased renewable energy
- 14.7 Percent of total city energy use that is purchased from a community solar garden

DEFINITION

- **Renewable energy sources** includes power from wind and water, from the sun (powering photovoltaic panels, hot-air and hot-water panels), from biofuels, and from biomass (burning wood, and biogas produced by anaerobic digestion of organic matter such as at a waste water plant). [\(Element 14.1\)](#)
- **Ground-sourced geothermal** heating/cooling is not renewable energy (but rather the efficient use of an electric motor to move energy between a building and the subsurface). [\(Element 14.1\)](#)
- **Resource recovery** (incineration of trash) and landfill gas recovery is not considered renewable energy under some definitions, but they are defined in Minnesota as renewable and should be included in your elements. [\(Element 14.1\)](#)
- **City sites** include renewable energy generation sites inside and outside city limits, such as at a waste water treatment plant, owned or leased by city government. Include sites owned by a municipal utility. [\(Element 14.1\)](#)
- **Private sites** include private, non-profit, governmental (other than city), residential, commercial, institutional and industrial sites within city limits owned or leased by an entity other than city government. Include community solar gardens and gas stations selling ethanol or biodiesel blends above the state mandated 10%. [\(Element 14.1\)](#)
- **Generation capacity** is the rated (or "nameplate") theoretical generation capacity in kilowatts (KW) and includes generation in facilities at city (public) sites, and at private sites. [\(Element 14.2\)](#)
- **Annual production** counts megawatt hours (MWh/yr.) generated by public and by private sites in the year prior to the GreenStep reporting year. [\(Element 14.3\)](#)
- **City and private purchases** include renewable energy amounts above the amounts already in the baseline mix from the electric utilities supplying power and gas to the city, and above the mandated 10% biofuels mix from liquid fuel stations in the city. Include voluntary "green power purchases" or REC (renewable energy credit) purchases by the city, and by residents, businesses and other entities government. Among these amounts are purchases under Xcel Energy's Windsource® program and city purchase agreements from renewable energy facilities owned by another provider, such as a community-solar facility. Note that sometimes such purchases may be from renewable energy sources (e.g. community solar gardens) where the renewable energy credit has been retired by another party. [\(Elements 14.4 and 14.5\)](#)
- **Community Solar Gardens** include purchases made through a community solar garden subscription where the renewable energy credit has been retired by another party. [\(Element 14.7\)](#)

DATA SOURCES

- Utility and city records for permitted sites and capacities, and for green power purchases (Elements 14.1-14.7)
- City records and Minnesota Department of Commerce for energy production and biofuels data (Element 14.3)

CALCULATION AND PUBLIC REPORTING

- **Number of sites and generation capacity** is measured on December 31st before the reporting year. Use a multi-year average of production to estimate the capacity of a landfill gas facility, incinerator, digester, and biofuels outlet. (Elements 14.1 and 14.2)
- **For energy conversions**
use: http://www.eia.gov/Energyexplained/index.cfm?page=about_energy_conversion_calculator
- **Annual production** amounts are for the calendar year before the reporting year. If the city owns or leases a portion of a renewable energy facility it should count the percentage share of that facility's generation allocated for use by government operations. (Element 14.3)
- **Annual renewable energy purchases** by city operations, and by residents and businesses, should ideally be documented with renewable energy credits (RECs) and be Green-E certified. (Element 14.4)
- **Report the ratio** of renewable energy generated and purchased by city government to total energy used by city government, using data for the calendar year prior to the GreenStep reporting year. (Element 14.6)

RATIONALE

Minnesota is almost completely dependent on energy sources outside state borders. Annually we spend over \$13 billion on coal, natural gas, uranium, petroleum, and electricity produced from a variety of these non-renewable (and a small proportion of renewable) sources. Adding renewable energy generation capacity that is owned by local government, residents, businesses and educational institutions:

- Develops underused local energy resources, keeping dollars available for re-spending in the community
- Increases a community's resilience to energy supply and price shocks
- Cuts greenhouse gas emissions in support of the state's Next Generation Energy Act goals
- Decreases health care costs to individuals and the state by eliminating coal air emissions

Annual tracking of renewable energy generated/purchased within the city provides a moving baseline measure, facilitating city decisions on what actions to take to increase these amounts. While city government generation and purchasing of renewable energy will always be a small portion of total energy used within city limits, the example and experience of these city actions help propel residents and businesses to invest in renewable energy.

STEP 5 TARGETS

The State of Minnesota, as part of the Next Generation Energy Act, has a goal of generating 25% of electricity used in 2025 from renewable sources. In addition, the state has set a solar standard for achieving an additional 1.5% of electric energy generation from solar energy systems by 2020 and 10% by 2030.

NEED HELP? CONTACT

Alexis Troschinetz, Clean Energy Resource Teams (CERTs) Behavior Change and Metrics Coordinator
612-626-0455 or atroschi@umn.edu

Minnesota GreenStep Cities
Performance Metrics for Recognition at Steps 4 and 5

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