



Energy & Conservation Research Questions

The energy and conservation component of the Comprehensive Plan update will provide an in-depth review of local energy production. It will establish a baseline of local energy production, including methods of production and the levels of emissions associated with those methods, and establish policy direction for future energy production, pollution and emissions reduction goals, and environmental conservation.

Energy Production & Economy

1. What are the sources used for energy production in the City? What percentage of these sources are renewable?
2. Are there opportunities for cogeneration within Duluth? Where are they?
3. How much and which types of energy are we selling/sending to other locations? How much are we getting/paying for from other locations?
4. What are operational and technical best practices used by other cities for energy production, including gas, electricity, and district heating and cooling?
5. What are examples of renewable energy production and energy storage systems that would be viable in Duluth? What would be the costs and benefits?
6. What are some examples of distributive energy? Are there existing models that could successfully be implemented within the City of Duluth?
7. What is the economic output per unit of energy produced?
8. Can we create new jobs via energy efficiency and renewable energy?

Energy Use

1. What is the total usage – electrical, gas, Steam Plant, and others – by all users (industrial, commercial, residential, utility) in the city? Where and what are the largest energy consumers? How does this compare to peer cities and peer industries?
2. What is the geographic extent of the district heating and cooling system, and what structures does it include? Could this be expanded or could there be sub-districts, and what would be the advantages of this? What possibilities are there for making this system more energy efficient and more sustainable

Emissions & Efficiency

1. What are the emissions associated with various uses in the city as a whole, and what are the energy sources of the emissions?
2. What are the GHG and carbon emissions of commercial, residential, industrial, and transportation uses in the corporate City? What are the energy sources of the emissions (electricity, water gas, etc)?
3. What are the specific sources of pollution (in addition to GHG and carbon emissions) resulting from our energy use?
4. How could we reduce the emissions from the Steam Plant? What is the most efficient and least polluting way to heat and cool downtown?
5. How much residential and commercial energy could be saved through economical conservation measures and what are best practices for implementation?
6. How much waste heat is emitted in the city, and where? What percentage is being captured and reused?
7. What are the best practices for efficiency and emissions reductions for residential, commercial, transportation, and industrial users/uses? And which of those best practices are most efficient for Duluth to implement? How can the City incentivize energy efficiency and reduced emissions by businesses?
8. How can the City support and expand affordable energy efficiency programs for residents? How can the City decrease the percentage of household income spent on heating and cooling?

Resiliency

1. What climate change factors could impact energy demand and use in our region?
2. What can Duluth implement that would improve its energy resiliency for unforeseen changes and emergency situations such as floods?
3. What potential agencies and institutions could partner and collaborate with Duluth on identifying energy solutions and policies, and how could this collective group shift the overall picture of regional energy resiliency?