



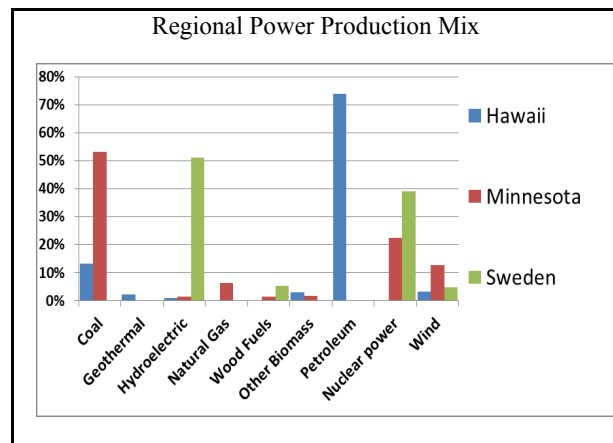
Putting the Price of Electricity in Minnesota in Perspective

Joel Tallaksen, Renewable Energy Scientist

Over the last several weeks, I have been working on a research project that examines the amount of fossil fuels used in fertilizer production. In conjunction with research partners from Sweden, we have looked at factors related to the production of electricity in Minnesota and Sweden. One of the interesting observations of the data is how much variation there is in the methods used for production of energy and the resulting price; not just around the world, but even within the United States. To provide a little perspective on differences in electricity prices, I gathered data from two very different States in the US along with data from Sweden.

In the US, the State of Hawaii has the most expensive electricity in the nation at an average of 36 cents per kW hour for residential customers. This compares to Minnesota at 12.5 cents and Sweden at roughly 30 cents. Two main factors account for this price difference, energy resources and environmental impacts of energy generation. In Hawaii, there are no fossil energy resources. Therefore, the state must import large amounts of petroleum and coal to generate electricity (see the figure below). While Minnesota must also import large amounts of fossil coal, it is can be brought in by rail from other nearby states. Minnesota also has the advantage of being near low cost hydroelectric production from adjacent states and provinces. In the case of Sweden, their primary sources of energy (hydroelectricity and nuclear) are relatively inexpensive. However, to promote conservation and raise funds for encouraging the private sector to develop renewable energy alternatives, Sweden has higher taxes on electricity.

One of the most interesting observations is how much change can be seen in the US mix of power production over time. Newer more efficient electrical generation facilities are slowly replacing older facilities that are not as economically viable or that are emitting too much pollution. In several states throughout the US, including Minnesota, renewable sources are become a bigger part of the overall mix. Wind power now produces roughly 12% of Minnesota's home grown energy, up from almost no wind energy 15 years ago.



While many Minnesotan's may feel their electricity prices are very high, they are actually among some of the lowest in the industrialized world. Traditionally, this was because of the vast amount of fossil fuel resources and hydroelectricity. The additions of renewable energy resources, improved power plant efficiency, and energy conservation have served to keep energy costs low in the region. The continuing improvement in wind, solar, and biomass technologies will likely help keep power costs low in the future as the region has abundant wind, sun, and forestry/agricultural biomass supplies. In other areas of the country, including Hawaii, this technology is already being welcomed as a way to lower costs, spur economic development, and produce clean energy.

AgCountry Auditorium

January 13—Dave Frederickson
January 15—Ag Professional Update
January 16—WCROC Advisory Meeting
January 20—Small Grains Meeting
January 21 —Renewable Energy Interview

Seminar Room

January 13—Horticulture Meeting
January 21—Renewable Energy Interview

4-H! Popping with Adventure!

Carrie Ann Olson, EE, Youth Development

University of Minnesota Extension staff provides adults with the training and resources one needs to volunteer – the volunteer provides the passion for helping youth succeed! 4-H offers a number of training opportunities throughout the year where volunteers learn about leading clubs, projects and more. Our new volunteer training includes five 30-minute online training modules: Creating a welcoming 4-H environment: Engaging, encouraging, and respectful, The 4-H learning environment, 4-H project leaders: Where the action starts, and Managing 4-H clubs: A guide for club leaders. An excellent face to face opportunity for volunteer training and resources is the following annual conference.

MN 4-H Adult Volunteer Association Conference

February 6-8, 2014 - Plymouth, MN

Volunteers and their families are invited to attend the 29th Annual MN 4-H Adult Volunteer Association (M4-HAVA) Conference at the Best Western Plus Kelly Inn in Plymouth on February 6-8, 2014. The theme this year is “4-H! Popping with Adventure!” which reflects the focus on 4-H Project Curriculum Training. Participants will have the opportunity to choose from 32 Workshops ranging from “Hands on Woodworking”, “Where Did You Get That Bag, I Made It”, and “Building Chefs for a Day” to “Building Reflection into Programming”, “Project Bowls Come Alive”, and “Engaging Teens & Older Youth”. Other opportunities include:

- Network With Other Volunteers
- Kids Path For Grades K-6
- Adult Volunteer Recognition Program
- Attend a Premiere Musical Play

Exciting speakers, educational workshops, and entertainment are planned as well as opportunities to get together with 4-H Volunteers from the Minnesota and the five state area. Many workshops will provide 4-H Project curriculum at no additional charge. Share new ideas, learn new skills, develop and renew friendships, and of course have lots of fun!

Conference registration includes meals and 4 workshops daily. Registration received January 2-15 is \$130.00 for members and \$165 for non-members. One day registration is also available. Note: Membership is \$10/year per person, so please join M4-HAVA before or while registering for the conference.

Contact the Best Western Plus Kelly Inn in Plymouth at 763-553-1600 for hotel reservations. Mention 4-H and the U of MN Extension Center for Youth Development to obtain a special rate. Complete conference details including registration and workshops information is available on the University of Minnesota Extension webpage (www.4-H.umn.edu/m4-hava).

There are many ways to volunteer, including short-term volunteering such as speaking at a club meeting or serving as a resource person or longer-term volunteering: such as leading a club. Learn more about local volunteer opportunities to volunteer be contacting your local Extension office.

