St. Paul Cogeneration - A Regional Solution for Tree Waste

St. Paul Cogeneration (SPC) is a combined heat and power (CHP) facility that provides heating to downtown Saint Paul and power to Xcel Energy through the repurposing of tree waste, referred to as renewable biomass fuel. CHP is a significantly more efficient way to produce energy, providing renewable and cost-effective heating solutions to Saint Paul. Since SPC utilizes tree waste, this approach helps solve a natural resource and waste stream problem for the region, including tree waste from the spread of Emerald Ash Borer.

The management of tree waste as a fuel source for SPC contributes approximately $15 million annually into the local economy in the form of jobs, contractors, and equipment. The alternative to using biomass-generated heat and power would be to use only fossil fuels-natural gas and fuel oil-to heat buildings. Biomass energy also helps the City of Saint Paul meet its climate action goals by avoiding 100,000 tons of carbon each year.

- Annually, the SPC plant turns approximately 260,000 tons of tree waste into renewable energy.
- Over the last five years, SPC processed tree waste from over 171 communities in 22 counties.
- In the past year, volumes approaching 50% of the metro tree waste processed into biomass fuel has been from EAB management.
- Estimated EAB tree waste in just the seven-county metro will be in excess of 1.7 million tons.

750 organizations served with wood processing

348,136 MWh heat energy provided

197 customer buildings heated

260,000 tons of wood processed

25 MW electricity produced

171 cities served

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What's Needed in 2020

THE CURRENT POWER PURCHASE AGREEMENT

The current power purchase agreement (PPA) between Xcel Energy and St. Paul Cogeneration expires in 2023. The PPA helps Xcel Energy to fulfill the obligations of the Biomass Mandate.

Extending the PPA through 2030 would ensure a diverse portfolio of renewable energy sources continue to be utilized in the state's future, and would help local communities and state agencies continue to manage the influx of EAB tree waste, expected to peak in the next 10 years.

PRIORITIES FOR 2020 MINNESOTA LEGISLATIVE SESSION

There has been a tremendous amount of exploration and discussion of how best to handle the mounting EAB issue in Minnesota, including the recent publication of a white paper by the Environmental Quality Board and a multi-agency working group looking at solutions. It is critical that SPC remain a part of the solution for managing tree waste and that the region retains the benefit of this as an outlet for EAB and source of renewable and efficient energy. To that end, Ever-Green will be continuing to look for collaborative policymaking in the 2020 session with the following key priorities:

» Recognition of the importance of SPC in the management of tree waste and support for the extension of the PPA to 2030 under agreed upon operating conditions.

» Secure a source of funding to provide a $5 million annual subsidy (approximately $20 per ton), for tree waste management provided by SPC, and to make the cost of the generated electricity comparable to other renewable energy generating plants integral to the management of other solid waste streams.

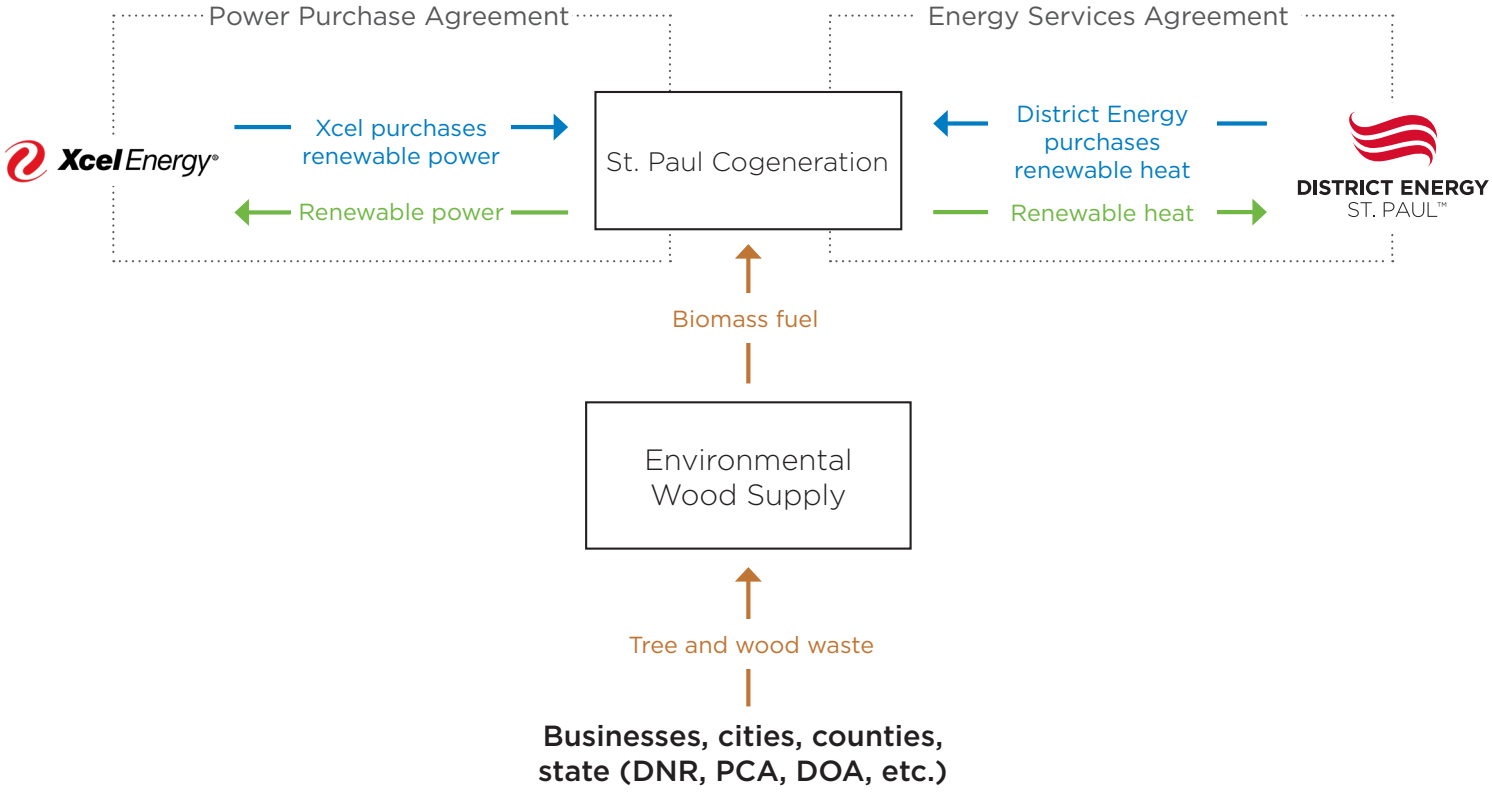
ABOUT THE BIOMASS MANDATE

The Biomass Mandate was set forth in Minn. Stat. § 216B.2424 Subd. 5, which specifies in relevant part that a public utility that operates a nuclear-powered electric generating plant within the state must either construct, operate, purchase, or contract for the construction of 110 MW of biomass generated power. Futhermore, cogeneration facility using waste wood as a primary fuel source.

St. Paul Cogeneration (SPC), an affiliate of District Energy St. Paul, was developed to address the needs for tree waste processing for this region and fulfill the Biomass Mandate. SPC was developed with over sixty million dollars of private investment. The purchase of the SPC facility's energy and capacity helps Xcel energy satisfy its remaining obligations provided by the Biomass Mandate. The Biomass Mandate has its origin in the 1994 Prairie Island legislation that permitted Xcel Energy to install additional above-ground nuclear waste storage capacity otherwise known as casks to allow the nuclear facility to continue to operate. Minn. Stat. § 116C.773 required the State and Xcel Energy to enter into an agreement binding the two parties to the obligation contained in Minn Stat. § 116C.711, 772 and 216B.2424 and naming the Mdewakanton Dakota Tribal Council at Prairie Island as an intended third-party beneficiary.

Tree Waste Processing in the Metro

Currently, tree waste is used directly as an energy resource in the form of biomass-fueled power and heat. It is an integral part in the state's energy production and delivery system. Tree waste from businesses, municipalities, individuals, and agencies is managed by Environmental Wood Supply. The material is processed into smaller sizes and transported to the St. Paul Cogeneration plant, where it is used as biomass fuel to heat steam, creating both electricity and heat.



What are the other disposal options for tree waste? Where could it go if St. Paul Cogeneration didn't exist?

Landfilling or resource recovery facility?

Not allowed by law

Open burning?

Significant environmental impacts

Landscaping applications?

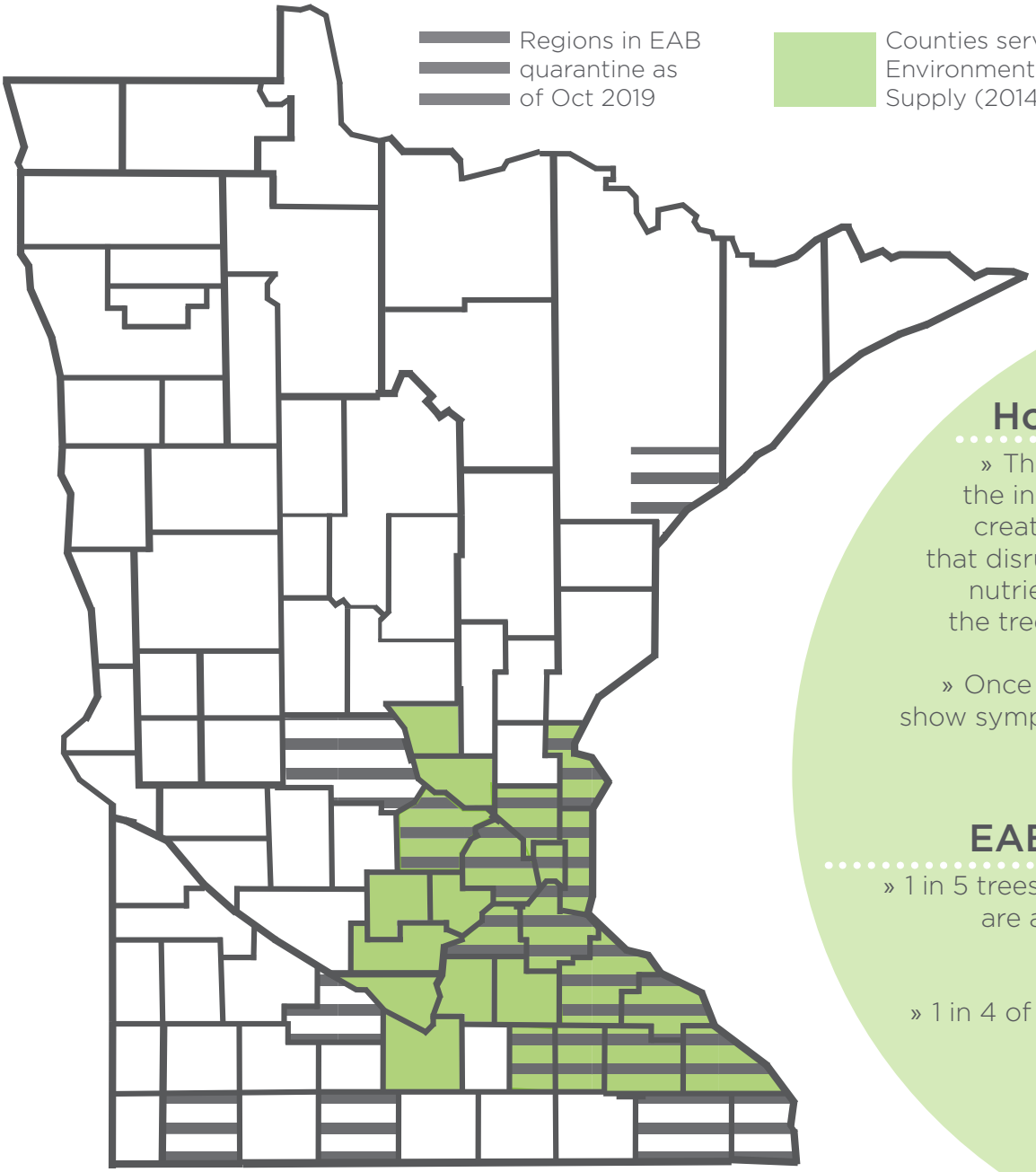
At capacity

Collect and let decompose naturally?

Risk of spontaneous combustion and off-gassing

Emerald Ash Borer (EAB) in Minnesota

From Minnesota Environmental Quality Board's report on EAB



How EAB Works

» The EAB larvae feed on the inner bark of ash trees, creating s-shaped tunnels that disrupt the movement of nutrients and water within the tree, eventually killing it.

» Once trees have started to show symptoms, they generally die within 1-3 years.

EAB in Minnesota

» 1 in 5 trees in Minnesota forests are ash, totaling over one billion ash trees.

» 1 in 4 of Minnesota's counties have infestations.

» All ash trees will eventually be infested.

BENEFITS trees provide:

» **Cooling** through shading and reduction of urban heat island effect
» **Water quality** through stormwater capture and slowing of runoff
» **Air quality** through removal of pollutants
» **Carbon sequestration** and storage
» **Aesthetics** through improvement of property values and enhancing green space

COSTS resulting from EAB

» It is estimated communities could pay an additional $2.2 billion due to lost tree benefits and accelerated management costs over the next 20 years.
» The average cost for removal of a tree is $1,000 for communities and up to $4,000 for homeowners.

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