



# Air Quality Briefing Note

**Date:** March 2012  
**Agency:** City of Prince George  
**Subject:** Redesigned Downtown District Energy System Reduces Waste and Emissions

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Some of the piping for the Downtown District Energy System being welded together.  
(Photo courtesy Kristy Brown)

District energy systems generate heat in a central location and distribute it through insulated piping to surrounding buildings, eliminating the need for individual natural gas boilers in each facility. Planning for the Prince George Downtown District Energy System (DDES) began in 1999. The system, inaugurated in 2012, will generate heat for institutional, corporate, and City-owned buildings in the downtown core. It will also achieve the additional objectives of reducing reliance on fossil fuels, keeping energy dollars in the community, and reducing the amount of particulate matter entering the Prince George airshed.

The centralized district energy facility will have advanced pollution control equipment, running more efficiently and producing fewer emissions than individual building plants. Emissions can be more effectively monitored, as they will come from no more than two sources (the main heating plant and the back-up heating plant). The DDES will provide a new use for wood residue being generated at the Lakeland Mills site, allowing the City to take advantage of locally available energy resources that may otherwise be wasted.

Planning for the Downtown District Energy System began in 1999. A proposal for a stand-alone heating plant in 2008 met with public concerns over air pollution, which led to a redesign. Options included having a stand-alone, biomass-fired energy centre

building, or using existing infrastructure and biomass already available on site at Sinclair Forest Products' Lakeland Mills facility. The latter option was chosen, since situating the facility at the Lakeland Mills site would eliminate the need to truck fuel to a separate heating facility, and the associated road dust generated. An electrostatic precipitator, which captures particulate matter from exhaust, is among the equipment being installed to optimize the biomass combustion system already in place at Lakeland Mills, while at the same time reducing particulate and GHG emissions. This option simultaneously reduces greenhouse gas emissions (wood residues are considered carbon neutral) and air pollutant emissions from both fuel and dust.

In redesigning the district energy system, the City addressed perceptions around district energy technology, bioenergy, and emissions in order to gain public support. Residents were able to participate in the federally-regulated environmental assessment process in addition to the City's Alternate Approval Process (AAP) for the new design. The AAP is a method to gauge public opinion in regard to certain types of proposed bylaws, agreements, or other matters. It is most commonly used in relation to long-term borrowing bylaws.

As a result of the upgrades, including the electrostatic precipitator:

- Emissions of particulate matter from wood combustion will be reduced by 30.7 tonnes per year, equal to removing 5,110 woodstoves from the airshed.
- Truck traffic will be reduced by 300 trucks per year (52,500 km/year), reducing particulate matter emissions by approximately 70 tonnes per year.

These two elements of the project will reduce total net emissions by 100 tonnes per year.

The Downtown District Energy System will:

- ✓ reduce particulate emissions in the city airshed
- ✓ permit the City and its customers to meet greenhouse gas reduction goals
- ✓ reduce the City's reliance on non-renewable fossil fuels
- ✓ help position the City as a leader in bioenergy application
- ✓ assist with energy security and stability
- ✓ keep energy related funds in the community
- ✓ assist with downtown renewal
- ✓ generate non-tax revenue for the City

For more information see our website at [www.princegeorge.ca](http://www.princegeorge.ca)



The back-up heating plant for the Downtown District Energy System.  
(Photo courtesy Adrian Mohareb)