

ELECTRICITY FROM... BIOMASS



RENEWABLE ENERGY FROM FIELDS AND FORESTS

Ontario Power Generation (OPG) is targeting 2012 as the year it will begin using renewable biomass as a replacement fuel for coal in some of its electricity generating units. Biomass is generally accepted as being a fuel that is carbon neutral. Even when carbon emissions resulting from harvesting, processing, and transportation are considered, biomass delivers significant climate change benefits.

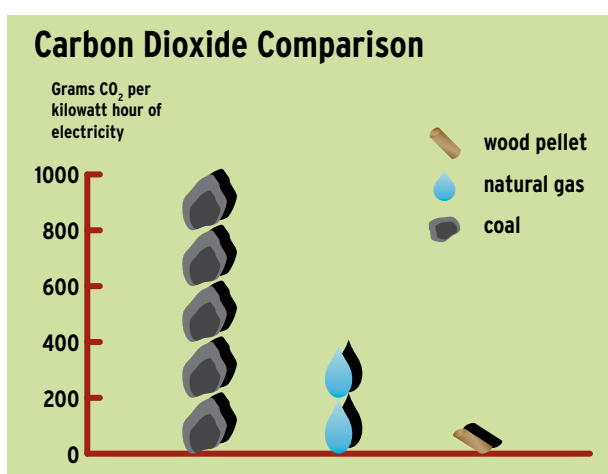
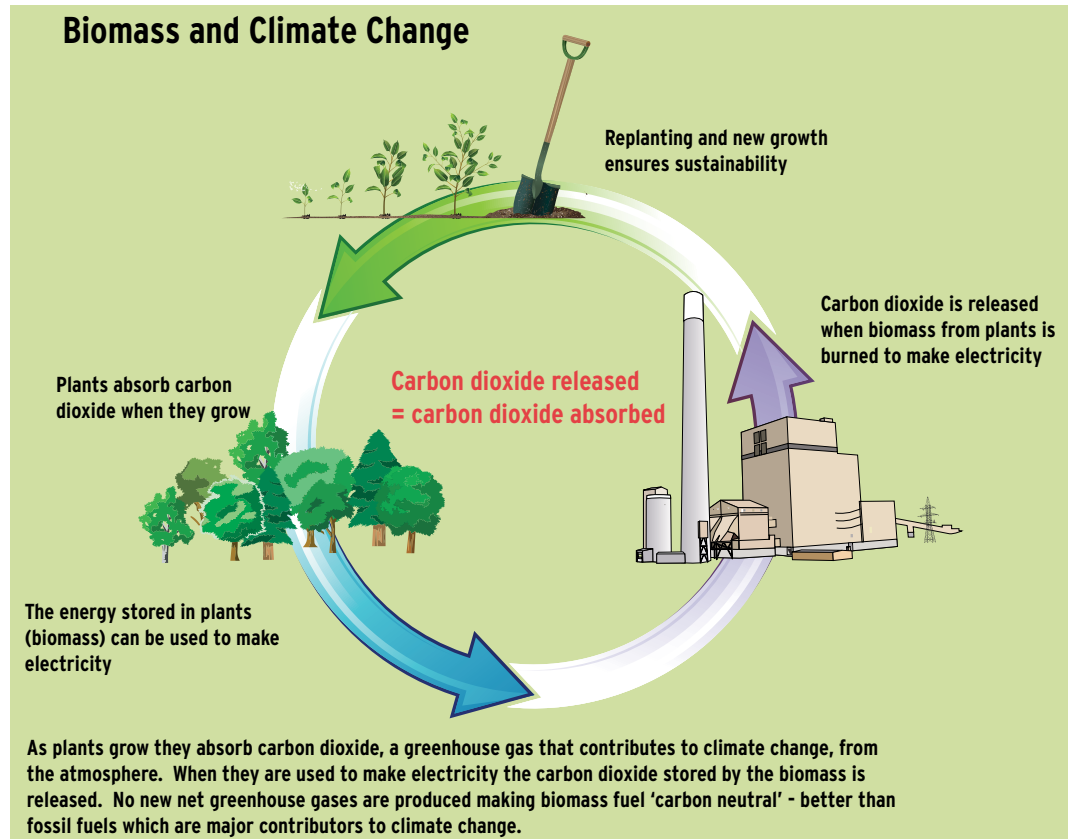
What is Biomass?

Biomass is plant material from agricultural and forestry sources that can be used to produce energy. It can take the form of harvested plant and tree material or by-products of processing operations like wood chips, grain milling by-products and crop stover or stubble. It is often formed into pellets that are easy to transport and use.

Because plants grow and are harvested in a continuous cycle, biomass is recognized around the world as a renewable source of energy.

Biomass and Greenhouse Gases

Combustion of most fuels produces carbon dioxide, a greenhouse gas that contributes to climate change. Unlike oil, gas, or coal which release carbon that was absorbed from the environment millions of years ago, carbon released from biomass is the same carbon that it absorbed when the plant was growing. It is a carbon-neutral fuel source.



As with any product, the fuels used to harvest, process and transport biomass will produce carbon dioxide emissions. OPG contracted the University of Toronto to assess the impact of these activities for sustainably harvested, forest-based fuel. The study concluded that biomass can deliver significant reductions in net carbon dioxide emissions compared to fossil fuels when all steps in the fuel supply chain are considered. Studies quantifying the greenhouse gas benefits of agricultural biomass are being conducted.

There are other environmental advantages as well. Experience with biomass around the world indicates other air emissions are lower than they are with coal. In addition OPG's coal stations are already equipped with effective particulate control systems that capture ash before it enters the chimney.

Sustainable Fuel Sources

OPG takes a responsible approach to biomass fuel supply. Fuel contracts will require that biomass comes from sources that meet the United Nations Framework Convention on Climate Change definition of renewable. In addition, suitable standards will be assessed and adopted to ensure sustainable resource management practices are in place.

OPG will not use food for fuel.

OPG's Biomass Project



All eyes on the controls as Atikokan tests 100 percent biomass fuel.

OPG is targeting the Atikokan Generating Station (GS) to be the first station converted to biomass fuel. Atikokan achieved full electricity output on wood pellets during tests in 2008. Successful tests have also been completed at the Thunder Bay, Lambton and Nanticoke stations.

We are encouraged by our test results to date and are moving forward with the work required to make biomass a commercially viable fuel. We are assessing the impacts of biomass on equipment, required modifications and the safe handling and storage of biomass fuel. Sustainable fuel supplies must also be developed. The contribution of many groups including government, forestry, agriculture, business, academia, and communities will be needed for successful introduction of biomass.



Good for Ontario

Development of biomass as a fuel offers a potential new market opportunity for Ontario's agriculture and forestry industries and communities. Refueling OPG's coal generating stations with biomass not only provides Ontario with more renewable energy, it also means these public assets can continue to provide valuable service after coal is phased out by the end of 2014. Two coal units at Lambton GS and two at Nanticoke GS will be closed in 2010 as part of the phase out plan.

Transition to a Cleaner Energy Future

More than 75 per cent of the electricity produced by OPG comes from nuclear and renewable water power sources that produce virtually no greenhouse gases. Biomass will help Ontario's and OPG's transition to a low carbon generator.



For more information and to watch our biomass video visit www.opg.com