

# Small Electrical Power Generating Facility Code of Practice Policy Intentions Paper for Consultation

## 1. Introduction

The Ministry of Environment intends to establish a code of practice addressing discharges to the environment from small biomass-fired electricity generating facilities (those with a rated peak load production at or below five megawatts) that generate power for commercial applications.

A code of practice (or “minister’s regulation”) is a legally binding and enforceable set of rules that must be followed – the environmental protection measures and other actions that are expected of the industry by the ministry. The code would be established under provisions of the *Environmental Management Act* (EMA) and the Waste Discharge Regulation (WDR).

The proposed code of practice would apply across the entire province and serve as the primary means for regulation of discharges to the environment from this type of facility – supplanting site specific or individually issued air and effluent permits.

The development process for the proposed code of practice consists of five phases:

1. **Scoping** – including a review of regulatory approaches in other jurisdictions and current best management practices.
2. **Policy Intentions Paper for Consultation** – (intentions paper) outlining the ministry’s proposed policy intent for the code of practice proposed content of the code and any outstanding issues or questions.
3. **Consultation** – with affected stakeholders and the general public, using the intentions paper and response forms posted on the ministry website, and other means as required.
4. **Drafting** – preparation of legal language for consideration by the Minister and/or Lieutenant Governor-in-Council.
5. **Implementation** – training of ministry staff and external stakeholders, development of guidelines and/or best management practices.

The purpose of this intentions paper is to seek responses and comments from stakeholders and the public on the proposed code of practice. This consultation is the third phase in the code of practice development/regulatory review process.

The intentions paper with a response form for providing comments to the ministry, and links to related legislation, are posted on the ministry’s website: <http://www.env.gov.bc.ca/epd/codes/>.

## 2. Ministry Goals

The Ministry of Environment provides leadership in environmental management through legislation and programs, compliance activities and shared stewardship initiatives. The ministry’s mandate is to protect human health and safety, and restore and maintain the diversity of native species, ecosystems and habitats. The ministry’s core business areas include environmental protection, stewardship and compliance, in support of the government’s goals.<sup>1</sup>

The ministry’s objectives in establishing the code of practice are to:

- ◆ Protect the environment;
- ◆ Encourage carbon neutral clean energy production; and
- ◆ Provide a clear, common and equitable regulatory framework for producers of electrical power in B.C.

## 3. Background Information

The EMA and WDR were brought into force in July 2004. Under the legislation, introductions of waste from identified “prescribed” industries, trades, businesses, operations and activities require authorization (e.g., permit or approval) from the ministry. The WDR also contains provisions for establishing codes of practice issued by the minister as a form of authorization for specified industries, trades, businesses, operations and activities.

<sup>1</sup> See: [Ministry of Environment Service Plan 2011/12](#)

# Small Electrical Power Generating Facility Code of Practice Policy Intentions Paper for Consultation

The proposed code of practice is being developed in the context of:

1. The [B.C. Energy Plan](#) – which outlines the steps required for all stakeholders to develop realistic and achievable goals for conservation, energy efficiency and clean energy.
2. The [B.C. Bioenergy Strategy](#) – which directly supports the commitments made in the BC Energy Plan and is a key element in helping partner jurisdictions in the Western Climate Initiative<sup>2</sup> achieve their emission reduction goals.
3. [BC Hydro phase 1 and 2 bioenergy calls for proposals](#) – although these calls for proposals are oriented towards large scale (> five megawatts) electricity production, evolution of the biomass-fired electrical generation industry could lead to the development of smaller scale systems.
4. The [BC Air Action Plan](#) – Action #21: *Turn more wood waste into energy*. B.C. is the leading producer of biomass energy in Canada. In 2005 alone, B.C.’s forest industries generated the equivalent of \$150 million worth of electricity and roughly \$1.5 billion in the form of heat energy – just by burning waste wood.
5. A ministry commissioned technical report (the “[Envirochem Report](#)”) – used for setting emissions limits in the [Agricultural Waste Control Regulation](#) and in guidelines for biomass-fired electrical energy generation.
6. [BC Hydro Standing Offer Program](#) – This program encourages the development of small and clean renewable energy projects throughout British Columbia.

Fuel switching initiatives that encourage replacement of petroleum based fuels with carbon neutral biomass fuels (“biofuels”) such as hog fuel, pellets and other vegetative residues

<sup>2</sup> The [Western Climate Initiative](#) is a partnership of US and Canadian jurisdictions that have been working together since 2007 to identify, evaluate and implement policies to address climate change.

support the reduction of British Columbia’s carbon footprint and reliance on petroleum based fuels.

However, the proper combustion of petroleum based fuels (such as low sulphur fuel oil, natural gas, propane or low sulphur biogas) emits far less particulate and other compounds than the combustion of biomass. Combustion of biomass can increase environmental risk through emission of particulate and other volatile organic compounds if left unchecked.

As well, recent developments in bio-fuel technologies and bio-fuels (e.g., wood and agricultural pellets) are encouraging the development and use of small scale biomass-fired energy systems.

To address concerns regarding air emissions, the ministry has established stringent emission standards for industries that combust biomass to generate energy. This effort has included amendments to the Agricultural Waste Control Regulation (setting more stringent limits for biomass-fired boilers) and a “Guideline for Emissions from Biomass-Fired Electrical Power Generation.”

## 4. Ministry Intentions

### 4.1 Amend the definition of “electrical power industry” under the WDR

The current definition of “electrical power industry” under the Waste Discharge Regulation (WDR) of the *Environmental Management Act* is as follows: “electrical power industry” means that establishments that (a) are engaged in the production of electricity by the combustion of fuel, and (b) have a rated production of more than 5 megawatts under peak load.

The ministry intends to amend this definition to include electrical power facilities generating power for commercial applications that have a rated production at or below five megawatts at peak load.

This change would ensure that small facilities that combust fuel in order to generate electrical power for commercial applications are regulated under the same standards as other facilities – including those that combust fuel to generate electricity or to gener-

# Small Electrical Power Generating Facility Code of Practice Policy Intentions Paper for Consultation

ate heat energy for other uses (such as heating green houses or drying lumber).

## 4.2 Introduce a code of practice for small electrical power generation facilities

The ministry intends to introduce a code of practice (“minister’s regulation” or “code”) addressing emissions to the environment from electrical power facilities generating power for commercial applications and that have a rated production from 0.1 megawatts to 5.0 megawatts at peak load.

Facilities that have a rated production of greater than five megawatts would continue to be authorized and regulated by air and effluent permits (and *not* the code of practice).

The proposed “Small Electrical Power Generating Facility Code of Practice” is intended to provide clear, consistent and appropriate environmental protection standards for establishments engaged in producing electricity on a small scale.

The proposed code of practice will include provisions for monitoring and reporting for all biomass-fired electrical power generating plants. The proposed code of practice will also include provisions for limited monitoring and reporting requirements for operations that combust low sulfur fuel oil, natural gas, propane or low sulfur biogas (see section 4.7 below).

## 4.3 Definition of biomass as a fuel

The code of practice will clarify the types of biomass that may be used as fuel.

The proposed definition of “biomass as a fuel” is vegetative material that arises from the harvesting and processing of agricultural or forestry crops and includes:

- ◆ Wood products including, but not limited to, wood pellets, hog fuel, mill ends, wood chips, bark, shavings or sawdust and industrial residue of wood that has not been treated with glue, paint or preservative, or contain foreign substances harmful to humans, animals or plants when combusted (e.g., salt laden wood).

- ◆ Vegetative agricultural products including but not limited to agricultural pellets, pelletized manure, corn kernels, corn stalks, straw, seed hulls; and
- ◆ Other vegetative bio-energy sources.

The proposed definition of biomass as a fuel would *not* include: other agricultural products (such as raw manure from cattle, poultry, horses or hogs), garbage or recyclable post consumer waste paper.

The proposed code of practice will also clarify that coal will not be permitted as a fuel source for electrical power generating facilities under this code of practice.

## 4.4 Proposed emission standards

The proposed code of practice would include new emission standards for biomass-fired electrical power plants that have a rated production at or below five megawatts at peak load.

The proposed standards are summarized in Table 1 below.

Table 1: Proposed Air Emission Limits

Emissions from biomass-fired electrical power plants el = power output		
Power plant size (output under peak load)	Total Particulate Emission Limit	Opacity
0.1 MW to 5.0 MW <sub>el</sub>	120 mg/m <sup>3</sup>	20%

The parameter used to determine air emission standards for biomass-fired boilers is the weight of particulate matter in a given volume of air.<sup>3</sup>

These emission limits would not apply for the first 30 minutes of combustion unit start-up or the last 30 minutes prior to combustion unit shut down.

## 4.5 Registration

The proposed code of practice would require all power plants that have a rated production from 0.1

<sup>3</sup> Measured in milligrams per cubic metre (mg/m<sup>3</sup>) under standard conditions of 20°C, 101.3kPa, dry gas and 8% O<sub>2</sub>.

# **Small Electrical Power Generating Facility Code of Practice Policy Intentions Paper for Consultation**

megawatts to 5.0 megawatts at peak load to register with the Ministry of Environment.

## **4.6 Monitoring and reporting requirements**

The proposed code of practice would require the monitoring and recording of emissions from all biomass-fired power plants that have a rated production from 0.1 megawatts to 5.0 megawatts at peak load.

For new units, an operator would be required to undertake baseline monitoring and recording (stack testing) within six months of start up or provide a manufacturer's certificate containing equivalent emission performance data.

For modified units where modifications would affect emission performance, baseline monitoring and recording would be required within six months of start up.

If the system is found to exceed the emission limits specified in the regulation, the facility operator would be required to: immediately notify the ministry (i.e., a director); take corrective action, and re-monitor within six months after the corrective action has been taken.

Existing power plants that are found to have opacity readings of greater than 20% will be required to undertake stack testing to ensure that the combustion unit is operating within the limits specified in the regulation. If the system is found to exceed the emission limits specified in the regulation, the facility operator would be required to immediately notify a director, take corrective action, and re-monitor within six months after the corrective action has been taken.

A director may require the facility owner or operator to undertake additional stack testing.

## **4.7 Provisions for facilities combusting only low risk fuels**

The proposed code of practice would require facilities that combust low sulfur fuel oil, natural gas, propane or low sulfur biogas to only register under

this regulation. For example some communities in areas such as Haida Gwaii obtain much of their power from diesel generator stations. These operations would be exempt from the monitoring and recording requirements unless otherwise required to do so by a director.

This proposal is based on information indicating that boilers or power plants fired by these fuel types consistently have emission limits for particulate much lower than 20 mg/m<sup>3</sup>.

## **4.8 Use of unrefined fuels from anaerobic digesters or landfills**

The ministry is also proposing provisions that would require small electrical power generating facilities that combust biogas derived from anaerobic digestion or from landfills to a) obtain an authorization from the ministry (i.e., a director) and b) to ensure that the biogas meets a fuel standard to be specified in the proposed code of practice. This provision is intended to ensure protection of the environment from harmful emissions of sulphur compounds.

## **4.9 Use of backup generators during power failures.**

The use of backup electricity generators (e.g. backup generators for computer servers or hospitals) using diesel fuel has created some issues with particulate and other emissions while operating in emergency situations in some urban areas in British Columbia. To help offset health problems associated with the occasional use of backup generators, the ministry is proposing that low sulphur fuel be used in all diesel backup generators.

## **4.10 Effluent handling requirements.**

The ministry is proposing that if the applied emission control technology uses a solution (such as wash water), any resulting effluent should be delivered to an approved facility for treatment or disposed of in an approved manner.

# **Small Electrical Power Generating Facility Code of Practice Policy Intentions Paper for Consultation**

## **5. Assuring Compliance**

### **5.1 Compliance promotion**

The ministry will develop a strategy for the promotion of voluntary compliance with the requirements of the proposed code of practice. Compliance promotion may entail training for ministry staff, as well as information and the development of best management practices for the operation of biomass-fired boilers. If followed, the best management practices should lead to compliance with the code.

### **5.2 Compliance verification**

The ministry's approach to assuring compliance with the proposed code of practice will include reasonable regular and random compliance reviews and inspections, as well as reviews and inspections in response to identified or potential issues or concerns regarding protection of the environment or human health.

The ministry is committed to using compliance verification data to guide the ongoing management of biomass-fired boilers and assure the goals for environmental protection are being met.

### **5.3 Enforcement**

The ministry response to non-compliance will entail written advisories, warnings, directives, tickets and prosecutions. The choice of response will be based on ministry wide policy, the compliance history and the significance of the impact from the non-compliance occurrence.

## **6. Providing Comment**

Comments regarding the ministry's intentions are being solicited and will be carefully considered in drafting the proposed regulatory amendments.

Those interested are invited to submit comments on the ministry's intentions – using the instructions and questions provided on the accompanying response form. Individuals or organizations may also make written submissions to the ministry without following the format set out in the response form.

**Comments to the ministry should be made on or before November 14, 2011.**