

Feedback from Written Submissions to the Discussion Paper on Combined Heat and Power Generation at Greenhouses in the ALR

Summary

May 14, 2012

The Ministry of Agriculture prepared a discussion paper titled *Regulating Combined Heat and Power Generation at Greenhouses in the ALR* in the fall of 2011. The discussion paper was developed to provide criteria that could be incorporated into the *Guide for Bylaw Development in Farming Areas*. The criteria could then be used by local governments to establish land use policy or regulations to address on-farm energy production through natural gas-fired cogeneration systems.

Industry stakeholders, the public and local governments were invited to respond to an online survey on the draft discussion paper. The survey was posted on the Ministry of Agriculture website on December 20, 2011 and it was closed on March 15, 2012. Written submissions were also accepted. Some local governments requested an extension and the deadline for written submissions was changed to May 10th.

This document summarizes the feedback received from written submissions. The results of the online survey are summarized in a separate report.

Results

The Ministry received seven written submissions. Submissions were provided by GE Energy, Fraser Valley Regional District (FVRD), a joint submission from the BC Greenhouse Growers' Association (BCGGA) and United Flower Growers (UFG), Ministry of Environment, and three local governments (e.g. City of Abbotsford, City of Surrey, and the Corporation of Delta).

Overall, the feedback received from written submissions was supportive of on-farm cogeneration.

The City of Surrey Agricultural and Food Security Advisory Committee expressed their general agreement with the concept of cogeneration at agricultural operations, while the City of Abbotsford stated they are supportive of the development of energy alternatives. The City of Abbotsford Agriculture Strategy includes a policy to pursue research into processes and technology innovations to address energy production and other agricultural issues. The City will, however, rely on formal notification that the proposed operation meets the permitting and related requirements of the Ministries of Agriculture and Environment before they will grant formal approval for new facilities. The City of

Abbotsford will also look to the agencies for adequate monitoring to ensure environmentally sound operation of the cogeneration facilities.

The BCGGA and UFG support the direction of the Bylaw Standard but are opposed to operators requiring approval from the Agricultural Land Commission and rezoning by local governments for on-farm natural gas-fired cogeneration in the ALR. They stated that cogeneration under the BC Hydro Standing Offer Program (SOP) is one option for the sector to reduce costs of production and improve competitiveness.

The most common concern expressed in the written submissions was the impact of cogeneration on local air quality. This issue was raised by the Corporation of Delta and the FVRD. The Corporation of Delta stated that the cumulative effect of multiple cogeneration facilities on local air quality should be considered. They also noted that the paper did not mention Metro Vancouver's authority over air emissions in the region, and questioned how cogeneration fits into this regulatory regime.

The FVRD expressed their displeasure that the paper does not address the impact on air quality of greenhouses burning wood for heating. The City of Surrey Agricultural and Food Security Advisory Committee did not express concerns related to air quality, but did express some concern that cogeneration may create a shortage in the availability of sawdust that is relied on by other agricultural operations.

Responses were not consistent with respect to the impact on air quality. GE Energy and the Ministry of Environment suggested that cogeneration would actually reduce emissions. Both submissions responded to statements on page 13 of the paper that greenhouse gas emissions would double with cogeneration. GE believes that cogeneration will decrease CO₂ and particulate emissions locally by reducing the reliance on the combustion of biomass and by displacing the use of bulk, liquid CO₂. GE provided new wording for the section that acknowledges that cogeneration will increase the amount of CO₂ produced through combustion, but countered that it will displace otherwise consumed bulk, liquid CO₂. The Ministry of Environment stated that with increasing demand for electricity and the diminishing ability to build new dams in BC, the carbon content of new electricity supply needs to be considered. For example, some electricity is imported from coal fired power from Washington.

The discussion paper includes seven criteria for regulating the use of cogeneration at greenhouse operations in the ALR. Concerns were raised about the criteria on maximum CHP (cogeneration) capacity. The greenhouse industry and GE Energy both expressed opposition to the industry 'rule of thumb' for maximum heat demand sizing of 0.5 MW/ha. They suggested that the proposed minimum efficiency requirements of the standard and the maximum system size under BC Hydro's Standing Offer Program (SOP) (15 MW per cogeneration system) will preclude systems from being intentionally oversized. GE Energy proposed new wording for the section: "sizing should be optimized based on the value of electricity and heat produced by the cogeneration system to meet the

operational demands for heat and CO₂...in the end the cogeneration system size should result in the highest overall efficiency possible.”

If a maximum CHP capacity is necessary, industry suggests 1.5 MW/ha is a more reasonable value. Industry contends that the 1.5 MW/ha rate is required to meet the peak load electricity requirement of a greenhouse operation using high-intensity supplemental lighting.

Industry and GE Energy are also opposed to a statement in the paper that maximum heat demand sizing could be reduced to 0.35 MW/ha in operations that use grow lights. Industry pointed out that new light systems use electronic ballasts that produce considerably less heat. Both groups suggested the comment should be removed from the paper.

The adoption of cogeneration by the greenhouse sector hinges on getting a favourable price for the electricity they produce from BC Hydro's SOP. The Ministry of Environment raised a concern that the recently announced greenhouse Carbon Tax rebate program may affect the viability of cogeneration for greenhouses under the SOP.

A final item raised in the written submissions was about adoption of the standard by local governments. Specifically, the Corporation of Delta requested clarification on whether adoption of the standard would be voluntary for local governments.

Summary

No opposition was received from the written submissions to natural gas-fired cogeneration in the ALR. The biggest concern expressed was regarding the impact on local air quality. The Corporation of Delta suggested the cumulative effect of multiple cogeneration facilities on local air quality should be considered. FVRD also expressed concerns about air quality but they were exclusively related to biomass-fired cogeneration, which is outside the scope of this discussion paper. In contrast, two respondents suggested that cogeneration will reduce harmful emissions. These respondents questioned a statement in the paper that cogeneration will double CO₂ emissions. They argued that cogeneration will reduce CO₂ emissions by reducing the reliance on the combustion of biomass and of buying power from coal-fired plants outside BC. The most contentious criterion in the standard is the maximum CHP (cogeneration) capacity. Two respondents expressed their opposition to this criterion. It was suggested that the minimum efficiency requirement and the maximum system size under BC Hydro's SOP will preclude systems from being intentionally oversized.