



AGENDA

PLANNING AND ENVIRONMENT COMMITTEE Special Meeting

Tuesday, January 30, 2001
1 p.m.

2nd Floor Boardroom
4330 Kingsway, Burnaby, British Columbia

Please advise the Air Quality Department at 436-6700 if you are unable to attend.

Chair, Director, Mayor Barbara Sharp, City of North Vancouver
Vice Chair, Director, Councillor Gordon Price, City of Vancouver
Director, Mayor Kurt Alberts, Township of Langley
Director, Mayor Lisa Barrett, Bowen Island Municipality
Mayor Don Bell, District of North Vancouver
Director Tom Blom, Electoral Area A
Councillor Bob Bose, City of Surrey
Director, Mayor Brenda Broughton, Village of Lions Bay
Director, Mayor Doug Drummond, City of Burnaby
Mayor Marlene Grinnell, City of Langley
Mayor Greg Halsey-Brandt, City of Richmond
Director, Mayor Al Hogarth, District of Maple Ridge
Director, Mayor Lois Jackson, Corporation of Delta
Director, Mayor Jon Kingsbury, City of Coquitlam
Director, Mayor Don MacLean, District of Pitt Meadows
Director, Mayor Helen Sparkes, City of New Westminster
Director, Mayor Hardy Staub, City of White Rock
Director, Mayor Joe Trasolini, City of Port Moody
Director, Mayor Hal Weinberg, Village of Anmore

January 23, 2001

NOTICE TO THE GVRD PLANNING AND ENVIRONMENT COMMITTEE

You are requested to attend a Special of the Planning and Environment Committee to be held on January 30, 2001 at 1 p.m. in the Second Floor Board Room, 4330 Kingsway, Burnaby, British Columbia.

A G E N D A

1. ADOPTION OF THE AGENDA

1.1 January 30, 2001 Special Meeting Agenda

Recommendation:

That the agenda for the Planning and Environment Committee Special Meeting scheduled for January 30, 2001 be adopted as circulated.

2. ADOPTION OF MINUTES

No items presented.

3. DELEGATIONS

3.1 Society Promoting Environmental Conservation

Designated Speaker: Tracy Keeling

This presentation will address the implications that increased burning of dirty fuels will have on the health of Lower Mainland residents.

4. REPORTS

4.1 Interim Approach to Fuel Switching

Designated Speaker: Barrie Mills, Doug Taylor, Stothert Engineering Ltd., Paul Willis, Willis Energy Services.

Recommendation:

- a) That Bylaw 603 be amended to:
 - i) Remove the ability to use fuels, other than natural gas, on an ongoing basis;
 - ii) Specify fuel oil as the only fuel that can be used for stand-by purposes,
 - iii) Specify that stand-by use only applies to interruptions in the supply of natural gas;
 - iv) Specify that only cleaner No. 1 and No. 2 fuel oil can be used, for the above purposes;
 - v) Specify an annual maximum duration for using stand-by fuel;
 - vi) Specify that the Board can grant a temporary variance from the above requirements to an individual source or to a business sector;
 - vii) Specify that Bylaw 603 only applies to existing equipment;
 - viii) Specify that Bylaw 603 also applies to industrial space and process heaters;
 - ix) Specify that new installations must use Best Available Control Technology;
 - x) Specify that new installations are covered by a permit or regulation under Bylaw 937

- xi) Remove redundant sections of the Bylaw 603; and
- xii) Make other changes as are necessary to affect all of the above.
- b) That staffs prepare a draft bylaw for the next Planning & Environment Committee meeting;
- c) That staffs revise the Draft Emission Regulation for Gas-fired Boilers and Heaters to also fully address the related ongoing and stand-by use of liquid and solid fuels, and ensure that air quality is not compromised by this use;
- d) That staffs bring forward a revised draft for consultation, as soon as possible, with the view to bringing a final draft to the Board for their consideration and adoption in the Fall of 2001;
- e) That staffs continue to develop long-term strategies to favour green energy systems and reduced energy demand;
- f) That staffs report on their experience with the revised bylaw within a six month period.

5. INFORMATION ITEMS

No items presented.

6. OTHER BUSINESS

No items presented.

7. RESOLUTION TO CLOSE MEETING

No items presented.

8. ADJOURNMENT



Society Promoting Environmental Conservation
2150 Maple St., Vancouver, BC V6J 3T3
Phone: (604) 736-7732; Fax: (604) 736-7115
E-Mail: enviro@spec.bc.ca

SINCE 1969 ENVIRONMENTAL ADVOCACY, EDUCATION, AND CONSERVATION

January 11, 2001

Planning and Environment Committee
Greater Vancouver Regional District
4330 Kingsway Avenue
Burnaby, BC., V5H 4G7

Dear Committee Members:

Re: Delegation request to speak to air quality impacts of industrial switch from natural gas to other fuels.

We request to appear as a delegation at the Feb. 7, 2001 Planning and Environment Committee meeting. We are concerned by industries in the Lower Mainland switching from natural gas to oil and other fossil fuels.

It is critical the GVRD recognize the implications that increased burning of dirty fuels such as diesel will have on the health of Lower Mainland residents. The estimated 100 industries now burning diesel fuel and other fuels instead of natural gas will increase the levels of dangerous small particulate air pollution. Researchers estimate that small particulate air pollution from burning dirty fossil fuels results in approximately 82 unnecessary deaths each year in BC. It also contributes to increased incidents of hospitalization for lung disorders, asthma, heart disorders, bronchitis, and emphysema. There is a clear cost to the health care system of dealing with in terms of increased care will equal if not exceed the savings to industry in dollars made by changing from natural gas to cheaper fuels.

Allowing industries to burn dirty fuels could be a breach of the GVRD's own Air Quality Management Plan. The AQMP was enacted to improve the region's air quality with a goal of reducing air emissions from vehicles, industry, businesses, homes, and other sources by 38% from 1985 levels by the year 2000.

Section 2.2 of the AQM Bylaw states "nothing in this Bylaw is intended to conflict with the Waste Management Act except that this Bylaw may impose further restrictions or require further conditions than those imposed" by the WMA. The duties imposed under the WMA therefore apply to the GVRD in its air quality management plan. The premise of the WMA is "protect the environment...for the benefit of those humans, plants, and animals who inhabit it, and to protect the public health and environment". Section 13 of the WMA focuses on the authorization of amendments to air emission



Greater Vancouver Regional District
4330 Kingsway, Burnaby, British Columbia, Canada V5H 4G8

Secretary's Office
Telephone (604) 432-6250
Fax (604) 432-6248

January 23, 2001

Society Promoting Environmental Conservation
2150 Maple Street
Vancouver, BC V6J 3T3

Dear Tracy Keeling:

Re: Delegation Request to Attend the Special Planning and Environment Committee Meeting

Thank you for your correspondence received January 22, 2001 requesting an opportunity to appear as a delegation at a Greater Vancouver Regional District Committee. You have indicated that the subject of your delegation is regarding industries in the Lower Mainland switching from natural gas to oil and other fossil fuels.

Would you please be in attendance as follows:

Committee: Planning and Environment
Meeting Date: January 30, 2001
Meeting Time: 1:00 pm
Location: 2nd Floor Committee Room, 4330 Kingsway, Burnaby, BC

Delegations are generally heard at the beginning of the meeting so you may want to arrive a few minutes early. You will have five minutes in which to make your presentation. If you have a written presentation you wish to submit to the Committee, please have 24 copies available for distribution at the meeting. We also request that if others are attending with you, that you please notify our office with the names of those individuals.

After having appeared before the Committee, if you then wish to appear before the Board regarding this matter, would you please submit your written request by January 18, 2001. You may fax your request to 451-6686.

Please contact me at 432-6250 if you require any further information about this process.

Sincerely,

Catherine Gastaldello
Assistant to the Corporate Secretary

Cc: Mr. B. Mills, Manager Air Quality Department



Committee Date: January 30, 2001

To: Planning and Environment Committee
From: Barrie Mills, Manager - Air Quality
Date: January 25, 2001
RE: **Interim Approach to Fuel Switching**

Recommendation:

- a) That Bylaw 603 be amended to:
 - i) Remove the ability to use fuels, other than natural gas, on an ongoing basis;
 - ii) Specify fuel oil as the only fuel that can be used for stand-by purposes;
 - iii) Specify that stand-by use only applies to interruptions in the supply of natural gas;
 - iv) Specify that only cleaner No.1 and No. 2 fuel oil can be used, for the above purposes;
 - v) Specify an annual maximum duration for using stand-by fuel;
 - vi) Specify that the Board can grant a temporary variance from the above requirements to an individual source or to a business sector;
 - vii) Specify that Bylaw 603 only applies to existing equipment;
 - viii) Specify that Bylaw 603 also applies to industrial space and process heaters;
 - ix) Specify that new installations must use Best Available Control Technology;
 - x) Specify that new installations are covered by a permit or regulation under Bylaw 937
 - xi) Remove redundant sections of the Bylaw 603; and
 - xii) Make other changes as are necessary to affect all of the above.
- b) That staffs prepare a draft bylaw for the next Planning & Environment Committee meeting;
- c) That staffs revise the Draft Emission Regulation for Gas-fired Boilers and Heaters to also fully address the related ongoing and stand-by use of liquid and solid fuels, and ensure that air quality is not compromised by this use;
- d) That staffs bring forward a revised draft for consultation, as soon as possible, with the view to bringing a final draft to the Board for their consideration and adoption in the Fall of 2001;
- e) That staffs continue to develop long-term strategies to favour green energy systems and reduced energy demand;
- f) That staffs report on their experience with the revised bylaw within a six month period.

1. PURPOSE

To discuss the incidence and impacts of fuel switching precipitated by recent natural gas prices and to propose a GVRD strategy to deal with the issue.

2. CONTEXT

At their December 15, 2000 and January 12, 2001 meetings, the GVRD Board discussed recent increases in natural gas pricing and the resulting impact on emissions, as and when sources switched to using alternate fuels. The dramatic price increase that occurred in December has not been sustained, however prices still remain above historical levels.

The BC Utilities Commission continues to approve rate increases. Last July, it approved a 33% increase for Lower Mainland residential users and a 36% to 41% increase for commercial users. On January 1, 2001, another residential increase of 27% was approved and even greater increases for commercial users are anticipated shortly.

While these increases apply to longer term gas contracts, spot prices for natural gas are more volatile. Some of the latter is caused by California's large electricity requirements and recent black-out issues, some by natural gas supply capacity limitations in British Columbia, and perhaps some by the normal financial forces which affect any commodity on an open market.

A recently completed study by Stothert Engineering provides a good introduction to the issue of energy pricing. The study was carried out for the BC Job Protection Commission to support the latter's assessment of the impact of energy pricing on the Greenhouse industry. A representative from Stothert will present a summary of their findings to the January 30th Planning and Environment Committee meeting.

Fuel Switching and Emissions

The Stothert report and much of the recent discussions of gas pricing and fuel switching have focussed on greenhouse operations. However, the related boilers and heaters for this sector represent only a portion of the local use of natural gas. While there are about 90 greenhouses in the GVRD, their combined emission impact is similar to that from the region's hospitals, or half that of local schools and other institutional facilities. Boiler and heaters in industrial facilities would collectively generate about ten times the emissions from the greenhouse sector, as would those from residential and commercial boiler and heating sources.

The degree to which fuel switching can occur varies with each sector and within each sector. Some boilers are built to operate on two different fuels and can readily switch from one to the other. This is typical of sources with interruptible natural gas supply contracts. When their gas is curtailed during extreme weather conditions, a stand-by supply of fuel oil carries them through until the weather improves. Dual fuels can also be used on an ongoing basis, with gas used to start up equipment, and another fuel used to maintain ongoing steady-state conditions.

For most gas-fired facilities, however, some sort of equipment modification is required to use another fuel. It may be as simple as fitting an auxiliary burner on an existing boiler, or it may require a completely new installation. Costs for these modifications can be in the thousands, hundreds of thousands, or even millions of dollars. Lead time for supply of the related parts and equipment can be a matter of days or up to a year. Switching fuels (and equipment) is therefore usually a fairly significant financial decision.

To quantify the potential emission impact from a possible future situation of wide-spread switching, staff looked at four representative sectors: industrial facilities; greenhouses and horticultural facilities; schools and institutional facilities; and hospitals. To develop a realistic worst-case estimate, they reviewed the potential capability for each sector to switch to two different qualities of fuel oil, as well as to wood and coal. As a topical basis for comparison, the changes in emissions were compared to those from the proposed Sumas 2 Energy plant.

By such an analysis, it was predicted that wide-spread switching to light fuel oil in these four sectors could collectively produce nitrogen oxide emissions equal to three Sumas 2 plants, while switching to wood or coal could produce 20-30 times the particulate emissions from that facility. Widespread use of

coal would also duplicate the nitrogen oxides of nearly 30 Sumas 2 plants. In absolute terms, extensive use of light fuel oil would annually create an additional 9,000 tonnes of common air pollutants, while such use of coal would lead to about 50,000 more tonnes. Either case would also generate more than 1,000,000 new tonnes of carbon dioxide.

As an additional point of comparison, the GVRD emission inventory indicates that residential gas furnaces emit the nitrogen oxides of 15 Sumas 2 plants. While switching to oil furnaces is an unlikely prospect for the typical homeowner, their increased use of available wood stoves is quite a reasonable assumption. A GVRD residential audience survey indicates that 10 percent of the population use wood stoves about four times a month during the fall and winter. If rising gas prices caused this use to triple, another 5 Sumas 2's worth of particulate would be the result.

Fuel Switching and Air Quality

While these numerical assessments are speculative, they do indicate that air quality could be compromised by widespread community decisions to switch from natural gas to other fuels. Switching has occurred, however, and there are both real and anecdotal illustrations of this. Surveys of the greenhouse sector indicate that about a third had switched to fuel oil, and the estimate for industry is similar. Some industrial facilities had switched that were previously authorized to use fuel oil on a stand-by basis (the related permits actually contain no specific limitations on the cause or duration of stand-by firing).

The two main universities and some hospitals and schools had also switched to fuel oil, as had the Central Heat Distribution facility in downtown Vancouver. As the dramatic peak in gas prices was relatively short-lived, some considered switches never occurred, and some "switched" sources have now returned to using natural gas. But the residual price differential for natural gas has meant that at least some sources remain switched. This situation could change quickly if media reports of provincial government heating subsidies come to fruition.

While increased emissions have undoubtedly resulted from fuel oil firing, to date we have been unable to determine a direct impact on air quality. This is in contrast to the situation that can arise during the open burning weekends allowed in some municipalities, when noticeable increases in particulate levels can sometimes be observed. These differences in air quality impacts are due to two things: the amount of additional emissions and the meteorological conditions under which these increases occur. In the case of autumn burning weekends, the burning is usually quite widespread and occurs when meteorological ventilation is poor.

Recent fuel switching has been limited to those relatively few operations that are equipped for immediate switching. Weather conditions have also provided a reasonable level of ventilation to more quickly disperse the resulting emissions. There may be some areas where a relatively high number of switched sources has caused localized air quality impacts. However, region-wide impacts have either not occurred, or have been lost in the year-to-year air quality fluctuations caused by weather conditions. However, it is probably safer to say that we have dodged an air quality bullet than to assume a cavalier and Kevlar immunity to such bullets.

Fuel Switching and Existing Bylaws

Much of the current switching is already allowed under current GVRD legislation. There are actually two GVRD air quality bylaws. The first dates back to the early 1970's under GVRD authority, and to the mid-1900's under the former Smoke Inspection program of the City of Vancouver, from which the GVRD program originated. The historical bylaws primarily dealt with apartment incinerators and the

smoke from older heating installations. Its first GVRD incarnation (1973) effectively halted all new incinerator construction, while the last version (1989 Bylaw 603) phased out these sources entirely.

Regulation of heating installations similarly evolved to coincide with the development of modern gas-fired boilers. Permits are not required for installations or modifications to equipment fired on a non-interruptible basis with only natural gas. Permits are required for changes in mode of operation or method of combustion, and it could be argued that fuel switches represent such a change. The bylaw does allow oil and other unspecified fuels to be used and contains specific emission restrictions for such an eventuality.

No Bylaw 603 permits have been issued with respect to fuel switching and, in fact, none has ever been issued. The main permitting targets for Bylaw 603 were incinerators, however stringent emission limits for those sources halted all new installations and closed all existing incinerators within a year of the bylaw's passage. Permits issued to heating installations under the predecessor Bylaw 92 were simple documents that essentially just registered the new or modified source(s). There are no grounds for refusing to issue a permit to a source that meets the emission limits and other criteria of Bylaw 603. So while no permits were issued for fuel switching, their issuance would have had little effect on the amount of switching or the resulting impact.

Bylaw 603 defines heating installations as boilers and furnaces used for space heating in domestic, commercial and institutional premises. Greenhouses may not quite fall under the strict definition of commercial premises, and the "spaces" that are heated may be outside the original intent of Bylaw 603's definition. However, the related boiler equipment and emissions are in line with sources that clearly do fall under the bylaw's application. This close similarity also extends to most industrial boilers and heaters.

The main GVRD statute is now Air Quality Management Bylaw No 937, 1999. It contains a permit system for major sources and an accompanying pollution-based fee system. It also incorporates an Order system for abating pollution or preventing it from occurring. Most sources can be regulated through this bylaw, including those that are also subject to the previously mentioned Bylaw 603.

Several years ago, the GVRD Board directed staff to implement a system of Emission Regulations to more effectively regulate emissions from common groups of sources and/or equipment. In contrast to site-specific permits, Emission Regulations apply uniform operating and emission criteria to given business sectors, or to equipment and processes that are common to many sectors. A Major Source Sub-program of the Air Quality Regulation program preserves a system of permits for complex industrial sources that require more detailed administration. But under Bylaw 937, Emission Regulations are intended to control most sources and sectors.

During the transition to these regulations, permits continue to apply to a variety of small to large emission sources. Permits have proactively been issued to some sources because of their size, while other sources found their way into the permit system due to public complaints of excessive emissions. Permitting within a given business sector can be extremely spotty, as evidenced by the fact that only one of the 90 local greenhouses has been permitted. In this specific instance, a provincial Agricultural Regulation also applies certain emission restrictions to all these sources.

In April 2000, the GVRD formally began consultation on a draft Emission Regulation for Gas-Fired Boilers and Heaters. The draft regulation sets emission criteria for new boilers and requires some existing boilers to be upgraded over a period of seven years. Stakeholder workshops and meetings

were held which identified a number of possible changes in the first draft. Suggestions to waive or extend the requirements for upgrading existing boilers are among those received.

Staffs were in the process of re-drafting this Emission Regulation when the recent rise in gas prices occurred and fuel switching became an issue. While the draft Emission Regulation does provide for limited stand-by fuel use, it does not address any on-going fuel switching practice. It also does not provide for regular use of either liquid or solid fuels, which have both been at least considered by businesses for potential switching purposes. All of these issues seemingly need to be considered in future drafts of the regulation and either allowed or restricted, in some form.

The current active status of this draft regulation has created uncertainty for staff in determining the appropriateness of issuing new or amended permits to allow sources to switch fuels. All of the related sources will ultimately be subject to this regulation, regardless of their location, and any interim actions should be similarly even-handed. The current situation is very inconsistent.

3. ALTERNATIVES

The regulation of boilers and heaters across the region is clearly in transition, particularly with regard to the issues of fuel selection and switching. While a limited number of sources are operating under existing Bylaw 937 permits, many thousands are not. These non-permitted sources exist throughout the region and are extremely varied in nature. They include hospitals, commercial and apartment buildings, shopping malls, churches, etc., and all but one greenhouse. Bylaw 603 permits could have been issued for most of these related sources to formally allow them to switch fuels. As these permits would have had little effect on the incidence or impact of fuel switching, none were issued.

At their December 15th meeting, the Board directed staff to bring forward a bylaw to implement a system of regulating the use of fuels to respond to rising natural gas prices while protecting air quality. This could be effectively achieved through revisions to the draft Emission Regulation for Boilers and Heaters with some supplementary changes to Bylaw 937, itself. Presentation of a revised draft could occur shortly, with further consultation occurring in the spring and summer.

The above Emission Regulation and bylaw changes would provide a consistent and long-term approach for dealing with all boilers and heaters. To address the current condition of fuel switching, the GVRD has several options:

1. It can continue to allow limited fuel switching to occur under certain restrictions;
2. It can immediately cease the practice of fuel switching; or
3. It can allow fuel switching to occur, without restriction.

Continue Limited Allowance of Fuel Switching

The Board has previously directed staff to utilize Emission Regulations for controlling emissions from business and equipment sectors, but individual site permitting is presently possible under both GVRD bylaws. No permits have ever been issued under Bylaw 603, while Bylaw 937 permits are intended for regulating large sources and collecting related emission fees.

However, simple registration permits could be issued to most affected boilers and heaters under Bylaw 603. This bylaw allows non-gaseous fuels to be used and contains relevant emission limits for this purpose. Installations must use the fuels for which they were designed, but solid and liquid fuel designs are certainly available. The 1989 emission limits in Bylaw 603 are dated and lacking in some aspects.