

# **SOLID FUEL BURNING DOMESTIC APPLIANCE REGULATION – INTENTIONS PAPER**

## **SUMMARY OF PUBLIC COMMENTS**

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## Solid Fuel Burning Domestic Appliance Regulation - Intentions Paper Summary of Public Comments

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# Solid Fuel Burning Domestic Appliance Regulation - Intentions Paper Summary of Public Comments

## 1. Introduction

The Solid Fuel Burning Domestic Appliance Regulation (SFBDAR) was enacted under the *Environmental Management Act* (EMA) for the purpose of reducing air pollution from domestic wood heating. The regulation sets particulate matter (PM) emission standards applicable to specified new solid fuel burning domestic appliances (such as wood and pellet stoves) manufactured or sold in BC. The regulation has not been revised since it was enacted in 1994.

The Ministry of Environment and the Ministry of Healthy Living and Sport intend to review and revise the Solid Fuel Burning Domestic Appliance Regulation in keeping with actions set out in the B.C. Air Action Plan ([www.bcairsmart.ca](http://www.bcairsmart.ca)). The ministries intend to revise the regulation in two phases as described in the intentions paper. Phase 1 revisions will be initiated in 2010, following review and consideration of consultation comments. Revisions undertaken during this phase will address elements where the Ministry of Environment has both existing legislative authority to act and sufficient information to revise regulatory provisions. A proposed Phase 2 will be aimed at reducing pollution from existing solid fuel burning appliances and addressing remaining exempt appliances. Phase 2 is expected to begin approximately 2 years after the completion of the Phase 1 revisions and once the required legislative amendments have been completed. A separate intentions paper and consultation process will also be undertaken for Phase 2.

This report provides a summary of public comments received as part of the consultation process for review and revision of the Solid Fuel Burning Domestic Appliance Regulation.

### 1.1 Background to the consultation process

An intentions paper was posted for public review and comment on the ministries' website ([www.env.gov.bc.ca/epd/codes/solid-fuel/index.htm](http://www.env.gov.bc.ca/epd/codes/solid-fuel/index.htm).) May 6 through July 2 of 2010. The intentions paper provided background information regarding solid fuel burning domestic appliances, a summary of related government goals and objectives, a discussion of the ministries' intentions for amendment of the regulation and an outline of potential changes being considered for two phases of the revision process, as well as the process for providing comment to the ministries. A separate response form for providing comments or suggestions to the ministries was also posted on the website.

### 1.2 Purpose and format of the *Summary of Public Comments* document

This document has been prepared for the Ministry of Environment and the Ministry of Healthy Living and Sport by C. Rankin & Associates, contracted by the ministries to independently receive, compile and review comment on the ministries intentions for development of the regulation.

The complete set of responses received through the consultation process has been compiled and passed to the ministries for detailed review and consideration. All comments and references

submitted through this process, through independent submissions and through direct consultations with stakeholders, will be reviewed and carefully considered by the ministries in amending the regulation.

The summary of responses is arranged by discussion area and question as presented in the intentions paper and response form.

### **1.3 Description of responses received**

Over 40 responses to the intentions paper were received (by e-mail, fax and attached file), and have been reviewed for this summary of public comments. About a quarter of respondents identified themselves as “work[ing] in the manufacture, sales or distribution of solid fuel burning appliances.” More than a quarter as working for a government regulatory agency (e.g., municipality or regional district) or for a public sector organization (e.g., university or health authority). Other respondents included environmental, community and First Nation interest groups or associations, as well individuals.

A number of respondents provided supplemental information with their response – including local clean air bylaws, newspaper and journal articles related to wood burning and smoke from domestic heating appliances, health impacts of air emissions (e.g., particulate matter, dioxins), fire grate technology and correspondence related to past Environment Canada consultations. This information was compiled and conveyed to ministry staff for review and consideration however, it is not included in this summary of public comments.

Note that responses have not been reviewed or edited for accuracy or consistency. This summary includes statements that may be conflicting or not reflective of the current scientific or regulatory situation.

## Summary of Public Comments

### 1. Objectives guiding proposed revisions

The overall objective of the review and proposed revisions is to reduce impacts on human health and ecosystems by reducing air pollution from domestic wood heating. The ministries used a set of objectives to assess potential changes and guide revisions of the regulation set out in section 5.1 of the intentions paper.

*Response Form Question 1.1: Do you have any comments or suggestion regarding the objectives and their use by the ministries in guiding proposed revisions to the regulation?*

Many respondents provided extensive comment in response to this question. Most respondents who commented expressed support for the objectives used by the ministries to guide proposed revisions to the regulation with statements such as “we support placing the reduction of human health impact from domestic wood smoke as a top priority” or “[our organization] supports the objectives and their use in the proposed revisions.” Several respondents recommended more restrictive action based on health concerns, such as “ban all wood burning appliances” or “no wood burning in city limits,” commenting, for example, that “heating with wood is an option...breathing isn’t.” Respondents making such comments also commonly called for “action” to implement regulatory restrictions by the ministries as soon as possible.

Several respondents commented that there should be more focus on existing domestic heating units recommending, for example, “increased efforts...in assisting low income rural British Columbians to switch either to new wood burning appliances or to alternative sources of domestic heat.”

One respondent commented that a “fundamental flaw” of the ministries’ intentions is that it “fails to discuss or assess unacceptable ambient concentration standards of PM2.5 for the community...[with the consequence that] a wood stove change-out that could cost thousands of tax dollars to B.C. citizens can occur where there is not an ambient problem.” The respondent recommended following the direction taken by the US EPA as “the model in North America...both defin[ing] PM2.5 as toxic and set[ting] both 24 hour and annual ambient standards...[with associated] regulatory programs required for those jurisdictions not in attainment [with the standards, hence]... regulatory resources are directed to where the problems are.”

Additional recommendations or suggested objectives included:

- “It would be beneficial if the document provided an approximate cost to each sector and introduce available compensatory plans and/or suggested new plans”;
- “Encourage the upgrading of solid burning appliances, while still emphasizing the renewable resource aspect of wood heating and the important role wood heat will play in the event of a natural disaster”;

- “The B.C. Government [should] implement the Federal/Provincial agreement...regarding Canada Wide Standards on dioxin furan emissions, with particular reference to domestic home heating appliances”;
- “Laws/regulations [should be] consistent with existing laws/regulations that have already been implemented with success in at least six US States...[providing] uniformity in regulatory requirements across jurisdictions”;
- “Consider incentives for those who do not need to heat with wood to switch to a cleaner fuel”;
- “The objective that existing wood burning appliances are operated as cleanly as possible is extremely important and is vital to the overall objective to reduce impacts on human health”;
- “[Suggested] additional objectives should be: to discourage the use of appliances that do not meet the new emission guidelines, the migration of wood burning appliances to sustainable appliances as quickly as possible, to reduce future and existing neighbourly conflicts caused by wood burning appliances”;
- “Apply in B.C. what has been effective in other jurisdictions (such as Washington State provisions)”;
- “Perhaps greenhouse gas emissions...should also be considered”;
- “Develop clean energies such as wind, solar and geo-thermal...why continue to allow a fuel such as wood burning to be used in heavily populated areas where it does the most harm”;
- and
- “The primary goal [should be] to protect human health from domestic wood smoke.”

## 2. Widening the scope of the regulation

The ministries intend to revise the regulation so that “appliance” will be defined in an inclusive manner – with the emission standards applying to all biomass fired solid fuel appliances except: (1) defined classes of appliances specifically excluded from the regulation; and (2) defined classes of appliances for which a separate emissions standard is provided. This will greatly reduce the number of “exempt” appliances sold in B.C. (see intentions paper section 5.2).

***Response Form Question 2.1: Do you have any comments regarding the ministries’ intention to widen the scope of the regulation?***

Almost all respondents who commented on this question expressed “support” or “strong support” for a more inclusive regulation. Many respondents also suggested that emissions requirements should be consistent across North American jurisdictions commenting, for example, that “it is imperative that pressure be put on harmonizing the US and Canadian standards.” One respondent cautioned however, that “all emissions requirements [should be] attainable given current technology” if the scope of the regulation is widened.

One respondent, representing an organization familiar with both US and Canadian regulatory standards, felt that “it is essential to recognize that wood heating appliances operate differently

from each other” - noting that “the US EPA is currently in the process of revising the New Source Performance Standard (NSPS) and expects that [outdoor wood boilers] OWBs will be included in the provisions...therefore [our organization] supports the B.C. Ministry of Environment for incorporating both CSA B415.1-10 and the US EPA’s Hydronic Heater Phase 2 program into the proposal.”

Several respondents requested clarification from the ministries regarding what appliances might be considered as ‘exempt’ under a revised regulation, also commonly commenting, for example, that “there should be as few exemptions as practical.”

Additional comments included:

- “We would also suggest that some background information on the adverse health effects of these appliances be included”;
- “There are many wood burning ‘appliances’ - using a barrel stove or rebuilt metal propane cylinders (which are filling our dumps now) - [that] are good and positive ways for people, many who haven’t money to afford the fancy so called ‘appliances’ so we advise you think twice about limiting people to ‘efficient’ appliances”;
- “Most burners will think more about saving money than of the health hazards that wood smoke will cause their neighbours [or of the impacts on] the environment”;
- [With respect to site-built masonry fireplaces] “ is there a standard practice of minimum sizing to ensure the minimum > 5.0 kg/h that could perhaps be carried over to the site-built industry [?]”; and
- “The emissions standards of Washington state [show that] it is possible to regulate the emissions from in situ masonry fireplaces.”

### 3. Lower PM emission standards for new solid fuel burning appliances

The ministries intend to adopt Particulate Matter (PM) emission standards equivalent to the levels currently required in Washington State. These emission levels will be defined as the B.C. emissions standard. Beginning in 2011 only appliances meeting the B.C. emissions standard will be allowed to be offered for sale in B.C. The only exceptions will be classes of appliance specifically exempted from meeting the emissions standard, and classes of appliances for which a separate standard is established. The proposed standard will result in a lowering of the maximum permissible average emissions rate by 40% and ensure that only the lowest emitting new appliances are available for sale in B.C. (see intentions paper section 5.3).

**Response Form Question 3.1: Do you have any comments regarding the ministries’ intention to set lower emission standards for new solid fuel burning appliances that are equivalent to the levels currently required in Washington State?**

A range of comments were received in response to this question. The majority of respondents expressed support for the ministries’ intention commenting, for example, that “[the ministries] should be setting standards at the current lowest achievable levels based on available technology” or that “I believe that most of the wood appliances manufactured in B.C. would already

meet these standards.” Other respondents however, expressed concern or caution stating, for example, that “it is not clear why the additional Washington State criteria are needed” or “Washington State doesn’t have anywhere near the number of pulp mills and slash burning [as] B.C....you must look at the whole picture...when you start picking on the little guy and ignore the industrial devastation.” Respondents voicing concern about adopting Washington State standards commonly recommended that B.C. should adopt an equivalent of the harmonized “CSA/EPA emission standards” as these are consistent and “risk-based” rather than “technology-based” standards.

Several respondents reiterated their comment that emissions from existing wood stoves and other wood burning appliances are a critical concern, for example, “the only way that emissions will truly be cut is to phase out all wood burning appliances in urban areas and for people to have to change their old non-compliance wood burning appliance and for a nuisance bylaw to be established for recourse for anyone whose neighbour's wood burning appliance pollutes their air or interrupts their daily life from the smoke and odour.” Another respondent suggested that “there needs to be education about emissions levels – the cleanest choice would be to install a gas stove over wood.” One respondent expressed specific concerns regarding emissions of dioxins and furans from woodstoves.

One respondent suggested “a single standard for all wood burning appliances instead of [a separate] one for catalytic technology” noting that “well design[ed] catalytic stoves maintain catalyst life with emission levels below the non-cat averages long after the warranty period has expired...detailed studies have shown that catalytic stoves have lower emissions after the six year warranty period than the current non-catalytic standards.”

#### **4. PM emission standards for indoor central heating appliances**

The ministries intend to revise the regulation to include a definition of an indoor central heating appliance, and beginning in 2012 only solid fuel burning indoor central heating appliances certified to meet the CSA standard will be legal to offer for sale in B.C. If the US EPA has adopted a similar or more stringent emissions limit for indoor central heating appliance by 2012, appliances of this type could also be certified to that standard. The phase in date of 2012 is proposed to allow for indoor central heating appliances to be certified (see intentions paper section 5.4).

***Response Form Question 4.1: Do you have any comments regarding the ministries’ intention to establish PM emission standards for indoor central heating appliances?***

Most respondents who commented on this question supported establishing PM emission standards for indoor central heating appliances commenting, for example, that “the absence of standards for these appliances has been problematic and inconsistent with the goal of protecting human health.” One respondent recommended that these appliances “should be subject to the same testing as residential heaters but adjusted to PM emissions per kg burned or per energy unit produced.” Another respondent suggested that “indoor and outdoor central heating appliances [outdoor wood boilers] can be qualified in the US EPA Phase 2 Program, along with stick wood/batch load and continuous feed/automatically fueled (pellet) appliances.”

Several respondents reiterated previous comments recommending phase-out programs for existing appliances, encouraging replacement of wood burning appliances with alternatives such as natural gas, or banning the use of wood burning appliances in urban areas.

## 5. Requirements for outdoor central heating appliances

The ministries intend to revise the regulation to include a definition for outdoor central heating appliances, and beginning in 2011 only solid fuel burning outdoor central heating appliances certified to meet the CSA standard or demonstrated to meet the EPA White Tag emissions level will be legal to offer for sale in B.C. If the US EPA has adopted an emissions standard for outdoor central heaters by 2011 (replacing the voluntary White Tag program), appliances of this type could also be certified to that standard.

In addition to the emissions standards the ministries propose to include a setback standard that will limit the installation of new outdoor central heating appliances to sites where they are unlikely to cause nuisance or health problems to neighbours. The ministries are proposing a setback distance in the range of 60-150 metres for appliances that do not meet the emission standards and 30-90 metres for appliances that do meet the emission standards (see intentions paper section 5.5).

*Response Form Question 5.1: Do you have any comments regarding ministries' intention to establish PM emission standards for outdoor central heating appliances?*

Respondents who commented on this question can be grouped in two general clusters. One group expressed support for establishing common standards for outdoor appliances, using US EPA and/or CSA standards. Another grouping of respondents strongly commented that “outdoor burners should be banned” often also recommending phase out or another “mechanism to eliminate existing poorly designed/operated outdoor heating appliances.”

Specific comments included:

- “Industry has shown that they can make better outdoor boiler units, and coupling this technology with strict adherence to proper operating techniques (dry spit wood, no full logs, no garbage and no dead carcass incineration) should be the direction forward, otherwise ban them outright”;
- “This is a growing issue, and setting emission standards is essential – we believe this is a crisis situation for some parts of BC, and the intent to begin implementation by 2011 is far too late”;
- “[I recommend] a fixed time frame to remove the non approved appliance (e.g., 15 yrs.) and a non transferable clause – when you sell the residence the ‘non approved’ outdoor appliance [would have to] be removed or replaced”;
- “Outdoor central heating appliances should be regulated to the same degree as open fireplaces [as] they generate more emissions”;
- “This is absolutely unacceptable in remote areas...limiting people, particularly in poorer economic conditions, from being able to heat their homes and cook their food”;

- “The proposed standard of 0.137 g/mj is still at least 3-10 times higher than those proposed for indoor appliances – this means that further restrictions are needed;” and
- “Outdoor burners that have a low temperature hot water control system should be banned – these units tend to smoke excessively.”

*Response Form Question 5.2: Do you have any comments or suggestions for the ministries regarding the proposed setback standard for installation of outdoor central heating appliances and the date for setback provisions coming into force?*

This question generated substantive comment from respondents. Many respondents commented that setbacks “are a good idea” or “important” and often provided additional suggestions (such as “minimum stack height”) or reasons for an increased setback distance. Other respondents felt that there is not a clear rationale for the proposed setback standard commenting, for example, that “outdoor wood boilers that qualify under the EPA Program generally emit less particulate matter than indoor wood stoves that meet current [US] federal standards which may be installed in British Columbia without any setbacks.” One respondent provided detailed recommendations for “less restrictive” setback requirements following established standards in eastern US States – 200 ft from nearest neighbouring residence for outdoor boilers that do not meet emission standards and 50 ft from a property line for those that do meet emission standards.

Additional specific comments included:

- “Has any consideration been given to an outright ban of these appliances within specific airsheds where elevated PM2.5 levels have been determined to be an issue?”;
- “The proposed setback requirement would actually prevent residents of British Columbia from installing lower emission Phase 2 outdoor wood boilers to replace an existing higher emission outdoor boiler or indoor wood stove(s)”;
- “With modern day range finders and local government GIS mapping systems the option of locating the unit based upon neighboring residences is cost effective and reasonable for consumers”;
- “The use of setbacks coupled with stepped-up inspection and enforcement should help to improve emissions”;
- “Many properties that use these appliances are located in valleys where temperature inversions occur – thus there will be frequent occasions where there will be insufficient dispersal of particulates even with the largest setbacks...in addition to PM generation, consideration for aesthetics should be incorporated, as should stack height and dispersion”;
- “It would be helpful if the standards required that removal, relocation or revision of a structure would only be permitted with upgrading to emissions standards;”
- “The most efficient fire is one that burns simply and clean without toxins using natural materials like non herbicided wood for fuel – this is still, to date, one of the most efficient sources of heat, particularly for those in remote areas;”

- “A stack height of at least 1.5 meters above roof height of nearby buildings should also be specified as recommended by [the] BC Lung [Association]”; and
- “How will the setback be enforced? It is unfair, unreasonable and ineffective to expect a neighbour to report on another neighbour when this occurs in small villages.”

*Response Form Question 5.3: Do you have any comments or suggestions regarding the ministries’ intention that retailers of outdoor central heating appliances be required to provide information to purchasers on setback requirements, and that purchasers be required to acknowledge receipt of this material?*

Most respondents who commented on this question expressed agreement or support for the ministries’ intention, for example, “using the retailers as the distribution method for this information seems to be the most effective way to ensure [that] the information is distributed to those who will need it.” Several respondents noted that follow up inspection and/or “a mechanism for enforcement” is also needed. One respondent expressed skepticism, feeling that “people will go around your regulations... you are better off setting out a system of evaluation of specific situations where there is cause of nuisance rather than taking these measures.”

## 6. PM emission standards for cook stoves

The ministries intend to adopt a definition for a “cook stove” in the revised regulation. Appliances meeting this definition can continue to be legally sold in B.C., but will be required to be certified to meet the B.C. emission standard starting in September 2014 (see intentions paper section 5.6).

*Response Form Question 6.1: Do you have any comments regarding the ministries’ intention to require cook stoves to meet the B.C. emission standards?*

Many respondents who commented on this question felt that wood fired cook stoves “are not a significant source of air pollution” or “not a great concern.” Several respondents commented that all types of appliances should have to meet a common standard noting, for example, that “several manufacturers already make EPA certified cook stoves.” Some respondents reiterated previous points commenting, for example, “anything burning wood is putting the public at risk.”

## 7. Additional considerations

The following “additional considerations” are described in section 5.7 of the intentions paper.

### A. Transition period

*Response Form Question 7.1: Do you have any comments or suggestions regarding an appropriate transition period (e.g., 12 – 18 months) between the effective date of the regulation and its coming into force – to allow sufficient notice for manufacturers, distributors and retailers of appliances to meet new standards?*

There were two groupings of responses to this question. The first group – about half of the respondents to the question – felt that a 12-18 month transition period is appropriate and necessary to provide retailers with adequate time to sell existing stock. The second grouping felt that regulatory provisions should be implemented as soon as possible as “manufacturers, distributors and retailers already know there is a problem” and that, “given the lengthy operational lifespan of these appliances, delaying implementation would reduce the effectiveness of the regulation.”

### B. Acceptable fuels

*Response Form Question 7.2: Do you have any comments or suggestions regarding “acceptable fuels” for solid fuel appliances (e.g., seasoned wood with a moisture content below 20%, wood chips, manufactured fire logs, wood or other biomass products, clean paper, newsprint and/or cardboard) and the ministries’ intention to include a list of such fuels in the regulation?*

Many respondents who commented on this question questioned the enforceability of moisture content provisions in a regulation, feeling instead that “public education is key” to changing behaviour. Several respondents commented that although “regulation of seasoning for firewood would be unenforceable” specifying acceptable fuels for solid fuels could provide enforcement officers with a tool for limiting burning of trash or other inappropriate materials.

Specific comments or recommendations included:

- “I would suggest incentives to encourage more use of the cleaner fuels compared to those that will result in higher emissions”;
- “It may be valuable to avoid the burning of wood soaked in sea water (salt)...[to reduce emissions of] dioxins and furans”;
- “I’d suggest a differentiation between start up fuel and regular burn fuel...and further flagging of the importance of using clean cellulose material only for catalytic units”;
- “As a minimum, inspections could be carried out as a result of public complaints about specific units”;
- “May wish to replace ‘clean paper, newsprint and/or cardboard’ with ‘clean, non-glossy or non-colored paper/newspaper and/or cardboard used solely for starting fires’ ”; and
- “Wood burning needs to be phased out within city limits.”

### C. Labeling and information requirements

*Response Form Question 7.3: Do you have any comments or suggestions regarding labeling of appliances or the ministries' intentions to track appliances that are legal for sale in B.C.?*

Most of the respondents who commented on this question expressed support for clear labeling requirements “consistent with the EPA Hydronic Heater Phase 2 Program and/or CSA B415.1-10.” One respondent further recommended that “all wood burning appliances have ‘health hazard’ labels...[and] treated like cigarette packages...also...with instructions as to the only type of wood to be used plus nuisance bylaws to enforce this.” Another respondent noted that “in the State of California wood is labeled [as emitting] chemicals that can cause cancer [when burned].”

The limited comments received regarding the ministries' intentions to track appliances commonly expressed caution, recommending, for example, that “while [a tracking program would be useful for] conducting future studies on emission levels in communities...costs and benefits of such programs need to be considered at the outset to avoid premature termination of the program.” One respondent felt that “tracking of appliances is just more paperwork that is not needed” while another commented that “I’d rather see money for tracking used on public education campaigns.”

### D. Testing and record keeping requirements

*Response Form Question 7.4: Do you have any comments or suggestions regarding appropriate testing and record keeping requirements that should be a component of the regulation?*

Most respondents who commented on this question felt that while testing and record keeping may be required, the ministries should minimize additional “red tape” and maintain consistency with US EPA and CSA programs and requirements.

Specific comments or recommendations included:

- “Record keeping requirements should remain the responsibility of the distributor”;
- “Testing for grates that are used in open fireplaces is questionable since no testing protocol exists”;
- “It may be reasonable for manufacturers/wholesalers/retailers to submit proof of compliance for the various models of appliances to be sold – new models would require certification, which could then be forwarded to the ministries”;
- “Units should have dispersion information generated so that clarity on human exposures under varying temperature, wind direction and speed can be established for the purposes of investigations as health hazards”;
- “Compliance testing records should be kept by industry for much longer time than 2 years... all compliance test records [should] be kept for the lifespan of the product line including transfer to any company taking over the line”; and

- “I see no reason for not keeping records [for longer than 2 years], particularly in electronic format.”

#### E. Pelletized fuel specifications

*Response Form Question 7.5: Do you have any comments or suggestions on the need for, or form of, a pelletized fuel specification provision in the regulation?*

Almost all respondents who commented on this topic recommended inclusion of pellet specification and testing in appropriate regulations.

Specific comments or recommendations included:

- “All testing should be consistent with the EPA HH Phase 2 Program and/or CSA B415.1-10 or any other testing standards applicable to that individual class of appliance”;
- “Routine chemical analyses would be useful since combustion relates directly to chemical constitution which varies by species, different results for dioxin/furan emissions in woodstoves”;
- “There should be provisions in the new regulation to ensure emissions will continue to be consistent with CSA/EPA certification – in that sense, test burning of the various grades of pelletized fuel in certified appliances should be conducted”;
- “It would be interesting to see what the emission ratings would be on pellets compared to natural wood”; and
- “There should be some specification regarding pelletized fuel quality to safeguard against possible imported pellet fuels from areas with less stringent safety concerns.”

#### F. B.C. specific appliance testing not required

*Response Form Question 7.6: Do you have any comments or suggestions regarding appropriate testing requirements for solid fuel burning domestic appliances that may be manufactured, distributed and offered for sale in B.C.?*

Most respondents who commented on this question felt that “while testing is required” it is not necessary to require “B.C. only” testing. Rather, appliances should be tested and compliant with “the US EPA HH Phase 2 Program and/or CSA B415.1-10 or any other testing standards applicable to that individual class of appliance.” One respondent cautioned the ministries to “be very cognizant of the difference between having CSA, EPA or other certification (an actual tag or designation) as compared to a unit that may have been merely tested against CSA, EPA or other standards – there’s a huge difference.” Another respondent recommended direct consultation with B.C. manufacturers as “most B.C. manufacturers have a strong record of making low emission appliances.”

Additional comments included:

- “Encourage users and makers to butt out with any solid fuel burners, except in rural areas”;

- “No, we do not need that and don’t want to pay for that”; and
- “The testing should be done in house and not in the lab – studies have shown that the emissions are considerably higher when used in homes than the emissions shown when tested in the lab.”

## 8. Proposed phase 2 revisions to the regulation

Section 6 of the intentions paper describes several provisions that the ministries are considering for inclusion in Phase 2 revisions to the Regulation. Phase 2 revisions are aimed at reducing pollution from existing solid fuel burning appliances and addressing remaining exempt appliances.

*Response Form Question 8.1: Do you have any comments or suggestions for the ministries to consider in the design of the Phase 2 revisions?*

Substantive comment was received in response to this question. Many respondents recommended moving some of the proposed Phase 2 revisions to Phase 1 – specifically:

- A “sunset” provision with mandatory timelines for phasing out of old high emission appliances (in specified airsheds, in urban areas or across the province);
- A prohibition on the sale of used appliances that do not meet emission standards;
- Requirements to disclose or remove non-compliant appliances on sale of property; and
- A prohibition on the installation of new or used appliances that do not meet emissions standards.

Several respondents commented that the existing (education and incentive based) provincial wood stove exchange program appears to be of limited effectiveness and that regulatory means for reducing the number of (i.e., “phasing out”) high emission appliances are needed. A number of respondents noted that existing masonry fireplaces are a significant source of emissions in some regions (e.g., Metro Vancouver) and encouraged the ministries to establish regulations addressing this issue as soon as possible.

Several respondents expressed concern that potential “opacity” requirements under consideration for Phase 2 revisions would be difficult to enforce and inappropriate. One respondent also noted that “opacity standards...can be an effective tool to establish...whether or not a wood burning appliance is operating properly.” The respondent also recommended “consideration of an outright ban of wood burning appliance use during May-September (especially in urban areas) when regional air quality during the hot summer months can be poor.”

## 9. Additional provisions in other legislation

Section 7 of the intentions paper describes examples of other regulatory or non-regulatory means that may be used to reduce harmful emissions from solid fuel burning appliances. The

ministries are seeking comment on these and other measures that might be enacted outside of the Solid Fuel Burning Domestic Appliance Regulation.

***Response Form Question 9.1: Do you have any comments on or suggestions for regulatory or non-regulatory measures outside of the Solid Fuel Burning Domestic Appliance Regulation that would support reduction of harmful emissions from solid fuel burning appliances?***

Several respondents expressed support for changes to the Building Code requiring fireplace construction and wood burning appliance compliance with emissions standards. A number of respondents also commented that recent efforts by “the insurance industry...to tighten requirements” have resulted in significantly improved air quality. Respondents provided a diverse range of specific suggestions for additional actions that could support emissions reductions. These included:

- “A ban on the use of pre-1984 ‘freestanding woodstoves’ should be enforced”;
- “Opacity legislation...every major jurisdiction in the United States that had wood smoke regulations in place has it coupled with a basic opacity scheme”;
- “Phase 1, rather than Phase 2, revisions to the regulation [should] make it an offence to install non-certified appliances in B.C. regardless of where they were purchased – in most North American markets, it seems notionally that only certified stoves would be available for sale, rendering inclusion of such a provision a simple exercise”;
- “Tie the non-burning of garbage requirement as per the Open Burning Smoke Control Regulation to indoor and outdoor appliances – make it illegal to burn garbage...and tie non-compliance to the enforcement and penalty section of the regulation”;
- “Linking air quality to the real estate sales transactions is a good progressive approach”;
- “Anything burning herbicided wood or other products that produce dioxin must be eliminated”;
- “No wood burning appliances should be allowed in urban areas [of] B.C.”;
- “Any wood burning appliance to be installed in rural areas should be CSA/EPA approved with a nuisance clause attached to them”;
- “Education has been a successful tool...a clean air ambassador educating [offenders with ‘smoky’ stoves] on how to burn cleanly after neighbours complained usually resulted in gratitude...and no further complaints from neighbours”;
- “The wood stove exchange program should be province wide and year-round”; and
- Ministry of Health could play a much stronger role in raising awareness of the health impacts of wood smoke.”

## 10. Awareness, compliance and enforcement

Section 5.8 of the intentions paper outlines awareness and compliance promotion, compliance verification, enforcement and offence and penalty aspects of the regulation.

***Response Form Question 10.1: Do you have any comments or suggestions for the ministries to support awareness, compliance and enforcement of the regulation?***

Many respondents who commented on this question felt that public and wood appliance user education programs are the most effective method of reducing emissions from wood burning appliances. Several respondents expressed concern that effective promotion and enforcement strategies will require dedicated (and “additional”) provincial government resources and responsibility for awareness and promotion could be “downloaded” to local government.

Additional specific comments included:

- “The State of Washington is divided into various Clean Air Agencies...something similar could be considered for B.C.”;
- “[Our organization] believes that wood appliance user education can reduce uncertified appliance emissions by more than 30%...remember, the problem is with the uncertified wood stoves, not the requirement of emission reductions in certified appliances – this is a significant omission and should be corrected”;
- “Improved education at the retail level would probably get the ‘biggest bang for the buck’ “;
- “Conservation Officers should have the authority to enforce and fine people for burning prohibited materials within a private building;” and
- “The objective [stated in the intentions paper] to ensure that existing wood burning appliances are operated [as] cleanly as possible is admirable but...is addressed nowhere in the intentions paper.”

## **11. Protection of human health and the environment**

***Response Form Question 11.1: Are there any aspects of solid fuel burning domestic appliances that could significantly affect human health or the environment that are not, in your view, sufficiently addressed in the ministries’ intentions and proposed amendments to the Regulation? What, if any, are they? What suggestions do you have for the ministries to improve the manner in which these concerns are addressed?***

A number of respondents provided detailed comments and suggestions in response to this question. Many of those who commented stated that the most significant source of emissions from wood burning appliances is existing wood stoves, and that the ministries’ intentions to revise the regulation did not adequately address this issue. Respondents commonly suggested targeted and increased enforcement, improved wood stove exchange programs and well designed and supported education programs – particularly in airsheds with air quality concerns. One respondent commented, for example, that “what is needed is a program endorsed and supported by local governments and agencies with strong enough incentives to drive the polluting stoves out and their replacement with certified, clean burning appliances...whatever method is chosen, the most healthful payback is the replacement of existing units and not further limiting emissions from new units.”

Additional specific comments included:

- “The regulation of the manufacture and sale of uncertified wood burning appliances should be augmented with restrictions on their installation”;
- “The proposal only deals with individual appliances and contains no provision to deal with a geographic area where there are multiple properties with appliances producing significant degradation of air quality”;
- “The regulation should ensure that our First Nations residents are offered the same protection from smoking older units, wood boilers, etc. and that our shared airsheds are equally protected”;
- “We encourage the province to undertake a comprehensive cost-benefit analysis on options to enhance the current wood stove exchange program”; and
- “It may be worthwhile for the province to assess the feasibility of district heating in communities where waste wood is plentiful, to replace wood burning in individual homes.”

*Response Form Question 11.2: Do you have any other comments or suggestions for the ministries regarding the regulation of solid fuel burning domestic appliances?*

Respondents included a wide range of introductory information, background materials and supplementary explanations with individual responses. This information has been compiled and passed to staff of the ministries charged with review and revision of the regulation for consideration. Additional comments and suggestions included:

- “There is a law in Washington State that makes it illegal to be party in the sale, transfer of ownership or installation of non-Washington state approved wood stoves – the Wood Stove Coordinator for the Air Quality Program for the Department of Ecology regularly sends letters or emails to private parties that are attempting to sell such appliances and recommends remedies as well as stipulates possible fines and penalties”;
- “In the state of Oregon...no home may transfer title without the removal and or replacement of any non-compliant unit...this law has seen support at various levels including realtors acting on behalf of both sellers and buyers of homes ”;
- “Ideally, the [ministries] should wait a short period longer for the new NSPS to be announced by the EPA – we are confident that a brief delay in making revisions will be in the best interest of all parties and will avoid a great degree of confusion – as an example, if the EPA does as indicated and moves to a single emissions level for all cord wood stoves and fireplace inserts, having two different emissions levels for the two most recognized technologies will create problems for the B.C. market”;
- “I strongly recommend that Wood Energy Technicians of B.C. and the Western Hearth BBQ and Patio Association be consulted in this process”;
- “Keep in mind that EPA does not work on a consensus basis when developing a regulation. Furthermore, Canadian manufacturers are not allowed to appear in front of the EPA Small Business Representative panel in order to comment on the proposed EPA regulation. As a result, it is doubtful that the EPA regulation will end-up addressing the dynamics of the

Canadian industry. Therefore, in everything B.C. does or decides, should there be any material differences between CSAB415.1 and EPA, both standards should be allowed. If only one must be chosen (for any particular reason), CSAB415.1 should prevail. CSAB415.1 was developed using a consensus-based approach and Canadian manufacturers were allowed to comment”;

- “For a community like Golden, where woodstove emissions represent approximately 40 per cent of the community’s PM2.5 emissions, eliminating all 300 non-certified woodstoves would reduce PM2.5 by 18 tonnes and improve annual air quality significantly”;
- “There are substantial environmental and social benefits from wood heat. Wood heat lowers our dependence on fossil fuels and thereby lowers greenhouse gases that are emitted into the atmosphere. The energy return on investment (EROI) for pellets and cordwood is 3 to 5 times greater than natural gas, and even greater than for electricity... Furthermore, wood heat is an essential subsidy assisting our rural poor and those citizens who live on fixed incomes. Wintertime heating costs can be substantial in rural British Columbia. Balancing their family budget with wood heat lessens winter time heating bills allowing them to buy food and medicine”;
- “Conclusion: The ministries should be commended for their efforts to regulate unhealthy particulate concentrations in British Columbia. Their current regulatory scheme is the best in Canada and their attempts to improve it are admirable. As their regulatory restrictions tighten however, it is incumbent to clearly establish the health benefits of future more restrictive regulations. Ambient concentrations of PM 2.5 must be measured and health standards set. Scarce resources must be efficiently spent to solve or prevent problems. Measuring air-shed PM 2.5 concentrations and setting standards is essential in this next stage”;
- “Open fireplaces are the least expensive way to ventilate a home, First Nations people use this phenomenon in ‘Long Houses’ and a by-product is a source of heat. Fires in open fireplaces are self-regulating, fires in EPA approved woodstoves are subject to the whims of the homeowner adjusting the air intake away from recommended settings by the manufacturer, creating ‘wood cookers’ and increasing the amount of PAH’s and Dioxin/Furan vented to the atmosphere. Cap and Trade regulations should permit the homeowner to sell the resulting offsets to the system or to BC Hydro against electric bills. The ultra efficient heating controls promoted by the B.C. Government should make this proposal possible”;
- “Municipalities should be permitted to set higher standards of air quality than the provincial regulations allow when the circumstances warrant it”;
- “The ministries could consider including a statement referring to the operation of wood burning appliances in the revised regulation...containing wording such as: ‘no person may operate a domestic solid fuel appliance other than in accordance with the manufacturer’s recommended operating procedures and in a manner which minimizes emissions’ “;
- “We suggest that partnerships with local government be formed to the extent that the Province be advised when municipal inspectors detect non-compliance issues – this would be particularly important if a decision is made to include regulation of the installation of appliances”;
- “We encourage the government to ensure that a population health equity lens be applied to the regulatory changes so that all British Columbians can benefit equitably from the new regulation”;

- “Do not place any restrictions on burning of wood for heat or cooking in remote areas, particularly Indigenous peoples who have relied on this method long before your government was in place”; and
- “Banning outdoor hydronic heaters like Washington and Colorado and New Jersey and Maryland is your best idea and should be extended to old equipment as well at least. Hampstead is the shining light you can use for an example. But London did the same and Sydney and other cities in progressive communities have also done this.”

## Appendix A: Acronyms and Abbreviations

<b>Acronym or Abbreviation</b>	<b>Definition</b>
B.C.	British Columbia
CSA	Canadian Standards Association
EMA	<i>Environmental Management Act</i>
FOI	Freedom of Information
HH	Hydronic heaters
NSPS	New source performance standards (of the US EPA)
OWB	Outdoor wood boiler
PAH	Polycyclic aromatic hydrocarbons
PM	Particulate matter
PM2.5	Fine particles in the (ambient) air 2.5 micrometres or less in size
SFBDAR	Solid Fuel Burning Domestic Appliance Regulation
US EPA	United States Environmental Protection Agency