



View to the west from Burnaby

# Proposed Amendments to Boilers and Process Heaters Emission Regulation

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**metro**vancouver





# Metro Vancouver

Over **3 Million** Residents

**53%** of BC population

**23** Member Jurisdictions

**61%** of BC GDP

**1.29 million** jobs



# MANAGING EMISSIONS FROM BOILERS & PROCESS HEATERS

Combustion of:

- Natural gas
- Propane
- Biomass





# MANAGING EMISSIONS FROM BOILERS & PROCESS HEATERS



GVRD Boilers and Process Heaters  
Emission Regulation Bylaw 1087  
(under 50 MW capacity)



Site-specific  
permits  
(over 50 MW)

# HEALTH IMPACTS AND POLICY DRIVERS

- Health impacts even at low concentrations of nitrogen dioxide
  - Respiratory illness, heart disease
  - More frequent hospitalization
  - Premature death
- Policy drivers:
  - Meet or be better than stricter ambient air quality objectives
    - Align with federal standards
  - Address air quality complaints



# ADJUSTED PROPOSALS

Responding to previous feedback

- Additional design criteria for emission stacks
- Additional dispersion modelling requirements
- Stricter emission limits for boilers and process heater equipment
  - Focus on new or replacement equipment at natural end of life



# STACK DESIGN REQUIREMENTS



# BENEFITS OF VERTICAL EMISSION STACKS





# HORIZONTAL EMISSION STACKS





# RAIN CAPS

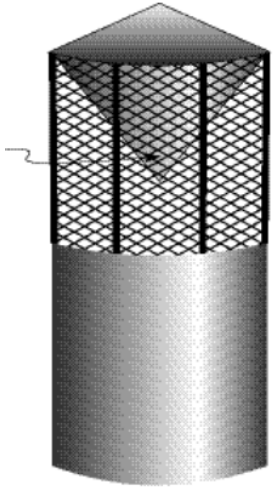


“Conventional” Rain Cap

Photo Credits: [Stack Height and Rain Guard Guidance | Department of Environmental Conservation](#)



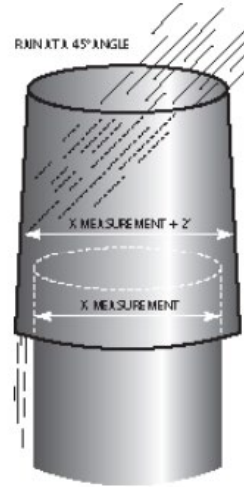
# BETTER ALTERNATIVES TO CONVENTIONAL RAIN CAPS



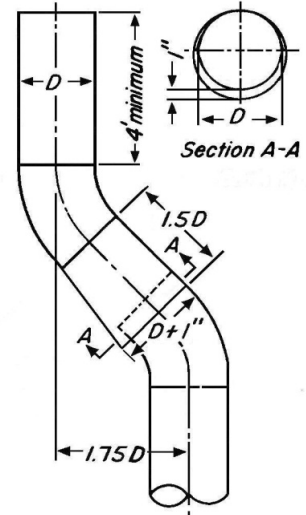
Inverted Cone  
Stack Cap



Stack-in-a-Stack Cap



Hinged Stack Cap



Offset Stack

Photo Credits: [Stack-and-Rainguard-requirements.pdf](https://www.stack-and-rainguard-requirements.pdf)

# PROPOSED EMISSION STACK DESIGN REQUIREMENTS

- Restrict use of rain caps
- Require vertical orientation
- For new stacks
- Exceptions:
  - On complex buildings (Part 3 in BCBC) – when required by professional engineer
  - On simple buildings (Part 9 in BCBC) - when specified by manufacturer or required by professional engineer or gas fitter



# DISPERSION MODELLING REQUIREMENTS





# PROPOSED DISPERSION MODELLING REQUIREMENTS

- Apply requirements to new and expanded facilities
- To minimize cost impacts, require dispersion modelling for most impactful facilities:
  - Facilities 10 MW and over
  - Facilities between 6 -10 MW near\* schools, hospitals, and community care facilities
  - Low-use boilers not included

*\*In response to a question during the June 25, 2025 webinar, Metro Vancouver clarified that “near” refers to a distance under 100 metres.*

# EMISSION LIMITS FOR BOILERS AND PROCESS HEATERS



# PROPOSED EMISSION LIMITS FOR NATURAL GAS AND PROPANE BOILERS

Boiler Capacity	Current Emission Limit	Proposed NO <sub>x</sub> Emission Limit
Less than 0.6 MW	Low NO <sub>x</sub> 60 mg/m <sup>3</sup>	38 mg/m <sup>3</sup> (20 ppm)
0.6 MW – 50 MW		20 mg/m <sup>3</sup> – 30 mg/m <sup>3</sup> (10.5 ppm – 15 ppm)

- Apply new emission limits to new equipment and when equipment replaced at end-of-life
- Maintain low-NO<sub>x</sub> for low-use boilers (10% of year)
- Setting achievable phase-in dates





# PROPOSED NO<sub>x</sub> EMISSION LIMITS FOR BIOMASS BOILERS

Boiler Capacity	Current Emission Limit	Proposed NO <sub>x</sub> Emission Limit
0 MW – 50 MW	None	120 mg/m <sup>3</sup> (65 ppm)

- Focus on new facilities
- Air quality permits offer alternative pathway for authorizing emissions

# TIMELINE

2022

Initial Engagement

2023 – Mid-2025

Review and  
Consider Feedback

- Ongoing engagement with key audiences
- Exploring options in response to feedback

2024

Exploring  
Alternatives

Fall 2025

Seek Board  
Adoption of  
Regulation  
Amendments

- Report to the Metro Vancouver Regional District Board

# OPPORTUNITIES TO PARTICIPATE

- Email comments to:  
[AQbylaw@metrovancover.org](mailto:AQbylaw@metrovancover.org)
- Request a meeting
- Reach out by July 11, 2025







Thank you

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