Green Compliance

Air Pollution Control Ordinance (Cap. 311)

Irr C.F. LAM
Air Pollution Control Ordinance

Type of Air Pollution Sources

- Point Source (Stationary Source) - Power plant, Factory, etc.
- Line Source (Mobile Sources) - Vehicle, etc.
- Area Source - Domestic premise, etc.
Air Pollution Control Ordinance

Introduce in 1983 to replace Clean Air Ordinance

Major amendments:

1987: Amendment relating to specified process

1991: Widen the scope to control other sources, Control of unleaded petrol (repealed in 1994 by Regulations)

1993: Introduce the polluting processes concept; removal of SP exemption; control on asbestos
Air Pollution Control Ordinance

Objective

• To control the emission of air pollutants from polluting process.

“air pollutant” means any solid, particulate, liquid, vapour, objectionable odour or gaseous substance emitted into the atmosphere.

“polluting process” includes an activity, process or the operation of a Chimney, relevant plant, machinery or equipment that evolves air pollutant.

“relevant plant” means any furnace, engine, oven or industrial plant.
Air Pollution Control Ordinance

Application

Not apply to any air pollutant emitted from any furnace or engine used in the propulsion of any vessel, railway locomotive or aircraft. (s.3)
Air Control Zones (ACZs)
& Air Qualities Objectives (AQOs)

The APCO provides the main statutory framework for the declaration of ACZs (s.6) and the establishment of AQOs (s.7).

The Authority shall aim to achieve and maintain AQOs (s.8).
Air Pollution Control Ordinance

List of Subsidiary Regulations

• APC (Smoke) Reg.
• APC (Furnace, Ovens and Chimneys)(Installation and Alteration) Reg.
• APC (Fuel Restriction)Reg.
• APC (Specified Processes) Reg.
• APC (Dust and Grit) Emission Reg.
• APC (Construction Dust) Reg.
• APC (Open Burning) Reg.
• APC (Petrol Filling Stations)(Vapour Recovery) Reg.
• APC (Dry-Cleaning Machines) (Vapour Recovery) Reg.
• APC (Appeal Board) Reg.
Air Pollution Control Ordinance

Air Pollution Abatement Notice (APAN)

Issuing conditions:

(a) in the opinion of the “Authority or of an authorized officer” (s.10(2))

(b) by the emission of any “air pollutant”

(c) air pollutant emission causes or contribute to the existence or imminence of an “air pollution”
Air Pollution Control Ordinance

“air pollution” means an emission of air pollutant which either alone or with another emission of air pollutant—

(a) is prejudicial to health

(b) is a nuisance

(c) imperils or is likely to imperil the safety of or otherwise interferes with normal operation of aircraft

(d) is determined to be air pollution under a technical memorandum
Air Pollution Control Ordinance

**Statutory requirement:**

- cease emission or operation;
- reduce emission;
- take other steps to abate emission

immediately or within a period of time for compliance.
Fuel-burning equipment with total fuel consumption exceeding (excluding internal combustion engine): 1 150 MJ/hr (gas); 25 l/hr (liquid); 35 kg/h (solid)

Indirect control of cooking fumes

28 days prior approval by EPD

Height restriction (still applicable to “old” area)

Submission of documents:
block plan by Authorized Person,
other plans by Registered Professional Engineer

For catering trade, inform FEHD
Air Pollution Control Ordinance

APC (Smoke) Regulations
Air Pollution Control Ordinance

APC (Smoke) Regulations

- Dark smoke ($shade > #1$) must not exceed:
  - (i) 6 minutes in 4 hours
  - (ii) 3 minutes continuously at any time
Air Pollution Control Ordinance

*Particulate Trap*
Air Pollution Control Ordinance

Use of PME Exhaust Washer
Air Pollution Control Ordinance

• **(Specified Processes) Regulation:**

  - Specified Process means a process specified in Schedule 1.

  *Examples: Cement works, Mineral works*

  - Apply for a licence to conduct the process before the process is conducted.
## Schedule 1 - 30 Specified Processes

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<th>Process</th>
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<td>2. 鋁工程</td>
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<td>3. 水泥工程</td>
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<td>21. 氰氯酸工程</td>
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<td>27. 鍍鋅工程</td>
<td>28. 提煉工程</td>
</tr>
<tr>
<td>29. 非鐵冶金工程</td>
<td>30. 玻璃工程</td>
</tr>
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有關上述工程的詳細定義，請參閱《空氣污染管制條例》附表 1。
Air Pollution Control Ordinance

Specified Processes:

- Considerations for granting of licence:
  - provide and maintain the *Best Practical Means (BPM)*
  - attainment and maintenance of any relevant *Air Quality Objectives (AQOs)*
  - whether the emission of noxious or offensive emissions would prejudicial to health
Air Pollution Control Ordinance

APC (Fuel Restriction) Regulations

Prohibit the use of the following unsuitable fuel:

- conventional liquid fuel:
  sulphur content > 0.5% by weight; or
  viscosity > 6 centistokes at 40°C

- conventional solid fuel
  sulphur content > 1% by weight;

- conventional liquid fuel or solid fuel in Shatin
  (except in construction sites or for emergency use)

- Not apply to dwelling, vehicle, aircraft, electricity work with SP licence
Air Pollution Control Ordinance

(Fuel Restriction)(Amendment)
Regulation 2008

• Effective on 1 October 2008

• Diesel fuel users in industrial and commercial sectors must now use ultra low sulphur diesel (ULSD) with a sulphur content of not more than 0.005% by weight
Air Pollution Control Ordinance

- Applicable to construction diesel powered equipment
  
  • Check fuel oil purchasing receipt
  • Conduct fuel oil sampling
Prohibit / Control Open Burning Activities

"Open burning" – combustion outdoors without any enclosure & chimney
Air Pollution Control Ordinance

APC (Open Burning) Regulation

- **Purpose:** Prohibit / Control Open Burning Activities

- Disposal of construction Waste
- Site clearance
- Disposal of Tyres
- Salvage of metal
Exempted Open Burning

1. Burning of joss paper, etc. in religious rites, festivals and on festive occasions.
2. Fires for recreational purposes, e.g. BBQ.
3. Fires for fire testing, training and education, etc.
4. Agricultural burning for weeding, land disinfecting, pest control, etc.
5. For emergency purpose to ensure public safety.
Open Burning Permit

1. Allow at least 28 days for application
2. The applicant shall prove:
   a. an absolute need for the burning;
   b. there is no other practical alternative means of waste disposal; and
   c. there will not be adverse air pollution impact.
3. The Authority may impose terms and conditions in the permit
APC (Construction Dust) Regulation

- Employ effective dust abatement measures to:
  - Reduce dust emission,
  - Reduce air nuisance, and
  - Improve general air quality

- Set out appropriate dust control measures and make them as standard practice in the construction industry
Air Pollution Control Ordinance

Type of Construction Works

😊 **Notifiable work** – notify Authority before work commences: building demolition, construction of superstructure, site formation, etc.

😊 **Regulatory work**
road opening /resurfacing, external renovation, slope stabilization, etc.

😊 **Excluded work**
internal renovation, specified process, etc.
Air Pollution Control Ordinance

APC (Construction Dust) Regulation

- Control measures are listed out in the Schedule, e.g.:
  - Wet dusty processes, dusty materials;
  - Cover dusty material;
  - Enclose
  - Stop if control equipment is out of order
  - No use of compressed air
Air Pollution Control Ordinance

- **Dust Control: Water Spray**

  - Compacted road
  - Water sprinkler for road
Air Pollution Control Ordinance

- Dust Control: Water Spray

Wheel washing

Water spray on loading/unloading
Air Pollution Control Ordinance

- *Water bowser*
Air Pollution Control Ordinance

- Sprinkler
Air Pollution Control Ordinance

- Wheel washing facility
Air Pollution Control Ordinance

- Dust Control: Cover

Screen effectively reduce dust nuisance

Enclose the building under demolition
Air Pollution Control Ordinance

- Dust Control: Cover

Hoardings

Hard-paved road
Air Pollution Control Ordinance

- *Dust Control: Cover*

Cover for dusty material

Enclose building refuse chute
Air Pollution Control Ordinance

- Tarpaulin, hydroseeding
Air Pollution Control Ordinance

○ **Hoarding**
Air Pollution Control Ordinance

- Mechanical cover
General Requirements

- Stop operating the relevant plant or dusty process if there is breakdown of air pollution control equipment.
- Avoid using compressed air jet to clean off dust.
Site Boundary and Exit

• Provide vehicle washing facilities.
• Pave the area between site exit & the vehicle washing facilities.
• Provide 2.4 m hoarding along site boundary.
Main Haul Road

- (4 or more vehicles/ 30 minutes)
- Paved with concrete, bituminous materials, hard cores, etc. and keep clear of dusty materials; or
- Maintain entire road surface wet.
Road leading only to a construction site

- Clear dusty materials from the portion of any such road within 30 m of vehicle entrance / exit.
Stockpile of Cement

Bagged cement exceeding 20 nos should be covered or enclosed in area sheltered on the top and the 3 sides.
Bulk Storage of Cement

Bulk Cement or PFA stored in closed silo with high level alarm.
Exposed Earth

Treated by compaction, hydroseeding, vegetation planting, etc. within 6 months after the last construction activity.
Dusty Materials
(Collected by Fabric Filters or Other Equipment)

- Dispose of in enclosed containers.
- Do not store in open area.
Stockpiling of Dusty Materials

- Cover entirely by impervious sheeting;
- Place in an area sheltered on the top and the 3 sides; or
- Maintain entire surface wet.
Loading, Unloading or Transfer of Dusty Materials

Wet dusty materials with water spraying prior to operation.
Transfer of Dusty Materials with a Belt Conveyor System

- Enclose the belt conveyor from the top and the 2 sides.
- Enclose the transfer point between conveyors.
- Install belt scraper and bottom plates.
- Maintain vertical distance between belt conveyor outlet and material landing point at <1 m.
- Enclose the unloading area.
Use of Vehicles

- Wash every vehicle before leaving the site to remove dusty materials from body and wheels.
- Cover any load of dusty materials.

Dusty material not covered

Vehicle with mechanical cover
Drilling, Cutting & Polishing, etc

- Spray surface continuously with water.
- Equip with effective dust extraction and filtering device.
Debris Handling

- Cover or store debris in area sheltered on the top and the 3 sides.
- Enclose the debris chute.
- Wet debris before dumping into chute.
Excavation or Earth Moving

- Spray the working area with water or chemicals before, during and immediately after the operation to maintain entire surface wet.
Site Clearance

- Wet the working area before, during and immediately after the operation.

- Cover all demolished items or place in area sheltered on the top and the 3 sides within a day of demolition.

Dusty material should be covered or removed.
Blasting

- Wet area within 30 m before blasting.
- No blasting during the strong wind signal or tropical cyclone warning No.3 or above is hoisted unless permitted by Commissioner of Mines.
Air Pollution Control Ordinance

Exemption for Emergency Works

• Where there is a threat to human life or building safety.

• Immediate repair of utility services, road collapse or road blockage due to accidents.
Air Pollution Control Ordinance

Air Pollution Control (Volatile Organic Compounds) Regulations

- Effective on 1 April 2007
- Covers regulated products locally manufactured or imported for sale at local market or proprietary use
- Control VOC content in architectural paints, printing inks and six selected consumer products:
  - Air fresheners, hair-sprays, multi-purpose lubricants, floor wax strippers, insecticides and insect repellents
Air Pollution Control Ordinance

Air Pollution Control (Volatile Organic Compounds) Regulations

- **Not** apply to products for export, re-export, transshipment or in transit, or those products manufactured or imported prior to enforcement
- Surprise surveillance, spot checks and testing
Air Pollution Control Ordinance

Air Pollution Control (Volatile Organic Compounds) Regulations

- Exemption:
  (a) Vital public health or security function
  (b) Public interest
  (c) Trade samples

- Display manufacturing date and information on VOC
- Warning label

The content of volatile organic compounds in this product exceeds the prescribed limit that is to be implemented with effect from 1 January 2008. Volatile organic compounds cause air pollution.

本产品的挥发性有机化合物含量，超出将於2008年1月1日实施的訂明限制。挥发性有机化合物引致空氣污染。
Air Pollution Control Ordinance

- **VOC Control:**
  - Beware of the prescribed maximum limits of VOC content
  - Choose non / low VOC paints during design stage
  - Assess usage of paint products, do not over purchase
Air Pollution Control Ordinance

**Legislative Control of Asbestos:**

- **Air Pollution Control Ordinance (Cap. 311)**
  - owners to appoint registered asbestos professionals to prevent and control of asbestos release to the environment

- **Waste Disposal (Chemical Waste)(General) Regulation, (Cap. 354)**
  - to ensure proper packaging, labeling, transportation and disposal of asbestos waste
Asbestos Control in Renovation or Demolition Projects:

Duties of Premises Owners:

1. Hire a Registered Asbestos Consultant to carry out investigation, who will prepare
   - Asbestos Investigation Report
   - Asbestos Abatement Plan

2. Submit an Asbestos Investigation Report and an Asbestos Abatement Plan to the Authority at least 28 days before commencement of the asbestos abatement work

3. Appoint a Registered Asbestos Contractor to conduct the asbestos abatement work
Air Pollution Control Ordinance

- Control on Asbestos Waste:
  - Chemical Waste Producer
  - Packaging & Labelling
  - Registered Waste Collector
  - Prior Arrangement with Landfill
The Authority may have regard to:

(1) relative location of source / place affected;
(2) Locality of place affected;
(3) time, duration and frequency;
(4) any of following effects:
  the deposit of dust, grit or particles;
  objectionable odour;
  Staining, corrosion, or damage to a building, plant, equipment;
  irritation of eye, nose, skin or any sensory discomfort;
  disturbance of normal activities by color or opacity;
  may affect public safety; or
  unreasonable for a member of the public to suffer
Odour Assessment

- Subjective in nature;
- affect people in different ways;
- more than one reaction at the same time;
- Complex composition and combined effects;
- Concentrations usually too low to be detected by instrument
Odour impact is affected by:
- the locality,
- wind direction,
- ambient temperature,
- humidity,
- nature,
- intensity,
- duration and frequency of the odour.

May need to conduct several visits to satisfy ourselves that nuisance exist.
Simple presence of odour does not establish a nuisance.

A subjective odour assessment must be made to determine if the odour is

Irritating; or

Objectionable; or

Cause sensory discomfort; or

Unreasonable for a member of the public to suffer
Appellant may initiate within 21 days upon receipt of APAN, refusal of applications, imposing terms & conditions

The Appeal Board may summons any person to appear (proper documentation)

Proceedings before a Appeal Board hearing are to be held in public
Air Pollution Control Ordinance

Licensing & Permitting
Air Pollution Control Ordinance (APCO) *(Cap. 311)*

1. Approval for Installation/Alternation of Furnaces, Ovens and Chimneys (IR)
2. Specified Process Licence (SP)
3. Permit for Open Burning
4. Notification of Construction Works
5. Certificate on Examination of Vapour Recovery System Petrol Filling Station
6. Notification of commencement of asbestos abatement work
APCO: Installation Regulation (IR) Applications

- Control air pollution from stationary sources

- Rate of fuel consumption (all furnaces added together in a premises) > limits:

  (a) 25 litres of liquid fuel/hour
  (b) 35 kg of solid fuel/hour
  (c) 1150 megajoules of gaseous fuel/hour
Main Categories of IR Applications

- Emergency generator
- Restaurant (Cooking stove)
- Industrial furnace and Chimneys
IR Approval Criteria

- Reg. 8 of the IR:
  - No contravention of the Ordinance.
  - No creation of air pollution including nuisance.
  - No air pollutant emission due to unsuitable design, unsuitable fuel, etc.:
    - Gas-fired stoves in restaurant - no cooking fume and odour nuisance.
    - Emergency generators - no nuisance caused by exhaust.
  - Effective control equipment installed at sources of emissions.
Approval Certificate

**Site visits:**

- Check any potential air pollution problem.
- Check whether the proposed installation has been made.
- Visit after technical assessment of the application.
APCO: Specified Processes

- 31 specified processes (SP)
  (eg. Cement manufacturing plant)
- Licence required for conducting a SP
- Exemption for existing premises if notify
  Authority within specified period
- Authority may de-exempt
Specified Processes

- Adopt the *best practicable means (BPM)*:
  - Prevent emission of any noxious or offensive emission into the atmosphere
  - Rendering such emissions harmless and inoffensive

- Finalised BPMs for SP are available at EPD website:
Processing of Specified Processes

- Public notification in newspaper (Chinese & English)
- 30 days for public objection
- Decide not earlier than 40 days after publish
- Granting criteria [s.15(3)]:
  (a) Use BPM
  (b) Maintain AQOs
  (c) No noxious or offensive emissions prejudicial to health
  (d) Consider Outline Zoning Plans (OZPs)
Offences (Specified Processes)

- S.12 – Not using best practicable means for preventing emission of noxious or offensive emissions
- S.13 – Conduct SP process without licence
- S.21 – Addition, alteration or notification of relevant plant or chimney resulting in non-conforming with any particulars in public register without prior application to EPD
- S.30A – Contravene any term or condition
APCO: Open Burning

- Combustion of materials outdoor without enclosure (smoke generated not directed through a chimney)
- Exclude normal use of appliances eg. Soldering iron

*Types of Open Burning Activities:*
- Exempted open burning activities
- Prohibited open burning activities
- Permit control for other open burning activities
Exempted Open Burning

1. Burning of joss paper, incense, etc. in religious rites, festivals and on festive occasions.

2. Fires used solely for recreational purposes, e.g. BBQ.

3. Fire testing, training and education by any government fire fighting force or agency.

4. Agricultural burning for weeding, land disinfecting, pest control, making firebreaks in the countryside.

5. Emergency for ensuring public safety.
Prohibited Open Burning

*Disposal of construction Waste*

*Site clearance*

*Disposal of Tyres*

*Salvage of metal*
Open Burning Permit

1. Allow at least 28 days for application

2. Applicant shall prove:
   a. an absolute need for the burning
   b. no other practical alternative
   c. no adverse environmental impact

3. Authority may impose terms and conditions
### Offences (Open Burning)

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<th>Penalties</th>
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<tr>
<td>1. Carry out prohibited open burning</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Conviction: Level 5 ($50,000)</td>
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<tr>
<td>2. Carry out open burning without a permit or in contravention of permit conditions</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; or subsequent conviction: Level 5 ($50,000) and 3-month imprisonment Continuous fine: $500 every 15 minutes</td>
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Notification of Construction Works

- Site formation
- Reclamation
- Work carried out in any part of a tunnel that is within 100 m of any exit to the open air
- Road construction work
- Demolition of a building
- Construction of building foundation
- Construction of building superstructure
Air Pollution Control Ordinance (Chapter 311)
Notification pursuant to Section 3(1) of the
Air Pollution Control (Construction Dust) Regulation

Form NA
Notification of Commencement of Asbestos Abatement Work

- Owner of premises engages a registered asbestos consultant for investigation and abatement plan.

- Owner notify Authority in not less than 28 days in writing of the date of asbestos abatement work.

- Owner appoints a registered asbestos contractor to carry out the work.
Air Pollution Control Ordinance

Case Study
Thank you