

**Anonymous, postcode not supplied**

**What do you think are the key environmental challenges which will impact the EPA in the future?**

The increasing effects of climate change will require the EPA to enforce harsher regulations on industries.

**What aspects of the EPA's work do you value and wish to preserve in the future?**

Monitoring of polluting industries. Enforcement of air pollution regulations. Protection of water quality. Anti dumping monitoring and litter reporting.

**How can the EPA effectively work in partnership with other government agencies to meet the environmental challenges of the future?**

The EPA should not re invent the wheel instead support existing programs such as waterwatch and landcare and other citizen science and non government community programs that are already in the space. It should support grassroots efforts to improve and protect the environment and help facilitate them. Instead of developing its own citizen science water monitoring there are already existing groups that have been doing it for many years but are now under resourced.

**How can the EPA's role in safeguarding the community against the health impacts of pollution be clarified or strengthened?**

At the moment fugitive emissions are classified as "nuisances" where a new business does not need to fill out an epa license but it relies on local councils to monitor. Local councils do not have the adequate monitoring equipment, staff, funding or scientific knowledge to carry this out. I believe there is a loophole allowing industries to escape regulatory oversight and this needs to be looked into.

**How could statutory frameworks more effectively prevent future environmental risks and land use conflicts?**

PM 2.5 particles need to be standardised in National Air Quality Standards and failing this implemented on a state level. This will have the most effect on human health such as decreasing heart and lung deaths and illnesses.

**What role should the EPA play in emergency management?**

The EPA should develop and extend rapid air monitoring as stated in the Hazelwood Mine Fire first report to improve data collection which will better inform other agencies. It should consider sending text messages on high pollution days so that people can take steps to reduce its effects.

**How can the EPA better identify and, where necessary, address problems that are the result of past activity?**

It should work more closely with local councils to implement information sharing about abandoned industrial sites that may still contain asbestos or other hazardous materials.

**What can the EPA do to avoid potential future problems?**

Listen to the community as they will be the first to notice problems in their areas and respond to their complaints in a timely manner. If people think their concerns will go unheard they will become apathetic about reporting problems in future.

**What role should the EPA play in improving environmental outcomes beyond those necessary to safeguard human health?**

Communication with the public is the key. The EPA relies on reports from members of the public who collect data. It follows that collecting this data can be made easier by utilising something citizens carry on their persons at all times which are smart phones. The ability to send photographic and video evidence to the epa can be improved through a smartphone app that makes this process easier and can also be used as a way to alert users to high pollution events. The EPA has a litter reporting app and maybe this can be extended to include other purposes.

**What role should the EPA play in reducing greenhouse gas emissions?**

The reduction of greenhouse gases will require a regulatory approach as I do not believe market forces will achieve it. Older polluting infrastructure needs to be targeted first in favour of cleaner and newer technology and if they cannot improve their emissions they need to be dealt with to protect human health. For example older diesel vehicles that emit black smoke are just as harmful as old power stations where the air scrubbers are not working. The EPA should be seeking to curb the most powerful greenhouse gas which is methane by adopting emissions standards that can be enforced through low cost technologies and methods.

**How do you see environmental justice being applied to the work of the EPA?**

Environmental justice goes hand in hand with social justice. Highly polluting industries are often in low socio-economic areas and by paying closer attention to this and targeting its resources the EPA will have the best effect. For example air pollution affects these areas much more than in better resourced areas who can afford adequate legal advice to prevent hazardous industrial developments.

**What can we adopt from other regulators and regulatory models to implement best-practice approaches and ensure that the EPA can rise to key future challenges?**

Self reporting needs to be changed as industry will abuse the process. A tax needs to be introduced on polluting industries to help fund more monitoring by the epa and other agencies as a result of misleading reports or leaving out relevant data. The EPA needs to implement more live monitoring through the use of surveillance cameras to catch illegal dumping and air quality cameras the community can monitor themselves

such as this one - <http://breatheproject.org/about/> The Breathe Project is a coalition of residents, businesses, government and many other groups in southwestern Pennsylvania in the US. Projects such as the Clean Air Taskforce are showing how methane emissions can be discovered more easily through the use of low cost infrared camera technology <http://www.catf.us/resources/publications/view/205> The EPA can work with the open source community by opening more of its data to let them build interactive applications that lets the community know what it is breathing. Indoor air quality also needs to be addressed by the EPA. The EPA can and should implement modern technology to ensure more pollution sources are identified and the owners forced to act. Camera technology both overt and discreet can go some way toward filling the gaps in the EPA monitoring needs instead of relying totally on the community to report things.

**Are there any other issues relevant to the Terms of Reference that you would like to raise?**

I believe the EPA needs to be better resourced to meet the challenges it faces. Not only to support itself but to support active community involvement through other programs.

The EPA must prioritise action on the pollution sources which are the greatest contributor to pollution levels and have the biggest impact on human health in Victoria. This is important because the World Health Organisation has announced that Air Pollution is a Group 1 carcinogen.

Source : [http://www.iarc.fr/en/media-centre/iarcnews/pdf/pr221\\_E.pdf](http://www.iarc.fr/en/media-centre/iarcnews/pdf/pr221_E.pdf)

These include bushfire/burn off smoke, diesel engine exhaust, solvents, metals, and dusts. PM2.5 in particular MUST be an important regulatory standard given its real danger to increase mortality in the population as seen after the hazelwood mine fire. To address climate change gases such as methane need to be monitored and the sources of its emission identified and addressed.

Source : <http://www.abc.net.au/news/2014-09-12/hazelwood-mine-fire-pollution-blamed-for-11-deaths/5740824>

The EPA must prioritise action on human health rather than focusing on the burden on polluters. The focus must be on the pollutants that create the greatest health impacts on Victorians, and the pollution sources that put an unfair burden on local communities. The current EPA regime is based on self reporting. The EPA needs more rigorous enforcement provisions because of the serious externalised costs to the public health system. The state based EPA lacks the funding to take large multinational polluters to court.

Communities have a right to know what toxic pollutants are being put into the air around us. The National Pollutant Inventory must be strengthened and properly resourced.

The EPA must give air pollution the priority it deserves and fix the biggest sources of pollution as a priority. This will require using new technology to make monitoring much easier and responsive to immediate concerns.

I have concerns about local pollution reporting and if that is an adequate system.

I am informed by the EPA that “if a business does not fall under the type of industry that the EPA regulates then it must be registered with the local council.”

Therefore complaints about emissions/odours from non-EPA regulated industries should be addressed to the environmental health department of the appropriate local

council as, despite reporting complaints to the EPA, the EPA can't act on it unless the council ask them to, thus rendering EPA reports useless.

Another concern though, could it be that industries which have the potential for significant odour/emissions are slipping through the system because the appropriate environmental assessments are not being completed in the planning permit stage? This occurs via the following ways.

1. Local Council deliberately underplay a planning application to facilitate quick processing for approval
2. Local Council have not done their due diligence to ensure the planning permit application is appropriate, which highlights incompetence and/or;
3. The community are apathetic to the proposal

The recent planning application for the Toongabbie Chicken Broiler Farm is the perfect example. Luckily, this community is not apathetic. There are two permit applications to house 400,000 birds each that are being assessed separately and run concurrently but, cumulatively, total 800,000 birds. The next biggest chicken farm I believe to be 387,000 birds. Yet both applications state that an Odour Environmental Risk Assessment (Odour ERA) is not needed for the separate 400,000 capacity applications.

We are going into unknown territory here with significant odour potential impacting the surrounding community that Wellington Council have not addressed in the permit application. Who will set licensing conditions, EPA or Local Council? If it is Local Council, how will they monitor for compliance, how will it be regulated and how do residents report odour complaints? Under local bylaws would odour complaints be just treated as a nuisance from an 800,000 broiler farm even though there could be multiple environmental hazards from an industry that size that would have numerous origins for odour releases? And will Local Council only know about a problem if it is reported?

Firstly, Wellington Council needs to explain to the community of Toongabbie who the responsible authority will be to manage a farm this size without the appropriate Odour ERA? Secondly, is Wellington Council saying that they have the technical expertise and capacity to know that a broiler farm that size will not have significant odour issues and thirdly, what if they get it wrong?

My question is, where is the information to make informed decisions available to the local ratepayers on these EPA unregulated businesses? Who monitors this on behalf of the local council? Do they have the scientific knowledge available and/or the required equipment to carry out monitoring?

The EPA makes emission reports public so that we are informed but where are the reports sent to council? Where do we find this information and how do council show their ratepayers that they are being transparent?

The EPA should address and fix the loopholes local councils use to bypass EPA regulations. All businesses should submit an odour risk assessment to the EPA when at the planning stage which has the requisite skills to test and monitor pollution. This responsibility should not pass to local councils.

The EPA should support existing programs and where it conflicts not try to copy the program itself rather ensure the existing program has adequate funding and resources to continue. Cut backs to waterwatch have placed the health of our rivers in danger and may lead to pollution sources being identified.

The EPA should utilise modern technology to fill the gaps that are caused by relying on public reporting. These may include the following –

## Smartphone reporting apps with notifications.



From the NSW EPA <http://www.epa.nsw.gov.au/pollution/reporttoepa.htm>

“Mobile sensing”: smartphones already have technology that allow to catch what is happening around you, by taking a picture or recording the noise level. Even without a scientific protocol, the amount of crowdsourced data can reach a threshold that is enough to reflect the actual situation. The EPA can tap into this data to improve it’s enforcement capability.

## Covert surveillance cameras



Camouflaged camera within a bollard. Courtesy of Ryde City council.

<http://www.epa.nsw.gov.au/illegaldumping/surveillance.htm>

“Where dumpers were aware of the illegality of dumping, a covert approach generating successful prosecutions was effective in changing behaviour. Time invested in strategic camera placement and creative concealment is rewarded by capturing clearer images and minimising camera theft.”

## Air pollution cameras accessible via the internet

A new system of high-resolution cameras developed by Carnegie Mellon University's CREATE Lab in the Robotics Institute will allow the public to track where emissions are coming from and when. This could be adopted in high air pollution regions such as the Latrobe Valley to allow citizens (and the EPA) to monitor the area and see trouble spots.

<http://breatheproject.org/learn/breathe-cam/>

The screenshot displays the BREATHE CAM web interface. At the top, there is a blue header with the text "BREATHE CAM". Below the header, the main content area is divided into several sections. On the left, there is a vertical navigation bar with a circular icon at the top and a vertical line with several small square icons below it. The central part of the interface is a large video player showing a live feed of an industrial area with a river and hills in the background. To the right of the video player, there is a calendar for December 2014, showing the days of the week and the dates. Below the calendar, there are four smaller video thumbnails labeled "North Shore", "Downtown", "Mon. Valley", and "Oakland". At the bottom of the video player, there is a play button, a timestamp "12/04/2014 11:50 AM", and a progress bar. To the right of the video player, there are several control buttons: "Change Detection", "Share", and "Help". Below the video player, there is a table of air quality data for two sensor locations: Avsilon and Lawrencoville. The table has columns for Sensor Location, Fine Particles (2.5 µm), RS Particles (10 µm), Sulfur Dioxide (PPB), Temperature (F), Relative Humidity (%), and Wind Speed & Direction. The data for Avsilon is: Fine Particles (2.5 µm): 32, RS Particles (10 µm): N/A, Sulfur Dioxide (PPB): 3, Temperature (F): 33.3, Relative Humidity (%): N/A, Wind Speed & Direction: 1.3 MPH, S. The data for Lawrencoville is: Fine Particles (2.5 µm): 20, RS Particles (10 µm): N/A, Sulfur Dioxide (PPB): 1.4, Temperature (F): 34.7, Relative Humidity (%): 60.6, Wind Speed & Direction: 1.7 MPH, ENE. At the bottom of the page, there is a small note: "Note: ACHC monitoring stations do not uniformly track the same air quality and meteorological data. When a given station has no report on a particular parameter, the data will be displayed as 'N/A'."

| Sensor Location | Fine Particles (2.5 µm) | RS Particles (10 µm) | Sulfur Dioxide (PPB) | Temperature (F) | Relative Humidity (%) | Wind Speed & Direction |
|-----------------|-------------------------|----------------------|----------------------|-----------------|-----------------------|------------------------|
| Avsilon:        | 32                      | N/A                  | 3                    | 33.3            | N/A                   | 1.3 MPH, S             |
| Lawrencoville:  | 20                      | N/A                  | 1.4                  | 34.7            | 60.6                  | 1.7 MPH, ENE           |

Note: ACHC monitoring stations do not uniformly track the same air quality and meteorological data. When a given station has no report on a particular parameter, the data will be displayed as "N/A".

## Low cost Infra Red cameras for fugitive methane and other gases

Infrared cameras are now being deployed that can make invisible leaks of natural gas visible. Take a look at the storage tanks in the two pictures below. The first is with a regular camera, or the naked eye, the second is utilizing a FLIR GF 300 infrared camera (FLIR is the manufacturer). The plumes of what appear to be smoke coming out of the top of the tanks are actually invisible gases: methane and other hydrocarbon pollutants.



The EPA should support art and citizen science projects that educate the population and make environmental pollution a more visible problem.

<http://www.flukerpost.com/> is one example of this.

Everybody can now buy an air quality sensor and assess by himself how breathable is the air around him. With the drone technology that has also become more affordable, small cameras or sensors can fly over hardly accessible areas or between skyscrapers in cities to collect data that usually require a huge deployment of fixed sensors. The EPA should become a valuable contributor to such efforts by open sourcing its data collection and making it available to developers to integrate into their projects. This will lead to more collaborative efforts and build trust in data collected by the EPA. Allowing the public to contribute and interact in new ways will make them more open to acting on EPA advice.