



groundWork

Environmental justice action

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Sasol offset implementation plan Comment by groundWork, Friends of the Earth, South Africa

Date: 29th January 2016
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Pages: Seven

First, we do not accept the basic premise of this intervention. Reducing emissions from any source is a good in itself but does not ‘offset’ emissions from any other source. It would be absurd to propose that domestic emissions could be offset by reducing industrial emissions. It is equally absurd to pretend that industrial emissions are offset by reducing domestic emissions.

The Air Quality Act (AQA) of 2004 provided for ambient and emission standards. These standards were thoroughly debated over the next five years and minimum emission standards were promulgated in 2010 for implementation in 2015. In all those ten years, Sasol and Eskom did nothing to prepare for implementation of the standards. Instead they declared, in 2013, that they would not meet the standards. Offsets were then produced, like a rabbit from a conjuror’s hat, to condone non-compliance.

Hence, in March 2015, the Department of Environmental Affairs (DEA) allowed Sasol to ‘postpone’ compliance with minimum emission standards in exchange for an offset programme. This is the cheap option to compliance. It works in the same way as a mediaeval indulgence: Sasol may carry on sinning, at considerable profit, providing it pays the much lesser cost of a penance.

The minimum emission standards enable communities to hold corporations liable for polluting them. The offset absolves the corporation of liability. At the same time, it outsources government’s responsibility for healthy human settlements served with clean energy.

Thus, the interests of the community are at stake on both sides of this deal. Yet this deal is struck between Sasol and government. In so far as communities have been consulted, they have denounced offsets in principle and this deal in particular. It appears, however, that the matter was already decided and community views were already excluded. Now, the community is asked to comment on the projects that result from this deal and participate in their implementation.

In discussing these proposals, including at meetings called by Sasol and Natref, people from community organisations have reiterated several points:

1. These projects cannot substitute for compliance with minimum emission standards. Sasol must provide a roadmap to compliance showing what steps Sasol will take by what dates. Sasol's response, at its Sasolburg meeting on 3rd December, that it cannot guarantee compliance by the end of the postponement period and may therefore request further postponement, suggests postponement without end and is not accepted.
2. Implementation of priority area air quality management plans (AQMPs) is the primary process and government and corporations must demonstrate their commitment to reducing industrial emissions within set timeframes in that context. The so called offset projects must not divert that process or be given priority within it.
3. Source apportionment studies have been mandated within the AQMP process and should be funded by Sasol and other corporations on the polluter pays principle. Sasol proposes more limited source apportionment studies for the offset process. We note that Sasol controls the offset source apportionment study whereas the AQMP study is accountable to the Implementation Task Team (ITT). The offset study cannot be allowed to divert funds or resources from the main study but must be additional to it. Sasol cannot offset its AQMP responsibilities through the 'offset' process.
4. A baseline for the distribution of pollution is necessary but not adequate. There must also be a baseline for people's health so that the existing health impacts of pollution are understood before Sasol's offset projects are implemented. Such a study should create the basis for monitoring people's health through the systematic collection of statistics from hospitals, clinics and doctors. Baseline studies and health monitoring should be under the auspices of the AQMP as any process managed by Sasol or other corporate polluters will lack credibility.
5. Since Sasol's projects are accounted as offsets, are they terminated with the expiry of the postponement or when Sasol's plants are brought into compliance with minimum emission standards? Who then takes responsibility for the projects?
6. Irrespective of what Sasol does with its offset projects, we expect government to pick up its responsibilities concerning domestic energy and emissions. To date, government has done nothing more than the Basa Magogo programme which was always a cheap way of avoiding a real response and has proved utterly ineffective.
7. Similarly, government needs to provide healthcare staff and facilities adequate to the crisis of health created by the pollution of the Vaal and Highveld. This should include 24 hour clinics able to respond to emergency pollution events at night and specialist staff to deal with respiratory illness. The system must be developed to enable better

access to public healthcare. In this respect, we note that local people do not trust that corporate health professionals will give a proper diagnosis where the corporation's activities are the likely cause of illness.

Sasol's projects

1. Veld fires.

Sasol's draft offset plan is light on detail. We note that fire is integral to the ecology of the Highveld grasslands. Fire management is necessary as the original ecology and fire regime has been transformed but should nonetheless take account of the ecological need for fire.

The Sasolburg plan says Sasol will "enhance the capacity of Metsimaholo Municipality" to manage fire. The Secunda plan says Sasol will "work with the Fire Protection Association of Govan Mbeki Municipality". In both cases, it seems likely that the municipality will incur increased costs. The draft plan is silent on how much and how those costs will be funded.

The plan makes use of 15 'Eco-Rangers' appointed by the Free State government. Sasol will sponsor "2 vehicles and 2 water skid units" for the rangers. It is not stated if this covers maintenance or replacement or if these costs are transferred to the Free State government at the end of the postponement period.

2. Vehicle emissions testing

The plan is to test heavy vehicles entering Sasol sites. We do not understand why this should be accounted an offset rather than an integral part of Sasol's environmental management programme.

3. Reduced dust from unsurfaced roads

Sasol says it will "conduct trials with a chemical stabiliser that in appearance looks like a tarred road, and which would limit dust emissions" as "tarring ... is costly". A pilot project will: establish if the stabiliser will reduce dust from "low volume traffic in unsurfaced community areas"; obtain community buy in; and train local people to apply the stabiliser.

It thus appears that paving is too costly for poor areas. The proposal is for a very limited intervention that does not look beyond the surface of the road. Further, Sasol appears to be committing only to trials. It is therefore not clear if there will be any actual dust suppression or who will be left with the bill for that. Beyond that, we wonder if this project will open new markets for Sasol's products.

Sasol says nothing about the chemical composition of the chemical stabiliser or how it will be applied. It seems, however, that large quantities of chemicals will be introduced into the environment. They may blow in the wind when applied and they may be dispersed in the

environment as the treated surface breaks down. Sasol's draft document does not suggest any prior consideration of the impacts on people's health or the environment.

4. Waste recycling

This project is proposed for Zamdela, Sasolburg, and aims to reduce waste burning and increase recycling. These are laudable objectives. However, the project was developed without consulting Sasolburg waste pickers who are organised under the banner of Ikageng Ditamating Recycling Cooperative, an affiliate of the South African Waste Pickers' Association, and are already leading recycling efforts in Sasolburg. As written, it appears rather to muscle in on the waste pickers' economy.

It is not clear what the scope of the project is, whether it is community based or school based, restricted to Zamdela or municipal wide. While the description talks of establishing recycling points at 'eco-schools', milestones include: "Build a Metsimaholo Recyclable Waste Removal and Value Creation Model". It is not clear what this means, if a 'model' is merely conceptual or if it implies implementation. And if, as the phrasing suggests, this is a comprehensive plan for recycling in Metsimaholo, it is not clear why Sasol should lead it or why there is no reference to the municipal integrated waste management plan of which it is presumably a part.

Under 'partners', the draft document says that Metsimaholo will contribute "land for buy back shop/ recycle depot/ parks". The construction of these facilities is not mentioned under 'project scope and milestones' but we are told that "waste collected will be removed to a site where it will be compacted, where after it will be sold to a recycling enterprise." It seems that these facilities are central to the project but are conjured out of air.

The next sentence reads, "Funds generated from the sale of waste will subsidise the project to create value throughout the waste recycling collection train." It is not clear for whom 'value will be created' but it sounds as if it will support project management. Those who work in collecting, bailing and selling the waste are not visible. Perhaps it is imagined that this work should be voluntary. The existing recycling economy organised by waste pickers is also ignored.

We suggest that this project needs to be re-conceived from the ground up and should not go forward without full consultation with organised waste pickers in Sasolburg or other local organisations addressing waste. It should then be clearly described.

5. Household waste

This is primarily a household waste collection project. It is not clear to us why the municipality should wait for a Sasol offset project to carry out a core function. Such a service should be well designed and recycling and composting should be part of it. This should be covered in the integrated waste management plan (IWMP). We note that the Waste

Management Act obliges municipalities to consult specifically with waste pickers as well as the community. Any project that supplements or substitutes for the municipal service must do likewise.

6. Domestic emissions – RDP housing retrofit

We have long since argued that badly built houses with poor thermal properties impose high energy costs on poor families and exacerbate domestic emissions. Government has made a mess of housing, allowing shoddy building to the benefit of contractors and at the cost of residents. Government has the primary responsibility for fixing the mess and for addressing domestic energy and emissions in a holistic manner. Outsourcing this responsibility through an ‘offset’ is deeply cynical.

Sasol’s project is described by way of the KwaDela pilot project and relies primarily on the insulation of RDP houses. It appears to us that the project is being done on the cheap. It does not address underlying issues relating to poor building quality and creates new environmental hazards within people’s homes and in the wider environment.

Sasol considered three levels of retrofit at KwaDela:

- Basic: ceilings & draught proofing.
- Intermediate: Basic + Trombe wall, north side. (It’s a form of solar space heating.)
- Full: Intermediate + insulation of other external walls.

Draught proofing is the obvious first step but unless structural defects are dealt with in each house, cracks are likely to open up again within a relatively short period. Hence, each house should be inspected and repairs and retrofits designed accordingly.

Draught proofing must be accompanied by proper ventilation particularly where there are indoor fires. Old coal or wood stoves with cracks that leak smoke must either be fixed or replaced and all smoke must go up a chimney. A cowl & chimney should be installed if people are using paraffin, rocket stoves or *mbaulas*. Indoor air must be vented and replaced to prevent a build up of CO, CO₂ and smoke. Incoming air should be warmed through a heat exchanger (e.g. using heat from the chimney).

Expanded polystyrene sheets are used for ceilings and external wall insulation. For the wall insulation, it is applied to the outside, covered with a plastic mesh and then plastered over. While the principle of insulation is sound, we have the following concerns with the use of polystyrene:

- Gases used during manufacture are toxic.
- Thermal resistance (R value) depends on thickness but is rather low and deteriorates with time.
- Houses (or walls) will be demolished or will collapse sooner or later. Polystyrene will then litter the countryside.
- Polystyrene constantly releases toxic styrene (vinyl-benzene) vapours.

- Fire hazard: Burning polystyrene melts and sticks to the flesh like napalm. Heat from a house fire will accelerate styrene vaporisation. The vapours may then catch light with or without a spark.
- Polystyrene panels are typically treated with brominated fire retardants (HBCD) which is toxic.
- The plaster is applied to a flexible surface and may crack with any impact.

Options which avoid these problems should be investigated for any housing retrofit. Options for ceilings include:

- Ceiling board and sisalation;
- Wool or cardboard insulation lined with foil. Note that a doubled insulation & foil layer doubled results in very little heat loss.

Options for wall insulation include wool (or cotton) batts lined with foil and plastered over or cardboard honeycomb sheets plastered over. Both are treated with borax to retard fire. These are non-toxic and biodegradable options. They have high R values and retain it over time.

Windows are not mentioned in Sasol's draft plan. Insulating walls will make little difference if the heat escapes through the windows. Options include double glaze windows, insulating shutters or double lined curtains. A foil layer or lining with shutters or curtains improves performance.

Sasol's Trombe wall is constructed with a polycarbonate sheet on a wooden frame fixed to the north wall of the house. This creates a mini-greenhouse between the sheet and the wall. The wall is painted black to absorb heat which is then radiated through the wall and into the house. Sasol says its design at KwaDela was "adjusted to exclude extra building mass and air vents". That is, it was cheap and will perform accordingly. The single skin cement block will lose heat rapidly after sunset.

A good Trombe wall relies on mass which retains heat and releases it gradually during the night. It also comes with a ventilation system which circulates warmed air back into the house in winter. In summer, warmed air is vented to the outside and this is used to draw cool air in from the south side of the house. The ventilation has to be actively managed so householders need to be told how it works.

Hence, repair and retrofit plans for each house should include construction of a high mass wall. Options include double skin clay brick or rammed earth. A great deal of energy is used in firing and transporting clay brick so rammed earth (or similar materials such as green brick or cob) is preferable. The only energy input is human labour.

Sasol says: "In summer the acute sun angle limits the heat collection of the Trombe wall and thus does not cause excessive heating." The wall should in fact be shaded in summer by an extension of the roof or by making a canopy roof. Vents must be included to allow heat to vent and draw in cooler air.

Sasol's draft project does not support alternative energy (i.e. non-burn) in households but this would be needed in a holistic plan to address domestic emissions.

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