

Activity: EMERGENCY AND LOAD SHARING DIESEL GENERATOR RETROFITS

Impact/Benefit

- Emission reductions from that type of source:

(While it is not necessary, and may not be possible, to quantify the emission reductions, quantitative estimates may be more useful than purely qualitative estimates (large medium or small)).

If diesel particulate filters (DPFs) are installed, PM reduction would be approximately 85 to 90 percent. However, if generators only run for small amounts of time, there is very little emissions reduction benefit overall. Additionally, DPFs require engines to reach a certain temperature, and stationary generators that do not run enough will not reach peak temperature.

Requiring stationary diesel generators in the CAIP area to run with ultra low sulfur diesel (ULSD) and/or biodiesel would also reduce particulate matter, and volatile organic compounds (VOCs).

- Number of similar sources (large or small number):

(For example, there are a lot of vehicles in the communities, but probably a relatively small number of outdoor wood boilers).

The total number of stationary generators in the Phillips area is **still unknown** at this point. There is a stationary generator at Abbott Northwestern Hospital, however, the type and the amount of time that this generator actually runs is still unknown.

Contact has been made with Xcel Energy to try and determine additional load-sharing generators in the area, but no data obtained yet.

The total number of generators, as well as their contribution to the overall air quality impacts, still needs to be determined.

- Severity of the impacts to be mitigated:

Diesel emissions in general are a risk driver for health. However, the impact of stationary generators depends on 1) how many there are, and 2) the amount of time that they run. One important note, however, is that load sharing generators tend to run during peak load times, which also happen to be days with elevated ozone levels.

Previous MPCA research from other hospital generators indicated very low running times (10-12 hours per year). If they do not run often enough, it will not be cost effective to retrofit any of the generators.

- Visibility of the impacts:

(For example, the unique paint jobs of hybrid buses make them more visible, whereas clean diesel buses produce significantly fewer emissions than standard buses but are less visible.)

Low visibility.

Plan

Need to determine # of generators in the area. For the hospital, determine the type and running time of their generator.

Implementability

- General feasibility (easy, difficult):

Retrofits: Medium to high. There may be funds available to retrofit stationary generators, but the cost effectiveness to retrofit the generators may be too low. Difficulty in determining the true number of generators in the area, because of the sensitivity of the information. Note: if a DPF is installed, ULSD fuel is required.

Fuel replacement: low to medium. The cost differential between ULSD/biodiesel and standard 500 ppm diesel is minimal. The only real obstacle to implementation is the fact that both ULSD and biodiesel have recommendations to rotate the fuel in a stationary generator so the fuel is used before it is six months old. Given the limited running time of most generators, this may present a problem for generator owners.

- Cost of implementing (financial and labor):

Retrofits: DPFs for stationary diesel generators are anywhere from \$7,000-10,000 (plus maintenance afterwards for generator owners).

Fuels replacement: little to no cost.

- Need for additional funding, list of possible funding sources:

There could be funds available to pursue retrofits for stationary generators.

- Recommendation on how to and who should pursue funding:

To be determined.

- Labor required and available to implement activity (volunteer or professional labor):

Professional labor is typically required to install retrofit devices. Additionally, DPFs require maintenance (filter cleaning) to run properly.

- Timeframe to implement: (one-time or on-going): **on-going**
- Ripeness for action:
 - This activity can be initiated immediately **no**
 - This activity needs funding retrofits **yes**
 - fuel replacement **no**
 - Funding for the activity can be secured immediately or soon **maybe**

Recommendation

If the amount of generators in the Phillips area can be determined, and it has been determined that it is cost effective to pursue retrofits, than the group could implement as resources become available.