

## **Transforming PES: A Renewables Focused Energy and Resource Recovery Hub**

The Philadelphia Energy Services site plan has to be **deliberate** (like a master plan but more like a coordinated effort that thinks sustainable and long term, anticipating changing technologies and environmental changes like ground and tidal river incursions), **collaborative** (with the impacted communities, city, state, and federal governments, workers, and the business community), and **comprehensive** (looking at the property as both a tremendous asset and as an environmental nightmare). Whether collaboratively crafted with a new Owner, with the existing Owners, or independently, done well, the plan can simultaneously solve multiple challenges facing the City: Climate Change; Citywide waste disposition; Site resilience and clean-up; Job creation; and Job training.

To meet the challenges posed by a changing climate, the City has set a goal of decarbonization (80% decrease in carbon by 2050). Spending money or time to re-establish a 'dirty' energy hub flies in the face of that goal and runs counter to what is needed to address climate impacts; especially at this site. Rather, Philadelphia should work with a new Owner, with the existing Owners, or independently, to **create a renewables focused energy and resource recovery hub** that concentrates on energy recovery and material transformation from the City's waste stream rather than the current processes that refine virgin or ground-stored sources. This hub would be a center for **a new Circular Economy in Philadelphia** – regarding waste as a valuable resource and input to new products and high-energy demand fuels.

While establishing the **energy and resource recovery hub** an aggressive, environmentally aware, workplan plan for real, substantial clean-up and long-term resilience, should be crafted and implemented. It is clear that the tried-and-true method of PADEP and EPA reports and tests is having limited impact on the pollution levels in the air, on the ground, in the ground water, or in the deep aquifer. A new paradigm needs to be developed that collaboratively devises and implements a phased, timely plan. Parties to this collaboration should at least include: the City; Evergreen; PES; Sunoco; PADEP; EPA; a remediation expert in partnership with the Pennsylvania Horticulture Society; and the AFL-CIO. It should also include resiliency experts to craft and implement a plan to manage and reduce the effects of rising tidal water and ground water.

The **energy and resource recovery hub** should include:

### **The Jobs**

- Instituting a large scale, net zero, decarbonization workforce training center that is jointly operated with the green community and the AFL-CIO to provide retraining based on existing, transferable skills, job placement, and education about issues including: life skills, climate issues, and the transition to a green energy economy. Establishing a joint program with the School District of Philadelphia for skills training.

## The Site

- Changing the language used to describe the site from PES and refinery to green industrial park.
- Using and incorporating phytoremediation on the site for clean-up. Installing a buffer of trees and vegetation around the industrial park to incorporate beauty and to work as natural air filtration.
- Adopting GSI techniques throughout the site to manage stormwater and tidal/ground water inundation. Decommissioning portions of the water's edge and installing a managed wetland to absorb flood waters.
- Installing a significant array of pollution sensors for air, soil, ground water, and deep aquifer monitoring that allows everyone and anyone to access real time data and track remediation efforts over time.
- Establishing an Industrial Park micro-grid that supplies all energy needs on the site using a mix of renewable energy sources including geothermal, fuel cell, solar and wind. Incorporate sensors to manage utilization.
- Requiring that all new and significantly renovated buildings on the site be built to net-zero energy standards.
- Installing Solar on all of the structures in the industrial park and structure the ownership as community solar for the surrounding neighborhood.
- Activating the site for City residents by opening up the river front and extend the Schuylkill River bike trail around the perimeter on a raised boardwalk.

## Potential Businesses

- Expediting the permit applications for RNG's digester plant that is slated for installation on the property. This facility is slated to process commercial, institutional, and industrial food waste in biodigesters to create two outputs: pipeline grade methane and compost. This food waste represents about 19% of Philadelphia's total landfill bound waste; recovering it as resources will help the City reach its **Net-Zero Waste** goals.
- Processing wood and other cellulose to create biodiesel and biochar, a high value soil amendment. This material represents about 20% of the City's landfill bound waste.
- Installing a trash gasification plant on the site. The potential is almost limitless for the waste and fuel sides of the equation. Waste Management, the City's current waste contractor, has a test gasification system in Pittsburgh that should be investigated. Although a 'burning technology' there are little to no emissions from this process.  
<https://www.technologyreview.com/s/413606/converting-garbage-into-fuel/>

- Considering processing low-and-high-value Plastics to recover oil and chemicals including: MLPs, polystyrene, polyvinyl chloride, polypropylene, and LDPE.

Transforming the PES to a green industrial park that is a renewables focused energy and resource Recovery Hub will benefit all Philadelphia residents now and into the future. I am available to discuss this and can be reached at [amy@greenbeams.us](mailto:amy@greenbeams.us) and 610-202-2555.

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