



## State of New Jersey

DEPARTMENT of ENVIRONMENTAL PROTECTION

CHRIS CHRISTIE  
*Governor*

BOB MARTIN  
*Commissioner*

KIM GUADAGNO  
*Lt. Governor*

Division of Air Quality  
Bureau of Air Permits  
401 E. State Street, 2<sup>nd</sup> floor, P.O. Box 420, Mail Code 401-02  
Trenton, NJ 08625-0420

### **HEARING OFFICER'S REPORT**

#### **Response to Public Comments**

FOR

#### **Hess Newark Energy Center**

Doremus Avenue and Delancy Street, Newark  
(ESSEX COUNTY), NEW JERSEY, 07105

Program Interest (PI) Number: 08857      Permit Activity Number: BOP110001

**AIR POLLUTION CONTROL OPERATING PERMIT (TITLE V)  
AND  
FEDERAL PREVENTION OF SIGNIFICANT DETERIORATION (PSD) OF AIR QUALITY PERMIT  
AND  
ACID RAIN PERMIT**

Hearing Officer

A handwritten signature in cursive script that reads "Francis C. Steitz".

---

Francis C. Steitz  
Assistant Director  
Air Quality Permitting Program

September 13, 2012  
Date

## HEARING OFFICER'S REPORT

### List of Commenters (in the order of appearance at July 27, 2012 public hearing):

<u>No.</u>	<u>Name</u>	<u>Association</u>
1.	Louis Correia	Resident of Newark
2.	Molly Greenberg	Ironbound Community Corporation
3.	Wilbur J. McNeil	Weequic Park Association
4.	Jeff Tittel	Resident of Newark
5.	Peter Montague <sup>[1]</sup>	Environmental Research Foundation NJ
6.	Nicky Sheats <sup>[1]</sup>	Center for the Urban Environment Thomas Edison College, NJ Environmental Justice Alliance
7.	Jean Lowrie	Resident of Newark
8.	Joseph Nardone	Resident of Newark
9.	Cynthia Mellon	Resident of Ironbound section of Newark NJ
10.	Luis Barreira	Resident of Ironbound section of Newark NJ
11.	Kim Thomson – Gaddy <sup>[1]</sup>	Newark Environmental Commission
12.	Henry Rose	Newark Resident
13.	Leonard Thomas	Resident of Ironbound section of Newark NJ
14.	Nancy Zak	Resident of Newark
15.	Louis Shockley	Resident of Newark
16.	Terri Suess	Resident of Newark
17.	Viva White	Resident of Newark
18.	Lillan Ribeiro	Resident of Newark
19.	Emily Turonis	Ironbound Community Corporation
20.	Wynnie-Fred Hinds	Resident of Newark

### List of Commenter(s) from whom written comments were received:

21.	Joseph Della Fave	Ironbound Community Corporation
-----	-------------------	---------------------------------

The individuals who made the following comments are indicated by the number in parenthesis at the end of the comment. The number corresponds to the number from the above list. Commenters noted with the superscript [1] also submitted written comments to the Department.

## Table of Contents

Section A) Air Quality Modeling -----	4
Section B) Air Quality Monitors -----	10
Section C) Permitting -----	11
Section D) Alternative Locations -----	22
Section E) Environmental Justice Comments -----	24
Section F) New Jersey Executive Order 215 and Environmental Impact Statement -----	31
Section G) Enforcement -----	31
Section H) Emergency Plan -----	33
Section I) Site Remediation -----	34
Section J) Land Use -----	34
Section K) Sustainable Energy/Energy efficiency -----	34
Section L) Gas supply -----	37
Section M) Global Warming/Climate Change -----	38
Section N) Energy Master Plan -----	39
Section O) Jobs -----	42
Section P) Other -----	42
Section Q) Response Areas Assigned to Hess -----	43
Department-initiated Changes -----	46

## HEARING OFFICER'S REPORT

### A) Air Quality Modeling

- 1) **Comment:** One commenter questioned the validity of the modeling use of meteorological data collected at 10 meters above ground at the Newark International Airport. This commenter asked the Department to get air charts that show the air movement around the Ironbound neighborhood, not at the airport. (1)

**Response:**

The meteorological data used in the modeling accurately represent the wind flows that will transport and disperse emissions from the Newark Energy Center. The meteorological data used in the air quality modeling analysis was collected at the Newark International Airport, only 2 miles southwest of the Newark Energy Center. All the necessary meteorological measurements needed for modeling, hourly measurements of wind speed, wind direction, temperature, and cloud cover recorded, were available. As required by EPA, five years of this data (2005 – 2009) was obtained and used in the modeling. The meteorological measurements are taken by the National Weather Service and are subject to a high degree of quality control to ensure that the data is accurate. Wind speed and wind direction are measured 10 meters (33 ft) above ground at an open location at the airport free from the influence of nearby buildings or other obstacles. Wind speeds above the measured 10 meter level are calculated by the model using detailed scientific equations.

The next closest site of high quality National Weather Service meteorological data in New Jersey is at the Caldwell Airport, approximately 13.5 miles to the northwest of the Newark Energy Center site. Because of the distance from the site and its location near the Watchung Mountains away from the coastline, it is much less representative of wind flows affecting the emissions from Newark Energy Center than the Newark Airport meteorological data.

- 2) **Comment:** This plant will emit up to 97.65 tpy of PM, which is barely under the 100 tpy threshold. Hess did not utilize the air monitor closest to the proposed facility, instead they used Bayonne and Jersey City. Also, Hess did not take into account diesel emissions from vehicles (one of the greatest contributors to air pollution in the Ironbound). (2)

**Response:**

Three years (2008 – 2010) of PM<sub>2.5</sub> and PM<sub>10</sub> measurements from the Department's Jersey City Firehouse monitor at 355 Newark Avenue were used as background concentrations. This monitor is located approximately 3.7 miles to the east-northeast of the Newark Energy Center site. The Department considers its measurements representative of existing PM<sub>2.5</sub> and PM<sub>10</sub> concentrations in the area around the Newark Energy Center because of its proximity to the site and the significant vehicle traffic in the

vicinity of the monitor. The Jersey City Firehouse PM<sub>2.5</sub> and PM<sub>10</sub> monitors are 150 yards east of the New Jersey Turnpike and, therefore, are impacted by both car and diesel truck emissions.

In 2010, the Department began collecting PM<sub>2.5</sub> concentrations at its Newark Firehouse monitoring site on 360 Clinton Avenue. It is 3.6 miles to the west of the Newark Energy Center. While it is slightly closer to the Newark Energy Center than the Jersey City Firehouse, it does not have three years of data available for use. The Department guidance specifies that background air quality concentrations should be based on three years of collected data. Also worth noting is that PM<sub>2.5</sub> concentrations measured at the Newark Firehouse in 2010 and 2011 are less than those measured at the Jersey City Firehouse, both on a 24-hour average basis and annual average basis. Therefore, use of the Jersey City Firehouse monitored concentrations for PM<sub>2.5</sub> background resulted in a more conservative analysis.

- 3) **Comment:** Several Commenters expressed concerns regarding emissions from existing sources of air pollution and what can be done to reduce air pollutant emissions from existing sources that affect Newark and other urban communities. (1, 4, 6, 8, 11, 19)

**Response:**

The Department has been focusing on reducing air pollutant emissions from existing sources that affect Newark and other urban communities including the following:

- a) Within Newark, an agreement was recently reached with Covanta to improve the particulate air pollution control system on the company's incinerators in Newark. While the current system meets the permitted rates, the new baghouse system will be the best available control technology for particulates and will achieve much lower particulate emission levels than the current emissions controls at the facility.
- b) The Department's statewide efforts to control power plant emissions have resulted in the installation of modern pollution control equipment at PSEG Hudson power plant coal-burning unit in Jersey City. Since 2005, actual emissions from this unit have been reduced as follows: particles emissions are approximately 98 percent lower, sulfur dioxide is approximately 95 percent lower, and nitrogen oxides are approximately 90 percent lower.
- c) Also, a two phase nitrogen oxides emission reduction rule (NO<sub>x</sub> RACT HEDD Rule N.J.A.C. 7:27-19.29 & 30) is reducing nitrogen oxides emissions from existing peaking power plants now, and will further reduce emissions in 2015. Based on currently available information provided to the Department by owners and operators of peaking power plants, over 2,000 MW of peaking power plants are expected to shut down by the May 1, 2015 compliance date and many of these shutdown plants are located in Essex County. This shutdown power would be replaced by new low-emitting gas fired power plants like the proposed Newark Energy Center, which has about 1% of the nitrogen oxides emissions as the highest emitting turbines used for peaking. Because

nitrogen oxides are pre-cursors of ozone, reductions in nitrogen oxides emissions will result in reductions in ozone formation.

- d) The Port Authority of New York and New Jersey is implementing a plan to reduce particulate emissions from diesel engines associated with the movement of goods at Ports Newark and Elizabeth (<http://www.panynj.gov/about/port-initiatives.html>). This is in addition to the Department's efforts to reduce diesel particulate emissions statewide, with special emphasis on urban areas. Under the Mandatory Diesel Emission Reduction Act (N.J.S.A. 26:2C-8), school buses, garbage trucks and most buses have been retrofitted with devices to control harmful diesel exhaust. The last phase of this program has just begun for retrofitting other public diesel vehicles, both on road and off road, with particulate filters. The Department has also begun a pilot program under the Governor's Executive Order 60 to retrofit privately-owned off road construction equipment if used in the performance of public contracts, again with an emphasis on projects in urban and densely-populated areas.

New Jersey's air quality is now cleaner than the current annual and 24-hr health standards for fine particulates (15 ug/m<sup>3</sup> and 35 ug/m<sup>3</sup>, respectively). On July 18, 2012, New Jersey asked EPA to reclassify New Jersey as in attainment statewide for fine particles National Ambient Air Quality Standards.

This monitored air quality improvement reflects the success of state and federal efforts to control existing sources of air pollution, which is resulting in the replacement of many higher emitting sources with much lower emitting sources, creating an overall net air quality improvement in Newark and throughout the state. The Department intends to continue its efforts to reduce air pollution from existing sources and realize continued air quality improvements in New Jersey, and especially in our urban areas.

- 4) **Comment:** One commenter stated that New Jersey's legal and regulatory system evaluates pollutants against individual standards and expressed concern that there was no determination of the simultaneous impact of multiple pollutants on human health. The commenter requested that the Department should require a dispersion analysis that includes a cumulative impacts analysis that examines the impacts on Ironbound and Newark residents of the pollution emitted from the proposed plant when it is added to and combined with existing pollution in the area and that the permit should not be issued until this revised modeling has been subject to public comment. (6)

**Response:**

No criteria have been provided by EPA for determining the simultaneous impact of multiple pollutants on human health.

For the protection of public health and welfare, EPA has established National Ambient Air Quality Standards (NAAQS) for individual pollutants. As part of the evaluation of this permit application, emissions of carbon monoxide (CO), sulfur dioxide (SO<sub>2</sub>), nitrogen dioxides (NO<sub>2</sub>), fine particulate

(PM<sub>2.5</sub>) and inhalable particulate (PM<sub>10</sub>) from the Newark Energy Center project were modeled and, after representative existing background concentrations were added, compared to their respective NAAQS. All pollutants were predicted to be below their NAAQS by significant margins. Also, all pollutants were predicted to be below significant impact levels in residential areas. It is unlikely that there will be adverse cumulative impacts from multiple air pollutants because all pollutants are below the significant impact levels.

- 5) **Comment:** The Department states that the Hess plant will not contribute significantly to the violation of a NAAQS, however, the plant would have some impact on air quality in the Ironbound community. In a community, such as the Ironbound that is already overburdened with pollution, any additional pollution or impact is significant and is too much. The fact that the plant may not cause a violation of the NAAQS does not necessarily mean that it is not having a detrimental impact on the health of the residents. Amounts of pollution that seem relatively small may pose a public health threat when combined with other pollution. In this case, no cumulative impacts analysis was attempted, that took into account the combination of pollutants that exists in the Ironbound community and showed that adding more pollution to this mix would not be detrimental to the health of Ironbound and Newark residents. (6)

**Response:**

As discussed in response A4, the monitored existing pollutant concentrations in air (background concentrations) were added to the model predicted impacts of the Newark Energy Center project to assess the total impacts. This is a cumulative impacts analysis for each modeled and monitored air pollutant. The total impacts all demonstrated compliance with the National Ambient Air Quality Standards with significant margins and insignificant impacts in residential areas.

- 6) **Comment:** Although dispersion modeling did not show a violation of a NAAQS it did indicate that pollution from NEC would reach the Ironbound community. It is possible that modeling would have shown a violation of the NAAQS if a better estimate of background air pollution concentrations in the Ironbound community were used, particularly for NO<sub>x</sub>. The NO<sub>x</sub> data that was used for modeling came from a monitor in Bayonne. It is likely that this monitor underestimates the background air pollution concentrations in the Ironbound neighborhood because that area has more highways and traffic surrounding it than Bayonne. The Department should require that the modeling be repeated with better estimates of the background air pollution concentrations in the Ironbound community gained either through actual monitoring or modeling that specifically accounts for the elevated amounts of traffic in that area. The permit should not be issued until this revised modeling has been subject to public comment. (6)

**Response:**

Three years (2008 – 2010) of NO<sub>2</sub> measurements from the Department's Bayonne monitor at Veterans Park on Newark Bay were used as background concentrations. This monitor is located approximately

2.5 miles directly south of the Newark Energy Center site. The Department considers its measurements representative of existing NO<sub>2</sub> concentrations in the area around the Newark Energy Center because of its proximity to the site and its location in an urban residential area similar to the Ironbound.

The next closest NO<sub>2</sub> monitor is the Department's Elizabeth Lab monitor, 4.2 miles to the south-southwest of the Newark Energy Center site. It is located at Exit 13 on the New Jersey Turnpike, where I-278 and the Turnpike intersect. The traffic volumes in the immediate vicinity of the Elizabeth Lab monitor are greater than those in the immediate vicinity of the Ironbound community. The NO<sub>2</sub> 1-hour concentrations measured at the Elizabeth Lab monitor are the highest in New Jersey, yet are only 8 percent higher than those measured at the Bayonne monitor. Use of the Elizabeth Lab measurements for NO<sub>2</sub> background in the Newark Energy Center modeling analysis also showed compliance of the NO<sub>2</sub> NAAQS.

- 7) **Comment:** Several commenters expressed concerns about the potential impacts to health and welfare on the Ironbound residential community from the air pollutants emitted by the facility. (12, 13, 14, 18)

**Response:**

National Ambient Air Quality Standards (NAAQS) were established to protect public health and public welfare. Emissions of SO<sub>2</sub>, CO, NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> from the Newark Energy Center project were modeled, representative existing background concentrations for each of these pollutants were added, and these combined concentrations were less than the NAAQS. The results show that the potential maximum impacts of these pollutants on the Ironbound residential community are well below both the Significant Impact Levels and the NAAQS for each of these pollutants. For example, the maximum 24-hour PM<sub>2.5</sub> level in the Ironbound community was predicted to be less than 0.2 ug/m<sup>3</sup>, well below the PM<sub>2.5</sub> Significant Impact Level of 1.2 ug/m<sup>3</sup> and the PM<sub>2.5</sub> 24-hour NAAQS of 35 ug/m<sup>3</sup>. The 1-hour NO<sub>2</sub> cumulative impact analysis predicted maximum 1-hour NO<sub>2</sub> level in the Ironbound residential community to be less than 5 ug/m<sup>3</sup>, well below the 1-hour NO<sub>2</sub> Significant Impact Level of 10 ug/m<sup>3</sup> and the 1-hour NO<sub>2</sub> NAAQS of 188 ug/m<sup>3</sup>.

Risk assessment for air toxics was also conducted for the proposed project. The risks were predicted to be far below the Department's health risk negligible thresholds. The health risks due to toxic air pollutants emitted from the Newark Energy Center are predicted to be negligible at the point of maximum modeled impact, which is not located in residential areas. Therefore, the health risks of toxic air pollutant emissions from Newark Energy Center in the residential areas, including the Ironbound community, is expected to be negligible.

- 8) **Comment:** We are talking about 1.0 million tons of fine particulate matter. This is the stuff, cancer in the lungs, respiratory illnesses. (13)



**Response:**

The maximum allowable emission rate of fine particulate (also known as PM<sub>2.5</sub>) from the facility will be 97.65 tons per year. Actual emissions are likely to be substantially less. Newark Energy Center will be required to report on actual emissions each year, and stack testing will be used to verify emission levels. In order to protect public health and public welfare, EPA established the 24-hour and annual PM<sub>2.5</sub> National Ambient Air Quality Standards (NAAQS). As part of the evaluation of this permit application, the impact of PM<sub>2.5</sub> emissions from Newark Energy Center project was evaluated with an air dispersion model using five years of hourly meteorological data. The maximum predicted 24-hour PM<sub>2.5</sub> impact due to emissions from the Newark Energy Center when combined with representative PM<sub>2.5</sub> background level was 30.2 ug/m<sup>3</sup>, well below the 24-hour NAAQS of 35 ug/m<sup>3</sup>. The maximum predicted annual PM<sub>2.5</sub> impact due to emissions from the Newark Energy Center when combined with representative PM<sub>2.5</sub> background level was 11 ug/m<sup>3</sup>, also well below the annual NAAQS of 15 ug/m<sup>3</sup>.

- 9) **Comment:** Hess states, in their application, that the level of PM they will be emitting is 97.65 tpy which just narrowly falls under the 100 tpy threshold. We believe the modeling that the applicant conducted to show no significant impact for PM levels is flawed. They utilized air monitoring data from outside of Newark, which we believe does not accurately represent local conditions. The applicant also did not consider diesel emissions from vehicles. Since PM emissions were modeled as being barely under the threshold, there has been no discussion regarding inclusion of best available control technologies for PM. (21)

**Response:**

See response A2 in response to the air monitoring data used in the modeling. The discussion on best available control technologies (BACT) for Particulate Matter is discussed in Section 4.6 (Page 4-15) of the application package. Although PM emissions are not subject to federal BACT requirements since it is less than 100 TPY, it is subject to the State-of-the-art (SOTA) requirements under the state rule. The applicant has demonstrated that the combustion of clean burning fuel is the most effective means for controlling particulate emissions from combustion equipment. Since natural gas is a very clean fuel, the facility has proposed to use natural gas in its turbines exclusively. The facility has also indicated that there are no combustion turbine projects in existence that have add-on controls for particulate matter.

- 10) **Comment:** The International Agency for Research on Cancer Health Organization in June of this year said that diesel engine exhaust is carcinogenic. You will be putting carcinogens in an already carcinogenic atmosphere from the diesel fumes. (8)

**Response:**

The combined-cycle combustion turbines will combust natural gas only, and will not emit diesel particulate matter (DPM). There will be two diesel-fueled emergency engines, an emergency generator and a fire pump, that will be operated during real emergencies, such as a blackout, and for periodic

testing. Each testing is limited to 30 minutes, and the annual cumulative testing of each emergency engine is limited to 100 hours. Also, these two emergency engines are all limited to ultra-low sulfur diesel fuel exclusively, which reduces diesel particulate emissions.

- 11) **Comment:** The proposed facility will have a detrimental impact on the aesthetic value of our existing skyline. The facility will include a stack more than 250 feet in height, far larger than the highest stack in the skyline to date from the Covanta incinerator which is 150 feet high. The applicant stated in their assessment that this stack will be visible from various locations throughout the City of Newark and beyond including the new Riverfront Parks set to open this summer. (11)

**Response:**

The visibility of a stack is beyond the scope of air pollution control rules. Stacks must be high enough to avoid downwash of air pollutants. Covanta Essex incinerator's stack height is 278 feet. The proposed Newark Energy Center stack height is less than that (i.e., 252 feet). The existence of elevated highways and bridges in the area where the stack will be located (such as the I-78 bridge over Newark Bay and the Pulaski Skyway) should help reduce the visual impact it will have on the aesthetics of the Newark skyline. The Newark Energy Center is approximately one mile from the nearest residential area, approximately 1.5 miles from the new Riverfront Park and 3 miles from Newark's central business district. These distances are significant and will help reduce the visual impact of the 252 foot stack on people at these locations.

- 12) **Comment:** The Department has not spoken with the UMDNJ regarding their long term study of air quality and hazmat effects in my neighborhood. (1)

**Response:**

The commenter did not provide sufficient information to determine what study is being referenced, or its relevance to this project. Also, see responses A3 and A7.

- 13) **Comment:** The applicant should be required to demonstrate displacement and "net benefit" of emissions regionally if this claim is part of their overall appeal in contributing to the State Energy Plan's objectives. An annual analysis of their net emissions should be conducted and if they are found to be net contributors then offsets should be required to lessen the local and regional air quality burden. (21)

**Response:** See response E3. NEC has satisfied the Department's offset requirements as well as the requirements of the Prevention of Significant Deterioration program, the operating permit requirements, and other applicable requirements. The Department cannot require more offsets under the existing rules. Please see response C12 for additional information regarding emission offsets.

**B) Air Quality Monitors**

1. **Comment:** Can we get air quality monitors in the neighborhood for the next 90 – 180 days? (1)

**Response:**

The Department's air monitoring program does not have equipment that is suitable for rapid deployment. Air monitoring stations are usually established to provide data on longer term exposures and trends. The Department is evaluating the feasibility of conducting air monitoring in Newark with assistance from citizens in the Ironbound area. This would be a special project using federal funds awarded to the Department for this purpose. If that program moves forward, sample collection would have to be completed before June of 2013.

2. **Comment:** Why don't we have an air monitor in our neighborhood? (10)

**Response:**

The Department operated a comprehensive air monitoring station at the Ironbound Recreation Center near St. Charles Street from 1985 through 1999 (prior to that, the air monitoring station had been at the intersection of Washington Street and Branford Place.). The Department was asked by the City to remove the air monitoring equipment when the Ironbound Recreation Center was being renovated. The Department has not been given permission to reinstate the air monitor at the Center after that work was completed. Another comprehensive monitoring station was established in the area in 2001 near the intersection of East Ferry and Lexington Sts. The Department was asked to vacate that location in 2003 due to planned construction at the site. In 2009, monitoring was initiated at the Newark Firehouse at 360 Clinton Ave., and the Department continues to operate that site. In addition, sampling for particulate matter has taken place at several locations throughout Newark over the years. The monitoring data available in any given year can be reviewed on the Department's website ([www.njaqinow.net](http://www.njaqinow.net)) or by contacting the Department at (609) 292-0138.

**C) Permitting**

- 1) **Comment:** The Department has the legal authority to a) demand a great deal of additional information about this plant, and to b) use that information to conclude that the plant should not be given a license to operate and the Department should use that authority. If the Department takes the legal position that it does not have the authority to do (a) or (b) please tell us why and tell us what changes in the law would be needed to give the Department those two authorities so that we, as citizens, can advocate for the necessary legal changes. (5)

**Response:**

Under N.J.A.C. 7:27-22, the Department has the authority to request relevant information from the applicant, to enable the Department to determine whether or not to issue a permit. If, based on that information, the Department concludes that the application does not demonstrate compliance with all

applicable State and Federal rules and regulations, the Department has the authority to either require the applicant to address the deficiencies by revising the application or, if the applicant fails to revise the application, the Department has the authority to deny the permit. In Hess's case, the Department requested additional information about the facility several times and, based on the additional information that Hess submitted, the Department required Hess to revise the application. Based on the revised application and additional information, the Department determined that the applicant demonstrated compliance with all applicable State and Federal rules and regulations necessary to issue an air pollution control permit.

- 2) **Comment:** If this permit is approved, it should contain the following requirements: a) Hess should pay for continuous monitoring of PM, NO<sub>x</sub>, and VOC's in the Ironbound community and other designated areas of Newark to ensure plant emissions do not have a greater impact on Newark air quality than projected, b) All recommendations contained in the USEPA comment letter on the proposed plant dated April 17, 2012 should also be contained in the permit, c) Offsets for NO<sub>x</sub> and VOC's should be obtained in the Ironbound, Newark or Essex County if legally possible, d) If the permit application relied in any way on estimated emissions reductions from other New Jersey power plants that will be achieved due to the operation of the proposed Hess NEC plant then achieving these emissions reductions should be made a condition of the air permit. For example, if the dispersion modeling relied in any way on those estimated reductions then the reductions should be a condition of the permit. (6)

**Response:**

- a) See section B for response on ambient air monitoring. Also, ambient monitoring detects cumulative impact, and generally not the impact of individual sources. Modeling maximum allowable emissions and testing to ensure compliance with those maximum allowable emissions is a more precise and reliable way to determine and restrict individual source impacts.
- b) All of the recommendations contained in the EPA comment letter were incorporated into the proposed permit except for the suggestion to use PM-10 and PM-2.5 emission factors based on the first two years of quarterly stack test results to calculate and record each turbine's hourly emissions (lbs/hr). The draft permit requires the permittee (see Group1, Ref. #7 and #8) to calculate and record annual emissions of PM-10 and PM-2.5 based on a lb/MMBtu emission factor that would be determined by averaging all valid quarterly stack results for both turbines during the first year of operation. Each month, the permittee is required to calculate the total facility emissions from that month and add that sum to the total facility emissions from the previous 11 months, in order to demonstrate compliance with the annual emission limit on a monthly basis.

In response to this comment, the Department has modified these permit requirements to require the permittee to calculate and record annual emissions of PM-10 and PM-2.5 for each turbine, based on a lb/MMBtu emission factor that would be determined by averaging all valid stack test

results obtained during the previous 12 months, for each turbine. Therefore, the emissions from each turbine will be considered separately, instead of being based on the average emissions from both turbines (this is consistent with the recommendations in EPA's letter). Also, the reported emissions from each turbine will be based on the average stack test results from the past 12 months, instead of the first 4 stack tests that were performed when the turbines were new, as required by the previously proposed permit or the first 8 stack tests that were performed, as recommended by EPA.

The Department has also added the following references [U1, OS1, Ref. #27 and Ref. #29; U1, OS2, Ref. #27 and Ref. #29; U1, OS3, Ref. #27 and Ref. #29; U1, OS4, Ref. #27 and Ref. #29]. These new permit conditions require the permittee to calculate and record hourly emissions of PM-10 and PM-2.5 for each turbine with, and without, the duct burner firing, based on the lb/MMBtu emission factor that is equivalent to the highest lb/MMBtu stack test result (average of 3 test runs) that was obtained during any valid stack test performed within the previous 12 month period. This incorporates the last of EPA's suggestions into the proposed permit.

- c) See response C12 below as to the source of emission offsets. The project proposed to the Department meets the regulatory requirements for emission offsets. To require offsets from within the community where the sources operate would require a rule change. The purpose of the required offsets is to provide a net air quality benefit in the non-attainment region, since the air pollution levels for ozone and fine particles are mostly from regional and interstate sources.
- d) The Department did not rely on emission reductions from other New Jersey Power Plants. For information regarding Air Dispersion Modeling and the inclusion of existing power generation in that modeling see section A. Any benefits from reductions of emissions at other power plants because of the operation of the Hess facility would be in addition to the air quality benefits of the offsets provided by Hess.

- 3) **Comment:** Section E of the fact sheet says that you will require monitoring and testing by Hess. Don't you think the Department should do independent public testing? Also, you require quarterly testing for 2 years. I think that is inadequate. I think testing should be done on a monthly basis. I think, also, that 2 years is insane to stop regular testing because equipment degrades over time, and it seems like you should have even more testing as time goes by. This is a 30-year facility. (16)

**Response:**

The permit has enforceable conditions requiring comprehensive stack tests and reporting initially and periodically, conducted pursuant to Federal and State test methods. The Department provides oversight of the stack emission testing process. A professional testing firm, employed by Hess will submit a stack emission test protocol to the Department's Bureau of Technical Services (BTS). BTS personnel will review the protocol to ensure that the stack testing will be in conformance with Federal and State test methods. If the protocol is inconsistent with those methods, BTS will require changes to the protocol.

With an approved protocol, Hess must schedule the stack emission test with the Department to assure State staff is present to observe the testing. During the stack testing, personnel from the Department's BTS and Compliance and Enforcement will be present to observe the test to make sure that it is performed according to the approved Operating permit, approved protocol and any applicable State or Federal regulations. Once completed, Hess will submit a report to the Department summarizing the stack test results. BTS staff will then review the stack test report to verify compliance.

New Jersey's air permitting regulations (N.J.A.C. 7:27-8 and 22) require that an air permit contain sufficient testing and monitoring to ensure the ability to determine continuous compliance with applicable requirements. The table below summarizes the monitoring and testing frequency the Department has determined to be sufficient to demonstrate compliance with this initial permit.

Pollutant	Continuously Monitor	Stack Testing Requirements	
		Initial	Frequency of Additional Testing
NOx	Yes	Yes	Every 5 Years
CO	Yes	Yes	Every 5 Years
VOC	No	Yes	Every 5 Years
SO2	No	Yes	Every 5 Years
TSP	No	Yes	Every 5 Years
PM-10	No	Yes	Every Quarter (if Operated)
PM-2.5	No	Yes	Every Quarter (if Operated)
CO2	Yes	Yes	N / A
Ammonia	Yes	Yes	N / A

Note that for key gaseous air pollutants, oxides of nitrogen, carbon monoxide, Carbon dioxide and Ammonia, continuous monitoring with monitors connected to the stack is required. For particles, there are no reliable continuous monitors, so periodic stack tests are required. The frequency of particle testing is quarterly. That frequency is more than usual (one-year or five-year) because allowable particle emissions are close to the 100 ton per year significant level. The frequency of particle testing established in the Operating permit can only be relaxed through a Significant Modification to the Permit. This Significant Modification would require a detailed justification and follow a public process similar to this initial operating permit.

In order to renew this operating permit, Hess will be required to submit a Renewal Application, including compliance certifications for the previous permit term, summary of 7-day notices, summary of testing and monitoring, compliance status, pollution prevention reporting, and facility-wide trends. During its review, the Department will once again make a determination as to the adequacy of the monitoring and stack testing including frequency.

In response to comments regarding the frequency of fine particle stack testing, the Department historically has required natural gas based combustion turbine facilities to conduct stack emission tests to demonstrate compliance with particulate emission (PM-10/PM-2.5) limits initially and once per permit term (5 years). The Department recently issued permits to other natural gas based combustion turbine facilities with the potential to emit PM-2.5 emissions slightly less than 100 tons per year and required those facilities to conduct quarterly stack tests for PM-2.5. The increase in the frequency of testing was done to assure that the source was adequately monitored in the absence of quality assured emission factors or a method to measure the emissions on a continuous basis and would not exceed the permit allowable. Hence, requiring quarterly stack testing for Newark Energy Center is adequate to assure compliance with the annual emission limits for PM-10/PM-2.5 and consistent with the recent decision made by the Department for similar facilities.

The draft permit required stack testing for PM-10 and PM-2.5 during each quarter that the turbines are operated but allowed the permittee to submit a significant modification to the Department, after 8 quarterly stack tests were completed, to request that the Department reconsider the stack test frequency and possibly allow less frequent testing. The Department has now modified that requirement to allow the permittee to submit such a permit modification, only after demonstrating, through 8 consecutive quarterly stack tests, that the emissions of PM-10 or PM-2.5 are less than 80% of the permit limit. This will provide the public and Hess certainty on the criteria for considering a change of particulate testing frequency. Such a change would be a significant modification of the permit and subject to public comment.

- 4) **Comment:** Besides enforcing the strictest reporting guidelines, the Department should require that there be a comprehensive review at the 5 year renewal period that includes enhanced public participation (extended comment periods, early notification of stakeholders, etc.). At the time of the renewal, we would request that the Department review the net emissions regionally from power generation as well as new local offsets to meet their offset requirements and a review of best available technologies to ensure the facility is using the cleanest equipment possible. (21)

**Response:**

The Department's renewal process includes reviewing the compliance history of the facility during the previous permit term and updating the permit to include any new State or Federal rules applicable to the facility. As described in response C3, additional review of the adequacy of the monitoring and stack testing is also performed.

Upon receipt of a renewal application for this permit, the Department will follow its then effective policy for enhanced notification for interested parties, including notification of interested parties that the Department has received a renewal application from Hess.

Once review and engagement are completed, the Department will publish a public notice seeking comment on the draft renewal. Historically, the Department has allowed 30 days for public comment on draft renewals and additional time can be considered in response to requests.

The Department does not review, at the time of renewal, available local offsets or the net emissions, regionally from power generation. The Department does not have the authority to require Hess to obtain additional local offsets or to require best available control technologies, at the time of renewal. To do so would require statutory and regulatory changes.

- 5) **Comment:** Several commenters questioned the sharing of information with the community and requested better coordination between state agencies involved in any way with the proposed project. (2, 10, 21)

**Response:**

The Department received this application on October 12, 2011. The Department notified the Ironbound Community Corporation (ICC) about the receipt of this permit application on October 13, 2011 via an automated email early notification system. The Department made the application available for the public to view, at the Van Buren Branch of the Newark Public Library, on November 3, 2011. An electronic version (PDF format) of the application was also provided to those who contacted the Department and requested it. Also on November 3, 2011, the Department sent a letter notifying interested persons who previously expressed interest in significant permit applications for facilities in the Ironbound. The Department met with the ICC in Newark on November 18, 2011 to discuss community concerns over the pending application. On June 25, 2012, the Department notified all above mentioned interested parties, as well as the Mayor and the Environmental Commission of Newark that it would be publishing a public notice in the Star Ledger newspaper and in the Jersey Journal newspaper on June 26, 2012, seeking comment on the draft permit that the Department proposed to approve. The published notice stated the Department's intent to approve a permit for the proposed facility, referenced several documents that would be available on the Department's website (draft permit, statement of basis, fact sheet) that contained additional information about the facility and the proposed permit. The notice also advertised the Department's public information session that was held in the Ironbound community on July 12, 2012, and the public hearing that took place on July 26, 2012. The Department provided 45 days, from July 26 through August 10, 2012, for the public to comment on the proposed permit. This was in addition to the opportunity provided since November, 2011, to comment on the application.

The Department already engages the BPU as necessary.

- 6) **Comment:** Two commenters were disappointed that the Department provided a 45 day comment period after a 90 day comment period was requested. (11, 21)



**Response:**

N.J.A.C. 7:27-22.11 (b) states opportunity for public comment must be at least 30 days. For similar projects the Department's practice has been to allow public comment for one week beyond the public hearing, generally meaning public comment is available for 37 days. Due to the increased interest in this project, the Department allowed for an additional 8 days for a total of 45 days.

- 7) **Comment:** The company has submitted in their application to the state that they will fall just below the permitting thresholds by which PM levels would be required to be offset (the threshold levels are 100 tons per year, the facility will emit 97 tons per year for PM10). Despite the obvious cumulative impacts that PM levels can wreak on our air quality, the facility has presented no plans to mitigate their contribution to PM which we know to be a major trigger of asthma, cardiovascular disease and death. (11)

**Response:**

Hess proposes to install and operate a state of the art (SOTA) combined cycle turbine electric generating facility that combusts natural gas. Combustion of this fuel produces significantly less PM emissions than any other fossil fuel. Also, combined cycle turbines are more fuel efficient, generating more electricity with less fuel and fewer emissions of PM.

Because annual emissions are close to major source thresholds (97% of 100 tons) the Department is requiring Hess to conduct stack testing initially and every quarter for at least the first 2 years of operation to demonstrate that the facility will not breach the Major Source Threshold (see response C3 for more detail).

- 8) **Comment:** The diesel generators will be running for days at a time, emitting particulates and soot, which we already have too much of. You should not allow diesel backup. (4)

**Response:**

The proposed facility has one tier 2 emergency diesel generator (there are no available tier 3 generators of this size) and one tier 3 emergency diesel fire pump, which are only allowed to operate in two limited circumstances. The first is operation during an emergency (i.e. the fire pump could be operated in the event of a fire and the emergency generator could be operated if there is a power outage due to an emergency). The second is for the performance of testing and maintenance limited to no more than 100 hours per year and for a duration of no more than 30 minutes per test. Also, testing may not occur on days forecast to be unhealthy for sensitive persons. The emergency generator cannot be tested at the same time as the fire pump. These engines can only be operated for onsite use and cannot generate electricity to supply the power grid.

- 9) **Comment:** Every year, the ICC holds a two-hour truck count in the Eastern Ironbound and we actually counted 2,000 trucks in 2 hours. We never counted less. This diesel exhaust is polluting our environment. (9)

**Response:**

Progress is being made to reduce this community's exposure to diesel emissions through ongoing diesel initiatives.<sup>[1]</sup> The Department's Diesel Risk Reduction Program's goal is to reduce the amount of PM emitted by diesel vehicles. Under the Diesel Retrofit Law, emissions have been reduced from older on-road, diesel-powered motor vehicles including 1,200 garbage trucks, 7,000 school buses, 750 New Jersey Transit buses, and 1,000 private commercial buses. Publicly owned vehicles commonly used for road maintenance and other public works type functions are in the process of installing hardware to reduce diesel emissions.

Other Departmental rules limit engine idling for both diesel and gasoline vehicles to three minutes and authorize State government and local police departments to fine offenders. The Department's Bureau of Mobile Sources focuses on building awareness of these requirements and coordinating with the Enforcement program to mitigate egregious idling.

Heavy weight diesel vehicles are also required to be inspected annually to ensure, via an opacity test, that they are emitting within acceptable levels. We continue to work with vehicle owners to ensure they're aware of these requirements in order to minimize emissions throughout the State, but especially in urban areas.

In 2009, the Port Authority of New York and New Jersey announced a comprehensive plan to reduce emissions from multiple sources of diesel associated with goods movement over a ten year period. Cleaner fuel for ships, drayage truck modernization, and locomotive repowers are among the strategies that are already underway.

For more information about the idling restrictions, retrofit requirements, and related information, please see the Department's web page at <http://www.stopthesoot.org>

- 10) **Comment:** That 25 story cooling tower will emit chemicals that will be settling in my back yard on me. (13)

**Response:**

The proposed cooling tower at this facility will be 65 feet high, approximately 5 stories. The cooling tower is equipped with State of the art (SOTA) high efficiency drift eliminators to remove water droplets from the air stream (see permit application section 2.3.4 and section 4.6.2.3).

The Department evaluated the particles which are produced by the cooling tower from the suspended and dissolved solids contained in the cooling water. These particles are limited in the permit to 1.33 lbs

---

<sup>[1]</sup> [http://www.nj.gov/dep/ej/docs/ejac\\_impacts\\_report\\_mauriello\\_response200908.pdf](http://www.nj.gov/dep/ej/docs/ejac_impacts_report_mauriello_response200908.pdf)

per hour of Particulate matter less than 10 microns (PM-10) and 0.47 lb per hour of Particulate matter less than 2.5 microns (PM-2.5). The modeling analysis of PM-10 and PM-2.5 determined that the location of maximum impact of these emissions is along the eastern boundary of the NEC site, over one mile from residences. At this location, the maximum 24-hour and annual impacts due to the cooling tower emissions are below the significant impact levels and, when added to background ambient concentrations, are well below the NAAQS. The ground-level concentrations from these cooling tower emissions decrease rapidly away from the eastern boundary of the NEC site and are about a factor of ten lower in the residential community, still well below the NAAQS.

Water treatment chemicals identified in the application for the cooling towers are limited to sodium hypochlorite, sulfuric acid and sodium bromide. Toxic chemicals such as hexavalent chromium are prohibited from being used in the cooling tower.

- 11) **Comment:** I looked at the information provided tonight (ed. Fact sheet) and it was a compounded study, but it really didn't seem like it was. (17)

**Response:**

The fact sheet was a brief categorical summary of the Department's review and analysis of Hess's Application.

- 12) **Comment:** Several Commenters had comments regarding the emission offsets obtained for the project. One concern was the facility did not obtain any of the emission offsets from the community that is directly impacted by the proposed facility. Another commenter thought offsets should be obtained from sources that are close to the plant, such as diesel trucks, the airport and diesel ships. One commenter wanted assurance that the reductions used as offsets had actually taken place and had been verified. One commenter wanted to know the facility's specific source of the offsets.(2, 4, 6, 10, 11, 12, 21)

**Response:**

Offsets are required from the regional nonattainment area, not the immediate community. This is because the impacts of the NOx and VOC emissions from this proposed power plant, both precursors to the formation of fine particles and ozone, occur mostly outside of Newark. The NOx and VOC react in the atmosphere to form ozone and particles over time. During that time, the wind transports the pollution downwind. The use of regional NOx and VOC emission reductions to offset emission increases results in a net air quality benefit to the region. Some of the offsets are required upwind of Newark which directly benefit Newark by reducing the precursors that lead to pollutants transmitted by the wind to the Newark area. N.J.A.C.7:27-18.5I specifies a minimum offset ratio, based on the distance between the proposed facility and the source of the emission reductions that are being proposed as emission offsets (see Table E1 below). Hess obtained all of its emission offsets from within 100 miles

of the proposed facility. Therefore, Hess was required to obtain 1.3 tons of NO<sub>x</sub> offsets for each ton of NO<sub>x</sub> they propose to emit, and 1.3 tons of VOC offsets for each ton of VOC they propose to emit. This offset ratio provides the required net air quality benefit for the nonattainment area.

See section Q for additional information provided by Hess on their agreement with the City of Newark with regard to emission reductions from within the community.

Only a creditable emissions reduction (defined at N.J.A.C 7:27-18.1), may be used to offset an emission increase. "Creditable emission reduction" means a decrease in actual emissions which is:

- Quantifiable,
- Federally enforceable
- Not required pursuant to any federal or State law, rule, permit, order, or other legal document
- Not relied on by the Department in the SIP or any revision thereto, adopted by the Department, to demonstrate attainment or maintenance of a NAAQS or to demonstrate reasonable further progress toward attainment of a NAAQS; and
- Verifiable, to the satisfaction of the Department, to have in fact occurred. Such emission reductions may be contemporaneous or banked in accordance with N.J.A.C.7:27-18.8.

At the present time the Department's emission credit bank does not contain any NO<sub>x</sub> or VOC emission credits from the Ironbound community, the City of Newark or Essex County. The offsets obtained by Hess comply with the regulatory requirement of being generated in the same nonattainment area as the proposed facility.

The NJDEP does check to make sure the reductions actually take place and are maintained. The quantity of emissions applied for is reviewed and verified by the Department. The application is also reviewed by the Department to verify that the emissions reductions are surplus (i.e. not already required by rule or enforceable agreement). The Department confirms that the permit for the provider of the offsets has federally enforceable condition(s) in its compliance plan that makes the emission reductions enforceable by the Department. The Department's enforcement officers inspect the facility to make sure that all necessary physical or operational changes have been made and that those changes are permanent and enforceable. Enforcement conducts additional inspections periodically to ensure continued compliance with the respective permits which require the emission reductions.

Hess did submit a plan on the required offsets for this project. Since Hess obtained all of their emission offsets from within 100 miles of the proposed facility, they are required to obtain 1.3 tons of NO<sub>x</sub> offsets for each ton of NO<sub>x</sub> they propose to emit and 1.3 tons of VOC offsets for each ton of VOC they propose to emit. Hess must offset all of their emissions, not just the emissions that are above an acceptable threshold. Hess has already obtained the necessary quantity of emission offsets for NO<sub>x</sub> and VOC. The following table, summarized from the Department's Fact Sheet Table I, lists the offsets

obtained by Hess.

**Table E1. NOx Emission Offsets Obtained by Hess**

<b>Offsets Obtained (tpy)</b>	<b>Facility of Origin</b>	<b>County of Origin</b>
41.20	Simkins	Bergen
10.63	GM Linden	Union
11.08	3M Co.	Somerset
6.00	BASF	Warren
42.90	KMS Crossroad	Bergen
13.40	Glen Gery	Somerset
67.07	Gerdau	Middlesex
<b>VOC Emission Offsets Obtained by Hess</b>		
<b>Offsets Obtained (tpy)</b>	<b>Facility of Origin</b>	<b>County of Origin</b>
94.04	GM Linden	Union
25.80	KMS Crossroad	Bergen

13) **Comment:** If you meet the standards, you won't have to buy offsets. (4)

**Response:**

Emissions from Hess Newark Energy Center will meet the lowest achievable emissions rate (LAER). Hess must secure emission offsets for NOx and VOC. Offsets are in addition to LAER, not a substitute for LAER.

14) **Comment:** I would like to see some offsets obtained by telling PSEG that they have to cut the coal plant operation down. Natural gas is supposed to be the new clean fuel coming down the pipeline, but is the Department going to tell PSEG that they have to phase out that coal plant? (15)

**Response:**

The Department has authority to require new sources with a significant net emission increase to obtain offsets; it does not have the authority to dictate the source of those offsets. The Department has required existing sources, including coal-fired generating facilities, to reduce emissions through enforcement actions and new regulations. These emission reductions are not surplus, (i.e. already required by rule or enforceable agreement) and cannot be used to offset emissions from new sources.

There will be reductions of power plant emissions if Newark Energy Center is built. These reductions would be in addition to the required offsets. The replacement of old high emitting power plants with

much cleaner and more efficient new plants and the installation of emissions controls at existing power plants throughout the region also reduces the contribution of power plants to ozone and fine particle pollution. The reduced use of old higher-emitting power plants because of the use of a cleaner gas plant, such as the Hess Newark Energy Center, is expected to provide additional air quality benefits to New Jersey and to Newark. Such air quality benefits are already occurring. Sulfur dioxide emissions from power plants have decreased over the last 10 years and particle levels in air throughout New Jersey, including Newark, have declined. That trend will continue if more old high emitting power plants are replaced with new gas-fired plants that have state-of-the-art emission controls. These benefits are in addition to those achieved by the required offsets.

**D) Alternative Locations:**

- 1) **Comment:** Two commenters expressed concern regarding alternative siting of this facility with respect to local air quality impacts. (6, 21)

**Response:**

N.J.A.C.7:27-18.3(c)2 requires Hess to submit to the Department an analysis of alternative sites within New Jersey, demonstrating that the benefits of the proposed Newark Energy Center significantly outweigh the environmental and social costs imposed as a result of the location, construction and operation of the source. This rule is part of the Department's emissions offsets requirements. Thus, the purpose of N.J.A.C.7:27-18 is to help bring New Jersey into attainment with the NAAQS. That is, the Department requires a new source proposed in a non-attainment area to demonstrate that the benefits of the source significantly outweigh the environmental and social costs imposed as a result of the location, construction and operation of the source in the non-attainment area.

The entire state of New Jersey is currently in non-attainment for ozone (for which NO<sub>x</sub> and VOC are precursors) and major portions of New Jersey are currently in nonattainment for fine particles (for which NO<sub>x</sub> is a precursor). Therefore, Hess's alternative sites analysis must be considered in the context of ozone and fine particle nonattainment.

Note: While fine particle air quality now meets the federal health standard, the nonattainment area must be redesignated to attainment by the EPA before the nonattainment requirement does not apply. Hence, the nonattainment rule, N.J.A.C. 7:27-18, applies to this permit even though particle air quality is better than the health standard.

The impacts of the NO<sub>x</sub> emissions from this plant to ozone are mostly outside of Newark because the NO<sub>x</sub> reacts in the atmosphere to form ozone over time. During that time, the winds transport the pollution downwind away from the source that emits NO<sub>x</sub>. Since ozone is a result of emissions transported downwind from combustion sources (including out of state coal-fired power plants), siting

power generation to another location in New Jersey would not address ozone non-attainment. Therefore, utilizing alternative sites in New Jersey for a power plant would not benefit ozone attainment. In order for alternate siting of the plant to benefit ozone attainment, the plant would have to be sited hundreds of miles away from New Jersey and not upwind of New Jersey. N.J.A.C 7:27-18.3(c)2 does not require an analysis of sites outside of New Jersey.

Similarly, the ten northeastern counties of New Jersey, including Essex County, are designated non-attainment for fine particles. The purpose of this project is to provide electric generation to respond to the demand for additional electricity in the metropolitan area. Siting the facility in another part of this nonattainment area would have no impact on the State's attainment status because the entire region is designated nonattainment. Also, power plants upwind of New Jersey contribute significantly to fine particle levels in New Jersey. The impacts of the NO<sub>x</sub> emissions from this plant to fine particles are mostly outside of Newark because the NO<sub>x</sub> must react to form particles (Nitrates) and this takes time over time. During that time, the wind transports the pollution downwind away from the source that emits NO<sub>x</sub>. Moving power plants to different towns, or counties, would not solve regional particle air quality nonattainment.

Siting this facility outside of the region in which the power is needed, would result in more emissions. Electricity is lost during transmission, and the amount of electricity that is lost increases as the length of the transmission line increases. Therefore, to provide the necessary power to the region from plants located far from the region, more electricity (and thus, greater emissions) would have to be generated to compensate for the transmission line power losses. The increased emissions would contribute further to the ozone and fine particle non-attainment issues in the region.

In its application, Hess explained that the purpose of the project is to provide electricity to respond to regional energy needs using clean-burning natural gas technology. See Section 2.7 of Hess's application. Hess also explained that it selected the site because of the presence of existing infrastructure (i.e., proximity to gas supply, electrical interconnection, cooling water and waste water treatment capacity). The use of existing infrastructure in lieu of building new infrastructure will save natural resources and minimize pollution that would be generated by building the new infrastructure.

Hess in other parts of its application also demonstrated that the predicted emissions from the source would not result in significant air quality impacts. As explained in response A4, air quality modeling showed that the emissions from NEC, after adding representative existing background data, were predicted to be below their corresponding NAAQS standards by significant margins and would not exacerbate the existing air quality in the local community. Thus, the air quality impact from this source will be minimal. Hess is also providing the required 1.3 to 1.0 emission offsets in the areas that are in nonattainment of the ozone and fine particle standards to provide a net air quality benefit. Therefore, considering the purpose of N.J.A.C. 7:27-18.3(c)2 and the information provided to the Department, the

Department believes that Hess satisfied the alternative sites analysis requirement.

See section Q Applicant-Provided Information regarding the location of this project.

**E) Environmental Justice Comments:**

**Siting of Facility and Role of NJDEP**

- 1) **Comment:** Commenters express concern over the siting of an electric generating facility within the City of Newark. Commenters express frustration that these facilities continue to be sited within areas that already contain a high density of industrial facilities. Commenters question what role the Department has versus that of the local government in approving of this facility. (2, 3, 7, 5, 13, 14, 15,16, 18,19)

**Response:**

On January 28, 2011 Governor Christie signed into law P.L. 2011, c.9, establishing a Long-Term Capacity Agreement Pilot Program (LCAPP) to promote construction of electric generation facilities. The three winning bids for new electric generation facilities are located in Newark, Old Bridge, and Woodbridge. These projects were selected after analyzing several criteria, including suitable locations and current and future energy demands in NJ.

The Department's core mission is the protection of the air, waters, land, and natural and historic resources of the State for all residents for the protection of public health and the environment. To accomplish this mission, the DEP assures that all facilities, proposed or existing, comply with all applicable state and federal environmental rules and regulations. The DEP has determined the applicant has demonstrated compliance with all applicable State and Federal air pollution control requirements necessary to issue a final decision on the air permit.

The Department does not possess authority to site power plants. The authority to site this facility, along with other electric generating facilities, is shared among local government, which has land use planning and zoning powers, the Federal Energy Regulatory Commission (FERC), and PJM Interconnection LLC (PJM), the regional transmission organization.

When reviewing any application, the Department uses a uniform set of air quality standards, which apply equally to any geographic location in New Jersey. The applicability of those standards may vary depending on the attainment status (areas of non-attainment are subject to more stringent standards than areas of attainment) of the proposed site.

While the Department's mission is the protection of human health and the environment, the City of Newark also plays a role in ensuring communities benefit from facilities sited under local planning and zoning approvals. The Department notes that as part of the City of Newark's local approvals of this



facility, the applicant has agreed to provide over \$15 million in funding of environmental and community benefit projects. See section Q Applicant-Provided Information regarding the agreement.

### **Environmental Justice in Department Decision-Making**

- 2) **Comment:** Commenters question what environmental justice considerations were included in the Department's decision-making for this permit. In particular, one commenter states the Department's environmental justice analysis did not follow Region 2's Interim Environmental Justice Policy and that if the Department did so, the Department would have concluded that this plant would cause a disproportionate adverse impact on Newark and the Ironbound Community. Commenters stated that the Department should evaluate its permitting decisions to ensure that the Department does not violate Title VI of the Civil Rights Act. (6, 12, 17, 20, 21)

#### **Response:**

Over the past two decades, the federal government (Federal Executive Order 12898 (1994) (EO 12898)) and NJ (State Executive Order 131 (2009) (EO 131)), directed agencies to achieve "environmental justice" in decision-making. Environmental Justice includes the "fair treatment and meaningful involvement of all people." Environmental justice issues are important to the Department, as evidenced by the Department's commitment to the Office of Environmental Justice and the Department-wide goal for "Enhanced Protection and Restoration of Environmentally Overburdened Communities."

The DEP engaged in many efforts related to this project to involve people in decision-making, and ensure all applicable environmental and public health standards were met. For instance, the DEP made this and all other applications available for the public to view at the Van Buren Branch of the Newark Public Library, on November 3, 2011. An electronic version (PDF format) of the application was also provided to those who contacted the Department and requested it. On November 3, 2011, the Department sent notification letters to interested parties including Ironbound community residents. On November 18, 2011, the DEP met with the Ironbound Community Corporation (ICC) in Newark to discuss community concerns over the pending application. On June 25, 2012, the DEP notified the mentioned interested parties, as well as the Mayor and the Environmental Commission of Newark, that DEP would be publishing a public notice in the Star Ledger newspaper and in the Jersey Journal newspaper on June 26, 2012, seeking comment on the draft permit that the Department proposed to approve. The published notice stated the Department's intent to approve a permit for the proposed facility, referenced several documents that would be available on the Department's website (draft permit, statement of basis, fact sheet) that contained additional information about the facility and the proposed permit. The notice also advertised the Department's public information session that was held in the Ironbound community on July 12, 2012, and the public hearing that took place on July 26, 2012. The Department provided 45 days, from July 26 through August 10, 2012, for the public to comment on the proposed permit. This was in addition to the opportunity provided since November, 2011, to

comment on the application. Based on the foregoing, the Department has complied with State Executive Order 131.

The Region 2 Interim Environmental Justice Policy (June 2000) states that this policy is solely “an approach and methodology Region 2 will use.” The Department has not engaged in rule-making to adopt this policy and the Department has not committed to USEPA, through the DEP’s Performance Partnership Agreement (PPA), to use this policy.

The Department required extensive air quality modeling and confirmed that the plant would not cause any exceedances of the National Ambient Air Quality Standards (NAAQS), Prevention of Significant Deterioration (PSD) increments, and significant impact levels. Therefore, DEP did not identify any disproportionate adverse impacts on nearby communities that would affect issuance of this permit. No criteria have been provided by USEPA for determining the multi-media cumulative impacts of multiple pollutants on human health. For the protection of public health and welfare, USEPA has established National Ambient Air Quality Standards (NAAQS) for individual pollutants. As part of the evaluation of this permit application, emissions of carbon monoxide, sulfur dioxide, nitrogen dioxides, fine particulate (PM<sub>2.5</sub>) and inhalable particulate (PM<sub>10</sub>) from the Newark Energy Center project were modeled and, after representative existing background concentrations were added, compared to their respective NAAQS. All pollutants were predicted to be below their NAAQS by significant margins. Also, all pollutants were predicted to be below significant impact levels in residential areas. It is unlikely that there will be adverse cumulative impacts from multiple air pollutants because all pollutants are below the significant impact levels.

The Department has also taken numerous actions to improve air quality in Newark and the Ironbound community. Pursuant to the agreement with the Department, Covanta Essex Company has agreed to install a state-of-the-art particulate emissions control system on its waste-to-energy facility in Newark. The Department’s statewide efforts to control power plant emissions have resulted in the installation of modern pollution control equipment at the PSEG Hudson power plant coal-burning unit in Jersey City. Also, the Department’s two-phase nitrogen oxides emission reduction rule (NO<sub>x</sub> RACT HEDD Rule, N.J.A.C. 7:27-19.29 and 30) is reducing nitrogen oxides emissions from existing peaking power plants now, and will further reduce emissions in 2015. Based on currently available information provided to the Department by owners and operators of peaking power plants, over 2,000 MW of peaking power plants that do not have sufficient emissions controls are expected to shut down by May 1, 2015 to comply with the Department’s rule.

The Port Authority of NY and NJ is implementing a plan to reduce particulate emissions from diesel engines associated with the movement of goods at Ports Newark and Elizabeth (<http://www.panynj.gov/about/port-initiatives.html>). This is in addition to the Department’s efforts to reduce diesel particulate emissions statewide, with special emphasis on urban areas. Under the

Mandatory Diesel Emission Reduction Act (N.J.S.A. 26:2C-8), school buses, garbage trucks and most buses have been retrofitted with devices to control harmful diesel exhaust. The last phase of this program has just begun for retrofitting other public diesel vehicles, both on road and off road, with particulate filters. The Department has also begun a pilot program under the Governor's Executive Order 60 to retrofit privately-owned off road construction equipment if used in the performance of public contracts, again with an emphasis on projects in urban and densely-populated areas.

The Department considers each permit application to determine whether the permit complies with the applicable laws. The Department thus ensures that any permit that is issued complies with the applicable laws.

As explained in the foregoing, the Department disagrees that EO 12898 requires the type of analysis that the commenter advocates. As EPA stated in its Interim Guidance, "EO 12898 and the Agency's EJ policies do not mandate particular outcomes for an action, but they demand that decisions involving the action be informed by a consideration of EJ issues." EPA's Action Development Process, Interim Guidance on Considering Environmental Justice During the Development of an Action 5 (July 2010). In the permitting decision before it, DEP appropriately considered environmental justice to reach its conclusion that there would be no disproportionate adverse impacts on minority communities and low-income communities that should affect issuance of this permit.

### **Cumulative Impact of Pollutants**

- 3) **Comment:** Commenters raise questions and concerns about how the Department considered the risk of multiple pollutants on the human health of nearby residents, also known as "cumulative impacts". One commenter raises the point that an air permit for an electric generating station may emit over 2 million pounds of toxic air pollution (excluding greenhouse gasses) per year. Another commenter raises a concern related to the Department's sharing of data as part of the Ironbound CARE Cumulative Impacts Projects from 2009 demonstrating a link between cumulative impacts of pollutants with race and income level. Another commenter urged the Department to utilize "the Department's draft cumulative impacts tool" in the permitting process. Several commenters remark that the Department should reject applications that fail a cumulative impact analysis. (6, 11, 17, 18, 21)

### **Response:**

Currently, there is no State or Federal methodology established for evaluating cumulative risk from multiple environmental sources together, such as water, soil, and ingestion. The Department and USEPA require the use of air quality dispersion modeling to assess environmental impacts that may be posed by new and modified sources of air pollution. These air modeling assessments are made after first considering the most feasible and effective control technologies. Results of air models are compared to ambient air quality standards to establish an environmental impact, relative to air quality. The applicant

has demonstrated, as verified by the Department, that pollutant loads generated by this facility conform to all applicable state and federal requirements.

The “2009 data” referred to by the commenter is a draft graphical information system (GIS) methodology that the Department developed. This data was developed as part of the Ironbound CARE Cumulative Impacts Project Work Group (Project Work Group), a diverse stakeholder group comprised of residents, business representatives and representatives of government and academic institutions formed to help implement the project. However, this draft methodology is not a “cumulative risk analysis” that correlates levels of pollution with human health impacts on different geographic areas. The Department is currently making significant changes to this draft methodology and preparing for a stakeholder process to discuss its future potential use. The Department routinely updates the public, through the Department’s Environmental Justice Advisory Council (EJAC), on the current status of this draft GIS methodology. The Department cautions external stakeholders from drawing conclusions from an incomplete and draft product.

The Department is committed to efforts providing restoration and enhanced protection of environmentally overburdened communities, including working with communities to ensure a thorough understanding of issues and potential solutions. See Commissioner Martin’s goals, specifically Goal 3 “Restoration & Enhanced Protection of Environmentally Overburdened Communities” found at <http://www.state.nj.us/dep/docs/depgoals.pdf>. The Department will consider the commenter’s suggestion in the context of those efforts.

- 4) **Comment:** One commenter stated that the conclusion that there will be an environmental benefit from the project is based on market speculation that the plant will seek to offset emissions from a nearby Jersey City coal fired plant, instead of being based within the context of environmental justice and the total cumulative burden already present in the area of the proposed new plant. (11)

**Response:**

The Hess project is not depending on emission reductions from the Jersey City coal-fired power plant (PSEG Hudson Unit 2). The required emission offsets came from other sources. See response C12 for information regarding the sources of emission offsets. See responses N2 and N3 for a discussion of displacement of existing power plants. See section Q: Applicant Provided Information about the agreement between the City of Newark and NEC regarding community benefits.

**Information Sharing and Public Engagement**

- 5) **Comment:** One commenter questioned why the Department did not share information with ICC from the beginning. Another commenter stated that information about the proposed project was not distributed adequately to the residents of Newark. (2, 10)

**Response:**

The Department disagrees with the commenter's suggestion that the Department failed to engage the community early in the application process. The Department also disagrees that information about this proposed project was not adequately shared with Newark residents. The Department received this application on October 12, 2011. The Department notified the ICC about the receipt of this permit application on October 13, 2011 via an automated email early notification system. The Department is developing the system to provide the public notice of permit applications received to allow for early community involvement in the permitting process. The Department is piloting the automated early notification email system with the ICC for over a year and more recently included members of Newark's local government. The pilot system provides an automated email containing facility name, permit application type and a link to additional online information that provides contact name and phone number. The Department is working to make this a service available to the public but continues to pilot with ICC and Newark government officials. The Department made the application available for the public to view at the Van Buren Branch of the Newark Public Library, on November 3, 2011. An electronic version (PDF format) of the application was also provided to those who contacted the Department and requested it.

As noted in response to comment E2, the Department engaged in extensive efforts to notify the public of the proposed project and to engage the community. To summarize these steps again, on November 3, 2011, the Department sent a letter notifying interested persons who previously expressed interest in significant permit applications for facilities in the Ironbound. The Department met with the Ironbound Community Corporation (ICC) in Newark on November 18, 2011 to discuss community concerns over the pending application. On June 25, 2012, the Department notified all above mentioned interested parties, as well as the Mayor and the Environmental Commission of Newark that it would be publishing a public notice in the Star Ledger newspaper and in the Jersey Journal newspaper on June 26, 2012, seeking comment on the draft permit that the Department proposed to approve. The published notice stated the Department's intent to approve a permit for the proposed facility, referenced several documents that would be available on the Department's website (draft permit, statement of basis, fact sheet) that contained additional information about the facility and the proposed permit. The notice also advertised the Department's public information session that was held in the Ironbound community on July 12, 2012, and the public hearing that took place on July 26, 2012. The Department provided 45 days, from July 26 through August 10, 2012, for the public to comment on the proposed permit. This was in addition to the opportunity provided since November, 2011, to comment on the application.

- 6) **Comment:** Several commenters raised the issue of translation of information for non-English speaking residents. Commenters raised translation issues for both written materials, as well as at the public hearing. (1, 14, 18)

**Response:** The Department provided 3 bilingual staff (fluent in Portugese, Spanish and Russian) to

translate comments to the stenographer at the public hearing on July 26, 2012. While the Department's communication practices do not require multilingual translation, the Department continues to enhance its public outreach to include the use of bilingual staff, to the extent practicable, in addition to other partners and stakeholders to assist us in our community engagement.

### **Non-Cataloged Comments**

- 7) **Comment:** One commenter asserted that the Department misquoted and misapplied the definition of "adverse environmental burden" set forth in the Region 2 Interim Policy. The commenter stated that the Department inserted "only" into the definition, which according to the commenter, caused the Department to misapply the definition. The commenter stated that there is no existing health standard for the burden in question, and therefore, health data, a cumulative impacts analysis that examined a combination of pollutants, an equity analysis and an alternative site analysis should be considered. (6)

#### **Response:**

As explained in response E2 above, the Department referred to the Region 2 Interim Policy for certain definitions, but is not obligated to use the Region 2 Interim Policy. With this in mind, the Department acknowledges that "only" is not included in the Region 2 Interim Policy definition of "adverse environmental burden". However, the Department disagrees with the commenter's interpretation of the definition and the commenter's position that the Department mis-interpreted or mis-applied the definition. Although the Department included "only" in the definition, this inadvertent inclusion did not render faulty the Department's analysis of whether the plant would impose an adverse environmental burden on the community. As explained, the air quality modeling analyses showed that emissions from this plant, considering the existing background concentrations from existing sources, would not cause an exceedance of the NAAQS, which are public health standards with an adequate margin of safety. Contrary to the commenter's statement, the NAAQS are the applicable public health standards used to consider the impacts of this source's emissions. The Department determined that the impacts are not significant and the environmental burden is not adverse. Please see response D1 for the Department's response regarding the alternative sites analysis. Please see response E3 above regarding cumulative impacts analysis. Please see response A4 for health standards.

- 8) **Comment:** Commenters stated that even though the plant may be efficient and low-emitting, the Department failed to consider the asthma rate in Newark. According to one commenter, Newark has one of the worst asthma rates in the country and Essex County is the 13<sup>th</sup> dirtiest county in the nation for air pollution and soot. (10,12)

#### **Response:**

The Department appreciates the commenter's concerns about asthma rates in Newark and the environmental and health effects of air pollutants in densely populated urban areas. The Department

regulates sources of air pollution to assure compliance with the national ambient air quality standards, which are standards set by the USEPA to protect the public health with an ample margin of safety, including sensitive populations. In other words, the air quality standards are based on known health effects, including asthma. The Department requires pollutant sources to employ state of the art control technologies to minimize emissions. N.J.A.C. 7:27-13.2(a) states the air quality objective in applying both technology and air quality requirements to new and modified equipment.

*Whereas air is vital to life and contamination of it to any degree is a condition to be endured reluctantly; and whereas our knowledge of the long-term harmful effects of low levels of contamination is incomplete and uncertain; therefore, it is the air quality objective of the Department to assure, at all times and throughout the territory of the State, ambient air of the highest purity achievable by the installation and diligent operation and maintenance of pollution source control devices and methods consistent with the lawful application of the most advanced state of the art.*

Moreover, as explained in response E2, the Department has taken many actions and will continue to take action to improve the air quality in Newark and the Ironbound Community.

**F) New Jersey Executive Order 215 and Environmental Impact Statement:**

- 1) **Comment:** Several commenters requested the Department require the facility to complete Environmental Impact Statement including a health analysis pursuant to New Jersey Executive Order 215. (5, 11, 16)

**Response:**

Executive Order 215 states:

“All departments, agencies and authorities of the State shall prepare and submit to the Department of Environmental Protection an environmental assessment or environmental impact statement, as specified below, in support of major construction projects. Projects directly initiated by departments, agencies, or authorities of the State, as well as projects in which the State departments, agencies or authorities are granting at least 20 percent financial assistance, shall comply with this Order.”

NEC is not associated with any departments, agencies, or authorities of the State and is not receiving any financial assistance from any State department, agency or authority for construction of the NEC facility. Therefore NEC is not subject to Executive Order 215.

**G) Enforcement**

- 1) **Comment:** Several commenters questioned how the Department would conduct inspections to assure the facility is in compliance with its permit. They requested that enhanced inspections be conducted and all inspection results should be submitted to the city of Newark and to ICC on an annual basis. One commenter requested an enhanced enforcement requirement that would seek to mitigate any violations

from this facility and would result in stepped up penalties or trigger Supplementary Environmental Projects that benefit the local environment that they are impacting. One commenter requested that the Department should require that Hess renew the permit every 5 years. One commenter requested that any deviations from the projected emissions should trigger another review of the permit at that time and include local offset requirements as well as ensure that they are using the best available technology. (2, 15, 21)

**Response:**

The permit has enforceable conditions requiring comprehensive stack tests and reporting initially, quarterly, and every permit renewal (see response C3). The Department will conduct a compliance inspection at the facility on a routine basis. In addition, the Department reviews all compliance submittal requirements including annual compliance certification, semi-annual deviation report, and quarterly excess emission monitoring performance report to determine compliance. All inspection reports are available online and can be accessed by the general public using Data Miner found on the Department's website at <http://www.nj.gov/dep/>. As a policy, supplemental environmental projects (SEP) are voluntary. Where applicable, the Department will encourage SEP as part of a settlement agreement if there is a violation. The permit has a 5-year term permit. Any deviations and exceedances to permit conditions will be addressed with the appropriate enforcement action that can include a modification to the existing permit. During the permit modification review, additional offsets and air pollution controls may be required if emissions are proposed to increase.

- 2) **Comment:** I believe the Department should go into the neighborhood where a project is built and monitor the construction and operation of the facility, not just permit them initially. (10)

**Response:**

Where the Department has jurisdiction and oversight, the Department will inspect. Air contaminant monitoring data is reviewed by the Department.

- 3) **Comment:** What happens when the plant exceeds all these numbers that are in here? Are there plans in place? And who will they report these to? And what will the Department do with these reporting numbers? Will they be on a website? Will they be available? What about requiring Hess to report to the climate registry, which is a transparent reporting mechanism for all greenhouse gasses? That, I think, definitely should be included. (16)

**Response:**

Appropriate enforcement action(s) will be taken by the Department for permit exceedances if any. In accordance with New Jersey Administrative Code N.J.A.C. 7:27 et seq., the Department's Division of Compliance & Enforcement is tasked to ensure compliance of all environmental rules and regulations in



the State of New Jersey. Currently, there is no state and federal mandate that require the facility to report to the climate registry. Federal regulations, 40 CFR Part 98, requires facilities that emit 25,000 metric tons or more per year of greenhouse gases (GHGs) to submit annual reports to EPA. Furthermore, NJAC 7:27-21 also has provisions for facilities subject to this regulation to report GHGs to the Department. Also see response G1.

- 4) **Comment:** I live within the site of Danberry and every night I watch the fumes of smoke. It doesn't come up in the daytime but at night it does. No one seems to monitor that. I'm wondering if the same thing is going to happen with this plant. (13)

**Response:**

To report all air pollution incidents during after-hours, weekends and holidays, please call the Department's hotline at 1-877WARN-DEP (1-877-927-6337). The air permit for this facility requires continuous emissions monitoring system (CEMS) be installed and operated on the exhaust stack(s) of the combustion equipment. The CEMS will continuously monitor for NO<sub>x</sub>, CO, CO<sub>2</sub>, NH<sub>3</sub>, and O<sub>2</sub>, during the night as well as the day.

- 5) **Comment:** Hess was just sued by the Department in a non- environmental justice community for not implementing safety standards that they were supposed to have there. The same type of things that they are supposed to put in this plant. (13)

**Response:**

The Department and the EPA are currently working on a federal Consent Decree to address alleged Clean Air Act violations at the Hess Corporation's Port Reading Refinery. This action is similar to actions taken at all refineries across the United States and the Hess refinery is the last refinery to be addressed in New Jersey. The Consent Decree deals with alleged emission exceedances from boilers and heaters, benzene wastes, Volatile Organic Leak Detection and Repair and the fluidized catalytic cracking unit.

**H) Emergency Plan:**

- 1) **Comment:** Several comments were received regarding the absence of an emergency response plan. (11, 14, 16)

**Response:**

Hess has indicated in the Department's Permit Readiness Checklist that the facility is subject to the requirements of the Discharge Prevention program, N.J.A.C. 7:1-E. As a result, Hess must submit a discharge clean up and removal (DCR) plan that incorporates all of the elements addressing emergency response. Those elements include, but are not limited to, appointing a response coordinator, conducting staff training, and notification to all applicable emergency response organizations, and annual drills to

evaluate the adequacy of the emergency response plan. The DRC plan must be submitted to and approved by the Department prior to operation of the facility. Based on the type of ammonia (< 20% ammonia) being used for the air pollution control system, Hess is not subject to the Department's Toxic Catastrophe Prevention Act (TCPA) regulations (N.J.A.C. 7:31) which would require them to submit a report of safety review of design at least 90 days prior to construction.

**I) Site Remediation**

- 1) **Comment:** The Ironbound has been the site of one hazardous source after another for 30 years. (14)

**Response:**

The Department is committed to addressing any sources of contamination and contaminated sites in the Ironbound section of Newark. Enforcement of permit conditions and the requirement that any contaminated site is remediated under the recently implemented Site Remediation Reform Act will result in the clean-up of these sites.

- 2) **Comment:** Two commenters stated Brownfields could be put to better use if they were remediated and redeveloped for green job intensive industries. (2, 21)

**Response:**

The proposed site is not a Brownfields redevelopment, which is typically the clean-up of vacant or underutilized properties. The Hess Newark Energy Project is a modification of current industrial use to a different use by the property owner.

**J) Land Use**

- 1) **Comment:** Two commenters questioned where the facility would obtain its natural gas supply and if any new infrastructure would have an impact on water resources. (4, 11)

**Response**

The facility has proposed to get its natural gas from an existing Transco gas supply line, which runs approximately 500 feet south of the proposed site and will be no impact to water resources.

**K) Sustainable Energy/Energy Efficiency:**

- 1) **Comment:** ICC sees the road to a sustainable and healthy world and more long term jobs as being the development of alternative energy sources, including solar and wind – not through more destructive means, such as fracking and natural gas. (2)

**Response:**

The Newark Energy Center does not preclude the State's support of alternative energy resources. New Jersey has one of the most significant Renewable Energy Portfolio Standards (RPS) in the United States and has more than 800 MW of in-state solar capacity. The technology employed at the Newark Energy Center has the ability to complement the increased supply of alternative energy resources. See response K5 below.

- 2) **Comment:** Newark has 35,000 acres up in Kearny. They should take 10,000 acres of it and install solar panels. That would help everyone. (3)

**Response:**

The Newark Energy Center is not preventing solar development. The State encourages the development of renewable energy technologies with its RPS. A diverse energy supply portfolio, including natural gas and renewables, is an effective hedge against the uncertainties and risks associated with energy generation.

- 3) **Comment:** The amount of money they are getting in subsidy is more than \$800 million. With solar panels on 4,000 homes in Newark, you wouldn't need this plant. You could build 8,000 homes more energy efficient and create 3,000 jobs in the process. This would be a good location for a solar factory which would create a lot of jobs. (4)

**Response:**

See Response K1 and K2. The Department does not have the authority to control Hess's business decisions. The Department evaluates the permit applications as submitted, and approves or denies applications based on its compliance with applicable State or Federal air rules and regulations.

- 4) **Comment:** We have not ever had a real discussion of alternatives, if we did have a discussion of alternatives, the first alternative would be energy efficiency. We know that energy efficiency is available today at affordable prices off the shelf and that it would produce many more jobs than this plant. (5)

**Response:**

See Response K3. Energy efficiency is appropriate for both end users of electricity and the equipment which produces electricity. The technology employed by NEC would be amongst the most efficient producers of electricity in the USA, and there continues to be the need for new power plants to replace those older plants shutting down. Combined cycle gas-fired power plants are a good alternative for this replacement.

- 5) **Comment:** The National Renewable Energy Laboratory states that the renewable energy generation for technologies that are commercially available today, in combination with a more flexible energy system

is more than adequate to supply 80% of total US energy generation in 2050. (8)

**Response:** The study that is referenced by the commenter, NREL's Renewable Electricity Futures Study, indicated that U.S. electricity demand in 2050 could be met with 80% of generation from renewable energy technologies in conjunction with a mix of flexible conventional generation amongst other changes to the infrastructure like grid storage, new transmission, more responsive loads, and changes in power system operations. Combined-cycle natural gas plants, like Newark Energy Center, are flexible conventional generation and can support the integration of renewable technologies into the electric grid, as the NREL study concludes.

- 6) **Comment:** They should take the money from this project and retrofit houses to make them more energy efficient. They won't use as much energy and that would put more people to work. We won't have to worry about polluting the air. (13)

**Response:**

See responses K3 and K4. New Jersey supports energy efficiency measures through incentives administered by the Board of Public Utilities' Clean Energy Program (CEP) in residential, commercial, and industrial sectors. The Newark Energy Center does not preclude individuals or businesses from taking advantage of these programs.

- 7) **Comment:** Hess should be spending its money right now to build renewable energy plants, solar facilities, wind facilities and energy conservation. We could save one-third of all the electricity that we are using. (16)

**Response:**

See responses K3 and K4. Currently, the Department does not have the authority to require alternatives to proposed energy technology. However, the Department acknowledges the merit of renewable energy and energy conservation by promoting these resources through the various incentives available.

- 8) **Comment:** There has been no discussion regarding energy efficiency. The applicant should be required to demonstrate credible alternatives to the proposed technology as part of their application to the state. (21)

**Response:**

See response K3 and K4. In their permit application, the applicant considered simple – cycle combustion and conventional boiler technologies as alternatives to the proposed combined cycle combustion technology. They determined that the alternatives are not as efficient in terms of both energy (MW per BTU of fuel) and environmental (lbs of emissions per MW) efficiency. For these reasons, the combined – cycle technology was determined to be superior.

**L) Gas Supply:**

- 1) **Comment:** We need to stop fracking nationwide. We should all call Governor Christies office and ask him to approve the bill A575 / S253. (7); While natural gas plants are cleaner relative to coal and oil plants, they still produce significant amounts of pollution and contribute to the ongoing need to extract natural gas including the use of controversial methods such as fracking. (11)

**Response:**

The Department agrees that a new combined cycle power plant has much less air contaminant emissions than a coal fired power plant. This is especially true for old coal fired power plants. To put this in perspective, a comparison with the Portland Power plant, located about 50 miles west of Newark, is relevant for several reasons. First, the Portland power plant provides electricity to the PJM grid, including Newark and the rest of northern NJ. Second, Portland is representative of many very old and inefficient USA power plants that should be retired and replaced with cleaner more efficient sources of electric power. Third, Portland is scheduled to be retired in 2015, the same year that the NEC project is scheduled to start operation. Hence, it is plausible that the Newark Energy Center project, if constructed, will be providing replacement electricity for Portland in 2015. Also relevant is that the substantial emission reductions from the shutdown of the Portland coal units will benefit all of northern New Jersey, including Newark. Those reductions would not occur if there were not sufficient new power plants constructed to provide the electric power capacity from Portland and similar old power plants. Following is an emission comparison of the key air contaminants emitted by Portland's approximately 400 MW of coal capacity, and the proposed maximum amount of these air contaminants from the 655 MW Newark Energy Center project. Even though the Newark Energy Center would provide substantially more electricity, its emissions would be a fraction of the emissions from Portland. The emission comparison is provided for both the total emission rate in lbs per hour and the normalized emission rate in lbs per megawatt – hour of electricity. Emissions from other equipment at these facilities are not included in the comparison.

Table L1. Comparison of Allowable Short-Term Emissions between the 400 MW Coal-Fired Portland Power Plant and the Proposed 655 MW Natural Gas Fired Newark Energy Center

Pollutant	Max. Allowable Emissions (lbs/hr)		Normalized Max. Allowable Emissions (lbs/MW hr)	
	Portland Coal Units	NEC Gas Turbines	Portland Coal Units	NEC Gas Turbines
Sulfur Dioxide	14,720	5.6	36.80	0.009
Nitrogen Oxides	2,070	33.6	5.18	0.051
Particulate (TSP)	416.9	15.8	1.04	0.024

Table L2. Comparison of Annual Emissions between the 400 MW Coal-Fired Portland Power Plant and the Proposed 655 MW Natural Gas Fired Newark Energy Center

<b>Pollutant</b>	<b>Portland Coal Units 2007-2010 <u>Actual Annual Emissions</u> (tons per year)</b>	<b>NEC Gas Turbines <u>Allowable</u> (tons per year)</b>
Sulfur Dioxide	29,067	19.7
Nitrogen Oxides	3,321	136.9
Particulate (TSP)	295.5	57.27

With respect to fracking, natural gas can be obtained if acceptable environmental procedures are followed.

**M) Global Warming/Climate Change**

- 1) **Comment:** Several commenters expressed concern that the facility will emit over 2 million tpy of CO<sub>2</sub> and contribute to climate change and will raise the temperature in Newark. (2, 5, 11, 13, 15, 16, 17)

**Response:**

The Department acknowledges that the Newark Energy Center will emit CO<sub>2</sub>. However, natural gas combined cycle power plants emit much less CO<sub>2</sub> per megawatt – hour than coal or oil. Further combined cycle natural gas plants have the potential to *decrease* current levels of CO<sub>2</sub> emissions by offsetting less efficient coal and oil power plants that currently supply electricity to the PJM electric grid, which includes Newark. A Board of Public Utility commissioned report titled “LCAPP Agent’s Report: Long-Term Capacity Agreement Pilot Program” studied three potential power plants totally approximately 2000 megawatts, which included the Newark Energy Center, and concluded that overall, the annual reductions are equivalent, on an order-of-magnitude basis, to the annual emissions of roughly 250-MW of coal-fired generation.

- 2) **Comment:** They are talking about piping the carbon dioxide into the ocean. It is not going to work. It kills the fish and kills the environment. (13)

**Response:**

The Newark Energy Center is not designed to capture and pipe carbon dioxide to the ocean or elsewhere.

**N) Energy Master Plan:**

- 1) **Comment:** There is no guarantee that this plant will displace older and dirtier facilities. (2)

**Response:**

In New Jersey, wholesale electricity markets determine which power plants run to meet electricity demand and determine the wholesale price of electricity. Electricity generators offer bids determined by short-term variable costs (include incremental costs of fuel, operation and maintenance, and emission allowances) into auctions administered by PJM, the entity responsible for market operation, and PJM selects the lowest priced plant one-by-one until electricity demand is met. The last electricity generator selected to meet demand is referred to as the marginal unit. Due to the current and projected price of natural gas, combined cycle natural gas plants can offer low priced electricity and disrupt the order in which plants dispatch their electricity. The plants most likely to be displaced by the new generation will be those units that are the last to be selected (marginal units), which tend to be coal and oil. According to PJM, in 2011, 69% of the fuel used by marginal units was coal. Hence, NEC is likely to displace old inefficient coal-fired power. See response to L1 for specific example.

- 2) **Comment:** Hess has argued publicly that this plant is going to displace emissions from dirtier power plants in northern NJ and therefore result in an overall improvement in air quality in the area. That argument is based on future estimates of the price of natural gas and the demand for electricity that may appear reasonable now but are not guaranteed to be true during the 30 to 40 year operating life of the power plant. This plant appears to be insulated from variations in the price of natural gas for the first 15 years of operation because it will receive government subsidies. However there is no guarantee that those subsidies will be forthcoming for the final 15-20 years of the plants existence. If electric demand goes up, both plants may continue to operate. Another problem with Hess's claimed emission reductions from area plants is that they are not legally enforceable so if they don't occur, there are no consequences for Hess but there will be more pollution for Newark. (6)

**Response:** See response N1 above. It is likely that newer, cleaner and more efficient combined cycle generating plants will displace older, dirtier and less efficient plants that are more costly to operate. While emission reductions from the displacement of older power plants are likely, such reductions through such means is not a condition of this permit.

- 3) **Comment:** They are proposing that there will be an environmental benefit based on market speculation that will seek to offset emissions from the nearby Jersey City coal fired plant. Yet the applicant was unwilling to formally attest to or make written assurances regarding the realization of this net benefit

calculation. Furthermore, this conclusion is not based within the context of environmental justice and the total cumulative burden already present in the area of the proposed new plant. (11)

**Response:** See responses N1 and E3.

- 4) **Comment:** Our organization and many community residents attempted to meaningfully participate and weigh in early on this issue by testifying at the State’s Energy Master Plan hearings and submitting formal comments in opposition to the siting of this natural gas plant. Yet, these attempts at early participation went without response and apparently with very little regard given to our participation, particularly during the public hearing sessions in which residents’ were denied or limited in their ability to speak (21)

**Response:**

The hearings related to the State’s Energy Master Plan are outside the scope of the Department’s review of this permit application. As the Department understands, BPU conducted numerous stakeholder meetings and elicited comments on its web-site over the course of development of the EMP from April, 2010 to December 5, 2011. The BPU considered opposing comments during its deliberations, explained the basis for decisions in the Energy Master Plan and, specifically, provided significant detail with respect to the selection of three projects under the Long-Term Capacity Agreement Pilot Program (LCAPP). Additional details for the selection of these projects are contained in the “LCAPP Agent’s Report; Long-Term Capacity Agreement Pilot Program,” prepared for the New Jersey Board of Public Utilities, March 21, 2011. Among other things, project applications submitted for consideration under the LCAPP program were evaluated for environmental, economic and community benefits. It bears emphasis that while BPU evaluated projects that applied for the LCAPP pilot program, BPU had no involvement in site selections by private developers or jurisdictional authority over local zoning approvals and permitting decisions.

- 5) **Comment:** Hess’s assertions of offsets from nearby coal power plants are based on economic models which are speculative in nature and hold no guarantees for the communities who will be impacted for decades to come. In order for this facility to achieve any displacement from Hudson coal plant, it is critical that the price of natural gas remain under \$4.50 per MMBtu in the future – there is no guarantee that this will happen. Also, there is a possibility that electrical demand may grow so that all of these energy generating plants would be operating simultaneously to meet the burgeoning demand. (21)

**Response:** NEC did not rely on offsets from nearby power plant emission reductions as this comment suggests. See response N2.



- 6) **Comment:** This is a plant that is built on spec, and is being subsidized by the taxpayers of NJ. The plant is guaranteed through a contract offered by DPS with the DEP to sell electricity to the grid at 22 cents per Kilowatt when the average price at auction is 4.5 cents per Kilowatt. This plant will increase the average rate amount. (4)

**Response:**

The premise of this comment is not factually correct. The plant will participate in the wholesale electricity market as other generators and will sell electricity as governed by the rules administered by PJM. The LCAPP pilot program will likely lower power prices below pre-LCAPP levels by assisting with financing for the construction of new power plants that are less costly to operate because of high efficiencies and low natural gas prices. Increased supplies of energy are intended to reduce prices for New Jersey ratepayers and also serve to complement an increase in the development of renewable energy through more efficient load balancing.

- 7) **Comment:** There has been no discussion regarding the need for the increase in the size of the facility from its original proposal in the Energy Master Plan. (21)

**Response:**

The EMP and LCAPP Report refer to “MW of unforced capacity” and, in the case of NEC, identifies 625 MW of unforced capacity, which is the amount of capacity available to supply the electrical grid in light of the real-world experience with operating such a unit. Unforced capacity ratings (“UCAP”) account for the fact that all electric generating units experience unplanned outages due to equipment failures; that is, when units are “forced” out of service, their capacity is no longer available and must be accounted for in realistic planning projections of available generation capacity. The NEC application refers to “655 MW of installed capacity,” which is the maximum or peak generating capacity of the NEC. Installed capacity ratings (“ICAP”) represent the nameplate rating of the generating unit; that is, what the unit is electrically capable of producing assuming no forced outages. The difference in the two numbers does not reflect an increase in the size of the plant but rather refers to two different units of measure, with ICAP representing the engineering specification for the plant assuming perfect operation and UCAP reflecting the fact that all machines are subject to unplanned breakdowns for short durations of time.

- 8) Part of the energy master plan is to decommission existing plants and build natural gas plants. Governor Christie wants to build a plant here but the pollution is totally a problem. (17)

**Response:** See response A3 for information on the Air impacts from the project, and see response N2 for information regarding the displacement of older power plants.

## O) Jobs

- 1) **Comment:** The proposed plant will create few, if any, jobs for Newark residents. (2)

**Response:**

This comment is beyond the scope of the permit application review. See section Q: Applicant Provided Information about the agreement between the City of Newark and NEC regarding jobs.

- 2) **Comment:** In terms of the economic opportunities for Newark residents, this Commission believes that there are far more sustainable employment opportunities possible from the investment and development of truly green energy sources such a proposed offshore wind and solar projects. This proposed project promises very few long term jobs (26 FTE) with no commitment to Newark residents beyond the potential for some construction jobs in the two years it will take to build the plant. (11)

**Response:**

This comment is beyond the scope of the permit application review.

- 3) **Comment:** In return for continuing a pattern of disproportionate and cumulative burdens, residents will see only 26 jobs created; whether they will even go to local residents is questionable. (21)

**Response:**

The Department disagrees with the commenter's assertion regarding the burdens. As explained in response E3 and Section A, the Department determined that the emissions from this plant will not cause significant air quality impacts. The remainder of the comment is beyond the scope of the permit application review.

## P) Other

- 1) **Comment:** What we should be doing is charging Hess, and other businesses that are located here and polluting, for all of their emissions and that money should be going into funds for transition to clean energy. (16)

**Response:**

The Department has the authority to charge Title V facilities a fee for emissions, which support the permitting and compliance and enforcement programs. Charging additional fees would require statutory and regulatory changes.

- 2) **Comment:** Lower the taxes in our community. (18)

**Response:**

The Department does not have the authority to regulate taxes in any community.

- 3) **Comment:** Hess talks about a community plan. We haven't seen it. What is it? (11)

**Response:**

See section Q: Applicant Provided Information about the agreement between the City of Newark and NEC regarding community benefits.

- 4) **Comment:** Hess has made an agreement with the City of Newark that may result in some air pollution reduction in the city but to the best of our knowledge these reductions have yet to be quantified so there is no way of knowing how they will compare with the emissions from the proposed plant. (6)

**Response:**

See section Q: Applicant Provided Information about the agreement between the City of Newark and NEC regarding environmental programs. The Department added a new permit condition (FC, Ref. #16 in the compliance plan) which requires the permittee to submit an annual report, to the Department, which gives an updated status of the environmental program funding projects which Hess is funding in the City of Newark pursuant to resolution 7R3D(AS). The report must include a description of each environmental program funding project, its location, its implementation status and an estimate of the environmental benefit of the project. Any emission reductions from these programs are in addition to the emission offsets required by this permit.

**Q) Response Areas Assigned to Hess**

The following areas of public inquiry were assigned to Hess for factual response:

1. Agreement between Hess and City of Newark and Community Benefits
2. Plant Location

While these are outside the scope of the Air Permitting process they are provided for public information and in the interest of addressing all public inquiry wherever possible.

Community Benefits

Environmental Program Funding: NEC agreed to fund a total of \$7 Million Dollars in environmental programs:

- A. NEC will pay \$4 Million Dollars to the Brick City Development Corporation ("BCDC") a not-for-profit corporation headquartered in Newark. A publication about BCDC is located at: [http://bcdcn Newark.org/cms/wp-content/uploads/2011/04/BCDC\\_Overview\\_Flyer.pdf](http://bcdcn Newark.org/cms/wp-content/uploads/2011/04/BCDC_Overview_Flyer.pdf)
- B. This \$4 Million Dollars is to be used to support programs to be managed by Newark as outlined under the Program Management/Use of Funds section below.
- C. NEC will spend \$3 Million Dollars in Newark to retrofit and/or replace older, less efficient, oil burning boilers with cleaner, more efficient, natural gas fired boilers. Commercial and residential structures that use more than 20,000 gallons of fuel oil per year are eligible. NEC provides reports to the City on the program, which is expected to be complete by December 31, 2015.

City Resident Employment Development: NEC agreed to fund a total of \$650,000:

- A. NEC has paid \$500,000 to the Newark Workforce Investment Board, Inc. ("NWIB") to fund a First Source Job Placement program. This program is designed to help NEC hire Newark residents. NWIB is a not-for-profit corporation headquartered in Newark. NWIB was created pursuant to a United States law to create state and local boards to provide better access to employment, education, training and information services. NEC promises to make good faith efforts to hire Newark residents.
- B. NEC has paid \$150,000 to NWIB for a pre-apprenticeship training program.
- C. NEC will establish a paid intern program to be managed by the New Jersey Institute of Technology.
- D. To encourage city resident and business participation in the project, NEC also is required to include language in its labor contracts encouraging local and minority hiring.

\$5 Million Dollars in Payment to the City to Fund Health and Education Programs: The City of Newark decides how to allocate these funds for health and education programs for residents of Newark, and manages and oversees those programs. See the Program Management/Use of Funds section below for details on which projects Newark intends to fund.

Utility Easements/Connection Fees: NEC agrees to pay \$11 Million Dollars for a utility easement.

#### Program Management/Use of Funds

General: NEC manages the boiler replacement program, with oversight and input from Newark. All other programs funded by the Agreement are managed by Newark or by the non-profit corporation involved, and NEC has no input or control over them. Section 12 of the Agreement explains how Newark has elected to use the money:

Section 12. City Allocation of Funding:

- \$2 Million Dollars for Newark Green and Healthy Homes program that will provide comprehensive energy and indoor air quality improvements in Newark residential structures;
- \$1.5 Million Dollars for Newark's tree planting initiative;
- \$100,000 for air quality monitoring;
- \$100,000 for anti-idling and truck route enforcement;
- \$200,000 to fund sustainability office staff;
- \$100,000 for Waterfront Park maintenance; and
- \$5 Million Dollars for renovation of Ironbound Stadium.

### Location of Plant

The Newark site was selected by NEC due to its ideal location, proximate to an adequate natural gas supply, an electrical interconnection point, and a readily available supply of cooling water. It is also an industrial area within which power plants are a permitted use, and well removed from residential areas. NEC did not have ownership or control over any other suitable sites and did not develop alternate cost estimates for different sites, nor was such a cost analysis required by regulation.

NEC was selected from applicants under New Jersey's Long-Term Capacity Agreement Pilot Program. This program was created by the New Jersey legislature to promote the construction of electrical generation facilities for the benefit of New Jersey's electric consumers. New Jersey has estimated that this project and the other two projects approved will generate a net economic benefit of \$1.8 Billion Dollars for electricity ratepayers in New Jersey, while providing significant environmental benefits. Each project was evaluated based on economic, environmental and community benefits. The location of the NEC project contributes significantly to its ability to achieve the economic benefits of this project, in the form of lower long term costs for electricity users and moving it away from critical facilities such as gas and water supply and interconnection points would have raised the project cost significantly. In addition, moving the project further away from the end users of the electricity increases losses in the transmission system.

**The following changes have been made to the draft permit as a result of public comments and Department-initiated changes.**

Department Initiated Changes to Permit:

1. Remove several references to a “dew point heater” in Group 1 because the facility permit application does not include a “dew point heater”. The facility is expected to have an electric powered dew point heater, which does not require an air pollution control permit.
2. Correct several emission factors in the equations used to calculate the annual emissions in Group 1 (Ref. #1 through 8 of the compliance plan) to reflect the actual emission factors from the permit application. Group 1 contains facility wide annual emission limits for each pollutant and requires the permittee to demonstrate compliance, every month, with each emission limit by adding up the total emissions for each combustion source at the facility, for each pollutant. The emissions from each source are based on the amount of fuel combusted by that source and an emission factor for that source.  
The compliance equations in the previously proposed permit, contained incorrect emission factors that were not consistent with the emission factors used in the permit application. The Department has now updated these emission factors. This change does not affect the emissions that are allowed to be emitted but corrects the equation that is used to calculate the actual emissions from the facility to demonstrate compliance with the facility wide emission limits. This change will allow for an accurate accounting of actual emissions from each combustion source at the facility.
3. Remove a duplicate permit condition for total facility HAPs emission limit from Group 1 (Ref. #12).
4. Correct the number of cold and warm start-ups that were cited at U1, OS0, Ref. #32, #33 and #34. The annual emission limits were based on 50 cold start-ups and 250 warm start-ups. The previously proposed permit incorrectly stated 250 cold start-ups and 50 warm start-ups. This change does not affect the emissions that are allowed to be emitted by the facility.
5. Include the Clean Air Interstate Rule (CAIR) permit in the Operating Permit. Two new permit requirements, (U1, OS0, Ref. #31 and 32) were included in the compliance plan as well as the actual CAIR permit which was included as appendix I to the operating permit.

Permit Changes in Response to Comments:

1. Add a new permit condition (FC Ref. #16) requiring Hess to submit an annual report, to the Department, which gives an updated status of the projects which Hess is funding in the City of Newark pursuant to resolution 7R3D(AS). The report must include a description of each project, its location, its implementation status and an estimate of the environmental benefit of the project.
2. Change (U1, OS0, Ref. #3) to require that 8 consecutive quarterly PM-10 or PM-2.5 stack tests demonstrate emissions of less than 80% of the permit limit in order for Hess to submit a significant permit modification requesting a change in frequency of stack testing for these pollutants. The permit currently allows them to submit such a modification application after 8 quarterly tests, regardless of the test results.
3. Modify existing permit conditions (GR1, Ref. #7 and #8) to require Hess to demonstrate, through calculation, compliance with the annual PM-10 and PM-2.5 emission limits (monthly). For each turbine, the lb/MMBtu emission factor, with and without duct burner firing, used in this calculation will be determined by averaging all valid stack test results obtained during the previous 12 months. The current permit requires compliance demonstration to be based on a lb/MMBtu emission factor that is

determined by averaging the first 4 valid stack tests.

4. Add new permit conditions (U1, OS1, REF #27 and 29; U1, OS2, REF #27 and 29; U1, OS3, REF #27 and 29; and U1, OS4, REF #27 and 29) which require Hess to demonstrate, through calculation, compliance with the hourly PM-10 and PM-2.5 emission limits (hourly). For each turbine, the lb/MMBtu emission factor, with and without duct burner firing, used in this calculation will be equivalent to the highest lb/MMBtu stack test result (average of 3 stack test runs) obtained during any valid stack test that was performed within the previous 12 months.