**Witness:** **Lynn Gresock**
**Fred Sellars**

**Question Westover School-1:**

How would someone living in the three-mile radius of the plant be affected by smell/sound/air quality, and other health considerations? How about during construction?

**Response:**

Facility emissions, even at the point of release from the stack, will be well below any odor recognition threshold. Therefore, no offsite odor impacts are expected to occur during either construction or operation.

The Facility will fully comply with applicable noise standards and regulations, with Facility-related sound levels at or below 51 dBA at the nearest residentially zoned areas. Facility impacts at the nearest existing residences would be even lower, less than 48 dBA, equivalent to typical sound levels in a quiet suburban area. The most noise-intensive construction activities will be limited to daytime hours (7:00 a.m. to 3:30 p.m.), when existing ambient levels are higher and noise is less noticeable. The second construction shift (from 4:30 p.m. to 12:00 midnight) would not involve heavy construction, but less noisy activities such as welding or cable pulling.

Using very conservative air quality modeling, Tetra Tech determined that the Facility's maximum air quality impacts will be a small fraction of the United States Environmental Protection Agency's (USEPA's) National Ambient Air Quality Standards (NAAQS). As required by the Clean Air Act, the USEPA sets the NAAQS through a rigorous scientific process at levels determined to be protective of the health of the most sensitive individuals (e.g., children, the elderly, chronic asthmatics and people with other pulmonary diseases), with an added margin of safety. Ambient air quality modeling analyses, completed in support of the Facility's air permit application, demonstrate that even these low maximum impacts will occur very close to the fence line of the Facility and drop off rapidly with distance.

Under the Clean Air Act, the USEPA has also adopted Prevention of Significant Deterioration (PSD) Increments which represent cumulative levels below which any quality degradation in air quality would be considered insignificant. Facility impacts (based on very conservative modeling assumptions), added together with other major sources in the area, are well below the PSD Increments. In fact, maximum modeled impacts are well within the measured year-to-year variations in existing air quality levels (for

example, annual average ambient $PM_{2.5}$ levels have ranged from 8.4 $\mu g/m^3$ to 9.9 $\mu g/m^3$ over the last four years). Therefore, in addition to maintaining NAAQS attainment, no significant deterioration in existing air quality levels will occur anywhere from Facility operation.

Air emissions sources during construction will be typical of similar construction projects. Equipment will meet all strict USEPA on-road and off-road emissions standards, as appropriate.

**Witness: Lynn Gresock**
**Fred Sellars**

**Question Westover School-2:**

Could living near the plant cause health problems over time? Please provide author of testimony.

**Response:**

Please see the Response to Q-Westover School-1. As that response discusses in detail, results of comprehensive air quality modeling analyses completed by Tetra Tech demonstrate that based on USEPA standards, Facility impacts, when cumulatively considered with contributions from other major sources in the area and existing background levels will not cause health problems.

**Witness:** **Lynn Gresock**
**Fred Sellars**

**Question Westover School-3:**

Is there any data on the long-term effects of PM2.5 on developing, teenage bodies, especially those of young women?

**Response:**

USEPA establishes and periodically reviews NAAQS using a wide array of epidemiological and other scientific studies. Because the maximum Facility ambient air quality impacts represent a very small fraction of those standards, the Facility will not affect human health of even the most vulnerable portion of the population. In addition, maximum modeled impacts are well below existing air quality levels (9.2 $\mu g/m^3$), further demonstrating that the Facility will not significantly affect air quality.

Westover School's concern for the health and wellbeing of its students, including its student athlete is understandable. Therefore, Tetra Tech specifically modeled the Facility's maximum impact on $PM_{2.5}$ levels at the school and compared them to existing annual average levels, as well as the NAAQS. The Facility's maximum modeled annual average $PM_{2.5}$ impact level, conservatively assuming year-round oil firing (even though the Facility's annual oil use would be limited to 720 hours) are 0.04 $\mu g/m^3$. This level is approximately 0.4% of existing ambient $PM_{2.5}$ levels and 0.3% of the NAAQS (12 $\mu g/m^3$). It is also a tiny fraction of the natural year-to-year variation in measured annual average ambient $PM_{2.5}$ levels noted above. Since the Facility will have no appreciable impact on air quality at the school, it can safely be concluded that there will be no discernable impact on the health of the young women at the school.

**Witness:** **Lynn Gresock**
**Fred Sellars**

**Question Westover School-4:**

Would there be any compensation if people living in the surrounding areas got sick or had health problems exacerbated by the plant?

**Response:**

For the reason described in the Responses to Q-Westover School-1, 2 and 3, based on the best available science, current regulatory standards and extensive modelling, the noise and air emissions from the Facility will not result in or contribute to illness or health problems. Therefore, there would be no factual or legal basis for compensation.

**Witness:** **Fred Sellars**
**Dean Gustafson**

**Question Westover School-5:**

What could some of the long-term, ecological effects be of the emissions on the soil and forests within a three-mile radius of the plant?

**Response:**

Tetra Tech utilized USEPA's guidance document, *A Screening Procedure for the Impacts of Air Pollution Sources on Plants, Soils and Animals* to compare maximum modeled air quality impacts to established vegetation and soil screening levels based on direct vegetation injury thresholds as well as expected plant tissue concentrations resulting from soil deposition and plant uptake. In addition, the USEPA has adopted Secondary NAAQS for the protection of public welfare, including vegetation. Facility impacts below the NAAQS and the soil and vegetation thresholds are also considered protective of wildlife. Since air quality modeling results are well below all applicable thresholds for protection of soils, vegetation and wildlife, no significant adverse short-term or long-term effects will occur.

**Witness:** **Fred Sellars**
**Dean Gustafson**

**Question Westover School-6:**

Would possible vibrations/harmonics or plumes from the plant interfere with local bats, birds or other wildlife?

**Response:**

No injury to local bats, bird or other wildlife from vibrations, harmonics or plumes are predicted even if an individual animal were to closely approach noise- or plume-emitting equipment on the Facility site. Careful equipment specification will ensure that no pure tonal violations (harmonics) as defined by the Connecticut Department of Energy and Environmental Protection (DEEP) Noise Regulations will occur as a result of the Facility. The Facility will not emit ultrasonic noise that may potentially interfere with bats.

As discussed in the response to Q-Westover School- 5, use of EPA screening procedures concludes that no significant air quality-related impacts to bats, bird or other wildlife will occur.

**Witness:** **Andrew J. Bazinet**
**Jon Donovan**

**Question Westover School-7:**

What is the lifespan of the plant?

**Response:**

The life of the Facility based on Generally Accepted Accounting Principles (GAAP) standards is thirty to forty years. However, with routine and appropriate operations and maintenance practices, the Facility is expected to be operational for longer than the thirty to forty year period.

**Witness:** **Lynn Gresock**
**Fred Sellars**

**Question Westover School-8:**

With the rate at which technology develops, how long until the technology of this plant is no longer BACT, and a more sustainable option comes along?

**Response:**

The Facility represents the most advanced state-of-the-art in terms of efficiency and environmental control technology, and is expected to represent BACT for the foreseeable future. As new sustainable technologies may be developed in the future for addition to the portfolio of generating resources, the efficient combined cycle technology reflected by the Facility will continue to be an important component of the energy mix.

**Witness:** **Danielle Powers**
**Tanya Bodell**

**Question Westover School-9:**

Does building this facility deincentivize the potential for CT to invest in a solar/wind facility in the future? Conversely, does saying "no" to the building of this plant open up the conversation about building a more sustainable, renewable energy facility?

**Response:**

This Facility does not create disincentives for Connecticut to invest in a solar/wind facility in the future. Instead, the addition of a quick-response, flexible resource such as Towantic facilitates higher levels of renewable integration by providing the type of capability necessary to support Connecticut and regional renewable resource mandates.

As ISO New England noted in its 2014 Regional Electricity Outlook (which is on the Council's Administrative Notice list):

> "The capacity that will replace New England's retiring generators is likely to be a combination of renewable and gas-fired resources. However, the relationship between renewables and the conventional resources needed to ensure grid reliability presents a puzzle: more wind and solar power creates a need for fast-starting, flexible resources that can take up the slack when the wind stops or the clouds roll in. New natural gas generators will likely fill this role, with their relative ease of siting and typically lower fuel costs—but this will further strain natural gas pipeline capacity.

Source: http://www.iso-ne.com/aboutiso/fin/annl_reports/2000/2014_reo.pdf

It is important to note that Towantic's dual-fuel capability ensures that the plant can provide the required "fast-starting, flexible resources" without further straining natural gas pipeline capacity.

Similarly, the State of Connecticut Department of Energy and Environmental Protection in its recent Draft Integrated Resource Plan recognized the importance of flexible resources such as the Facility where it made the following statements:

*"In order to maintain continuous real-time supply-demand balance, ISO-NE needs to be able to compensate for rapid changes in system conditions by having fast-acting, flexible resources at its disposal."*(page 19).

*"Natural gas generators have lower emissions and are also very flexible allowing them to ramp up quickly in response to changes in load."* (page 21)

**Witness: Danielle Powers**
**Tanya Bodell**

**Question Westover School-10:**

Does the building and success of this plant realistically have the potential to close one of the "sooty six" (CT's oil and coal burning plants)? If so, what is the projection timeline?

**Response:**

The analysis presented in Exhibit 2 to the Petition (the Concentric Report) does not examine potential retirements beyond those that have been announced. However, the dispatch model does provide insight into which power plants will be displaced by Towantic, which will be one of the most efficient and lowest emitting natural-gas fired resources on the system.

In general, the higher-polluting, less efficient power plants across New England will operate less as a result of the addition of Towantic. Whether or not these units retire will be a business decision that will depend on the numerous factors beyond displacement by Towantic, including environmental compliance costs, expected revenues and costs, and strategic objectives of unit owners.

**Witness:** **Andrew J. Bazinet**
**Jon Donovan**

**Question Westover School-11:**

Will traffic of the local areas be affected? Who will improve the infrastructure of roads to handle high traffic/big 80,000 lb. trucks?

**Response:**

Pursuant to the terms of an agreement with the Town of Oxford, CPV Towantic, at its cost, will construct E-Commerce Road, which connects Woodruff Hill Road and Juliano Drive at the Waterbury-Oxford Airport. Due to the proximity of E-Commerce Road to I-84 and constructing the road to be rated for heavy haul transport, we do not expect any rise in traffic within local areas.

**Witness:** **Andrew J. Bazinet**
**Jon Donovan**

**Question Westover School-12:**

Will the building and operation of the plant guarantee jobs to CT workers, and how many, for how long?

**Response:**

Yes, the Facility will bring an influx of jobs to the State of Connecticut. CPV Towantic has committed to using skilled members of the Connecticut State Building and Construction Trades Council for the duration of the 2.5 year construction schedule. Over the majority of the construction schedule, the Facility will require between 300-500 skilled jobs. As the plant switches over from construction to commercial operation, CPV Towantic will hire 20-25 experienced operators to manage the day-to-day operations of the Facility. Furthermore, and perhaps more significantly, there are a significant number of indirect and induced jobs created as a result of the project contracting for outside services such as janitorial, security, snow removal services, etc.

**Witness:** **Lynn Gresock**
**Fred Sellars**

**Question Westover School-13:**

What is the temperature of the exit stack gas as it leaves the 150' stacks? How will this influence local weather patterns and visual effects in the winter and summer?

**Response:**

The average exhaust temperature is 183.29$^{o}$F, which rapidly cools as the exhaust is mixed with ambient air. The size, temperature, and other physical characteristics of the plume are far too small to have any discernable effect on local weather patterns. On cold winter days, water vapor in the exhaust gas will condense and the plume will be visible, similar to a cloud or the vapor trail from an airplane or the plume from a chimney on a school or a house. Visible plumes are very uncommon in summer.

**Witness: Lynn Gresock**

**Question Westover School-14:**

As we understand it, the plant will be using water from one watershed (Heritage Village, Southbury) and putting it into another (Naugatuck). Will this out of basin water use adversely affect the water table and aquatic life in any one area?

**Response:**

On a watershed basis, the water demand of the Facility and wastewater discharge volumes are far too small to have a material influence on either the water table or aquatic life. See Response to Q-CSC-33 submitted on February 5, 2015.