

Grays Harbor Energy Center

Proposed Expansion: Units 3 & 4 Air Quality

What is the proposed expansion?

Grays Harbor Energy currently owns and operates a 650 megawatt natural gas-fired power plant known as the Grays Harbor Energy Center. It is located in the Satsop Development Park, near Elma, Washington. The existing facility has two combustion turbine generators, one steam turbine generator and a cooling tower.

Grays Harbor Energy proposes to add two more combustion turbine generators, one more steam turbine and another cooling tower. The proposed expansion will also add an auxiliary boiler, a diesel-fueled internal combustion engine driving a firewater pump, and a diesel-fueled generator. The proposed expansion is sometimes called Units 3 and 4.

The proposed expansion will use the most effective technologies available to minimize air pollution. The fuel will be natural gas, which is the cleanest fossil fuel available for producing electricity.

What laws govern air quality?

Several federal and state laws, including the Clean Air Act, regulate air quality. EFSEC requires facilities such as the Grays Harbor Energy Center to comply with all of these laws.

In order to comply with these laws, Grays Harbor Energy has applied for a Prevention of Significant Deterioration (PSD) permit

and a Notice of Construction (NOC) permit. Grays Harbor Energy will:

- implement the Best Available Control Technology to control air pollution;
- meet the ambient air quality standards established by EPA and the Washington Department of Ecology as levels to protect public health; and
- provide funding to mitigate its greenhouse gas (CO₂) emissions.

What is Best Available Control Technology?

The term Best Available Control Technology, or "BACT," refers to an air emissions limitation based on using the most effective, state-of-the-art methods and production processes available to minimize air emissions. Grays Harbor Energy will use the Best Available Control Technology to control the emissions of criteria and toxic pollutants from Units 3 and 4.

Criteria pollutants are the six pollutants governed by ambient air quality standards: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂). Because ozone is not emitted by sources directly, volatile organic compounds (VOCs) are used as a surrogate. Toxic air pollutants are the more than 300 chemicals that Washington has characterized as toxic.

The Prevention of Significant Deterioration (PSD) permit will require the use of Best Available Control Technology and will include emission limits that are at least as stringent as those found in the other permits issued to similar facilities.

What is the Best Available Control Technology that Grays Harbor Energy is proposing to use for Units 3 and 4?

Grays Harbor Energy proposes to install Selective Catalytic Reduction, known as "SCR", to reduce oxides of nitrogen (NOx) emissions, and an oxidation catalyst to reduce carbon monoxide (CO) and volatile organic compounds (VOCs) emissions.

If you are interested in a more complete description of the proposed emission controls and emission rates, please refer to Table 2.11-1 in the Application for Amendment 5 to the Site Certification Agreement, Section 2.11 (Oct. 30, 2009), available on the EFSEC website at: <http://www.efsec.wa.gov/SatsopAmend%205.shtml>.

Will the proposed expansion affect air quality?

ENVIRON International Corporation was retained to evaluate the effect of the project emissions on local and regional air quality. ENVIRON applied EPA-approved atmospheric dispersion models with local meteorological data. These models have also been approved by EFSEC, the Department of Ecology, the National Park Service, and the United States Forest Service.

Through this modeling, ENVIRON determined that the proposed expansion would not result in significant air pollution. In particular, the modeling showed that

criteria pollutant levels would be below "Significant Impact Levels" established by EPA and the Department of Ecology, and that toxic pollutant levels would be below "Acceptable Source Impact Levels" established by the agencies.

Will the addition of Units 3 and 4 affect plants, soils, or waterbodies?

ENVIRON also conducted computer-based modeling using EPA's preferred model to analyze the proposed expansion's potential impacts to plants, soils, and waterbodies. Based on this modeling, ENVIRON determined that the potential impacts would be insignificant.

Will the proposed expansion affect regional visibility and/or haze?

Using the methodology recommended by the National Park Service and the United States Forest Service, ENVIRON also assessed the proposed expansion's potential effect on regional visibility and haze. ENVIRON determined that project emissions would not have a perceptible effect on regional visibility or haze.

Will the addition of Units 3 and 4 create odors that will be perceptible off-site?

Grays Harbor Energy has recently learned that, during certain conditions, the chlorine used to keep the facility's cooling tower clean may linger in the air and cause occasional odors nearby. Grays Harbor Energy is making a change in the chemicals used in the cooling tower in order to address this concern. With this change, no odors are expected to be perceptible off-site.

Will the proposed expansion result in an increase in ozone?

ENVIRON conducted modeling to assess the expansion's potential effect on ozone. Based on this modeling, ENVIRON determined that the proposed expansion would not significantly increase ozone levels.

Will the proposed expansion result in greenhouse gases?

The existing Grays Harbor Energy Center and the proposed expansion both use a very efficient natural gas-fired combined-cycle technology. By its nature, burning natural gas produces less carbon dioxide (CO₂) than the burning of other fossil fuels, and the highly efficient design of this facility means more electricity is produced with fewer greenhouse gas emissions.

The proposed expansion will comply with Washington's greenhouse emissions performance standard. Grays Harbor Energy will also provide funding to mitigate its carbon dioxide (CO₂) emissions as required by Washington law.

Who will Grays Harbor Energy have to answer questions during the EFSEC meetings?

Eric Hansen of ENVIRON will make a presentation on air quality on behalf of Grays Harbor Energy at the meetings EFSEC has scheduled in July 2010. He will also be available to answer questions.

Eric Hansen has more than 30 years of experience in air quality modeling and permitting new and modified industrial facilities. He has responded to comments during public review, negotiated appropriate permit conditions, and

provided expert testimony during public hearings, including several EFSEC proceedings.

How can you find additional information?

More information about air quality can be found in the following document:

Application for Amendment 5 to the Site Certification Agreement, Sections 2.11.1, 3.2, and 5.0; Appendices A-1 through A-4 (Oct. 30, 2009), available on the EFSEC website at: http://www.efsec.wa.gov/Satsop_Amend%205.shtml