BEFORE THE STATE OF WASHINGTON

ENERGY FACILITY SITE EVALUATION COUNCIL

In the Matter of:	
APPLICATION NO. 99-01	**COUNCIL ORDER NO. 754**
SUMAS ENERGY 2, INC.	Findings of Fact, Conclusions of Law, and Order Recommending Denial of Site Certification and Order Denying Motion to Reopen Record
SUMAS ENERGY 2 GENERATION FACILITY	

SYNOPSIS: The Energy Facility Site Evaluation Council recommends against allowing a proposed fossil-fuel power plant to be located in the community of Sumas, Washington. On balance, the significant environmental and social costs of the facility, if located at the site proposed, outweigh the resulting energy benefits it would provide only to the most competitive bidders in the wholesale markets of the Western states power grid.

Nature of the Proceeding: This matter involves an application for certification of a proposed site in the City of Sumas, Washington, for the construction and operation of the Sumas 2 Generation Facility (S2GF[1]), a natural gas-fired electric generation facility and an associated electric transmission line and natural gas pipeline. Sumas Energy 2, Inc. (SE2[2] or the Applicant) seeks a Site Certification Agreement (SCA) to construct and operate a natural gas-fired combined–cycle 660 MW electric generation facility, an associated 230 kV electric transmission line, and a natural gas pipeline. The proposed project includes the use of diesel oil as a backup fuel.

Executive Summary: The Energy Facility Site Evaluation Council (EFSEC or Council) is the state agency charged with making a recommendation to the Governor as to whether a new energy facility should be sited in the state of Washington. EFSEC must consider a variety of factors in determining whether to recommend that an application to build and operate a new energy facility at a location proposed by the applicant be approved.

The Council is acutely aware of the region's need for energy and capacity. We are also mindful of our duty to protect the broad public interest. The Council must decide whether this energy facility, at the proposed site, will produce a net benefit after balancing the availability and costs of energy to consumers and the impact to the environment.

[1] While this recommendation consistently refers to the proposed plant as S2GF and its owner as SE2, others who are quoted may refer to both entities as SE2.
[2] See footnote 1.

The Council determined, upon careful consideration of the state's need for energy at a reasonable cost and the need to minimize environmental impacts, that the environmental costs outweigh the energy benefits that would be provided by this facility as proposed at this location. SE 2 has not shown that the plant would produce direct energy or economic benefits to consumers or lead to lower energy costs in Washington or in the region.

Sumas Energy 2 (SE2) proposes to construct and operate a natural gas-fired combined cycle 660-megawatt (MW) electric generation facility in the City of Sumas close to the Canadian border. SE2 proposes to operate the plant as a "merchant plant." This means the electric output of the plant would be sold at market prices wherever the Applicant could obtain the best price.

The analysis of environmental impacts and SE2's proposals for mitigation are insufficient to address the environmental impacts of this facility; especially with respect to air quality impacts in the Lower Fraser River Valley, greenhouse gas emissions, oil tanker truck traffic impacts, water quality and quantity impacts at local wells, and risk of increased flood hazard.

This plant would emit more than three tons of pollutants per day. The impacts to air quality in the Lower Fraser River Valley are of particular concern to the Council. SE2 was unsuccessful in obtaining any offsets for emissions, most of which would end up in the Lower Fraser River Valley. Emission levels would be substantially higher on days when the plant would be operating on back up diesel oil fuel. The Lower Fraser River Valley is in a confined air shed. Its topographical and meteorological features act to trap pollutants. This is an already polluted area where residents currently suffer health effects from existing air quality conditions. The area is highly populated and projected for continued rapid growth. Such an increase in emissions would create increased health hazards, particularly to those suffering from asthma and other respiratory ailments.

Concern over air pollution and other environmental impacts led the government of British Columbia, and opposition party members, as well as numerous Canadian local governmental bodies, to express unanimous opposition to the plant. The Council also heard overwhelming public opposition to the plant from witnesses on both sides of the border. The Council agrees with their view that this is not an air shed into which three tons a day of new pollutants should be added. The state has the responsibility to protect all people from undue adverse environmental impacts, whether or not they live in Washington State.

Although this plant's design has much to recommend it, the Council finds that a number of the environmental impacts cannot be mitigated sufficiently to support the plant's location at this site. Accordingly, the Council recommends denial of SE2's application for site certification.

Table of Contents

Procedural History: On January 11, 1999, Sumas Energy 2, Inc., submitted an application to the Council to construct and operate the Sumas Energy 2 Generation Facility. On January 10, 2000, the Applicant submitted a revised application.[3]

EFSEC's process for review of the S2GF application, pursuant to its statutory obligations, occurred in several phases. These included reviewing SE2's application, conducting hearings to determine if the proposal complies with local land use regulations, issuing a Draft Environmental Impact Statement (DEIS) and adopting a Final Environmental Impact Statement (EIS), considering state and federal required permits, and conducting formal adjudicative and public comment hearings. EFSEC duly published all required notices of these proceedings.[4]

Statutory parties to the EFSEC adjudicative hearings include the Applicant and the Counsel for the Environment. The Council received petitions for intervention and granted party status to the Department of Fish and Wildlife, the Department of Ecology, the Department of Community Trade and Economic Development, and the Washington Utilities and Transportation Commission all of whom are entitled to intervene under Council rules. WAC 463-30-050. The Council also granted intervention to Whatcom County, the City of Sumas, the City of Abbotsford, the Abbotsford Chamber of Commerce, the Northwest Energy Coalition, the Washington Environmental Council, the Bonneville Power Administration,[5] and Constance Hoag.

The Council conducted an initial public information meeting and land use consistency hearing on March 2, 1999 following the Applicant's submission of its first application.

As the lead agency for environmental review of SE2's application pursuant to the requirements of Chapter 43.21C RCW, the Council issued a determination of significance and request for comments on the scope of environmental impacts on August 10, 1999. A hearing on the scope of the EIS was held in the City of Sumas on September 16, 1999. The deadline for written comments on the scope was extended from September 24 to October 1, 1999.

As noted, the Applicant filed a new application in January 2000.

EFSEC issued a DEIS prepared by an independent consultant on March 15, 2000. Hearings to accept oral comment from the public were held on April 3, 2000, in Bellingham and on April 4, 2000, in Sumas. Forty-nine members of the public commented at the hearings. The deadline for written comments on the DEIS was extended from April 17 to May 2, 2000, upon request. The Council received an additional 198 written comments. The Council adopted and issued a Final EIS (FEIS) on February 7, 2001.

---

[3] Hereafter in this Order, the term application will refer to the revised application submitted in 2000.

[4] These include notices of the application, public meetings, land use hearings, intent to hold adjudicative proceedings, notice for filing of petitions for intervention and deadline for filing such petitions, prehearing conferences, adjudicative hearings, determination of significance and request for comments on scope of the environmental impact statement (EIS), Draft Environmental Impact Statement (DEIS) comment hearings, and Prevention of Significant Deterioration (PSD) air emissions permit hearings.

[5] The Bonneville Power Administration later stipulated to withdraw from the adjudication.

Prior to the formal adjudicative hearings, the Council held prehearing conferences on April 24, May 15, June 12, July 17, and July 24, 2000, and issued Prehearing Orders Numbers one through six (Council Order Nos. 743, 744, 746, 747, 748, and 749).

The Council conducted adjudicative sessions on May 15 and July 17, 2000, to hear testimony in support of various stipulations entered into by some of the parties.

Formal adjudicative hearings were held from July 24 through July 29 in Bellingham, Washington, from July 31 to August 4 in Olympia, Washington, and September 28 and 29, 2000 in Bellingham, Washington. These evidentiary hearings were held in accordance with the provisions of Chapter 34.05 RCW, the Administrative Procedure Act, following due and proper notice. The Council issued two post-hearing orders, Post-hearing Order No. 1 and No. 2 (Council Order No. 750 and Council Order No. 751). On September 28, 2000, the Council also heard further evidence from the Applicant and other parties regarding the Canadian governmental entities' positions on environmental issues and new evidence raised by the Draft PSD air emissions permit.

The Council received public testimony regarding the project at public witness hearings held July 25, 2000, in Bellingham, and July 27, 2000, in Everson, Washington. The Council held an additional public hearing session on September 27, 2000, in Everson, Washington, to allow those people who were unable to testify during the allotted time on July 27, 2000 to be heard. On July 25 and 27, 2000, the Council also reconvened the land use consistency hearings. The Council published a draft Prevention of Significant Deterioration (PSD) air emissions permit on August 25, 2000, and the Council held a public hearing to receive comments on the Draft PSD permit on September 28, 2000, in Everson, Washington. The deadline for written comments on the Draft PSD permit was extended, upon request, until October 5, 2000.

The Applicant filed its Post-Hearing Brief, its Proposed Findings of Fact, Conclusions of Law, and Order, and its proposed draft Site Certification Agreement on September 5, 2000. The other parties filed their Post-Hearing Briefs by September 26, 2000. At the hearing on September 29, 2000, it was decided that the supplemental briefs of parties other than the Applicant would be due on October 11, 2000 and the Applicant's Reply Brief would be due on October 20, 2000. Supplemental briefing was received by October 20, 2000. [6]

[6] The Council has decided not to consider the [Proposed] Findings of Fact, Conclusions of Law and Order submitted by the Counsel for the Environment on October 20, 2000 because the timing of that filing would not have allowed the Applicant to respond to that submission in accord with the briefing schedule. The request of the Applicant to strike that pleading is granted and hence the Applicant's proposed response to that pleading also will not be considered. Additionally, supplemental briefing was allowed only on new issues raised by the draft PSD and PSD hearing regarding air issues, and on evidence allowed in September of 2000 on the positions of the Canadian governmental entities. Any briefing in the supplemental briefs beyond the scope of those topics has not been considered. Also, any briefing that relies on extra-record evidence, which was not subject to cross-examination, has not been considered unless it simply refers to public witnesses' positions. The Council is mindful of the difference between testimony that was offered subject to cross-examination and public witness testimony that was not subject to the rigors of cross-examination, and has afforded appropriate weight to the evidence.

On December 19, 2000, the Council for the Environment and Whatcom County filed a joint motion to reopen the record for the limited purpose of determining whether recently discovered evidence pertaining to the current seismic activity and threat in Whatcom County and the Sumas Valley should impact the deliberations by the Council on this application. The Council will rule on this motion in the context of this Order and Recommendation.

Appearances: The parties were represented as follows:

Sumas Energy 2, Inc.: Karen M. McGaffey, Elizabeth L. McDougall, Charles R. Blumenfeld, Perkins Coie LLP, 1201 Third Avenue, Suite 4800, Seattle, WA 98101.

Counsel for the Environment: Mary Barrett, Senior Assistant Attorney General, Office of the Attorney General, 1125 Washington Street S.E., PO Box 40100, Olympia, WA 98504-0100.

Washington Department of Fish and Wildlife: William Frymire, Assistant Attorney General, Office of the Attorney General, , 1125 Washington Street S.E., PO Box 40100, Olympia, WA 98504-0100.

Washington Department of Ecology: Joan M. Marchioro, Assistant Attorney General, Office of the Attorney General, PO Box 40117, Olympia, WA 98504-0117.

Washington Department of Community, Trade and Economic Development:[7] Jonathan Gurish, Assistant Attorney General and David Warren, Energy Division Assistant Director, appearing pursuant to WAC 463-30-100 (c), 925 Plum Street, Building 4, PO Box 43173, Olympia, WA 98504-3173.

Washington State Utilities and Transportation Commission: Sally G. Johnston, Assistant Attorney General, Office of the Attorney General, 1400 S. Evergreen Park Drive S.W., PO Box 40128, Olympia, WA 98504-0128.

Whatcom County: David M. Grant, Whatcom County Prosecutor, Whatcom County Prosecutor's Office, 311 Grand Avenue, Bellingham, WA 98225.

City of Sumas: James J. Wright, Smith & Kosanke, 105 Fifth St., Suite 201, PO Box 632, Lynden, WA 98264 and David Davidson, appearing pursuant to WAC 463-30-100(c).

[7] For purposes of clarification, the Council notes that the Washington Department of Community, Trade and Economic Development (CTED) was administratively split by Governor's Directive No. 00-03 on May 15, 2000, subsequent to commencement of these proceedings. The directive created two separate divisions within CTED: (1) The Washington State Office of Trade and Economic Development, which is comprised of Trade and Economic Development, Energy Policy and WorkFirst sections of the Department; and (2) the Washington State Office of Community Development, which is comprised of the Housing, Local Government and Community Services sections and staffing for EFSEC. While CTED continues to retain its legal standing as an agency of state government, the new divisions now separately operate their respective program and budget areas. Accordingly, the order will hereafter refer to this intervenor as the Office of Trade and Economic Development (OTED).

City of Abbotsford and Abbotsford Chamber of Commerce: David A. Bricklin, Claudia Newman, Bricklin & Gendler, LLP, Suite 1015 Fourth & Pike Building, 1424 Fourth Avenue, Seattle, WA 98101.

Northwest Energy Coalition & Washington Environmental Council: Roger M. Leed, Roger M. Leed, P.S., 2003 Western Ave., Ste. 600, Seattle, WA 98121-2161 and Danielle Dixon, appearing pursuant to WAC 463-30-100 (c).

Bonneville Power Administration: Joyce E. Patton, Sonya L. Baskerville, Bonneville Power Administration, 905 NE 11th Avenue, Portland, OR 97232.

Constance Hoag: *pro se*, 2633 Halverstick Rd, Lynden, WA 98264.

The Council: Council representatives participating in this proceeding are the following: Council Chair Deborah J. Ross; Daniel Jemelka, Department of Agriculture, Heather Ballash, Department of Community, Trade and Economic Development; Charles J. Carelli, Department of Ecology; Jenene Fenton, Department of Fish and Wildlife; Ellen Haars, Department of Health; Gayle Rothrock, Department of Natural Resources; Gary Ray, Department of Transportation; Dennis J. Moss, Washington Utilities and Transportation Commission; Dan McShane, Whatcom County; Gerald Richmond, City of Sumas. Nan Thomas, Administrative Law Judge, Office of Administrative Hearings was retained by the Council to facilitate and conduct the hearings.[8]

MEMORANDUM

The Council sets out its findings and conclusions upon contested issues and the Council's reasons and bases therefore in the memorandum portion of this document.

Introduction

The Applicant and the Project

The site certification applicant is Sumas Energy 2, Inc. (SE2 or the Applicant), a special purpose corporation formed to develop, permit, finance, construct, own and operate the Sumas 2 Generation Facility. SE2 is a Washington S-Corporation formed under Title 23B of the Revised Code of Washington, and is wholly owned by Darrell Jones and his family. Mr. Jones is the sole director.

SE2 proposed to locate the facility on a 37-acre site in the City of Sumas, Washington, approximately one-half mile south of the Canadian border. Approximately 26 acres of the site have historically been farmed and the remainder of the site is woods or wetlands.

[8] At earlier stages of the proceeding, C. Robert Wallis sat as a member for the Utilities and Transportation Commission, Diane Offord for the Military Department, Constance Hoag for Whatcom County, Michael Quinn and Robert Mitchell for the City of Sumas, and Bob Hilpert for the Port of Bellingham. None of these individuals participated in deliberations on dispositive issues.

The proposed plant is a 660 MW combined-cycle electric generating plant. The facility consists of two separate but identical combustion gas turbine driven generators and one steam turbine driven generator. The exhaust heat from the combustion turbines flows to heat recovery steam generators (HRSG) to produce steam. Steam flows to the steam turbine and the steam exhausted by the steam turbine flows to the condenser, is condensed, and returns to the HRSG. The Applicant also seeks certification to construct a new 4.5-mile natural gas pipeline from the United States-Canadian border to the S2GF to deliver gas to the facility. The proposed project also includes the construction of a new 5.9-mile 230 kV transmission line from the facility to the Clayburn substation in British Columbia, Canada. Only the portion of the transmission line located in Washington State, which is approximately 0.6 miles in length, is subject to the Council's jurisdiction.

The proposed plant would use natural gas as its primary fuel. Low-sulfur distillate fuel oil is proposed as a backup fuel ostensibly to be used no more than fifteen days per year, and no more than an average of ten days per year over a ten-year period.[9] The application proposed construction of a 2.5 million-gallon distillate fuel oil storage tank on site, but the Applicant offered in its post-hearing briefing to reduce the size of the oil tank to 1.5 million gallons.

Because so many of S2GF's impacts are uniquely associated with the oil tank and oil firing, several intervenors have urged the Council to condition any Site Certification Agreement on removal of the tank and oil backup.

The Council has considered to what degree it could condition an approval on such a fundamental change to the application to mitigate the environmental impacts of oil transportation, storage, and firing. The threshold question is whether the site certification agreement could be conditioned to allow the Applicant to construct a single capacity fuel plant burning only natural gas and not having a dual fuel capacity. This was an important threshold decision because many of the hazards and negative impacts that would be caused by the plant result from the transport, storage, and burning of diesel oil. [10]

Although the Council is authorized by statute to impose conditions on the issuance of a Site Certification Agreement, there comes a point at which a condition so dramatically changes the nature of a project that it essentially becomes a different project. The Applicant made it abundantly clear that

---

[9] As noted below, there is a discrepancy between the Applicant's request for a maximum of 15 *days* per year of oil burning with the Applicant's proposed Site Certification Agreement (SCA) which delineates oil burning for 720 *hours* per year which might occur over many more than 15 calendar days per year.

[10] The challenges presented by the Applicant's proposal to construct an oil tank and use oil as a backup fuel are diverse and widespread, including: air quality impacts that are by far the greatest when the plant is operating under oil firing; fire hazards associated with the possible rupture of and spillage from the tank; water quality hazards associated with possible rupture and spillage; danger of spillage associated with transportation of oil via tanker trucks and during filling, leading to concerns over impacts to surface water quality; flooding impacts associated with a berm around the tank; wetlands impacts associated with a berm and tank, which requires splitting the proposed wetlands mitigation area into two non-connected parts; impact on oil supply and price associated with a large increase in oil usage during peak times; and impact on traffic flow associated with a large number of tanker trucks moving across the border and through the City of Sumas.

it does not view removal of the oil tank or oil backup as a viable possibility. *See*, Transcript of Proceedings (Tr.) 224 (Jones). The Council considered the Applicant's consistent position that it needed to have dual fuel capacity to gain financing and be competitive. Additionally, the other parties and the public have responded to this project as an integrated dual fuel facility. The Council decided that it is not appropriate to consider a fundamentally different project with a fuel capability different from the one designed, and applied for, by the Applicant. Therefore, the Council declines to condition a Site Certification Agreement on the removal of the oil-burning capability. The Council concludes that it would be fundamentally unfair to recommend certification of the project with such a major change without allowing the parties and public to respond to such a different project. The Council therefore proceeded to consider the application as proposed by SE2 with diesel oil burning capacity.

The EFSEC Process

EFSEC was created to assist the Governor to decide which proposed locations are appropriate for the siting of large new energy facilities. Chapter 80.50 RCW. The Legislature has recognized that the selection of sites will have a significant impact on the welfare of the population, the location and growth of industry, and the use of the natural resources of the state. It is the policy of the state of Washington to recognize the pressing need for increased energy facilities, and to ensure through available and reasonable methods, that the location and operation of such facilities will produce minimal adverse effects on the environment, ecology of the land and its wildlife, and the ecology of state waters and their aquatic life. RCW 80.50.010.

The Council is charged with more than the responsibility to determine if a proposed power plant meets promulgated numerical standards. The Council has a comprehensive mandate to balance the need for energy at a reasonable cost with the broad interest of the public. RCW 80.50.010. The Council is charged to protect the health of citizens and recommend site approval for power plants where minimal adverse effects on the environment can be achieved. RCW 80.50.010; *see also* WAC 463-47-110. The Council is also charged with the responsibility to apply the laws of Chapter 43.21C RCW, the State Environmental Policy Act (SEPA), which provides for the consideration of probable adverse environmental impacts and possible mitigation. WAC 463-47-140.

The Council's mandate is to follow relevant Washington law in the process of determining whether to recommend a proposed project to the Governor. The Council conducted its review of the SE2 application as an adjudicative proceeding pursuant to Chapter 34.05 RCW as required by RCW 80.50.090(3) and Chapter 463-30 WAC.

In this proceeding, the Council complied with SEPA requirements by issuing a determination of significance and scoping notice, conducting a scoping hearing, issuing a draft environmental impact statement (DEIS) for public comment, conducting a public hearing and accepting written comments on the DEIS, and adopting a final environmental impact statement (FEIS).

A draft Prevention of Significant Deterioration (PSD) air emissions permit was issued for comment on August 25, 2000 and a public hearing on the draft PSD was held on September 28, 2000. No final PSD permit has been issued. The Council accepted written comments on the Draft PSD permit through October 5, 2000.

No draft Clean Water Act Section 401/Coastal Zone Management permit was developed for comment in this proceeding. The record reflects that the entity under contract with the Council had concerns over the adequacy of the proposed mitigation plan to meet required standards, and that the Applicant offered to meet with the consultant to work out these issues. (*See* Transcript of Prehearing Conference September 28, 2000 at 4 *et seq.*) It is not necessary to develop a final PSD air emissions permit nor a draft or final Clean Water Act Section 401/Coastal Zone Management permit to accompany this recommendation of denial.

Public Testimony and Comment

The Council is required to hold public hearings where any person is entitled to be heard in support of, or in opposition to, an application. RCW 80.50.090; *see also*, WAC 463-14-030. The application for this power plant generated intense public interest in this country and in Canada. The Council heard many public witnesses during the hearing on the draft Environmental Impact Statement, the hearing on the Prevention of Significant Deterioration air emissions draft permit, and three evenings of public hearings on the proposed project. The Council received oral comments during public hearings, as follows: at the July 25, 27 and September 27, 2000, public witness hearings - 133 comments, at the DEIS comment hearing - 49 comments, and at the Draft PSD Permit hearing - 20 comments.

The Council received 798 written comments from members of the public regarding this application, in addition to 198 letters on the Draft EIS, and 28 written comments on the Draft PSD air emissions permit. A number of the written statements to the Council included petitions signed by many people. The vast majority of the public's testimony and comments were strongly opposed to siting the project as proposed.

The Council carefully considered both the specific comments of the witnesses and the topics they addressed as indications of matters significant to the public as well as the written comments submitted by the public. The Council expresses its appreciation for these witnesses' testimony and written comments.

Issues

The Council considered numerous issues during this proceeding. These include: land use consistency with local regulations; the "need and consistency" requirement as applied to merchant plants; potential or expected environmental impacts on air quality, water quantity, water quality, plants and animals, wetlands, flooding, stormwater runoff; climate changes caused by the emission of greenhouse gases; noise; fire; effects of diesel oil transportation, storage, and burning; gas pipeline construction and operation; transmission of electricity; socioeconomic impacts; duration of site

certification agreements; and site restoration requirements.[11] This memorandum addresses issues that remained unresolved or subject to controversy at the conclusion of evidence.

The Applicant entered into the following settlement agreements and stipulations: Partial Settlement Agreement between Washington Utilities and Transportation Commission and Sumas Energy 2 Concerning Natural Gas Pipeline Issues; Settlement Agreement between Washington Department of Fish & Wildlife and Sumas Energy 2; Partial Stipulation Agreement between City of Sumas and Sumas Energy 2; Supplemental Agreement between Washington Department of Fish & Wildlife and Sumas Energy 2 Regarding Wetlands; Settlement Agreement between Washington Department of Ecology and Sumas Energy 2; and Stipulation and Settlement Agreement between Washington Utilities and Transportation Commission and Sumas Energy 2.

Project's Consistency with Land Use Laws

The Council is required to hold a public hearing to determine whether the proposed use of the site is consistent with county or regional land use plans or zoning ordinances at the time of the application. WAC 463-14-030. As noted above, that hearing was held in two sessions, during which city and county officials, as well as members of the public testified.

A Statement of Land Use Consistency from Whatcom County was entered into evidence. Land-Use Hearing Exhibit 1. That document confirmed that the portion of SE2's proposed project within the jurisdiction of Whatcom County is consistent with its comprehensive plan, zoning ordinance, critical areas ordinance, shoreline master program, and park and open space plan.

---

[11]The issues regarding transmission of electricity and pipeline construction and safety were settled during the hearing to the satisfaction of the Council. The Applicant and the Washington Utilities and Transportation Commission (WUTC) entered into a Stipulation and Settlement Agreement regarding potential adverse impacts the proposed project might have on the regional transmission grid. Exhibit 10 (Stipulation and Settlement Agreement Between Washington Utilities and Transportation Commission and Sumas Energy 2). The Council agrees with the statement made in the stipulation between the WUTC and the Applicant that impacts to system transmission reliability and costs are important factors in determining whether to site a facility. The studies performed by the Bonneville Power Administration show that system impacts would be minimal, and the Applicant agreed to pay any costs associated with system upgrades that might be necessary as a result of this project.

The Council also accepted the settlement agreement between the WUTC and the Applicant regarding the construction, operation and maintenance of the proposed natural gas pipeline. Exhibit 1 (Partial Settlement Agreement Between Washington Utilities and Transportation Commission and Sumas Energy 2 Concerning Natural Gas Pipeline Issues). Having accepted this agreement during the hearings, the Council also notes that it would endorse it as a satisfactory conclusion of the issues addressed. The Council acknowledges the excellent work of the WUTC and the Applicant in developing the conditions for the pipeline construction and operation.

The Settlement Agreement between the Department of Ecology and the Applicant addressed the issue of stormwater. The Council simply notes that the Applicant would have been required to have a storm water plan that would have addressed the unique circumstances of the site if the Council intended to recommend approval of the project.

The wastewater issue was resolved by contract and standards were set by contract.

Additionally, a Certificate of Land Use Consistency from the City of Sumas was entered into evidence. Land-Use Hearing Exhibit 2. That document found the proposed use as a major industrial facility to be consistent with the planned use of the site and confirmed the site's consistency with the City's comprehensive plan, zoning ordinance, and critical areas ordinance.

Certificates from local authorities attesting to the fact that the proposal is consistent and in compliance with county or regional land use plans or zoning ordinances are to be regarded as *prima facie* proof of consistency and compliance with such zoning ordinances or land use plans absent contrary demonstration by anyone at the hearing. WAC 463-26-090. The Council concludes that the proposed use of the site is consistent with both city and county land use plans and zoning ordinances.

"Need and Consistency" Requirements

EFSEC was created to respond to the Legislature's finding more than two decades ago that:

> [T]he present and predicted growth in energy demands in the state of Washington requires the development of a procedure for the selection and utilization of sites for energy facilities and the identification of a state position with respect to each proposed site. The legislature recognizes that the selection of sites will have a significant impact upon the welfare of the population, the location and growth of industry and the use of the natural resources of the state.

RCW 80.50.010. Just four years ago, the Legislature amended this section, yet left its earlier finding intact. In addition, RCW 80.50.010 continues to provide, in relevant part, that:

> It is the policy of the state of Washington to recognize the pressing need for increased energy facilities, and to ensure through available and reasonable methods, that the location and operation of such facilities will produce minimal adverse effects on the environment, ecology of the land and its wildlife, and the ecology of state waters and their aquatic life. It is the intent to seek courses of action that will balance the increasing demands for energy facility location and operation in conjunction with the broad interests of the public.

Further legislative guidance on energy policy is given in RCW 43.21F.015. In part, this statute states:

> It is the policy of the state of Washington that:
>
> (1) The development and use of a diverse array of energy resources with emphasis on renewable energy resources shall be encouraged;
>
> (2) The supply of energy shall be sufficient to insure the health and economic welfare of its citizens;
>
> (3) The development and use of energy resources shall be consistent with the statutory environmental policies of the state;

(4) Energy conservation and elimination of wasteful and uneconomic uses of energy and materials shall be encouraged, and this conservation should include, but is not limited to, resource recovery and materials recycling; …

In the past, the Council has interpreted these intent and policy provisions to require a balancing of the state's need for energy at a reasonable cost with the imperative to minimize adverse impacts to the environment. In recent Council decisions, this has been referred to as requiring that the Applicant show it has met "need and consistency" requirements. The Council has employed a number of tests to determine need and consistency. These include the following: (1) a showing that a certain percentage of capacity is under firm contract entered into prior to construction[12]; (2) consistency with integrated resource planning[13] principles by having a certain percentage of capacity sold to purchasers who have adopted an integrated resource plan or otherwise conducted an integrated resource planning process, including the opportunity for public participation[14]; (3) a showing of consistency with regional or statewide energy plans or strategies for acquisition of new energy resources[15]; or (4) consistency with and reliance upon regional forecasts of energy needs.[16] By contrast, where a proponent failed to show need, the Council rejected its application.[17]

The Council considers need and consistency to be a single concept that is not just a demonstration of the need to produce power based on current supply and demand. The need and consistency issue poses a broader question of whether an energy facility at a particular site will produce a net benefit after balancing the availability and costs of energy to consumers and the impact to the environment.[18]

Each application is unique and falls somewhere on a continuum that may be defined by end points that, at the one extreme, might involve a facility that produces no harmful emissions, is designed and proposed to be located in a fashion to affect the environment minimally; and that provides demonstrable economic benefits both immediately and over the long term. Persuasive evidence of such benefits would militate strongly in favor of site certification even if the facility promised to produce only a moderate amount of energy or was proposed at a time when available energy supply is adequate to meet demand.

At the other extreme, a proposed facility might produce significant harmful emissions, be designed and proposed to be located with little regard to impacts on the land, surface, and groundwater; and promise few economic benefits. Persuasive evidence of such facts would militate

---

[12] Chehalis (Order No. 698, June 10, 1996), Satsop (Order No. 694, as revised, April 15, 1996)
[13] The term "integrated resource planning" means, in the case of an electric utility, a planning and selection process for new energy resources that evaluates the full range of alternatives, including new generating capacity, power purchases, energy conservation and efficiency, cogeneration and district heating and cooling applications, and renewable energy resources, in order to provide adequate and reliable service to its electric customers at the lowest system cost. *See*, Exhibit 70.7 (Federal Energy Policy Act of 1992, Public Law 102-486, Section 16 USC 2602 (8)(d)(19)).
[14] Chehalis (Order No. 698, June 10, 1996), Satsop (Order No. 694, as revised, April 15, 1996)
[15] Id., KVA (Order No. 697, June 10, 1996)
[16] KVA, *Ibid* , Creston Coal (Order No. 645, December 17, 1982)
[17] Northern Tier (Order No. 636, January 27, 1982)
[18] *See*, Chehalis, Amendment Request No. 1 (Initial Order No. 752, 12/5/00).

strongly against site certification even if the facility promised to satisfy a pressing energy need somewhere on the Western states' and Canadian power grid.

Most proposed facilities, of course, fall somewhere in the middle range between these hypothetical extremes. Thus, EFSEC's need and consistency analysis is a delicate and difficult task in practice, made more difficult yet by the need to consider both objective and subjective criteria in evaluating "the broad interests of the public."

The balancing of the state's need for energy at a reasonable cost and the need to minimize environmental impacts need not be a strict cost accounting. However, inherent in this balancing process is the expectation that an applicant can demonstrate a commitment to provide energy at a reasonable cost that will either directly or indirectly benefit consumers. Therefore, a determination of net benefit will include consideration of whether the Applicant will: (1) procure preferred energy resources; (2) minimize the facility's impacts to the environment; and/or (3) provide offsets that mitigate impacts of the facility on the environment and citizens. The particular location where an Applicant seeks to build a power facility will always be a central issue inherent to the balancing that the Council must consider.

In considering the need and consistency issue and deciding if there is a net benefit for consumers in the siting of a power plant, the Council will consider the policy considerations expressed in RCW 43.21F.015(1) – (4), which are consistent with the intent expressed in RCW 80.50.010. Specifically, EFSEC will consider:

1. Whether, and to what extent, the energy and capacity from the proposed facility will benefit consumers;
2. Whether the Applicant has offered commitments to increase the diversity of resources, including but not limited to:
    - Demonstration that the proposed facility itself is consistent with goals of diversity or preferred resource acquisition strategies, or
    - If the facility is not consistent with these goals, a commitment to procure additional resources such as energy conservation or renewable sources of energy; and
3. Whether, and to what extent, the proposed generating facility will mitigate environmental impacts consistent with the environmental policies and requirements articulated in state land use and environmental statutes and other relevant statutory criteria in individual cases.

When an applicant informs the Council that it is applying for an SCA to conduct its sale of energy as a merchant plant, then the Council must consider this fact during the need and consistency inquiry to protect the interests of all concerned. Although merchant plants may eventually be the norm in this country, they must be built in such a way that the people in a region do not bear the costs of environmental degradation and the concomitant health risks without receiving the benefits of the generated power. The citizens of those areas of the country that are choosing not to site power generating plants locally, because of their negative environmental impacts, must not be allowed to impose on the people of the locale of the site the external and inevitable pollution costs.

If the external costs[19] of the generation of power are borne by the generator, then they will presumably be absorbed by the shareholders or passed on to the actual consumers of the power and not imposed unfairly on the people in the locale where the generating plant is located. While it may be legitimate to accept some environmental impacts in order to compensate for demonstrated energy benefits, this is not the case when the locale where the plant is sited is not assured of energy benefits. If an Applicant has shown no assured energy benefit to the state, then it is inequitable that the people of that state receive the damage to their air quality and suffer the other negative environmental impacts. Hence, a merchant plant that enjoys the freedom to supply power to whoever is willing to pay the highest price, wherever they may be, must also have the responsibility to build such a plant in a manner (or purchase actual appropriate local offsets) so that the locale where it is sited does not bear an inequitable level of the costs of environmental degradation.

Having set forth the general criteria that the Council will use to address the need and consistency issue, we discuss next the extent to which the Applicant has demonstrated energy benefits associated with the project.

The record leaves little doubt that the state and the region face a need for increased energy and/or capacity in the very near term. Witnesses for several parties provided testimony, and exhibits were introduced showing that under a variety of tests, this region will be energy or capacity short within at most the next three to five years. *See, for example*, Exhibits 28, 28.2, 28.4 (Litchfield), Exhibit 42, 42.2 (Watson), Tr. 3147-48 (Warren).

There is also a consensus that one of the resources of choice for meeting this need is combined cycle combustion turbines. This is due to a combination of reliability, cost competitiveness, efficiency, and environmental impacts that are less severe than other existing fossil fuel technologies. *See, for example*, Exhibit 71 (Usibelli).

The documents and testimony cited make it clear that the state of Washington participates in a market that extends throughout the western United States and Canada. Having access to this market is a benefit to Washington citizens because, with adequate transmission, Washington consumers may be able to take advantage of energy and capacity available in any of the Western states. *See, for example*,

---

[19] The term "external costs" or "externalities" was discussed often during these proceedings. The Council agrees with the following textbook definition:

> Externalities are defined as situations in which the private calculation of benefits or costs differs from society's valuation of benefits or costs. Since in a market economy private costs and market prices determine the output of the good in question, non-optimal output levels will result. Externalities can occur in both production and consumption. Examples of production externalities typically focus on pollution. An excellent energy-related example is the electric utility plant burning high-sulfur coal near a major metropolitan city. While the private cost of the electricity, as measured by the firm's cost, may be 6 cents per kilowatt-hour (kwh), the social cost of the electricity production may be much higher, perhaps 9 cents/kwh. Included in the social cost are the health costs imposed on the city's inhabitants due to increased sulfur dioxide concentrations in the air.

J. Griffin, H. Steele, "Energy Economics and Policy," at 40 (2nd Ed., 1986).

Exhibit 28.3 at 1-3 (1999 Biennial Energy Report); Tr. 2565 (Litchfield), and Tr. 119 (Jones). On the other hand, the interconnectedness of the Western grid also means that comparisons of statewide or even northwest regional supply and demand curves are less helpful than they might have been even in the recent past. It is possible, therefore, to conclude that by adding generation capacity and energy to the western grid, the proposed plant would contribute generally, but not specifically, to the state's objective of ensuring "abundant energy," RCW 80.50.010(3).

It is equally clear that the Applicant, as a merchant plant, may choose not to offer specific assurances that the energy produced will assist the state or Northwest region directly in meeting its energy needs or in meeting those needs at a "reasonable cost," the second half of the statutory objective. The Applicant has made it quite clear that it will sell the energy and capacity associated with the plant to the highest bidder wherever that bidder is located. *See, e.g.*, Tr. 169, 177, 189 (Jones). The Applicant's witness, James Litchfield, testified that increasing supply of energy and capacity in the western marketplace ought in theory to have a beneficial (*i.e.*, downward) impact on prices. Exhibit 28 at 10 (Litchfield). But Mr. Litchfield could offer no specific assurances that this will occur in fact. He acknowledges that the market is in flux and does not currently operate as intended. *See,* Tr. 2570 (Litchfield). The Council is thus faced with making a determination regarding the energy value of the proposed plant with only speculative evidence concerning any potential benefits to consumers in terms of energy costs and availability.

To address this uncertainty, two parties, OTED and the Counsel for the Environment, recommend that the Council require the Applicant to dedicate a portion of the output of the plant to meet the needs of the citizens of Washington. We decline to do so. First, a requirement that the output be sold to Washington citizens or businesses would not ensure that the environmental costs of the project would be borne by the benefiting population. As discussed below, many of the environmental impacts of the plant would occur in Canada and elsewhere. Second, the intervenors made no showing that dedicating the plant's output to Washington citizens or businesses would be beneficial to Washington citizens. It is easy enough to envision a scenario where the Bonneville Power Administration might sell lower cost power outside of Washington, leaving Washington citizens and businesses to pay much higher prices demanded by the Applicant. Finally, the energy policy of the state does not require a finely tuned matching of benefits and impacts to affected populations. *All that is required is that we internalize to the extent feasible the cost of the impacts; then, the costs necessarily are borne by the beneficiaries.*

The Council finds that the Applicant has shown that the proposed plant would provide energy benefits in the form of mitigating to some extent forecasted energy and capacity constraints, and contributing to reliability on the Western states power grid generally. However, the Applicant has not shown that construction and operation of the plant will confer direct benefits on any identifiable segment of that market (for example, the citizens of Washington State) or lead to lower energy costs in the state or regionally. Under the tests described in the previous section, the Council would permit the costs of a modest amount of environmental degradation to remain externalized in exchange for the general benefits that the Applicant has demonstrated. But, in the absence of more direct, specific benefits being demonstrated, no more than that modest amount should be allowed.

Having found that the Applicant has demonstrated only generalized energy benefit from the proposed plant, we next proceed in our duty to balance that benefit with the environmental impacts that would result from the building and operation of the proposed project.

Air Quality

A significant focus of interest by the parties to this proceeding was the air pollution that would result in the Lower Fraser Valley air shed from the operation of the proposed facility. The Lower Fraser Valley air shed is an area shared by the British Columbia Lower Mainland and Whatcom County in Washington State. The Council recognizes that the Canadian portion of the Lower Fraser Valley would receive much of the potentially harmful air emissions from SE2's plant.

Summary of parties' positions

The Applicant argues that the project complies with minimum federal and state regulatory requirements and that emissions would not cause exceedences of federal or state ambient air quality standards. It argues that the project would set a new standard for Best Available Control Technology (BACT) in Washington.[20] SE2 recognizes that there is a dispute about whether ambient concentrations in the Fraser Valley would exceed applicable Canadian standards and adversely affect Canadians' health because of the creation of ozone[21] and the emissions of particulate matter (PM_{10} and $PM_{2.5}$)[22]. SE2 argues that the weight of evidence shows that the project will not have a significant impact on ambient concentrations of ozone or particulate matter. The Applicant also argues that although the Canadian authorities have identified "Reference Levels,"[23] these are only "goals" that Canada is attempting to achieve by 2010 and not regulatory limits, and that it is unlikely that S2GF emissions would make any significant contribution to concentrations above those levels.

---

[20] All new sources of air emission regulated by the Clean Air Act Prevention of Significant Deterioration Program are required to utilize Best Available Control Technology (BACT). BACT is defined as an emissions limitation based on the maximum degree of reduction for each pollutant subject to regulation, emitted from any proposed major stationary source or major modification, on a case-by-case basis, taking into account cost effectiveness, economic, energy, environmental and other impacts. 40 CFR 52.21(b)(12). *See*, Exhibit 170.2 at 6 (Fact Sheet for Prevention of Significant Deterioration).

[21] Ozone refers to an oxygen compound (O3) occurring in the form of a gas in the atmosphere at ground level that has been shown to have significant adverse effects on human health and the environment. Exhibit 159.4 at 2 (Canada Wide Standards for Particulate Matter and Ozone); Exhibit 159.5 at 13-5 (National Ambient Air Quality Objectives for Ground-Level Ozone, Science Assessment Document); *see also;* Tr. 1260-61 (Quiring). Ozone is a component of smog. NO_x is one of the precursors to ozone. Exhibit 99 at 2 (Jaffe);Tr. 1260 (Quiring).

[22] PM_{10} refers to airborne particles that are 10 microns or less in diameter; $PM_{2.5}$ refers to airborne particles that are 2.5 microns or less in diameter. Exhibit 159.4 at 2 (Canada Wide Standards for Particulate Matter and Ozone). Significant adverse health effects have been demonstrated for PM.. Exhibit 98 (Koenig); Tr. 1198 et seq.(Koenig)

[23] In Canada, the Federal/Provincial Working Group on Ambient Air Quality Objectives and Guidelines is required to identify an ambient "Reference Level," defined as a level above which there are demonstrated effects on human health and the environment. Exhibit 159.3 (National Ambient Air Quality Objective for Particulate Matter, Science Assessment Document; A Report by the CEPA/FPAC Working Group on Air Quality Objectives and Guidelines).

As previously noted, the primary fuel for this plant would be natural gas, but the Applicant has proposed this project with alternative fuel capacity of low sulfur distillate oil. The Applicant asserts that backup fuel is common for power facilities, that EFSEC has allowed it in the past, and that having backup fuel makes sense from a policy standpoint so that natural gas can be diverted to other users during times of need. The Applicant asserts that dual fuel capacity is required if the project is to obtain financing and be competitive with other facilities.

The Applicant recognizes that there is a dispute about impacts on visibility. It argues that the dispute is limited to the effect of emissions from oil firing that would only occur for a maximum of 15 days per year and when winds are generally from the North. The Applicant argues that this would prevent emissions from the facility from reaching the Canadian portion of the Fraser Valley.

The Applicant argues that the Fraser Valley air shed is not uniquely sensitive and that there will be air emissions associated with increased power production wherever generating facilities are located. It also argues that there are numerous air sheds in British Columbia and Washington State with equal or worse air quality.

The Applicant argues that it has offered to provide offsets[24] or establish a trust fund for offsets to eliminate adverse health risks caused by some of the pollutants that it emits. It argues that substantially offsetting new emissions would eliminate negative impacts of those emissions on health and the environment. It also contends that it has worked to come to agreement with the Canadian governmental entities to finance actual offsets in the Fraser Valley that would result in very significant reduction in total air emissions in the air shed.

The Counsel for the Environment (CFE)[25] argues that even though the Applicant's proposal substantially meets the numerical standards established under state law, the project should not be sited in the location proposed. CFE argues that, under existing intergovernmental accords, EFSEC must protect the health and environment on both sides of our northern border. She argues that the Council should only allow pollutant emissions that would achieve a realistic safety level for citizens of Washington and Canada. She argues that expert testimony supports the conclusion that particulate matter (PM_{10} and $PM_{2.5}$)[26] causes negative health effects on children and persons with compromised respiratory systems and that PM_{10} concentrations in this air shed already exceed healthful levels. CFE argues that due to the topography of the Canadian portion of the lower Fraser Valley, the plant should not be sited in the proposed location because the impact on the air shed would be too grave. CFE also asks that if the Council recommends certification of this project that it disallow the transport, storage, and use of backup diesel oil use due to the environmental degradation and other hazards attendant to the use of that fuel. CFE endorses the arguments of the Canadian intervenor parties- the City and Chamber of Commerce of Abbotsford, British Columbia- with regard to the air quality issues.

---

[24] Offsets are a reduction of emissions from a different source of pollution that would serve to offset the emissions of the proposed facility. *See*, Exhibit 131 at 28 (Sagert).

[25] CFE's statutory duty is to represent the public and its interest in protecting the quality of the environment. RCW 80.50.080.

[26] Particulate matter number 10 and 2.5 refer to the aerodynamic diameter of the particle. The smaller particles are more readily inhaled and tend to move and deposit more completely throughout the lung and end up in very small air sacs at the bottom of lung and can cause a pathological or adverse effects. Tr. 1205-06 (Koenig).

The City of Abbotsford and the Abbotsford Chamber of Commerce (hereafter Abbotsford) argue that this plant would emit 1,000 tons per year of criteria pollutants and toxic pollutants. It would constitute 50% of the total NO_x from Fraser Valley Regional District[27] point sources. Abbotsford argues that the magnitude of such emissions is demonstrated by the fact that 336,000 cars would need to be taken off the roads to offset the new emissions from particulate matter (PM_{10}) from this project. It points out that the site is located in the Fraser Valley, which is hemmed in by mountains, subject to inversions, and already suffering from unacceptable levels of air pollution. Abbotsford urges the Council to find that this is not a valley where a large pollution source should be added unnecessarily and that a power plant is not a necessary facility in the proposed location. Abbotsford argues that such a populated area is an inappropriate location for a pollution source of this magnitude. It argues that some pollutants, which are known to cause health hazards, have already reached an unhealthy level in this valley and that this power plant would be counter-productive to provincial and local air management planning measures.

Abbotsford argues that, as a result of existing air pollution problems, the various Canadian governments have undertaken programs to reduce pollution in this vulnerable, highly populated air shed. It argues that while increases in the number of automobiles, airplanes and other air pollution sources will necessarily accompany growth in this region, a power plant does not need to be located in an air shed already so compromised, hemmed in, and heavily populated. Abbotsford notes that the two fossil fuel power plants approved most recently in British Columbia have been sited outside of this compromised air shed and include cogeneration components in their design.

Abbotsford points out that the Province of British Columbia is opposed to this site, as are three local governments on the Canadian side: the Greater Vancouver Regional District (GVRD) the Fraser Valley Regional District (FVRD), and the City of Abbotsford. Abbotsford argues that the offsets offered by the Applicant are the same mechanisms that these governments need to use to allow them to reduce air pollution as other unavoidable new air pollution sources (*e.g.*, transportation related sources) locate in the air shed. If these offsets are bargained away in exchange for unnecessary new pollution, they will not be available as tools for the Canadian governments to offset unavoidable sources or to obtain an actual reduction in net total pollution.

Whatcom County argues that, in addition to many other hazards and negative impacts associated with the proposed oil transport and storage at this plant, the air pollutants from the plant are greatly increased during oil firing. The County argues that the airborne pollutants will immediately and directly affect the Fraser Valley air shed in British Columbia and urges the Council to be mindful of the fact that a jurisdiction with more stringent air quality standards than Washington's will suffer the health hazards. The County also contends that aside from the political significance of the inter-governmental agreements reached between this state and British Columbia, the Council should realize that the Canadian air quality standards offer evidence that U.S. and Washington air quality standards may not fully protect public health. The County contends that the evidence proves that the Provincial Government of British Columbia would not allow this project to be built north of the border in this air shed.

---

[27] The Fraser Valley Regional District comprises the easterly part of the Lower Fraser Valley and the Greater Vancouver Regional District comprises the westerly portion. Tr. 2800 (Sagert); *see also,* Tr. 3409 (Hawes).

The County proposes two solutions: site the plant elsewhere in Washington away from the shared air shed, or require the Applicant to provide air pollution offsets within the same air shed. The County suggests that a condition for offsets be subject to later revision if offsets cannot be located in the portion of this air shed south of the Canadian border and the Canadian authorities "unreasonably" withhold permission for SE2 to perform offsets to upgrade the Fraser Valley air shed in Canada. In its most recent briefing, the County suggests that perhaps it would be best for the Council to defer to the Governor the decision as to what accommodations, if any, should be made with respect to Abbotsford's prioritization of existing potential offsets.

Even though the official position of the City of Sumas is to support the project, the City points out that the emission rates of various pollutants are much higher when burning diesel than when burning natural gas. The plant will emit 301.1 pounds per turbine per hour of emissions in the diesel-fired mode, compared to a total of 77.5 pounds per turbine per hour when in the natural gas duct-fired mode. The City argues that there are already times when PM_{10} concentrations exceed the GVRD 24-hour Maximum Acceptable Objective and that the elimination of the diesel-fired mode would reduce the adverse effects of S2GF on local air quality. The City of Sumas asks the Council to certify S2GF for natural gas fired operation only and to mandate significant offsets of NO_x and full offsets of PM_{10} emissions.

Constance Hoag argues that a smog blanket already obscures Mt. Baker on some days. She notes that the Applicant has acknowledged that the emissions from the plant will cause a decrease in visibility in scenic areas. She states that her property value will be decreased by an estimated $35,000 if a smog blanket replaces her view and she seeks compensation if that occurs. She urges the Council to recommend denial of certification for this plant.

Many of the public witnesses concurred with Ms. Hoag's concerns that the emissions from the plant would cause serious visibility problems in an already polluted and visibly impaired air shed. Many of the public witnesses testified that the air shed north of the proposed plant is seriously impaired by air pollution that already negatively affects the health of residents of the area. The testimony of these witnesses stressed that even existing pollution causes serious concerns about health impacts on the local citizens. Physicians, during the public hearings, testified that the existing level of air pollution in the Lower Fraser Valley was exacerbating the respiratory problems of their patients.

Council's findings and conclusions regarding air quality

The Council carefully considered the positions of all parties, the public, and the Canadian governmental entities and has studied the voluminous record and the hundreds of public comments and has deliberated at length. The Council finds that the plant, as proposed, will add three tons per day of criteria and toxic pollutants into the air shed. Although this level of emission may be considered to be reasonable for a power plant of this size, it is nevertheless indisputably a large amount of pollution to add to an air shed. The existing condition and nature of the air shed are critical to our decision regarding the siting of such a facility.

The Lower Fraser Valley already is an environmentally sensitive and polluted area. Residents in this air shed currently suffer health effects from the existing air pollution. This air shed which would receive S2GF's polluting emissions has topographical and meteorological features that promote

the retention of pollutants. The Lower Fraser Valley also is a highly populated locale which is experiencing rapid population growth. The Council notes that the Canadian governmental entities are all strongly opposed to the siting of this source of air pollution because air quality in the Lower Fraser Valley in British Columbia is frequently in the range where adverse effects on health have been demonstrated and any further worsening of air quality will increase risks to human health. The Applicant's attempts to locate other sources of pollution in the air shed where emissions could be decreased to offset the negative effects of this large amount of new air pollution were unsuccessful.

The Council finds that, because of the nature of the air shed into which the pollutants would be emitted, this is not an appropriate location for a power facility with these levels of emissions.

The Council recognizes that the Applicant has made impressive efforts to minimize environmental impacts, to incorporate the latest emission control technology, and to propose measures to address the environmental concerns for this power plant proactively. However, even with the latest control technologies, this project would still be expected to emit at least 156 tons of nitrogen oxides (NO_x),[28] 106 tons of carbon monoxide (CO), 45 tons of sulfur dioxide (SO_x), 156 tons of volatile organic compounds (VOCs), 223 tons of particulate matter (PM_{10}), and 9.3 tons of H_2SO_4 (sulfuric acid) mist per year.[29] The plant would also emit toxic air pollutants including sulfuric acid mist, unburned hydrocarbons, and excess ammonia from NO_x reduction. Exhibit 170.2 at 3-4 (Fact Sheet for Prevention of Significant Deterioration); Tr. 1606-07 (Hansen); Application at 6.1-9 (as later amended by testimony of Applicant).[30]

The parties agreed that the criteria and toxic pollutants expected from this plant, would be approximately three tons per day. *See e.g.*, Tr. 1609-10 (Hansen). While this level of emission may be considered to be very "good" for a power plant of this size, it is still a great deal of pollution to add to an air shed. The Council must ask whether this is an appropriate air shed in which to allow the addition of this level of pollution.

---

[28] NO_x is a precursor of ozone that is a component of smog, which is a serious health and aesthetic issue.

[29] Again, the applicant proposes to operate this facility as a merchant power generation plant. Among other things, this means there is a potential that the plant may have numerous start-up and shutdown events. In addition, through normal operation and maintenance, there will be start-ups and shutdowns. The proposed PSD air emissions permit suggests allowing up to 200 start-up and shutdowns each year. Exhibit 170.1 at 10 (No. EFSEC/00-01 Draft Approval of the Prevention of Significant Deterioration and Notice of Construction). At the same time, Bernard Brady, the Council's consultant on the PSD process, following questions from the Council, agreed that "…there's potentially 1,200 hours a year of emissions that are *unaccounted for* when we look at the total emissions that are expected…" from this facility. PSD Hearing Transcript, September 28, 2000 at 85-6 (Emphasis added). The result is an under-estimation of the total amount of pollutants expected from this facility and the potential to affect air quality conditions further downwind of the SGF2 facility. The Council assigns no blame for this flaw in the PSD analysis but notes that several parties expressed concern with this issue. The Council wishes to make clear that were we intending to recommend site certification, we would seriously consider permitting conditions with regard to start-up and shutdown events.

[30] In addition, approximately 2.4 million tons of carbon dioxide (which is a greenhouse gas and discussed in a later section regarding climate change) would also be emitted from this plant. Tr. 1608 (Hansen).

Although the Council concludes that the project meets federal and state air quality standards, this is the beginning, not the end, of our inquiry. Compliance with promulgated numerical air quality standards is a minimum requirement for allowing a power generating facility to be constructed in this state. The Council has a much broader mandate than simply deciding whether minimum standards are met; rather, the Council is charged with protecting the people's health and welfare and with siting power plants only where minimal adverse effects on the environment can be achieved. RCW 80.50.010; *see also,* WAC 463-470-110. Additionally, EFSEC is charged with responsibility to apply the laws of Chapter 43.21C RCW, the State Environmental Policy Act (SEPA), which provides for the consideration and mitigation of probable adverse environmental impacts. WAC 463-47-140. The legislature has also charged the Council with the duty to consider public comment in favor of, or in opposition to, a proposed power facility. RCW 80.50.100; WAC 463-14-030. A power plant may satisfy the numerical standards for the amount of air pollutants that it emits without the requested site being an appropriate location. It is the totality of negative impacts and dangers that has led the Council to recommend denial of the application for siting. Not only is the proposed site for the plant in an air shed, which is already polluted, confined, and highly populated, but, as discussed below, the power plant also poses traffic, noise, flood, fire, ground and surface water hazards to local communities.

Specifically, the Council is a *siting* council and has the duty to assist the Governor in making a decision with respect to each location proposed for an energy facility. RCW 80.50.010. It is not enough for the Council to conclude that a power project is a good project in the abstract; rather, it is our duty to decide if the project has been sited in the proper location for the protection and welfare of citizens. RCW 80.50.010 directs the Council to seek courses of action based in part on the premise that operational safeguards are "*at least* as stringent as the criteria established by the federal government" *and* also are sufficient to protect the citizens' welfare. (Emphasis added.) The legislature has stated with respect to the selection and utilization of sites for energy facilities and identification of a state position with regard to each proposed site:

> It is the intent to seek courses of action that will balance the increasing demands for energy facility location and operation in conjunction with the broad interests of the public. Such action will be based on these premises:
>
> (1) To assure Washington state citizens that, where applicable, operational safeguards are at least as stringent as the criteria established by the federal government and are technically sufficient for their welfare and protection.
> (2) To preserve and protect the quality of the environment; to enhance the public's opportunity to enjoy the esthetic and recreational benefits of the air, water and land resources; to promote air cleanliness; and to pursue beneficial changes in the environment.
> (3) To provide abundant energy at reasonable cost.

RCW 80.50.010.

As explained above, we find that the Applicant has not shown that this project will provide abundant energy at reasonable cost to those people who will suffer the direct consequences of the environmental impacts. As previously discussed in the need and consistency portion of this order, while the merchant plant would provide some energy benefits by relieving forecasted energy and

capacity constraints, and contribute to reliability on the Western states power grid generally, there has been no showing that operation of this plant will confer direct benefits on any identifiable segment of the market or lead to lower energy costs. The Council has the duty to balance the need for abundant energy at reasonable cost against the probable environmental degradation. We, therefore, must consider the environmental effects of this proposed project *at the location* where the Applicant has proposed its construction.

After careful review of the record, the Council finds and concludes that the cumulative evidence demonstrates that this distressed air shed is not the proper location for this project as proposed. As discussed below, this ultimate finding of the Council is supported by the testimony and exhibits from expert witnesses, the testimony and comments of many hundreds of public witnesses on both sides of the United States-Canadian border, and the position of the Canadian governmental entities.

This plant, as configured by the Applicant with a backup diesel oil fuel capacity, emits too much pollution into an already polluted, sensitive, highly populated and physically constrained air shed. As discussed elsewhere in this order, the transportation and storage of diesel fuel also create other hazards to health, safety, and the environment that it would be impossible to eliminate or mitigate fully.

One of the critical facts of this case is the nature of the Fraser Valley air shed: its topography and meteorological features; its present air quality; and its population and expected rate of growth. We explain in further detail below that the Council carefully considered all of these factors before reaching its decision.

It is clear from our record that the proposed power plant would emit pollutants into the Lower Fraser Valley[31] air shed, an area shared by the British Columbia Lower Mainland and Whatcom County in Washington. Exhibit 162.12 at 1 (Sumas Energy 2 Generation Facility Air Quality Issue Summary); Tr. 3624 (Hrebenyk); Exhibit 131 at 5 (Sagert). Both the expert witness for the Canadian party, Abbotsford, and the expert for the Applicant recognize that the Canadian portion of the Lower Fraser Valley would receive much of the potentially harmful air emissions from SE2's plant. Exhibit 131 at 5 (Sagert); Tr. 1605 (Hansen).

Pollution in the Lower Fraser Valley air shed

Although the Applicant argues that the Lower Fraser Valley air shed is not a particularly threatened, impaired or sensitive air shed, the Council finds that the evidence to the contrary is not only convincing, it is overwhelming. Consistent evidence from highly qualified expert witnesses indicates that the Lower Fraser Valley is already an environmentally sensitive area with acknowledged atmospheric visibility problems and is already considered to be an impaired air shed. *E.g.*, Exhibit 131 at 14 (Sagert); Tr. 2843; 2791-92 (Sagert); Exhibit 99 at 2 (Jaffe); Tr. 1772-73 (Jaffe); Exhibit 98 at 3 (Koenig); *see also*, Exhibit 25.3 at 3 (A Numerical Simulation of Impacts on Ambient Ground-level

[31] The Lower Fraser Valley in Canada encompasses the Greater Vancouver Regional District, the GVRD, and that portion of the Fraser Valley Regional District, FVRD, bounded by the Coastal Mountains to the north and the Cascade Mountains to the southeast. Exhibit 157.2 at 4.

Ozone Concentrations from the Proposed Sumas Energy 2, Inc. Power Generation Facility Report, January 2000).

Additionally, a letter from Minister Joan Sawicki, Minister of Environment, Lands and Parks for British Columbia, to the Chair of the Council explains that the Fraser Valley air shed is very sensitive and already suffers from significant air quality and visibility issues. Exhibit 157.1. The Minister has informed the Council, on behalf of the Government of British Columbia, that it cannot support locating this project in an air shed as sensitive as the Fraser Valley. Ex 157.1 (letter from Minister Joan Sawicki to Chair of EFSEC Deborah Ross). A letter from a representative of Environment Canada to EFSEC indicates that the Lower Fraser Valley is an air shed under active air quality management by British Columbia agencies. It is under management by these agencies because it is already prone to periods of poor air quality including elevated levels of ground-level ozone, inhalable particulate and visibility reduction. Ex 25.7 (Letter from Adrian Duncan to Allen Fiksdal).

The Council notes that the Canadian governments have embarked on extensive and expensive efforts to reduce the air pollution in the Lower Fraser Valley. See, e.g., Exhibit 131 at 23 (Sagert); Tr. 2798 and 2843 (Sagert); Tr. 3392-93 (Member of Legislative Assembly (MLA) Van Dongen); Tr. 3412-13 (Mayor of Mission and Chairman of the FVRD Hawes); Exhibit 157.2 at 7 ("Pacific and Yukon Region Environmental Indicator - Smog, An indicator of potential air quality health risk in the Lower Fraser Valley"). Minister Sawicki has informed the Council that the province of British Columbia is currently engaged in efforts to improve air quality in the Fraser Valley and to protect the quality of life and health of its residents. Through multi-million dollar projects like Westcoast Express (public transit), Skytrain (public transit) and Air Care (an auto emissions testing program), the province has demonstrated beyond doubt a clear commitment to this objective. Exhibit 157.1 at 1.

"The Sumas Energy 2 Generation Facility Air Quality Issue Summary", prepared by the British Columbia Ministry of Environment, Lands and Parks (MELP), Environment Canada - Pacific and Yukon Region, and the Greater Vancouver Regional District (hereafter Joint Technical Report), issued September 11, 2000, and introduced into the record by the Applicant, states that its review was undertaken to assess the potential for S2GF's emissions to "aggravate poor air quality conditions that can occur in this air shed." That Report also notes that the Lower Fraser Valley already exceeds current ambient air quality objectives for ozone. Exhibit 162.12 at vi and viii. The Joint Report states that:

> Because air quality in the Lower Fraser Valley and many other parts of British Columbia is frequently in the range where effects on health have been demonstrated, any further worsening of air quality will increase risks to human health.

Exhibit 162.12 at ix.

The cited report also indicates that the various short and medium-term air quality objectives and standards for the area from Hope to West Vancouver are already exceeded up to 10% of the time. It states that recent studies on air quality and health indicate that effects on human health begin to occur at levels well below any of those objectives and standards. Exhibit 162.12 at vi; *see also*, Tr. 3555-58 (Martin) (indicating that the Applicant is not disagreeing that there are air quality problems in the valley).

Environment Canada reports that, presently, smog levels that pose potential risks to health occur in the Fraser Valley about 43% of the time for the ground-level ozone pollutant and about 3% of the time for fine airborne particulates (PM_{10}). Exhibit 157.2 at 2 ("Pacific and Yukon Region Environmental Indicator- Smog, An indicator of potential air quality health risk in the Lower Fraser Valley"); Tr. 2791-92 (Sagert). While current particulate matter (PM_{10}) concentrations in the Fraser Valley are below the EPA standard, they currently exceed the Canadian GVRD 24-hour criteria up to 4 days per year. SE2's Post-hearing brief at 14, citing Exhibit 25 at 12 (Hansen); Exhibit 154.5 at 2 (Letter from Sumas Energy 2, Inc., to Hu Wallis, Ministry of Environment Lands and Parks, April 18, 2000). *See also*; Exhibit 159 at 8 (Quiring); FEIS 3.1.3 at page 3.1-8**.** From 1996 to 1998, the maximum hourly ozone concentrations at the Abbotsford Station exceeded short-term Canadian Desirable Objectives. FEIS 3.1.3 at page 3.1-6.

The Council finds that the Lower Fraser Valley is considered to have the second worst air quality of any urban area in Canada. Tr. 2797-98 (Sagert); Tr. 3405 (MLA Van Dongan). Even one of the Applicant's expert witnesses recognized that the Fraser Valley is the second or third worst air shed in Canada in terms of short-term ozone impacts and that the adverse health effects associated with ozone would relate to short-term exposures. Tr. 3620-21 (Hrebenyk); *see also*, Tr. 3595-96 (Hrebenyk).

The parties, expert witnesses, and the public raised concerns regarding the potential of the power plant to reduce visibility in the Fraser Valley. The Applicant's expert air quality witness had originally informed the Council that the emissions with oil firing had the potential to reduce visual range perceptibly on up to 25 percent of winter days with good existing visibility. Exhibit 154 at 14 (Hansen); *see also*, Tr. 1625 (Hansen). The Applicant later changed the negative visibility prognosis to two days a year with gas firing and two more days when oil firing. Tr. 3637-40 (Hansen). The Applicant now estimates that the plant's emissions during oil firing could cause a perceptible change in visibility one day per year in the North Cascades National Park and one day per year in the Mt. Baker Wilderness Area and two days per year in the Olympic National Park (which is approximately 100 miles from the plant). Applicant's Post Hearing Brief at 16-17; Tr. 1631 (Hansen); *see also*, FEIS at section 3.1, page 3.1-28-29.

The Council is not satisfied by the Applicant's analysis of potential impacts of oil burning on visibility or whether pollution during oil firing is likely to affect air quality in Canada. The principal flaw in the analysis is the assumption that oil burning is likely to occur only during a "cold snap" in Sumas when temperature conditions result in less than the maximum potential ozone production and prevailing wind conditions (*i.e.*, wind from the North or Northeast) would disperse the plant's pollution plume away from the Fraser Valley. SE2 Brief at 11. In fact, under the Applicant's proposed draft SCA, oil burning could occur whenever gas supplies are constrained. Applicant's proposed Site Certification Agreement, Article IV (A), at page 7. Elevated gas demand anywhere on the gas pipeline company's extensive system might trigger the need for S2GF to switch to oil to avoid curtailing production. The Applicant's recent offer to restrict oil burning to six months of the year does not alleviate our concern on this matter. Extreme and protracted cold weather may occur on the gas pipeline's system many hundreds of miles away from Sumas at times when conditions in Sumas are ideal for ozone production. Thus, it appears that the potential impact of oil burning on visibility must be considered under a "worst case" scenario, not the "best case" scenario urged by SE2.

The testimony of Dr. Daniel Jaffe casts doubt on the Applicant's position that the higher air pollution during times of oil burning would most likely not enter the Canadian Fraser Valley during times of high air pollution. Dr. Jaffe explained:

> The data show that for particulate matter less than 10 microns in diameter (PM_{10}) the City of Abbotsford, British Columbia, already exceeds the Canadian air quality objectives. Given that the SE2 will have significant emissions of particulates, especially during oil firing which is more likely during winter, there is the potential to significantly exacerbate this situation. The DEIS states that the worst periods for particulate air pollution in Abbotsford are associated with high winds and wind blown dust. On the other hand, according to the DEIS, the worst contribution of the SE2 emissions to ambient concentrations occurs under low wind conditions. Thus they conclude that it is unlikely that high particulate concentrations from SE2 will occur simultaneously with high ambient concentrations. While this is a plausible statement, there is insufficient evidence presented to show whether it is true or not. There is an alternate, equally plausible, possibility. In other areas of the Pacific [N]orthwest, it is common to exceed the particulate standards during winter under stagnant, high-pressure conditions. If this is also the cause for the Abbotsford exceedences, then the statement in the DEIS is wrong and the SE2 project will significantly contribute to exceedences of the Canadian air quality objectives (see pages 3.1-13 and 3.1-14 in the DEIS).

Exhibit 99 at 2 (Jaffe).

Dr. Jaffe acknowledged that the S2GF plant design was a clean facility by most standards for a large power plant. However, he testified that the problem was that the plant is proposed to be sited in an area that already has "marginal air quality" and already exceeds Canadian air quality objectives for ozone and particulate matter. Tr. 1772-73.

The Council finds that the Applicant has not proved its contention that the increased level of pollution caused by oil firing would only occur when the pollution levels were relatively low in the Fraser Valley air shed.

Dr. Jane Koenig stated that her research on the health effects of pollution has led her to conclude that the fine particle air pollution which is projected to be emitted by the S2GF plant poses a health hazard to the public, particularly to those suffering from asthma and other pulmonary diseases. Exhibit 98 at 2 (Koenig); Tr.1203-04 (Koenig); Tr. 1225-26 (Koenig). Dr. Koenig testified that, given the past measurements of PM_{10} at the Abbotsford station, there is very little margin left for the addition of new sources of particulate matter if the plan is to protect the public health in the region. Exhibit 98 at 3 (Koenig); *see also,* Tr. 1804 (Jaffe). Eric Hansen, the Applicant's air expert, explained that the level of particulate matter during operation of the proposed plant would put the annual average particulate matter at approximately 9 micrograms per cubic meter at Chilliwack. Dr. Koenig set the threshold for a statistically noticeable increase in hospital admissions at approximately 11 micrograms per cubic meter. Exhibit 98.6 (Koenig); Tr. 1212-13 (Koenig); *see also*, Tr. 1724-25 (Hansen). The evidence does not show that the projected emissions from the S2GF project would immediately cause exceedences in the standards or health references for particulate matter. However, the Council finds that the emissions would add to the background concentrations and further narrow the present small margin of safety between an acceptable ambient air quality and the level at which association between

level of particulate matter and increased health risks occur. *Compare*, Tr. 1213 (Koenig) with Tr. 1724-25 (Hansen).

A number of parties have pointed out that the Applicant's proposed SCA appears to differ from the assumptions used in the air modeling done by the Applicant, in expressing the maximum oil firing in terms of hours, rather than days. Throughout these proceedings, including in its post-hearing brief (p. 11), SE2 emphasized its intention that oil burning would be limited to no more than 15 *days* in any given year and an average of 10 *days* per year on a rolling ten-year average basis. This, coupled with SE2's flawed assumption that oil burning is not likely to occur except during "cold snaps" in Sumas when the impacts from oil burning would be less severe, apparently was intended to minimize the Council's concerns over the potential impacts from oil burning. However, it appears from SE2's draft SCA that the Applicant actually seeks authority to have substantially more flexibility to switch to oil.

The Applicant's proposed SCA would not limit oil burning in terms of calendar days, but rather in terms of hours per turbine. The proposed SCA specifically says, "[u]se of low sulfur distillate fuel oil will be limited to a maximum of 720 hours per year (based on 360 hours per turbine), and a ten-year average of 480 hours per year (based on 240 hours per turbine)." Applicant's proposed draft SCA at Article IV, page 7. Since the proposed facility is capable of fuel-switching "on the fly", Tr. 129 (Jones), this restatement of the asserted limitation implies that SE2 proposes, in fact, to have authority to burn oil for up to two hours nearly every day of the year. Whether this is likely, or even plausible, remains unexamined because SE2 never made clear until after the close of evidentiary proceedings its actual proposal in this regard. It is sufficient to observe that the proposed right to burn oil for a few hours on many days of the year is substantially different from a proposal to burn oil only for a few days in any given year. Under these circumstances, we are unable fully to assess the potential environmental consequences from oil burning. The evidence and argument all relates to one type of proposed authority, yet it now appears that SE2 may have intended something else.

Another matter that concerns the Council in connection with SE2's proposal to have oil burning capability is the potential that economic conditions in the energy sector, or other circumstances, might easily change in a way that would prompt SE2 to propose to expand its use of oil. When questioned on this point during the evidentiary proceedings, SE2's witness embraced that possibility. Tr. 325 (Jones). In spite of the fact that the Applicant made commitments to the Canadian governments to limit oil burning to an average of 10 days per year over a 10 year period, Tr. 3515 and 3525 (Martin); Exhibit 154.6 (letter from Applicant to Hu Wallis, Manager of Air Quality of Ministry of Environment Lands & Parks, May 24, 2000), the Applicant testified that it would consider requesting permission to burn oil for a longer period.

Geographically confined nature of the air shed

Evidence in the record establishes that the upper end of the Fraser River Valley is a confined air shed where adjacent mountains act to confine the air mass. Topographic features of the lower Fraser Valley can exacerbate the retention of pollutants. The mountains act as barriers to pollutants emitted within the Lower Fraser region channeling them along the valley that ultimately leads to high levels of ozone and its precursors near the ground. Exhibit 25.6 at 5-9 (National [Canadian] Ambient Air Quality Objectives for Ground-level Ozone Science Assessment Document).

The Joint Technical Report, Exhibit 162.12 at vi explains, "[t]he meteorology and topography of the area are also contributing factors in creating conditions that exacerbate the impact of any emissions." *See also,* Tr. 3557-58 (Martin). Environment Canada has explained that the Lower Fraser Valley is bounded by the Coastal Mountains to the north and the Cascade Mountains to the southeast. These topographical features, along with the summer sea breezes off the Strait of Georgia, restrict airflow patterns and contribute to the area's smog problem. Exhibit 157.2 at 4 ("Pacific and Yukon Region Environmental Indicators - Smog, An indicator of potential air quality health risk in the Lower Fraser Valley"). Meteorological processes play a significant role in the movement of ozone and its precursors. High ozone episodes are often associated with slow moving, high-pressure weather systems that concentrate pollutants and provide the higher temperatures and solar radiation that enhance ozone formation. These weather systems are characterized by sinking of air through much of the troposphere, which has the effect of trapping localized pollutants and preventing their dilution through convective mixing into the upper troposphere. Temperature inversions associated with these events are experienced in all parts of Canada, but are especially significant in the Lower Fraser Valley region of British Columbia where adjacent mountains act to further confine the air mass. Exhibit 25.6 at 5-8 and 5-9 (National [Canadian] Ambient Air Quality Objectives for Ground-level Ozone Science Assessment Document); *see also,* Tr. 1604 (Hansen).

Population and growth in the Valley

The Lower Fraser Valley is a highly populated and rapidly growing area. The Valley has a current population of approximately 2.2 million people. Approximately 120,000 reside in the City of Abbotsford which also is experiencing rapid population growth. Tr. 2793, 2797 (Sagert); Exhibit 131 at 15 (Sagert). The testimony of one of the Applicant's witnesses indicates that the GVRD expects an increase of almost a million people in the next 20 years. Tr. 3612 (Hrebenyk).

Applicant's proposed offsets

The Council acknowledges the Applicant's offer to pay for voluntary offsets for some of the emissions that the proposed project would cause. The Council considers such action to be both appropriate and responsible. The Council does recognize that significant effort was expended by the Applicant to locate potential sites for such offsets in the Lower Fraser Valley. However, the Council finds that no such offsets were ultimately located by SE2 and presented to the Council as mitigation for the impacts on air quality.

Throughout the days of hearing, and in its written testimony, the Applicant noted that it has attempted to reduce or remove certain Canadian air quality impacts associated with the plant's operation by offsetting those impacts. *See, for example,* Tr. 3536-48 (Martin); Exhibit 154.6 (Letter from Applicant to Hu Wallis, Manager of Air Quality, Ministry of Environment, Lands and Parks, May 24, 2000). One of the proposals focused on eliminating NO_x and particulate emissions associated with current burning of wood debris that accumulates in the Fraser River. According to exhibit 162.2, stopping the burning of wood debris would eliminate 243 tons per year of PM_{10} and 61 tons of NO_x, thereby fully offsetting the plant's PM_{10} emissions, and partly offsetting the NO_x emissions. Exhibit 162.2 (Emission Calculations for COFI).

The City of Abbotsford and the Abbotsford Chamber of Commerce challenge the Applicant's assertion that the offsets it proposes would be meaningful. Abbotsford argues that there is a strong

possibility that the wood burning would have to be discontinued anyway in order to deal with existing air pollution challenges. Abbotsford and other Canadian witnesses contend that these measures should be reserved to offset existing air pollution sources or to allow for normal growth and its unavoidable pollution. Tr. 3395 (MLA Van Dongen); Tr. 3423 (Mayor Hawes).

The Applicant was not able to reach agreement with the Canadian authorities on offsets, nor did the Applicant show that the offsets that it did offer would mitigate several of the other major pollutants associated with the plant, for example SO_2, VOCs, and CO_2. *See*, EIS section 3.1, Table 3.1-3. The Applicant has not identified any emission offsets in the United States portion of the air shed. The Council finds that the Applicant has not been able to provide a specific enough proposal to create adequate offsets to air pollution when balancing the need for energy and the impacts of this project.

Public input to the Council

As noted, the Council heard from thousands of members of the public through testimony, written comments, and petitions. The overwhelming sentiment is against the permitting of this power plant. The vast majority of the public that has communicated with the Council has expressed extreme concern for the health and safety of those people that reside in the vicinity and in the broader air shed affected by the project. While the Council does not find all of the public's sentiments to be based on completely accurate scientific information, the public's general belief that this amount of pollution emitted into an already sensitive and confined air shed is likely to cause adverse health impacts is supported by more concrete evidence in our adjudicative record as discussed throughout this Order.

Canadian opposition to the power plant

This project involves significant movement of air pollutants over the northern border of the United States into Canada. *See, for example,* Exhibit 131 at 5 (Sagert); Exhibit 99 at 2 (Jaffe). Air pollution respects no international borders and the Council must be mindful of the impacts on Canada and be respectful of its laws. The evidence presented on air quality standards has been more complex than if the pollution from the plant were to be experienced solely in the United States. This is because Canada has air emission standards, objectives and reference levels that differ from, and are generally more protective of human health, than standards in the United States. *See e.g.* Tr. 3643 (Hansen); Tr. 2775-78 and 2834-35 (Sagert).

The Council has a duty under statutes and regulations and pursuant to intergovernmental accords and memoranda of understanding to consider the concerns of the public, from this country and from Canada, regarding air pollution. RCW 80.50.090(3); WAC 463-14-080. The Air Quality Accord and the Memorandum of Understanding entered into between governments and agencies of the United States and Canada commit Canada and the United States, and Washington and British Columbia, to consult on activities such as this project that might cause significant trans-boundary air pollution. *See*, Exhibit 7 (The Air Quality Accord between the Governments of Canada and the United States and the Interagency Agreement among the State of Washington Department of Ecology, State of Washington Northwest Air Pollution Authority, the Province of British Columbia Ministry of Environment, Lands and Parks and the Greater Vancouver Regional District).

One of the principles agreed to in the Air Quality Accord is that both countries are responsible for the effects of their air pollution on one another. Exhibit 7 at 2 (Air Quality Accord). Under its

statutory duty to consider public comment and the duty imposed by that Accord, the Council heard extensive testimony on the subject of air pollution from the general public and from representatives of Canadian governmental agencies.

The governments of British Columbia (and the opposition government of the Province), the Greater Vancouver Regional District (GVRD), the Fraser Valley Regional District (FVRD), and the City of Abbotsford all oppose the building of the S2GF power plant in this air shed. This is based on their opinions that the Fraser River Valley is a sensitive, compromised, confined, highly populated and growing area. *See, e.g.,* Tr. 3385, et seq. (MLA Van Dongen); Exhibit 157.1 (letter of Minister Sawicki to EFSEC); Tr. 3411 (Chairman of the FVRD Hawes); Tr. 3433 (Mayor of Abbotsford Ferguson); Exhibit 133.19 (letter to Mayor Ferguson from Minister Sawicki). Expert witness testimony indicates that it would be very difficult for this project to be permitted in Canada because of the poor air quality in the Lower Fraser Valley. Tr. 2791-92 (Sagert).

The Council does not find the position of these governmental entities to be determinative of whether this power plant should be sited in the proposed location. However, it adds to and supports the other extensive evidence in this record which indicates that this air shed is: (1) in a highly populated and growing area; (2) hemmed in and confined by mountains and prone to air inversions; and (3) already a polluted, stressed and sensitive air shed.

Council's Findings on Air Quality

The Council finds that over three tons per day of criteria and toxic pollutants would be emitted from S2GF into an air shed that is already suffering from impaired air quality. Existing pollution already causes adverse health impacts to the residents. The air shed is surrounded by mountains that confine the air mass and it is subject to temperature inversions that exacerbate the retention of pollutants in the valley. The area that would receive the air pollution from the proposed plant is highly populated and rapidly growing. The Applicant has been unsuccessful in offering any specific offsets that would mitigate its harmful emissions. The public sentiment expressed to the Council is overwhelmingly opposed to siting this plant in this air shed. The air pollutants that would be added to an air shed of this nature is a significant reason why the Council decided to recommend denial of the siting of this project in this location.

Water Quantity

The FEIS and testimony in adjudicative hearings identified the effects on local wells and the aquifer from the quantity of groundwater to be extracted as issues in the adjudicative hearings. The City of Sumas originally agreed to supply an annual maximum of 1,053 acre-feet of nonpotable water to S2GF at a peak rate of 849 gallons per minute. The amount of nonpotable water the City agreed to supply was later changed to 1,025 acre-feet per year. Exhibit 80 at 2 (Davidson). This large volume of groundwater would be extracted from the Sumas City well fields to supply the Applicant with the water that the project would require. The City of Sumas has issued a Certificate of Water Availability to the Applicant and indicated its willingness to provide water for the power plant. *See,* Exhibit 4 at 2 (Partial Stipulation Agreement Between City of Sumas and Sumas Energy 2).

The Applicant argues that the City's water plan demonstrates that the City can meet S2GF's water requirements and still reserve enough water for its own future use. The Applicant argues that the

City intends to perfect its water rights and that this nonpotable water would be used for other future industrial uses if not used by S2GF. The Applicant argues that there is no evidence that the withdrawals of water for S2GF would deplete or "mine" the aquifer. The Applicant argues that pump testing on the City's wells indicate that only six wells could theoretically experience slightly lower water levels as a result of withdrawals for S2GF (*i.e.* experience adverse "impacts"). However, the Applicant maintains that none of them are expected to experience any inability to fully exercise their water rights (*i.e.* experience "impairments"). In its proposed SCA, the Applicant has offered to perform pre- and post-operations monitoring on the six wells it considers within the radius of influence and take actions to ensure the well owners do not experience "impairment of their water rights".[32]

The City of Sumas argues that the record does not contain evidence that increased groundwater withdrawal by the City will deplete the Abbotsford-Sumas aquifer or that the withdrawal will impair other rights. The City recognizes that the increased City pumping could cause some changes in water level at the wells closest to the well field.

Whatcom County expresses the concern that the City of Sumas has allocated too much of its future water reserves for the benefit of S2GF. While recognizing that the City is within its rights to allocate its resources, the County urges the Council to exercise its judgment as to whether such allocation is wise and appropriate in light of protection and proper allocation of vital natural resources. The County suggests that the Council require the Applicant to seek industrial water from the City of Abbotsford on an annual basis in the event that British Columbia changes its position on the export of industrial water to S2GF.

Constance Hoag argues that the testimony from experts has not ruled out potential changes in the water levels. She urges the Council to impose a requirement on the Applicant to remedy the situation if a pattern of impacts to wells were to be demonstrated.

The Council gives substantial deference to the City of Sumas regarding how it chooses to allocate its water and understands its wish to perfect its water rights. However, the Council does have the responsibility to avoid or mitigate adverse environmental impacts that may result from its decisions. That responsibility includes the duty to attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences. WAC 463-47-110.

The FEIS concludes that the large volume of groundwater that would be extracted from the Sumas City well fields to supply the plant would result in increased drawdown in the areas surrounding the well fields. While this drawdown would be mainly interference from pumping and not an

[32] The Council notes the confusing language in the Applicant's proposed Draft SCA since the Applicant argues in its briefing that the six well owners could experience only "impacts" on wells due to lower water levels, but would not experience "impairments" or the inability to exercise their water rights. However, the language in the Applicant's proposed SCA offers only to address well pumping problems so the owners did not experience "impairments of their water rights". Since the Applicant only expects "impacts" and not "impairments" of water rights, this appears to be an empty promise of mitigation. The Council assumes that this was just careless drafting and not an offer of less protection than was offered in the Applicant's briefing. *Compare,* Post-Hearing Reply Brief at 19 and proposed draft Site Certification Agreement at Attachment 6, Part V. A. 3.

indication that the aquifer is being depleted, it would be, in effect, a permanent condition because the well fields would be pumped continually. There is a potential for water levels in nearby private wells to be lowered as a consequence of the pumping. However, the FEIS concludes that there is not sufficient hydrogeologic information available to determine how much the additional drawdown would be in any particular location or whether any existing well uses would be affected. FEIS, section 1.5.1 at page 1-9.

An Applicant for a SCA has the duty to provide detailed descriptions of the affected natural water environment, project impacts, and mitigation measures. WAC 463-42-322. The Applicant has the duty to describe the means to be utilized to minimize or mitigate possible adverse impacts on the physical or human environments. WAC 463-42-085. The Council finds that the Applicant has not fully evaluated the impacts of large amounts of groundwater withdrawal on wells located within the cone of influence. The Applicant identifies six wells that may be affected by increased pumping of the City well field. However, because the actual cone of influence created by increased pumping of the City well field is not known, it is not known how many other wells may be in this area.

The Council finds a lack of well-defined offers of mitigation of the impacts on other water users in the area of the proposed water withdrawal for S2GF. The Council finds that this lack of a well-defined offer supports a recommendation for denial of the application for certification.

Water Quality

During the adjudicative and public hearings, the issue was raised whether the increased pumping of groundwater would cause harm to the City's water supply by increasing the nitrate levels in the City well fields.[33] Parties and the public also raised the concern that a leak, spill, or release from the oil tank, oil tanker trucks or during filling of the tank could cause serious harm to groundwater.

The Applicant argues that whether or not the withdrawal of water for S2GF would accelerate the transport of nitrates to the Sumas portion of the aquifer is unknown. It points out that it has agreed to pay for a nitrate removal system for the City of Sumas' water supply if nitrate levels end up exceeding regulatory standards while S2GF is in operation. *See,* Exhibit 4 at 3 (Partial Stipulation Agreement Between City of Sumas and Sumas Energy 2).

Constance Hoag asserts that the stipulation between the City of Sumas and the Applicant to provide a nitrate removal system for the City's water does nothing to protect other water users who use their own wells for their water supply.

The Council is concerned by the fact that no mitigation has been identified if the increased pumping from the City well fields results in nitrate exceedences in the wells of those residents who do not use City water. The Applicant did not bear its burden to describe the means to be used to mitigate such adverse impacts on other people's water supply. *See,* WAC 46-42-085.

[33] While the Council did pose questions on other potential contaminants in the aquifer, no data was supplied about contaminants other than nitrates. If the Council were recommending siting this plant at this location, more data would be requested on that issue.

Additionally, the Applicant has provided incomplete and inadequate information on the dangers of an oil spill during the transportation of diesel fuel. During the time that diesel would be used for an extended period of time at S2GF, the surrounding roads would experience a tanker truck loaded with diesel oil passing through approximately 60 times a day. Exhibit 14 (Woltersdorf). Such trips could occur during harsh winter road conditions. The Council finds that the Applicant provided inadequate analysis regarding the dangers of accidents and the impacts on surface water that would occur as a result of an oil spill from tanker truck accidents.

Again, the lack of complete study of the impacts and lack of meaningful mitigation supports a recommendation for denial.

Wetlands

The Council accepted the stipulations between the Department of Ecology and the Applicant and the Department of Fish and Wildlife and the Applicant as minimum thresholds to meet in addressing wetlands issues. Exhibits 5 and 6 (Supplemental Settlement Agreement Between Washington Department of Fish & Wildlife and Sumas Energy 2 Regarding Wetlands and Settlement Agreement Between Washington Department of Ecology and Sumas Energy 2). During the hearing, the Council explained that it was only approving the stipulations as minimum thresholds and that the Council had not been unanimous in voting to accept them as minimum requirements.

The Council notes that it is unlikely to have been satisfied with the minimum requirements delineated in the settlement with Ecology if it had recommended approval. The Council also recognizes that at the close of hearings, the parties were not in agreement on the actual amount of land that constituted wetlands on the project site as defined by state and federal law. Prehearing Conference September 28, 2000, Tr. 6-13.

The Council has concerns with two features of the stipulated wetlands mitigation plan. First, the stipulated plan does not appear to contain mitigation ratios consistent with the Department of Ecology's normal recommended wetland mitigation ratios. Tr. 676-680 et seq. (Stockdale). Second, one expert witness expressed concern that the location of the proposed oil tank splits the wetlands area into two sections, making the wetland mitigation plan less effective. Tr. 651 (Stockdale). We need not address the adequacy of the mitigation ratios in detail because of the conclusion we have reached for independent reasons.

Additionally, wetland buffers are a vital component of wetland habitat. Native wildlife depends on plant communities and their associated physical structures both inside and adjacent to the wetland. Wetland dependent wildlife such as waterfowl, salamander, beaver, and mink use adjacent uplands to meet essential life needs. Buffer zones are areas where individual animals have the necessary separation and interspersion to reduce competition and maintain populations. When land use changes and the buffers gets narrower, the wetland becomes more susceptible to loss of habitat function and productivity. *See,* Exhibit 44, Letter numbers 141 and 151(Comments from Department of Fish & Wildlife and Department of Ecology on DEIS). Because the buffered area in the stipulation was expressed in terms of acreage and not width, the Council cannot determine whether it meets applicable guidelines. However, because of the result we have reached, we need not discuss what specific additional mitigation would have been required with regard to wetland buffers and this issue did not form a basis for our recommendation.

Flooding

The Applicant proposes to construct the S2GF power plant on the overflow corridor of the 100-year floodplain of the Sumas River. Exhibit 91 at 2 (Cooper); FEIS at section 3.2.2.3, page 3.2-12. In the industrial area where SE2 seeks to site the plant, the 100-year flood elevation is approximately four to five feet higher than existing natural ground. FEIS at section 3.2.2.3, page 3.2-12. The Sumas area experienced a 100-year flood in 1984 and a 50-year flood in 1990. Exhibit 150 at 3 (Carlton). Flood damages to properties in the overflow corridor have been, and will probably continue to be, extensive. Exhibit 91 at 3 (Cooper). Public witnesses described the severe flooding which has occurred in the recent past in the Sumas area. Expert evidence corroborates the testimony of public witnesses regarding the extent of past flooding in this area. For example, during the flood event in 1990, damages in the City of Sumas and in Canada were estimated to be in excess of $6.5 million. Exhibit 91 at 3 (Cooper). Public witnesses and Whatcom County raised concerns about the potential impacts that the filling of the S2GF site and the construction of the facility and its oil storage tank would have on the flow and the elevation of floodwaters flowing to other properties during a flooding event.

The Applicant asserts that the City of Sumas has developed a Floodplain Management Plan, which addressed development of the City's industrial area. The Applicant refers to the 1997 KCM, Inc. flood modeling. KCM's modeling was the basis for the City's Floodplain Management Plan, which contemplated the filling of the entire industrial area where the power plant is proposed. The Final Environmental Impact Statement estimates that the filling of the industrial zone in Sumas may increase the depth of a flood by up to one foot. FEIS, at section 3.2.2.3, page 3.2-12. The Applicant's expert witness opined that the modeling done in 1997 presented an accurate picture of flood characteristics in the Sumas area. Exhibit 150 at 4 (Carlton).

The modeling done for the City in 1996-97 used a steady state model to evaluate the impacts of the fill for the project. Tr. 1080 (Cooper); Exhibit 150 at 3 (Carlton). Expert evidence indicates that steady-state models route only a peak flow rate and can only account for the differences in flood levels and velocities resulting from loss in floodplain conveyance. The effects of the loss in floodplain storage are not inherently accounted for in steady-state analyses. Unsteady flow models route an entire flood hydrograph through the floodplain system, and can simulate the relative differences in flood conditions resulting from filling floodplain areas due to the loss of both floodplain storage and conveyance. Exhibit 91 at 4 (Cooper).

The expert witness for Whatcom County, Paula Cooper, testified that the proposed fill of the S2GF plant site could exacerbate the existing flood problems in the area. Fill materials displace floodwaters that can increase flood levels upstream and increase flow rates and velocities in other parts of the floodplain. Ms. Cooper opined that in order to determine whether, and how seriously, the filling of the S2GF property would worsen flooding, an unsteady flow modeling analysis would need to be used. She explained that an analysis with an unsteady flow model would allow an evaluation of whether or not other floodplain properties would be adversely affected by the filling of the site for the S2GF project. Ms. Cooper testified that the impacts of the fill in displacing the temporary storage of floodwaters are not reflected in the model results performed in 1997. She testified that if an unsteady flow model indicated that adverse off-site impacts would be expected, measures such as compensatory storage could be used to mitigate those negative impacts. Exhibit 91 (Cooper); Tr. 1067-87 (Cooper).

The County argues that its taxpayers should not have to bear the cost of flood mitigation measures to benefit the power plant owners. It argues the costs for additional study and the measures that may be necessary to control the flood damage resulting from the plant ought to be borne by the company which can build those costs into its operating costs. While the County agrees that the impacts of the construction of the plant might be insignificant in relation to a 100-year flood event, the County is concerned with relatively smaller and more frequently occurring floods, such as 10 and 25-year flood events. It argues that, given the lesser volume of water in the smaller flood events, the amount of water that would be displaced by the filling of the plant site would be significant. The County asks the Council to require SE2 to pay for the cost of any necessary mitigation measures. The Applicant calls the County's request "insincere" and responds that the County should use the dollars it would receive in taxes from the proposed project to help fund its general flood planning efforts.

The past flooding in this area has been severe. Local residents and County officials are understandably concerned about exacerbating expected flooding events. The Council finds that it has been presented with insufficient evidence to decide the effect of site filling on potential flooding events and the consequent effect on adjacent properties and other properties in the Sumas area. The Council finds the testimony and opinion of the County's witness on flooding to be more credible than the testimony and opinion of the Applicant's witness on flooding. The present studies are inadequate to assess either the effect of the project on a flooding event or what mitigation might be effective and appropriate for impacts from the construction of the plant. The Council concludes that the Applicant has not met its burden to adequately describe the potential for flooding problems created by S2GF or the protective measures to prevent increased flood damage. *See*, WAC 463-42-322(3). The uncertainty surrounding the potential flooding impacts of the S2GF project contributes to the Council's decision not to recommend the siting of this plant in this location.

Climate Change / Greenhouse Gas Emissions

The S2GF plant would raise the amount of CO_2 emissions generated in Washington State by up to 2.4 million tons each year. SE2 Application, Appendix B-6 at p. 2-1; Exhibit 41 at 3 (Gammon). This is about a three- percent increase relative to current Washington State annual emissions of approximately 74 million tons of CO_2. Exhibit 41 at 3 (Gammon).

There is a consensus in the international scientific community that various byproducts of human activity, including CO_2 and other gaseous emissions produced by the combustion of fossil fuels, contribute to global atmospheric warming via the so-called greenhouse effect. [34] Exhibit 41 at 3-4 (Gammon); Tr. 2086-87 (Gammon); Exhibit 123 at 3 (Mote); Exhibit 120 at 6-7 (Hirsch). Such gases trap infrared energy from the sun in the earth's atmosphere and cause its temperature to rise. The concentration of CO_2 in the atmosphere has increased by approximately 30 percent since the beginning of the industrial revolution, largely because of the burning of fossil fuels. Exhibit 123 at 2 (Mote). One long-term study shows a 15 percent increase in the more recent period from 1958 to 1994. Exhibit 40 at 2 (Smith). These "greenhouse gases" are persistent in the atmosphere. Fossil fuel

[34] Although our focus here is on CO_2 we recognize that other emissions from the proposed plant also are in the category of greenhouse gases. The plant, for example, would emit significant quantities (*i.e.*, up to 161 tons per year) of methane (CH_4) which absorbs 20 to 30 times as much infrared radiation as does CO_2. SE2 Application, Appendix B-6 at Part B-6, page 2-1; Exhibit 40 at 3 (Smith).

emissions of CO_2, for example, last for as much as a century after their release into the air. Exhibit 41 at 3 (Gammon); Tr. 2122 (Mote); Tr. 2823 (Sagert).

Although there remains uncertainty with regard to the precise impacts and the speed of onset, it is well understood that global warming has significant impacts on our climate and potentially profound consequences for people, including the citizens of Washington State. Tr. 2083-85 (Gammon); Exhibit 40 at 4-5 (Smith); Exhibit 123 at 2-7 (Mote). Dr. Gammon testified that "[m]ost people on balance feel that the total impacts for the United States will be overall negative and much more negative for the developing world than for us." Tr. 2084. Dr. Gammon expects that there will be severe economic impacts associated with the expected climatic changes. Tr. 2085-86 (Gammon).

Extrapolating from global models to the Pacific Northwest, Dr. Mote discussed in some detail the scenario most consistent with current scientific thought. Exhibit 123 at 3-6 (Mote). The scenario includes decreased summer precipitation, increased winter precipitation, and reduced snow pack. Dr. Mote testified that:

> the consequences of climate change in the Pacific Northwest are likely to include both positive and negative changes. The most fundamental consequence for the region's ecosystems and human endeavors is likely to be the reduction in summer water supply caused by a diminishing snowpack. This is likely to have profound impacts on irrigated agriculture, forests, salmon, and hydropower, among other things.

Exhibit 123 at 2 (Mote).

There is no serious dispute in our record concerning these facts. Indeed, SE2 recognizes and acknowledges both the problem and the necessity for responsible power plant developers to contribute to its solution. Tr. 270 (Jones). Placing itself in that class of responsible developers, SE2 included in its revised application a Greenhouse Gas Offset Strategic Plan ("GHG Offset Plan"). SE2 Application, Appendix B-6. We recognize SE2's initiative in offering to provide $100,000 per year for 10 years to promote greenhouse gas offset as being directionally correct.[35] However, for reasons discussed immediately below, we find SE2's GHG Offset Plan to be less than fully satisfactory.[36]

Portions of SE2's GHG Offset Plan are flawed by virtue of being predicated on premises and analyses that do not hold up on examination. One key component of the GHG Offset Plan is the assertion that SE2's proposed plant is itself a greenhouse gas mitigation project. This is based on an assumption that the power produced and sold by SE2 will "displace power produced by older, less efficient power plants . . . .." SE2 Application, Appendix B-6 at p. 3-5. Although that may be sound theory, it is an assertion by SE2 that is germane to our determination of this issue only if there is credible evidence that conditions in the market promise to actually yield such an outcome in the foreseeable future.

---

[35] Intervenor OTED calculates the net present value of the proposed $1,000,000 to be $572,163, assuming a 5.57 percent discount rate (the current 10 year bond rate) and payments beginning on June 1, 2001. OTED Brief at 17, note 2.

[36] We note, preliminarily, that "SE2 does not propose to make site certification for the [plant] subject to performance against voluntary actions undertaken to reduce unregulated emissions." SE2 Application, Appendix B-6 at p. 3-1.

Mr. Pratt prepared the GHG Offset Plan for SE2. Exhibit 158 at 3 (Pratt); Tr. 2471 (Pratt). Mr. Pratt could not offer such evidence as the Council would require to make a finding favorable to SE2 on this point. Among other reasons, we find Mr. Pratt's testimony not credible inasmuch as he acknowledged that he is not familiar with the power mix in the Pacific Northwest (*i.e.*, the operation and costs of power from coal or oil-fired sources relative to gas or other sources) and has no qualifications in resource economics.[37] Tr. 2394-96, 2399, 2406-07, 2415, 2420-23, 2432, 2446, 2486, 2497 (Pratt).

We find the testimony that suggests the principle of "economic dispatch" could result in S2GF displacing production from older, "dirtier" facilities on a transitory basis during non-peak periods (Watson; Litchfield) to be unconvincing. Moreover, this suggestion is at odds with other testimony that older, more fully depreciated generating assets enjoy a marginal cost advantage and that regional load growth will continue to require existing facilities to continue operating "full tilt". Tr. 181 (Jones); Tr. 1979-81 (Hirsh); 2756-57 (Litchfield).

Such evidence as does appear in our record suggests the assertion that S2GF will replace coal-fired generation in the foreseeable future is wrong. *See, e.g.*, Tr. 2954-58 (Usibelli); Tr. 1978-79 (Hirsh). Even the Applicant's witness, Mr. Jones, acknowledged that S2GF coming on line would not result in a short-term net reduction in CO_2 emissions via displacement of existing fossil fuel generation facilities in our region.[38] Tr. 142-45 (Jones). The bottom line is that S2GF, albeit a superior design relative to existing fossil fuel generating facilities, will add significant quantities of greenhouse gases to the atmosphere. As noted by witnesses for the Northwest Energy Coalition, and acknowledged by SE2, the "Greenhouse Gas Offset Strategic Plan" is not so much a plan as a menu of possible options to consider. The plan does not establish a performance level for the amount of gases that should be reduced, nor does it propose an evaluation methodology for assessing success or failure. Exhibit 120 at 9 (Hirsch), Exhibit 121 at 18 (West); Tr. 218 (Jones); Tr. 770 (Chaney). In sum, SE2's proposed GHG Offset Plan, based in significant part on an unsubstantiated assumption and containing no performance levels or evaluation criteria, simply is inadequate to mitigate the plant's contribution to the problem of climate change.

As Dr. Gammon testified, "the offset strategy offered by SE2, while a good first step, is insufficient if the goal is to balance the costs to the environment with the costs of production of new energy . . .." Exhibit 41 at 6 (Gammon). Although not a policy specialist or economist, Dr. Gammon is acquainted with current policy initiatives in the U.S. and abroad that are aimed at limiting the impact

[37] We afford Mr. Pratt's testimony little, if any, weight. It became apparent that he did no independent analysis and based his testimony in large part on the work of Dr. Charles Montgomery, who did not appear as a witness. Mr. Pratt did not inquire into the bases for Dr. Montgomery's work nor, it appears, is Mr. Pratt well-qualified by education, training, or experience to assess that work. *See, e.g.*, Tr. 2398-99.

[38] Mr. Jones testified further to his opinion that the "short term" is defined by that period required to permit, build, and put into production, somewhere between 7 to 10 power plants the size of S2GF. That is the earliest point in time at which the so-called cleaner plants would begin to displace the so-called dirtier plants, even in theory. Tr. 144 (Jones).

of human activity on global climate change. He points us to the Kyoto Protocol,[39] statutory standards enforced in Oregon since 1997, and a resolution by the City of Seattle that commits to no net increase in greenhouse gases in the future.[40] Ms. Hirsh, who is Policy Director for the Northwest Energy Coalition, elaborates on these and other public and private greenhouse gas control initiatives in her testimony. Exhibit 120 at 8-9 (Hirsh). In general, what is required to address the problem "is not just a slower growth rate of CO_2 emissions, but a sustained and substantial decrease in net greenhouse gas emissions, year after year, continuing throughout this century." Exhibit 41 at 5 (Gammon).

Although there is evidence to support various mitigation measures for greenhouse gases advocated by CFE, OTED, NWEC and WEC, it is unnecessary, in light of our negative recommendation, for us to analyze and determine in detail what precise standards the project would be required to meet as a condition of site certification. In light of the evidence discussed above, however, we conclude that SE2's proposed GHG Offset Plan fails to satisfy its general and specific obligations under governing law. In general, we look for guidance to WAC 463-47-110, which provides, in relevant part, that:

> (1) (a) The overriding policy of the council is to avoid or mitigate adverse environmental impacts which may result from the council's decisions.
>
> (b) The council shall use all practicable means, consistent with other essential considerations of state policy, to improve and coordinate plans, functions, programs, and resources to the end that the state and its citizens may:
>
> (i) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
>
> (ii) Assure for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
>
> (iii) Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
>
> (c) The council recognizes that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.
>
> (d) The council shall ensure that presently unquantified environmental amenities and values will be given appropriate consideration in decision making along with economic and technical considerations.
>
> (2)(a) When the environmental document for a proposal shows it will cause

[39] The U.S. Senate has not ratified the multinational treaty that would give the Kyoto Protocol the status of law, though it may achieve that status anyway if it is approved by at least 55 countries responsible for at least 55 percent of global greenhouse gas emissions. Under this protocol, the U.S. would be required to reduce its emissions to 7 percent below the 1990 rate within the 2008-2010 timeframe. This would promote the Kyoto Protocol's longer-term goal of a 60 percent or more absolute reduction in worldwide CO_2 and other greenhouse gas emissions that is required to achieve a stable world climate at least to the extent it is made unstable by man-made climate change. Exhibit 41 at 4-5 (Gammon).

[40] Mr. Golden appeared as a witness for NWEC and WEC to explain in detail the City of Seattle's resolution, including discussion of the resolution's environmental, economic, social, and other implications. Exhibit 122 at 2-6 (Golden); Tr. 2137-2170 (Golden).

significant adverse impacts that the proponent does not plan to mitigate, the council shall consider whether:

(i) The environmental document identified mitigation measures that are reasonable and capable of being accomplished;

(ii) Other local, state, or federal requirements and enforcement would mitigate the significant adverse environmental impacts; and

(iii) Reasonable mitigation measures are sufficient to mitigate the significant adverse impacts.

(b) The council may:

(i) Condition the approval or recommendation for approval for a proposal if mitigation measures are reasonable and capable of being accomplished and the proposal is inconsistent with the policies in subsection (1) of this section.

(ii) Reject or recommend rejection of the application if reasonable mitigation measures are insufficient to mitigate significant adverse environmental impacts and the proposal is inconsistent with the policies in subsection (1) of this section.

More specifically, our rule, WAC 463-42-225, requires an applicant to "deal with … CO_2" in a facility's construction and operation.

SE2's failure to present a plan that actually proposes to reduce its projected greenhouse gas emissions, including CO_2, thus contributes to our decision to recommend against site certification in this case. However, even without the issue regarding greenhouse gas emissions, the Council would have recommended denial of the application based upon the other reasons articulated in this order.

Noise

There was a great deal of controversy in this proceeding regarding the noise that would be emitted from S2GF's power plant. This was a technically complex issue with some of the concern centered on the low frequency noise levels and tones that would come from operation of the plant.

The City of Sumas and the Applicant entered into an agreement that recognized a 50 dBA[41] nighttime noise limit is allowed at residentially zoned receiving properties. SE2 and the City agreed that the 50 dBA limit was only applicable to the noise generated by S2GF, not the cumulative noise received at a given residential property from S2GF in combination with other noise sources. SE2 agreed to perform pre-and post-construction monitoring to verify compliance with code requirements given that understanding of the code requirement. Once operational, if S2GF was found to exceed the City's noise limits, SE2 agreed to install additional noise abatement measures at the facility in order to bring noise limits into compliance with code requirements. Exhibit 4 at 2 (Partial Stipulation Agreement Between City of Sumas and Sumas Energy 2).

The Applicant argues that its testing indicates that the facility would emit noise below state and local noise ordinance levels. It argues that it has incorporated numerous noise attenuation features in

[41] The decibel scale used to describe sound is a logarithmic rating system that accounts for the large differences in audible sound intensities. One frequency-weighting used is A-weighting and measurements from instruments using this system are reported in "A-weighted decibels" or dBA. Application at section 4.1.1.1.

its design and has received assurances from its vendors that the equipment will be effective in controlling low frequency noise. The Applicant argues that if noise level or low frequency noise or tones are discovered after the plant begins operation, they can be remedied then.

The City of Abbotsford and its Chamber of Commerce argue that the proposed facility includes gas and steam combustion turbines the size of jet engines, with large transformers, which each generate levels of noise so loud that continuous exposure within 100 feet could cause hearing loss. The facility will have other significant noise sources, including generators, exhaust stacks and cooling fans. Abbotsford argues that there is serious disagreement between the expert for the Applicant who testified that the plant would not exceed noise laws and the other expert witnesses who disagreed with that conclusion. Abbotsford also criticizes the Applicant for entirely dismissing the impacts that will be caused by the generation of low frequency noise and tones. While doubting the facility would meet legal noise levels, Abbotsford argues that even if it did, the plant would still be likely to cause significant noise problems for the community because of low frequency noise and tones. Abbotsford asks that the Applicant be required to conduct a new impact analysis with at least 20 receptors and consider additional atmospheric conditions, including wind, and be required to mitigate the project to provide a margin of safety and to attenuate problematic tones. It also asks that SE2 be required to disclose the low frequency levels of all for its equipment and to mitigate those sounds.

Constance Hoag argues that the noise levels at her property with the operation of S2GF will exceed acceptable levels for nighttime noise. She contends that the Council does not have enough information to assess the low frequency noise from the plant and that one needs to be more conservative in noise control with low frequencies. Ms. Hoag also argues that there are differences in state and local law. She cites regulations that require noise levels in relation to the total amount of noise received at a given property as opposed to the local ordinance that speaks to a sound originating from a source outside the property. She therefore asserts that the City ordinance is more lax than the state law. She argues that the Draft EIS shows that nighttime noise levels are already being exceeded and that combined noise levels will exceed 50 dBA. She asks that the project not be sited, for this and other reasons. She expresses concern over both low frequency noise and tone problems.

The Counsel for the Environment relies on expert witness testimony to assert that the consequences of noise pollution can have significant physical, and psychological impacts in particular, at the low frequency end of the range. She argues that any assessment must include a frequency spectrum analysis. She argues that the record shows that the Applicant's calculation of decibel increase is underestimated and that the Applicant's design has left no margin of safety. She argues that it is cheaper and fairer to local residents to do noise abatement during construction rather than attempting to retrofit at a later date. She argues that the plant's design needs to factor in the impact of the low frequency band and tone scale. The CFE asks that better monitoring be performed to determine the impact of noise from S2GF and asks that monitoring devices be positioned at ranges which reflect how sound travels to accurately assess its impact. She asserts that additional modeling and monitoring addressing low frequency issues needs to be conducted.

Whatcom County also expresses serious concerns about the noise that would be generated from the plant both in its broad spectrum, as measured by noise ordinances, and its lower frequencies. The County asserts that alternative or additional construction methods should be used to lessen low frequency sound emissions in order to avoid harm to the local community. The County argues that the noise from the turbines will not be attenuated sufficiently to meet regulatory requirements and that the

significant and constant levels of noise will present public health risks unless properly attenuated. The County asks the Council to require further investigation on whether additional noise attenuation could be achieved by utilizing more massive structures to surround the turbines if the reduction could be realized at a reasonable price. The County also requests that SE2 be required to post a bond in an amount sufficient to rebuild or retrofit sound suppression components of the project. The County cites to RCW 80.50.010 for the proposition that the Council is required not only to assure compliance with minimum codes, but also to act in a manner that ensures through available and reasonable methods, that the location and operation of the plant will produce minimal adverse effects on the environment. The County urges the Council to meet its statutory duty to take whatever steps are required beyond the guidelines to assure that the welfare of citizens is protected. The County argues that the Council, under the law, can surpass standards and offer greater protection to the citizens of Washington.

The Council finds that the computer modeling conducted by the Applicant is insufficient to assess the probable noise level that would be emitted from the proposed plant, whether that noise would comply with relevant legal standards, and what effect it might have on the health and comfort of the local population. This finding is based on the expert testimony of Jerry Lilly, Dr. David Lipscomb, Ph.D., Ioana Park, and Dr. Nathan Kronenberg, M.D. Exhibit 130 (Lilly); Tr. 2237-2310 (Lilly); Exhibit 96 (Lipscomb); Tr. 1454-95 (Lipscomb); Exhibit 92 (Park); Tr. 1495-1521 (Park); Exhibit 142 (Kronenberg); Tr. 1536-46 (Kronenberg).

Additionally, the cross examination of Eric Hansen, the Applicant's expert witness on noise pollution, indicated that while it is known that the distance that noise travels is affected by atmospheric conditions such as wind, the Applicant's noise study did not consider wind. Tr. 1375-79 (Hansen). The Applicant's study of noise considered only four receptor locations while Mr. Lilly indicated that many more receptors should be considered for the analysis of a project of this magnitude. *Compare* Tr. 1375-76 (Hansen) *with* Exhibit 130 at 2-3 (Lilly).

The Council recognizes this state does not currently have promulgated standards on low frequency noise and that the research is continuing on the impacts on human health of low frequency noise. *See e.g.* Tr. at 1508 (Park) and Tr. at 2307 (Lilly). However, many of the experts who testified indicated that such noise could cause significant problems. Exhibit 130 at 4 (Lilly); Exhibit 96 at 2-3 (Lipscomb); Exhibit 142 at 2-5 (Kronenberg); Exhibit 92 at 4-5 (Park). For example, Mr. Lilly testified that low frequency noise could shake walls, rattle windows, and cause extreme annoyance, headaches, and stress. Eric Hansen, the Applicant's noise witness, responded to Mr. Lilly's concerns regarding low frequency noise by stating that he did not expect the plant noise to have that effect but that he did not know that the noise from the plant would rattle windows and that he did not know if the noise could shake walls. Tr. 1387 (Hansen) Mr. Lilly concluded that the Applicant had not looked at the facility's potential for generating tones and that it was possible that the equipment planned for the project could have a significant problem with the generation of tones which could keep people awake at night. Exhibit 130 at 5 (Lilly). Mr. Hansen confirmed that the Applicant could not tell the Council what the tone levels would be from the proposed plant and that the Applicant's noise study does not have an analysis of tones. Tr. 1390, 1392-93 (Hansen).

The Applicant's proposed draft SCA is inconsistent with offers and assurances that it made during the hearing and in its briefing to the Council. The Applicant states in its briefing that "if noise level or low frequency or tone problems are discovered when the project begins operation, they can be remedied then." SE2's Post-hearing Brief at page 24. The Applicant's proposed draft SCA does not

mention its commitment to address problems with tones or low frequency noises. The Applicant's proposed draft SCA commits only to perform noise abatement measures in order to "bring noise limits into compliance with code requirements." Proposed draft SCA at 16. Since low frequency noise is not addressed in the codes, the Applicant's proposed Draft SCA is not written in accord with the Applicant's suggestion of remedy in its briefing.

The Council finds that the Applicant's studies on the noise impacts of the plant are insufficient to assess the probable noise level that would be emitted from the proposed plant. It is not possible, based on the evidence offered by the Applicant, to know whether that noise would comply with relevant legal standards or to assess whether mitigation after construction would be feasible. The Council concludes that the Applicant has failed in its burden to describe the means to mitigate the possible adverse impacts on the community from noise that will be emitted from the plant. *See*, WAC 463-42-085. The Applicant's failure to adequately assess and address the impacts of noise on neighbors and to offer meaningful mitigation measures contributes to our decision to recommend denial of its application.

Fire

The City of Sumas, Whatcom County, and public witnesses expressed concern over the hazards of a fire connected with the oil tank. SE2 argues that a number of safety features have been designed into the project, including a 125% containment area around the tank and a foam extinguishing system to suppress a fire. Exhibit 27 at 7-10 (Woltersdorf); Tr. 1881-1946. The Council understands that the Applicant has offered to "explore arrangements" with refineries to provide aid in the event of an emergency at the S2GF facility and would develop an emergency response plan in the future. Tr. 1943-44 (Woltersdorf); Exhibit 27 at 10 (Woltersdorf). The testimony of the Applicant's expert witness is that it is "extremely unlikely" that a properly designed and maintained foam suppression system would not control any fire that ignited in or around the diesel storage tank. Exhibit 27 at 9 (Woltersdorf).

The Council does not question the accuracy of the Applicant's assessment, but notes that in the unlikely event of an oil tank fire, there would most likely be only two SE2 employees on the site to deal with the fire. The local fire department is a volunteer fire department that would only be expected to form a perimeter control in an attempt to keep the fire from spreading. Tr. 1893-96; 1904 (Woltersdorf).

The containment area around the oil tank is designed to hold the contents of the oil tank and 20 minutes of fire fighting water. Tr. 1897 (Woltersdorf). The Applicant's witness explained that when the oil in the containment area was burning, the liquid from the bottom of the containment area would be drained into tanker trucks. If the fire had reached a high degree of heat, this would pose problems even if tanker trucks were at the ready to accept the drained water and oil. *See*, Tr. 1922-23; 1942-43 (Woltersdorf). The Council agrees that the likelihood of fire is low. However, in the event of fire, the problem of fighting such an oil fire is significant.

An Applicant for a SCA has the burden to describe any potential for fire and what measures will be made to mitigate any risk of fire. WAC 463-42-352(2). The Council must consider such hazards and impacts and what mitigation is necessary in its recommendation to the governor. Without more information than has been provided on this issue, the Council cannot assess the potential hazards

to the community from the risk of fire or what mitigation measures might be effective. The Council concludes that the Applicant has not carried its burden to describe the potential for fire during construction or operation and what measures could be used to mitigate any risk of fire as required by WAC 463-42-352(2) and WAC 463-42-085. The inadequate fire protection plans contribute to our decision to recommend denial of the site certification.

Fuel Supply

Several parties raised significant issues about the effects that this project might have on diesel oil supplies and prices. Exhibit 72 (Lazar); FEIS section 3.9.6. Mr. Lazar testified that, during oil firing, the daily consumption of diesel by S2GF would be equal to approximately 25% of the total daily distillate fuel oil consumption in the state. The short-term disruption of the transportation and home heating oil market if diesel demand suddenly increased by 25% could be significant. Mr. Lazar concluded that the plant could have a severe impact on the availability and cost of diesel fuel for other purposes in this state. Exhibit 72 at 13-15 (Lazar). The Council finds this to be a serious and complex issue which is a nonmitigable impact of the project and which contributes to the Council's decision to recommend denial of the application.

Traffic and Transportation

The Council has serious concerns about the potential traffic problems and transportation hazards involved during periods when S2GF would be operating in an oil-firing mode. In order to refill a two and a half million-gallon oil tank for a 15-day period, it would take 900 trips by oil tanker trucks. Many of these trips could occur under harsh winter conditions on small roads.

In response to Council's Bench Request, Mike Woltersdorf, a Risk Control Specialist, provided information about the probability of a truck accident associated with deliveries of backup diesel fuel oil to S2GF. Exhibit 14. His calculation identifies 250 trips to fill the diesel tank (2.5 million gallons) initially. The initial filling of the tank is not as troublesome as the subsequent filling required when diesel is being used. Mr. Woltersdorf calculates 900 trips to keep the tank at full capacity for a 15-day period. Exhibit 14 at 1. Based on his calculation, that is an average of 60 trucks per day going through Abbotsford, through the border crossing, through Sumas to the S2GF site. Those same 60 trucks would then make the return trip. During the time that diesel is being used at S2GF, the local roads and communities would experience a tanker truck passing through 120 times a day. The Council finds that there was inadequate analysis conducted regarding the impact of this traffic on local roads and communities.

The Applicant contemplates that diesel firing would primarily occur during a "cold snap". Exhibit 20 at 11 (Jones). The analysis performed did not evaluate the risk and environmental impact of keeping the diesel tank full during inclement weather with the corresponding winter road conditions. The tanker trucks will be using small rural roads in a community that may not have adequate equipment to keep roads in good condition during severe winter weather. Mr. Woltersdorf did not mention the impact of inclement weather on the probability of truck accident in the response to the Bench Request. The Applicant failed to address the possibility that during a cold snap that was accompanied by extreme snow, ice, and wind, the risk of accident would increase significantly. Impact analysis resulting from potential accidents and diesel oil spills was inadequate to address the risks to surface water, the aquifer, Johnson Creek, and the Cities of Abbotsford and Sumas.

The proposed change in tank size from 2.5 million to 1.5 million gallons, which was suggested at the end of the proceedings,[42] adds another dimension to the application that has not been analyzed. Consequently, there is no evidence of the environmental impacts of this new proposal on traffic, roads, surface water, the aquifer, Johnson Creek, the Cities of Sumas and Abbotsford and the border crossing.

The tanker truck traffic and its hazards do not appear to be a mitigable impact during times of oil burning. The lack of analysis of the traffic impacts and hazards, or of any possible mitigation of them, contribute to our recommendation to deny certification.

Decommissioning Plan / Site Restoration

The Applicant candidly admitted that its site restoration plan is a set of assurances and does not include any guarantee that there would be adequate financing to assure the site would be made safe and healthy for the community at the end of the plant's use. Tr. 3173-75 (Martin); *see* Application at section 7.3. As a special-purpose corporation, the Applicant owns only the development assets of this project. The Applicant expects that any debt incurred to finance S2GF would be solely the responsibility of SE2. Tr. 3229-30 (Martin). The Applicant argues that no financial security should be required for the decommissioning and site restoration of the project because the facility's equipment will likely be salvaged at the end of its useful life and the site sold for use as another industrial facility. The Applicant argues that bonding is unnecessary since it will have environmental insurance coverage. It argues that EFSEC's enforcement authority and the ordinary recourses available under state law would be sufficient to provide assurances that any environmental or health risks at the site after the facility ceases operation would be addressed.

OTED recommends that the Council require the escrow of funds with the State or the provision of other security to ensure funding for site restoration. Response Brief of Energy Division of the Washington State Office of Trade and Economic Development at 29-30; see also, Exhibit 70 at 14-16 (Warren). The Counsel for the Environment also argues that a plan for site restoration is worthless if the plan is not adequately funded. She endorses the recommendation of OTED that the Council require a bond or surety for site restoration for all future projects so that the taxpayers do not end up paying such costs. The CFE argues that insurance would not necessarily cover all the costs of decommissioning and site restoration and that SE2 is only an empty corporate shell. She proposes that a SCA include a provision for a study of the amount of the bond or surety that would be funded by the Applicant and conducted independently with an opportunity for public comment.

WAC 463-42-655 requires an Applicant to provide a plan for site restoration in sufficient detail to identify, evaluate, and resolve all major environmental and public health and safety issues presently anticipated. The rule requires that the plan address provisions for funding or bonding arrangements to meet the site restoration or management costs.

The Council determines that the site restoration plan offered here is insufficient to assure that the cost of restoration would not fall on the taxpayers. The Applicant has not shown that insurance it proposes to purchase for environmental releases would fund the decommissioning and site restoration when the plant ceases operation. The Applicant has failed to include any provision for financial

[42] The Applicant first proposed a change in the size of the oil tank in its post-hearing brief.

guarantees to ensure restoration will occur in the event of cessation of operation of the facility either during or after completion of construction. The lack of a viable plan for site restoration with any provision for funding or bonding is another reason the Council recommends denial of certification.

Conclusion

The Council has carefully considered its statutory duties, applicable administrative rules, and all of the facts of this case in exercising its duty to balance the state's need for energy at a reasonable cost with the need to protect the environment and the health and safety of the residents of the area.

One of our principal duties is to ensure that the *location* of energy facilities will produce minimal adverse effects on the environment. We have listened at length to both expert witnesses and to the public and considered thousands of pages of evidence and the FEIS on whether this plant, as proposed, is appropriate for this location. In light of the lack of a demonstrated energy benefit to consumers or to others who would suffer the consequences of environmental degradation and the hazards of this plant, and in light of the nature of the location in which the Applicant seeks to site this facility, we must recommend denial of the application.

While the project in the abstract has many positive attributes, the location is simply not appropriate for this type of project for all of the reasons discussed above. The transport of large quantities of diesel oil under harsh winter conditions, the siting of the plant on a flood plain, and the burning of oil in an air shed which is already stressed, confined by mountains, subject to inversions, highly populated and growing, all are factors that militate against this particular site. The transboundary international issues have only become more heated and controversial during the planning of this project and therefore no resolution has been reached with regard to potential emission offsets that could decrease the amount of degradation of air quality.

While the Council is keenly aware that one of our duties is to ensure that the supply of energy, at a reasonable cost, is sufficient to ensure people's health and economic welfare, the record before us does not show that this merchant plant, sited in this location, would serve those goals. For all of the reasons discussed in the body of this Order, we cannot recommend to the Governor that this project be approved for site certification.

MOTION TO REOPEN THE ADJUDICATIVE PROCEEDING

The Counsel for the Environment and Whatcom County filed a motion to reopen the hearing record in order to hear alleged new scientific evidence of an earthquake fault running under the proposed site for the plant. Those parties argue that the newly discovered earthquake fault makes the siting of the project more hazardous than was represented at the adjudicative hearings. The Applicant opposed the motion to reopen the record. In light of our decision to recommend that the application be denied on other grounds, the motion is denied.

FINDINGS OF FACT

Having discussed in detail above the facts relating to the relevant material matters, and having stated findings and conclusions, the Council now states the following summary of those facts. Those portions of the proceeding findings pertaining to the Council's findings and conclusions stated below are incorporated by reference.

The Application, the Applicant, and the Application Review and Hearing Process

1. On January 11, 1999, Sumas Energy 2, Inc. (SE2 or the Applicant) applied to the Washington State Energy Facility Site Evaluation Council (EFSEC or the Council) for certification to construct and operate the Sumas 2 Generation Facility (S2GF), a natural gas-fired electric generation facility in Sumas, Washington, and an associated electric transmission line and natural gas pipeline.

2. SE2 filed a revised application on January 10, 2000, making a number of changes and requesting that diesel fuel be added as a backup fuel for the facility.

3. SE2's revised application sought a Site Certification Agreement (SCA) to construct and operate a natural gas-fired combined-cycle 660 MW electric generation facility and an associated 230 kV electric transmission line, and a natural gas pipeline.

4. SE2 is a special purpose corporation formed to develop, permit, finance, construct, own and operate the Sumas 2 Generating Facility. SE2 is a Washington S-Corporation formed under Title 23B of the Revised Code of Washington. It is wholly owned by Darrell Jones and his family. Mr. Jones is the sole director.

5. EFSEC duly published notice of the application, public meetings and hearings, prehearing conferences, land use hearings, PSD hearings, DEIS hearings, and the adjudicative hearings.

6. The Council conducted a land use consistency hearing on March 2, 1999, which was reconvened on September 25, and 27, 2000.

7. Prior to the formal adjudicative hearings, the Council held prehearing conferences on April 24, May 15, June 12, July 17, and July 24, 2000, and issued Prehearing Orders number 1 through 6 (Council Orders Nos. 743, 744, 746, 747, 748, and 749).

8. The Council conducted adjudicative sessions on May 15 and July 17, 2000, to hear testimony in support of various stipulations entered into by some of the parties. The Council held formal adjudicative hearings July 24-29, 2000, in Bellingham, Washington, July 31-August 4, 2000, in Olympia, Washington, and September 28-29, 2000, in Bellingham, Washington. The Council issued two post-hearing orders, Post-Hearing Orders No. 1 and No. 2 (Council Orders No. 750 and 751).

9. The Council held public hearings on July 25, 2000, in Bellingham July 27, 2000 and September 27, 2000 in Everson, Washington.

10. The Council published a draft Prevention of Significant Deterioration (PSD) air emissions permit on August 25, 2000, and held a public hearing on the draft PSD permit on September 28, 2000, in Everson, Washington.

11. Final post-hearing briefing was completed on October 20, 2000.

Project Description

12. The proposed plant is a 660 MW combined-cycle electric generating plant. The facility consists of two separate but identical combustion gas turbine driven generators and one steam turbine driven generator. The exhaust heat from the combustion turbines flows to heat recovery steam generators (HRSG) to produce steam. Steam flows to the steam turbine and the steam exhausted by the steam turbine flows to the condenser, is condensed, and returns to the HRSG.

13. The application seeks the use of natural gas as the primary fuel with low-sulfur distillate fuel oil as a backup fuel to be used for no more than fifteen days per year, and no more than an average of ten days per year over a ten-year period.[43] The application proposed construction of a 2.5 million-gallon tank of distillate fuel oil on site, but the Applicant offered in its post-hearing briefing to reduce the size of the oil tank to 1.5 million gallons.

14. The application also seeks authorization to construct a 4.5-mile natural gas pipeline from the United States-Canadian border to the facility to deliver gas. The Applicant seeks to construct the pipeline adjacent to an existing natural gas pipeline operated and maintained by an SE2 affiliate.

15. The proposed project includes the construction of a new 5.9-mile 230 kV transmission line from the facility to the Clayburn substation in British Columbia, Canada. All parties agreed that only the portion of the line located in Washington State, which is approximately 0.6 miles in length, is subject to the Council's jurisdiction.[44]

Stipulations and Settlements

16. The Applicant entered into the following settlement agreements and stipulations: Partial Settlement Agreement between Washington Utilities and Transportation Commission and Sumas Energy 2 Concerning Natural Gas Pipeline Issues; Settlement Agreement between Washington Department of Fish & Wildlife and Sumas Energy 2; Partial Stipulation

[43]There is a discrepancy between the Applicant's request, in its application and during the course of the hearings, for a maximum of 15 days per year of oil burning with the Applicant's proposed Site Certification Agreement (SCA) which delineates oil burning for 720 hours per year, which could occur during more than 15 calendar days per year.

[44] The Draft EIS had included a description of other high power transmission lines in Whatcom County, which could have been an alternative route for transmission of power. Those lines were the subject of intense public opposition. The Applicant informed the Council that it was not applying for certification of those power lines and they were not considered.

Agreement between City of Sumas and Sumas Energy 2; Supplemental Agreement between Washington Department of Fish & Wildlife and Sumas Energy 2 Regarding Wetlands; Settlement Agreement between Washington Department of Ecology and Sumas Energy 2; Stipulation and Settlement Agreement between Washington Utilities and Transportation Commission and Sumas Energy 2.

Environmental Documentation

17. EFSEC is the lead agency for environmental review of SE2's application pursuant to the requirements of Chapter 43.21C RCW. As Council Manager, Allen Fiksdal is the SEPA responsible official. WAC 463-47-051.

18. The Council issued a determination of significance and request for comments on the scope of environmental impacts on August 10, 1999. A hearing on the scope of the EIS was held in the City of Sumas on September 16, 1999. The deadline for written comments on the scope was extended from September 24 to October 1, 1999.

19. EFSEC issued a Draft Environmental Impact Statement (DEIS) prepared by an independent consultant on March 15, 2000. Hearings to accept oral comment from the public were held on April 3, 2000, in Bellingham and on April 4, 2000, in Sumas, Washington. Forty-nine members of the public commented at the hearings. The deadline for written comments on the DEIS was extended from April 17 to May 2, 2000, upon request. The Council received an additional 198 written comments.

20. The Council adopted and issued a Final Environmental Impact Statement (FEIS) on February 7, 2001.

Site Characteristics

21. The Applicant seeks to locate the facility on an approximately 37-acre site in Sumas, Washington, approximately one-half mile from the Canadian border. The legal description of the site is contained in section 2.2.2.1 of the revised application.

22. Approximately 26 acres of the site have historically been farmed with a variety of crops and the remainder of the site is woods or wetland and not cultivated.

23. The proposed site is located within a designated industrial zone of the City of Sumas and a portion of the natural gas pipeline is located within unincorporated Whatcom County.

24. The proposed site is located within the 100-year floodplain of the Sumas River.

25. The only other sites considered for this project by the Applicant are properties in the same vicinity as the proposed site.

Land Use Consistency

26. The proposed use of the site is consistent with the land use plans and zoning ordinances of the City of Sumas and Whatcom County.

Need and Consistency

27. There is a need for new energy and capacity to meet regional demands.

28. SE2 seeks authorization to build a merchant plant and intends to sell its energy to the highest bidder, within or out of the region. SE2 has not demonstrated that the energy that the proposed plant would produce would assist the State of Washington or the Northwest region in meeting their energy needs or in meeting those needs at a reasonable cost.

Air Quality

29. The S2GF is subject to federal and state air emissions control requirements: Notice of Construction Approval; Prevention of Significant Deterioration (PSD); New Source Performance Standards (NSPS); and air toxic standards.

30. The S2GF facility would be a major new source of air pollution under the Prevention of Significant Deterioration (PSD) air emissions procedure, as cited below, because it has the capacity to emit any one of nitrogen oxides (NO_x), carbon monoxide (CO), volatile organic compounds (VOCs), or particulate matter (PM_{10}) at more than 100 tons per year. Some of the sulfur dioxide from the facility is expected to convert and hydrolyze to sulfuric acid mist.

31. The Applicant has proposed to use Selective Catalytic Reduction (SCR) as an emissions reduction technology. With the use of SCR, the NO_x emissions would be reduced to two parts per million by dry volume (ppmdv) and six ppmdv when oil-firing. The Applicant proposes using catalytic oxidation to reduce carbon monoxide (CO) to two ppmdv when gas-firing and 12 ppmdv when oil-firing. The Applicant proposes to use natural gas firing and good combustion practice for VOC emission control. The Council's PSD permit writing contractor has opined that SCR would be Best Available Control Technology (BACT) for NO_x, that catalytic oxidation would be BACT for CO, and that use of natural gas as the primary fuel and good combustion practice would be BACT for VOCs. There are no federal standards for emissions of particulate matter less than 10 microns (PM_{10}) emitted from gas turbines. SE2 proposes, and EFSEC's permit writer agrees, that good combustion practice, using only natural gas and on-road specification, low-sulfur distillate oil with less than 0.05% sulfur as fuel, and minimizing oil-firing would constitute BACT for PM_{10} emissions.

32. Even with the control technologies it proposes to use, the S2GF facility would be expected to emit approximately 156 tons of nitrogen oxides (NO_x), 106 tons of carbon monoxide (CO), 45 tons of sulfur dioxide (SO_x), 156 tons of volatile organic compounds (VOCs), 223 tons of particulate matter (PM_{10}), and 9.3 tons of H_2SO_4 mist per year. The plant would also emit toxic air pollutants including sulfuric acid mist, unburned hydrocarbons, and excess ammonia from NO_x reduction. Approximately 2.4 million tons of carbon dioxide (which is a greenhouse gas

and discussed in a later section regarding climatic changes) would also be emitted from this plant.

33. NO_x is a precursor of ozone that is a component of smog and has been determined to be a serious health and aesthetic problem. NO_x is also a key ingredient in the formation of inhalable particulate.

34. The S2GF power plant with the use of SCR would be expected to emit approximately 1,000 tons per year of criteria and toxic air pollutants.

35. When firing gas or oil, the modeled criteria pollutant concentration of S2GF are below the Canadian Maximum Desirable Air Quality Objective for most pollutants. However, there are times when the background particulate matter (PM_{10}) concentration in the area of Abbotsford, British Columbia is near or above the Greater Vancouver Regional District Maximum Desirable Air Quality Objective. If S2GF were burning oil, the addition of its PM_{10} emissions could contribute to or exacerbate an exceedance.

36. Whatcom County in Washington and the British Columbia Lower Mainland share the Lower Fraser Valley air shed. The Lower Fraser Valley in Canada encompasses the Greater Vancouver Regional District, and that portion of the Fraser Valley Regional District, bounded by the Coastal Mountains to the north and the Cascade Mountains to the southeast.

37. The Canadian portion of the Lower Fraser Valley would receive much of the potentially harmful air emissions from the proposed power plant.

38. The Lower Fraser Valley in Canada already exceeds current Canadian air quality objectives for ozone. Various short and medium-term air quality objectives and standards for the area from Hope to West Vancouver already are exceeded up to 10% of the time. Smog levels that pose potential risks to health occur in the Fraser Valley about 43% of the time for ground-level ozone pollutant and about 3% of the time for fine airborne particulates (PM_{10}). While current particulate matter (PM_{10}) concentrations in the Fraser Valley are below the U.S. Environmental Protection Agency standard, they currently exceed the Canadian 24-hour criteria up to four days per year. In Canada, the Lower Fraser Valley is considered to have the second worst air quality of any urban area in that country.

39. Pollutants from the proposed power plant would cause a perceptible change in visibility for at least several days per year. There would be a diminution is visibility at least two days a year in the Olympic National Park which is approximately 100 miles from the proposed project.

40. The worst periods for high particulate air emissions which would be caused by S2GF in the Lower Fraser Valley will not necessarily or usually occur during times when other pollution is low in the Valley. The Council finds that the degree to which the S2GF project will contribute to exceedences of the Canadian air quality objectives has been underestimated by the Applicant.

41. Given the past measurements of PM_{10} at the Abbotsford measuring station, there is very little margin left for the addition of new sources of particulate matter before the air quality reaches levels that have been shown to pose health hazards to humans.

42. The Lower Fraser Valley in Canada is a confined air shed where mountains act to confine the air mass and the topographic features exacerbate the retention of pollutants. Meteorological processes play a significant role in the movement of ozone and its precursors and high ozone episodes are often associated with slow moving, high-pressure weather systems that concentrate pollutants and enhance ozone formation.

43. The Lower Fraser Valley has a current population of approximately 2.2 million people with approximately 120,000 residing in Abbotsford. The Greater Vancouver Regional District expects an addition of almost one million people in the next 20 years.

44. The Applicant has been in discussions with the Canadian governmental entities regarding the possible reduction of pollution in other facilities or projects in the air shed in which it proposes to construct its power plant. However, the Canadian governmental entities have declined the offer of offsets on the Canadian side of the border, explaining that they prefer to perform offsets themselves to counter the expected growth in Canada and its attendant pollution. The Applicant has failed to offer offset proposals that are concrete enough to include as a part of a mitigation strategy or that go far enough to offset the air impacts of concern to the Council.

45. Thousands of people from this country and Canada have appeared as public witnesses, submitted written comments to the Council, or signed petitions on the proposed project. The vast majority of those people have expressed extreme concern for the health and safety of those people who reside in the vicinity or air shed of the proposed power plant and have strongly opposed the siting of the proposed facility.

46. The governments of British Columbia, (and the opposition government of the Province), the Greater Vancouver Regional District (GVRD), the Fraser Valley Regional District (FVRD), and the City of Abbotsford all oppose the building of the S2GF power plant in this air shed on the basis that the Fraser River Valley is a sensitive, polluted, confined, highly populated and growing area.

47. This polluted, confined, highly populated and rapidly growing area is not an appropriate site in which to locate a power plant, which would emit three tons a day of criteria and toxic pollutants.

48. The Applicant originally proposed to build a 2.5 million-gallon diesel oil tank at the proposed site. In its post-hearing briefing, it has offered to reduce the size of the tank to 1.5 million gallons. A number of hazards are posed by the siting of an oil tank of this size, including: air quality impacts which are far greater when the plant is operating under oil-firing; fire hazards associated with possible rupture and spill; danger of spill associated with the transportation of oil via tanker trucks and during filling, leading to concerns over damage to surface water quality; flooding impacts associated with the construction of the berm around the tank; wetlands impacts associated with construction of the berm and tank, which requires splitting the wetlands into two separate areas; the impact on oil supply and price associated with a large

increase in oil usage during peak times; and the impact on traffic flow associated with a large number of tanker trucks moving across the border and through Sumas. The record contains no analysis of the environmental impacts of SE2's post-hearing proposal to reduce the size of the oil storage tank. The reduction in tank size would reduce only one hazard, that is, the risk of fire and impacts to water quality associated with rupture of the entire tank. Although evidence is inconclusive, such evidence as is in the record indicates that all other hazards, including air quality, traffic, water quality impacts associated with tanker accidents and refueling spills, flooding, wetlands, would either remain the same or worsen.

Water Quantity

49. The City of Sumas has agreed to supply 1,025 acre-feet of nonpotable water per year to the Applicant. The water would be extracted from the City's well fields that draw on the Sumas-Abbotsford aquifer.

50. The large volume of groundwater that would be extracted from the Sumas City well fields to supply the plant would result in increased drawdown in the areas surrounding the well fields. While this drawdown would be mainly interference from pumping and not an indication that the aquifer is being depleted, it would be, in effect, a permanent condition because the City well fields would be pumped continually. There is a potential for water levels in nearby private wells to be lowered as a consequence of the pumping. The Applicant has not supplied sufficient hydrogeologic information to determine how much the additional drawdown would be in any particular location or whether and to what degree existing well uses would be impaired or impacted. The analysis of impacts of groundwater withdrawals on wells located within the cone of influence caused by increased pumping of the City wells has not been adequately evaluated.

Water Quality

51. It is not known whether the withdrawal of water for S2GF would accelerate the transport of nitrates to the Sumas portion of the aquifer.

52. The Applicant has agreed in its Stipulation Agreement with the City to pay for a nitrate removal system for the City of Sumas water supply if nitrate levels exceed regulatory standards while S2GF is in operation.

53. The stipulation between the City of Sumas and the Applicant to provide a nitrate removal system for the City's water does nothing to protect the water quality of water users who use their own wells for their water supply.

54. The Applicant has proposed no mitigation in the event that the increased pumping from the City well fields results in nitrate exceedences in the wells of those residents who do not use City water.

55. The Applicant has provided incomplete and inadequate information on the dangers to groundwater from an oil spill during the transportation of diesel fuel.

Wetlands

56. The Council accepted the stipulations between the Department of Ecology and the Department of Fish and Wildlife and the Applicant as minimum thresholds to meet in addressing wetlands issues. Given the Council's disposition of this application, no further consideration of wetland mitigation is necessary. However, had such consideration been necessary, the Council would not have been satisfied on wetlands issues with the minimum guidelines delineated in the stipulations.

Flooding

57. The Applicant proposes to construct the S2GF power plant in the overflow corridor of the 100-year floodplain of the Sumas River. The Sumas area has experienced severe flooding in the past.

58. During the last decade, the flood damages to properties in the overflow corridor have been extensive. Experts expect flooding to continue to be a hazard for this area.

59. The Applicant would fill the site for the plant prior to construction. Fill materials displace floodwaters that can increase flood levels upstream and increase flow rates and velocities in other parts of the floodplain. The Applicant has not supplied the Council with enough information to assess the potential impacts that the filling of the S2GF site and the construction of the facility would have on the flow and the volume of floodwaters flowing to other properties during a flooding event.

60. The Applicant has analyzed the flood hazard using a steady-state model. Steady-state models route only a peak flow rate and can only account for the differences in flood levels and velocities resulting from loss in floodplain conveyance. The effects of the loss in floodplain storage are not inherently accounted for in steady-state analyses.

61. Unsteady flow models route an entire flood hydrograph through the floodplain system and can simulate the relative differences in flood conditions resulting from filling floodplain areas due to the loss of both floodplain storage and conveyance. The modeling done for the City, and used by the Applicant, did not use an unsteady state model to evaluate the impacts of the fill for the project. In order to determine whether, and how seriously, the filling of the S2GF property would worsen flooding, an unsteady flow modeling analysis would need to be used in the analysis. Therefore, the Council is unable to determine whether and to what extent the proposed filling of the S2GF plant site could exacerbate the existing flood hazard in the area.

62. The Council has been presented with insufficient reliable evidence to decide the effect of site filling on potential flooding events and the consequent effect on adjacent properties and other properties in the Sumas area or what mitigation might be feasible and adequate.

Climate Change

63. Operation of the S2GF will result in the annual emission of 2.4 million tons of carbon dioxide (CO_2). This is about a three percent increase relative to current Washington State annual emissions of approximately 74 million tons of CO_2.

64. CO_2 is not specifically regulated under federal, state or local laws or regulations. However, WAC 463-42-225 requires an applicant for a fossil fuel plant to deal with products containing CO_2.

65. There is a consensus in the international scientific community that various byproducts of human activity, including CO_2 and other gaseous emissions produced by the combustion of fossil fuels, contribute to global atmospheric warming via the so-called greenhouse effect. Such gases trap infrared energy from the sun in the earth's atmosphere and cause its temperature to rise. The concentration of CO_2 in the atmosphere has increased by approximately 30 percent since the beginning of the industrial revolution, largely because of the burning of fossil fuels. One long-term study shows a 15 percent increase in the more recent period from 1958 to 1994. These greenhouse gases are persistent in the atmosphere. Fossil fuel emissions of CO_2, for example, last for as much as a century after their release into the air. Although there remains uncertainty with regard to the precise impacts and the speed of onset, it is well understood that global warming has significant impacts on our climate and potentially profound consequences for people, including the citizens of Washington State.

66. SE2 included a Greenhouse Gas Offset Mitigation Plan ("GHG Offset Plan") in its revised application. SE2 offers to provide $100,000 per year for 10 years to promote greenhouse gas offsets.

67. The GHG Offset Plan as proposed does not provide any specific plans for offsets for the plant's greenhouse gas emissions.

68. Replacing electricity generated at plants using fossil fuels other than natural gas with electricity generated by natural gas-fired plants is a strategy for reducing CO_2 emissions. However, there is no evidence that construction of this or any other natural gas-fired plant will actually cause existing plants using fossil fuels to be retired. Even though S2GF is a superior design, it will still add significant quantities of greenhouse gases to the atmosphere.

69. The GHG Offset Plan does not adequately address greenhouse gas emissions from the power plant.

Noise

70. The proposed facility includes gas turbines, gas turbine generators, heat recovery steam generators (HRSGs), steam turbines, a cooling tower and other components which all generate very loud levels of noise which must be mitigated in order to meet noise regulations.

71. The computer modeling conducted by the Applicant is insufficient to assess the probable noise level that would be emitted from the proposed plant, whether that noise would comply with relevant legal standards, or what effect it might have on the health of the local population.

72. Although the Applicant represented to the Council that if excessive noise levels or low frequency noise or tones are discovered after the plant begins operation, they can be remedied at that time, the Applicant's proposed draft SCA does not reflect any commitment to address problems with tones or low frequency noises. The Applicant could not tell the Council what the tone levels would be from the proposed plant and the Applicant's noise study does not contain an analysis of tones.

Fire

73. A number of safety features have been designed into the project, including a 125% containment area around the tank and a foam extinguishing system to suppress a fire.

74. It is unlikely that a properly designed and maintained foam suppression system would fail to control a fire that ignited in or around the diesel storage tank. However, the hazard does exist.

75. In the event of an oil tank fire, there would most likely be only two SE2 employees on the site to deal with the fire. The local fire department is a volunteer fire department that would only be expected to form a perimeter control in an attempt to keep the fire from spreading.

76. The containment area around the oil tank is designed to hold the contents of the oil tank and 20 minutes of fire fighting water. The Applicant's plan, if the oil in the containment area were burning, would be to drain the liquid from the bottom of the containment area into tanker trucks. If the fire had reached a high degree of heat, this would pose insurmountable problems even if tanker trucks were at the ready to accept the drained water and oil.

77. The Applicant has not adequately addressed the initial fire response or the impacts and plans for mitigation of a fire during construction or operation of the facility as required by WAC 463-42-352(2).

Fuel Supply

78. During oil firing, the daily consumption of diesel by S2GF would be equal to approximately 25% of the total daily distillate fuel oil consumption in the state. The short-term disruption of the transportation and home heating oil market if diesel demand suddenly increased by 25% could be significant.

Transportation

79. In order initially to fill a 2.5 million gallon diesel oil tank at the S2GF site, it would take 250 tanker truck trips.

80. It would take 900 oil tanker truck trips to keep a 2.5 million-gallon tank at full capacity for a 15-day period.

81. There was inadequate analysis conducted regarding the impact of this traffic on Abbotsford, Sumas and the border crossing. The analysis preformed did not evaluate the risk and environmental impact of keeping the diesel tank full during inclement weather with the corresponding winter road conditions. The analysis of potential accidents or spills was inadequate to address the impacts on surface water, the aquifer, Johnson Creek, and the Cities of Abbotsford and Sumas.

82. The proposed change in tank size from 2.5 million to 1.5 million gallons, which was suggested after the end of the proceedings, may have environmental impacts that have not been analyzed. Consequently, there is no evidence on the environmental impacts of this new proposal on traffic, roads, surface water, the aquifer, Johnson Creek, the Cities of Sumas, Abbotsford or the border crossing.

Decommissioning Plan / Site Restoration

83. The site restoration plan offered by SE2 does not include any guarantee that there would be adequate financing to assure the site would be made safe and free of health risks for the community at the end of the plant's useful life.

84. The Applicant is a special-purpose corporation and owns only the development assets of this project.

85. The Applicant has not met the requirements of WAC 463-42-655 because it has failed to provide a plan for site restoration in sufficient detail to identify, evaluate, and resolve all major environmental, public health and safety issues presently anticipated. The Applicant has not identified a plan to address provisions for funding or bonding arrangements to meet the site restoration costs. The Council finds that the site restoration plan offered here is insufficient to assure that the cost of restoration would not fall on the taxpayers.

CONCLUSIONS OF LAW

Based on the foregoing findings of fact, the testimony received and evidence admitted during the adjudicative hearing, the environmental documents and environmental determinations made by the Council, and the record in this matter, the Council makes the following conclusions of law:

1. The Washington State Energy Facility Site Evaluation Council has jurisdiction over the persons and the subject matter of Application No. 99-1, pursuant to Chapter 80.50 RCW and Chapter 34.05 RCW.

2. The Council conducted its review of the SE2 application as an adjudicative proceeding pursuant to Chapter 34.05 RCW as required by RCW 80.50.090(3) and Chapter 463-30 WAC.

3. EFSEC is the lead agency for environmental review of Sumas 2's application pursuant to the requirements of Chapter 43.21C RCW. Because the SEPA responsible official determined that the proposed action may have a significant adverse environmental impact, an environmental impact statement (EIS) was legally required. The Council complied with Chapter 43.21C RCW, Chapter 197-11 WAC, and Chapter 463-47 WAC, by issuing a determination of significance and scoping notice, conducting a scoping hearing, issuing a draft environmental impact statement (DEIS) for public comment, conducting a public hearing and accepting written comments on the DEIS, and adopting a final environmental impact statement (FEIS).

4. The Prevention of Significant Deterioration (PSD) air emissions procedure is established in Title 40, Code of Federal Regulation (CFR), 40 CFR Part 52.21. Federal rules require PSD review of new air pollution sources that meet certain criteria, which includes this project. The Washington State Energy Facility Site Evaluation Council (EFSEC) is the PSD permitting authority for energy facilities greater than 250 MW sited in the State of Washington per Chapter 463-39 of the Washington Administrative Code (WAC). While a Draft PSD permit was written and a hearing conducted on that draft, no final PSD has been issued for this application. In light of the Council's decision to recommend denial of the application, no final PSD is required. *See*, WAC 463-39-095.

5. The Council is required to determine whether a proposed site is consistent with county or regional land use plans or zoning ordinances. RCW 80.50.090; WAC 463-14-030. The Council concludes that the proposed use of the site is consistent with city and county land use plans and zoning laws.

6. Legislative guidance on energy policy is provided in RCW 43.21F.015.[45] The Council has interpreted the intent and policy provisions of RCW 80.50.010[46] and RCW 43.21F.015 to require a balancing of the state's need for energy at a reasonable cost with the imperative to minimize adverse impacts to the environment. The Council concludes that the location and operation of the S2GF power plant as proposed would not provide abundant energy at a reasonable cost to the citizens of Washington or to those people who will suffer the consequences of the hazards and the environmental harm that would be caused by this power plant. Balancing only a generalized benefit of more power on the Western grid with the substantial environmental impacts of this plant leads the Council to conclude that the negative environmental impacts outweigh the benefit of the energy that would be produced by this plant.

---

[45] RCW 43.21F.015 provides in relevant part:

It is the policy of the state of Washington that:

(1) The development and use of a diverse array of energy resources with emphasis on renewable energy resources shall be encouraged;

(2) The supply of energy shall be sufficient to insure the health and economic welfare of its citizens;

(3) The development and use of energy resources shall be consistent with the statutory environmental policies of the state;

(4) Energy conservation and elimination of wasteful and uneconomic uses of energy and materials shall be encouraged, and this conservation should include, but is not limited to, resource recovery and materials recycling; …

[46] RCW 80.50.010 provides:

The legislature finds that the present and predicted growth in energy demands in the state of Washington requires the development of a procedure for the selection and utilization of sites for energy facilities and the identification of a state position with respect to each proposed site. The legislature recognizes that the selection of sites will have a significant impact upon the welfare of the population, the location and growth of industry and the use of the natural resources of the state.

It is the policy of the state of Washington to recognize the pressing need for increased energy facilities, and to ensure through available and reasonable methods, that the location and operation of such facilities will produce minimal adverse effects on the environment, ecology of the land and its wildlife, and the ecology of state waters and their aquatic life.

It is the intent to seek courses of action that will balance the increasing demands for energy facility location and operation in conjunction with the broad interests of the public. Such action will be based on these premises:

(1) To assure Washington state citizens that, where applicable, operational safeguards are at least as stringent as the criteria established by the federal government and are technically sufficient for their welfare and protection.

(2) To preserve and protect the quality of the environment; to enhance the public's opportunity to enjoy the esthetic and recreational benefits of the air, water and land resources; to promote air cleanliness; and to pursue beneficial changes in the environment.

(3) To provide abundant energy at reasonable cost.

7. The legislature has recognized that the selection of sites for new large energy facilities will have significant impact upon the welfare of the population, the location and growth of industry, and the use of the natural resources of the state. It is the policy of the state of Washington to recognize the pressing need for increased energy facilities, and to ensure through available and reasonable methods, that the location and operation of such facilities will produce minimal adverse effects on the environment, ecology of the land and its wildlife, and the ecology of state waters and their aquatic life. RCW 80.50.010. The Council finds and concludes that the location and operation of this facility in the place where the Applicant has requested its siting will result in significant adverse impacts to the welfare of the population and the use of the state's natural resources and will cause much more than minimal adverse effects on the environment. The Council thus concludes that the proposed project fails to satisfy the requirements of RCW 80.50.010 and WAC 463-47-110, and that the Council therefore should recommend that the Governor not approve the application for certification.

8. Pursuant to WAC 463-47-110[47], the Council must fulfill the responsibilities of our generation as trustee of the environment for future generations. The Council is mandated to ensure that

[47] WAC 463-47-110 provides in relevant part:

(1) (a) The overriding policy of the council is to avoid or mitigate adverse environmental impacts which may result from the council's decisions. (b) The council shall use all practicable means, consistent with other essential considerations of state policy, to improve and coordinate plans, functions, programs, and resources to the end that the state and its citizens may:

(i) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(ii) Assure for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings;

(iii) Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(c) The council recognizes that each person has a fundamental and inalienable right to a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

(d) The council shall ensure that presently unquantified environmental amenities and values will be given appropriate consideration in decision making along with economic and technical considerations.

(2) (a) When the environmental document for a proposal shows it will cause significant adverse impacts that the proponent does not plan to mitigate, the council shall consider whether:

(i) The environmental document identified mitigation measures that are reasonable and capable of being accomplished;

(ii) Other local, state, or federal requirements and enforcement would mitigate the significant adverse environmental impacts; and

(iii) Reasonable mitigation measures are sufficient to mitigate the significant adverse impacts.

(b) The council may:

(i) Condition the approval or recommendation for approval for a proposal if mitigation

presently unquantified environmental amenities and values will be given appropriate consideration in decision making along with the economic and technical considerations. WAC 463-47-110(1)(d). The Council concludes that allowing the addition of over two million tons of greenhouse gases per year into the atmosphere, without adequate mitigation, would not be fulfilling this duty. The Council concludes that the emission of the greenhouse gases from S2GF, without adequate mitigation, does not conform to the requirements of RCW 80.50.010, WAC 463-47-110, or WAC 463-42-225.

9. The Applicant has a duty to supply adequate information and assessment on the potentially harmful impacts of a proposed power plant. *See*, Chapter 463-42 WAC. The Applicant also must describe the means to be utilized to minimize or mitigate possible adverse impacts on the physical or human environments. WAC 463-42-085. The Council concludes that the Applicant has failed to adequately address a number of impacts. Specifically, during oil burning, the local area may experience large numbers of tanker trucks transporting diesel oil to the plant, possibly during harsh winter road conditions and the Applicant has not adequately assessed this impact. The inadequate fire protection plans contribute to our inability to recommend site certification, as does the effect on diesel oil supply and price during oil firing. SE2 has failed to adequately analyze and offer meaningful mitigation for other impacts such as: the potential impact to flooding due to filling on the site; noise; the potential impact on water quantity for local well owners; and the potential for contamination of local wells and water supply. The Applicant has failed to satisfy the requirements of WAC 463-42-655 in that the Applicant has not addressed provisions for funding or bonding arrangements to meet site restoration costs. The Applicant has failed to provide enough information to the Council on these subjects for the Council to be able to assess adequately the actual impacts that would be caused by this plant or how they might be mitigated.

10. It is the Council's duty to recommend denial of an application for a power facility when reasonable mitigation measures are insufficient to mitigate significant adverse environmental impacts and the proposal is inconsistent with WAC 463-47-110(1). WAC 463-47-110 (2)(b)(ii). Based upon the above facts, we conclude that the significant adverse impacts have not been mitigated and that the proposed plant does not assure the people safe, healthful, productive, and aesthetically pleasing surroundings or attain the widest range of beneficial uses of the environment without degradation or risk to health or safety. WAC 463-47-110; *see also*, RCW 80.50.010. The Council therefore recommends denial of the application for site certification.

(footnote 47 continued)
measures are reasonable and capable of being accomplished and the proposal is inconsistent with the policies in subsection (1) of this section.

(ii) Reject or recommend rejection of the application if reasonable mitigation measures are insufficient to mitigate significant adverse environmental impacts and the proposal is inconsistent with the policies in subsection (1) of this section.

ORDER AND RECOMMENDATION

Based on the foregoing Memorandum decision, findings of fact and conclusions of law, the parties' briefs, and the record in this matter, the Council issues the following Order.

1. The Council recommends that the Governor deny certification for the construction and operation of the Sumas Energy 2 Generation Facility (S2GF) at Sumas, Washington.

2. The Council orders that its recommendations as embodied in the above memorandum, findings of fact and conclusions of law be reported and forwarded to the Governor of the State of Washington for consideration and action.

Signatures

DATED and effective at Bellingham, Washington, this 16th day of February 2001.

/s/
Deborah J. Ross, Chair

/s/
Daniel Jemelka, DVM, MPH, Department of Agriculture

/s/
Heather Ballash, Department of Community, Trade and Economic Development

/s/
Charles J. Carelli, Department of Ecology

/s/
Jenene Fenton, Department of Fish and Wildlife

/s/
Ellen Haars, Ph. D., Department of Health

/s/
Gayle Rothrock, Department of Natural Resources

/s/
Gary Ray, Ph. D. Department of Transportation

/s/
Dennis Moss, Utilities and Transportation Commission

/s/
Dan McShane, Whatcom County Councilmember

/s/
Gerald Richmond, City of Sumas

NOTICE TO PARTIES: This is a final order of the Council for purposes of RCW 34.05.470 (1). Administrative relief may be available through a petition for reconsideration, filed within ten days of the service of this order, pursuant to RCW 34.05.470 and filed with the Council Manager pursuant to WAC 463-30-335.

CONCURRING OPINION (Charles J. Carelli)

I find myself in a difficult position with respect to the Council decision on this Application for Site Certification of a gas fired combustion turbine in Sumas Washington. My vote is with the majority of the Council in recommending that the Governor deny certification for the construction and operation of this facility. As described in the Order, the majority of the Council feels that it is not possible to separate the applicant's request to use back up oil firing from the overall question of approval or rejection for this project by Sumas Energy 2. That is not my position.

The Council has the ability to go beyond the application and to require mitigation or other offsets appropriate to the individual case. The Council could have elected to send the application back to the applicant and asked them to consider removing the oil firing option. Alternatively, the council could have reviewed the evidence in the case and eliminated the oil firing option during deliberation. However, this Council accepted the applicant's position that oil firing was inseparable for this project to proceed and conducted its deliberations on that basis.

This application without oil firing would have far fewer adverse environmental impacts. Removal of the oil firing option would substantially reduce air emissions resulting from this project. As an example, NOx from the project would decline from 6 ppm with oil firing to 2 ppm with natural gas firing. Likewise carbon monoxide and sulfur would decline from 12 to 2 ppm and 10 ppm to 1 ppm respectively. It also would eliminate the need for a 2.5 million-gallon on site oil storage tank that has its own set of potential environmental impacts. These include:

- the risk of oil spills resulting in surface and ground water contamination,
- the risk of earthquake caused damage to the tank and containment berm resulting in uncontrolled oil spills,
- the risk of fire,
- up to 120 daily round trip tanker truck trips delivering fuel to the site during periods of oil firing, and
- the possibility of increased flood impacts.

Without backup oil firing, full mitigation or offsets of the impacts of this project would be very possible.

This application, by this applicant, has set a new standard for preparing applications for this type of project. Their offers to mitigate the impacts associated with this facility go farther than any previous application received by EFSEC for this type of a facility. These offers include:

- low NOx emissions when gas firing,
- air cooling instead of water cooling,

- dollars to mitigate greenhouse gas emissions,
- offers for direct emission offsets in Canada and the US,
- wetland mitigation

Unfortunately, this facility, as it is proposed, is not appropriate for this location. Therefore, I vote with the majority of the Council in recommending that the Governor deny certification for the construction of the Sumas Energy 2 Generation Facility.

/s/	/s/
Charles J. Carelli, Department of Ecology	Gary Ray, Ph. D., Department of Transportation

CONCURRING OPINION (Ellen Haars, Ph. D.)

The decision whether to recommend approval or denial of the site certification of the proposed Sumas 2 Generating Facility has been difficult for me. I am mindful:

- Of the need to protect public health and to minimize the impact to the environment;
- Of the need to listen to oral and written public comments;
- Of the need for energy; and
- That this proposal would be a merchant plant with no assurances that the people located in the area would benefit from the plant.
- Of Executive Order 97-02 and Chapter 34.05 RCW, Administrative Procedures Act.

Two specific aspects of the Findings of Fact, Conclusions of Law and Order Recommending Denial of Site Certification (Order) trouble me. They are: the Council's decision not to consider impacts of the project without backup oil firing, and the lack of formal comprehensive air quality standards for the siting of thermal energy plants. However, given the record in this case, I must vote with the majority of the Council in recommending that the Governor deny certification for the construction and operation of Sumas Energy 2 Generation Facility. Further discussion of my position follows.

Backup Diesel Oil Provision

The Council could have sent the application back to the applicant to reconsider eliminating the backup diesel oil option. The majority of Council members decided against doing so. I do not agree with their position in this regard. Without backup oil firing, full mitigation or offsets of the impact of this project would be very possible. I support Charles J. Carelli's and Gary Ray's position on this point as stated in their concurring opinion and incorporate it into this concurring opinion by reference.

Air Quality Standards

I am particularly concerned that the Order does not specify what would have constituted acceptable air quality standards. Without such a specification, this applicant, or future applicants, have little guidance from the Council on what would be an acceptable level of air quality impacts. Page 25 of the Order states in part that:

> Although the Council concludes that the project meets federal and state air quality standards, this is the beginning, not the end, of our inquiry. Compliance with promulgated numerical air quality standards is a minimum requirement for allowing a power generating facility to be constructed in this state. The Council has a much broader mandate than simply deciding whether minimum standards are met; rather, the Council is charged with protecting the people's health and welfare and with siting power plants only where minimal adverse effects on the environment can be achieved.

What constitutes "protecting the people's health and welfare"? What are the criteria that must be met?

In conclusion, I vote with the majority of the Council in recommending that the Governor deny certification for the construction and operation of Sumas Energy 2 Generation Facility. However, I believe the Council should have explored eliminating the backup diesel fuel option. Further, I urge the Council to promulgate specific criteria that will be used in evaluating the air quality standards for the construction and operation of thermal generating power facilities.

/s/
Ellen Haars, Ph. D., Department of Health