IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR COUNTY OF PIERCE

ADVOCATES FOR A CLEANER TACOMA, SIERRA CLUB, WASHINGTON ENVIRONMENTAL COUNCIL, WASHINGTON PHYSICIANS FOR SOCIAL RESPONSIBILITY, STAND.EARTH, AND THE PUYALLUP TRIBE OF INDIANS, Petitioners, v. PUGET SOUND CLEAN AIR AGENCY, PUGET SOUND ENERGY, AND THE WASHINGTON STATE POLLUTION CONTROL HEARINGS BOARD, Respondents.	NO. 21-2-08733-9 PUYALLUP TRIBE OF INDIANS' PETITION FOR JUDICIAL REVIEW OF POLLUTION CONTROL HEARINGS BOARD DECISION PCHB NO. P19-087C

The Puyallup Tribe of Indians ("Tribe" or "Petitioner"), a federally recognized Indian tribe entitled to the quiet enjoyment of its homeland as provided for by the Medicine Creek Treaty and as confirmed by the Puyallup Tribe of Indians Settlement Act of 1989, petitions the Court for review of decisions rendered, and actions taken, by the Pollution Control Hearings Board of the State of Washington ("PCHB" or "Board") in the following matter: *Advocates for a Cleaner Tacoma, Sierra Club, Washington Environmental Council, Washington Physicians for Social Responsibility, Stand.Earth, and the Puyallup Tribe of Indians v. Puget Sound Clean Air Agency and Puget Sound Energy*, PCHB No. 19-087c (consolidated with PCHB No. 19-088).

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This Petition is made pursuant to the PCHB statutes, RCW Ch. 43.21B, and the Washington Administrative Procedure Act, RCW Ch. 34.05 ("APA"). Decisions of the PCHB are subject to judicial review under RCW 43.21B.180, which in turn provides that review is governed by the APA, RCW 34.05.514 *et seq*. The filing of this Petition in Pierce County Superior Court is authorized by RCW 34.05.514(1)(b), (c).

I. PETITIONER

The Petitioner is the Puyallup Tribe of Indians, whose mailing address is: 3009 E. Portland Avenue, Tacoma, Washington 98404.

II. PETITIONER'S ATTORNEYS

The Tribe's attorneys in this case are:

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Nicholas G. Thomas
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III. AGENCY WHOSE ACTION IS AT ISSUE

The agency whose action is at issue in this Petition is the Washington Pollution Control Hearings Board, State of Washington Environmental and Land Use Hearings Office, P.O. Box 40903, Olympia, Washington 98504-0903. The Board's physical address is: 1111 Israel Road, S.W., Tumwater, Washington 98501.

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IV. AGENCY ACTION AT ISSUE

The agency actions giving rise to this Petition are the following rendered by the Board in PCHB No. 19-087c:

- Findings of Fact, Conclusions of Law and Order on State Environmental Policy Act Issues 2a, 2c, 2d, 2e, 2f, and 9, dated November 19, 2021.
- Findings of Fact, Conclusions of Law and Order on NOC Issues 4, 4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h, 4i, 4j, 4k, 4o, 4p, 4u, 6, and 8, dated November 19, 2021.
- Order on Motion to Dismiss and for Partial Summary Judgment, dated March 26, 2021.[1]

True and correct copies of these Board decisions are attached to this Petition. By way of the Findings of Fact and Conclusions of Law documents, the Board largely affirmed the challenged Order of Approval to Construct No. 11386 issued by the Puget Sound Clean Air Agency, and the underlying Supplemental Environmental Impact Statement.

V. PARTIES TO THE ADJUDICATIVE PROCEEDINGS LEADING TO THE AGENCY ACTION

The parties to the Board's adjudicative proceeding in PCHB No. 19-087c were:

APPELLANTS

In addition to the Puyallup Tribe of Indians, the following parties appeared in PCHB No. 19-087c as appellants:

Advocates for a Cleaner Tacoma;

Sierra Club (Washington Chapter);

Washington Environmental Council;

Washington Physicians for Social Responsibility;

Stand.Earth.

[1] In that Order, the PCHB granted summary judgment to respondents on Issue 1 in Petitioners' appeal, which asked whether the Puget Sound Clean Air Agency's Order of Approval was *ultra vires* and invalid under state law.

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The above appellants were referred to collectively as "ACT" and were represented by:

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RESPONDENTS

The following parties appeared in the adjudicative proceeding as respondents:

Puget Sound Clean Air Agency ("PSCAA")
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Puget Sound Energy ("PSE")
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VI. FACTS TO DEMONSTRATE THAT PETITIONER IS ENTITLED TO OBTAIN JUDICIAL REVIEW

The following is a concise statement of facts demonstrating the Petitioner is entitled to judicial review, which does not include all facts upon which the Tribe will rely in support of its appeal.

Standing

The Tribe's Reservation shares an airshed with PSE's Liquefied Natural Gas facility (the "Project" or "Tacoma LNG") to which the Puget Sound Clean Air Agency ("PSCAA") issued an Order of Approval to Construct, Install, or Establish ("Approval Order") at issue in this appeal on

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December 10, 2019. Indeed, in addition to other lands located near the Project, the Tribe owns land directly across the Hylebos Waterway from the Project site, including marinas that provide access to the Tribal treaty fisheries and restoration sites that provide essential fish habitat.

The Tribe, and the health and safety of its members, will be disproportionately impacted by Tacoma LNG and its emissions of air pollution (including toxic air pollutants) because the Tribe's entire homeland shares an airshed with the Project, which will emit harmful pollutants in significant amounts. The Puyallup Tribe already suffers from air pollution in its homeland, and construction and operation of Tacoma LNG would add further pollution and increase traffic impacts to the community. Moreover, PSE has never fully disclosed the safety risks presented by Tacoma LNG to nearby homes, schools, businesses, and Tribal properties.

Further, because the Tribe's entire Reservation is located near and, in places, adjacent to the coast (where sea levels are rising and extreme weather events are becoming more frequent because of climate change), the Tribe is uniquely sensitive to and disproportionately impacted by the consequences of climate change and the greenhouse gas impacts that the Project presents.

Agency Action

In 2014, the City of Tacoma initiated an environmental review for a shoreline substantial development permit for the Tacoma LNG project. The Project was to store natural gas for PSE's customers for use during periods of peak demand, known as "peak shaving." Additionally, the Project would provide liquefied natural gas ("LNG") as a fuel for marine vessels and trucks.

After environmental review and permitting by the City of Tacoma, PSE submitted a notice of construction, pursuant to state and federal clean air laws, seeking authorization from PSCAA for the facility. Because the City's Final Environmental Impact Statement ("FEIS") did not consider lifecycle greenhouse gas ("GHG") emissions, and because it relied on guidance that had later been withdrawn, PSCAA prepared a Supplemental Environmental Impact Statement ("SEIS") to assess lifecycle GHGs, but in other respects relying on the FEIS in its permitting.

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PSCAA issued a draft SEIS in late 2018. The comment period generated nearly 15,000 comments, many of them deeply critical of the GHG analysis, which found that the Project would result in a net *reduction* in GHG emissions on an annual basis. On March 29, 2019, PSCAA finalized the SEIS. The SEIS concluded that the Project's GHG emissions were substantial but that the emissions under the "no action" scenario were the same or even higher—meaning the project would have an insignificant impact on GHG emissions over the project's anticipated 40-year lifespan. On December 10, 2019, PSCAA issued the final Order of Approval No. 11386 ("Approval Order"), to Construct, Install, or Establish the Tacoma LNG facility.

The Approval Order was signed by staff at the agency. The Board of PSCAA took no action with respect to the Approval Order.

ACT and the Tribe separately appealed the Approval Order to the PCHB on December 19, 2019. The appeals, Case Nos. 19-087 and 19-088, were consolidated in Case No. 19-087c, and each petitioner joined the other petitioners' appeals.

The appeals raised several challenges to the Approval Order and the SEIS on which it relied. Among other things, the petitioners challenged the permit as *ultra vires*, raised several challenges to the validity of the SEIS addressing greenhouse gasses, and raised a number of challenges to the Approval Order itself.

On March 26, 2021, the Board issued an order on Puget Sound Energy's motion to dismiss and for summary judgment, which had been joined by PSCAA. That decision dismissed a number of issues, while preserving others for hearing.

The Hearing on ACT and the Tribe's appeal took place starting in April 2021 and lasted approximately two weeks. The first week was devoted to the SEPA, GHG, and safety issues in the consolidated appeals. The remainder of the hearing focused on challenges to the Approval Order issued by PSCAA.

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On November 19, 2021, the Board issued two separate decisions addressing the SEPA issues and the Approval Order issues. With the exception of ordering additional emissions monitoring for certain pollutants, the Board affirmed the Approval Order and the SEIS it relied on.

Construction of the Project appears to be complete. On information and belief, operations at Tacoma LNG have not yet started. At the time of the April 2021 hearing, PSE had no customers for marine fuel from the project.

VII. ISSUES FOR WHICH RELIEF IS SOUGHT AND REASONS WHY RELIEF SHOULD BE GRANTED

The Board's summary judgment and final orders contain a number of errors that should be corrected on appeal, including: (1) the Board's orders violate constitutional provisions; (2) the Board engaged in unlawful procedure or decision-making process or failed to follow a prescribed procedure; (3) the Board erroneously interpreted or applied the law; (4) the Board issued a decision that was not supported by substantial evidence; (5) the Board did not decide all issues requiring resolution; (6) the Board's orders are inconsistent with Board rules; and (7) the Board's decisions were arbitrary and capricious. The Board's errors are outlined below. The following outline does not include all facts on which the Tribe will rely in this judicial review.

PSCAA's Approval Order is ultra vires

1. The governing body of any air pollution control authority is a "board of directors" whose membership is dictated by state law. RCW 70.94.100. The statute vests regulatory authority in the board, declaring that "***the board*** shall exercise all powers of the authority except as otherwise provided." RCW 70.94.130 (emphasis added).

2. PSCAA's Approval Order for the Tacoma LNG Facility was issued pursuant to RCW 70.94.152, which governs applications to construction of new sources of air pollution. The statute directs the board of the local air authority to make a final decision on whether to approve applications to construct new sources. RCW 70.94.152(1), (3), (9).

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3. However, PSCAA's board did not issue the Approval Order for this facility or otherwise take any action to approve it. Instead, it was issued by agency staff. This renders the permit *ultra vires* and invalid.

4. The PCHB rejected Petitioners' arguments about the proper authorization of pollution sources and upheld the Approval Order. The Board's decision was incorrect as a matter of law and should be reversed.

The SEIS erroneously deems status quo GHG emissions to be "insignificant."

5. The evidence before the Board was undisputed that the current science shows that drastic and immediate reductions in GHG emissions are needed to prevent a global climate catastrophe.

6. Washington state has adopted a number of laws and policies explicitly calling for sharp reductions in GHG emissions. For example, Washington has by statute adopted a goal to reduce GHG emissions to 95% below 1990 levels and achieve net zero emissions by 2050, well within the lifetime of this project. RCW 70A.45.020. PSCAA has its own GHG reduction targets, calling for an 80% reduction in GHG emissions by 2050.

7. This project sharply collides with those targets. It will maintain existing high emissions for decades, in contravention of the science as well as state and agency policies. Even so, the SEIS deemed the project's emissions "insignificant," and otherwise failed to disclose the conflict with state and agency policies, thereby sidestepping the full disclosure that SEPA required and depriving the agency of the ability to limit or mitigate those admissions, or deny the project altogether.

8. The Board upheld the SEIS in this regard, finding its assessment of GHG emissions to be generally "reasonable."

9. This decision was wrong as a matter of law. In making a significance determination, agencies must consider whether a proposed action "conflict[s] with local, state or federal laws" for the protection of the environment. WAC 197-11-330(3)(e)(iii). Pursuant to WAC 197-11-030(2)(a) the agency must "[i]nterpret and administer the policies, regulations, and laws of the state of Washington

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in accordance with the policies set forth in SEPA and these rules." The SEIS did not satisfy either standard.

The SEIS relies on an arbitrary comparison to a speculative "no action" scenario.

10. The SEIS concluded that the project's GHG emissions were considerable. It then compared those emissions to those that it claims would occur under a "no action" scenario, to determine "net" emissions. To enable this comparison, the SEIS assumes that 100% of the LNG produced by the facility will displace conventional fossil marine fuel, for the 40-year lifespan of the project.

11. Appellants demonstrated during the hearing that this comparative net approach was fundamentally misleading. For example, it compares a reasonably certain estimate of project emissions against an entirely speculative and uncertain estimate of "no action" emissions, without ever disclosing the asymmetry between the two estimates. It also considered such uncertain offsets to be mitigation, when SEPA specifically prohibits speculative mitigation.

12. During the development of the SEIS, this problem was repeatedly criticized in public comments. In the final SEIS, PSCAA did not respond to or address these comments except to declare that PSCAA's analysis was generally reasonable.

13. The Board upheld the SEIS in the face of these challenges. It said nothing at all about the arbitrary comparison between the known project emissions and speculative no action emissions, and barely mentioned PSCAA's response to comments. Its decision was arbitrary and capricious and contrary to law. Agencies must fully disclose "scientific uncertainty concerning significant impacts" in SEPA documents. WAC 197-11-080(2); WAC 197-11-330(3)(d); WAC 197-11-060(4)(a) (SEPA requires consideration of impacts that are "likely" and not "speculative").

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Remand was required based on the fact that the Approval Order was predicated on flawed air-dispersion modeling.

14. PSE submitted air modeling prepared by its consultant, Landau Associates ("Landau"), as part of its NOC application. PSCAA approved PSE's application, relying on the results of that modeling.

15. Just days before hearing, PSE disclosed that Landau's modeling was inadvertently run with the wind direction reversed. While the hearing was underway, PSE's paid litigation expert performed new modeling with the wind blowing in the right direction. PSCAA then copied and pasted the applicant's litigation expert's analysis into a letter that claimed the modeling correction did not necessitate any new work by PSCAA or revision of any specific approval condition.

16. By affirming the Approval Order based on materials that were never presented for public comment, the Board allowed PSCAA to violate the Clean Air Act regulations. PSCAA was required, before granting a permit, to make the grounds for approval available for public comment. *See* WAC 173-400-171; 40 C.F.R. §§ 70.7(a), 70.7(h), 70.8(a)(1). The information presented to the public must include: a "complete application" with "all the information necessary for processing the application" and at "a minimum … information on the nature and amounts of emissions to be emitted by the proposed new source" (WAC 173-400-111(1)(b)); and a "description of the air contaminant emissions including the type of pollutants and quantity of emissions that would increase under the proposal." WAC 173-400-171(6)(a).

17. PSCAA made PSE's application and supporting documents available for public review and comment. The application's supporting documents included Landau's air dispersion modeling that Respondents now admit were flawed. The Board then affirmed the permit based on materials prepared by a litigation expert during the hearing that *should have* been, but were not, submitted to PSCAA and the public for vetting and comment. By the time PSCAA reviewed these new materials, all pretense of neutrality had been dropped, as PSE and PSCAA had joined forces under a joint defense agreement and focused their efforts on defeating the Tribe's challenge. The fact that PSCAA received

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these materials in this highly biased posture highlighted the need for public comment. Further, the discovery of this error just days before hearing proved that PSCAA failed to properly or thoroughly review the original application. By affirming on these facts, the Board acquiesced in a violation of the regulations that PSCAA and the Board were bound to uphold and affirmed a permit containing substantive conditions predicated on objectively incorrect air dispersion modeling.

PSE withheld from PSCAA information that was material to its permitting decision.

18. PSE withheld information relevant to PSCAA's Best Available Control Technology ("BACT") analysis and determination. For example, Landau and PSE performed BACT research yielding that a liquefaction facility like PSE's LNG facility utilizes a thermal oxidizer as BACT for waste gases generated in the liquefaction process. Despite possessing this information, PSE's permitting team did not provide it to PSCAA during the permit application process.

19. PSCAA lacked experience with methane liquefaction facilities and greatly relied on the information provided by PSE in making its permitting determinations. The fact that PSE intentionally withheld material information from PSCAA during that process resulted in a flawed BACT analysis and Approval Order. The Board failed to even address the issue, raised by the Tribe, that the withholding of information deprived PSCAA of the ability to perform a proper BACT analysis.

PSCAA's decision to issue the Approval Order relied on a leak detection and repair program that did not exist when PSCAA made its permitting decision.

20. PSCAA could not lawfully approve PSE's application until PSE presented a "complete application." 40 C.F.R. § 70.7(a)(1). When PSE sought the Approval Order (through its application) and PSCAA made its permitting decision, there was no leak detection and repair (LDAR) program for the Tacoma LNG facility.

21. The LDAR program was essential because the fugitive emission calculations—and thus estimated emissions—underlying PSCAA's permitting decision hinged on the existence of that program. Without an LDAR program, PSCAA could not meaningfully "evaluate the subject source" or specifically determine applicable requirements concerning Tacoma LNG's fugitive emissions. 40

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C.F.R. § 70.5(a)(2); 40 C.F.R. § 70.5(c). The absence of an LDAR program also made it impossible for PSCAA to support or substantiate its permitting conclusion that Tacoma LNG would emit only 4.2 tons per year of fugitive VOC emissions.

22. Further, the absence of information about Tacoma LNG's estimated fugitive emissions during the public comment period deprived the public of the opportunity to meaningfully participate in the permitting process, thereby violating PSCAA's obligations to the public. The PCHB erred in determining PSCAA had a sufficient basis for its permitting conclusions regarding the facility's fugitive emissions of volatile organic compounds.

The requirements for BACT and tBACT were not met.

23. A notice of construction approval must include a "determination that the new source will achieve best available control technology." RCW 70A.15.2210(10); WAC 173-400-113. This requirement mandates an analysis both of BACT for all pollutants (WAC 173-400-113) and of BACT for toxics ("tBACT"). WAC 173-460-040(3), -070.

24. In issuing the Approval Order, PSCAA failed to meet the requirements of BACT and tBACT. Indeed, in permitting Tacoma LNG, PSCAA failed to consider control technologies used at other liquefaction facilities, much less require them at Tacoma LNG or explain any decision not to require those technologies at Tacoma LNG. The PCHB did not dispute this fact in its decision, but nonetheless disposed of the issue by claiming that there was "no need to consider alternatives" because, the PCHB concluded, the technology used was adequate. The PCHB's analysis failed to enforce the requirement of an analysis, on the record, of whether the technology employed was the "best available."

25. The PCHB erred further in finding that PSCAA met its obligation to analyze BACT/tBACT by requiring Tacoma LNG to use "good combustion practices." This term is impossibly vague, and a practice is not a technology. This vague requirement could not substitute for a proper BACT/tBACT analysis.

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VIII. RELIEF REQUESTED

The Tribe respectfully asks the Court to accept the Tribe's Petition, set a briefing and argument schedule for this appeal, and render the following relief at the conclusion thereof:

a) Find the Approval Order *ultra vires* and invalid, set the Approval Order aside, and remand to the PCHB and PSCAA for further proceedings.

b) Find the SEIS arbitrary and invalid, set the SEIS aside, and remand to PSCAA to initiate a new SEIS.

c) Enjoin PSE from operating Tacoma LNG without a valid Approval Order from PSCAA.

d) Grant the Tribe such other and further relief as is just and equitable.

Dated this 16th day of December, 2021.

PUYALLUP TRIBE OF INDIANS

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BOARD DECISIONS APPEALED PER PUYALLUP TRIBE OF INDIANS' PETITION FOR REVIEW OF POLLUTION CONTROL HEARINGS BOARD DECISION PCHB NO. P19-087C

- Findings of Fact, Conclusions of Law and Order on State Environmental Policy Act Issues 2a, 2c, 2d, 2e, 2f, and 9, dated November 19, 2021.

- Findings of Fact, Conclusions of Law and Order on NOC Issues 4, 4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h, 4i, 4j, 4k, 4o, 4p, 4u, 6, and 8, dated November 19, 2021.

- Order on Motion to Dismiss and for Partial Summary Judgment, dated March 26, 2021.

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

ADVOCATES FOR A CLEANER TACOMA, SIERRA CLUB, WASHINGTON ENVIRONMENTAL COUNCIL, WASHINGTON PHYSICIANS FOR SOCIAL RESPONSIBILITY, STAND.EARTH, and THE PUYALLUP TRIBE OF INDIANS, Appellants, v. PUGET SOUND CLEAN AIR AGENCY and PUGET SOUND ENERGY, Respondents.	PCHB No. 19-087c FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER ON STATE ENVIRONMENTAL POLICY ACT ISSUES 2a, 2c, 2d, 2e, 2f, and 9

I. INTRODUCTION

This case concerns challenges to a Permit and accompanying supplemental environmental impact statement (SEIS) issued by the Puget Sound Clean Air Agency (PSCAA) authorizing greenhouse gas and other emissions from a specific project. Against the backdrop of the pressing effects of climate change, the Pollution Control Hearings Board's (Board) resolution of the case is a narrow one: whether the Permit and SEIS complies with the State Environmental Policy Act (SEPA), ch. 43.21C RCW, and applicable federal and state Clean Air Act statutes and regulations. *See* 42 U.S.C. §§ 7401-7671q; ch. 70.94 RCW. Concluding that they do, the Board affirms the Permit and SEIS, but remands to add a condition to the Permit.

On December 19, 2019, the Puyallup Tribe of Indians' (Tribe) and Advocates for a Cleaner Tacoma, Sierra Club, Washington Environmental Council, Washington Physicians for Social Responsibility, and Stand.Earth (collectively, ACT) each separately appealed the Order of Approval for Notice of Construction (NOC) No. 11386 (Permit) issued to Puget Sound Energy (PSE) by PSCAA to construct the Tacoma Liquefied Natural Gas facility (TLNG) and related equipment. The Appeals challenged both the Permit and SEPA supplemental environmental impact statement supporting the Permit. On January 24, 2020, the Presiding Officer consolidated the Appeals. *Consolidation and Amended Prehearing Order*, PCHB No. 19-087c.

The administrative record in this case reflects the protracted discovery and voluminous motions filed. The ten-day hearing on the consolidated appeals took place before the Board via Zoom videoconference in April 2021. The Board was comprised of Board Chair Neil L. Wise, and Members Carolina Sun-Widrow and Michelle Gonzalez. Administrative Appeals Judge Heather C. Francks, presided for the Board.

At the hearing, the parties presented expert and fact witnesses for direct examination, cross-examination, and questioning by the Board members. The Board also viewed portions of certain video deposition testimony as part of the evidence in the case, and PSE counter-designated portions of deposition testimony. Approximately 1,500 exhibits were filed, of which around 350 exhibits were ultimately admitted.

At the hearing, attorneys Jan E. Hasselman and Jaimini Parekh appeared on behalf of ACT. Attorneys Geoff Bridgman, Nicholas G. Thomas, and Andrew S. Fuller appeared for the Tribe. Attorneys Tadas A. Kisielius, Joshua B. Frank, Allison Watkins Mallick, and Sterling

Marchand appeared for PSE. Attorneys Jennifer A. Dold and Jennifer Elias appeared on behalf of PSCAA.

The parties agreed to present evidence on the SEPA legal issues during the first five hearing days and to present the Permit legal issues during the remaining five hearing days. As the Board's Findings of Fact, Conclusions of Law, and Order on the consolidated appeals total 180 pages, they are divided into two documents for ease of reading. The instant findings, conclusions, and order addresses the legal issues relating to whether PSCAA's SEIS adhered to SEPA requirements. A separate order issued the same day addresses the Permit issues. *See Findings of Fact, Conclusions of Law, and Order on NOC Issues 4, 4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h, 4i, 4j, 4k, 4o, 4p, 4u, 6, and 8*.

Together, they comprise the Board's sole decision in this case, which affirms the Permit and SEIS, but remands to add a condition in the Permit to install a continuous emission monitoring system to monitor SO_2 and VOC emissions from TLNG's enclosed ground flare.

II. PROCEDURAL HISTORY

On January 2, 2020, ACT filed a Motion for Stay seeking a stay of the effectiveness of the Permit. On January 10, 2020, the Tribe filed a Motion for Stay of the Permit, joining ACT's Motion for Stay and providing additional reasons for a stay. PSE opposed both Motions. PSCAA took no position on whether a stay should be issued in the consolidated appeal but filed a response on the issue of whether ACT or the Tribe has established a required element for obtaining a stay from the Board: the likelihood of success on the merits of the appeal. On March 17, 2020, the Board denied the Appellants' Motions for Stay.

On May 6, 2020, PSE filed a Motion to Dismiss and for Partial Summary Judgment (PSE's Motion). PSCAA joined PSE's Motion. The Tribe opposed PSE's Motion. ACT joined the Tribe's opposition and filed a cross motion for Partial Summary Judgment on Issue 1. On March 26, 2021, the Board granted in part and denied in part PSE's Motion and denied ACT's cross motion. Issues 1, 3b-f, 4f (as to WAC 173-400-111 -WAC 173-400-112), 4l and 4m were dismissed. Issues 4n, 4q, 4r, 4s, 4t and 5 were dismissed by agreement of the parties.

On August 3, 2020, the Tribe moved to bifurcate the SEPA issues from the non-SEPA issues on the grounds that resolution of the SEPA issues may eliminate the need for a hearing on the non-SEPA issues. The Presiding Officer denied the motion on the grounds that bifurcation may result in piecemeal litigation and continued the case until March 2021. On January 6, 2021, the Tribe renewed its motion to bifurcate the SEPA issues from the Permit issues and continue the hearing on the Permit issues to allow time to complete discovery and for a stay of the Order of Approval. The Presiding Officer denied the motion on the grounds that bifurcation may result in piecemeal litigation. In the course of the briefing, a two-week block of hearing time became available in the Board's calendar and all parties agreed to continue the case from March 2021, to April 2021.

On November 30, 2020, PSE filed a Second Dispositive Motion. PSE moved to dismiss Issues 2a-2d and 2f, 3a, 4o, 4p, 4v and 4w. PSCAA joined the motion. ACT and the Tribe opposed the motion. On March 26, 2021, the Board granted in part and denied in part PSE's Second Dispositive Motion. Summary Judgment was granted as to Issues 2b and 3a and denied

as to Issues 2a, 2c, 2d, 2f and 4o and p. Issues 4v and 4w were dismissed by agreement of the parties.

The parties filed numerous Motions in Limine prior to hearing including motions related to the order of witness testimony and the use of videotaped deposition testimony of corporate representatives and former employees.

The hearing took place April 12-16, 20-23, and 27, 2021, by Zoom videoconference. On May 28, 2021, the parties filed Closing Briefs. On June 30, 2021, ACT submitted *Washington State Dairy Federation v. Dept' of Ecology*, 18 Wn. App. 2d 259, 490 P.3d 290 (2021) as supplemental authority on consideration of climate change.

The Board received sworn testimony of witnesses, admitted exhibits, and heard argument on behalf of the parties. Based upon the evidence presented, the Board makes the following Findings of Fact and Conclusions of Law.

III. LEGAL ISSUES

The following legal issues proceeded to hearing, grouped into SEPA issues and Permit issues:[1]

SEPA Issues

2. Whether the supplemental environmental impact statement ("SEIS") assessing lifecycle greenhouse gas emissions that supported the Order of Approval was arbitrary, unreasonable, incorrect, or otherwise not in compliance with the State Environmental Policy Act ("SEPA"), including but not limited to the following:

[1] Issue 2b was dismissed on summary judgment. *See Order on PSE's Second Dispositive Motion,* PCHB No. 19-087c (March 26, 2021).

a. The SEIS relies on an incorrect and unsupported claim of 1-for-1 fuel displacement, and an assumption that fuel use will not change over 40 years, that masks the greenhouse gas ("GHG") impacts of the Order of Approval.

c. The SEIS fails to acknowledge that maintenance of high-GHG-emissions status quo for the lifetime of the project is a "significant' impact under SEPA.

d. The SEIS relies on displacement and/or mitigation that is unavailable under the project as currently configured, and otherwise fails to assess the current configuration of the project.

e. The SEIS fails to properly address the facility's emissions of N_2O, a potent greenhouse gas.

f. The SEIS relies on scenarios that have not undergone SEPA review.

9. Whether legally adequate environmental review under SEPA requires either denial or further mitigation of the Project or is a reviewable cause of action under SEPA.

Permit Issues

4. Whether the Puget Sound Clean Air Agency's ("PSCAA") December 10, 2019 Order of Approval ("Order of Approval") violates PSCAA Regulations, the Washington Clean Air Act (RCW Ch. 70.94), and/or the federal Clean Air Act, including but not limited to the following:

a. Whether PSCAA's conclusions concerning Tacoma LNG's emissions and the impacts from those emissions are erroneous when PSCAA relied on modeling using non- representative meteorological data.

b. Whether PSCAA's Order of Approval is premature when the design of Tacoma LNG was not yet complete and continued to change at the time PSCAA determined PSE's NOC Application was complete and when the Order of Approval was issued, and it was likely that the facility's design and its operations would need to undergo revisions, which would likely result in changes to facility details having bearing on the facility's emissions.

c. Whether PSCAA's Order of Approval is invalid, when PSCAA's decision to grant the Order of Approval was made in reliance on performance specification and process details that were not provided to PSCAA, including those from Chicago Bridge & Iron and other unidentified "vendors."

d. Whether PSCAA erred in concluding that Tacoma LNG is not a Major Source of one or more pollutants, including volatile organic compounds (VOCs)?

e. Whether PSCAA erroneously concluded that Tacoma LNG's emissions are below the Clean Air Act's regulatory thresholds, emission and air quality standards.

f. Whether PSCAA erroneously concluded that the emissions from Tacoma LNG will not violate WAC 173-400-113 (i.e., not cause or contribute to a violation of any ambient air quality standard).

g. Whether PSCAA erroneously concluded that Tacoma LNG's emissions will not exceed applicable acceptable source impact levels (ASIL).

h. Whether PSCAA erroneously concluded that Tacoma LNG's emissions will not exceed applicable small quantity emission rate (SQER) limits.

i. Whether PSCAA's Order of Approval is invalid, where a first-tier ambient concentration screening analysis was performed before all emissions of HAPs and TAPs from the flare were estimated.

j. Whether PSCAA violated WAC 173-460-060 by failing to require a demonstration that Tacoma LNG will employ tBACT for all TAPs for which the increase in emissions will exceed de minimis emission values found in WAC 173-460-150.

k. Whether the Order of Approval's requirement that "the sole source of natural gas supply used in all operations at the Tacoma LNG facility comes from British Columbia or Alberta, Canada" is enforceable.

o. Whether PSCAA's Order of Approval incorrectly fails to include the requirements of NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.) relating to the handling of acid gas from the facility.

p. Whether PSCAA's Order of Approval incorrectly fails to include a requirement that Tacoma LNG monitor and control fugitive GHG and VOC emissions in accordance with NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.).

u. Did PSCAA violate the Clean Air Act by allowing a known source of significant amounts of pollution to achieve BACT through "good combustion practices", when PSCAA fails to define that standard and when there are known and reasonably available methods which, if implemented, would better ensure the facility is not violating pollution standards?

6. Whether PSCAA's permitting decision is invalid in light of its failure to engage in formal government-to-government consultation with the Puyallup Tribe of Indians.

8. Does the Board have jurisdiction over issues raised in Advocates for a Cleaner Tacoma et al.'s appeal and the Puyallup Tribe's appeal that are outside of the Board's jurisdiction in this permit appeal, including: facial challenge to Agency regulations and/or provisions of the Washington Clean Air Act, Ch. 70.94 et seq. ("Act"); alleged constitutional, Civil Rights Act, or treaty-based claims; challenges to an alleged failure to pursue enforcement; challenge to elements of the City of Tacoma's 2015 Final Environmental Impact Statement ("2015 FEIS") not properly before this Board; and/or issues outside of the Board's jurisdiction established in Ch. 43.21B et seq.?

IV. GENERAL FINDINGS OF FACT

1.

The TLNG is generally located north of East 11th Street, east of Alexander Avenue, south of Commencement Bay, and on the west shoreline of the Hylebos Waterway, adjacent to the Puyallup Indian Reservation. The site is in an area zoned as Port Maritime Industrial. The site is composed of four separate parcels owned by the Port of Tacoma. *Ex. RA-51, p. 6.*[2]

2.

The purpose of the project is to receive natural gas from PSE's distribution system, chill natural gas to produce approximately 250,000 to 500,000 gallons of liquefied natural gas (LNG) daily, and to store up to 8 million gallons of LNG on site. *Ex. RA-51, p. 18.* PSE hired Chicago Bridge & Iron Company (CB&I) to design and construct TLNG. *Stobart Testimony at 969-972.*[3]

[2] Page numbers in exhibit citations refer to the pdf page number.
[3] Witness hearing testimony citations refer to the transcript pages.

3.

LNG from the facility would be distributed for use as marine transportation fuel by Totem Ocean Trailer Express (TOTE) at its Port of Tacoma Facility, along with other potential future regional LNG marine fuel customers. During times of peak gas demand, generally in the winter, 66,000 dekatherms per day of LNG would be re-gasified and re-injected into PSE's distribution system. This capability to vaporize LNG back into its gaseous state for injection into the PSE natural gas distribution system is referred to as "peak shaving." *Ex. RA-51, p. 5*. PSE is also proposing to load LNG onto trucks and barges for use by other regional markets seeking an alternative fuel source. *Ex. RA-51, p. 18.*

4.

LNG is a temporarily liquefied, naturally gaseous fossil fuel, mostly composed of methane. *Ex. ACT-107, p. 3 (Pratt Pre-filed Testimony).* As of 2019, 0.14 percent of ships were powered by LNG, but it is growing in popularity. *Id.* A significant driver of LNG adoption is the establishment of low pollution zones that require low emissions of sulfur and nitrogen oxides. *Id.* LNG contains only trace amounts of sulfur and its combustion processes produce lower nitrogen oxides than production of marine fuels. *Id.*

5.

The TLNG project requires several permits from various agencies and jurisdictions. *See Ex. RA-38, pp. 9-11.* Among them is a Shoreline Substantial Development Permit (SSDP). PSE formally applied to the City of Tacoma (City) for an SSDP for TLNG. In 2014, the City, acting as lead agency under SEPA, issued a SEPA Determination of Significance indicating the City's

intention to require an Environmental Impact Statement (EIS) to assess the environmental impacts of the facility. *Ex. RA-38, p. 29.* Upon issuance of the significance determination, the City solicited public comments regarding what issues should be addressed during environmental review and the City held a public scoping meeting. *Id.*

6.

The City issued a Draft EIS (DEIS), held a public meeting, and accepted comments. On November 9, 2015, the City published the Final EIS (FEIS) for TLNG. *Ex. RA-38, p. 29.*

7.

The FEIS found, *inter alia*, that the Project would enable TOTE vessels to meet new emissions standards, and that natural gas has been identified as a key resource to implement greenhouse gas (GHG) emission reductions for commercial truck, bus, rail, and marine transportation. *Ex. RA-38, p. 31.* In addition, the FEIS concluded the Proposed Action as mitigated would have nominal adverse effects on water resources, soils and geology, vegetation, climate and air quality, health and safety, socioeconomics, and cultural resources. *Id.*

8.

In 2017, PSE applied to PSCAA for a Permit for TLNG. In its review of a Permit application, PSCAA engineers are required to ensure that all the proposed processes and equipment will employ best available control technology (BACT), identify and confirm what air contaminants may be emitted, and confirm that all applicable agency, state and federal regulations, and all air quality standards will be met. *Ex. RA-68 (NOC).*

9.

In late 2017, during PSCAA's review of PSE's Permit application, PSCAA concluded that the FEIS did not account for "upstream" GHG emissions associated with natural gas extraction and transmission. *Ex. RA-39 (Jan. 24, 2018 Notice of SEIS).* In addition, PSCAA determined that the Washington State Department of Ecology (Ecology) guidance document for identification and evaluation of GHGs, which the FEIS analysis relied upon, had been withdrawn for revision after completion of the FEIS. *Ex. RA-51, p. 17.* As a result, PSCAA required an SEIS using a life cycle analysis (LCA) to identify and analyze GHG emissions. *Ex. RA-39.* An LCA is a cradle-to-grave estimate of the emissions from a production process or a project. *Unnasch Testimony at 634.* LCAs generally look at direct emissions from the facility as well as indirect emissions upstream and downstream of the facility. *Ex. PSE-651, p. 10 (Couch Pre-filed Testimony).*

10.

Upstream life cycle emissions are the emissions associated with production and transport of fuel to be used at the LNG production plant: natural gas feedstock, natural gas fuel, diesel fuel, and electricity. *Ex. RA-51, p. 24.* Direct emissions include all fuel combustion emissions, as well as fugitive emissions, at the plant. *Id.* The downstream or end-use emissions include the combustion of the fuels by the end-user as well as fugitive emissions from the equipment that is burning the fuel. *Id*. End use emissions refer to the final combustion of LNG for vessel/truck transportation, fugitive emissions from the equipment burning the fuel, and peak shaving applications. *Id.*; *Unnasch Testimony at 643.*

11.

PSCAA retained Life Cycle Associates, LLC to conduct the GHG LCA for the Proposed Action and No Action (no project) Alternative, and Ecology and Environment, Inc., to conduct SEIS research, analysis, and document preparation. *Ex. RA-51, p. 9.* Stefan Unnasch of Life Cycle Associates has over 25 years of experience conducting LCAs for the States of California and Washington and private entities, including experience in LCAs that involved fuel pathways such as diesel fuels and LNG. *Ex. RA-4 (Unnasch CV).* Unnasch has prepared hundreds of LCAs during his work and conducted the LCA for PSCAA. *Unnasch Testimony at 634-35.*

12.

An LCA has many different inputs. Each one of those inputs has a potential range of values. A sensitivity analysis is helpful in identifying which input was selected and what effect a different value would have on the model. *Couch Testimony at 736.*

13.

The sensitivity analysis for the TLNG LCA included variable assumptions that both increased and/or decreased the GHG emissions included in the LCA. *Ex. RA-51, p. 46.* A graph was included in the Final SEIS showing net GHG emissions when different key inputs are used to calculate GHG emissions. *Ex. RA-51, p. 136, Fig. 5.5.*

14.

The TLNG LCA identifies and quantifies all GHG emissions associated with natural gas extraction and transmission, on-site LNG production and storage, and downstream end uses of the LNG. *Ex. RA-51, p. 17.* The TLNG LCA analyzes the primary GHGs: water vapor, carbon

dioxide, methane, and nitrous oxide. *Id., p. 75*. Carbon dioxide is the most abundant of these gases. *Id*.

15.

As part of the SEIS and LCA, several assumptions were made, including:

- 100 percent of the project's LNG will displace conventional marine fuel. *Ex. RA-51, p. 94*.
- Fuel use will remain static over the 40-year lifetime of TLNG. *Ex. RA-51, pp. 31, 35.*
- Canada would be the source of natural gas for TLNG. *Ex. RA-51, p. 216.*
- Price induced displacement effects would be so small that they could be ignored when calculating GHG emissions. *Ex. RA-51, p. 74*.
- The amount of LNG used for trucking in Scenario A is zero. *Ex. RA-51, p. 29*.
- All of the project's customers will have the same fuel efficiency as the TOTE LNG ships.

Ex. RA-51, (SEIS App. B at 123, 126, 158, 189).

16.

Using the LCA, the draft SEIS included a comparison between a No Action Alternative[4] to PSE's Proposed Action, and production of 250,000 to 500,000 gallons per day of LNG for use by marine customers and peak shaving. *Ex. RA-51, p. 6.* The end use of the LNG processed at

[4] The SEIS defined the No Action Alternative as: Construction of the Tacoma LNG Facility, including upgrading of the natural gas distribution system, would not occur. Existing levels of maritime petroleum fuels use would continue. *Ex. RA-51, p. 6*.

the facility will go to TOTE marine to fuel their ships, other marine vessels, on-road trucks, and use by PSE residential and commercial natural gas users, long haul trucks or other marine transportation. *Ex. RA-51, pp. 6, 81.*

17.

The Proposed Action was defined as:

> The Tacoma LNG Facility would be constructed and produce between approximately 250,000 and 500,000 gallons of LNG per day, for use by marine customers, including TOTE, as well as regasification into the PSE natural gas distribution system for peak-shaving purposes. Additional uses would include providing LNG to other industries or merchants, such as fuel for high-horsepower trucks used in long-haul trucking or other marine transportation uses. The Tacoma LNG Facility would operate and be staffed with approximately 16 to 18 full-time employees 24 hours per day, 365 days a year.

Ex. RA-51, p. 6. The Proposed Action included two scenarios in the SEIS lifecycle analysis: Scenario A assumed an LNG production rate of 250,000 gallons per day and Scenario B assumed an LNG production rate of 500,000 gallons per day. *Ex. RA-49, p. 29.*

18.

Scenarios A and B both included the same count of TOTE marine vessels and peak shaving. *Ex. RA-49, p. 29.* Scenario B includes the use of more LNG for marine applications where the LNG is transferred by bunkering barge. *Ex. RA-49, p. 29.* Under the Scenario A, 55 percent of the gas produced at the TLNG facility would be sold to other marine vessels. *Ex. RA-51, p. 29, Table 2-1.* Under Scenario B, 73 percent of the gas produced would be sold to other marine vessels, and two percent to trucks. *Id.* Other marine vessels are not defined in the SEIS. *See Ex. RA-51 generally.*

19.

The permitted production capacity for TLNG is 250,000 gallons per day, Scenario A in the SEIS. *Hogan Testimony at 377.* The facility is not currently permitted to produce up to 500,000 gallons per day, and such an expansion would require a revised air permit. *Hogan Testimony at 377.*

20.

The draft SEIS found that the project would generate 687,639 metric tons (tonnes) of CO_2e/year[5] under Scenario A, and 1.387 million tonnes/year under Scenario B. *Ex. RA-49, pp. 160 (Table 5.1), 164 (Table 5.3).* The draft SEIS concluded that the Proposed Action would result in an overall decrease in GHG emissions in the Puget Sound region, a net beneficial impact compared to the No Action Alternative. *Ex. RA-49, pp. 18-19.*

21.

On October 8, 2018, PSCAA issued a draft SEIS and initiated a public comment period. *Ex. RA-51, p. 17.* Appendix C to the Final SEIS contains the comments received on the draft SEIS and PSCAA's responses to comments. *Ex. RA-51, pp. 199-283.* In response to comments, PSCAA confirmed the findings of the draft SEIS, and updated and expanded the sensitivity analysis with additional variables and assumptions that would both increase and/or decrease the GHG emissions, including: global warming potential, methane leakage and methane slip values, and a comparison of AR4 and AR5 values. *Van Slyke Testimony at 530-31; Ex. RA-51, pp. 46,*

[5] Carbon dioxide equivalent means the number of metric tons of CO_2 emissions with the same global warming potential as one metric ton of another greenhouse gas.

136. Those additional variables included an additional Environmental Defense Fund study (referred to as "EDF" or "Alvarez") value for the natural gas upstream calculation. *Van Slyke Testimony at 532; Ex. RA-51, p. 136*. Methane slip was also added to the updated sensitivity analysis. *Id*.

22.

The Final SEIS concluded overall reductions in GHG emissions are dependent upon the assumption that the sole source of natural gas supply to the facility is from British Columbia or Alberta but entering Washington through British Columbia. *Ex. RA-51, p. 19*. The Final SEIS recommended the Order of Approval, if issued, contain a condition that the source of natural gas supply to the facility be solely from British Columbia or Alberta, with specific permit terms and conditions specifying how compliance with this requirement would be demonstrated on a continuous basis. *Ex. RA-51, p. 48*. This requirement was set as Condition 41 of the Permit which requires the natural gas feeding the facility to come through British Columbia to ensure the facility would remain consistent with the LCA's calculation of GHG emissions. *Ex. RA-51, pp. 216-218 (SEIS Response to Comments); Van Slyke Testimony at 525-526*.

23.

The Final SEIS also provided additional information on key aspects of the LCA, including: an explanation of how the amount of LNG produced by PSE would displace marine gas oil (MGO); explaining the displacement relationship created between LNG and MGO; identifying a range of GHG emissions that could be created by PSE's project as compared to the

no action alternative; and information regarding the State of Washington's overall GHG emissions inventory. *Ex. RA-51, pp. 39-49.*

24.

On March 29, 2019, PSCAA finalized the SEIS. *Ex. RA-51, p. 1.* PSCAA issued a draft Permit Approval for public comment in July 2019 and issued the final Permit on December 10, 2019. *Ex. RA-132.*

1. Appellants' Witnesses

25.

The Appellants presented five witnesses who testified on the SEPA issues: Dr. Ranajit Sahu, a mechanical engineer and expert in environmental and energy issues; Peter Erickson, the Climate Policy Program Director at the Stockholm Environment Institute; Dr. Joseph Pratt, a mechanical engineer and expert in alternative energy technologies; Dr. Thomas Spicer, a professor of chemical engineering and expert in dispersion modeling; and Dr. David Layton, an economics professor.

26.

Dr. Sahu has a bachelor's in mechanical engineering from the Indian Institute of Technology, a master's in mechanical and combustion specialization from Caltech, as well as a Ph.D. in combustion from the same. Dr. Sahu is currently an independent consultant focusing on air quality requirements for private, public, and non-profit clients. *Ex. APTI-587, pp. 85-86 (Sahu Amended Pre-filed Testimony).* Relating to the SEPA issues, Dr. Sahu provided expert testimony that the SEIS underestimated TLNG's emissions of N_2O.

27.

Erickson provided opinion testimony on the methodologies and conclusions contained in the SEIS and the LCA. Erickson has been commissioned as a researcher by the United Nations, the World Bank, and the U.S. Environmental Protection Agency (EPA) to conduct and lead research projects on GHG emissions accounting and the role of policy mechanisms in reducing GHG emissions. Erickson has been published in peer-reviewed journals, including Nature, Nature Energy, and Climate Policy. *Ex. ACT-108, pp. 1-2 (Erickson Pre-filed Testimony*).

28.

Dr. Pratt has a bachelor's degree in mechanical engineering from the University of Washington, as well as a master's and a Ph.D. in mechanical and aerospace engineering from the University of California- Irvine. From 2010 to 2018, Dr. Pratt worked for the U.S. Department of Energy where he focused on transitioning to alternative energy technologies. Dr. Pratt is the founder of Golden Gate Zero Emission Marine which seeks to provide hydrogen fuel cell technology to the marine market. *Ex. ACT-107, pp. 1-2 (Pratt Pre-filed Testimony*). Dr. Pratt provided expert testimony challenging the GHG assumptions in the TLNG SEIS No Action Alternative and opined that correcting these assumptions would likely show that TLNG has a higher GHG impact than what was presented in the SEIS.

29.

Dr. Spicer has a bachelor's degree, a master's, and Ph.D. in chemical engineering from the University of Arkansas. Dr. Spicer's consulting clients include the American Petroleum Institute, U.S. EPA, U.S. Department of Justice, U.S. National Oceanic and Atmospheric

Administration, and the U.S. Department of Homeland Security. Dr. Spicer testified as an expert on the TLNG design changes and presented his opinion about potentially significant unexamined health and safety adverse consequences due to these design changes.

30.

Dr. Layton, a professor of economics and microeconomics, provided expert testimony challenging the 1-for-1 displacement analysis in the LCA. Dr. Layton is a Professor and Associate Dean at the University of Washington Evans School of Public Policy and Governance. *Ex. APTI-561, p. 3. (Layton Pre-Filed Testimony).* Dr. Layton's research is primarily focused on applied econometrics, microeconomics, and environmental policy. *Id*.

2. PSE Witnesses

31.

PSE presented ten witnesses who testified on the SEPA issues: Patrick Couch, Senior Vice President of Technical Services at Gladstein, Neandross, and Associates; Jan Hagen Andersen, Senior Principal Engineer at DNV, an expert in global marine shipping and alternative and low carbon fuels for marine shipping; Dr. Armando Levy, an economist and professor of economics with extensive experience in fuels markets, GHG cap and trade issues in California and other GHG projects; Jim Hogan, LNG Project Manager for PSE's project; Blake Littauer, Director of Business Development at Puget LNG, a sister company of PSE; Matthew Stobart, Project Engineering Manager with CB&I, with 37 years of experience working with LNG; William Donohue, Manager of Natural Gas Resources for PSE; Dr. Shari Libicki, a chemical engineer and principal at Ramboll US Corporation, Dr. Joseph Smith, a chemical engineer, and,

Dr. Filippo Gavelli, a mechanical engineer who performs safety studies for oil and gas facilities, particularly LNG facilities.

32.

Couch provided expert testimony in support of the LCA methodologies for calculating GHG emissions that Life Cycle Associates conducted on behalf of PSCAA. Couch is the Senior Vice President of technical services at Gladstein, Neandross, and Associates, a clean transportation consulting firm. *Ex. PSE-651, p. 6 (Couch Pre-filed Testimony).* Couch has a bachelor's and master's in mechanical engineering from the University of California-Irvine, with specializations in combustion and propulsion technologies. His primary responsibilities include assisting members of the transportation sector, including fleets and regulators, to transition from traditional to alternative fuels. Couch was involved in approximately 25-50 LCAs over his career, with several involving marine fuels. C*ouch Testimony at 725*. In the present case, Couch assisted PSE in responding to PSCAA's requests for information regarding the direct, indirect and cumulative GHG lifecycle emissions outlined in the SEIS for TLNG. *Ex. PSE-651, p. 8 (Couch Pre-filed Testimony).*

33.

Andersen, a mechanical engineer in the maritime industry, testified as an expert in marine vessel fuels, including existing and emerging fuel alternatives that effectively decrease a ship's GHG emissions. Andersen advises maritime clients on alternative fuels for shipping, environmental compliance, energy efficiency, and novel maritime technologies. He has over 30 years of experience in the maritime industry, including expertise in the growing LNG bunkering industry. Andersen

provided an expert opinion as to why the assumptions and conclusions contained in the SEIS regarding marine fuel displacement and methane slip from marine vessel engines are reasonable to assess the foreseeable potential impacts of the TLNG Project over the Project's life. *Ex. PSE-652, p. 5 (Andersen Pre-filed Testimony).*

34.

Dr. Levy is an economist and principal at The Brattle Group, an international economic consultancy that provides economic analysis on behalf of companies and governments, with a particular focus on energy and climate issues. *Ex. PSE-653, p. 2 (Levy Pre-Filed Testimony).* Levy offered expert testimony as to why it was reasonable to use a 1-for-1 displacement analysis in the LCA. *Id*.

35.

Hogan is a project manager for PSE, has a Bachelor of Science in mechanical engineering, and has obtained certifications in project management and contract management. *Hogan Testimony at 363.* Hogan provided an overview of the purpose of TLNG and its design history. *Id. at 364-368.*

36.

Littauer is the Director of Business Development for Puget LNG, a sister company of PSE. Littauer is responsible for identifying potential customers and selling TLNG to potential customers. *Littauer Testimony at 420*.

37.

Stobart is a manager for CB&I, the company PSE contracted to handle the design and construction of TLNG, including identifying and selecting equipment vendors. *Stobart Testimony at 966, 1992.* Stobart serves as Project Engineering Manager for TLNG. *Id. at 971.* His primary responsibility is to serve as the technical liaison and point of contact between PSE and CB&I. *Id. at 972.* As part of his duties, Stobart reviewed siting studies prepared to determine whether TLNG complied with the applicable codes, regulations and laws required in the particular location TLNG is sited. *Id. at 973.*

38.

Donahue is responsible for managing PSE's entire portfolio of natural gas transportation contracts. As part of that responsibility, Donahue identifies and analyzes opportunities for PSE to provide energy services. Prior to working for PSE, Donahue was employed by the Northwest Pipeline. *Donahue Testimony at 1790-91*.

39.

Dr. Libicki has a Bachelor of Science in engineering and chemical engineering, and a master's and Ph.D. in chemical engineering. Dr. Libicki is currently a principal at Ramboll US Corporation, where she has been employed for 30 years as an air quality professional doing air quality permitting, dispersion modeling, exposure assessments for risk assessments, and emission estimates. *Ex. PSE-374, pp. 1-4 (Libicki Pre-filed Testimony).*

40.

Dr. Smith teaches courses on flare design and operation. Dr. Smith has a bachelor's and master's and Ph.D. in chemical engineering from Brigham Young University. During his Ph.D. studies, Dr. Smith was a researcher for the Advanced Combustion Engineering Research Center funded by the National Science Foundation. *Ex. PSE-649, p. 2 (Smith Pre-filed Testimony).*

41.

Dr. Gavelli is an engineering consultant with Blue Engineering and Consulting Company. His primary responsibility is to perform safety studies for oil and gas facilities, particularly LNG facilities. Dr. Gavelli has a bachelor's degree and Ph.D. in mechanical engineering. Dr. Gavelli works as a consultant, focusing on fires and explosion investigations, hazard analyses and risk assessments of LNG facilities. *Ex. PSE-645, p. 2 (Gavelli Declaration).* He has performed siting studies for numerous LNG facilities and has performed reviews of siting studies on behalf of the U.S. Department of Transportation-The Pipeline and Hazardous Materials Safety Administration (PHMSA). He is the principal investigator for a PHMSA-sponsored effort to develop model evaluation protocols for the Proposed TLNG Project. *Id., p. 3.* Dr. Gavelli testified regarding the TLNG facility design changes and addressed the safety and hazard issues raised by the Appellants. *Ex. PSE-645 (Gavelli Declaration).*

3. Agency Witnesses

42.

PSCAA presented four witnesses who testified on the SEPA issues: Steven Van Slyke, Agency Director of Compliance; Carole Cenci, Agency Senior Engineer and SEPA Responsible

Official; Ralph Munoz Agency Permitting Engineer, and Stefan Unnasch, Managing Director of Life Cycle Associates.

43.

Van Slyke is a registered professional engineer in Washington State with over 38 years of air quality experience. During his time with PSCAA, he has reviewed and approved over 1,500 NOC applications. Van Slyke has a bachelor's degree in chemical engineering from the University of Idaho. *Ex. RA-1 (Van Slyke resume).* As the Director of Compliance, Van Slyke provided oversight and technical support for PSCAA's review of PSE's application. *Van Slyke Testimony at 451.* Van Slyke testified regarding his familiarity and experience with calculating air emissions, equipment and processes in PSE's application; SEPA requirements, applicable regulatory thresholds, BACT determinations and NOC conditions. *Van Slyke Testimony at 1828-30, 1844-48, 1882-86.*

44.

Cenci has a bachelor's degree in mechanical engineering from the University of Minnesota and has been a licensed engineer since 1990. She serves as PSCAA's Manager of Compliance. *Ex. RA-2 (Cenci resume).* Her responsibilities included reviewing Ralph Munoz's work as the permitting engineer on the TLNG Project. *Cenci Testimony at 1115*. Cenci testified regarding her review of the TLNG Project and ensuring SEPA requirements were met. *Id. at 1109.*

45.

Munoz served as PSCAA's permitting engineer for TLNG. Munoz's responsibilities at PSCAA include reviewing incoming NOCs and making determinations as to the adequacy of proposed control technology as well as the applicability of various regulations. *Ex. RA-3 (Munoz resume).* Munoz testified regarding his role as PSCAA's permitting engineer for TLNG and his experience and understanding with fugitive emissions, vaporizers and flares, and calculating emissions related to those types of control equipment. *Munoz Testimony at 2315-17.*

46.

As the Managing Director of Life Cycle Associates, Unnasch is experienced with alternative energy options and ventures to examine the potential for carbon emission reductions. He specializes in the life cycle assessment and economic evaluation of alternative and renewable fuel pathways. *Ex. RA-4 (Unnasch resume).* He has performed fuel cycle analysis studies since 1987 and has developed analytical approaches that adhere to California's environmental regulations. *Id.* He has also worked on projects involving economic analysis of alternative fuels in California and Washington. *Id.* Unnasch provided testimony about the LCA he conducted, the basis for the assumptions, the sensitivity analysis, and the response to public comments.

V. GENERAL CONCLUSIONS OF LAW

47.

The Board has jurisdiction over the subject matter and the parties pursuant to RCW 43.21B.110. As the parties appealing the SEIS and order approving the Permit application, the

Tribe and ACT have the burden of proof. WAC 371-08-485(3); *MYTAPN v. Dep't of Ecology*, PCHB No. 10-162, COL 1 (July 25, 2012).

48.

The Board's standard and scope of review is *de novo*. WAC 371-08-485(1). The Board makes findings of facts based on a preponderance of the evidence. WAC 371-08-485(2). The Board gives great weight to PSCAA's interpretation of the laws it is charged with administering, and deference to PSCAA's specialized knowledge and expertise on complex scientific or technical judgments. *Port of Seattle v. Pollution Control Hr'gs Bd.*, 151 Wn.2d 568, 592-93, 90 P.3d 659 (2004); *Marine Vacuum Svcs. v. Puget Sound Clean Air Agency*, PCHB No. 16-130c, COL 2 (Feb. 8, 2018). The Board also gives deference to PSCAA's interpretations of permit conditions that involve technical or scientific judgments. *City of Snoqualmie v. Dep't of Ecology*, PCHB No. 14-064, p. 16 (Feb. 2, 2015). The Board can decide a case based on all of the evidence available at the time of the hearing, including additional information gathered after issuance of the challenged order. *Port of Seattle*,151 Wn.2d at 597-98; *BNSF Ry Co. v. Dep't of Ecology*, PCHB No. 11-150, p. 11 (Dec. 4, 2012). Allowing the agency to analyze such additional information allows the Board to fulfill its charge to give deference to a permitting agency's expertise on issues that involve technical or scientific judgments. *Port of Seattle*, 151 Wn.2d at 592-593; *Buxton v. Dep't of Ecology*, PCHB No. 07-033, p. 10 (Dec. 21, 2007).

A. SEPA and the EIS Process

49.

With the enactment of SEPA in 1971, the legislature sought to bring an environmental consciousness into government decision making. *Millennium Bulk Terminals, et al. v. Dep't of Ecology, et al.*, PCHB No. 17-090, p. 10 (August 15, 2018). The stated purposes of SEPA are:

> (1) To declare a state policy which will encourage productive and enjoyable harmony between humankind and the environment; (2) to promote efforts which will prevent or eliminate damage to the environment and biosphere; (3) and [to] stimulate the health and welfare of human beings; and (4) to enrich the understanding of the ecological systems and natural resources important to the state and nation.

RCW 43.21C.010 (alteration in original). SEPA recognizes the broad policy "that each person has a fundamental and inalienable right to a healthful environment." RCW 43.21C.020(3).

50.

The primary focus of SEPA is on the decision-making process. SEPA seeks to ensure that environmental values are given appropriate consideration. *Stempel v. Dep't of Water Res.*, 82 Wn.2d 109, 118, 508 P.2d 166 (1973)*; Moss v. City of Bellingham,* 109 Wn. App. 6, 14, 31 P.3d 703 (2001). The government agency must assemble and review full environmental information before rendering a decision. *Davidson Series & Assocs. v. City of Kirkland,* 159 Wn. App. 616, 634-35, 246 P.3d 822 (2011).

51.

SEPA requires an EIS only for "major actions having a probable significant, adverse environmental impact." *Boehm v. City of Vancouver*, 111 Wn. App. 711, 718, 47 P.3d 137

(2002); RCW 43.21C.031(1). The purpose of an EIS is to ensure SEPA's policies are an integral part of state and local actions by providing an impartial discussion of significant environmental impacts. WAC 197-11-400. "The primary function of an EIS is to identify adverse impacts to enable the decision-maker to ascertain whether they require either mitigation or denial of the proposal." *Victoria Tower P'ship v. City of Seattle*, 59 Wn. App. 592, 601 (1990); WAC 197-11-400(2). To achieve these goals, SEPA requires disclosure of "significant" adverse impacts that arise from governmental actions. An impact is significant when there is a "reasonable likelihood of more than a moderate adverse impact on environmental quality." WAC 197-11-794. SEPA empowers agencies to mitigate impacts, or deny the project altogether, when adverse impacts are significant. RCW 43.21C.060; WAC 197-11-660; PSCAA Regulation I, § 2.12.

52.

The Board does not rule on the wisdom of the proposed project but rather on whether the EIS gave the agency sufficient information to make a reasoned decision. *See Citizens All. to Protect Our Wetlands v. City of Auburn*, 126 Wn.2d 356, 362, 894 P.2d 1300, 1304 (1995).

B. Rule of Reason

53.

The SEPA legal issues in this case challenge the adequacy of the SEIS's assessment of lifecycle greenhouse gas emissions on many grounds, claiming that it was arbitrary, unreasonable, incorrect, or otherwise violated SEPA. The determination of whether an EIS is adequate is a question of law subject to de novo review. *OPAL v. Adams County*, 128 Wn.2d 869, 875, 913 P.2d 793 (1996). EIS adequacy refers to the legal sufficiency of the environmental

data contained in the impact statement. *Klickitat County Citizens Against Imported Waste v. Klickitat County*, 122 Wn.2d 619, 633, 860 P.2d 390 (1993), amended, 866 P.2d 1256 (1994) (citing R. Settle, The Washington State Environmental Policy Act: A Legal and Policy Analysis § 14(a) (i) (4th ed. 1993)). The adequacy of an EIS is tested under the "rule of reason." *SEAPC v. Cammack II Orchards*, 49 Wn. App. 609, 614, 744 P.2d 1101 (1987). The rule of reason is "in large part a broad, flexible cost-effectiveness standard," in which the adequacy of an EIS is best determined "on a case-by-case basis guided by all of the policy and factual considerations reasonably related to SEPA's terse directives." *Klickitat County Citizens*, 122 Wn.2d at 633 (internal citations omitted). The adequacy of a particular discussion of environmental effects in an EIS under the rule of reason depends on whether the environmental effects are sufficiently disclosed, discussed, and substantiated by supporting data and opinion. *Id*. at 644. When reviewing an EIS, the Legislature has directed that the decision of the agency regarding the adequacy of an EIS be "accorded substantial weight." RCW 43.21C.090.

C. Agency Deference

54.

Appellants argue that PSCAA is not entitled to deference because PSCAA had never completed a lifecycle GHG analysis before this one, and they did little independent research on key issues. *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 10*. Appellants are correct that agencies are not entitled to deference on matters outside their expertise. *Port of Seattle,* 151 Wn.2d at 595. However, SEPA designates the regional air pollution control agency as possessing special expertise regarding air quality. WAC 197-11-920(1)(d). PSCAA's

experience and expertise lies in identifying and calculating air emissions (including from the types of equipment and processes in this case); applying regulatory thresholds; determining BACT and establishing permit conditions. ¶¶ *43-45*;[6] *Exs. RA-1, 2, 3 (PSCAA resumes)*.

55.

Deference is given to the agency pursuant to RCW 43.21C.090 and WAC 197-11-920(1)(d). The agency also is given deference in the exercise of its technical judgment; its interpretation of the CAA and its regulations; and the conditions it has written. *Port of Seattle*, 151 Wn.2d at 593-96. PSCAA, as the lead agency for the SEIS, hired an outside consultant to conduct the LCA. Van Slyke stated the LCA uses a combination of emission estimates and factors, that it is a very expansive emission estimation and comparison tool, and that PSCAA has the technical expertise to understand and use the LCA in the SEIS. *Van Slyke Testimony at 493*; ¶ *43*. Cenci asserted she did a thorough review of several drafts of the life cycle analyses and understands emissions calculations through years of experience and training as an engineer. ¶ *44*; *Cenci Testimony at 1118, 1148.*

56.

Despite this being PSCAA's first experience with an LCA, PSCAA has experience with the key components of an LCA including calculating emissions, SEPA standards of review, types of equipment and processes at TLNG, and applying regulatory thresholds. ¶*43-45*. Given PSCAA's experience and the statutory mandate that the Board must accord PSCAA's decision

[6] Paragraph references are to internal paragraph numbers within this Order.

substantial weight, the Board concludes deference must be given to PSCAA in its review of and conclusions within the SEIS, including the LCA.

VI. FINDINGS/CONCLUSIONS BY LEGAL ISSUE

A. Supplemental Environmental Impact Statement

1. 1-for-1 Fuel Displacement (Issue 2a)

57.

Appellants claim the SEIS relies on an incorrect and unsupported claim of 1-for-1 fuel displacement, and an assumption that fuel use will not change over the 40-year life of the facility. *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 16.* Appellants further argue that PSCAA's assumption that 100 percent of the Project's LNG fuel will displace MGO is unsupported and unreasonable because the 1-for-1 displacement assumption is contrary to economic principles, courts have rejected similar assumptions, and SEIS should have used a dynamic baseline when examining displacement. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 16-26.*

58.

Displacement in this case refers to the anticipated amount by which LNG produced at TLNG will replace conventional diesel marine fuels, particularly MGO. *Layton Testimony at 305-307; Ex. PSE-653, p. 3 (Levy Pre-filed Testimony).* The displacement analysis is one part of PSCAA's LCA for downstream and upstream GHG emissions from TLNG. *Layton Testimony at 305-307; Ex. PSE-653, p. 3 (Levy Pre-filed Testimony).*

59.

The SEIS states displacing diesel and MGO will have an effect on petroleum fuel markets because the increase in supply will reduce price and induce a small increase in demand. *Ex. RA-51, p. 97*. The SEIS concluded this effect is very small since the amount of petroleum fuel displaced is a small fraction of the global supply. *Id*.

60.

Unnasch used a 1-for-1 displacement assumption in the LCA assuming that no market induced displacement effects would occur because the effect of the TLNG project on Washington MGO prices represents a very small fraction of the total fuel market. *Ex. RA-51, p. 74, n. 3; Unnasch Testimony at 645, 670-671.* The facility's LNG production would be 0.06 percent of the global marine fuels market at 250,000 gpd. *Ex. PSE-652, p. 41 (Andersen Pre-filed Testimony).* The 1-for-1 displacement has been used in other fuel LCAs in California and Washington. *Unnasch Testimony at 644-645.*

61.

Dr. Layton, a professor of economics, testified on behalf of Appellants challenging the 100 percent displacement rate assumption in the LCA. Dr. Layton opined that even while maintaining all other SEIS assumptions, if the displacement rate drops merely 3 percent (from 100 percent to 97 percent) the project becomes a net emitter of GHGs. *Ex. APTI-561, pp. 12-13 (Layton Pre-filed Testimony); Layton Testimony at 308*. He opined that even a small displacement rate change can cause a significant increase in GHGs. Drawing from available data to calculate the elasticities of the whole oil and natural gas markets, Dr. Layton opined that using

a displacement rate of between 54 percent and 72 percent would yield a net increase of 25 percent to 43 percent (175,000 to 300,000 tons per year) of GHG emissions compared to the No Action Alternative. *Layton Testimony at 311-316.*

62.

Dr. Levy, also an economist, testified on behalf of PSE. Dr. Levy has particular experience in petroleum markets and has worked on projects which related to economic evaluations associated with life cycle analyses of GHG emissions. *Ex. PSE-653, p. 2 (Levy Pre-filed Testimony).* Dr. Levy testified that it was reasonable for PSCAA to calculate the rate of GHG emissions displacement of MGO by LNG as 1-for-1 (for every unit of LNG used, there is a commensurate unit of MGO that is not used on an equal energy basis). *Id., pp. 3-4.*

63.

Dr. Levy opined that PSCAA's 1-for-1 displacement assumption was reasonable for three reasons: (1) demand for petroleum fuel is relatively inelastic; (2) petroleum refineries are elastic and can respond to market opportunities, such as the emergence of LNG as an alternative to MGO, and (3) as ships convert to LNG, there will be a displacement effect in the LNG market where LNG customers crowd out other potential LNG consumers by driving the price up. *Ex. PSE-653, pp.4-6 (Levy Pre-filed Testimony).* Taken together, he says, the fluctuations between the MGO and LNG market will essentially cancel each other out. *Id., p. 9.* In addition, the effects on the global marine fuel market will be small, and whether the facility is built or not, the demand for energy remains the same. *Levy Testimony at 847.*

64.

Dr. Levy and Dr. Layton disagreed on how to calculate demand and supply price elasticity. Both economists agree that there are no available studies on the submarket elasticities of MGO and LNG. *Ex. APTI-561, pp. 21, 26 (Layton Pre-filed Testimony); Levy Testimony at 864.*

65.

Dr. Levy asserted that there is an example of a 1-for-1 displacement which occurred in 2014 when TOTE converted its Puerto Rico-Florida fleet from conventional bunker fuels to LNG. *Ex. PSE-653, p. 12 (Levy Pre-filed Testimony).* When TOTE converted two ships from MGO to LNG on its Puerto Rico-Florida route, it stopped using MGO and only used LNG. *Id.* MGO demand collapsed at TOTE after its fleet converted to LNG. *Id.*

66.

Unnasch has worked on LCAs and has also worked on projects involving economic analyses of alternative fuels. *Ex. RA-4, p. 3*. He testified that Dr. Layton's displacement analysis is not typical in fuel LCAs, including those conducted for the states of California and Washington and the EPA. *Unnasch Testimony at 671*. He argued Dr. Layton's analysis simply takes a ratio of two numbers, and the consequential effects are very small and not appropriate for this type of life-cycle analysis. *Id*.

67.

The LCA explains the 1-for-1 assumption:

> Displacing MGO will have a small effect on MGO consumption. The classical consequential LCA approach is to assume that more MGO is available on the market and that the price of MGO drops in response to increased supply. The drop in price results in an increase in consumption elsewhere due to price induced demand. The effect the Tacoma LNG project on Washington MGO prices will be extremely small since it represents a very small fraction of the total fuel market. Ultimately, this assumption implies that crude oil to make MGO is not produced and that no additional demand for marine diesel fuel or other oil refinery products is induced elsewhere in the world.

Ex. RA-51, p. 74, n. 3. Unnasch testified that he prepared the footnote above in the SEIS to explain that Life Cycle Associates was not doing a consequential analysis because the price-induced effect would be small. *Unnasch Testimony at 669-70; Ex. RA-51, p. 74.*

68.

Couch also testified that Dr. Layton's economic analysis was not specific to the location of the project and the markets in which TLNG facility would participate. *Couch Testimony at 759-60.* He stated it is typical for a project of this size and scale to use 1-for-1 displacement. *Id. at 751-52*.

69.

Dr. Layton testified he had never worked on an LCA and only looked at the displacement assumption in the TLNG SEIS. *Layton Testimony at 339-340*. Dr. Layton does not have a background with transportation or marine fuel supply and demand. *Id. at 340-341*. The Board finds and concludes that Dr. Layton's opinion regarding supply and demand elasticities was theoretical in nature, was not specific to TLNG markets, and this type of economic analysis was not typically applied to fuel LCAs. Moreover, Dr. Layton did not have any expertise conducting

an LCA. Accordingly, the Board gives more weight to Dr. Levy, Unnasch and Couch's credible testimony supporting the reasonableness of the 1-for-1 displacement assumption in the LCA.

70.

In reviewing the adequacy of the TLNG SEIS, the Board finds and concludes PSCAA's use of a 1-for-1 displacement assumption meets the rule of reason. Appellants assert the 1-for-1 displacement assumption was unsupported with data or analysis. However, the LCA assumed a 1-for-1 displacement assumption because the effect of the Project on Washington MGO prices will be extremely small since it represents a very small fraction of the total fuel market. ¶¶ *59, 60, 63, 67*. Experts who have conducted LCAs testified this kind of economic assumption is typical in fuel LCAs for projects this size. ¶¶ *60, 67, 68*. Appellants assert PSCAA should have used a different displacement rate such as the one presented by Dr. Layton. However, the Board gives more weight to Respondents' experts' testimony on this issue than Dr. Layton's testimony. ¶ *69*.

71.

Appellants argue that courts have rejected displacement assumptions in EISs for other fossil fuel projects, therefore the Board should also do so in this case. In support, Appellants cite to several federal district court and appellate court cases where the courts have applied the rule of reason to find an agency's EIS was arbitrary and capricious. *See WildEarth Guardians v. BLM*, 870 F.3d 1222, 1237-38 (10th Cir. 2017); *see also Center for Biological Diversity v. Bernhardt*, 982 F.3d 723, 736, 740 (9th Cir. 2020); *and see High Country Conserv. Advocates v. U.S. Forest Serv*., 52 F. Supp. 3d 1174, 1197-98 (D. Colo. 2014). The Board finds these cases to be

inapposite. The court in *Bernhardt* found the agency to be arbitrary and capricious in part because the agency should have given a quantitative estimate of downstream GHGs and failed to include emissions estimates from foreign oil consumption. *Bernhardt* 982 F.3d at 740. The SEIS for TLNG provides quantitative estimates of downstream GHGs and considers the global market for MGO and LNG and the entire lifecycle of GHG emissions. ¶¶ *9, 10, 11, 14, 23, 32, 60, 63, 68.*

72.

In *High Country*, the court found the agency was arbitrary and capricious where it acknowledged there might be impacts from GHGs in the form of methane emitted from mine operations but stated they could not quantify the climate impacts from such emissions. The record showed there was a tool available for that specific purpose, and the agency's failure to utilize it was arbitrary and capricious. *High Country*, 52 F. Supp. at 1193. There is no similar failure here on the part of PSCAA. The whole purpose of the SEIS was to quantify GHG emissions. PSCAA conducted an LCA and gathered and addressed public comments about the way in which the LCA calculated GHG emissions. ¶¶ *9, 10, 11, 12, 13, 14, 21.* PSCAA then evaluated and included eleven variable inputs in the LCA sensitivity analysis, providing quantifiable GHG emissions data. ¶¶ *12, 13, 21.*

73.

Appellants argue that similar to *WildEarth*, the SEIS here violated the rule of reason because the 1-for-1 displacement relies on an economic assumption which contradicts basic economic principles. *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 19.* In *WildEarth*,

the EIS assumed there would be no real-world difference between issuing coal leases and declining to issue them because third party sources of coal would perfectly substitute for any lost volume. 870 F.3d at 1234-36. Applying the National Environmental Policy Act (NEPA), the court stated "[t]he evidence must be sufficient in volume and quality to 'sharply defin[e] the issues and provid[e] a clear basis for choice among options." *Id*. at 1235 (citing C*itizens' Comm. To Save Our Canyons v. Krueger,* 513 F.3d 1169, 1179 (10th Cir. 2008). The court concluded that there was only a blanket assertion that coal would be substituted from other sources without any data. *Id*. Contrary to the facts in *WildEarth*, the SEIS explained why the LCA used a 1-for-1 displacement assumption. ¶¶ *59, 66, 67.* Unnasch, Couch, and Dr. Levy also provided expert testimony on the reasonableness of using a 1-for-1 assumption in the LCA. ¶¶ *60, 62, 63, 65-68.*

74.

In addition, Appellants argue the economic assumption is a foundational piece of the analysis of the environmental impact being assessed and, therefore, must be supported with data and analysis in the SEIS. An EIS, however, is not required to evaluate and document all the possible effects and consideration of a decision or to contain the balancing judgments that must ultimately be made by the decision makers on a proposal. *See* WAC 197-11-448(1). Economic competition is one type of an example of information that is not required in an EIS. WAC 197-11-448(3). The Board concludes a more detailed analysis of the 1-for-1 displacement assumption is not required in the SEIS.

75.

Appellants also argue the Board should disregard the testimony from non-economists regarding Dr. Layton's opinion. But as stated above, the Board gives greater weight to witnesses with experience conducting LCAs. ¶ *69*. Moreover, a detailed economic analysis was unnecessary in the SEIS.

2. Static Baseline Assumption (Issue 2a)

76.

Appellants assert the SEIS's assumption that the marine industry as it exists today will remain unchanged over the next 40 years is misleading and unreasonable. *Appellants' Closing Brief on SEPA Issues (Issue 2), p 27* (citing *Ex. RA-51, p. 31*). They argue this static baseline assumption in the "no action" scenario was flawed, and that a dynamic baseline should have been used.

77.

Erickson and Dr. Pratt testified that PSCAA should have used a dynamic baseline when calculating displacement that includes alternate future scenarios to reasonably evaluate the potential impacts to the facility. *Erickson Testimony at 77-78; Pratt Testimony at 153-156*. Dynamic baselines consider foreseen changes in technology and behavior and conditions over time. *Ex. ACT-108, p. 12 (Erickson Pre-filed Testimony).* In the case of TLNG, Erickson stated that dynamic baselines would assess plausible future changes in marine and on-road shipping technologies and the market share of battery electric, hydrogen fuel cell, and other low-carbon technologies. *Id.*

78.

Dr. Pratt opined that the likelihood of increased regulation combined with developed alternative technologies will cause the shipping industry to invest in new fuels or technologies to reduce emissions in the coming decades. *ACT-107, p. 6 (Pratt Pre-filed Testimony).* He testified that available alternative fuels include renewable diesel; bio-LNG, biodiesel, bioethanol, and hydrogen fuel cells. *Id., p. 11*.

79.

Respondents countered that it was reasonable to use a static baseline assumption. Couch testified that using a dynamic baseline requires a substantial number of assumptions, many of which are difficult or impossible to verify or support, and it becomes a very speculative analysis. *Couch Testimony at 752-753*. In his experience in the EIS context, assumptions about the future generally require grounding those assumptions in specific enforceable regulations. *Id. at 752*. The use of a static baseline is not an affirmative assertion that nothing will change in the future, but a recognition that how things will change in the future is sufficiently unclear that the magnitude and direction of change cannot be estimated. *Id. at 754.*

80.

Andersen opined that it would be speculative for PSCAA to analyze alternative fuels such as hydrogen. *Ex. PSE-652, p. 34 (Andersen Pre-filed Testimony).* LNG is the only commercially viable fuel that provides GHG emissions benefits to large ocean-going vessels. *Andersen Testimony at 893.* Andersen defined a large ocean-going vessel as a commercial ship, a container vessel, a bulk carrier, general cargo vessel, large passenger vessels, oil and product

tankers, and Ro-Ro vessels that have more than 5,000 gross tonnage and use a large engine and more than 400 feet in length. *Id. at 905.* Andersen testified that smaller vessels are unlikely to convert to LNG because they lack sufficient space for LNG storage tanks, conversions are cost-prohibitive, and other technologies such as battery hybrid are a more likely alternative than LNG. *Id. at 906-07.*

81.

Dr. Pratt challenged the SEIS assumption that LNG from TLNG would be used only for large ocean-going vessels. *ACT-107, p. 11 (Pratt Pre-filed Testimony).* He asserted smaller engines using LNG can have a dramatic effect on the overall Project's GHG emissions because GHG savings decrease from 26 percent to approximately 10 percent in smaller engines. *Id., p. 17.* Erickson and Dr. Pratt argued that alternative fuel technologies are evolving rapidly for marine use and are in use currently for small- and medium-sized vessels. *Ex. ACT-108, p. 9 (Erickson Pre-filed Testimony); Ex. ACT-107, pp. 10-12 (Pratt Pre-filed Testimony).* Specific to large ocean-going vessels, however, Erickson and Dr. Pratt did not disagree with PSE witnesses that MGO and LNG are the only commercially available marine fuels. *Erickson Testimony at 99-108; Pratt Testimony at 151.*

82.

Respondents contend it would be speculative to assume alternative fuel technology for smaller vessels, and the SEIS did not need to consider these alternative fuels for smaller vessels. *PSE Post-Hearing Brief, pp. 23-24.* TLNG is actively marketing its unsold capacity only to large ocean-going vessels, comparable to TOTE vessels. *Littauer Testimony at 422- 423.* Large

ocean-going vessels are the most likely customers of TLNG because they are most likely to convert to LNG. *Ex. PSE-652, p. 57 (Andersen Pre-filed Testimony)*. Andersen estimates that 80-90 percent of all new vessels on order for LNG fuel are ocean-going vessels. *Andersen Testimony at 907*.

83.

Hogan testified that TLNG's existing infrastructure restricts its ability to provide LNG to smaller vessels. The loading arm at TLNG is specifically designed to deliver LNG to the unique high fueling location of TOTE large ocean-going vessels. *Hogan Testimony at 409-10*. The only way the loading arm could be used to load LNG onto another vessel is if that vessel has its loading flange located geometrically in a similar location to TOTE vessels. *Id. at 407-08*.

84.

The Board is not persuaded that the SEIS's static baseline assumption was unreasonable. The evidence demonstrates that the future of alternative fuels for ocean-going vessels is uncertain. ¶ *80*. The SEIS was based on information currently available, and at the time the SEIS was finalized there were only two fuels available for large ocean-going vessels: MGO and LNG. *Id.* Moreover, the TLNG facility is currently designed to fuel large ocean-going vessels, similar to TOTE vessels, and is being marketed to large ocean-going vessels. ¶¶ *82, 83*. Based on the evidence presented, the Board finds the SEIS made a reasonable assumption that the most likely users of the TLNG facility will be large ocean-going vessels and concludes the SEIS assumption of a static baseline is reasonable.

3. Methane (Issue 2)

85.

Methane (CH_4) is a potent greenhouse gas which absorbs much more energy (heat) than carbon dioxide (CO_2), but instead of remaining in the atmosphere for hundreds of years like carbon dioxide, it remains for about a decade. Methane is released in large quantities from agricultural operations (e.g., cattle digesting their food, rice production), during decomposition of waste at landfills and wastewater treatment plants, and during the extraction of fossil fuels. Natural gas is 90 percent or more methane so natural gas projects necessarily require analysis of methane emissions, such as methane leakage and methane slip. *Ex. ACT-108, p. 19, (Erickson Pre-filed Testimony); Erickson Testimony at 52.*

86.

Appellants argue the SEIS relied on flawed methane emissions data and assumptions and thus the impacts of TLNG were not sufficiently disclosed, discussed, and substantiated by opinion and data. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 38-39.* They argue methane loss from natural gas production, process, transportation, distribution, storage, and use (referred to as "upstream" methane loss and otherwise known as methane leakage), is a substantial contributor to GHG emissions. *Ex. ACT-108, p. 21 (Erickson Pre-filed Testimony).)*; *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 37-38.* They Appellants contend that the SEIS needed to consider the Alvarez study (EDF) methane leakage rates.[7]

[7] The Alvarez study is a synthesis of at least 10 different data sets published since 2012, across six different oil and gas production areas in the United States, drawn from 433 different sites, validated against a separate, top-down

87.

PSE would obtain its gas for the project from the Sumas hub on the border of British Columbia and Washington, with the gas primarily coming from British Columbia.[8] Condition 41 of the Permit requires natural gas to come from British Columbia. *Ex. RA-132, pp. 6-7.* The SEIS relied on an upstream methane loss rate of 0.32 percent and Appellants contend this was a "crucial mistake." *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 41.* Erickson asserted this assumption does not account for irregular operation or accidental methane releases, which are a substantial source of emissions from natural gas production. *Ex. ACT-108, p. 21(Erickson Pre-filed Testimony).* Erickson also challenged the LCA because it did not include "top-down" studies in its sensitivity analysis, referred to as the "Alvarez" and "Johnson" studies. *Erickson Testimony at 64-67.*

88.

There are two conventional methods for estimating fugitive methane emissions: bottom-up and top-down inventories. *Ex. PSE-651, p. 12 (Couch Pre-filed Testimony).* A bottom-up inventory involves measuring or estimating fugitive methane emissions rates for various components of equipment and processes. The rates of emissions for each type of component and process are then applied to a count of all of the equipment at a facility or in a region to develop

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method. *Ex. ACT-108, p. 21 (Erickson Pre-filed Testimony)* (referring to: Alvarez, R. A., D. Zavala-Araiza, D. R. Lyon, D. T. Allen, Z. R. Barkley, A. R. Brandt, K. J. Davis, S. C. Herndon, D. J. Jacob, A. Karion, E. A. Kort, B. K. Lamb, T. Lauvaux, J. D. Maasakkers, A. J. Marchese, M. Omara, S. W. Pacala, J. Peischl, A. L. Robinson, P. B. Shepson, C. Sweeney, A Townsend Small, S. C. Wofsy, S. P. Hamburg. 2018. *Assessment of methane emissions from the U.S. oil and gas supply chain*. SCIENCE, https://doi.org/10.1126/science.aar7204.

[8] Over 99 percent of the gas entering Washington comes from Canada. *Ex. RA-51, p. 88.* Estimates of upstream GHG emissions, including methane leakage rates, from natural gas in British Columbia and Canada are lower than the United States. *Id., p. 170.*

estimates of total emissions. *Id.* A top-down inventory attempts to measure methane concentrations in the atmosphere in a region of interest and then attribute a portion of those emissions to a facility or activity. *Id.*

89.

Countering Erickson's argument that the SEIS failed to use top-down studies for methane emission assumptions, Couch stated the Alvarez study was not directly applicable as the other rates used in the SEIS because the Alvarez study is a U.S. oil and gas basin average for methane leakage, and British Columbia is not part of the Alvarez study. *Couch Testimony at 736-737*. The Alvarez study also provides a lump-sum estimate for all of the oil and gas sector in the U.S., not just methane leakage associated with natural gas production. *Id. at 737*; *Ex. PSE-651, p. 16 (Couch Pre-filed Testimony)*. Couch also disagreed with Erickson regarding the Johnson study, which is based on basins in Alberta, and not the British Columbia region. *Couch Testimony at 738*. Couch stated that the majority of regulatory entities use bottom-up methodologies to evaluate emissions. *Id. at 730*. Couch further testified that top-down analyses can be a good companion to a bottom-up analyses; however, sampling in the atmosphere for a broad region makes it difficult to apportion the methane concentrations in the air back down to the identifiable source of emissions on the ground. *Id. at 730*. The SEIS LCA sensitivity analysis included the Alvarez study (EDF). *Id. at 735*.

90.

During the public comment period for the SEIS, PSCAA responded to comments on the LCA methodology regarding methane leakage rates. *Ex. RA-51, p. 210*. PSCAA added other

methane leakage rates in the updated SEIS sensitivity analysis. *Van Slyke Testimony at 511, 532, 549-550, 554; Unnasch Testimony at 676-677, 707-708, 709-10, 720*.

91.

In addition to upstream methane leakage discussed above, methane slip is methane emissions associated with downstream emissions, the end use of LNG in an engine. *Erickson Testimony at 66*. Appellants argue that methane slip estimates in the SEIS were unreasonable and misleading for several reasons. Appellants argue that PSCAA's reliance on engine-test data provided by TOTE (*Ex. ACT-39, Appendix 1*) was unreasonable because it: (1) contained math errors; (2) erroneously estimated zero slip at 100 percent load; and (3) assumed that TOTE methane slip values would apply to vessels in the "other marine" category. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 44-45*. Based on its own testing, TOTE showed the emission rates from their converted engines are in line with 5.3 g/kWh as specified in the draft SEIS. *Ex. ACT- 39, p. 2.* This methane slip rate of 5.3 g/kWh was based on earlier tests of similar LNG engines as well as the SINTEF report.[9] *Ex. ACT-38, p. 22.*

92.

Erickson argued the SEIS should have assumed a higher methane slip rate of 6.9 g CH_4 per kWh based on the SINTEF report and other studies. *Ex. ACT-108, pp. 27-28 (Erickson Pre-filed Testimony)*. Erickson also opined that the methane slip rate was based on an incorrect ship

[9] As cited in *Erickson Testimony at 68*.

load of 100 percent, which affects the methane slip rate. *Id., pp. 28-30.* Ship load is a measure of the actual power output of an engine as a percent of its maximum power output. *Id., p. 28.*

93.

Dr. Pratt testified that applying TOTE methane slip values to "other marine" was unreasonable because other vessels could be four stroke engines which have higher GHG emissions. *Ex. ACT-107, p. 16.* Dr. Pratt had assumed that TOTE vessels were two stroke engines. *Id.* During the hearing, Dr. Pratt learned that his assumption was incorrect as TOTE vessels are four stroke engines. *Pratt Testimony at 71.*

94.

Couch testified that the methane slip assumptions in the SEIS (5.3 g/kWh-6.9 g/kWh) are actually conservative. He asserted that current literature estimates a methane slip rate of 5 g/kWh. *Couch Testimony at 750.* The literature Couch relied upon included a report cited by Appellants, the Lindstad 2020 report. *Couch Testimony at 750; Ex. ACT-107, p. 16.*

95.

Andersen testified that assuming the non-TOTE vessels would have the same methane slip values as the TOTE vessels is reasonable because most ocean-going vessels have more efficient engines with lower methane slip than the TOTE vessels. *Andersen Testimony at 913, 918.* Andersen testified that the majority of ocean-going LNG fueled vessels are two stroke engines which have a methane slip range of 0.2-2.5 g/kWh. *Ex. PSE-652, p. 60.* Therefore, the SEIS assumption was a conservative methane slip assumption for "other marine" vessels. Andersen also opined that Erickson's direct comparison between load and engine efficiency is

misleading because the four stroke TOTE engines can run at different speeds to optimize fuel consumption and air emissions including methane slip. *Ex. PSE-652, p. 60 (Andersen Pre-filed Testimony).*

96.

The SEIS sensitivity analysis included a methane slip range of 5.3 to 6.9 g/kWh for TOTE and non-TOTE vessels. *Ex. RA-51, p. 136 (Figure 5.5).* This resulted in a range of GHG emissions from approximately negative 30 to just under positive 30 GHG emissions (k tonne CO_2e/year). *Id.*

97.

The SEIS methane leakage rate was based on the natural gas being sourced from Canada, which is Condition 41 of the Permit. ¶¶ *22, 47*. The Final SEIS added additional methane leakage and methane slip rates to expand the range of emissions that could be caused if different rates were considered. *Ex. RA-51, pp. 46, 136.*

98.

The Board concludes under the rule of reason standard the SEIS provided decision makers with a reasonable range of methane emission data. Although Appellants contend the methane emissions data and assumptions were not provided, the sensitivity analysis included the Alvarez (EDF) study and the SEIS included an explanation about why PSCAA relied on the regional data and bottom-up methodology for methane leakage emissions. *Ex. RA-51, pp. 136-137, 210, 220*. The methane leakage values from the Alvarez study are identified as EDF in the sensitivity analysis of natural gas (NG) Upstream. *Id., p. 136.* The methane slip range in the

sensitivity analysis is 5.3 g/kWh-6.9 g/kWh. *Id., p. 136*. Thus, the ranges Appellants are suggesting should have been used are indeed contained in the sensitivity analysis.

99.

PSCAA considered detailed methane emissions data, made reasonable assumptions, and considered the information in the SEIS. The Board concludes that under the rule of reason, methane leakage and slip rates were sufficiently disclosed, discussed, and substantiated by supportive opinions and data.

100.

Appellants also challenge PSCAA's expertise in understanding the methane emissions data and assumptions. PSCAA officials testified regarding their background and experience with SEPA compliance and emissions calculations, and their communications with various stakeholders during the SEIS process. ¶¶ *43, 55, 90*. PSCAA provided a detailed report of public comments received during the process. ¶ *90*. The fact that they hired an LCA consultant to conduct the LCA does not mean PSCAA was ill-informed about methane emissions and methodologies used to calculate them. The Board finds and concludes the methane slip and leakage assumptions in the LCA were reasonable and gives substantial weight to PSCAA's selection of these assumptions. *See* RCW 43.21C.090 and WAC 197-11-920(1)(d). The Board finds and concludes that Couch and Andersen's testimony regarding conservative estimates in the LCA for methane leakage and slip is credible and persuasive. They provided a reasonable basis for their conclusions. ¶¶ *89, 94, 95*. Moreover, the sensitivity analysis included a range of methane leakage and slip values as well as the range of GHG emissions. ¶¶ *90, 96, 97*.

4. Global Warming Potential (Issue 2)

101.

Appellants argue the SEIS used outdated scientific data regarding the global warming impacts of methane. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 39-41*. They assert the SEIS should have relied on the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) to calculate global warming potential (GWP).[10] Appellants also argue the SEIS failed to use an accurate GWP time horizon of 20-years for methane. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 39-41.*

102.

At the time of the hearing, the IPCC had published five Assessment Reports, which provide a comprehensive summary of the current state of climate science. *Ex. PSE-651, p. 34 (Couch Pre-filed Testimony).* The Draft SEIS relied on the Fourth Assessment Report (AR4). *Ex. RA-51, p. 216.*

103.

After the Draft SEIS was issued, IPCC's AR5 was published. The AR5 represents newer data on radiative forcing of methane and other gases, secondary effects and their lifetime in the

[10] The SEIS defines GWP as follows:

> GHGs are ranked by their GWP. GWP is based on the ability of a GHG to absorb solar radiation, as well as its residence time in the atmosphere, compared to CO_2. Applying GWP factors from the Intergovernmental Panel on Climate Change AR4, CO_2 has a GWP of 1, methane has a GWP of 25, and N2O has a GWP of 298. The IPCC has revised the GWP factors for the 100-year time horizon in the IPCC Fifth Assessment Report. The change in GWP factors are examined in a sensitivity analysis (refer to Appendix B). Emissions of GHGs are typically estimated as CO_2e. Estimates of individual GHGs are converted to CO_2e by multiplying each pollutant by its GWP relative to CO_2.

Ex. RA-51, p. 40.

atmosphere. *Ex. RA-51, p. 215*. The AR5 includes a higher GWP for methane and a lower GWP for N_2O than AR4. *Id.*

104.

The updated LCA report in the Final SEIS included an updated sensitivity analysis considering AR5 GWP values. *Unnasch Testimony at 662; Exs. RA-51, p. 215, RA-52 at "Factors" Tab*. The SEIS states:

> The updated LCA report included an updated sensitivity analysis that considered AR5 GWP values. Refer to Section 1.5.2 (and Appendix A.4) of the LCA report. The results of that sensitivity analysis are shown in Section 5 (see Figure 5.5) of the LCA report. That analysis indicates that the use of the AR5 GWP values, by itself, would not change the conclusions identified in the DSEIS.

Ex. RA-51, p. 215. In the sensitivity analysis, the AR5 GWP factor increased the net GHG emissions rate to positive 20 (k tonne CO_2e/year), compared with negative 30 (k tonne CO_2e/year) for the AR4 GWP factor. *Id., p. 136.*

105.

The LCA used a 100-year time horizon to assess the GWP of the Project. *Ex. RA-51, p. 161*. PSCAA received public comments challenging the use of a 100-year time horizon, suggesting that a 20-year time horizon should have been used to account for methane emissions. *Id., p. 215*. The Final SEIS addressed these comments:

> Evaluation of the GHG emissions using the 100-year GWP protocol is consistent with IPCC AR4 (IPCC 2007) and other policy directions and initiatives in Washington State as prescribed in WAC 173-441-040. It is also consistent with the long-term goals of the Paris Agreement. The comments regarding a 100-year analysis methodology as contrasted to the 20-year analysis relates to the differences in GWP for methane on a longer versus a shorter lifetime. The analysis has not been revised to adjust the results of the life-cycle analysis on a 20-year basis

> because most of the GHG emissions and warming effects from the emissions considered in this analysis are CO2, not CH4. A 20-year GWP based analysis would omit the warming effect of CO2 after 20 years and the CO2 has much longer cumulative effects. CO2 has a persistent effect in the atmosphere for over 100 years.

Id.

106.

PSCAA explained its decision to use the 100-year time horizon for the emissions lifespan over the 20-year time horizon in the LCA report:

> The methodology selected by PSCAA and the project team to follow a protocol based on AR4 values for a 100-year life remains a valid, reasonable approach. The GHG emission reporting requirements for the federal government (40 Code of Federal Regulations 98 - Mandatory Greenhouse Gas Reporting) and Washington State (see WAC 173-441 - Reporting of Emissions of Greenhouse Gases) follow these protocols. It is both appropriate and reasonable to evaluate the GHG emissions from this proposal in a life-cycle analysis on the same basis as those inventory values to support comparisons and understanding of the emissions as was done in the SEIS.

Ex. RA-51, pp. 215-16.

107.

Erickson argued that using AR5 values and the GWP 20-year time horizon would more accurately count methane emissions, which has a GWP of 36 over a 100-year time horizon but a value of 87 over a 20-year time horizon. *Ex. ACT-108, pp. 31-32 (Erickson Pre-filed Testimony).* Under AR4, methane has a 100-year GWP of 25; whereas under AR5 methane has a 100-year GWP of 36. *Id., pp. 31-32*. Erickson testified that understanding shorter time scales is important to show short-terms effects of methane and the SEIS should have included both time horizons. *Erickson Testimony at 74-75.*

108.

Unnasch testified that the GWP calculation is used for the impact assessment of an LCA. *Unnasch Testimony at 645*. Each of the GHG emissions are multiplied by their GWP to assess their impact. *Id. at 646*. In drafting the LCA, Unnasch determined that a 20-year time horizon for GWP would not present a reasonable or reliable calculation of GHGs and did not include it in the LCA. *Id. at* 675; *Ex. RA-51, App. B, pp. 92-93*. A 20-year GWP is primarily used when focusing on short-term climate impacts. *Unnasch Testimony at 675, 745; Ex. PSE-651, p. 33 (Couch Pre-filed Testimony)*. The 20-year GWP time horizon effectively cuts off the warming effect of CO_2 and N_2O after 20 years while capturing the entire warming effect of methane, which has a lifetime of about 20 years or less. *Ex. RA-51, p. 76*. Unnasch testified that for this LCA the 100-year AR4 GWP was the standard GWP to use. *Unnasch Testimony at 672-73.*

109.

Couch testified it was reasonable for PSCAA to analyze the project's impacts under 100-year GWP time horizon given the composition of GHGs in the Project. *Couch Testimony at 746*. AR4 is most predominantly used by agencies such as the U.S. EPA, and Washington and California statewide inventories. *Id. at 747*. In addition, Couch noted that the 100-year GWP framework is consistent with the State of Washington's GHG inventory which is necessary to make comparisons to other emissions. *Id. at 746*.

110.

Couch also testified that the majority of GHG emissions from the project are attributable to carbon dioxide (CO_2). *Ex. PSE-651, p. 33 (Couch Pre-filed testimony.)*. Carbon dioxide is a

long-term climate pollutant. *Couch Testimony at 674-755, 746.* A 20-year GWP based analysis would omit the warming effect of carbon dioxide after 20 years and carbon dioxide has a much longer cumulative effect. *Ex. RA-51, p. 215.*

111.

The Board finds and concludes Unnasch and Couch's testimony regarding the use of the 100-year GWP time horizon was credible. Both Unnasch and Couch have conducted numerous LCAs and provided a reasonable basis for using the 100-year time horizon. Unnasch and Couch also provided a credible and reasonable explanation for relying on the AR4 GHG factors for this LCA. ¶¶ *105, 106, 108, 109*. The Board also finds Erickson's testimony credible regarding use of a 20-year time horizon to calculate methane emissions and gives his testimony the same weight as Unnasch and Couch.

112.

Ultimately, the Board concludes that PSCAA's selection of the 100-year time horizon to assess the GWP was reasonable. The SEIS included an explanation of why the 100-year AR4 GWP should be used. ¶¶ *105, 106, 108*. After receiving comments, Unnasch added AR5 in the sensitivity analysis in the final LCA. ¶¶ *103, 104*. The SEIS addressed the comments on the use of a 100-year GWP and concluded use of the 100-year GWP best captured the effects of CO_2, the most prevalent GHG for this project. ¶¶ *105, 106, 108.*

113.

PSCAA relied on AR4 values for a 100-year emissions lifespan to be consistent with GHG emission reporting requirements for the federal government (40 C.F.R 98 – Mandatory

Greenhouse Gas Reporting) and Washington State (WAC 173-441 – Reporting of Emissions of Greenhouse Gases). ¶¶ *105, 106*. PSCAA determined it was reasonable to evaluate the GHG emissions on the same basis as those inventory values to support comparisons and understanding of the emissions. ¶¶ *105, 106.*

114.

The SEIS disclosed, discussed, and substantiated the use of AR4 and the 100-year GWP time horizon for methane emissions. PSCAA included AR5 in the sensitivity analysis but did not include the 20-year time horizon methane emissions data. ¶¶*104, 105, 108*. Although Erickson's testimony was credible regarding the updated methane emissions data in AR5 and he explained why he thought a 20-year time horizon should have been included in the SEIS, the Board defers to PSCAA as the agency with expertise to resolve technical differences on how to quantify methane emissions for the Project. *Port of Seattle*, 151 Wn.2d at 593.

5. Nitrous Oxide Emissions (Issue 2e)

115.

Appellants argue the SEIS fails to properly address the facility's emissions of N_2O, a potent GHG. Appellants argue that the N_2O emissions are underestimated in the SEIS because the SEIS fails to account for nitrogen gas used to purge the lines. Appellants' expert, Dr. Sahu, opined that TLNG flared waste gases will contain more nitrogen than typical gaseous waste because nitrogen will be used to clear lines after fueling of ships and trucks. *Ex. APTI-587, p. 78 (Sahu Pre-filed Testimony).* As a result, the nitrous oxide emissions from purging gas lines were

underestimated. *Sahu Testimony at 1730; Ex. APTI-587, p. 78 (Sahu Pre-filed Testimony).* Dr. Sahu performed no quantitative analysis of the nitrous oxide emissions. *Sahu Testimony at 1730*.

116.

In preparing the LCA, Unnasch used standard nitrous oxide factors based on EPA's AP-42[11] combustion emission factors, which are also organized in the GHGenius and GREET models used in other LCAs in Washington State.[12] *Unnasch Testimony at 646-650, 676; Van Slyke Testimony at 5376.* The LCA used standard N_2O emissions factors that are available for many equipment types, such as diesel engines, gas turbines, and flares. *Unnasch Testimony at 666.*

117.

Dr. Libicki testified that the nitrogen used as purge gas "would not discernibly change N_2O emissions from the flare." *Ex. PSE-374, p. 162 (Libicki Pre-filed Testimony).* Dr. Libicki calculated that the purge gas would operate roughly 692 hours per year or less than eight percent of the year and would impact the nitrogen percentage minimally. *Ex. PSE-374, p. 163 (Libicki Pre-filed Testimony).* Dr. Smith opined that if any additional nitrous oxide is formed due to excess nitrogen it would be very small and quickly destroyed in the combustion zone of the flare. *Ex. PSE-649, pp. 67-68 (Smith Pre-filed Testimony).*

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[11] AP-42 contains EPA's compilation of emission factors for carbon monoxide, nitrogen oxides, and VOCs that are used by industry based on emissions test data from various industrial facilities and sources. They are continually updated and undergo public review and comment. *Exs. PSE-374, pp. 28-29, RA-71; Van Slyke Testimony* at 1909.

[12] The GHGenius LCA model is based on the UC Davis Life Cycle Emission Model (LEM) that was developed for Natural Resources Canada. *Ex. RA-51, p. 64*. Both models are used for assessment of GHG emissions for low carbon fuel regulations in the U.S. and Canada. The SEIS used the GHGenius and GREET models to calculate upstream emissions on a life cycle basis. *Ex. RA-51, p. 67.*

118.

Van Slyke testified that burning of gaseous fuels does not have the fuel-bound nitrogen components that are associated with normal N_2O emissions. *Van Slyke Testimony at 537-38.* The N_2O emissions that were used in the LCA rely on emission factors that are published as part of established and reviewed emission factor documents. *Id. at 537.*

119.

Unnasch also disagreed with Dr. Sahu's conclusion regarding N_2O emissions, which necessarily implies that atmospheric nitrogen would increase N_2O emissions. *Unnasch Testimony at 666.* Unnasch explained that according to relevant scientific literature, only very small amounts of N_2O are produced from combustion processes and atmospheric nitrogen is not a precursor for producing additional N_2O. *Id.*

120.

Couch testified that the LCA used standard N_2O emission factors organized in the GHGenius and GREET models, which is standard for fuel life cycle analysis considered by state agencies such as Ecology. *Couch Testimony at 646-650, 676.*

121.

The Board finds and concludes that testimony from Unnasch, Dr. Libicki, Dr. Smith, Van Slyke, and Couch was credible and persuasive regarding N_2O emissions. The Board finds Dr. Sahu's testimony less credible as he performed no quantitative analysis of the nitrous oxide emissions. ¶ *115.*

122.

Respondents' experts provided calculations demonstrating that N_2O emissions in the purge gas were minimal. ¶¶ *116, 117.* Respondents' experts also used standard N_2O emission factors used in GHGenius and GREET models which have been used in other LCAs in Washington State. ¶¶ *116, 118, 120.*

123.

The SEIS disclosed, discussed, and substantiated by data TLNG's N_2O emissions. Respondents' experts additionally substantiated that the forecasts were reasonable, and those calculations were not able to be refuted by Appellants' expert. Under the rule of reason, the Board concludes the SEIS properly addressed the N_2O emissions from the facility**.**

6. No Significant Adverse Impact (Issue 2c)

124.

Appellants assert under Issue 2c that the SEIS fails to acknowledge that maintenance of high-GHG emissions status quo for the lifetime of the project is a "significant" impact under SEPA. Appellants argue PSCAA's determination of insignificance for a fossil fuel project that maintains status quo GHG emissions is contrary to science and conflicts with applicable law and policy, and that PSCAA failed to consider the cumulative harm that will result from TLNG's contribution to existing adverse climate conditions. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 11-14.*

125.

Appellants argue PSCAA failed to integrate local, state and federal policies on GHG emissions in determining there were no significant adverse impacts. As one example, Appellants cite to Washington's goal to reduce GHG emissions to 95 percent below 1990 levels and achieve net zero emissions by 2050, RCW 70A.45.020. *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 13*. As another example, Appellants assert PSCAA has failed to abide by its own targets, calling for an 80 percent reduction in GHGs by 2050. *Id., p. 14* (citing *Ex. ACT-57*).

126.

In making a significance determination, agencies must consider whether a proposed action "conflict[s] with local, state or federal laws" for the protection of the environment. WAC 197-11-330(3)(e)(iii). Pursuant to WAC 197-11-030(2)(a) the agency must "[i]nterpret and administer the policies, regulations, and laws of the state of Washington in accordance with the policies set forth in SEPA and these rules."

127.

The SEIS identified local, state and federal laws with jurisdiction over GHG emissions. Section 4 of the SEIS addresses the regulatory framework for GHG emissions, and the specific regulations that apply to the TLNG project. *Ex. RA-51, pp. 36-39*. This section includes discussion of Chapter 70.235 RCW (recodified as Chapter 70A.45.010), which establishes GHG emissions reduction limits for state agencies and GHG reduction targets, and PSCAA SEPA checklist which requires identification and consideration of GHGs. *Ex. RA-51, p. 37*. Three agencies have jurisdiction over GHG emissions within the geographic areas of the Port of

Tacoma, City of Tacoma, and Pierce County: the U.S. EPA, Ecology, and PSCAA. PSCAA is the primary regulatory agency responsible for air quality permitting and compliance within King, Kitsap, Pierce, and Snohomish counties. *Id., p. 36.*

128.

Section 4.2 of the SEIS discloses and discusses the environment affected by climate change. *Ex. RA-51, p. 40.* The State of Washington established goals to minimize climate change impacts and reduce GHG emissions. *Id.* The SEIS states that the potential effects of climate change and GHG emissions are global and cumulative impacts. *Id.*

129.

Appellants argue that the cumulative harm must be considered under SEPA and that the context and intensity of TLNG's GHG emissions support a finding of significance. *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 15.* The SEIS puts the TLNG projected emissions of 54,522 and 107,922 metric tons CO_2 per year in the context of global impacts, concluding the SEIS analysis predicts TLNG would result in a net GHG reduction contingent on the source of the natural gas. *Ex. RA-51, p. 48.* Section 4.6 discloses and discusses cumulative impacts and states "while individual sources of GHG emissions are not large enough to have an appreciable effect on climate change, the global accumulation of GHG emissions is resulting in global and local impacts on the climate." *Id., p. 47.*

130.

The public comment section of the SEIS addressed concerns about cumulative effects from the proposed facility with other existing industry at the Port of Tacoma. PSCAA responded

that the identified scope for the SEIS was for a life-cycle analysis of the GHG emissions associated with the proposed TLNG facility only. *Ex. RA-51, p. 214.* Considering emissions from other facilities are not consistent with the life-cycle analysis methodologies. *Id.*

131.

As stated, the Board reviews the adequacy of the SEIS under the rule of reason. Under the rule of reason standard, "the EIS must present decision-makers with a 'reasonably thorough discussion of the significant aspects of the probable environmental consequences' of the agency's decision." *Klickitat County Citizens*, 122 Wn.2d at 633. The rule of reason standard is met here as the SEIS considered the contribution of TLNG's emissions to existing adverse climate conditions. ¶¶ *127, 128, 129.*

132.

Appellants cite to several cases to support their argument that an agency must consider the cumulative effects of a project. *See Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 15-16.* However, all of the cases cited by Appellants involve an agency's threshold determination of whether to prepare an EIS, which is not at issue here. *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin*., 538 F.3d 1172, 1220 (9th Cir. 2008) (holding an environmental assessment's finding of insignificance under NEPA for federal fuel economy standards was deficient and contrary to the record in its attempt to justify the refusal to prepare an EIS); *City of Fed. Way v. Town & Country Real Estate, LLC*, 161 Wn. App. 17, 54, 252 P.3d 382, 401 (2011) (Under the "clearly erroneous" standard for a threshold determination of non-significance, the court found the cumulative impacts on traffic constitutes a significant adverse

impact under SEPA, and mitigation payments were lawful). Both of these cases were examining whether an agency's initial threshold finding of insignificance was clearly erroneous, which triggers whether or not an EIS must be prepared. *See* RCW 43.21C.031. Such cases are not applicable to the TLNG SEIS where the SEPA process is well beyond the initial threshold determination.

133.

Appellants also cite *Columbia Riverkeeper, et al. v. Port of Kalama et al.*, SHB 17-010c (Sept. 15, 2017),[13] for the proposition that an inaccurate significance finding in an EIS robs an agency of its authority to mitigate or deny a project. This case is distinguishable. In *Port of Kalama,* Riverkeeper challenged the adequacy of the Final EIS, asserting that it erroneously concluded that the Project's GHG emissions were not significant. Riverkeeper, in part, claimed that the Final EIS merely relied on Ecology's internal document, "Guidance for Ecology: Including Greenhouse Gas Emissions in SEPA Reviews" (Guidance) to conclude the Project would not have significant adverse impacts without any analysis of environmental impacts. *Id.*, p. 19. The Shorelines Hearings Board found the Final EIS failed to provide adequate analysis because the conclusion was based "almost entirely on Ecology's Guidance." *Id*., p. 23. Unlike in *Port of Kalama,* PSCAA has done an analysis of environmental impacts in the LCA for TLNG.

[13] Appellants also cite a 2018 case they call *Port of Kalama v. Shorelines Hearings Board* with a different citation. The Board assumes the Appellants were referring to this case. *See Appellants Closing Brief on SEPA Issues (Issue 2), pp. 5, 12.*

134.

By letter, after the hearing and closing briefs were submitted, Appellants submitted *Washington State Dairy Federation v. Dept' of Ecology*, 18 Wn. App. 2d 259, 490 P.3d 290 (June 29, 2021), for the Board's consideration. In *Dairy Federation*, environmental groups sought judicial review of the PCHB's decision to largely approve Ecology's issuance of waste discharge permits for concentrated animal feeding operations, claiming in part that SEPA required Ecology to consider the effects of climate change before issuing the permits. The PCHB had dismissed appellants' argument regarding climate change on summary judgment. The Court of Appeals reversed, holding that SEPA required Ecology to consider climate change "to some extent" when issuing permits. *Dairy Federation.*, 18 Wn. App. at 309. The *Dairy Federation* case is distinguished from the case at hand. Rather than an industry-wide permit, the TLNG Permit is for a single, specific facility. Also, an EIS was never issued or reviewed in *Dairy Federation*. The issue here is the adequacy of the SEIS conducted to assess the lifecycle GHG emissions for TLNG.

135.

The Board is mindful of climate change as well as the policy basis for SEPA. In reviewing the adequacy of an EIS, the Board is limited to reviewing whether the EIS presented decision-makers with a "reasonably thorough discussion of the significant aspects of the probable environmental consequences" of the agency's decision. SEPA only requires the agency consider whether the project is in conflict with applicable laws, regulations, and policies, and PSCAA found it was not. ¶ *130*. The decision before PSCAA was not to adopt a policy or a

regulation addressing GHGs in relation to an entire industry. In fact, PSCAA's jurisdiction is geographically limited. ¶ *127*.

136.

Appellants also argue the baseline for the No Action Alternative should follow the guidance in Washington Department of Ecology's proposed Greenhouse Gas Assessment Rule.[14] *Ex. ACT-22, WSDOE Draft GAP Rule Conceptual Framework for Informal Review, Wash. State Dep't of Ecology (March 2021).* The proposal calls for defining the no action scenario as assessing future conditions under "state and federal GHG reduction limits and international goals approved by the U.S. Government." *Ex. ACT-22, p. 18.*

137.

The Board concludes that PSCAA could not have followed the guidance in Ecology's draft GHG Assessment rule issued in March 2021 because it did not exist in 2018 and 2019 when the SEIS was in process. The SEIS was prompted by Ecology withdrawing its previous GHG guidance. ¶ *9.* The Board concludes the SEIS adequately addresses applicable laws, regulations, and policies, in compliance with SEPA.

[14] In March of 2021, one month prior to the hearing in this case and long after the SEIS and issuance of the Permit, Ecology released a proposed Greenhouse Gas Assessment Rule (Draft GAP Rule). *Ex. ACT-22 (WSDOE Draft GAP Rule Conceptual Framework for Informal Review, Wash. State Dep't of Ecology (March 2021).* The purpose of the GAP Rule is to "enable consistent, predictable, and transparent consideration of GHG emissions related to industrial and fossil fuel projects. *Ex. ACT-22, p. 7*. The final rule is planned to be adopted later in 2021. *Id., p. 6.*

B. Facility Changes and Safety (Issues 2d and 2f)

138.

Appellants argue there were substantial design changes that were likely to cause significant impacts. They argue under SEPA fire and explosion hazards must be disclosed. They ask the Board to order PSCAA to prepare a supplemental EIS on safety hazards. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 39-40*. Appellants contend two substantial changes occurred after the Final EIS: 1) facility design changes to accommodate a heavier feed gas composition; and 2) relocation of vessel V-204. *Id., p. 41*.

139.

Legal Issue 2d asks whether the SEIS relies on displacement and/or mitigation that is unavailable under the project as currently configured, and otherwise fails to assess the current configuration of the project. Legal Issue 2f asks whether the SEIS relied on scenarios that have not undergone SEPA review.

140.

Appellants argue that changes to the facility design that occurred after the FEIS was published require supplemental environmental review because they would create significant new fire and explosion dangers. *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 39.* They also argue that PSCAA must consider fire and explosion hazards independent of the Washington Utilities and Transportation Commission's (UTC) jurisdiction.

141.

TLNG will process and store 250,000 gpd of LNG. *Ex. RA-21, p. 15*. The gas is processed to remove heavy hydrocarbons ("heavies"). These heavy hydrocarbons include: (1) mixed refrigerant liquids including propane and isopentane, and (2) natural gas liquids removed from the raw gas stream which contain a mixture of different heavy hydrocarbons (including propane, i-butane, n-butane, i-pentane, n-pentane, n-hexane, n-heptane, n-octane). *Ex. ACT-109, pp. 4-5*. Removed heavies would be stored as natural gas liquids in the heavies storage vessel (V-802). *Hogan Testimony at 392-93*. Stored natural gas liquids would be trucked offsite. *Stobart Testimony at 1018-19*.

142.

TLNG will process natural gas through a pretreatment and liquification process, after which the LNG will be stored until used either for transportation fuel or for peak shaving purposes. *Van Slyke Testimony at 451-52; Ex. RA-15*. Upon obtaining custody of TLNG's feed gas, the gas will be odorized and passed through a metering station. After which the pressure of the gas will be boosted to a level optimum for plant operations. Once at adequate pressure, the gas runs through an amine wet pre-treatment system where certain compounds are removed, next the gas goes through the liquefaction process. The LNG is then stored in a tank for later use as transportation fuel or for re-gasification to serve peak shaving needs. *Stobart Testimony at 1002-1012*. An enclosed ground flare will be used for the destruction of generated waste gases, and a vaporizer will be used to re-gasify the LNG. *Id. at 1014-15*.

143.

PSE has identified potential consumers of its transportation fuel. Primarily, the fuel is intended for TOTE vessels. *Ex. RA-38, p. 30.* TOTE vessels may be characterized as short sea vessels and fall within the classification of ocean-going vessels. *Couch Testimony at 798-99.* PSE hopes to serve other marine vessels in addition to TOTE as LNG engine technology becomes more prevalent in marine vessels. Other non-marine LNG customers may include those in the long-haul trucking industry. *Ex. RA-38, p. 8.*

144.

The natural gas processed by TLNG originates from North Montney Region of the Western Canadian Sedimentary Basin. From this region, natural gas is piped into the West Coast Energy pipeline where it travels south until it reaches Sumas, Washington, at which point the gas is transferred to the Williams Northwest Pipeline ("Northwest Pipeline"). *Donahue Testimony at 1791; Ex. PSE-24.* Flow in the pipeline is typically north to south but the pipeline is bidirectional. *Id. at 1797, 1811.* The gas can only flow in one direction at a time. *Id. at 1797.*

145.

Upon arrival at the Frederickson Gate Station, the Northwest pipeline gas is metered and measured for transfer to PSE where it is then pressurized and odorized. *Ex. RA-38, p. 126.* Gate stations, or custody transfer points, are locations where custody of gas within the Northwest Pipeline changes to a utility provider such as PSE. *Donahue Testimony at 1799.*

146.

The composition of the pipeline gas is dependent on factors present during extraction and transmittal and can change gradually over time. *Donahue Testimony at 1815-6.* From approximately 2013 through 2016 the British thermal units (BTU) content of the feed gas received at Sumas increased primarily due to increased ethane. *Id.* at 1821. Due to the increase in heavy hydrocarbons in feed gas composition, in 2017, CB&I made some design changes to TLNG. *Stobart Testimony* at 994; *Ex. PSE-369.*

147.

The City of Tacoma completed SEPA review of the proposal in the FEIS that evaluated the preliminary design and concluded there would be no significant adverse safety or risk impacts. *Ex. APTI-472, pp. 225-226.* The City anticipated eventual subsequent design changes. *Id.* Other regulatory agencies, such as the UTC, apply federal, state and local regulations to address safety and risk through the subsequent design, construction, and operation of the facility. *Id., p. 225*. The UTC, as a Pipeline Hazardous Materials Safety Administration (PHMSA) delegate, is the responsible agency for reviewing compliance when siting an LNG facility. *Gavelli Testimony at 1054*. In Section 3.5 of the FEIS, the Washington UTC Pipeline Safety Office provides oversight of property design and construction of the proposed project as well as ongoing oversight of project operations. *Van Slyke Testimony at 479-480.*

148.

The FEIS concluded that the preliminary design of TLNG was compliant with all safety regulations, but that the design should be reviewed when complete to ensure continued

compliance. *Ex. RA-38, p. 31.* The PHMSA is the agency responsible for regulating the siting, design, construction, operation, and maintenance of TLNG. *Van Slyke Testimony at 480; Ex. RA-38, p. 116.* Additionally, the Washington UTC Pipeline Safety Office has been granted authority by PHMSA to provide oversight of the facility's design, construction, and operation. *Ex. RA-38, p. 130.*

149.

The siting requirements of 49 C.F.R 193, to which TLNG is subject, cover the methods and means of managing risks from spills, or design spills, at the facility. *Ex. ACT-81, p. 4.* The purpose of the Siting Study is to determine if accidents within the LNG facility can have an impact on the public or public property outside the boundaries. *Gavelli Testimony at 1050*. The associated Siting Study is where the safety and hazard risks from design spills are first considered. In 2015, CB&I performed a Siting Study of TLNG as part of the FEIS process. *Stobart Testimony at 976.*

150.

Stobart, who serves as Project Engineering Manager for TLNG, has worked as an engineer, including design, construction, and commissioning, on approximately 25 LNG projects over his career. *Stobart Testimony at 968*. His testimony is based on his direct knowledge with the Siting Studies and design changes to the TLNG facility.

151.

In 2018, CB&I prepared two supplemental Siting Studies to evaluate safety concerns raised by the Tribe. *Stobart Testimony at 978-979; Exs. ACT-86, ACT-87.* CB&I completed the risk assessment of all the changes Appellants identified. *Stobart Testimony at 980.*

152.

Appellants assert that the heavy liquid hydrocarbons in the raw natural gas feedstock increased from the original design in 2015 to the July 2017 revised design. *Ex. ACT-109, p.5 (Spicer Pre-filed Testimony).* Dr. Spicer opined that refrigerant liquids and natural gas liquids contain highly flammable chemicals, and a leak of these hazardous chemicals could pose a fire or vapor cloud explosion hazard.[15] Also, processing feed gas with a higher content of heavy hydrocarbons would require more frequent removal of natural gas liquids by truck. Second, Dr. Spicer opined the relocation of equipment in the liquefaction area near Vessel V-204 occurred in a manner that could affect areas of congestion and confinement where a leak of mixed refrigerants from the vessel could create the risk of an explosion.[16] *Id., p. 7.*

153.

Dr. Spicer further opined that the vapor dispersion calculations in the 2015 Siting Study were no longer applicable. *Ex. ACT-109, p. 12 (Spicer Pre-filed Testimony).* Specifically, the

[15] Dr. Spicer cited The National Fire Protection Association (NFPA) 59A for evaluating the consequences of a fire or vapor cloud explosion, which requires modeling radiant heat flux, vapor dispersion, and overpressure. Overpressure is the pressure caused by a flame front over and above normal atmospheric pressure caused by a deflagration or detonation. *ACT-109, p. 5 (Spicer Pre-filed Testimony).*

[16] An area of congestion (obstacles or blockage in a moving gas that can generate turbulence and enhance mixing) and confinement (solid surfaces that prohibit gas movement in one or more directions) creates the circumstances found to be important in characterizing the overpressure damage due to an explosion.

flow rates and capacity of lines carrying hazardous materials changed, if not increased, creating fire or explosion hazards. Dr. Spicer noted Line 8008, which carries LNG from the liquefaction area to the heavies storage area where it is then trucked offsite, was identified in 2015 as exceeding the probability of failure threshold. With the 2017 design changes, Line 8008 may have an increased flow rate, and thus a larger vapor dispersion extent. Furthermore, the addition of the "New Heavies Line" and the increased storage capacity of V-801 present unexamined hazards. *Id., p. 13.* Specifically, Dr. Spicer opined that the "New Heavies Line" carries medium reactivity flammable liquid and thus poses new fire or explosion hazards. Moreover, because the line is above ground and runs the length of the facility, it has a higher probability of failure. *Spicer Testimony at 200.* Additionally, Dr. Spicer testified that the increase to the storage capacity of V-801, which carries heavy hydrocarbons, should have been evaluated for unexamined hazards. *Ex. ACT-109, p. 13 (Spicer Pre-filed Testimony).*

154.

Appellants also assert PSE made a substantial design change after publication of the FEIS by relocating equipment in the liquefaction area near vessel V-204,[17] which contains highly flammable hydrocarbons, and if spilled could explode in a confined environment. *ACT-109, pp. 7-8 (Spicer Pre-filed Testimony).* In the original site design, the liquefaction heat exchanger, a piece of equipment measuring 15 by 25 feet, was located (plant) south of both V-204 and the MRL Condenser. But in the final design, this orientation was flipped such that the liquefaction

[17] V-204 – MRL Condensate Vessel. *Stobart Testimony at 983.*

heat exchanger is (plant) north of V-204 and the MRL condenser. Additionally, redesigning the facility to accommodate the heavier feed gas would increase flow into and out of vessel V-204. With these changes to V-204's location and incoming/outgoing flow rates, Dr. Spicer testified that the areas of congestion in confinement identified in 2015 may have changed. *Id., p. 10.* Furthermore, Dr. Spicer testified that the catastrophic failure of V-204 could result in a boiling liquid expanding vapor explosion (BLEVE), and that this consequence was never evaluated in the Final EIS. *Spicer Testimony at 218-19*; *Ex. ACT-109, p. 10 (Spicer Pre-filed Testimony).*

155.

The original site design required truck trips for removal of heavy hydrocarbons approximately every 14 days, whereas the design changes require truck trips approximately every five days. *Stobart Testimony at 1013.* Stobart testified that based on the analysis of the feed gas composition in 2020, one truck trip would be required every 30 days. *Id.* Appellants assert that the safety hazards associated with increases in both on-site and off-site truck traffic were not sufficiently examined. *Ex. ACT-109, p. 14 (Spicer Pre-filed Testimony); Spicer Testimony at 204, 214-15.*

156.

Respondents argue that the design changes identified by the Appellants do not require further SEPA review because those changes constitute development that is within the scope of the proposed action evaluated by the FEIS, and the City properly relied on regulatory review by other agencies with jurisdiction over facility risk issues. Respondents further argue that none of

the design changes are substantial or will create unexamined significant adverse impacts. *Puget Sound Energy, Inc.'s Post-Hearing Brief, pp. 9-16.*

157.

Dr. Gavelli, PSE's expert witness, testified that adjustments made to accommodate the changing feed gas composition did not create new unexamined hazards. *Ex. PSE-645, pp. 10-11 (Gavelli Declaration)*. He asserted the 2015 Siting Study evaluated the risks associated with lines carrying medium reactivity flammable liquid and the 2017 design changes, including the addition of the "New Heavies Line." The changes did not introduce any high reactivity flammable liquid; thus, the hazards fall into the same medium reactivity category as hazards previously evaluated. *Id., p. 5.*

158.

Dr. Gavelli also testified the increased storage capacity of V-801 does not present new hazards because the 2015 Siting Study already evaluated more serious risk scenarios than releases from V-801. *Ex. PSE -645, p. 8 (Gavelli Declaration)*. Specifically, Line 8008, which connects to V-801 and carries Natural Gas Liquids (NGL) to the NGL storage vessel, was evaluated for a full-bore failure. *Id.* Additionally, by applying the PHMSA failure rate table to the lines added or modified in 2017, Dr. Gavelli testified that a full-bore rupture of the new, 2" amine line would be credible, however the stream flowing along the line is reported to include approximately 40 percent hydrocarbons and 60 percent water and therefore is not considered flammable. *Id., p. 9.*

159.

Dr. Gavelli noted that Line 8008 appears to be the only line affected by the 2017 feed gas composition changes. *Ex. PSE-645, p. 9 (Gavelli Declaration).* Line 8008 line carries a liquid stream of heavy hydrocarbons from V-801 to the NGL storage vessel and could be subject to a higher flow rate following the facility design changes. Dr. Gavelli stated that a rough estimate of the outflow from this line indicates that the available liquid inventory could be depleted in approximately 20 seconds, as opposed to the 10-minute duration that appears to have been used in the 2015 Siting Study. Therefore, it was reasonable to conclude that the 2015 analysis of the vapor dispersion consequences of a full-bore rupture of Line 8008 is still valid. *Id., p. 9.* Dr. Gavelli testified that based on his conservative analysis, the explosion consequence of Line 8008 would not exceed regulatory requirements. *Id., p. 9.*

160.

Dr. Gavelli also testified that the equipment adjustments in the liquefaction area do not render the 2015 analysis inapplicable. *Ex. PSE-645, p. 7 (Gavelli Declaration).* He asserted the 2015 analysis evaluated the overpressure consequences from the ignition of a flammable vapor cloud due to a 0.4-in leak in V-204, which is the only credible release scenario for V-204. *Id.* The worst-case scenario conservatively assumed a stoichiometric cloud that filled the entire footprint of the liquefaction area. *Id.* Thus, any change in the position of V-204 relative to the congestion areas would not result in an increase in the overpressure hazard distances. *Id.*

161.

Dr. Gavelli testified that the probability of a catastrophic failure of V-204 is not a credible scenario according to PHMSA Failure Rate Table. *Ex. PSE-645, p. 6 (Gavelli Declaration).* He stated that a BLEVE can only occur as a consequence of a catastrophic failure of a pressure vessel. Dr. Gavelli opined that because the probability of catastrophic failure of V-204 is not a credible scenario, the vessel does not present the risk of a BLEVE. *Id., pp. 6-7.*

162.

Finally, Dr. Gavelli noted that offsite transportation of hazardous materials is outside the scope of TLNG's siting. Additionally, the 2018 Supplemental Siting Study evaluated the consequences of spills of heavy hydrocarbons and LNG at the truck loading station and found them to satisfy siting requirements. *Ex. PSE-645, p. 10 (Gavelli Declaration).*

163.

Dr. Gavelli has conducted over 50 site hazard evaluations for LNG facilities, including on behalf of PHMSA. *Gavelli Testimony at 968.* Dr. Gavelli has 17 years of experience with hazard analyses and risk assessments for LNG facilities, and expertise in the regulatory and technical standards for siting these facilities. *Id. at 1049, 1052-53.*

164.

The Board finds and concludes that the testimony from Stobart and Dr. Gavelli was credible and persuasive. The Board gives greater weight to Stobart and Dr. Gavelli's testimony based on their expertise with LNG facilities, experience with state and federal regulations for

these facilities, and direct knowledge and evaluations of the TLNG facility design changes. ¶¶ *150, 151, 163.*

165.

Dr. Spicer conducted one site assessment, which did not involve an LNG facility. *Spicer Testimony at 278-79.* The City's FEIS was the sole basis for Dr. Spicer's understanding of the siting study regulations. *Id. at 282-83.* Dr. Spicer testified that a leak of hazardous chemical "could" pose a fire or vapor explosion hazard. ¶ *152.* He also asserted relocation of equipment in the liquefaction area "could" affect areas of congestion and confinement. ¶ *154.* Dr. Spicer did not run any calculations to support his testimony. *Spicer Testimony at 282.* Dr. Spicer had not undertaken an independent analysis of whether the catastrophic failure of vessel V-204 is a credible scenario and was not familiar with the PHMSA Failure Rate Table. *Id. at 283-85.* Dr. Spicer's opinions were speculative, and he did not perform any analysis of his own to determine whether the new changes might affect compliance with PHMSA's siting requirements. Therefore, the Board gives less weight to Dr. Spicer's testimony.

166.

The City completed SEPA review of the proposal in an EIS and evaluated the preliminary design, concluding there would be no significant adverse safety or risk impacts. ¶ *147.* In general, SEPA review occurs at the conceptual stages of design, and further design changes are expected to occur. *See* WAC 197-11-055(4). Other regulatory agencies, including the UTC, have jurisdiction to review safety and risk throughout the design, construction, and operation of

the Project. ¶ *147*. The UTC continues to have this regulatory authority and Appellants can address safety concerns through the UTC.

167.

SEPA regulations state that an agency may use environmental documents that have previously been prepared in order to evaluate proposed actions, alternative, or environmental impacts. WAC 197-600(2). An agency acting on the same proposal shall use an environmental document unchanged, except in the following cases:

> (b) For DNSs and EISs, preparation of a new threshold determination or supplemental EIS is required if there are:
> (i) Substantial changes to a proposal so that the proposal is likely to have significant adverse environmental impacts (or lack of significant adverse impacts, if a DS is being withdrawn); or
> (ii) New information indicating a proposal's probable significant adverse environmental impacts. (This includes discovery of misrepresentation or lack of material disclosure.) A new threshold determination or SEIS is not required if probable significant adverse environmental impacts are covered by the range of alternatives and impacts analyzed in the existing environmental documents.

WAC 197-11-600(3). Decisions regarding whether a supplemental EIS is required involve the application of law to facts and are reviewed under the "clearly erroneous" standard set forth in RCW 34.05.570(3)(d); *Glasser v. City of Seattle, Office of Hearing Exam'r*, 139 Wn. App. 728, 740, 162 P.3d 1134, 1139 (2007).

168.

Appellants argue a supplemental EIS is required due to changes in facility design. *Appellants' Closing Brief on SEPA Issues (Issue 2), p. 46*. Appellants bear the burden of proving

a supplemental EIS is required due to "substantial changes" to the proposal such that the proposal is likely to have significant adverse environmental impacts. "Significant" is defined as:

> (1) "Significant" as used in SEPA means a reasonable likelihood of more than a moderate adverse impact on environmental quality.
> (2) Significance involves context and intensity (WAC 197-11-330) and does not lend itself to a formula or quantifiable test. The context may vary with the physical setting. Intensity depends on the magnitude and duration of an impact.
> The severity of an impact should be weighed along with the likelihood of its occurrence. An impact may be significant if its chance of occurrence is not great, but the resulting environmental impact would be severe if it occurred.
> (3) WAC 197-11-330 specifies a process, including criteria and procedures, for determining whether a proposal is likely to have a significant adverse environmental impact.

WAC 197-11-794.

169.

Respondents argue the design changes do not require a new SEIS because other regulatory agencies, including the UTC, will apply federal, state and local regulations to address safety and risk throughout subsequent design, construction and operation of the facility. *Puget Sound Energy, Inc.'s Post-Hearing Brief, p. 11.* Respondents also argue that the safety issues related to facility redesign were raised too late. The Board addressed this argument when it denied Summary Judgment on Issue 2d, concluding that genuine issues of material fact remained as to the current configuration of the Project and whether Project impacts were adequately assessed in the SEIS. *Order on PSE's Second Dispositive Motion, p. 20.*

170.

The Board finds and concludes Appellants have not met their burden to show the facility design changes are significant as defined in WAC 197-11-794. Appellants have not shown that

the Siting Studies did not address the safety hazards they raise. They have not shown either the severity of an impact or the likelihood of its occurrence. Furthermore, the facility design changes constitute development that is within the scope of the proposed action evaluated by the FEIS. *See* WAC 197-11-055(4).

171.

Further, the UTC is the agency with jurisdiction to identify ongoing processes relating to safety impacts from subsequent changes in design. ¶¶ *148, 167.* Appellants have been participating in the UTC process and submitted Dr. Spicer's testimony regarding safety issues. *Ex. RA-142.*

172.

The Board finds and concludes PSCAA's reliance on the FEIS was not clearly erroneous.

C. Agency's Substantive SEPA Authority (Issue 9)

173.

Respondents' Legal Issue 9 asks whether legally adequate environmental review under SEPA requires either denial or further mitigation of the Project or is a reviewable cause of action under SEPA. In Legal Issue 4k, resolution of which is addressed in the Board's decision on the Permit issues, Appellants challenge whether Condition 41 is sufficient mitigation and whether PSE will comply with the Condition. *Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 42-43*. Condition 41 requires that PSE ensure the sole source of natural gas comes from British Columbia or Alberta (by way of British Columbia) and prohibits TLNG from accepting natural gas if the flow on the supply pipeline past the Frederickson Gate Station is not north to south.

Ex. RA-132, pp. 6-7. Appellants are apparently arguing that PSCAA should have exercised substantive SEPA authority to further condition or deny the Permit. Appellants further argue that PSCAA's assumptions regarding 1-for-1 displacement, methane leakage and slip rates, and GWP are erroneous and do not allow decisionmakers to properly mitigate for the Project. *See Appellants' Closing Brief on SEPA Issues (Issue 2), pp. 14, 18, 21, 42.*

174.

Respondents counter that these claims (especially as to Condition 41) do not relate to the adequacy of the SEIS but rather are challenging PSCAA's failure to exercise its substantive SEPA authority. PSCAA has the authority to enforce the Permit through permit record-keeping and reporting requirements. An agency's exercise of its substantive SEPA authority is discretionary, not mandatory. *See* RCW 43.21C.060; *Glasser,* 139 Wn. App. at 740. The Board concludes that PSCAA has the discretion to exercise its substantive SEPA authority to enforce Condition 41.

175.

Any Finding of Fact deemed to be a Conclusion of Law is hereby adopted as such. Any Conclusion of Law deemed to be a Finding of Fact is hereby adopted as such. Based upon the foregoing Findings of Fact and Conclusions of Law, the Board enters the following:

VII. ORDER

The Order of Approval No. 11386 and the associated Supplemental Environmental Impact Statement is AFFIRMED. The Order of Approval No. 11386 is remanded for further action consistent with the Board's decision in Findings of Fact, Conclusions of Law, and Order on NOC Issues 4, 4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h, 4i, 4j, 4k, 4o, 4p, 4u, 6, and 8.

SO ORDERED this 19th day of November, 2021.

POLLUTION CONTROL HEARINGS BOARD

NEIL L. WISE, Board Chair

CAROLINA SUN-WIDROW, Member

MICHELLE GONZALEZ, Member

HEATHER C. FRANCKS, Presiding
Administrative Appeals Judge

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

ADVOCATES FOR A CLEANER TACOMA, SIERRA CLUB, WASHINGTON ENVIRONMENTAL COUNCIL, WASHINGTON PHYSICIANS FOR SOCIAL RESPONSIBILITY, STAND.EARTH, and THE PUYALLUP TRIBE OF INDIANS, Appellants, v. PUGET SOUND CLEAN AIR AGENCY and PUGET SOUND ENERGY, Respondents.	PCHB No. 19-087c FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER ON NOC ISSUES 4, 4a, 4b, 4c, 4d, 4e, 4f, 4g, 4h, 4i, 4j, 4k, 4o, 4p, 4u, 6, and 8.

I. INTRODUCTION

This case concerns the Puyallup Tribe of Indians' (Tribe) and Advocates for a Cleaner Tacoma, Sierra Club, Washington Environmental Council, Washington Physicians for Social Responsibility, and Stand.Earth (collectively, ACT's) appeals of Order of Approval for Notice of Construction (NOC) No. 11386 (Permit) issued to Puget Sound Energy (PSE) by Puget Sound Clean Air Agency (PSCAA) to construct the Tacoma Liquefied Natural Gas facility (TLNG) and related equipment. The Appeals challenged both the Permit and the State Environmental Policy Act (SEPA) supplemental environmental impact statement supporting the Permit.

The administrative record in this case reflects the protracted discovery and voluminous motions filed. The ten-day hearing on the consolidated appeals took place before the Pollution

Control Hearings Board (Board) via Zoom videoconference in April 2021. The Board was comprised of Board Chair Neil L. Wise, and Members Carolina Sun-Widrow and Michelle Gonzalez. Administrative Appeals Judge Heather C. Francks presided for the Board.

At the hearing, the parties presented expert and fact witnesses for direct examination, cross-examination, and questioning by the Board members. The Board also viewed portions of certain video deposition testimony as part of the evidence in the case, and PSE counter-designated portions of deposition testimony. Approximately 1,500 exhibits were filed, of which around 350 exhibits were ultimately admitted.

At the hearing, attorneys Jan E. Hasselman and Jaimini Parekh appeared on behalf of ACT. Attorneys Geoff Bridgman, Nicholas G. Thomas, and Andrew S. Fuller appeared for the Tribe. Attorneys Tadas A. Kisielius, Joshua B. Frank, Allison Watkins Mallick, and Sterling Marchand appeared for PSE. Attorneys Jennifer A. Dold and Jennifer Elias appeared on behalf of PSCAA.

The parties agreed to present evidence on the SEPA legal issues during the first five hearing days, and to present the Permit legal issues during the remaining five hearing days. As the Board's findings of fact, conclusions of law, and order on the consolidated appeals total over 150 pages, they are divided into two documents for ease of reading. The instant findings, conclusions, and order addresses the legal issues relating to the Permit. The legal issues relating to SEPA are addressed in the Findings of Fact, Conclusions of Law and Order on Issues 2a, c, d, e, f, and 9 (State Environmental Policy Act Issues). Together they comprise the Board's sole decision in this case, which affirms the Permit and supplemental environmental impact

statement, but remands to add a condition in the Permit to install a continuous emission monitoring system to monitor SO_2 and VOC emissions from TLNG's enclosed ground flare.

II. PROCEDURAL HISTORY

On December 19, 2019, ACT and the Tribe separately appealed the Permit. The two appeals were consolidated. ACT and the Tribe will be referred to collectively as Appellants. ACT also intervened in the Tribe's appeal of the Permit. *See Order Granting Intervention*, PCHB No. 19-087c (Jan. 24, 2020).

The Presiding Officer consolidated the appeals and issued a Consolidation and Amended Prehearing Order which included the legal issues proposed by the parties. *Consolidation and Amended Prehearing Order,* PCHB No. 19-087c (Jan. 24, 2020). ACT filed a Motion for Stay, seeking a stay of the effectiveness of the Permit. The Tribe also filed a Motion for Stay of the Permit, joining ACT's Motion for Stay and providing additional reasons for a stay. PSE opposed both motions. PSCAA took no position on whether a stay should be issued in the consolidated appeal but filed a response on the issue of whether ACT or the Tribe has established a required element for obtaining a stay: the likelihood of success on the merits of the appeal. On March 17, 2020, the Board denied the Motions for Stay. *See Order Denying Motions for Stay*, PCHB No. 19-087c (March 16, 2020).

On May 6, 2020, PSE filed a Motion to Dismiss and for Partial Summary Judgment, joined in by PSCAA. The Tribe opposed PSE's Motion. ACT joined the Tribe's opposition and filed a cross motion for Partial Summary Judgment on Issue 1. The Board granted in part and denied in part PSE's Motion and denied ACT's cross motion. *See Order on Motion to Dismiss*

and for Partial Summary Judgment, PCHB No. 19-087c (March 26, 2021). The Board's order dismissed Issues 1, 3b-f, 4f (as to WAC 173-400-111 and WAC 173-400-112), 4l and 4m. Issues 4n, 4q, 4r, 4s, 4t and 5 were dismissed by agreement of the parties.

On August 3, 2020, the Tribe moved to bifurcate the SEPA issues from the non-SEPA issues on the grounds that resolution of the SEPA issues may eliminate the need for a hearing on the non-SEPA issues. The Presiding Officer denied the motion on grounds that bifurcation may result in piecemeal litigation, and continued the case to March 2021.

On November 30, 2020, PSE filed a Second Dispositive Motion. PSE moved to dismiss Issues 2a-d and 2f, 3a, 4o, p, v and w. PSCAA joined the motion. ACT and the Tribe opposed the motion. The Board granted in part and denied in part PSE's Second Dispositive Motion, granting Summary Judgment as to Issues 2b and 3a, and denying Summary Judgment as to Issues 2a, 2c, 2d, 2f, 4o and 4p. *See Order on PSE's Second Dispositive Motion,* PCHB No. 19-087c (March 26, 2021). Issues 4v and 4w were dismissed by agreement of the parties.

On January 6, 2021, the Tribe renewed its Motion to Bifurcate the SEPA issues from the Permit issues, to continue the hearing on the Permit issues, to allow time to complete discovery, and for a stay of the Permit. The Presiding Officer denied the motion, ruling, among other things, that bifurcation may result in piecemeal litigation. In the course of the briefing on the Tribe's motion, a two-week block of hearing time became available in the Board's calendar and all parties agreed to continue the case from March 2021 to April 2021.

The parties filed numerous Motions in Limine before hearing, as well as motions related to the order of witness testimony and the use of videotaped deposition testimony of corporate representatives and former employees.

The hearing took place on April 12-16, 20-23, and 27, 2021, by Zoom videoconference. On May 28, 2021, the parties filed closing briefs. On June 30, 2021, ACT submitted *Washington State Dairy Federation v. Dep't of Ecology,* 18 Wn. App. 2d 259, 490 P.3d 290 (2021), as supplemental authority on consideration of climate change.

III. LEGAL ISSUES

The following legal issues proceeded to hearing, grouped into SEPA issues and Permit issues: [1]

SEPA Issues

2. Whether the supplemental environmental impact statement ("SEIS") assessing lifecycle greenhouse gas emissions that supported the Order of Approval was arbitrary, unreasonable, incorrect, or otherwise not in compliance with the State Environmental Policy Act ("SEPA"), including but not limited to the following:

   a. The SEIS relies on an incorrect and unsupported claim of 1-for-1 fuel displacement, and an assumption that fuel use will not change over 40 years, that masks the greenhouse gas ("GHG") impacts of the Order of Approval.

   c. The SEIS fails to acknowledge that maintenance of high-GHG-emissions status quo for the lifetime of the project is a "significant' impact under SEPA.

   d. The SEIS relies on displacement and/or mitigation that is unavailable under the project as currently configured, and otherwise fails to assess the current configuration of the project.

[1] Issue 2b was dismissed on summary judgment. *See Order on PSE's Second Dispositive Motion,* PCHB No. 19-087c (March 26, 2021).

e. The SEIS fails to properly address the facility's emissions of N2O, a potent greenhouse gas.

f. The SEIS relies on scenarios that have not undergone SEPA review.

9. Whether legally adequate environmental review under SEPA requires either denial or further mitigation of the Project or is a reviewable cause of action under SEPA.

Permit Issues

4. Whether the Puget Sound Clean Air Agency's ("PSCAA") December 10, 2019 Order of Approval ("Order of Approval") violates PSCAA Regulations, the Washington Clean Air Act (RCW Ch. 70.94), and/or the federal Clean Air Act, including but not limited to the following:

a. Whether PSCAA's conclusions concerning Tacoma LNG's emissions and the impacts from those emissions are erroneous when PSCAA relied on modeling using non- representative meteorological data.

b. Whether PSCAA's Order of Approval is premature when the design of Tacoma LNG was not yet complete and continued to change at the time PSCAA determined PSE's NOC Application was complete and when the Order of Approval was issued, and it was likely that the facility's design and its operations would need to undergo revisions, which would likely result in changes to facility details having bearing on the facility's emissions.

c. Whether PSCAA's Order of Approval is invalid, when PSCAA's decision to grant the Order of Approval was made in reliance on performance specification and process details that were not provided to PSCAA, including those from Chicago Bridge & Iron and other unidentified "vendors."

d. Whether PSCAA erred in concluding that Tacoma LNG is not a Major Source of one or more pollutants, including volatile organic compounds (VOCs)?

e. Whether PSCAA erroneously concluded that Tacoma LNG's emissions are below the Clean Air Act's regulatory thresholds, emission and air quality standards.

f. Whether PSCAA erroneously concluded that the emissions from Tacoma LNG will not violate WAC 173-400-113 (i.e., not cause or contribute to a violation of any ambient air quality standard).

g. Whether PSCAA erroneously concluded that Tacoma LNG's emissions will not exceed applicable acceptable source impact levels (ASIL).

h. Whether PSCAA erroneously concluded that Tacoma LNG's emissions will not exceed applicable small quantity emission rate (SQER) limits.

i. Whether PSCAA's Order of Approval is invalid, where a first-tier ambient concentration screening analysis was performed before all emissions of HAPs and TAPs from the flare were estimated.

j. Whether PSCAA violated WAC 173-460-060 by failing to require a demonstration that Tacoma LNG will employ tBACT for all TAPs for which the increase in emissions will exceed de minimis emission values found in WAC 173-460-150.

k. Whether the Order of Approval's requirement that "the sole source of natural gas supply used in all operations at the Tacoma LNG facility comes from British Columbia or Alberta, Canada" is enforceable.

o. Whether PSCAA's Order of Approval incorrectly fails to include the requirements of NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.) relating to the handling of acid gas from the facility.

p. Whether PSCAA's Order of Approval incorrectly fails to include a requirement that Tacoma LNG monitor and control fugitive GHG and VOC emissions in accordance with NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.).

u. Did PSCAA violate the Clean Air Act by allowing a known source of significant amounts of pollution to achieve BACT through "good combustion practices", when PSCAA fails to define that standard and when there are known and reasonably available methods which, if implemented, would better ensure the facility is not violating pollution standards?

6. Whether PSCAA's permitting decision is invalid in light of its failure to engage in formal government-to-government consultation with the Puyallup Tribe of Indians.

8. Does the Board have jurisdiction over issues raised in Advocates for a Cleaner Tacoma et al.'s appeal and the Puyallup Tribe's appeal that are outside of the Board's jurisdiction in this permit appeal, including: facial challenge to Agency regulations and/or provisions of the Washington Clean Air Act, Ch. 70.94 et seq. ("Act"); alleged constitutional, Civil Rights Act, or treaty-based claims; challenges to an alleged failure to pursue enforcement; challenge to elements of the City of Tacoma's 2015 Final

Environmental Impact Statement ("2015 FEIS") not properly before this Board; and/or issues outside of the Board's jurisdiction established in Ch. 43.21B et seq.?

Having received the sworn testimony of witnesses, admitted exhibits, and heard argument on behalf of the parties, the Board makes the following:

IV. GENERAL FINDINGS OF FACT

A. Appellants' Witness

1.

Dr. Ranajit Sahu has a Bachelor of Science in Mechanical Engineering, and a master's and Ph.D. in Mechanical and Combustion Specialization from the California Institute of Technology. Dr. Sahu is currently an independent consultant focusing on air quality requirements for private, public, and nonprofit clients. He was the Appellants' sole expert witness on the Permit issues, opining on, among other things, the deficiencies concerning the potential to emit calculations, dispersion modeling, use of meteorological data in the dispersion modeling, and Best Available Control Technology (BACT) determinations for pollutant emissions. *Ex. APTI-587 (Sahu Amended Pre-filed Testimony); Sahu Testimony at 1551-1748, 2549-2604.*[2]

B. PSCAA Witnesses

2.

Steven Van Slyke is the Director of Compliance at PSCAA. Van Slyke is a registered professional engineer in Washington with over 38 years of air quality experience. During his time with PSCAA, he has reviewed and approved over 1,500 Permit applications. Van Slyke has

[2] Witness hearing testimony citations refer to transcript pages.

a bachelor's in Chemical Engineering. *Ex. RA-1.* He testified on the Permitting process, federal and state regulatory compliance issues, and the Permit conditions. He also addressed Dr. Sahu's criticisms of the Permit and PSCAA's review of the Permit application.

3.

Carole Cenci is a Senior Engineer with the PSCAA. Cenci has a Bachelor of Science degree in Mechanical Engineering and has been a licensed engineer since 1990. Her responsibilities with PSCAA include conducting SEPA reviews of project applications. *Ex. RA-2*.

4.

Ralph Munoz has been an engineer with PSCAA for approximately five years and served as PSCAA's Permitting Engineer for TLNG. Munoz's responsibilities include reviewing incoming Permit applications and determining the adequacy of proposed emissions control technology as well as the applicability of various regulations. Among others at PSCAA, Munoz reviewed PSE's Permit application. *Ex. RA-3.*

C. PSE Witnesses

5.

Keith Faretra served as PSE's Permit Application Manager and was responsible for settling the contents of the application for submittal to PSCAA. Including the TLNG Permit application, Faretra signed "almost all" of the various submittals to PSCAA and served as PSE's liaison with PSCAA and PSE's permitting consultants, including Landau Associates, the firm retained by PSE to prepare the Permit application. *Faretra Testimony at 1531-1532.*

6.

William Donahue is the Manager of Natural Gas Resources for PSE. Donahue is responsible for managing the entire portfolio of natural gas transportation contracts, which includes identifying opportunities for PSE to provide energy services. Prior to working for PSE, Donahue was employed by Northwest Pipeline. He testified to the infrastructure of the incoming natural gas to TLNG, explained how natural gas composition changes in the production pipeline are controlled, the timing and type of incoming feed gas changes relevant to this case, and the location of where TLNG would receive the incoming feed gas. *Donahue Testimony at 1790-1817.*

7.

Matthew Stobart is a Project Engineering Manager with Chicago Bridge & Iron (CB&I), the company that designed and constructed TLNG. Stobart served as the technical liaison between PSE and CB&I. *Stobart Testimony at 1991.* Stobart has a Bachelor of Science degree in Electrical Engineering and has been working for CB&I for approximately 37 years. Stobart has participated in the construction of 12 to 15 LNG facilities. He testified on TLNG's facility design, design and process changes, UniSim modeling, and bracketing cases. *Id. at 966-1048, 1990-2078, 2613-2617.*

8.

Pamela Berner is an employee of the NAES Corporation. NAES has been contracted by PSE to manage TLNG's operation. Berner's responsibilities as to TLNG include implementing permit compliance systems, developing a leak detection and repair (LDAR) plan, and a

monitoring and testing program. Berner drafted the LDAR plan at issue. *Berner Testimony at 1461-1474.*

9.

Louis Kalani is the Senior Project Manager for LFG Specialties (LFG) (owned by APTIM), which designs and manufactures flares. Kalani designed and built the TLNG flare. During his almost 30 years at LFG, Kalani has participated in the design and manufacture of nearly 1,200 flares. LFG started developing low nitrogen oxide (NOx) flares like the one at issue in 2014 to improve destruction efficiency of hydrocarbons and reducing NOx and carbon monoxide emissions. *Kalani Testimony at 2078-80.*

10.

Dr. Joseph Smith is a Professor of Chemical and Biochemical Engineering at the University of Missouri. Dr. Smith has a bachelor's, master's, and Ph.D. in Chemical Engineering. Combustion technology and industrial flare design and operation are Dr. Smith's area of academic and professional expertise. *Ex. PSE-649 (Smith Pre-filed Testimony)*. Dr. Smith testified to TLNG's flare design and operation, and to the modeling and calculations concerning the flare's destruction rate efficiency. *Id.; Smith Testimony at 2125-2195.*

11.

Eri Ottersburg has a bachelor's in Biomedical Engineering. Ottersburg is a Senior Scientist for Landau Associates. Ottersburg has 20 years of experience in air quality permitting and dispersion modeling, mostly gained from working on projects in Washington state. She was very involved in preparing the Permit application and is listed as "Primary Author" on the

application. *Ex. RA-21, p. 5.* She also personally oversaw the preparation of TLNG's emissions inventory and air dispersion modeling, which she testified on extensively. *Ottersburg Testimony at 2197-2200, 220; see also, Ex. PSE-374, Attach. B (Libicki Pre-filed Testimony).*

12.

Dr. Laura Kinner has a Bachelor of Science in Chemistry and a Ph.D. in Analytical Chemistry. Dr. Kinner's past research focused on testing of hazardous waste incinerators. She currently works for Emissions Monitoring Inc, where she provides consulting services to industrial clients in the area of stack testing. In her 35 years working in the stack testing field, she has completed over 900 stack testing programs and 50 continuous emissions monitoring system (CEMS) installation projects. PSE retained Dr. Kinner in November 2020 to assist with TLNG's stack testing program and to investigate the feasibility of installing CEMS on TLNG's flare. Dr. Kinner generally explained how TLNG's monitoring and flare stack testing required by the permit would ensure compliance with emission limits. *Kinner Testimony at 2392-95; see also Ex. PSE-374, Attach. C (Libicki Pre-filed Testimony).*

13.

Dr. Shari Libicki has a Bachelor of Science in Engineering and Chemical Engineering, and a master's and Ph.D. in Chemical Engineering. Dr. Libicki is currently a Principal at Ramboll US Corporation, where she has been employed for 30 years as an air quality professional doing air quality permitting, dispersion modeling, exposure assessments for risk assessments, and emission estimates. She testified as an expert to the review and modeling that she performed for this case, including dispersion modeling of Dr. Smith's stack parameters,

dispersion modeling of worst case (unrealistic) flare temperatures and exit velocities, dispersion modeling of corrected wind data, review of Landau's dispersion modeling, review of Landau's estimates of TLNG's VOC emissions, and VOC emission estimates using unrealistic inputs. *Ex. PSE-374 (Libicki Pre-filed Testimony); Libicki Testimony at 2415-2531.*

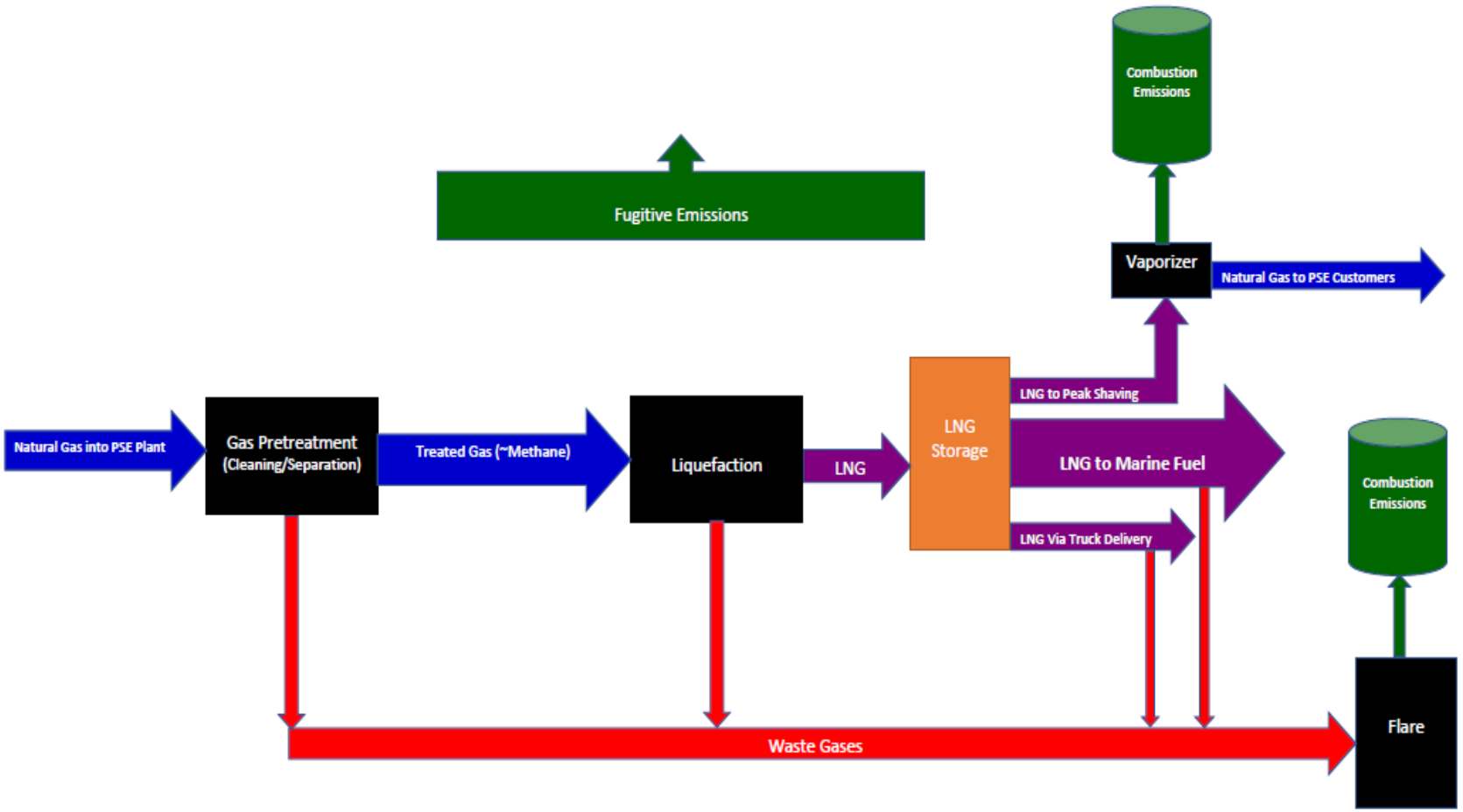
14.

CB&I designed and constructed TLNG, including identifying and selecting equipment vendors. *Stobart Testimony at 1992*. TLNG will emit criteria air pollutants, toxic and hazardous air pollutants, volatile organic compounds, and greenhouse gases. *Ex. RA-38, pp. 97-100.* Below is a simplified process flow diagram of TNLG. *Ex. RA-15.*

15.

The diagram below illustrates the different stages that natural gas from the pipeline goes through in the liquefaction process resulting in LNG for marine fuel or converting back to natural gas for distribution to PSE customers during periods of high demand (peak shaving). The diagram also shows the main components and the emissions attributed to each step of the process that is subject to regulation under the permit.

Simplified Process Flow Diagram - Puget Sound Energy Tacoma Liquefied Natural Gas Plant



16.

The primary emission units at TLNG are the enclosed ground flare and the vaporizer. The flare would produce more emissions because the vaporizer is limited to a maximum of 10 days per year of operation. *Ex. RA-68, p. 34; Ottersburg Testimony at 2216*. The flare has four burners to combust waste gases generated by the pretreatment, liquification, and fuel transmitting processes. *Ex. RA-15*. PSE contracted with LFG to design and build the flare. PSE provided specifications for flare height, waste gas composition, and a desired destruction rate efficiency for waste gases from which LFG designed and built the flare. *Stobart Testimony at 1992-93.*

17.

CB&I used UniSim, a commercially available process simulator, to design TLNG. When a simulation is run in UniSim, it produces an output file or report. In this case, a heat and material balance (or heat and mass balance) from a UniSim TLNG simulation was produced containing both inputs and outputs. *Stobart Testimony at 2060-62*. Relevant here, UniSim was used to develop bracketing cases of operating scenarios at TLNG that affect the type and amount of waste gases going to the flare. But certain processes are omitted from the UniSim model here. For example, UniSim did not address the fate of BTEX[3] coming into TLNG through feed gas and did not address other sulfur compounds except hydrogen sulfide. *Id. at 2062.*

[3] BTEX refer to the chemicals benzene, toluene, ethylbenzene and xylene.

18.

A vaporizer is used to re-gasify LNG so that it can be introduced into PSE's distribution network. *Ex. RA-38, p. 54*. The vaporizer would consist of a warm water bath that heats the LNG to a gaseous state suitable for use in the pipeline. *Id.* Because only one pipeline would convey gas to and from TLNG, the LNG liquefaction system cannot operate when the vaporizer is operating. *Ottersburg Testimony at 2218.*

19.

Broadly, an air permitting agency must issue an NOC Permit if the new source of emissions: 1) meets all applicable emissions standards under the federal and state Clean Air Act, and implementing regulations, 2) uses BACT for all new pollutants, and 3) the emissions from the new source will not cause or contribute to a violation of any ambient air quality standards. *See ¶ 32*.[4]

D. Potential to Emit

20.

To estimate TLNG's emissions and determine whether they would comply with applicable emission limits under the law, PSE and PSCAA had to calculate TLNG's potential to emit certain pollutants.[5] *Ottersburg Testimony at 2216-17*; *Munoz Testimony at 1308-09*. In the

[4] Paragraph references are to internal paragraph numbers within this Order.

[5] WAC 173-400-030(76) defines "[p]otential to emit" as "the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design only if the limitation or the effect it would have on emissions is enforceable. Secondary emissions do not count in determining the potential to emit of a source."

context of PSE's Permit application, a project's potential to emit is based on the physical design of the source along with pollution controls or conditions imposed by the agency. *Van Slyke Testimony at 1859-61*. Calculating total emissions for TLNG, or creating an emissions inventory, entails identifying the emission units for a facility on a pollutant by pollutant basis (flare, vaporizer, fugitive emissions), applying emission factors (using published information from government agency and vendor), and then adding the values together to obtain a facility's total emissions. *Ottersburg Testimony at 2216-19; Ex. PSE-75*.

21.

PSCAA and PSE (through Landau Associates) used AP-42 emissions factors to calculate TLNG's particulate matter ($PM_{2.5}$) emissions, a criteria air pollutant, as well as hazardous air pollutants and toxic air pollutants.[6] Emission factors are numeric values used to estimate emissions from a source like TLNG that has not yet been built and thus cannot be tested. *Ex. PSE-374, p. 25 (Libicki Pre-filed Testimony); Munoz Testimony at 1310-11, 1318-19; Ex. RA-68, p. 37*.

22.

PSE plans to operate TLNG year-round, except for seven days per year when liquefaction and vaporization operations would be shut down for maintenance. *Ex. R-68, p. 31.* As discussed above, bracketing cases are various facility operating scenarios created by CB&I which may arise during TLNG's day-to-day operations. Brackets identify worst case emissions rates for

[6] AP-42 emissions factors refer to the U.S. Environmental Protection Agency's document AP-42, which is a compilation of air pollutant emission factors. *See Mazdak Int'l, Inc. v. Northwest Clean Air Agency*, PCHB No. 13-008, p. 10 (Oct. 8, 2013).

each pollutant. *Ottersburg Testimony at 2224; Ex. PSE-374, pp. 104-143 (Libicki Pre-filed Testimony)*. Landau understood the bracketing cases to be the different processing rates at TLNG represented by a range of gas flow rate and gas characteristics going to the flare, such as heat content of the different gases. *Ottersburg Testimony at 2223-24; Ex. RA-68, pp. 41-42*. Landau and Dr. Libicki, air quality experts who testified on behalf of PSE, used these bracketing cases to calculate TLNG's potential to emit and to conduct dispersion modeling (see below).

E. Dispersion Modeling

23.

Air dispersion modeling is the process of considering the meteorology, terrain, and components of a project, and then analyzing those factors with a project's emissions inventory in order to predict the resulting potential concentrations of a given pollutant offsite. *Van Slyke Testimony at 1862-64; Ottersburg Testimony at 2206*. Dispersion models are used to determine compliance with National Ambient Air Quality Standards, and other requirements in New Source Review. *Van Slyke Testimony at 1862-64; Exs. RA-23, RA-107, RA-143*. Landau Associates performed the dispersion modeling for PSE.

F. Timeline of Permit Application Process

24.

PSE submitted the application for Permit No. 11386 to PSCAA on May 22, 2017. PSCAA issued the Order of Approval authorizing TLNG's emissions on December 10, 2019. The timing of numerous actions relevant to the process of reviewing the Permit application were presented through exhibits and testimony from numerous witnesses. For brevity, the timeline

will not be set out in this decision as they are fully described in PSCAA's NOC worksheet. *Ex. RA-68 (excerpted timeline in PSCAA's Prehearing Brief, p. 13).*[7]

G. Order of Approval on NOC application No. 11386 (Permit)

25.

Broadly, PSCAA reviewed the Permit application to identify the amount of criteria air pollutants, volatile organic compounds, hazardous air pollutants, and toxic air pollutants that TLNG will emit, and to determine whether the emissions and their impacts on ambient air complied with applicable limits. *Ex. RA-68, p. 31*.

26.

The Permit approved TLNG's equipment (flare, vaporizer, LNG storage tank, and two pretreatment heaters), set emission limits for several pollutants through BACT, and set forth 48 conditions that work together to constrain and control TLNG's operations. Those conditions include emission limits for specific pollutants, equipment or process specific conditions, and general conditions applicable to all equipment. *Munoz Testimony at 1333-34; Ex. RA-132*. The Permit also included standard Condition No. 1, which requires PSE to install and establish the approved equipment or process "in accordance with the plans and specification on file" at PSCAA. *Ex. RA-132; Van Slyke Testimony at 464-65*.

[7] Citations to page numbers in the parties' briefs refer to pdf page numbers.

V. GENERAL CONCLUSIONS OF LAW

27.

The Board has jurisdiction over the subject matter and the parties pursuant to RCW 43.21B.110. As the parties appealing the SEIS and order approving the Permit application, the Tribe and ACT have the burden of proof. WAC 371-08-485(3); *MYTAPN v. Dep't of Ecology*, PCHB No. 10-162, COL 1 (July 25, 2012).

28.

The Board's standard and scope of review is *de novo*. WAC 371-08-485(1). The Board makes findings of facts based on a preponderance of the evidence. WAC 371-08-485(2). The Board gives great weight to PSCAA's interpretation of the laws it is charged with administering, and deference to PSCAA's specialized knowledge and expertise on complex scientific or technical judgments. *Port of Seattle v. Pollution Control Hr'gs Bd.*, 151 Wn.2d 568, 592-93, 90 P.3d 659 (2004); *Marine Vacuum Svcs. v. Puget Sound Clean Air Agency*, PCHB No. 16-130c, COL 2 (Feb. 8, 2018). The Board also gives deference to PSCAA's interpretations of Permit conditions that involve technical or scientific judgments. *City of Snoqualmie v. Dep't of Ecology*, PCHB No. 14-064, p.16 (Feb. 2, 2015).

29.

Under its *de novo* scope of review, the Board can decide a case based on all of the evidence available at the time of the hearing, including additional information gathered after issuance of the challenged order. *Port of Seattle,*151 Wn.2d at 597-98; *BNSF Ry Co. v. Dep't of Ecology*, PCHB No. 11-150, p. 11 (Dec. 4, 2012). Yet considering such additional evidence

under a *de novo* standard of review does not supplant the need for an agency charged with administering an air permit program to first analyze all applicable facts and authority before issuing a decision for the parties to litigate and the Board to review. Allowing the agency to analyze such additional information allows the Board to fulfill its charge to give deference to a permitting agency's expertise on issues that involve technical or scientific judgments. *Port of Seattle*, 151 Wn.2d at 592-593; *Buxton v. Dep't of Ecology*, PCHB No. 07-033, p. 10 (Dec. 21, 2007).

30.

PSCAA regulates TLNG as a stationary source of air emissions under the New Source Review provisions in the Washington Clean Air Act, ch. 70A.15 RCW (formerly codified in ch. 70.94 RCW), its accompanying regulations (ch. 173-400 WAC), PSCAA regulations (PSCAA Regulation I, Article 6), and the federal Clean Air Act. *Van Slyke Testimony at 1826-27; Exs. RA-8, RA-11.* New source review refers to the preconstruction permitting programs of the Clean Air Act required for the construction and operation of any new stationary source of emissions. The purpose of new source review is to ensure compliance with ambient air quality standards and emission standards, and to confirm that appropriate control technologies are used. *Ex. RA-38, p. 100;* WAC 173-460-040.

31.

Emissions from TNLG are regulated through several PSCAA regulations, but the main one is the Permit review in PSCAA Regulation I, Art. 6, which expressly adopts and enforces the Washington State Department of Ecology's new source review regulations in ch. 173-400 WAC

and controls for new sources of toxic air pollutants. PSCAA Reg. I, Art. 6*; Van Slyke Testimony at 1827.*

32.

In reviewing an application to establish a new source of emissions in an attainment area, the permitting authority must issue an order of approval if it determines that the proposed new source satisfies three criteria:

1) Meet "all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, emission standards adopted under chapter 70.94 RCW and, for sources regulated by an authority, the applicable emission standards of that authority;

2) Employ BACT for all pollutants not previously emitted or whose emissions would increase as a result of the new source; and

3) Allowable emissions from the proposed new source or the increase will not cause or contribute to a violation of any ambient air quality standards.

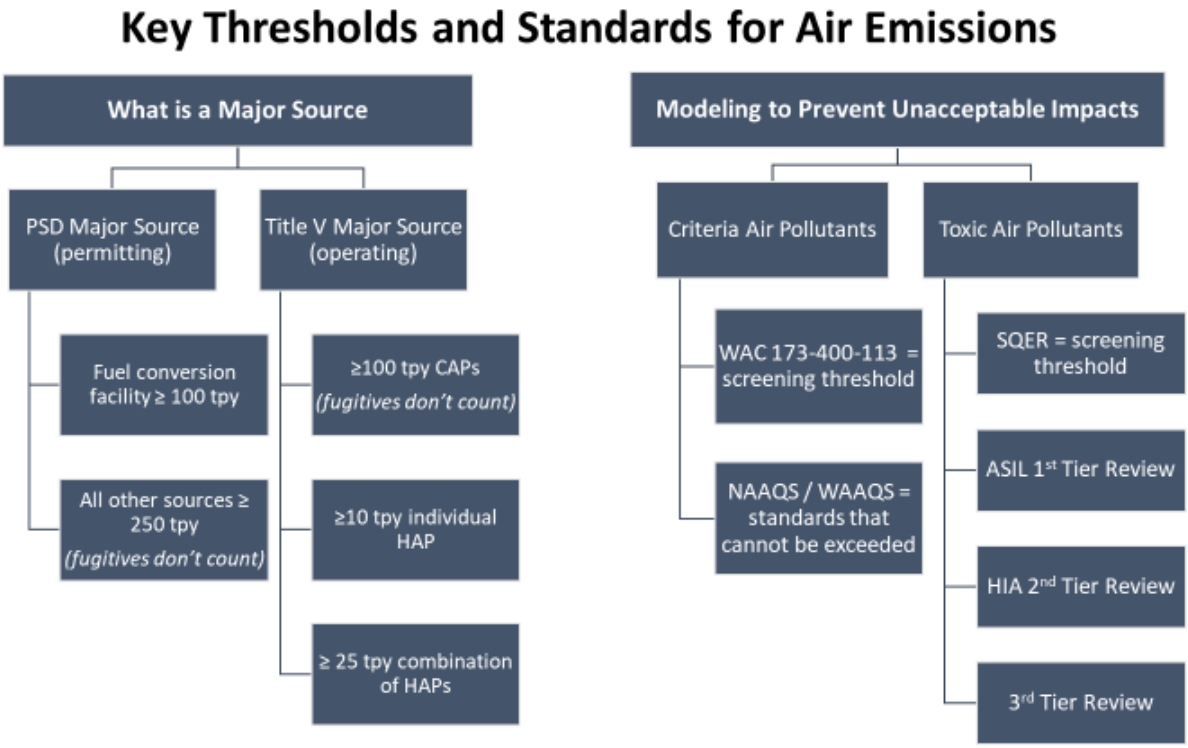
WAC 173-400-113;[8] *Van Slyke Testimony at 1828-30*.

[8] WAC 173-400-113 states in relevant part (emphasis added):

> The permitting authority that is reviewing an application to establish a new source . . . in an attainment or unclassifiable area *shall* issue an order of approval if it determines that the proposed project satisfies each of the following requirements:
> (1) The proposed new source or modification *will comply with all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, emission standards adopted under chapter 70.94 RCW and, for sources regulated by an authority, the applicable emission standards of that authority.*
> (2) The proposed new source or modification *will employ BACT* for all pollutants not previously emitted or whose emissions would increase as a result of the new source or modification. (3) Allowable emissions from the proposed new source . . . *will not cause or contribute to a violation of any ambient air quality*

33.

Most of the legal issues challenging the Permit ask whether the Permit complies with the three requirements of WAC 173-400-113. In turn, the three requirements contain standards and procedures which Appellants contend were violated. The graphic below illustrates the key regulatory thresholds and standards for air emissions governing this case.[9]



standard. If the modeled concentrations of allowable emissions from the proposed new source . . . are below the levels in Table 4a, the proposed source does not contribute to a violation of an ambient air quality standard.

[9] The graphic was presented without objection as a demonstrative during Dr. Libicki's direct testimony.

VI. FINDINGS/CONCLUSIONS BY LEGAL ISSUE

A. Meteorological Data (Issue 4a)

34.

Appellants presented Dr. Sahu's testimony to challenge in Issue 4a the meteorological data used as inputs in the air dispersion modeling, claiming that on-site meteorological data should have been collected rather than relying on data collected from nearby monitors. The meteorological data and dispersion modeling was used to evaluate the toxic air pollutant impacts and to determine whether TLNG's criteria air pollutant emissions will cause or contribute to a violation of National Ambient Air Quality Standards. *Van Slyke Testimony at 1868; Ottersburg Testimony at 2237-39; Ex. PSE-374, pp. 105-06 (Libicki Pre-filed Testimony)*. Thus, resolution of whether PSCAA used the appropriate meteorological data in Issue 4a affects the analysis of toxic air pollutant emissions in Legal Issues 4g, 4h, 4i, as well as the legal issues concerning criteria air pollutants in Issues 4e and 4f.

35.

Not all Permit applications require air dispersion modeling if emissions are low enough. Consistent with U.S. Environmental Protection Agency (EPA) guidance, meteorological data is not required to be included in air dispersion modeling; but if included, it is used to improve the accuracy of the predicted impact analysis. *Van Slyke Testimony at 1863-64, 1866*. Because meteorological data is often not available for the exact location of a project site, dispersion models often rely on representative meteorological data from nearby sites. *Ottersburg Testimony at 2241-45; Ex. PSE-374, p. 90 (Libicki Pre-filed Testimony).*

36.

Meteorological data include hourly wind speed, hourly wind direction and additional parameters such as surface characteristics (surface roughness), which are inputs in air dispersion modeling that may affect modeling results. *Ex. APTI-587, p. 28 (Sahu Amended Pre-filed Testimony); Van Slyke Testimony at 1397*.

37.

Applicable EPA guidance states that meteorological data should be "adequately representative" and may be site specific data. *See* 40 C.F.R. § 51, App. W, § 8.4.1(c) (2008) (Appendix A of EPA's *Guideline on Air Quality Models* (also published as Appendix W), hyperlinked in *Ex. RA-107*). Relevant here, offsite meteorological data may be adequately representative; conversely, meteorological data collected on a source's property does not by itself guarantee adequate representativeness. *Id*. at § 8.4.4.1(a), (c).

38.

Surface characteristics such as terrain, surface roughness, and distance are factors in determining whether meteorological data is representative of conditions at the TLNG site. *Ottersburg Testimony at 2241-45; Libicki Testimony at 2444; Ex. PSE-374, p. 93 (Libicki Pre-filed Testimony)*. PSCAA's Engineer Munoz testified that engineering judgment is used to determine whether meteorological data from a particular monitor is sufficiently representative of where the source will be located for air dispersion modeling use purposes. *Munoz Testimony at 1304.*

39.

PSE collected wind speed and wind direction data for a period of five years from the PSCAA Tideflats monitor located about a mile southeast from the TLNG project site. *Ex. APTI-587, p. 29 (Sahu Amended Pre-filed Testimony); Libicki Testimony at 2444-45*. Missing hours of wind speed and direction were supplemented with data from other monitors located at Tacoma South L Street, Seatac, and McChord Air force Base. *Ex. APTI-587, p. 29*. Supplementing missing hours of meteorological data with adequately representative alternative data, such as National Weather Service data, is acceptable and consistent with common practice and EPA guidance. *Ex. PSE-374, pp. 92-93 (Libicki Pre-filed Testimony).*

40.

PSCAA and PSE followed the applicable EPA guidance when selecting site specific meteorological data for air quality dispersion modeling. *See* Appendix A of EPA's *Guideline on Air Quality Models* (also published as Appendix W) of 40 C.F.R. Part 51; *Ex. PSE-373, p. 1 (Libicki Pre-filed Testimony Addendum); Libicki Testimony at 2444; Ex. RA-107;*[10] *Van Slyke Testimony at 1864-67*.

[10] EPA guidance states that

> [t]he meteorological data used as input to a dispersion model should be selected on the basis of spatial and climatological (temporal) representativeness as well as the ability of the individual parameters selected to characterize the transport and dispersion conditions in the area of concern.

EPA's Guideline on Air Quality Models, Appendix A of 40 C.F.R. part 51, 82 Fed. Reg 5182 p. 5222, Section 8.4.4.1, (Jan. 17, 2017) (hyperlink available in *Ex. RA-107*). The Guideline further states:

> Spatial or geographical representativeness is best achieved by collection of all of the needed model input data in close proximity to the actual site of the source(s). Site-specific measured data are, therefore, preferred as model input, provided that appropriate instrumentation and quality assurance procedures are followed, and that the data collected are adequately representative (free from inappropriate local or microscale influences) and compatible with the input requirements of the model to be used. It should be

41.

As part of the air dispersion modeling for PSE, Landau Associates evaluated surface characteristics and wind speed when selecting the Tideflats monitoring data as representative for the TLNG site. *Ottersburg Testimony at 2242-45; Ex. RA-23, p. 12.* Dr. Libicki agreed with PSCAA that the Tideflats meteorological data were both representative and site specific to provide a reliable basis for dispersion modeling – the Tideflats monitoring station is within one mile of the TLNG site, on the same pier, has similar terrain and land use, and has similar distance to over-water influence. *Libicki Testimony at 2443-44; Ex. PSE-374, p. 93 (Libicki Pre-filed Testimony)*.

42.

Appellants presented Dr. Sahu's opinion that wind fields in the Port of Tacoma are complex and therefore meteorological data from the Tideflats station and others cannot be site specific and representative. *Sahu Testimony at 1717, 2584-86*. Dr. Sahu also stated that meteorological data should have been collected and used in dispersion modeling from an onsite monitor. *Ex. APTI-587, p. 28 (Sahu Amended Pre-filed Testimony).*

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noted that, while site specific measurements are frequently made ''on-property'' (i.e., on the source's premises), *acquisition of adequately representative site specific data does not preclude collection of data from a location off property. Conversely, collection of meteorological data on a source's property does not of itself guarantee adequate representativeness* . . . Site-specific data should always be reviewed for representativeness and adequacy by an experienced meteorologist, atmospheric scientist, or other qualified scientist in consultation with the appropriate reviewing authority (paragraph 3.0(b)).

Id. at p. 5223 (*emphasis added*).

43.

To support his opinion of complex wind fields, Dr. Sahu compared hourly wind speed and wind direction data from the Tideflats monitor with the same parameters from a nearby National Oceanic and Atmospheric Administration "buoy" monitor located closer to the TLNG site.[11] The TLNG site is located between the buoy monitor and the Tideflats monitor. *Ex. APTI-587, pp. 29-30 (Sahu Amended Pre-filed Testimony).* Dr. Sahu's comparison purportedly showed wide variability in wind speed and directions recorded at the two closely located stations. *Id*., *pp. 29-37*. However, PSE's expert Dr. Libicki thoroughly analyzed and explained the reason for the wide variability in Dr. Sahu's comparison – the comparison failed to adjust for the fact that the Tideflats and buoy monitors reported data in different time zones and thus did not compare data hour by hour, but instead compared data recorded eight hours apart. The error affected Dr. Sahu's results because winds differ significantly when measured hours apart, especially at locations near water. Once Dr. Libicki corrected the time zone error, there was little difference in wind speed between the two monitors. Thus, similar wind speed at both the buoy and Tideflats monitors located closely supports Dr. Libicki's opinion that the Tideflats meteorological data was representative of the TLNG site. *Ex. PSE-373, pp. 1-6 (Libicki Pre-filed Testimony Addendum).*

[11] Although referred to as the buoy monitor throughout the hearing, the monitor is located on land at the tip of a pier with trees growing nearby. *Libicki Testimony at 2445-46; Ex. PSE-374, pp. 94-95 (Libicki Pre-filed Testimony)*.

44.

On April 8, 2021, PSE informed the parties that the air dispersion modeling it had submitted to PSCAA, which was considered in the review that led to issuance of the permit, had erroneously input Tideflats monitor wind directions that was reversed 180 degrees.[12] *Munoz Testimony at 1295-96; Van Slyke Testimony at 1868*. Thus, on April 12, 2021, the first day of hearing, PSE submitted a revised air dispersion modeling with the correct wind directions. *Ex. RA-143; Cenci Testimony at 1267-70, 1275-76*. Dr. Libicki performed the revised dispersion analysis. *Ex. PSE-373, pp. 6-19 (Libicki Pre-filed Testimony Addendum)*.

45.

In an April 14, 2021, letter to PSE, PSCAA acknowledged that on April 12, 2021, it had received the additional revised analysis (and the summary tables):

> The original dispersion modeling analysis was reviewed and considered in the process that led to the issuance of [OOA] No. 11386 on December 10, 2019. The agency has completed its review of the clarifying … dispersion modeling analysis[.] This analysis was submitted because PSE became aware that the wind directions used in the original analysis had been reversed by 180 degrees when running the dispersion models.

Ex. RA-143. PSCAA reviewed the revised modeling and found minimal differences in the results between the original and revised dispersion modeling, with no change in the criteria pollutant thresholds in WAC 173-400-113 and the TAP thresholds in WAC 173-460.[13] *Van Slyke Testimony at 1870; Ex. RA-143*. The revised modeling also did not change the BACT or

[12] The error was caused by a spreadsheet equation not properly formatting the wind direction data. *Libicki Testimony at 2452; Ottersburg Testimony at 2249-50*.

[13] "Toxic air pollutant (TAP)" or "toxic air contaminant" means any toxic air pollutant listed in WAC 173-460-150. *See* WAC 173-400-030(96).

tBACT determinations since those determinations are separate and distinct from ambient air quality impact analysis. Finally, PSCAA also determined that the revised modeling did not create a reason to revise any specific approval conditions in the Permit. *Ex. RA-143*. PSCAA noted that the additional revised air dispersion modeling will be added as additional information to the Permit application file as "part of the plans and specifications on file with the Agency, as identified in Condition No. 1 of the order of approval." *Ex. RA-143, p. 2.*

46.

Dr. Libicki explained in detail that the wind direction error in the original air dispersion modeling did not affect either the results of the original dispersion modeling of toxic air pollutants and criteria air pollutants for compliance with applicable standards. She prepared tables showing the modeled concentrations of those pollutants with the reversed wind direction data and compared them to tables showing the same with the correct wind direction data. *Ex. PSE-373, pp. 6-10 (Libicki Pre-filed Testimony Addendum); Libicki Testimony at 2455-58.*

47.

Dr. Libicki also redid air dispersion modeling with the correct wind direction data using stack parameters for flare temperature and exit velocity from Dr. Smith, and the results for those parameters were the same as the original air dispersion modeling. *Libicki Testimony at 2458; Ex. PSE-373, pp. 11-18 (Libicki Pre-filed Testimony Addendum)*.

48.

Dr. Libicki also testified that the wind meteorological data in the original dispersion modeling did not change her opinion that TLNG is not a major source of emissions because it is

the mass quantity of emissions (expressed in tons per year) that determines whether a facility is a major source. In contrast, dispersion modeling models concentrations of specific emissions and do not affect the size or quantity of the source of emissions. *Libicki Testimony at 2459*.

49.

Dr. Sahu testified that he also adjusted the wind speed and direction hour by hour but found nothing that would change his conclusion that the meteorological data used was non-representative. *Sahu Testimony at 1715-16*. Weighing the testimony of Dr. Sahu and Dr. Libicki's extensive analysis and testimony, the Board finds that PSCAA relied on representative meteorological data in modeling air dispersion emissions. The Board also finds that the revised air dispersion modeling with the correct wind data did not affect the conclusion in the original dispersion modeling that emissions of criteria air pollutants and hazardous air pollutants will not exceed applicable limits.

50.

For the first time in the post-hearing brief, Appellants argue that the Board should remand the Permit because PSCAA approved it with flawed air dispersion modeling. They contend that Dr. Libicki's new modeling fails to cure the defect that the Permit was obtained with incorrect wind direction data for four reasons. First, Appellants argue that the new modeling was not presented for public comment and would violate the Clean Air Act. *See The Puyallup Tribe of Indians' Closing Statement, pp. 13-14.* For support, Appellants cite provisions from federal regulations pertaining to public comment requirements for state operating programs

for *major source* of emissions. *See, e.g.*, 40 C.F.R. § 70.1. As analyzed in ¶¶ 65-105, TLNG is not a major source.

51.

Appellants also cite the definition for completeness in WAC 173-400-111(1)(b) and the public notice components for air quality actions in WAC 173-400-171(6)(a). Similar to the analysis in ¶¶ 55-63, the definition of application completeness simply does not require that the revised air modeling be included in the application or made available for public comment - all it requires is sufficient information to enable PSCAA to undertake review. Moreover, Appellants provide no authority for their claim that noncompliance with the public notice provisions require their requested remedy of reversal of the Permit and remand to PSCAA for "a full, transparent, and public review of PSE's permit application do-over." *The Puyallup Tribe of Indians' Closing Statement at 16*. As discussed below, Appellants agreed to proceeding with the hearing on the Permit the second week so that it would have time to analyze the new modeling.

52.

Second, Appellants claim it is unfair to rely on Dr. Libicki's new modeling to affirm the Permit when it was created during hearing, and where Appellants' expert, Dr. Sahu, did not have sufficient opportunity to analyze it and develop rebuttal opinions. The Board disagrees because counsel for the Tribe requested, and the Presiding granted, rebuttal testimony from Dr. Sahu specifically to address the reversed wind evidence, among other things. *Hearing Transcript Day 10 at 2535, 2538*. Moreover, the procedural history surrounding the new modeling in ¶¶ 44-45 and below, belies Appellants' claim of unfair process. Upon being notified of the correct wind

data, all parties agreed to proceed with trying the SEPA issues the first week of hearing, and then not to resume hearing until the following Tuesday so the parties could spend the intervening three days analyzing the new modeling before resuming with hearing on the air permit issues. No party asked to continue the hearing beyond what was agreed. Dr. Sahu, the Appellants' expert, reviewed the new modeling with the correct wind data and subsequently testified regarding the correct wind data. Under its *de novo* review, the Board is authorized to take in evidence during hearing that was not before PSCAA when it reviewed PSE's Permit application, affording the Board opportunity to consider PSCAA's review of that new evidence using PSCAA's technical expertise and judgment.[14] *See Port of Seattle*, 151 Wn.2d at 594-95; 597-99; *cf*., *Painted Summer Hills, LLC v. Dep't of Ecology*, PCHB No. 09-006, pp. 13-16 (Oct. 6, 2011) (concluding that state agency not precluded from asserting before the Board new reasons to support its initial decision when those reasons were not explicitly identified in agency's initial decision); *see also, K.P. McNamara Nw., Inc. v. Dep't of Ecology*, 173 Wn. App. 104, 108, 292 P.3d 812 (2013) (due process satisfied if administrative adjudicator bases findings against a party only on matters brought to the party's attention in complaint *or* during administrative hearing that are fully litigated).

[14] Appellants assert that the situation here created by the newly discovered wind flip data and ensuing modeling using the correct wind data is precisely the moving target problem which the Court in *Port of Seattle* identified (but rejected as not implicated in that case). The Board disagrees. The "moving target" problem is also not implicated here because the revised modeling was done as soon as the wind error was discovered. There is no evidence that Respondents willfully waited past the discovery deadline to present the data and revised air modeling. In short, the Board's consideration of the wind evidence under its *de novo* review authority as construed in *Port of Seattle* was an appropriate and efficient way to address evidence occasioned by a spreadsheet mistake and discovered right before hearing.

53.

Third, the Tribe argues that discovery of the reversed wind data days before hearing proves that PSCAA failed to properly review the original Permit application. The Board disagrees as the evidence does not support such a conclusion.[15] In any event, the Board reviews the Permit *de novo*, and after hearing extensive testimony regarding both the original and revised air dispersion modeling from multiple witnesses, the Board concludes that the wind data that necessitated a revised air dispersion modeling did not have any effect on the Permit's conclusions that TLNG's emissions meet all applicable law. Because the reversed wind data did not materially change the original air dispersion modeling results, the Board also rejects Appellants' fourth claim that remand is necessary.

54.

The Board concludes that Appellants did not meet their burden to show that TLNG's emissions violated applicable law or are otherwise erroneous by virtue of not using representative meteorological data on the TLNG property site. *See* ¶¶ *34-49*. The Board also concludes that the reversed wind data did not materially change the original air dispersion modeling results showing that criteria air pollutants and toxic air pollutants emissions are below applicable thresholds and limits. *See* ¶¶ *34-53*.

[15] *See, e.g., Libicki Testimony at 2452; Ottersburg Testimony at 2249-50* (testifying that the error was caused by a spreadsheet equation not properly formatting the wind direction data).

B. TLNG Facility Design Completeness/Sufficiency of Information provided to PSCAA (Issues 4b, 4c)

55.

Issue 4 asks whether PSCAA's Permit violates PSCAA regulations, the Washington Clean Air Act, and/or the federal Clean Air Act, including but not limited to the following sub-issues:

4b. Whether the Permit is premature when the design of TLNG was not yet complete and continued to change at the time PSCAA determined PSE's Permit application was complete and when the Permit was issued, and it was likely that the facility's design and operations would need to undergo revisions, which would likely result in changes to facility details having bearing on the facility's emissions;

4c. Whether the Permit is invalid when PSCAA's decision to issue the Permit was made in reliance on performance specifications and process details that were not provided to PSCAA, including those from Chicago Bridge & Iron (CB&I) and other unidentified vendors.

56.

Van Slyke explained that PSCAA employs the definition of application completeness in the Washington Administrative Code (WAC), instead of the federal regulations relied on by Appellants. *Van Slyke Testimony at 1840-42, 1841-44*. That definition provides in part that a complete application contains all the information necessary for processing the application and must provide the location, design, construction, and operation of the new source, as well as information on the nature and amounts of emissions to be emitted to enable the permitting

authority to determine whether the proposed project will meet the requirements of WAC 173-400-113. WAC 173-400-111(1)(b). Van Slyke testified that PSCAA properly determined that PSE's Permit application was complete under WAC 173-400-111. *Van Slyke Testimony at 1841-44*.

57.

Van Slyke and Munoz explained in detail PSCAA's review of PSE's Permit application, and the numerous analyses and calculations PSE submitted to PSCAA (including information submitted in response to PSCAA's specific request for more information) in support of its application. As a result, they testified that PSCAA obtained sufficient information to assess TLNG's emissions. *Van Slyke Testimony at 1840, 1868-69, 1875, 1880, 1893-94, 1908, 1946; Munoz Testimony at 2313-14, 2322; see also Cenci Testimony at 2366, 2370, 2374*. PSCAA considered project changes as PSE submitted them during the application review and evaluated them for their emission impacts. *Ex. RA-68, pp. 6-7; Van Slyke Testimony at 1923-27 (changes in incoming feed gas composition, among others, listed in Ex. RA-68), 1905-06*.

58.

Van Slyke disagrees with Dr. Sahu's testimony that PSE's Permit application did not have sufficient information. Van Slyke stressed that PSCAA interprets the application completeness requirement in WAC 173-400-111(1)(b) as requiring sufficient information for PSCAA to begin their review of the application. *Van Slyke Testimony at 1843-44.* Van Slyke also emphasized the last sentence of WAC 173-400-111(1)(b) providing that designating an application complete for purposes of Permit processing does not preclude the reviewing authority

from requesting or accepting any additional information. *Van Slyke Testimony at 1841, 1844*. Van Slyke specifically disagreed with Dr. Sahu that PSCAA did not have enough information to determine BACT for TLNG given the completeness determination and the research PSCAA undertook that informed PSCAA engineers on the choice of BACT. *Van Slyke Testimony at 1936*.

59.

PSE also presented evidence that its Permit application contained sufficient information on TNLG facility and processes to satisfy WAC 173-400-111 and enable PSCAA to evaluate TLNG emissions for compliance with applicable regulations. Dr. Libicki explained that it is common for air permits such as the one at issue to be based on a facility's early conceptual design stage where the focus is on the technical requirements. *Ex. PSE-374, p. 17 (Libicki Pre-filed Testimony); see also Van Slyke Testimony at 1923*. Dr. Sahu agreed. *See Ex. APTI-587, p. 62 (Sahu Amended Pre-filed Testimony).* This allows for the facility design to evolve and respond to agency review and public comment so that any design changes resulting from the review process can be incorporated in the final design. *Ex. PSE-374, pp. 16-18, 25 (Libicki Pre-filed Testimony).* Dr. Libicki opined that PSCAA had sufficient information about the proposed facility to estimate emissions. Specifically, Dr. Libicki presented her analysis (discussed in other legal issues), that TLNG's emitting equipment (mainly the flare and vaporizer) and operational design impacting emissions from them were sufficiently detailed and final when PSE submitted to PSCAA its emissions information and air dispersion modeling results. *Id., pp. 20-25.*

60.

Stobart testified to the facility process design changes made to accommodate information received from PSE in 2017, that the incoming feed gas contained heavier hydrocarbons. *Stobart Testimony at 2005-11*. Ottersburg also testified that CB&I's process changes and Landau's recommended physical changes were taken into account in the emissions calculations and dispersion modeling that was submitted to PSCAA.[16] *Ottersburg Testimony at 2228-29*. The Board therefore does not assign much weight to Dr. Sahu's opinion that TLNG's process design was not sufficiently mature or stable as it lacks evidentiary support.

61.

Similarly, the Board rejects Appellants' claim that CB&I and other unidentified vendors withheld process details and performance specifications from PSCAA rendering the Permit invalid. The Board considered the numerous e-mail communications involving PSE, the flare vendor, CB&I, and Landau that were shown during the hearing. *See, e.g.*, *Exs. APTI-587, p. 75, APTI-558, APTI-206, APTI-219.*

62.

In the end, the Board finds and concludes that the evidence does not establish that any such withholding materially affected emissions calculations and modeling so as to render the

[16] Ottersburg also testified that she did not try to hide information from PSCAA, that she responded quickly and thoroughly to PSCAA's requests for more information that it needed to complete review of the Permit application, and that Landau gave PSCAA everything that the agency asked for. *Ottersburg Testimony at 2204-05*. She also explained broadly the steps she took in preparing Permit application, noting that most of the information came from CB&I, which promptly provided all the information Landau needed to do dispersion modeling and emissions calculations. *Id. at 2207*. Ottersburg had no reason to doubt the accuracy of the information she obtained from CB&I. *Id. at 2215*.

Permit invalid. By way of example, TLNG's revised process flow diagram and heat material balance tables were all finalized before PSE submitted the Permit application. *Stobart Testimony at 2043*. Moreover, both inputs and outputs to the UniSim model that CB&I used to model TLNG process changes are shown in the heat and materials balance tables. Those tables were provided to Appellants, thus undercutting Dr. Sahu's claim that he did not have access to them to do the analysis to support his claims. *Stobart Testimony at 2043, 2613-15*.

63.

Based on ¶¶ 55-60, the Board concludes that testimony and exhibits presented by Respondents refute Dr. Sahu's opinion that changes in the composition of the incoming feed gas rendered TLNG's underlying process design insufficiently mature or stable to allow for proper emission estimates and air dispersion modeling. *Ex. APTI-581, pp. 55-67*. Process and physical changes to TLNG were taken into account in PSCAA's emissions calculations and dispersion modeling. The Board defers to PSCAA's determination that PSE's Permit application complied with the WAC definition of application completeness because it contained sufficient information to allow PSCAA to estimate emissions and determine compliance with applicable law. *See* ¶¶ *56-58*; *PT Air Watchers v. Dep't of Ecology*, 179 Wn.2d 919, 929 (2014); *Marine Vacuum Svcs. v. Puget Sound Clean Air Agency*, PCHB No. 16-130c, COL 2 (Feb. 8, 2018).

64.

The Board also concludes that Appellants have not sustained their burden to prove in Issue 4c that the Permit is invalid because PSE withheld material information (flare performance specification and process details) from PSCAA. ¶¶ *61-62*. The Board's analysis resolving Dr.

Sahu's more specific opinions that insufficiently stable or mature facility design affected SO_2 emissions, the flare's destruction efficiency, and BTEX calculations in the modeling for hazardous air pollutant impacts, are discussed in their respective analyses below.

C. Major Source of Emissions (Issue 4d)

65.

Issue 4d asks whether PSCAA erroneously concluded that TLNG is not a major source of one or more pollutants, including volatile organic compounds (VOCs).

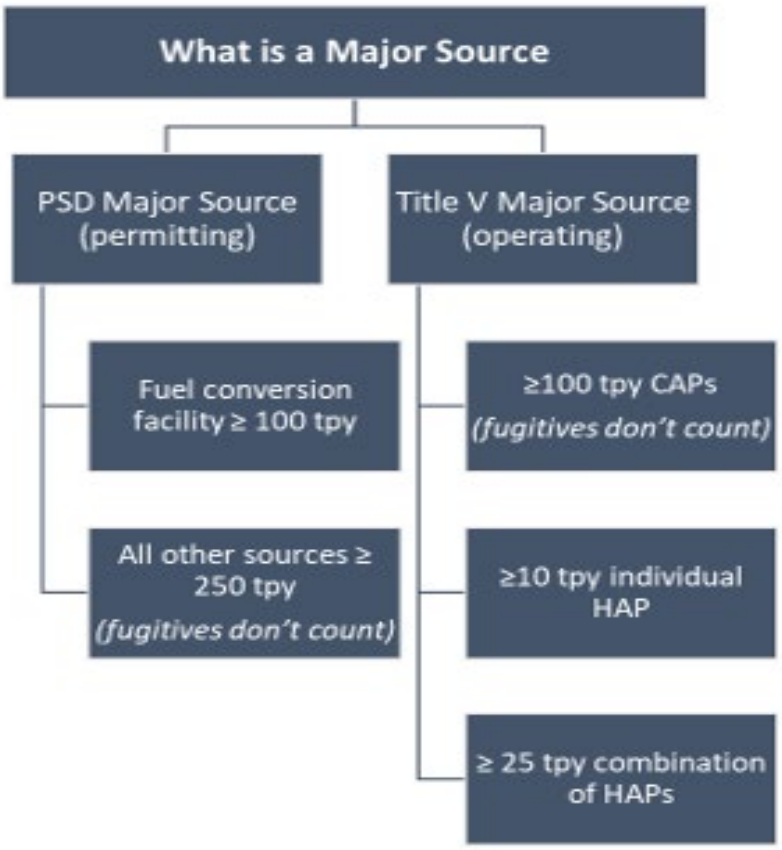
66.

VOCs are organic chemical compounds that are both indoor and outdoor air pollutants. Emissions of VOCs to the outdoors are regulated by EPA mostly to prevent the formation of ozone, a constituent of photochemical smog. *Ex. RA-17, pp. 3-4*. VOCs include hydrocarbons "heavier" than methane such as propane and butane, as well as other compounds regulated as hazardous air pollutants, such as benzene, formaldehyde, toluene, and xylene. *Exs. APTI-587, p. 9, PSE-374, pp. 70-75 (Libicki Pre-filed Testimony), PSE-137.*

67.

PSCAA regulates stationary sources of air pollution emissions through two Clean Air Act programs: Prevention of Significant Deterioration of air quality (PSD) and the Title V operating permit program. A stationary source can be either an emission unit or a combination of emissions units on a site. The amount emitted from a source determines its permitting requirements. For minor preconstruction sources, the Permit Program applies. For major

preconstruction sources, the Prevention of Significant Deterioration (PSD) program applies.[17] *Van Slyke Testimony at 1824-25, 1983*. At issue is whether TLNG is a minor source or major source of VOC emissions.[18] The diagram below, which PSE presented as a demonstrative exhibit without objection, illustrates the WAC criteria for determining whether TLNG is a major source.



[17] After construction, a minor source's ongoing operations would be subject to PSCAA's registration program, while a major source of operations would be subject to the Title V operating permit program. Air operating permits, which are also referred to as Title V permits, are required for major sources of air pollution. *Van Slyke Testimony at 1824-25, 1983*.

[18] Appellants' sole witness, Dr. Sahu, also makes passing assertions that TLNG is a significant source of hazardous air pollutants, but the Board rejects any argument on the issue of whether TLNG is a major source of hazardous air pollutants as it is devoid of supporting evidence.

68.

Under the PSD program, a source is major if: (1) it is one of the 28 PSD source categories and has the potential to emit pollutants (other than GHGs) equal or greater to 100 tons per year (tpy), *or* (2) it is not one of the listed source categories and has the potential to emit greater than or equal to 250 tpy. *Ex. PSE-374, pp. 53-54 (Libicki Pre-filed Testimony);* WAC 173-401-200(19)*; Ex. RA-68, pp. 49-50.* If a source belongs to a listed source category, fugitive emissions are counted towards the threshold. If not, then fugitive emissions are not counted. *Van Slyke Testimony at 1917; Libicki Testimony at 2430, 2437.*

69.

Under the Title V operating permit program, a source is major if it (1) emits 100 tpy or more of any criteria pollutant, or (2) emits any individual hazardous air pollutant (HAP) in amounts greater than or equal to 10 tpy, or any combination of HAPs in an amount greater than or equal to 25 TPY. WAC 173-401-200(19)*; Exs. RA-68, pp. 49-50, PSE-374, p. 54 (Libicki Pre-filed Testimony).*

70.

PSCAA reviewed Landau's estimate of 49 tpy of VOC emissions and concluded that it fell below to threshold amounts to qualify TLNG as a major source under either Title V or PSD programs. *Exs. RA-68, pp. 48-50, RA-36, Attachment A (11/2017), RA-61(c); Van Slyke Testimony at 1914-17, 1921; Ottersburg Testimony at 2222, 2219-20*. Both Landau and Dr. Libicki performed the analysis underlying the estimated VOC emissions. *Ottersburg Testimony*

at 2216-19; Libicki Testimony at 2422, 2424, 2429-37; Ex. PSE-374, pp. 52-80 (Libicki Pre-filed Testimony).

71.

Ottersburg explained that she estimated TLNG's maximum VOC emissions by identifying the emission units, applying emission factors, and then adding emissions from all the units to obtain the facility wide total. Throughout this process, she chose the highest value from each TLNG operating scenario so that she would obtain the facility's worst case potential to emit VOCs. *Ottersburg Testimony at 2216-19; Ex. RA-36*. In the end, Ottersburg calculated that TLNG would emit 49 tpy of VOCs from the facility's worst case operating mode for emitting VOCs, which was liquefying case scenario 5 (45 tons from flare + 4.2 tons from fugitive emissions). *Ottersburg Testimony at 2219-20.*[19]

72.

Appellants offered Dr. Sahu's opinion that TLNG is a fuel conversion plant (listed as one of the 28 PSD source categories) and is therefore subject to the 100 tpy threshold under PSD program (including fugitive emissions) instead of the 250 tpy threshold (excluding emissions). *Exs. RA-68, p. 50, APTI-587, p. 10 (Sahu Amended Pre-filed Testimony).* Respondents disagree.

[19] Ottersburg explained that liquefying case scenario 5 resulted in maximum emission of VOCs (had highest percentage of VOCs in it) because it was the highest British thermal unit (BTU) content of any of the flaring cases due to the larger hydrocarbon content of the feed gas. The larger or "heavier" the hydrocarbon, the higher the heating value and therefore the higher BTU content. *Ottersburg Testimony at 2225. See also Ex. PSE-374, pp. 70-75 (Libicki Pre-filed Testimony).*

73.

Although TLNG's emissions would not meet either threshold as explained below, the Board finds and concludes that TLNG is not a fuel conversion plant based on the most current EPA guidance. *Ex. RA-127*. The guidance is a 2017 letter from EPA Region 10 responding to the Oregon Department of Environmental Quality's question whether the proposed Jordan Cove LNG export facility is a "fuel conversion plant" for purposes of determining whether it is a major source. EPA determined it was not because the facility did not change the state of fuel where the fuel remains natural gas in a liquefied state that can be reversed. *Id*.

74.

Importantly, EPA's analysis considered earlier guidance letters, including the 2007 Kenai LNG facility guidance[20] cited by Appellants, and explicitly rejected earlier guidance that defined a fuel conversion plant differently. Earlier EPA guidance only assumed a simple change of fuel state was sufficient to qualify a facility as a fuel conversion plant without inquiring into "whether the facility was irreversibly converting one fuel type to another." *Ex. RA-127, pp. 2-3* ("a change in state is a possible characteristic of a fuel conversion plant but not the sole characteristic – i.e, not everything that accomplishes a change in state is a fuel conversion plant."). Thus, contrary to Dr. Sahu's interpretation, the 2017 Jordan Cove guidance's analysis broadly rested on the reversibility of the fuel conversion as a key factor, not whether the Jordan Cove facility was an LNG export facility for the purpose of transporting natural gas. Here, TLNG's process of

[20] *Ex. APTI- 422*.

converting natural gas to LNG is reversible because LNG will be reconverted to natural gas for PSE customers during periods of high demand. *See ¶ 15*; *Ex. PSE-374, p. 58 (Libicki Pre-filed Testimony)*.

75.

In short, TLNG is not a fuel conversion plant and is therefore subject to the 250 tpy major source threshold. But even assuming that TLNG is a fuel conversion plant, it would only be classified as a major source if its emissions are equal or greater than 100 tpy. The Board finds that its emissions would not exceed the 100 tpy threshold.

76.

Appellants contend that TLNG is a major source emitting 100 or more tpy of VOCs because: (1) "bypass" emissions from the flare should have counted; (2) emissions from the flare should have been estimated using less than 99% destruction removal efficiency (DRE); (3) fugitive VOC emissions were underestimated; and (4) PSCAA failed to account for process heaters as emitting units. Appellants solely rely on Dr. Sahu's opinion for their contention that VOCs were underestimated. *Ex. APTI-587, pp. 9-26 (Sahu Amended Pre-filed Testimony).*

77.

However, Dr. Sahu presented no calculations or analysis to support his opinion that the identified four shortcomings "*significantly and materially* understated" TLNG VOC emissions. *Ex. APTI-587, p. 11 (Sahu Amended Pre-filed Testimony)* (emphasis added). By contrast, Respondents' experts presented detailed calculations and specific evidence to refute the four bases upon which Dr. Sahu's opinion rests. The Board finds and concludes that the quantity and

quality of the evidence do not support Appellants' claim that VOCs emissions were underestimated. Each of the four reasons are analyzed below.

1. Bypass flare

78.

Permit Condition 11 prohibits emissions from bypassing the flare, stating that the flare shall operate at all times that gases are routed to it, and that if the flare goes out of service "due to malfunction or maintenance, all systems being routed to the flare shall shut down until the flare can be brought back into service." *Ex. RA-132, p. 2*.

79.

Despite condition 11, Dr. Sahu opined that flare bypass emissions during malfunctions should have been included in the calculations for TLNG's potential to emit VOCs. *Ex. APTI-587, p. 21 (Sahu Amended Pre-filed Testimony)*. Respondents countered with clear and convincing evidence that Dr. Sahu's position is contrary to the air agencies' practice of calculating a source's potential to emit under normal facility operations, which does not include emissions during emergency conditions, or emissions that are prohibited by a permit condition. *Ex. RA-16; Van Slyke Testimony at 1946-47, 1888-92; Ex. PSE-374, pp. 13-14, 78-79 (Libicki Pre-filed Testimony)*. PSE also explained that in the event the flare is out of service, the facility must shut down and will do so within ten minutes, which is the length of time waste gas may bypass the flare instead of Dr. Sahu's hypothetical of one day of bypass emissions during flare malfunction. *Stobart Testimony at 2040.*

80.

The Board finds and concludes that Dr. Sahu's opinion runs counter to the definition of potential to emit in WAC 173-400-030(76), which provides that enforceable emissions limitations are taken into account when calculating potential to emit. *See, e.g.*, *Protect the Peninsula's Future v. Olympic Reg. Clean Air Agency*, PCHB No. 11-103 (Jan. 4, 2012); *MYTAPN v. Dep't of Ecology*, PCHB No. 11-134 (Feb. 7, 2013); *Communities For a Better Env't v. Cenco Ref. Co*., 179 F. Supp. 2d 1128, at n. 9 (C.D. Cal. 2001), *aff'd*, 35 F. App'x 508 (9th Cir. 2002) (if permit governing a certain piece of equipment expressly limits emissions in a certain way, potential to emit should not be calculated without taking that specific limit into account).

2. Flare will not achieve 99% DRE

81.

Permit Condition 15 is the BACT condition that limits VOC emissions by requiring TLNG's flare to achieve a minimum destruction efficiency of 99% for VOCs. *Ex. RA-132, p. 3*. Compliance with the 99% destruction removal efficiency (DRE) condition is effectuated by Condition 28, which requires that the flare operate:

> at or above the average temperature range recorded during the most recent source test which shows compliance with Condition #15. The burner set point temperature of the flare, used to control the temperature within the flare, shall be set such that the temperature of the flare does not drop below the most recent source test temperature.

Ex. RA-132, p. 5. The technique of ensuring 99% DRE by way of temperature monitoring was referred to as parametric monitoring by witnesses. Using parametric monitoring is a common

method to ensure VOC DRE in flares. *Van Slyke Testimony at 1988; Smith Testimony at 2159; Kalani Testimony at 2090-92*. The 99% DRE will be determined by testing as specified in conditions 21 and 26.

82.

In context, the Permit requirement of 99% DRE is one of four ways in which TLNG's VOCs emissions are constrained. Dr. Libicki explained in detail how each of these constraints worked to limit the amount of VOCs that could be emitted, set out the evidence and engineering judgment and calculations behind each of those constraints, and explained that the resulting numbers indicate that TLNG's VOC emissions will be below the minor source threshold of 250 tpy and even the major source threshold of 100 tpy. *Ex. PSE-374, pp. 59-80 (Libicki Pre-filed Testimony)*. However, those calculations of hypothetical scenarios all assumed a DRE of 99%. *Id*., *at pp. 70, 73*.

83.

Dr. Smith evaluated the flare design and expected DRE by: 1) analyzing three factors affecting how efficiency of combusting hydrocarbons: time, temperature, and turbulence (the three T's of combustion), 2) running a computational fluid dynamics (CFD) model, and 3) performing a reaction kinetics analysis. *Ex. PSE-649, pp. 28-63 (Smith Pre-filed Testimony); Smith Testimony at 2135-36.*

84.

The result of the three T's of combustion analysis and the CFD modeling show that the flare will exceed a 99% DRE for all TLNG's operating scenarios developed by CB&I. *Ex. PSE* -

649, PP. 33, 55. The kinetics analysis, done to determine whether the flare could also destroy heavier hydrocarbons such as benzene, toluene, ethylbenzene, and xylene (BTEX), also show that BTEX should be destroyed at a DRE exceeding 99%. *Exs. PSE-649, p. 61 (Smith Pre-filed Testimony)*, *PSE-58*. The Board does not find any basis to disagree with the flare's expected 99% DRE as Dr. Sahu did not perform any analysis to evaluate the flare's anticipated performance. *Sahu Testimony at 1719-20, 1724*.

85.

However, Appellants challenge the suitability of using parametric monitoring, or maintaining a minimum temperature obtained through testing, as the means to demonstrate continuous compliance with the Permit's 99% DRE condition to limit VOC emissions. The Board does not share Respondents' view that this issue is a future enforcement issue over which the Board lacks jurisdiction. Appellants' challenge goes to how the 99% DRE on a continuous basis will be verified, or the appropriateness of using temperature as a surrogate for DRE as outlined in Permit testing Conditions 28, 26, and 21. Appellants' challenge is well-taken, as PSE's witnesses testified that computational fluid dynamics modeling does not replace testing. *Smith Testimony at 2136, 2159, 2193* (explaining that continuous monitoring of temperature will ensure compliance with 99% DRE because it is based on stack testing and monitoring the temperature derived from testing); *Ex. APTI -558* (flare vendor letter stating that it relies more on field testing data due to difficulty in modeling DRE of heavier non-methane organic compounds); *Ex. PSE-649, p. 38*; *Kalani Testimony at 2081, 2083-85* (LFG flare vendor relies on testing a prototype flare, rather than CFD modeling, to evaluate expected flare performance

when designing flares), *see also PSE-374, p. 77 (Libicki Pre-filed Testimony)* (flare's 99% DRE will be verified by source testing). And both PSE's and PSCAA's witnesses opined on the efficacy of using parametric monitoring. *See, e.g.*, *Ex. PSE-649, p. 65; Van Slyke Testimony at 1988; Smith Testimony at 2159; Kalani Testimony at 2090-92*.

86.

The Board finds and concludes that parametric monitoring does not ensure continuous compliance with the Permit condition of 99% DRE of VOC emissions from the flare. The Board's analysis is based on the uniqueness of the flare with four burners,[21] the wide variability in gas composition and flow rate going to the flare,[22] and Dr. Sahu's persuasive testimony that parametric monitoring of temperature is not appropriate in this case to demonstrate continuous compliance with the 99% VOC DRE requirement in Permit condition 15. *Sahu Testimony at 1696-1706, 2555-56, Ex. APTI-587, p. 17 (Sahu Amended Pre-filed Testimony)*.

87.

Dr. Sahu initially opined that using a continuous emissions monitoring systems (CEMS) at the outlet and inlet of the flare to continuously calculate DRE was more appropriate in this

[21] Although flares with multiple burners are common, Appellants presented ample evidence that TLNG's four burner configuration of two warm burners and two cold burners is unique. Flare designer Kalani testified that he had not designed a flare like the one at issue before, and he had designed over 1,200 flares. *Kalani Testimony at 2103, 2123-24*. Stobart also stated that the flare was fairly complex, and he was not aware of another LNG facility flare that uses multiple burners. *Stobart Testimony at 1519, 2059*. Finally, PSE itself communicated with PSCAA that its flare significantly differed from landfill and digester gas flares. *Ex. RA-33, pp. 1-2*. And Dr. Sahu explained that the flare at issue differs from other flares PSCAA has permitted (landfill and digester gas flares) due to the TLNG's wide variation in gas composition and flow rate. *Sahu Testimony at 2566-69, 2555-56*.

[22] *Ex. RA-33, pp. 1-2* (proposed LNG flare must have a much more complex design with multiple burners to address wide range of operating conditions that includes wide variations in gas composition and flow rate, which differ significantly from landfill and digester gas flares); *Kalani Testimony at 2084* (gas composition affects whether flare DRE is being achieved).

case than using parametric monitoring. *Sahu Testimony at 1705*. However, he later acknowledged during cross examination that he has not ever seen that type of CEMS. *Id. at 1706, 1708-1709*. Dr. Sahu further testified that if TLNG was subject to a mass quantity limit for VOCs, such as 45 TPY, or 244 lbs per day limit (instead of a DRE condition), and that if such condition was verified by a CEMS on the outlet to continuously measure VOC emissions, it would provide very good assurance of TLNG's VOC emissions staying below the major source thresholds. *Sahu Testimony at 1705-06, 1709-10.*[23]

88.

Van Slyke testified that adding CEMS as a Permit condition would not undermine the issuance of the Permit or PSCAA's determination at the time of issuance that the order met all pertinent requirements. He only opined that if CEMS were installed, TLNG would be the most heavily monitored minor source in PSCAA's jurisdiction. *Van Slyke Testimony at 1892-93*.

3. Fugitive VOC Emissions

89.

Fugitive emissions are irregular releases of gas or vapor from a source that cannot reasonably be collected and routed to a chimney, vent, stack, or functionally equivalent opening. WAC 173-400-030(41); *Ex. PSE- 374, p. 38 (Libicki Pre-filed Testimony).* For TLNG, small leaks of GHGs, VOCs, and TAPs from hundreds of components in a pipe rack constitute fugitive emissions. *Id.* Landau calculated TLNG's fugitive emissions were 4.2 tpy by estimating the

[23] Similarly, although Dr. Kinner and Van Slyke opined that CEMS to monitor DRE would be novel, *Kinner Testimony at 2399*, there are several reliable VOC CEMS in the market to measure VOC emissions at the flare outlet. *Kinner Testimony at 2405.*

number of TLNG's components such as valves, pumps, and connectors, and then applying emission factors and emission control factors to the estimated components. *Ottersburg Testimony at 2209; Ex. PSE-164*.

90.

Appellants assert that fugitive emissions were miscalculated because: (1) facility component counts were understated; (2) Respondents erroneously used average emissions factors from the South Coast air quality management guidance document (SCAQMD); (3) Respondents wrongfully applied emissions control factors from the Texas Commission on Environmental Quality (TCEQ); and (4) Landau wrongly applied an emissions control efficiency to 100% of estimated components. They relied solely on Dr. Sahu's opinion to support the assertion. *Ex. APTI-587, pp. 22-24 (Sahu Amended Pre-filed Testimony)*.

91.

Landau relied on component counts provided by CB&I, including how many components there were for each type of component and the kind and composition of fluid each component handles, to calculate fugitive emissions. *Ottersburg Testimony at 2260.*

92.

Dr. Sahu opined that Landau should not have relied on CB&I's component counts because the final TLNG design might result in higher components than those initially predicted by CB&I. *Ex. APTI-587, p. 22 (Sahu Amended Pre-filed Testimony)*. However, Dr. Libicki testified that it is standard air permitting practice to rely on a component count estimated by the project engineer. *Ex. PSE-374, p. 40 (Libicki Pre-filed Testimony)*. Van Slyke testified that the

fact that fugitive emissions were calculated by initial estimates of component counts to be finalized in a later Leak Detection and Repair (LDAR) plan did not render the Permit flawed, as all components at TLNG would be included in the final LDAR plan. *Van Slyke Testimony at 1906*. Permit Condition 32 requires PSE to submit and implement an LDAR plan as a BACT for fugitive emissions. *Ex. RA-132, p. 5*. The LDAR plan was submitted to PSCAA on March 11, 2021, and it includes all components that could come into contact with VOCs. *Ex. PSE-9, p. 10; Berner Testimony at 1473-76*.

93.

The Board finds and concludes that Landau properly relied on CBI's determination of component counts. Appellants fall short of meeting their burden of showing that such reliance resulted in materially underestimating TLNG's VOC emissions.

94.

After obtaining the component counts, Landau next identified average emissions factors for each component using the SCAQMD. *Ottersburg Testimony at 2261; Ex. PSE- 374, p. 41 (Libicki Pre-filed Testimony).* Dr. Sahu opined that Landau should have used the highest emissions factors available for each component. *Ex. APTI-587, p. 23 (Sahu Amended Pre-filed Testimony)*. He also states that Landau should not have relied on the SCAQMD because those factors came from measurements of marine terminals and depots in Southern California, which already utilizes a stringent LDAR program. Instead, Dr. Sahu opined that using SCAQMD's emissions factors for refineries would have been more appropriate. *Id.*; *Sahu Testimony at 1641-1644.*

95.

Dr. Libicki testified that using the highest emission factors available would be contrary to EPA fugitive guidance, which recommends using average emissions factors to estimate process component leaks because components are designed not to leak and not all process equipment will leak at the same rate. *Ex. PSE-374, pp. 45-46 (Libicki Pre-filed Testimony).* Based on Dr. Libicki's testimony, the Board finds and concludes that Landau was not required to rely on the highest emission factor available for each component.

96.

Contrary to Dr. Sahu's opinion that use of SCAQMD emission factors for refineries or oil/gas production plants would have been more appropriate than emission factors for terminals/depots, Dr. Libicki opined that the SCAQMD emissions factors for the two categories are essentially the same. *Ex. PSE-374, p. 41 (Libicki Pre-filed Testimony)*. Moreover, Ottersburg testified that the SCAQMD emission factors are the highest found in the literature and using them would generate the highest fugitive emissions in their calculations. *Ottersburg Testimony at 2261; Ex. RA-93*. Dr. Libicki testified that the SCAQMD emissions factors used here are substantially higher than the EPA emission factors for terminals and depots. *Ex. PSE-374, p. 41 (Libicki Pre-filed Testimony)*; *Libicki Testimony at 2442-43*. The SCAQMD factors are also based on the 1995 EPA Fugitive Guidance, which includes ethane and methane as emissions factors. *Ex. PSE-374, p. 42 (Libicki Pre-filed Testimony).* Neither ethane nor methane is considered a VOC because they are not photochemically reactive. Thus, choosing the SCAQMD emission factors that include ethane and methane is an example of Landau's

conservative approach in estimating fugitive VOC emissions at TLNG because it overestimates emissions. *Id*., *pp. 42-43.*

97.

Considering the reasons Dr. Libicki and Ottersburg identified, the SCAQMD factors likely overestimated anticipated fugitive emissions from process components and are therefore a conservative estimate. The Board finds and concludes that using the SCAQMD emission factors was appropriate. Appellants fail in their burden to prove how using SCAQMD factors for terminals/depots resulted in underestimating fugitive emissions.

98.

Having identified emissions factors for each component from the SCAQMD, Landau next determined what control factor applied for each kind of component. *Ottersburg Testimony at 2261*. A control factor is the reduction in emissions that can be anticipated by implementing a LDAR program. *Id.*

99.

Appellants presented Dr. Sahu's opinion that Landau should not have relied on the 28 M TCEQ control factors because the LDAR plan was not yet finalized at the time control factors were selected. *Sahu Testimony at 1643-44*. In response, Ottersburg testified that Landau used the 28 M factors because they were the lowest factors found in guidance documents, meaning that they would produce the highest emission. *Ottersburg Testimony at 2263-2264, 2267*; *Ex. PSE -243.* Ottersburg also testified that PSE's final LDAR plan is more stringent than what the 28 M program requires. *Ottersburg Testimony at 2267.* For example, the 28 M control factors

are consistent with an LDAR program that tolerates leaks up to 10,000 parts per million volume (ppmv), whereas the LDAR plan and permit only allow up to 500 ppmv leaks before the component must be repaired. *Id*.; *Ex. RA-143, p. 6*. The final LDAR plan also relies on a directed repair program that requires TLNG to remonitor as it repairs components rather than waiting until the next period. *Ottersburg Testimony at 2267*. Further, the final plan utilizes a more frequent monitoring system than under the 28 M program. *Id*. at 2267-68.

100.

The Board finds and concludes that it was appropriate to adopt control factors from the 28 M program because they yielded the highest emission for purposes of estimating potential to emit VOCs. It is uncontroverted that the final LDAR plan was more stringent than what the 28 M control factors required.

101.

Finally, Appellants argue that Landau wrongly applied an emissions control efficiency to 100% of estimated components, even though PSE testified at its deposition that the LDAR plan would only apply to 20%. *Ex. APTI-587, p. 24 (Sahu Amended Pre-filed Testimony)*. Respondents testified that under condition 32 of the Permit, PSE must operate in compliance with an LDAR plan for fugitive emissions submitted to PSCAA. *Ex. PSE-374, p. 50 (Libicki Pre-filed Testimony)*. The condition does not distinguish between different types of fugitive emissions, so all components are covered. *Id.* The Board finds and concludes that, because all components are covered in the final plan, it was reasonable for Landau to apply an emissions control factor to 100% of the components.

102.

Landau determined that based on the estimated component count, SCAQMD emission factors, and TCEQ 28 M control factors, fugitive emissions will contribute a maximum of 4.2 tpy of VOCs, which is less than 10% of the facility total. *Ex. PSE-374, p. 51 (Libicki Pre-filed Testimony).* Respondents further testified that calculations based on the final plan submitted to PSCAA, would result in 3.8 tpy of fugitive emissions. *Ottersburg Testimony at 2275.* They stated that the estimate based on the final plan also relied on conservative assumptions, such as that fluids would contain 10% VOC, when in reality most fluids are between 4-6% VOC, and relied on the Texas 28 M program, which relies on less frequent monitoring than the final plan. *Id. at 2276.*

4. Not All Emissions Units Counted

103.

Dr. Sahu opined that VOC emissions from small heaters at TLNG should have been included in the emission calculations. *Ex. APTI-587, p. 26 (Sahu Amended Pre-filed Testimony)*. However, Ottersburg, who performed the potential to emit analysis, explained that there are two small heaters and an emergency generator at TLNG that are categorically exempt from Permit review because they are very small emitting units and thus need not be included in the emissions estimates. Nonetheless, Ottersburg provided their calculations. *Ottersburg Testimony at 2222*; *Ex. RA-61(c).* Van Slyke testified similarly and added that even if the emissions from the two small heaters were counted, it would not change TLNG into a major source. *Van Slyke Testimony at 1850, 1933-34*.

104.

The Board finds and concludes that VOC emissions from exempt small heaters were properly excluded in the emission calculations.

105.

In sum, the Board concludes that Appellants did not meet their burden of proving in Issue 4d that PSCAA erroneously concluded that TLNG is not a major source of one or more pollutants, VOCs. The Board concludes that TLNG is not a fuel conversion facility under the more recent EPA guidance. ¶¶ *65-75*. Even if TLNG is a major source of emissions, it would not emit 100 or more TPY of VOCs. The Board further concludes that TLNG's potential to emit VOCs were properly estimated, factoring in the limitations on emissions set out in the Permit. ¶¶ *76-104*. Respondents presented reliable and convincing evidence that the calculations and analysis showed that TLNG would not be a major source either under either the 100 TPY or 250 TPY thresholds of PSD and Title V programs. Appellants fail in their burden to show that "bypass" emissions from the flare should have been counted, that fugitive emissions were underestimated, that process heaters should have been counted as emitting units, and that the flare cannot achieve 99% DRE. ¶¶ *76-104*.

106.

As stated in ¶¶ 81-84, the evidence shows that the flare can be expected to destroy VOCs with a 99% DRE. However, the Board concludes that using a VOC CEMS installed at the flare outlet, instead of using parametric monitoring, is necessary to ensure the 99% DRE Permit condition. ¶¶ *85-88*. This is so given the wide variation in gas composition going to the flare

and testimony stressing the importance of stack testing, instead of modeling, to ascertain whether a specific DRE will be achieved. *Id*. In PSE's Prehearing Brief and during hearing, counsel for PSE stated that if necessary, PSE would commit to installing a CEMS at the flare outlet to continuously monitor compliance with the applicable limits set forth in the Permit of 244 lbs VOC/day. *See Puget Sound Energy, Inc.'s Prehearing Brief, p. 7, n. 15*. The Tribe agreed to such VOC CEMS. *See The Puyallup Tribe of Indians' Closing Statement, p. 52*. The Board directs the parties to work together to modify the Permit to install a VOC CEMS at the flare outlet to continuously monitor compliance with the VOC limits of 244 lbs/day and/or other applicable VOC limit.

D. Criteria Air Pollutants (Issues 4e, 4f)

107.

Issue 4e asks whether PSCAA erroneously concluded that TLNG's emissions are below the Clean Air Act's regulatory thresholds, emission and air quality standards. Issue 4f asks whether PSCAA erroneously concluded that the emissions from TLNG will not violate WAC 173-400-113 (i.e., not cause or contribute to a violation of any ambient air quality standard).

108.

TLNG will emit criteria air pollutants, which are pollutants regulated by National Ambient Air Quality Standard (NAAQS) set by the EPA to protect public health and the environment. WAC 173-400-030 (21); *Exs. RA-17, p. 1, RA-38, p. 97*.[24] Washington Ambient

[24] NAAQs are implemented by establishing Air Quality Control Regions (AQCRs). Each AQCR then receives a designation of either "attainment" or "non-attainment" for each criteria pollutant. For those areas of "non-

Air Quality Standards (WAAQS) are the same as NAAQS. Relevant here are pollutants particulate matter, nitrogen dioxide, and sulfur dioxide. *Ex. PSE-374, p. 105 (Libicki Pre-filed Testimony)*.

109.

Appellants broadly argue in Issue 4e that PSCAA erroneously concluded that TNLG emissions are below Clean Air Act's regulatory thresholds, emission, and air quality standards. In Issue 4f, Appellants more specifically argue that PSCAA erroneously concluded that TLNG emissions will not violate WAC 173-400-113 (i.e., not cause or contribute to a violation of any ambient air quality standard). These two issues mainly concern whether TLNG's emissions of criteria air pollutants $PM_{2.5}$, sulfur dioxide, and nitrogen dioxide comply with WAC 173-400-113.

110.

Under WAC 173-400-113, PSCAA shall issue a permit for a new source application if the proposed new source satisfies three requirements: 1) comply with all applicable new source performance standards, and national and state emission standards for hazardous air pollutants; 2) employ BACT for all pollutants not previously emitted; and 3) allowable emissions from the proposed new source "will not cause or contribute to a violation of any ambient air quality standard. If the modeled concentrations of allowable emissions from the proposed new source . . . are below the levels in Table 4a, the proposed source does not cause or contribute to a violation

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attainment," the state with authority is obligated to develop a State Implementation Plan (SIP) to bring the ACQR within "attainment" levels. The site for TLNG is in attainment for all criteria air pollutants besides particulate matter. *Ex. RA-38, pp. 98-99.*

of an ambient air quality standard." WAC 173-400-113(3); *Van Slyke Testimony at 1828-30; Ex. PSE-374, p. 82 (Libicki Pre-filed Testimony)*.

111.

Table 4a in WAC 173-400-113(3) sets out average annual, 24-hour, 8-hour, 3-hour, and 1-hour threshold values for six pollutants to determine whether a project will cause or contribute to a violation of ambient air quality standards. WAC 173-400-113(4)(a). If the modeled emissions are equal to or exceed the threshold value in Table 4a, additional analysis is done by adding the background value to the source's modeled emissions and comparing the sum to the relevant ambient air quality standard. If the sum is below the NAAQS, then the source does not cause or contribute to a violation of an ambient air quality standard. *Ex. PSE-374, pp. 82-83 (Libicki Pre-filed Testimony)*. In other words, the threshold values are not limits; therefore, exceedances of thresholds are not violations of WAC 173-400-113.

112.

Ottersburg explained the steps taken to calculate TLNG emissions for compliance with NAAQS. She also thoroughly explained the air dispersion modeling that she oversaw to determine compliance with NAAQS, even though such modeling was not required. *Ex. RA-68, p. 56; Ottersburg Testimony at 2237-39; Ex. PSE-374, pp. 105-07 (Libicki Pre-filed Testimony)*. Dr. Libicki also explained in detail the steps Landau used in its air dispersion modeling, consistent with Department of Ecology's protocol: identify pollutants that would be emitted by each emitting unit at TLNG, calculate each unit's potential to emit individual pollutants, model

those emissions, and compare modeled ambient concentrations to WAC 173-400-113, Table 4a threshold values. *Id*.

113.

Dr. Libicki prepared a table comparing the results of the modeling for each criteria pollutant with the NAAQS threshold values and NAAQS ambient air quality standards. The table shows that the modeled concentrations of criteria pollutants from TLNG are below the threshold values for all pollutants except for $PM_{2.5}$, which equaled the threshold value of 1.2 $\mu g/m^3$.[25] *Ex. PSE-374, p. 107 (Libicki Pre-filed Testimony)*; *Ottersburg Testimony at 2239; Ex. RA-68, p. 57*.

114.

As stated, if the modeled concentration of any criteria pollutant does not exceed thresholds, then it does not contribute to NAAQS violation. If modeled concentrations equal or exceed the threshold, then additional analysis must be done to determine if a NAAQS violation will occur. ¶¶ *110-11*. Consistent with this requirement, PSCAA then performed a background analysis for $PM_{2.5}$, which showed that no emissions would exceed the NAAQS. This was done by adding the modeled $PM_{2.5}$ emissions from TLNG to the background air quality concentrations of $PM_{2.5}$ (which reflects emissions from other sources)[26] and then comparing the result to the

[25] The concentration of an air pollutant is given in micrograms per cubic meter air, or $\mu g/m^3$.

[26] PSCAA explained how it obtained its background value. It used $PM_{2.5}$ background data as measured from a PSCAA Tacoma Tideflats 24-hour $PM_{2.5}$ monitor, located within one mile of the TLNG site. The $PM_{2.5}$ 24-hour NAAQS is measured as the 98th percentile value averaged over 3 years per EPA criteria. The monitored ambient value that is calculated and used to compare to the NAAQS is referred to as the design value. The most recent 3-year average (2016-2018) design value at the Tideflats monitor is 25.4 ug/m3. Adding the modeled 1.2 ug/m3 from

ambient air quality standard. *Munoz Testimony at 1301-04; Van Slyke Testimony at 1875-76; Ex. RA-68, pp. 56-57; Ex. PSE-374, pp. 80-82, 107-108 (Libicki Pre-filed Testimony)*. This background analysis to evaluate compliance of $PM_{2.5}$ emissions with NAAQS is used by air engineers throughout Washington, contrary to Dr. Sahu's testimony. *Van Slyke Testimony at 2617-18*.

115.

Dr. Libicki also added TLNG's modeled $PM_{2.5}$ concentration to background to determine whether it violates NAAQS, and concluded that it did not. *Ex. PSE-374, p. 105 (Libicki Pre-filed Testimony); Libicki Testimony at 2510-11*. Instead of the Tideflats $PM_{2.5}$ monitor that PSCAA used, Dr. Libicki obtained the background data available online from a collaboration between environmental agencies in Idaho, Washington, and Oregon. The data in turn is obtained from a combination of model (AIRPACT) and monitoring data from 2014 – 2017 that can be used to support minor source applications in consultation with the permitting authority. *Ex. PSE-374, pp. 83-87 (Libicki Pre-filed Testimony)*. Dr. Libicki opined that the modeling system, AIRPACT, is based on a reliable EPA model. *Id*. She also opined that PSCAA's background analysis to evaluate whether a minor source's criteria pollutant emissions would cause or

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TLNG to the most recent design value results in 26.6 ug/m3, which is well under the 35 ug/m3 NAAQS. *Ex. RA-68, p. 57*. Dr. Libicki testified that PSCAA did not exclude "exceptional events" from this background data, such as the wildfires from 2017, which increased the background $PM_{2.5}$ levels. *Ex. PSE-360, p. 24*. Dr. Libicki opined that this meant that the background value used by PSCAA are likely higher than are actually present under typical conditions, which further supports the determination that predicted concentrations of TLNG's PM 2.5 emissions will not exceed NAAQS. *Ex. PSE-374, p. 108, n. 133 (Libicki Pre-filed Testimony)*.

contribute to an exceedance of ambient air quality standards is consistent with how Washington air agencies evaluate emissions. *Ex. PSE-374, pp. 7, 14-15, 81-82 (Libicki Pre-filed Testimony)*.

116.

Appellants presented Dr. Sahu's testimony to support their contention that the data PSCAA and Dr. Libicki used for their background analysis do not capture all background sources of $PM_{2.5}$ and other criteria air pollutants. *Sahu Testimony at 1653-54, 1658; Ex. APTI-587, p. 44 (Sahu Amended Pre-filed Testimony)*. They also rely on a selected sentence from a FAQs guidance document on the use of the background data (design values) that Dr. Libicki used. *Ex. APTI-602* (NW-Airquest Regional Background Design Values). Reading the guidance document, and considering PSCAA's and Dr. Libicki's background analysis against Dr. Sahu's critiques, the Board finds that Respondents' background analysis was reasonable, appropriate, and consistent with how such background data are used in the context of minor source permitting in Washington. *See, e.g., MYTAPN v. Dep't of Ecology*, PCHB No. 10-162, FOF 7 (July 25, 2012). That Dr. Libicki could not specifically confirm that the background data she used from AIRPACT includes daily marine traffic emissions does not undercut her testimony or otherwise make her testimony on this issue less credible. *See The Puyallup Tribe of Indians' Closing Statement, p. 35; Libicki Testimony at 2513*.

117.

To further support Landau's analysis that TLNG criteria pollutant emissions will not violate NAAQS, PSE also presented Dr. Libicki's additional "sensitivity analysis" to respond to Dr. Sahu's concerns that Landau's use of uniform flare stack temperature (1600 F) and exit

velocities results in underestimating ambient concentrations of criteria pollutants. The sensitivity analysis examined impacts of worst case, unrealistic, flare stack temperatures and exhaust velocities on Landau's air dispersion modeling results. The resulting analysis showed that TLNG's emission will not cause or contribute to a violation of NAAQS, consistent with Landau's modeling and PSCAA's conclusions from Landau's modeling. *Ex. PSE-374, pp. 109-118 (Libicki Pre-filed Testimony)*.

118.

Finally, Dr. Libicki also re-ran the air dispersion modeling with the same flare stack exit temperature and exit velocity from Dr. Smith's CFD modeling. The results also refuted Dr. Sahu's concerns about Landau's use of same exit gas temperature when the composition of waste gas, flow rate, and other factors changes. *Ex. APTI-587, pp. 40-41 (Sahu Amended Pre-filed Testimony)*. Instead, Dr. Libicki's results were highly consistent with Landau's results and showed no NAAQS violation. *Ex. PSE-374, pp. 119-20 (Libicki Pre-filed Testimony)*.

119.

Appellants argue that using non-representative meteorological data also contributed to flawed dispersion modeling. *See* Issue 4a, discussion above. But as explained in ¶¶ 34-53, the meteorological data used in dispersion modeling was representative and reliable. Even assuming that the meteorological data was not representative, Appellants failed to present any analysis, much less dispersion modeling, showing that such data materially affected the modeling and resulted in exceedances of screening thresholds or a violation of NAAQS. *Sahu Testimony at 1711-13, 1715*. As concluded in ¶ 54, the meteorological data inputs used to conduct dispersion

modeling were representative, and Appellants did not meet their burden of proving that the modeling was flawed on this basis.

120.

Appellants also present additional bases to support their claim of underestimated criteria pollutant emissions that were specific to $PM_{2.5}$, nitrogen dioxide, and sulfur dioxide. Each criteria pollutant is discussed in turn.

1. $PM_{2.5}$

121.

The parties agree that new air dispersion modeling with the correct wind direction for $PM_{2.5}$ shows that TLNG's $PM_{2.5}$ emissions of 1.3 ug/m^3 exceed WAC 173-400-113, Table 4a's *threshold* of 1.2 ug/m3. *Ex. RA-143*. But as stated in ¶¶ 113-115, PSCAA's and Dr. Libicki's background analysis did not show that the $PM_{2.5}$ NAAQS were exceeded. Appellants only point out that $PM_{2.5}$ emissions were still underestimated by using AP-42 emissions factors because they only represent an average range of emission rates.

122.

Landau used AP-42 emission factors from the EPA to calculate $PM_{2.5}$ emissions (among others) from gas combustion in the flare and vaporizer, as well as in its air dispersion modeling. *Ex. PSE-374, p. 27 (Libicki Pre-filed Testimony)*. AP-42 contains EPA's compilation of emission factors for carbon monoxide, nitrogen oxides, and VOCs that are used by industry based on emissions test data from various industrial facilities and sources. They are continually

updated and undergo public review and comment. *Id*., *pp. 28-29*; *Ex. RA-71; Van Slyke Testimony at 1909*.

123.

Appellants presented Dr. Sahu's opinion that average emission factors in AP-42 and other sources should not have been used because it underestimates flare emissions. *Ex.-APTI 587, pp. 23, 45 (Sahu Amended Pre-filed Testimony)*. Appellants also presented an EPA enforcement alert document on inappropriate use of AP-42 emission factors. *Ex. APTI-423*. Regulatory agencies and industries use AP-42 emission values to prepare emission inventories for permitting purposes, and to estimate a future facility's potential to emit pollutants. *Ex. PSE-374, pp. 25, 29-30 (Libicki Pre-filed Testimony)*.

124.

Respondents presented evidence that it is an accepted, standard, and reasonable practice for air Permit applications to use emissions factors to estimate a yet to be built facility's potential to emit because site specific emissions data will not be available before an air Permit is issued. *Ex. PSE-374, pp. 25-26 (Libicki Pre-filed Testimony); Libicki Testimony at 2428; Van Slyke Testimony at 1908-12*. The choice to use AP-42 emission factors entails engineering judgment weighing the risks of using them in a particular situation against the costs of further testing and analysis. *Id*. at 1910-11. Here, Landau used emissions factors in calculating TLNG's potential to emit certain air pollutants as well as in the air dispersion modeling. *Ex. PSE-374, p. 27 (Libicki Pre-filed Testimony)*.

125.

The Board relies on Respondents' persuasive expert testimony to find that using AP-42 emissions factors to estimate $PM_{2.5}$ emissions in this case was appropriate and consistent with PSCAA practice. This Board has also approved use of AP-42 emission factors. *See, Mazdak Int'l, Inc. v. Northwest Clean Air Agency*, PCHB No. 13-008, pp. 10-11, 14 (Oct. 8, 2013). The Board defers to PSCAA's choice of methodology in estimating certain criteria pollutant emissions using AP-42 factors as a proper exercise of engineering judgment. *MYTAPN v. Dep't of Ecology*, PCHB No. 17-022, p. 12 (July 19, 2018); *Port of Seattle*, 151 Wn.2d at 594-95.

126.

Appellants also contend that even if using AP-42 factor was appropriate, using a constant heating value of 1,020 Btu/scf for natural gas to convert the AP-42 emission factor of 7.6 pounds per million standard cubic feet of gas (lb/MMscf) to units of lb/MMBtu (pounds per British thermal unit) underestimated emissions from worst case *flaring* scenarios because TLNG's flaring cases will be flaring natural waste gas instead of natural gas.

127.

The Board disagrees. Dr. Sahu's "algebraic calculations" to explain why this results in underestimating PM emissions and modeled impacts were not in his pre-filed testimony or in any other exhibit; rather, Dr. Sahu testified that he calculated them the day after listening to Mr. Munoz's testimony. *Sahu Testimony at 1620-21; The Puyallup Tribe of Indians' Closing Statement, p. 26, n. 37*. What scant evidence Appellants presented on the use of a constant heating value falls short of demonstrating that the $PM_{2.5}$ worst case emissions *from flaring cases*

ultimately violated the NAAQS. That is in part because the maximum modeled impacts from $PM_{2.5}$ occurs when TLNG is vaporizing (and when the flare is not operating), not when TLNG is liquefying, and the flare is operating. *See Puget Sound Energy, Inc.'s Post-Hearing Brief, p. 41, fn. 335 (citing Ex. PSE-370); Ex. RA-68, p. 34* (liquefaction cannot occur while vaporization is occurring and vice versa; emissions would be highest for all pollutants except $PM_{10}/PM_{2.5}$ when the facility is liquefying).

128.

In sum, the Board concludes that because the modeled $PM_{2.5}$ value was the same as the threshold value, additional analysis was conducted, which showed no violation of ambient air quality standard. ¶ *121*. Without evidence demonstrating that using a different emission value would increase $PM_{2.5}$ emissions to the point of violating NAAQS, Appellants did not meet their burden in Issue 4f, with respect to $PM_{2.5}$. ¶¶ *122-127*.

2. Nitrogen Dioxides (NO_2)[27]

129.

Permit Condition 17 prohibits the discharge of nitrogen oxides in excess of the following limits: 0.066 lbs/MMBtu when the small warm burner is operating, 0.060 lbs/MMBtu when the small cold burner is operating, and 0.023 lbs/MMBtu whenever exclusively one or both of the large burners are operating. *Ex. RA-132, p. 4*.

[27] In briefing, exhibits, and at hearing the parties have referred to nitrogen dioxide as NOx (nitrogen oxide). Nitrogen dioxide is one of a group of highly reactive gases known as oxides of nitrogen or nitrogen oxides (NOx). *See*, https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2. For consistency, the Board will refer to this criteria air pollutant as nitrogen dioxide (NO_2).

130.

Permit Condition 22 provides that the compliance with the NO_2 limits in Condition 17 must be demonstrated by initial testing the flare at the specified times and manner and through recurring testing. *Ex. RA-132, p. 4*.

131.

Appellants argue that Respondents underestimated TLNG's potential to emit NO_2 in Landau's air dispersion modeling by using only the Permit's limit of 0.023 lbs/MMBtu when one or both of the large burners are operating. They argue that Respondents' calculations fail to consider NO_2 emissions when the large warm burner and the small cold burner are used simultaneously. *Sahu Testimony at 1633-34*.

132.

However, Landau clearly demonstrated through detailed air modeling spreadsheets that all scenarios of NO_2 emissions (all the combinations of different burners operating and combinations of facility operating scenarios), and the emissions value that Appellants claim was not considered, were indeed considered in both in the modeling and PSCAA's Permit worksheet. *Ottersburg Testimony at 2290-93*. PSCAA also presented testimony that the 0.023 lbs/MMBtu emission rate that applies to the large warm burner continues to apply to that burner even when a small burner is operating. *Munoz Testimony at 1336*.

133.

Appellants have presented no evidence that TLNG's 1-hour NO_2 emissions violate the NAAQS. *Ex. APTI-587, pp. 46-48 (Sahu Amended Pre-filed Testimony)*. In contrast, PSE

presented Dr. Libicki's sensitivity analysis (including adding background concentration values to the 1-hour NO_2 value that exceeded the threshold value), and her re-run modeling using Dr. Smith's flare stack parameters showing that NAAQS for 1-hour NO_2 were not violated. *Ex. PSE- 374, pp. 106-120 (Libicki Pre-filed Testimony)*.

134.

The Board concludes that Respondents did not underestimate TLNG's potential to emit NO_2 from flare burner combustion. ¶¶ *131-33*. All combinations of flare burner operation and facility operation scenarios were evaluated to obtain maximum (worst case) NO_2 emission values. ¶ *132*. The findings support the conclusion that TLNG's modeled concentrations of NO_2 do not cause or contribute to NAAQS violation.

3. Sulfur Dioxide (SO_2)

135.

The amount of sulfur in TLNG's feed gas affects its SO_2 emissions from the flare. SO_2 has four threshold values depending on averaging times: 1-hour, 3-hour, 24-hour, and annual. *Ex. APTI-581, p. 41*. Permit Condition 16 limits SO_2 emissions to 165 lb/MMcf, and provides that PSE may perform either an SO_2 performance test at the flare outlet or test the inlet concentration to the flare once every 12 months for all sulfur containing compounds and then assume all sulfur converts to SO_2 in the stack. *Ex. RA-132, p. 3*.

136.

Dr. Libicki and Ottersburg explained how the 165 lb/MMcf emissions rate (incorporated as a Permit limit) was calculated. *Ex. PSE-374, p. 156 (Libicki Pre-filed Testimony)*; *Ottersburg*

Testimony at 2230-31. There are two major forms of sulfur in the pipeline feed gas coming to TLNG**:** hydrogen sulfide (H_2S) and non-H_2S sulfur compounds. *Exs. PSE-374, p. 156 (Libicki Pre-filed Testimony)*, *RA-68, pp. 42-43, RA-57*. PSE adds non-H_2S sulfur-based odorants to the natural gas it receives from the pipeline, which was accounted for in Landau's calculations. *Id*.

137.

Landau used the following challenged inputs for its SO_2 emissions calculations:

1. 80% of non-H_2S sulfur is removed and sent to the flare, based on information from CB&I,[28] *Ex. PSE-68, Stobart Testimony at 2055-58*;
2. Pipeline tariff limit of 0.25 grains/100 SCF for H_2S; and
3. 0.603 grains/100 SCF for total sulfur.

Ex. RA-68, p. 43; Ottersburg Testimony at 2230, 2232-33.

138.

Landau selected the 0.603 grain value at the time of its calculation from the most recent 12 months of available total sulfur data in the pipeline (July 2016 – June 2017) because it believed sulfur was decreasing over the years and expected it to continue decreasing. *Ottersburg Testimony at 2232-33*. However, on cross-examination, Ottersburg acknowledged that there were total sulfur values higher than 0.603 in the 12-month period that it had selected, including 1.019 grains. *Ottersburg Testimony at 2299-2303*.

[28] The 80% of non-H_2S sulfur means the mass of sulfur sent to the flare for combustion that Landau determined for each operating scenario. Landau then used the percentage to calculate the concentration of sulfur in each of the flared gas cases and proposed an emission limit for the facility based on those calculations. *Ottersburg Testimony at 2230*.

139.

To support their claim that SO_2 emissions exceed thresholds, Appellants presented Dr. Sahu's calculations of SO_2 emissions by using different inputs than Landau used: 1) using higher total sulfur concentration in TLNG's feed gas than that used by Landau; and 2) assuming 100% of non-H_2S sulfur compounds will go to the flare for combustion instead of 80%. *Ex. RA-68, p. 43*.

140.

Specifically, Dr. Sahu ran two calculations. In one calculation, he used 1.019 grains/100 SCF of total sulfur instead of Landau's 0.603 grains/100 SCF. In the second calculation, Dr. Sahu used 5 grains/100 SCF of total sulfur, which is the pipeline tariff limit. The Board finds these inputs reasonable and supported by the evidence. In both calculations, Dr. Sahu assumed 100% of the non-H_2S sulfur would go to the flare instead of Landau's assumption of 80%. *Exs. APTI-581, pp. 41-43, PSE-374, p. 159 (Libicki Pre-filed Testimony)*. This assumption was also reasonable and appropriate given that the 80% figure would not be verified during facility operations and could fluctuate depending on the amount of CO_2 in the feed gas. *Stobart Testimony at 2057-58*.

141.

Dr. Sahu demonstrated that the 1-hour, 3-hour, and 24-hour SO_2 thresholds would be exceeded if his inputs had been used. Appellants thus met their burden on Issue 4e. In response, Respondents emphasize that TLNG must comply with the 165 lbs/MMScf SO_2 emission limit in Permit Condition 16, which is a lower Permit limit. Although Dr. Sahu's calculated a higher

SO_2 emissions of 285.45 lbs/MMScf using his reasonable inputs (thus representing a less stringent Permit emissions limit than 165 lbs/MMScf), Dr. Libicki *agreed* with Dr. Sahu's analysis that had the higher 285.45 lbs/MMScf emission been used in the calculations, it would have resulted in a modeled concentration exceeding the threshold for 1-hour SO_2 (55.7 ug/m3 greater than screening threshold of 30 ug/m3). *Sahu Testimony at 1726-27; Ex. PSE-374, pp. 159-160 (Libicki Pre-filed Testimony)*.

142.

Dr. Libicki went on to add background concentration to the 1-hour SO_2 value that exceeded the threshold (55.7 ug/m3 + 18 ug/m3 (background) = 73.7 ug/m3), as was done with $PM_{2.5}$, and the result showed no violation of the NAAQS value of 196 ug/m3. *Ex. PSE-374, pp. 160-161 (Libicki Pre-filed Testimony)*. However, there is no evidence that such background analysis was done for 3-hour SO_2, 24-hour SO_2, and annual SO_2 to demonstrate compliance with NAAQS for those averaging times. Dr. Libicki did not analyze whether TLNG will violate NAAQS if the 5 grains/100 SCF tariff limit for total sulfur was used. *Libicki Testimony at 2526-57*. Without the background analysis, review to determine whether TLNG's modeled concentrations of SO_2 violate NAAQS is incomplete.

143.

Respondents mainly emphasized that the SO_2 limit in Permit Condition 16, among other conditions, will ensure compliance with NAAQS. *Ottersburg Testimony at 2234-36; Ex. PSE-374, p. 161 (Libicki Pre-filed Testimony)*; *Van Slyke Testimony at 1949-50*. The Board finds that Permit Condition 16 does not protect against SO_2 emissions that either exceed threshold and/or

violate NAAQS because determining compliance with the SO_2 emissions limit in Condition 16 occurs only once a year. *Van Slyke Testimony at 1385-90; Sahu Testimony at 2593-94.*

144.

The Board finds that Appellants have met their burden of demonstrating that TLNG's SO_2 emission will exceed multiple thresholds if using Dr. Sahu's inputs. The Board further finds and concludes that similar to its analysis of parametric monitoring VOC emissions, the once yearly testing specified in Permit Condition 16 and other SO_2 conditions are insufficient to ensure that SO_2 emissions will not cause or contribute to NAAQS violation, given the variable composition of sulfur in feed gas from month to month. Dr. Sahu pointed out that the Permit does not require continuous measurement of the flare's actual SO_2 emissions, and that an SO_2 CEMS, which is widely available, would confirm compliance with the Permit's SO_2 limit. *Ex. APTI-581, p. 43; Sahu Testimony at 1727.*

145.

In sum, the Board concludes that evidence showed that TLNG's impacts from SO_2 emissions will exceed multiple *thresholds* when using the reasonable inputs that Dr. Sahu did for his calculations. ¶ *141*. Appellants thus have met their burden as to Issue 4e. The Board concludes that the once yearly testing specified in Permit Condition 16, and the other conditions related to SO_2 emissions, do not sufficiently ensure that SO_2 emissions will not cause or contribute to NAAQS violation -- Respondents did not present background analysis demonstrating that the threshold exceedances calculated by Dr. Sahu (particularly using the tariff limit 5 grains/hundred cubic feet as a different input to calculate the amount of non-H2S sulfur in

TLNG's feed gas) will not cause or contribute to violation of NAAQS. ¶¶ *142-143*. Since adhering to the Permit's SO_2 limit is crucial to ensuring compliance with NAAQS established to protect the public health and environment,[29] CEMS is necessary and appropriate under the facts to verify that the SO_2 limit is met at all times, and not solely during one testing day per year. ¶¶ *143-144*.

146.

PSE stated that if the Board disagreed that the Permit's SO_2 limit could be enforced through the once yearly testing in Condition 16, and "concludes additional testing is necessary," PSE would be willing to install an SO_2 CEMS. *Puget Sound Energy, Inc.'s Prehearing Brief, p. 7, Puget Sound Energy, Inc.'s Post-Hearing Brief, p. 46, n. 329; Puget Sound Energy's Inc.'s Opening Statement During Hearing, Transcript at 1789*. PSCAA generally agreed. *See Van Slyke Testimony at 1962* (PSCAA would continue to discuss installing CEMS on flare with Tribe as it had done with other matters). The Tribe also stated that the Board should amend the Permit to require CEMS for certain pollutants. *The Puyallup Tribe of Indians' Closing Statement, pp. 52-53*.

147.

Because the parties agree that installing CEMS would remedy the Board's finding that the Permit does not assure that SO_2 emissions will not cause or contribute to NAAQS violation,

[29] The limits and conditions placed in an NOC order of approval are also critical to protecting human health because, unlike air operating permits that are subject to periodic review and renewal (and therefore offer the opportunity to employ newer and more robust BACT to control emissions), an NOC approval allows a facility to operate under the terms and conditions of the approval for the life of the project. *Five Corners family Farmers v. Dep't of Ecology*, PCHB No. 09-106 (2010).

the Board directs that a SO_2 CEMS be installed to continuously monitor compliance with the Permit's limit of 165 lb SO2/MMscf at the flare. *PSE Prehearing Brief, p. 7, n. 15*. As PSE and Appellants have pointed out, the Board has affirmed Permits by requiring additional Permit conditions after a hearing and integrating the conditions in the Board's final order. *See, e.g.*, *MYTAPN v. Dep't of Ecology*, PCHB No. 10-162 (July 25, 2012); *Ostrom Co. Inc. v. Olympic Region Clean Air Agency*, PCHB Nos. 04-105, 04-140 (Sept. 9, 2005). After hearing, Appellants prepared a proposed redline to the Permit presenting their extensive proposed changes, including adding CEMS. *See App. A to The Puyallup Tribe of Indians' Closing Statement*. Although the Board is not adopting the proposed CEMS addition language offered by Appellants, nor opining on other proposed changes, this Order does not preclude the parties from considering and agreeing to the other proposed changes. The parties are directed to work together expeditiously and efficiently to modify the Permit to add the conditions of installing a CEMS to monitor SO_2 emissions and VOC emissions (at the flare outlet) consistent with this decision.

E. Toxic Air Pollutants/Hazardous Air Pollutants (Issues 4e, 4g, 4h, 4i)

148.

Issues 4e, 4g, 4h, and 4i encompass whether TLNG's emissions of toxic air pollutants (TAPs) and hazardous air pollutants (HAPs) comply with applicable limits.

149.

A new or modified source that emits any quantity of TAPs in excess of de minimis values[30] is subject to TAPs rules. WAC 173-460-080(1). The TAP rules in turn provide that a new or modified source of TAPs[31] must employ the BACT for toxics (referred to as tBACT), and must conduct a source impact analysis on ambient air for each TAP based on the employed tBACT. WAC 173-460-040(3); WAC 173-460-070; *see also, MYTAPN v Dep't of Ecology*, PCHB No. 10-162, FF 18 (July 25, 2012).

150.

The source impact analysis requirement can be satisfied for any TAP using either small quantity emission rates (SQERs) or dispersion modeling. If an emitting source can demonstrate that its TAPs emission rate does not exceed the SQER listed in WAC 173-460-150 for a given TAP, then the source impact analysis requirement has been satisfied and no further analysis is required. WAC 173-460-080(2)(b). But if TAP emission rates exceed SQER values, the emitting source must use dispersion modeling to determine whether those rates exceed acceptable source impact levels (ASILs). WAC 173-460-080(2)(a). If dispersion modeling demonstrates that the measured TAPs do not exceed ASILs, then no further analysis is required and PSCAA may approve the Permit application. WAC 173-460-080(4)(a). For those TAPs that exceed ASIL values after dispersion modeling, an applicant may submit an application for

[30] De minimis emissions are defined as trivial levels of emissions that do not pose a threat to human health or the environment and its threshold values are listed in WAC 173-460-150. *See* WAC 173-460-020(4).

[31] "New or modified toxic air pollutant source" means the construction or modification of a stationary source that increases the amount of any toxic air pollutant emitted by such source or that results in the emission of any toxic air pollutant not previously emitted. WAC 173-460-020 (6).

second tier review. WAC 173-460-080(4)(b); WAC 173-460-090*; see also, Five Corners Family Farmers v Dep't of Ecology*, PCHB No. 09-106 (Nov. 3, 2010).

151.

TLNG will emit HAPs and TAPs during flare combustion. PSCAA reviewed Landau's dispersion modeling and determined that TLNG's emissions of HAPs and TAPs will not exceed ASILs and/or SQERs. Appellants argue it was an erroneous determination based on flawed ambient toxics impact analysis.

152.

A new source emitting TAPs must demonstrate in its Permit application that the emission rate for each TAP is lower than the SQER, or that the modeled ambient impact is less than the ASIL. *Exs. RA-68, pp. 50-51, PSE-118, p. 7, PSE-374, pp. 121-22 (Libicki Pre-filed Testimony)*. PSCAA first compared TLNG's TAP emissions to the SQERs and found that seven TAPs exceeded the SQER, which were then modeled for comparison to the ASILs. *Ottersburg Testimony at 2237-39; Ex. PSE-374, pp. 121-124 (Libicki Pre-filed Testimony)*; *Ex. RA-68, p. 54*. None of the seven TAPs exceeded an ASIL, obviating the need for further TAP analysis. *Ex. RA-68, pp. 55-56; Ex. PSE-374, p. 123 (Libicki Pre-filed Testimony)*; *Van Slyke Testimony at 1869, 1913*. In fact, the modeled concentrations for the TAPs were significantly below ASIL values. *Ottersburg Testimony at 2238*. The air dispersion modeling for TAPs/HAPs done by Landau used the highest ambient impact from worst case TLNG operating scenarios and worst case set of meteorological data. *Ottersburg Testimony at 2216-2221, 2237-38, 2246, 2257-58; Ex. PSE-374, p. 135 (Libicki Pre-filed Testimony)*.

153.

Appellants challenge the TAPs/HAPs analysis based on Dr. Sahu's opinion that: 1) the analysis only considered four TAPs – benzene, ethylbenzene, toluene, and xylene (BTEX), and for those four compounds, it relied on 2014 pre-Permit issuance data that understated concentrations for some BTEX compounds, thus resulting in materially underestimating TLNG's HAPs/TAPs emissions. *Ex. APTI-587, pp. 60-6, Ex. RA-68, p. 42 (Sahu Amended Pre-filed Testimony)*;[32] 2) the analysis did not evaluate all TAPs that the flare will generate, such as products of incomplete combustions (PICs). *Ex. APTI 587, pp. 50-51 (Sahu Amended Pre-filed Testimony)*; and 3) the toxics analysis should not have used AP-42 emission factors, among others, to determine TLNG's potential to emit HAPs/TAPs, and had higher emissions factor been used for acrolein and formaldehyde, it could have increased their emissions impacts above SQERs. *Sahu Testimony at 1713; Ex. APTI- 581, pp. 51-54*.

154.

Respondents countered Dr. Sahu's generalized concerns with analyses performed by Dr. Libicki and Van Slyke's testimony. First, Dr. Libicki's analysis of whether higher levels of BTEX obtained from the 2019 incoming feed gas sample would result in concentrations exceeding SQER and ASILs showed that they would not. Indeed, Dr. Libicki's modeling results revealed that benzene concentrations from flaring would have to increase by a factor of more than 7,000 times to approach ASIL, and toluene concentrations would have to increase by 8

[32] *Compare* PSCAA's NOC worksheet "Flared Waste Gas Table" results for concentrations of benzene (2,980 ug/m3) and toluene (2,570 ug/m3), *Ex. RA-68, p. 42*, *with* October 2019 concentrations from Fremont Analytical sampling showing concentrations of benzene (4,060 ug/m3) and toluene (3,160 ug/m3). *Ex. APTI-514, p. 5*.

million times. *Ex. PSE-374, pp. 127-131 (Libicki Pre-filed Testimony)*. Dr. Sahu acknowledged these results, and candidly testified that he did not have a basis to opine that TAPs emissions will exceed ASILs. *Sahu Testimony at 1728-29*.

155.

Dr. Libicki also opined that it was reasonable for Landau's analysis to assume that flare gas concentrations of BTEX were the same as incoming feed gas in the 2014 gas pipeline sample given that much of the BTEX, being a heavier hydrocarbon, would go the heavy storage vessel instead of the flare. *Ex. PSE-374, pp. 133-34 (Libicki Pre-filed Testimony)*; *see also Van Slyke Testimony at 1931-32*.

156.

As stated in ¶¶ 117-118, Dr. Libicki also performed a sensitivity analysis using worst case flare exhaust temperature and velocity values and ran the air dispersion modeling using Dr. Smith's predicted flare temperature and velocities to account for a wider range of flare stack parameters. Results from both analyses demonstrated that none of the modeled TAP concentrations will exceed ASILs. *Ex. PSE-374, pp. 128-33, 135-38 (Libicki Pre-filed Testimony)*.

157.

The Board has already found and concluded that using AP-42 emission factors was appropriate and deference is accorded to PSCAA's decision on which emission factors to apply. *See ¶ 125*. Moreover, PSCAA presented Van Slyke's testimony that flare emissions estimated in part by using AP-42 emissions factors included products of incomplete combustion. *Van Slyke*

Testimony at 1930-32. Finally, based on Dr. Libicki's unrebutted analysis, the Board finds that even if a higher emissions factor had been used for acrolein and formaldehyde, it would not have resulted in exceedances of their respective ASIL values. *Ex. PSE-374, pp. 139-142 (Libicki Pre-filed Testimony)*.

158.

Appellants also argue that PSCAA's conclusion that TLNG's emissions will not exceed applicable SQERs and ASILs is unreasonable because it relied on the air dispersion modeling using alleged non-representative meteorological data and the erroneous wind direction data. But as explained in the analysis of Issue 4a, the meteorological data used in dispersion modeling was representative and constituted a reliable basis for dispersion modeling. Moreover, Dr. Libicki undertook additional air dispersal modeling using the correct wind direction. The results demonstrated that concentrations of BTEX, acrolein, formaldehyde, and the seven TAPs that exceeded the SQERs are all below their respective ASIL values. *Ex. PSE-373, pp. 15-18 (Libicki Pre-filed Testimony Addendum)*. Appellants fail to present any evidence showing that Dr. Libicki's additional modeling results were erroneous. The Board agrees with Dr. Libicki's opinion, fully supported by quantitative analysis, that even changing meteorological data could not cause an ASIL exceedance. *Ex. PSE-374, p. 139 (Libicki Pre-filed Testimony)*.

159.

In sum, without performing air dispersion modeling or at least some calculations to challenge Respondents' modeling results on TAPs/HAPs, Appellants have not met their burden

to prove that the Permit erroneously concluded that TAPs/HAPs emissions will not exceed applicable SQERs and ASILs.

160.

Based on ¶¶ 148-159, the Permit's analysis and review for TLNG's TAPs/HAPs emissions was appropriate and did not underestimate emissions and/or impacts. The Board concludes Appellants did not meet their burden to show that any TAPs/HAPs exceed ASIL.

F. BACT/tBACT Determinations (Issues 4j, 4u)

161.

Issue 4j asks whether PSCAA violated WAC 173-460-060 by failing to require tBACT for all TAPS that exceed emission values in WAC 173-460-150. Issue 4u asks whether PSCAA violated the Clean Air Act (CAA) by allowing TLNG to achieve BACT through "good combustion practices."

162.

Both BACT and toxic BACT (tBACT) refer to emission limitations placed on an emitting source by the permitting agency with the purpose of reducing the amount of emitted air pollutants which are subject to regulation. All new or modified sources of TAPs,[33] must employ BACT for toxic air pollutants, referred to as tBACT. WAC 173-460-040(3)(b); WAC 173-460-060. Both BACT and tBACT rely on the same statutory definition of BACT, *see* WAC 173-400-030(13), and the processes for determining BACT and tBACT for given emission units are

[33] TAPs are any toxic air pollutant listed in WAC 173-460-150. WAC 173-460-020(8).

completed at the same time by a reviewing engineer. *Van Slyke Testimony at 1898-99.* In other words, tBACT is BACT as applied to TAPs. WAC 173-460-020(3).

163.

The determination of what emission control limitations constitute BACT/tBACT for a proposed project or facility is made by agency engineers reviewing the Permit application. *Van Slyke Testimony at 1847.* BACT/tBACT is determined on a case-by-case basis and the reviewing engineer balances many factors, such as available control technologies, energy considerations, environmental considerations, and economic considerations. *MYTAPN v. Dep't of Ecology,* PCHB No. 10-162, pp. 26-27 (July 25, 2012); WAC 173-400-030(13). [34]

164.

In the context of a Permit application, BACT/tBACT determinations are required for all emission units that are subject to review. *Van Slyke Testimony at 1846.* In making a BACT/tBACT determination for a given emission unit, reviewing engineers may review other comparable projects or technologies and then apply their engineering judgment to discern whether the selected controls will be sufficient to meet all regulatory requirements. *Van Slyke Testimony at 1846 –55.*

[34] "Best available control technology (BACT)" is defined as emission limitation based on the maximum degree of reduction for each air pollutant subject to regulation under chapter 70.94 RCW emitted from or which results from any new or modified stationary source, which the permitting authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes and available methods, systems, and techniques, including fuel cleaning, clean fuels, or treatment or innovative fuel combustion techniques for control of each such pollutant. WAC 173-400-030(13).

165.

BACT and an agency's Permit application review does not authorize or require PSCAA to redesign the project. *Van Slyke Testimony at 1944-46.*

166.

The conditions imposed by PSCAA in the Permit apply BACT requirements on TLNG. *Van Slyke Testimony at 1889-91; Ex. RA-16.* Any failure of the operator to adhere to the Permit conditions will result in the operator being out of compliance and subject to fine and/or punishment. PSCAA Regulation I, Article 3, §§ 3.09, 3.11, 3.13. In other words, TLNG must comply with its Permitted conditions at all times.

167.

PSCAA made BACT recommendations for TLNG's emission units; specifically, emissions from the flare, the vaporizer, and the fugitive emissions. *Van Slyke Testimony at 1887.* To develop those recommendations, staff reviewed recently issued BACT determinations from EPA's BACT Clearinghouse, California's Air Resources Board BACT Clearinghouse, Sacramento Metropolitan Air Quality Management District, Bay Area Air Quality Management District, South Coast Air Quality Management District, and Texas Commission on Environmental Quality. *Ex. RA-68, pp. 10-14.* PSCAA compared the various BACT requirements for VOCs, NO_2, CO, particulate matter, and SO_2. *Id.*

168.

PSCAA also considered BACT that was required for other facilities with similar emission units, such as a U.S. Oil Refinery, the Chambers Creek Wastewater Treatment Plant, a company

called "Belmont Cabinets," and Seattle's West Point wastewater treatment plant. *Van Slyke Testimony at 1900-03; Exs. RA-123, RA-124, RA-125, RA-126.*

169.

PSCAA concluded that PSE's proposed BACT for the flare exhaust remained consistent with the most restrictive determinations for enclosed ground flares. The agency determined that the proposed BACT was acceptable, taking into consideration energy, environmental, economic impacts and a comparison to other BACT analyses. *Ex. RA-68*, *p. 17.*

170.

PSCAA determined that BACT for the enclosed ground flare was a minimum destruction efficiency of 99% for VOCs, and set emission limits for SO_2, NO_2, CO, and particulate matter. *Ex. RA-68, p. 27.* Permit Conditions 10-30 include BACT for the flare. *Ex. RA-132, pp. 2-5.*

171.

PSCAA reviewed other BACT determinations for vaporizers and determined emission limitations for SO_2, VOCs, CO, NO_2, and particulate matter. *RA-68, pp. 10-14.* PSCAA determined that BACT for SO_2 was good combustion practices. *Id., p. 26.* Good combustion practices are a well-known and industry-accepted term that is used regularly by air agencies. This term is shorthand for using design in equipment to maintain an efficient combustion operation in a device that is burning fuel or waste. *Van Slyke Testimony at 1943-44.* Conditions 3-9 of the Permit govern the regulation of the vaporizer and include the BACT determinations. *Ex. RA-132, pp. 1-2.*

172.

PSCAA also reviewed other agency websites for similar facilities like natural gas processing plants and/or oil refineries to determine BACT for fugitive emissions from equipment leaks. The agency found that typical BACT determinations for significant fugitive emissions included the use of a LDAR. LDAR programs are used to inspect facility components to identify leaks either by using instruments or physical inspections. Identified leaks are repaired within a specified time period to minimize emissions. *Ex. RA-68, pp. 19-21.*

173.

As stated in ¶ 92 Permit Condition 32 requires PSE to submit and implement an approved LDAR plan as BACT for fugitive equipment leaks. *Ex. RA- 132, p. 5*. The LDAR plan was submitted to PSCAA on March 11, 2021. ¶ *92.* The program would initially include monthly monitoring, repair of any detected leaks, and recordkeeping. *Ex. RA-68, p. 25.*

174.

The Tribe argued that, during its BACT analysis, PSCAA should have considered a thermal oxidizer such as the system used at the Freeport LNG facility in Texas instead of the flare. The Tribe also argued that PSCAA should have considered leakless components, and alternatives such as gas recovery, which would minimize flaring. *The Puyallup Tribe of Indians' Closing Statement, pp. 20-23; The Puyallup Tribe of Indians' Prehearing Brief, pp. 11-15.* The Tribe further argued that PSCAA's tBACT analysis was inadequate. *Sahu Testimony at 1647-49.*

175.

PSCAA responded as follows: since tBACT equals BACT, tBACT requirements are covered by the BACT conditions for the flare, vaporizer, and fugitive emissions (listed in *Ex. RA-16*). For example, the flare is required to have a destruction rate efficiency of 99%. As Van Slyke testified, PSCAA is not authorized to redesign the project as part of its BACT determination. And with the flare achieving 99% destruction efficiency for VOCs as conditioned, there is no need to consider alternatives. Leakless components are not the industry standard and are seldom used. *Stobart Testimony at 2045-46.* "Good combustion practices" is a common BACT term and is often used as a requirement. *Respondent Puget Sound Clean Air Agency's Closing Argument, pp. 42-45; Respondent Puget Sound Clean Air Agency's Prehearing Brief, pp. 17-22*.

176.

PSE also argued that tBACT requirements are included in the BACT conditions. PSE further argued "good combustion practices" is a standard requirement, and PSCAA imposed specific emission limits for particulate matter, nitrogen oxide, sulfur dioxide and carbon monoxide. *Puget Sound Energy, Inc.'s Post-hearing Brief, p. 45; Puget Sound Energy's Inc.'s Prehearing Brief, pp. 21-23*.

177.

The Board concludes that tBACT requirements may be satisfied by proper BACT conditions. According to Ecology's regulations, tBACT is merely BACT applied to toxic air pollutants. As stated earlier, BACT/tBACT is determined on a case-by-case basis and the

reviewing PSCAA engineer balances many factors, such as available control technologies, energy considerations, environmental considerations, and economic considerations. ¶ *163*.

178.

The Permit contains BACT emission limits and conditions for each of the emission units in the facility: the flare, vaporizer, and fugitive emissions. The Permit requires a minimum of 99% destruction of all VOCs for the flare, and the flare is also subject to emission limits for SO2, CO, NO_2, and particulate matter. The vaporizer has emission limits for VOCs, SO2, CO, NO_2, and particulate matter. Fugitive emissions are addressed by a LDAR plan. ¶ *172*; *Exs. RA-16, RA- 68, RA-132.*

179.

Respondents generally argued that when the Board is presented with conflicting expert opinion on an issue, it is PSCAA's task, rather than the Board's, to resolve those differences. This contention is too broad as the Board often resolves conflicting expert opinions. The Board defers to PSCAA's engineering judgment and expertise in making this BACT determination and concludes the agency's BACT determination is reasonable.

180.

The Board also rejects the Tribe's argument that BACT requires alternatives to flaring such as gas recovery. With the flare's 99% DRE for VOCs as conditioned, there is no need to consider alternatives, such as the system used at Freeport LNG. In any event, the Board agrees with Dr. Smith's and Van Slyke's testimony that TLNG's flare is a type of thermal oxider. Leakless components are not the industry standard and are seldom used. Stobart, from his

extensive experience with LNG facilities, testified that he had never seen leakless components on cryogenic valves. *Stobart Testimony at 2045-46.* "Good combustion practices" is a commonly used BACT. While the Tribe would have preferred other BACT, PSCAA considered reasonable alternatives, and the Board finds both the BACT and tBACT analysis and conditions sufficient.

G. Condition 41 (Legal Issue 4k)

181.

Legal Issue 4k. asks whether the Order of Approval's requirement that "the sole source of natural gas supply used in all operations at the TLNG facility comes from British Columbia or Alberta, Canada" is enforceable.

182.

Condition 41 requires that the "sole source of natural gas supply used in all operations at the TLNG facility comes from British Columbia or Alberta, Canada." The Permit states that compliance shall be verified by maintaining a detailed list of records, including monthly records on the purchase of natural gas, requests for gas from the Northwest Pipeline and the PSE system, the volume of gas received at TLNG, and proof that the flow of natural gas received was from north to south through the Fredrickson Gate Station.[35] If the flow is not from north to south, the facility shall immediately cease accepting natural gas from the pipeline. TLNG shall submit regular reports to PSCAA summarizing the data in the records. *Ex. RA-132, pp. 6-7.*

[35] The Frederickson Gate Station is where natural gas is delivered from the Northwest pipeline gas to PSE. *Ex. RA-38, p. 126*.

183.

Donahue, PSE's manager of natural gas resources, testified about the operation of the Northwest pipeline system that delivers natural gas to TLNG and other utilities or end users. In order to guarantee that natural gas delivered to TLNG originates in British Columbia, PSE collects data from a publicly available report from the pipeline that indicates what amounts of natural gas will be delivered at what location based upon orders placed by customers the day before. The pipeline report includes the total volume delivered to the pipeline at the B.C.-U.S. border at Sumas, WA. PSE will produce monthly records to PSCAA itemizing each day's delivery and demonstrating that the flow was north to south by showing that the volume in the pipeline remained positive after delivery to TLNG at the Frederickson Gate. Only on extremely cold days when customers north of the Frederickson Gate order more gas than usual (approximately six days per year) does Donahue expect the flow at the Frederickson Gate to be negative showing the movement of natural gas from south to north. On those days, TLNG will shut down until the flow resumes from the north. *Donahue Testimony at 1790-1821; Ex. PSE-27; Ex. RA-132, pp. 6-7.*

184.

PSCAA included this condition because the GHG Life Cycle Analysis (LCA) Report indicated that GHG factors for natural gas produced in the United States may be as much as five times higher than those for Canada. *Van Slyke Testimony at 524-5*. Thus, the source of the natural gas is an important factor in the LCA conclusion. *Id.*

185.

The Tribe argued that TLNG has access to multiple sources of natural gas and that the origins of the gas cannot be distinguished or traced. Therefore, the Tribe's expert concluded that Condition 41 is unenforceable. *Ex. APTI-587, pp. 76-77* (*Sahu Amended Pre-filed Testimony).,*

186.

PSCAA argued that Condition 41 is specific, measurable, and enforceable, and that all of the Permit's conditions are enforceable. PSCAA contended that Appellants have provided no evidence to the contrary. Also, PSCAA alleged that the Board has no jurisdiction over future violations or PSCAA's potential failure to enforce the conditions in the Permit. PSCAA claimed Dr. Sahu's testimony on the subject contains theoretical opinions only and presents no data or evidence. Finally, PSCAA noted that this issue was not included in the Board's Prehearing Order and should not be considered. *Puget Sound Clean Air Agency's Closing Argument, pp. 45-47; Puget Sound Clean Air Agency's Prehearing Brief, pp. 24-25*.

187.

PSE relied on Donohue's testimony to argue that Dr. Sahu's testimony was unfounded. PSE also stated that the detailed monitoring records are all that is needed to enforce Condition 41. *Puget Sound Energy, Inc.'s Post-hearing Brief, pp. 45-47; Puget Sound Energy, Inc.'s Prehearing Brief, pp. 23-24*.

188.

The Tribe has offered no evidence that the gas TLNG will be using cannot be distinguished from other sources. The Tribe also failed to produce any evidence, other than Dr.

Sahu's opinion, that Condition 41 is unenforceable. Considering the Donahue testimony, the detailed requirements of Condition 41, including the specific monitoring and reporting provisions, the Board concludes that this condition is enforceable.

189.

If the Tribe's concern is future enforcement, the Board lacks jurisdiction over this area unless a future PSCAA enforcement action is appealed to the Board. *Dixon v. Dep't of Ecology,* PCHB No. 05-059, p. 13 (October 21, 2005).

H. Applicability of 40 C.F.R. § 60.5430a (subpart OOOOa) (Legal Issues 4o, 4p)

190.

Issue 4o asks whether PSCAA should have included the requirements of 40 C.F.R § 60.5430a (subpart OOOOa) relating to handling of acid gas. Issue 4p asks whether subpart OOOOa requirements for fugitive GHG and VOC emissions should have been applied in the Permit.

191.

Subpart OOOOa applies to certain natural gas equipment that is constructed after September 18, 2015. 40 C.F.R. §60.5430a (subpart OOOOa); *Ex. RA-68, p. 61*. According to the Board's Order on Motion to Dismiss and for Partial Summary Judgment, the remaining material facts related to this issue are whether TLNG is downstream of the custody transfer station, and whether it is part of the natural gas distribution system. *Advocates for a Cleaner Tacoma,* PCHB No. 19-087c, p. 39 (Mar. 26, 2021).

192.

The custody transfer stations for PSE are at the points where they take custody of the natural gas from the high-pressure transmission line. For TLNG, the custody transfer station is the Fredrickson Gate. As stated above, TLNG receives its feed gas from the Northwest Pipeline, which can operate in a north-flow or a south-flow mode. *Donahue Testimony at 1790-1821*.

193.

TLNG is downstream of the local distribution company custody transfer station and is not included in the "natural gas source category" for the purposes of subpart OOOOa. *Donohue Testimony at 1800-1801; Cenci Testimony at 1254-55, 2371-73.*

194.

PSCAA argued TLNG is downstream of the Frederickson gate and so the federal regulation does not apply. *Puget Sound Clean Air Agency's Closing Argument, pp. 48-49; Puget Sound Clean Air Agency's Prehearing Brief, p. 24*. PSE stated that the 2020 rulemaking preamble makes it very clear that Subpart OOOOa never applied to the TLNG. *Puget Sound Energy, Inc.'s Post-hearing Brief, pp. 47-48; Puget Sound Energy, Inc.'s Prehearing Brief, p. 25*.

195.

The Tribe argued that the Tacoma facility is a natural gas processing plant, as the gas is vaporized and liquified at the plant, changing the state of the product. Also, the Tribe contended the plant is a custody transfer station, and the location in the distribution system is irrelevant. The Tribe states that the facility generates greenhouse gases, volatile organic compounds and

sulfur dioxide and the purpose of subpart OOOOa was to control these emissions. *The Puyallup Tribe of Indians' Closing Statement, p. 47; The Puyallup Tribe of Indians' Prehearing Brief, p. 24*.

196.

The Board agrees with PSCAA's and PSE's interpretation of subpart OOOOa and the evidence support PSCAA's and PSE's position. The custody transfer stations for PSE are at the points where they take custody of the natural gas from the high-pressure transmission line. For TLNG, the custody transfer station is the Fredrickson gate. The plant receives its feed gas from the Northwest Pipeline. ¶¶ *182-183*.This pipeline is a bidirectional line and can operate in a north-flow or a south-flow mode. The plant is downstream of the local distribution company custody transfer station and is not included in the "natural gas source category" for the purposes of subpart OOOOa. *Donohue Testimony at 1800-1801; Cenci Testimony at 1254-55, 2371-73. Ex. RA-68, p. 61.* Changing the state of the LNG does not make TLNG a natural gas processing plant. Therefore, the Board concludes that the TLNG facility is not subject to subpart OOOOa.

I. Tribal Consultation (Legal Issue 6)

197.

Issue 6 asks whether the Permit is invalid because PSCAA failed to engage in formal consultation with the Tribe.

198.

PSCAA did not engage in formal consultation with the Tribe. However, PSCAA responded to all requests for information from the Tribe, provided notice of any developments

related to PSE's Permit application, considered all the Tribe's comments and engaged in meetings and exchanged correspondence with the Tribe. *Cenci Testimony at 1241-42; Van Slyke Testimony at 1955-60; Exs. RA-30, RA-51, p. 206, RA-133, RA-134.*

199.

For the first time in its Post-Hearing Brief, the Tribe argued that since PSCAA's authority is derived from EPA under the CAA, the federal duty to consult with the Tribe comes with the delegation of this authority. Also, the Tribe contended that PSCAA is acting as a state agency and is required to comply with RCW 43.376.020, which provides, in part, that state agencies must "develop a consultation process that is used by the agency for issues involving specific Indian tribes." RCW 43.376.020(1). The Tribe cited *Lauterbach v. City of Centralia,* 49 Wn.2d 550, 304 P.2d 656 (1956), as authority for the claim that PSCAA is a state agency and subject to RCW 43.376.020. *The Puyallup Tribe of Indians' Closing Statement, pp. 6-10.*

200.

PSCAA argued that the Board lacks jurisdiction over any treaty issues. Even if the Board did have jurisdiction, PSCAA states that it had engaged with the Tribe in the Permit process as described in ¶ 198. Also, PSCAA argues it is a municipal corporation and not a state agency, and therefore, is not subject to the same consultation process as a state agency. *Puget Sound Clean Air Agency's Closing Argument, pp. 49-50; Puget Sound Clean Air Agency's Prehearing Brief, p. 25.*

201.

The Tribe did not cite any relevant authority supporting its claim that PSCAA had a delegated duty to consult. The cases cited by the Tribe address what activities constitute proper government to government consultation between federal agencies, on one hand, and tribes and/or states, on the other. The cases do not address whether CAA delegation includes the duty to conduct government to government consultation. Therefore, the Board concludes that the CAA delegated authority does not include the federal duty to consult. With respect to the Tribe's claim that PSCAA had a duty to consult with the Tribe under RCW 43.376.020, the Board concludes that the Tribe's sole authority supporting the claim, *Lauterbach*, was decided before PSCAA was even created, and only contains a general statement regarding municipalities. *Lauterbach,* 49 Wn.2d at 554. On the other hand, *Inland Foundry v. Spokane Cnty Air Pollution Control Auth,* 98 Wn. App. 121, 124, 989 P.2d 102 (1999), specifically states that an air authority such as PSCAA is a municipal corporation, and not a state agency. *Inland Foundry*, 98 Wn. App. at 124 (citing former RCW 70.94.081).[36] Therefore, the Board concludes that RCW 43.376.020 does not apply to PSCAA, and therefore the Permit is not invalid because PSCAA failed to engage in formal consultation with the Tribe.

[36] Recodified to RCW 70A.15.1560 in 2021.

J. Board Jurisdiction (Legal Issue 8)

202.

Issue 8 is a collection of sub-issues related to the Board's subject matter jurisdiction. The issue was raised by Respondents, but the parties did not address this issue in their Prehearing or Posthearing Briefs or during the hearing. Therefore, the Board considers this issue abandoned and will not rule on it.

203.

Any Finding of Fact deemed to be a Conclusion of Law is hereby adopted as such. Any Conclusion of Law deemed to be a Finding of Fact is hereby adopted as such. Based upon the foregoing Findings of Fact and Conclusions of Law, the Board enters the following:

IV. ORDER

The Pollution Control Hearings Board **AFFIRMS** Notice of Construction Order of Approval No. 11386 and associated supplemental environmental impact statement with the following additional requirement:

The parties are directed to work together expeditiously and efficiently to modify the Order of Approval to add conditions requiring the installation of a SO_2 and VOC Continuous Emission Monitoring System consistent with this decision.

SO ORDERED this 19th day of November, 2021.

POLLUTION CONTROL HEARINGS BOARD

NEIL L. WISE, Board Chair

CAROLINA SUN-WIDROW, Member

MICHELLE GONZALEZ, Member

HEATHER C. FRANCKS, Presiding
Administrative Appeals Judge

POLLUTION CONTROL HEARINGS BOARD
STATE OF WASHINGTON

ADVOCATES FOR A CLEANER TACOMA, SIERRA CLUB, WASHINGTON ENVIRONMENTAL COUNCIL, WASHINGTON PHYSICIANS FOR SOCIAL RESPONSIBILITY, STAND.EARTH, and THE PUYALLUP TRIBE OF INDIANS, Appellants, v. PUGET SOUND CLEAN AIR AGENCY and PUGET SOUND ENERGY, Respondents.	PCHB No. 19-087c ORDER ON MOTION TO DISMISS AND FOR PARTIAL SUMMARY JUDGMENT

I. INTRODUCTION

On December 19, 2019, Advocates for a Cleaner Tacoma, Sierra Club, Washington Environmental Council, Washington Physicians for Social Responsibility, and Stand.Earth (collectively, ACT) appealed Puget Sound Clean Air Agency's (PSCAA) Order of Approval to Construct No. 11386 (Permit) the Tacoma Liquefied Natural Gas project (Tacoma LNG) issued to Puget Sound Energy (PSE) on December 10, 2019.

On December 19, 2019, The Puyallup Tribe of Indians (Tribe) also appealed the Permit. The two appeals were consolidated.[1] ACT and the Tribe will be referred collectively as Appellants.

[1] To avoid issues related to possible improper service, ACT also intervened in the Tribe's appeal of the Permit. *See* Order Granting Intervention, PCHB No. 19-087c (January 24, 2020).

PSE filed a Motion to Dismiss and for Partial Summary Judgment (PSE's Motion). PSCAA joined PSE's Motion. The Tribe opposed PSE's Motion. ACT joined the Tribe's opposition and filed a cross motion for partial summary judgment on Issue 1 (ACT's Cross Motion).

Attorneys Jan E. Hasselman and Jaimini Parekh represented ACT. Attorneys Andrew S. Fuller, Geoff Bridgman and Nicholas G. Thomas represented the Tribe. Attorneys Erin L. Anderson, Tadas A. Kisielius, Sara Leverette and Clara Park represented PSE. Attorneys Jennifer A. Dold and Jennifer Elias represented PSCAA. The Pollution Control Hearings Board (Board) considering the motions was comprised of Board Chair Neil L. Wise and members Carolina Sun-Widrow and Michelle Gonzalez. Heather C. Francks, Administrative Appeals Judge, presided for the Board.

The Board reviewed the following materials in deliberating on the Motions:

1. Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment (*PSE's Motion*);
2. Declaration of Tadas A. Kisielius in support of Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment and Exhibits 1-18 (*Kisielius Decl.*);
3. Puget Sound Clean Air Agency's Joinder in Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment (*PSCAA's Joinder*);
4. Appellant the Puyallup Tribe of Indians' Response to Respondent Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment (*Tribe's Response*);

5. Declaration of Ranajit Sahu in support of Appellant the Puyallup Tribe of Indians' Response to Respondent Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment and Exhibits A-B (*Sahu Decl*.);
6. Declaration of Andrew S. Fuller in support of Appellant the Puyallup Tribe of Indians' Response to Respondent Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment and Exhibits A-Q (*Fuller Decl*.);
7. Declaration of Nicholas G. Thomas in Support of Appellant The Puyallup Tribe of Indians' Response to Respondent Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment;
8. [ACT's] Opposition to Motion to Dismiss and for Partial Summary Judgment (*ACT's Opp. / Cross Motion*);
9. Declaration of Jaimini Parekh in support of Opposition to Motion to Dismiss and for Partial Summary Judgment and Exhibits 1-20 (*Parekh Decl*.);
10. Puget Sound Clean Air Agency's Reply in support of Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment (*PSCAA Reply*);
11. Declaration of Jennifer A. Dold and Exhibits A-F (*Dold Decl*.);
12. Puget Sound Energy's Response to ACT's Cross Motion and Reply in support of Motion to Dismiss and for Partial Summary Judgment (*PSE Response/Reply*);
13. Declaration of Tadas A. Kisielius in support of Puget Sound Energy's Reply in support of Motion to Dismiss and for Partial Summary Judgment and Exhibits A-J (*Second Kisielius Decl*.);

14. [ACT's] Reply in support of Cross Motion for Partial Summary Judgment and sur-reply in support of Opposition to Respondent's Motion to Dismiss (*ACT Reply/Surreply*);

15. Appellant the Puyallup Tribe of Indians' surreply, objections and Motion to Strike Improper reply arguments by PSE and PSCAA in support of Respondent Puget Sound Energy's Motion to Dismiss/Partial Summary Judgment (*Tribe Surreply/ Strike Motion*)[2];

16. Puget Sound Energy's and Puget Sound Clean Air Agency's Joint Response to Puyallup Tribe's Motion to Strike (*PSE/PSCAA Response to Strike Motion*);

17. Puyallup Tribe's Reply in support of Motion to Strike Improper reply arguments by PSE and PSCAA in support of Respondent Puget Sound Energy's Motion to Dismiss/Partial Summary Judgment (*Tribe Strike Reply*);

18. Declaration of Nicholas G. Thomas in support of Puyallup Tribe's Reply in support of Motion to Strike Improper reply arguments by PSE and PSCAA in support of Respondent Puget Sound Energy's Motion to Dismiss/Partial Summary Judgment and Exhibit A (*Thomas Decl*.);

19. Puget Sound Energy's Notice of Partial Withdrawal of Motion to Dismiss and for Partial Summary Judgment with respect to Issue 4(b) and limited reply to Puyallup

[2] The Tribe filed a motion to strike improper reply arguments by PSE and PSCAA. The presiding officer hereby denies the motion on the grounds that the replies responded to arguments raised by Appellants in their responses and cross motion.

Tribe of Indian's supplemental response;[3] second motion for CR 56(f) continuance (*PSE Withdrawal Notice*);

20. Declaration of Tadas A. Kisielius in support of Puget Sound Energy's Withdrawal of Motion to Dismiss and for Partial Summary Judgment with respect to Issue 4(b) and reply to Puyallup Tribe's supplemental response and Exhibits 1-2 (*Third Kisielius Decl.*);
21. Puget Sound Clean Air Agency's Joinder in Puget Sound Energy's Notice of Withdrawal of Motion to Dismiss and for Partial Summary Judgment with respect to Issue 4(b) (*PSCAA Withdrawal Joinder*);
22. Van Slyke Decl. in Support of PSCAA's Response to Motions for Stay; (*Van Slyke Stay Decl.*); and
23. The Board's file in the matter.

Based upon the evidence submitted and the written materials filed, the Board enters the following decision:

II. BACKGROUND

PSE proposes to construct Tacoma LNG, a liquefaction, storage and marine bunkering facility and marine fueling system, on land leased from the Port of Tacoma. The purpose of the project is to receive natural gas from PSE's distribution system, chill the natural gas to produce approximately 250,000 to 500,000 gallons of LNG daily, and to store up to 8 million gallons of

[3] As PSE withdrew its motion as to Issue 4(b), the Board did not consider Puyallup Tribe of Indian's Supplemental Response to PSE's Motion to Dismiss and/or Partial Summary Judgment re Issue 4(b) and second Motion for CR 56(f) continuance or the related declarations.

LNG on site. PSE planned to distribute LNG for use as marine transportation fuel by Totem Ocean Trailer Express (TOTE) at its Port of Tacoma Facility, along with other potential future regional LNG marine fuel customers. During times of peak gas demand, 66,000 dekatherms of LNG would be regasified and reinjected into PSE's distribution system. PSE is also proposing to load LNG onto trucks and barges for use by other regional markets seeking an alternative fuel source. As of December 2020, the TOTE vessel conversion to LNG was delayed until early 2022. *Bridgman Decl., Ex. 9 (Littauer Dep. p. 20)*. PSE is seeking other marine customers as well as trucking companies who would use LNG to fuel their vehicles. *Id., (Littauer Dep. pp. 21-22)*. PSE has a customer, Potelco, who anticipates using LNG to fuel its fleet of trucks. *PSE's Response to Puyallup Tribe's Motion to Bifurcate the Issues, p. 11*.

Tacoma LNG is located on the peninsula between the Blair and Hylebos waterways adjacent to the Puyallup Indian Reservation. *Advocates for a Cleaner Tacoma v. Puget Sound Clean Air Agency*, PCHB No. 19-087c, p. 5 (March 16, 2020).

Tacoma LNG required a number of permits from various agencies and jurisdictions. Among them was a shoreline substantial development permit that PSE sought from the City of Tacoma. In September 2014, the City of Tacoma, acting as lead agency under the State Environmental Policy Act (SEPA), ch. 43.21C RCW, determined that Tacoma LNG required an Environmental Impact Statement to assess the potential environmental impacts of the project. The review resulted in a Final Environmental Impact Statement (FEIS) in 2015. *Advocates for a Cleaner Tacoma*, PCHB No. 19-087c, pp. 5-6.

Meanwhile, construction of the project proceeded and is expected to be completed in the second quarter of 2021. In early 2020, the remaining work included construction of foundations and installation of equipment that was subject to the Permit; completion of plant-wide piping, electrical and controls systems; final site civil work and landscaping; frontage improvements; plant commissioning and testing. In 2017, PSE applied to PSCAA for a Notice of Construction (NOC) for Tacoma LNG. During PSCAA's review of PSE's Permit application, PSCAA concluded that the FEIS did not account for "upstream" greenhouse gas (GHG) emissions associated with natural gas extraction and transmission. PSCAA decided that a supplemental EIS using the "lifecycle" approach to characterizing GHG emissions was needed. Lifecycle analysis identifies and quantifies all GHG emissions associated with natural gas extraction and transmission, on site LNG production and storage, and "downstream" end uses of the LNG. PSCAA initiated a Final Supplemental Environmental Impact Statement (SEIS) process and hired consultants to assess lifecycle GHG emissions. Since the FEIS process, the Tacoma LNG project had changed to primarily supply fuel for marine and other uses rather than the peak shaving (supplying additional gas for PSE's customers during periods of peak demand) addressed in the FEIS. PSCAA issued a draft SEIS for public comment in late 2018. *Advocates for a Cleaner Tacoma* PCHB No. 19-087c, pp. 6-7.

The draft SEIS compared a No Action alternative to PSE's Proposed Action, construction of the Tacoma LNG facility to produce 250,000 to 500,000 gallons per day of LNG for use by marine customers, including TOTE, as well as regasification into the PSE natural gas system for peak shaving purposes. Additional uses would include providing LNG to other industries or

merchants such as fuel for long haul trucks or other marine transportation uses. Two scenarios were included in the SEIS lifecycle analysis: Scenario A (based on a PSE facility production rate of 250,000 gallons per day) and Scenario B (based on a PSE facility production rate of 500,000 gallons per day). The draft SEIS concluded that the use of LNG produced by the Proposed Action, instead of petroleum based fuels for marine vessels, trucks and peak shaving, is predicted to result in an overall decrease in GHG emissions in the Puget Sound region, a net beneficial impact compared to the No Action alternative. In response to comments, PSCAA had its consultants perform various new analyses to confirm the findings of the draft SEIS and to update the sensitivity analysis with new assumption comparisons including global warming and methane leakage.[4] The SEIS was finalized in March 2019. PSCAA issued a draft Permit Approval for public comment in July 2019. PSCAA issued the final Permit in December 2019. *Advocates for a Cleaner Tacoma*, PCHB No. 19-087c pp. 7-8. The Permit was signed by PSCAA staff, Ralph Munoz, Reviewing Engineer, and Carole Cenci, Compliance Manager. *Kisielius Decl., Ex. 9, p. 9*.

ACT and the Tribe separately appealed the Permit, challenging the SEIS and the Permit on numerous grounds. The Board consolidated the appeals for hearing.

III. ANALYSIS

The issues before the Board in this Motion are as follows**:**

[4] The sensitivity analysis illustrates in a summary fashion how different variables could affect the overall GHG emissions in the lifecycle analysis, both up and down. *Advocates for a Cleaner Tacoma*, PCHB No. 19-087c, p. 8 n.4.

1. Whether the Puget Sound Clean Air Agency's ("PSCAA") December 10, 2019 Order of Approval ("Order of Approval") is ultra vires and invalid because it was issued by PSCAA staff and not the PSCAA Board.

2. Whether the supplemental environmental impact statement ("SEIS") assessing lifecycle greenhouse gas emissions that supported the Order of Approval was arbitrary, unreasonable, incorrect, or otherwise not in compliance with the State Environmental Policy Act ("SEPA"), including but not limited to the following:
   a. The SEIS relies on an incorrect and unsupported claim of 1-for-1 fuel displacement, and an assumption that fuel use will not change over 40 years, that masks the greenhouse gas ("GHG") impacts of the Order of Approval.
   b. The SEIS fails to utilize best available science in assessing GHG impacts.
   c. The SEIS fails to acknowledge that maintenance of high-GHG-emissions status quo for the lifetime of the project is a "significant" impact under SEPA.
   d. The SEIS relies on displacement and/or mitigation that is unavailable under the project as currently configured, and otherwise fails to assess the current configuration of the project.
   e. The SEIS fails to properly address the facility's emissions of N2O, a potent greenhouse gas.
   f. The SEIS relies on scenarios that have not undergone SEPA review.

3. Whether the final environmental impact statement ("FEIS"), produced by the City of Tacoma, was arbitrary, unreasonable, incorrect, or otherwise not in compliance with SEPA, including but not limited to the following:
   a. PSCAA's reliance on the FEIS is erroneous when the project has changed substantially in scope and purpose since issuance of the FEIS in November of 2015.
   b. The FEIS fails to adequately disclose and analyze all non-GHG air and water emissions and impacts.
   c. The FEIS fails to adequately disclose and analyze project safety and accident risk, and deliberately withheld key documentation related to safety.
   d. The FEIS fails to evaluate the direct, indirect, and cumulative impacts of trains, vessels, and trucks traveling to and from Tacoma LNG.
   e. The FEIS fails to adequately disclose cumulative effects.
   f. The FEIS did not follow mandatory SEPA procedures in the FEIS process, including but not limited to inadequate notice.

4. Whether the Puget Sound Clean Air Agency's ("PSCAA") December 10, 2019 Order of Approval ("Order of Approval") violates PSCAA Regulations, the Washington Clean Air Act (RCW Ch. 70.94), and/or the federal Clean Air Act, including but not limited to the following:

a. Whether PSCAA's conclusions concerning Tacoma LNG's emissions and the impacts from those emissions are erroneous when PSCAA relied on modeling using non- representative meteorological data.
b. Whether PSCAA's Order of Approval is premature when the design of Tacoma LNG was not yet complete and continued to change at the time PSCAA determined PSE's NOC Application was complete and when the Order of Approval was issued, and it was likely that the facility's design and its operations would need to undergo revisions, which would likely result in changes to facility details having bearing on the facility's emissions.
c. Whether PSCAA's Order of Approval is invalid, when PSCAA's decision to grant the Order of Approval was made in reliance on performance specification and process details that were not provided to PSCAA, including those from Chicago Bridge & Iron and other unidentified "vendors."
d. Whether PSCAA erred in concluding that Tacoma LNG is not a Major Source of one or more pollutants, including volatile organic compounds (VOCs)?
e. Whether PSCAA erroneously concluded that Tacoma LNG's emissions are below the Clean Air Act's regulatory thresholds, emission, and air quality standards.
f. Whether PSCAA erroneously concluded that the emissions from Tacoma LNG will not violate WAC 173-400-111, WAC 173-400-112, and WAC 173-400-113 (i.e., not cause or contribute to a violation of any ambient air quality standard).
g. Whether PSCAA erroneously concluded that Tacoma LNG's emissions will not exceed applicable acceptable source impact levels (ASIL).
h. Whether PSCAA erroneously concluded that Tacoma LNG's emissions will not exceed applicable small quantity emission rate (SQER) limits.
i. Whether PSCAA's Order of Approval is invalid, where a first-tier ambient concentration screening analysis was performed before all emissions of HAPs and TAPs from the flare were estimated.
j. Whether PSCAA violated WAC 173-460-060 by failing to require a demonstration that Tacoma LNG will employ BACT for all TAPs for which the increase in emissions will exceed *de minimis* emission values found in WAC 173-460-150.
k. Whether the Order of Approval's requirement that "the sole source of natural gas supply used in all operations at the Tacoma LNG facility comes from British Columbia or Alberta, Canada" is enforceable.
l. Whether PSCAA's issuance of the Order of Approval is contrary to principles of environmental justice, including Executive Order 12898 as well as PSCAA's mandate concerning avoiding environmental injustices.
m. Whether PSCAA's issuance of the Order of Approval violates its obligations under Title VI of the Civil Rights Act (42 U.S.C. § 2000d et seq.)?
n. Whether PSCAA's issuance of the Order of Approval violates the Tribe's right to the equal protection of the laws?

o. Whether PSCAA's Order of Approval incorrectly fails to include the requirements of NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.) relating to the handling of acid gas from the facility.
p. Whether PSCAA's Order of Approval incorrectly fails to include a requirement that Tacoma LNG monitor and control fugitive GHG and VOC emissions in accordance with NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.).
q. Whether PSCAA's Order of Approval incorrectly fails to require Tacoma LNG to comply with the National Emission Standards for Hazardous Air Pollutants (NESHAP) rules on marine tank vessel loading operations (40 C.F.R. § 63.560 et seq.).
r. Whether PSCAA's Order of Approval incorrectly fails to require the submission of risk management and hazard management plans as required under 40 C.F.R. Part 68.
s. Whether PSCAA's Order of Approval incorrectly fails to include the requirements of NSPS Subpart 1111 (40 C.F.R. 60.4200 et seq.) relating to the monitoring and performance of the facility's on-site emergency diesel generator.
t. Whether PSCAA's Order of Approval incorrectly fails to include the requirements of NSPS Subpart ZZZZ (40 C.F.R. 63.6580 et seq.) relating to the monitoring and performance of the facility's on-site emergency diesel generator.
u. Did PSCAA violate the Clean Air Act by allowing a known source of significant amounts of pollution to achieve BACT through "good combustion practices", when PSCAA fails to define that standard and when there are known and reasonably available methods which, if implemented, would better ensure the facility is not violating pollution standards?
v. Whether the Order of Approval is valid in light of PSCAA's failure to consider the impacts on the airshed of trains traveling to and from Tacoma LNG.
w. Whether PSCAA erred in claiming that it cannot consider cumulative effects of air pollution without "[n]ew legislation."

5. Whether respondents violated the Clean Air Act by constructing, and/or authorizing construction, prior to issuance of the Order of Approval.

In PSE's Motion, PSE moved to dismiss Issues 1; 3(b); 3(c); 3(d); 3(e); 3(f); 4(b)[5]; 4(f); 4(k); 4(l); 4(m); 4(n); 4(o); 4(p); 4(q); 4(r); 4(s); 4(t); 4(v); and 5. PSCAA joined PSE's Motion. The Tribe opposed PSE's Motion. In the course of briefing, the Tribe noted it did not

[5] PSE sought summary judgment on Appellants' Issue 4(b) on the basis that it improperly asks for an advisory opinion from the Board. Later PSE withdrew its Motion as to Issue 4(b). *PSE Withdrawal notice.*

oppose dismissal of Issues 4(n), 4(q), 4(r), 4(s), 4(t) and 5. *Tribe's Response*, p. 2. ACT filed a cross motion for partial summary judgment on Issue 1 and joined the Tribe's opposition. In its response to ACT's cross motion, PSE clarified that it inadvertently listed Issue 4(v) as among those it sought summary judgment, and that it was not seeking to dismiss 4(v) in its motion. *PSE's Response/Reply, p.1, n.2.* ACT sought and was granted a continuance to obtain discovery on Issue 4(b). *Order on Motion for Continuance and to Consolidate* (July 16, 2020). After determining that additional relevant discovery remained outstanding on Issue 4(b), PSE withdrew its Motion as to Issue 4(b). *PSE Withdrawal Notice.*

The issues remaining for the Board to decide in this Motion are: 1; 3(b); 3(c); 3(d); 3(e); 3(f); 4(f); 4(k); 4(l); 4(m); 4(o); and 4(p).

A. Standard of review[6]

Summary judgment is a procedure available to avoid unnecessary trials where there is no genuine issue of material fact. *Am. Express Centurion Bank v. Stratman*, 172 Wn. App. 667, 675-76, 292 P.3d 128 (2012). The summary judgment procedure is designed to eliminate trial if only questions of law remain for resolution, and neither party contests the facts relevant to a legal determination. *Rainier Nat'l Bank v. Security State Bank*, 59 Wn. App. 161, 164, 796 P.2d 443 (1990), *review denied*, 117 Wn.2d 1004 (1991).

[6] Because the parties relied on evidence outside of the pleadings (i.e., numerous declarations and attachments) and the Board reviewed those materials in considering PSE's Motion, ACT's cross motion, and other pleadings, the Board will treat the motions as requests for summary judgment even though PSE's Motion is partially entitled a motion to dismiss. *See*, CR 12(b) and (c) (if on a motion to dismiss matters outside the pleadings are presented to and not excluded by the court, motion shall be treated as one for summary judgment and disposed of as provided in CR 56)

The party moving for summary judgment must show there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. *Magula v. Benton Franklin Title Co., Inc*., 131 Wn.2d 171, 182, 930 P.2d 307 (1997). A material fact in a summary judgment proceeding is one affecting the outcome under the governing law. *Eriks v. Denver*, 118 Wn.2d 451, 456, 824 P.2d 1207 (1992).

Summary judgment is subject to a burden shifting scheme. If the moving party satisfies its burden, then the non-moving party must present evidence demonstrating that material facts are in dispute. *Atherton Condo Ass'n v. Blume Dev. Co*., 115 Wn.2d 506, 516, 799 P.2d 250 (1990); *Tario v. Dep't of Ecology*, PCHB No. 05-091, p. 12 (March 2, 2006). In a summary judgment proceeding, all facts and reasonable inferences must be construed in favor of the non-moving party. *Jones v. Allstate Ins. Co.*, 146 Wn.2d 291, 300, 45 P.3d 1068 (2002).

B. Issue 1—Validity of Order issued by PSCAA staff

Issue 1 asks whether PSCAA's Permit is ultra vires and invalid under the Washington Clean Air Act, former ch. 70.94 RCW because it was issued by PSCAA staff and not the PSCAA Board.[7] PSE moves for summary dismissal on Issue 1, joined by PSCAA. PSCAA also separately filed a reply in support of PSE's Motion, in which PSCAA also urges dismissal of Issue 1 as a matter of law. ACT cross moves on Issue 1, joined by the Tribe. At bottom, Issue 1

[7] In 2020, the Legislature recodified former ch. 70.94 RCW as ch. 70A.15 RCW with no substantive changes. *See* Laws of 2020, ch. 20, (June 11, 2020). Because former ch. 70.94 RCW was in effect at the time of the relevant events here, citations will be to the former statute.

turns on interpretation of Clean Air Act statutes and implementing PSCAA regulations; thus, this issue can be decided as a matter of law as the parties urge.[8]

PSE and PSCAA both argue that Issue 1 should be dismissed as Clean Air Act statutes and implementing regulation authorize PSCAA staff to issue the Order of Approval at issue.[9] PSE further argues that because statute and implementing PSCAA regulation plainly authorize PSCAA staff to issue Order of Approvals, Appellants' challenge to the Order of Approval at issue amounts to a facial challenge to the statute and PSCAA regulation over which the Board lacks jurisdiction. *PSE's Motion, pp. 11-12; PSCAA Reply, pp. 21-26.*

ACT argues that the Permit is invalid because it was signed by PSCAA staff rather than the PSCAA Board, contending that former RCW 70.94.152 requires that the PSCAA Board issue the approval order on PSE's notice of construction application for a new source of air contaminant emission. The Board concludes that former RCW 70.94.170 and Agency Reg. I, § 3.01 authorize PSCAA staff to issue the Order of Approval.

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[8] On March 16, 2020, the Board issued an Order Denying Motions to Stay the effect of the Permit. *Advocates for Cleaner Tacoma v. Puget Sound Clean Air Agency (*March 16, 2020). Appellants jointly petitioned for judicial review of the Order under RCW 43.21B.320(5), and for summary judgment (party aggrieved by denial or grant of stay by the Board may petition Thurston County Superior Court for review under the Administrative Procedure Act, ch. 34.05 RCW pending appeal on the merits before the Board). The superior court issued an Order Denying Summary Judgment and Motion for Expedited Relief in which the court rejected the Appellants' claim that the Permit is ultra vires and invalid, concluding that the plain terms of RCW 70.94.170 allows for issuance of the Permit in the manner done so here by PSCAA. *See Advocates for Cleaner Tacoma v. Puget Sound Clean Air Agency*, No. 20-2-01371-34 (Thurston County Sup. Ct. Nov. 2, 2020). Appellants then appealed the decision to Court of Appeals, Div. II, Case No. 55448-8-II.

[9] Permits issued to sources of air contaminants under the state Clean Air Act are called Notice of Construction (NOC) Orders of Approval. Van Slyke Decl. in Support of PSCAA's Response to Motions for Stay, ¶4. A NOC application is required by the Act to establish a new source of air emissions, or to replace or substantially alter a source's control equipment that prevents or controls emission of any air contaminant. Former RCW 70.94.152-.153; PSCAA Reg. I, § 6.03, p. 6-3.

The fundamental purpose in interpreting statutes is to ascertain and carry out the intent of the legislature. *Quinault Indian Nation v. Imperium Terminal Servs., LLC*, 187 Wn.2d 460, 468, 387 P.3d 670 (2017). If a statute's meaning is plain on its face, courts give effect to that plain meaning as an expression of legislative intent. *Id.* The plain meaning of words in a statute is not gleaned from words alone but from "all the terms and provisions of the act in relation to the subject of the legislation, the nature of the act, the general object to be accomplished and consequences that would result from construing the particular statute in one way or another." *State v. Evergreen Freedom Found*., 192 Wn.2d 782, 790, 432 P.3d 805, 809 (2019).

The Clean Air Act authorizes creation of local air authorities like PSCAA to implement the requirements of the Act to regulate stationary sources of air contaminant emissions. Former RCW 70.94.053; former RCW 70.94.141. Former RCW 70.94.170 provides that:

> [a]ny activated air authority which has adopted an ordinance, resolution, or valid rules and regulations . . . for the control and prevention of air pollution shall appoint a full time control officer, whose sole responsibility shall be to observe and enforce the provisions of this chapter and all orders, ordinances, resolutions, or rules and regulations of such activated authority pertaining to the control and prevention of air pollution.

Former RCW 70.94.170; *see also* former RCW 70.94.130 (air pollution control authority board "may appoint a control officer, and any other personnel," and pay their salaries from authority funds).

Consistent with former RCW 70.94.170, PSCAA in 1968 adopted Regulation I, § 3.01, which mainly mirrors the statute. The regulation has been amended a few times, but the current regulation, which was in effect at the time relevant to the events of this case, provides that:

> Pursuant to the provisions of the "Washington Clean Air Act" (Chapter 70.94 RCW), the Board has appointed a Control Officer whose sole responsibility is to observe and enforce the provisions of the Act and all orders, rules, and regulations pursuant thereto, including but not limited to Regulations I, II, and III of the Puget Sound Clean Air Agency. The Control Officer is empowered by the Board to sign official complaints, issue citations, initiate court suits, or use other legal means to enforce the provisions of the Act.

PSCAA Reg. I, Art. 3, § 3.01 ("Duties and Powers of the Control Officer").

The plain terms of RCW 70.94.170 authorize PSCAA to appoint a full time control officer responsible for observing and enforcing "all orders, ordinances, resolutions, or rules and regulations" of air authorities. In other words, once a local air authority has adopted rules and regulations consistent with the Clean Air Act, the control officer implements those rules and regulations. And PSCAA Regulation I, § 3.01, which implements former RCW 70.94.170, further specifies that the "orders" that a control officer is responsible for implementing include PSCAA "Regulations I, II, and III." Because the PSCAA regulation addressing issuance of Orders of Approval for PSE's Notice of Construction application is contained in Regulation I, Article 6 (New Source Review), Regulation I, § 3.01 specifically authorizes the control officer to issue orders of approval.

Here, the challenged Order of Approval for Notice of Construction 11386 was issued by a reviewing engineer and a compliance manager. *Kisielius Decl., Ex. 9.* Although "control officer" is only defined as the "air pollution control officer of any authority," the parties do not dispute that PSCAA staff engineers constitute control officers.[10] They are therefore authorized

[10] Former RCW 70.94.030(9).

to issue the order of approval here under former RCW 70.94.170 and PSCAA Regulation I, § 3.01.[11]

Construing former RCW 70.94.170 as allowing PSCAA staff engineers to issue orders of approval also comports with the fact that notice of construction applications and resulting orders of approval involve a complex review of relevant law and many different types of sources and equipment to determine whether the new source of air contaminant will cause any exceedances of ambient air standards. *Van Slyke Stay Decl.*, ¶¶ *3-6, 8-10*; former RCW 70.94.152(4). The Order of Approval here is indicative of the complexity, as it authorizes PSE to construct the following equipment: one 66 MMBtu/hr LNG vaporizer, an enclosed ground flare with four burners, one 9MMBtu/hr water propylene glycol pretreatment heater, one 1.6 MMBtu/hr regeneration pretreatment heater and one 8 million gallon LNG storage tank. *Kisielius Decl., Ex. 9, p. 1*. Since the determination of whether to approve the air emissions from the listed new equipment, and whether to place conditions on the approval is a technical and complex one, Board staff with the required expertise are better suited than the PSCAA Board to issue orders of approval. *ACT's Opp. /Cross Mot., p. 8* (PSCAA Board members are elected officials under WAC 173-440-220(a)).

[11] This Board has previously concluded that an air authority's control officer is authorized to issue order of approvals under former RCW 70.94.152 and former RCW 70.94.170. *Inland Foundry Co. v. Spokane County Pollution Control Auth.*, PCHB No. 98-279, p. 2 (Conclusions of Law and Order Granting SCPCA's Mot. for Summ. J., June 10, 1999) ("SCAPCA's control officer is authorized to approve a notice of construction and issue a letter of approval pursuant to RCW 70.94.152 and RCW 70.94.170"). The Board's decision was affirmed by the Court of Appeals in an unpublished decision. *Inland Foundry Co. v. Spokane County Pollution Control Auth.,* No. 19210-5-III, 106 Wn. App. 1007, 2001 Wash. App. LEXIS 924, (Ct. App. May 1, 2001). In its Order denying Stay, the Board provided an incorrect cite to the unpublished decision affirming the Board's case. *Order denying Stay*, p. 15 n. 6 (March 16, 2020) (incorrectly citing 98 Wn. App. 1019, 1999 WL 1080108, at *2 (1999)).

The Board disagrees with Appellants' arguments to the contrary. Specifically, interpreting former RCW 70.94.170 to allow control officers to issue orders of approval will not create a slippery slope where control officers would assume other PSCAA duties such as adopting regulations. As Respondents note, the language of former RCW 70.94.170 prevents such slippery slope by specifying that control officers only observe and enforce those rules and regulations that have first been adopted by an air authority.

Appellants rely on former RCW 70.94.152 to support their claim that only the PSCAA Board can issue order of approvals. That statute sets out the process to apply for a Notice of Construction Order of Approval for a new source of air contaminant, and states in relevant part that:

> (3) Within thirty days of receipt of a notice of construction application, the department of ecology or board may require, as a condition precedent to the establishment of the new source or sources covered thereby, the submission of plans, specifications, and such other information as it deems necessary to determine whether the proposed new source will be in accord with applicable rules and regulations in force under this chapter. If on the basis of plans, specifications, or other information required under this section, the department of ecology or *board* determines that the proposed new source will be in accord with this chapter, and the applicable rules and regulations adopted under this chapter, *it* shall issue an order of approval for the establishment of the new source or sources, which order may provide such conditions as are reasonably necessary to assure the maintenance of compliance with this chapter and the applicable rules and regulations adopted under this chapter. Every order of approval under this chapter must be reviewed prior to issuance by a professional engineer or staff under the supervision of a professional engineer in the employ of the department of ecology or board.

RCW 79.94.152(3) (emphasis added). "Board" means the Board of Directors of PSCAA, and "Authority" means any air pollution control agency whose jurisdictional boundaries are

coextensive with the boundaries of one or more counties. Former 70.94.030(5), (8); PSCAA Reg. I, § 1.07(a), (e). Appellants emphasize the word "board" and "it" in former RCW 70.94.152(3) to argue that the plain language of the statute required that only PSCAA Board, not staff, issue the order of approval. *ACT's Opp./Cross Motion, p. 6.* Such an interpretation is not supported by the terms of the statute, ignores former RCW 70.94.170, and runs contrary to the principle that plain meaning is derived from reading "all the terms and provisions of the act in relation to the subject of the legislation, the nature of the act, the general object to be accomplished and consequences that would result from construing the particular statute in one way or another." *State v. Evergreen Freedom Found*., 192 Wn.2d 782, 790.

Indeed, other subsections of former RCW 70.94.152 also refer to "board" with respect to actions the board takes in connection with a notice of construction for a new source. Former RCW 70.94.152(9) ("board shall notify . . . applicant in writing that the application is complete"); former RCW 70.94.152(10) (notice of construction approval required under subsection (3) must include determination that new source achieve best available control technology). In arguing that PSCAA Board approval of notice of construction is not delegable to staff because it calls for exercise of discretion, Appellants agreed with PSCAA that sending application completeness letters is the kind of ministerial act that the PSCAA Board can and should delegate, whereas issuing approval orders cannot be delegated because it calls for the exercise of discretion. Appellants' position that the board task of sending out letters to applicants (also stated as a task that the "board shall" do) in subsection (9) can be done by PSCAA staff undercuts their argument that the terms of subsection (3) plainly require that only

the PSCAA board can issue orders of approval. *ACT Reply, p.12*. All subsections of former RCW 70.94.152 must be read consistently.

Because the Board resolves Issue 1 on the basis of the plain meaning of former 70.94.170 and former RCW 70.94.152, it need not consider whether the PSCAA board delegated its authority to issue orders of approval to its staff by way of resolution, or whether the claim that the order of approval is ultra vires is an impermissible facial challenge to former RCW 70.94.170 and PSCAA Reg. I, § 3.01. The Board grants PSE's Motion on Issue 1 and dismisses it.

C. Issue 3(b)-(f) – Validity of City of Tacoma FEIS

Issue 3 asks whether the 2015 City of Tacoma FEIS was arbitrary, unreasonable, incorrect, or otherwise not in compliance with SEPA, including but not limited to the following:

> **3(b) —Adequacy of FEIS' disclosure and analysis of non-GHG air and water emissions**
> **3(c) —Adequacy of FEIS' disclosure and analysis of project safety and accident risk, and deliberate withholding key documentation related to safety**
> **3(d) —Failure of FEIS to evaluate of direct, indirect, and cumulative impacts of trains, vessels, and trucks traveling to and from Tacoma LNG**
> **3(e) —Adequacy of FEIS' disclosure of cumulative effects**
> **3(f) —Failure of FEIS to follow mandatory SEPA procedures in FEIS process, including but not limited to inadequate notice.**

PSE moves for summary dismissal on Issues 3(b) – 3(f), joined by PSCAA. PSCAA also separately filed a reply in support of PSE's Motion, in which PSCAA also requests dismissal of the same issues as a matter of law. Respondents PSE and PSCAA argue that challenges to the FEIS are barred as untimely under the SEPA provision requiring appeals to EIS be filed within 21 days of issuance of a notice of action. RCW 43.21C.080(2)(a). Respondents further argue that challenges to the FEIS in Issues 3(b) – 3(f) are also barred by Appellants' failure to exhaust

administrative remedies and by the prohibition on collateral attacks. *PSE's Motion, pp. 15-19; PSCAA's Reply, pp. 33-40.* ACT opposes summary dismissal on these issues, joined by the Tribe. *ACT's Opp./Cross Motion, pp. 20-33.*

SEPA establishes a "notice of action" procedure that, if used, imposes a 21-day time period for appealing a substantive governmental action and any accompanying procedural determination such as the City of Tacoma FEIS at issue. RCW 43.21C.080(2); RCW 43.21C.075(8). The statute provides in relevant part that:

> (1) Notice of any action taken by a governmental agency may be publicized by the acting governmental agency, the applicant for, or the proponent of such action, in substantially the form as set forth in rules adopted under RCW 43.21C.110: . . . (a) [b]y publishing notice . . . in a legal newspaper . . .
> (2)(a) Except as otherwise provided in RCW 43.21C.075(5)(a), . . . any action to set aside, enjoin, review, or otherwise challenge any such governmental action *or subsequent governmental action* for which notice [of action] is given as provided in subsection (1) of this section on grounds of noncompliance with the provisions of this chapter *shall be commenced within twenty-one days from the date of last newspaper publication of the notice pursuant to subsection (1) of this section, or be barred*.
> (b) Any subsequent governmental action on the proposal for which notice has been given as provided in subsection (1) of this section shall not be set aside, enjoined, reviewed, or otherwise challenged on grounds of noncompliance with the provisions of RCW 43.21C.030(2)(a) through (h) unless there has been a substantial change in the proposal between the time of the first governmental action and the subsequent governmental action that is likely to have adverse environmental impacts beyond the range of impacts previously analyzed, or unless the action now being considered was identified in an earlier detailed statement or declaration of nonsignificance as being one which would require further environmental evaluation.

RCW 43.21C.080 (emphasis added). Here, the City of Tacoma published its FEIS for the Project on November 9, 2015. The City published a notice of action on November 19, 2015, on its action of administratively authorizing PSE to do demolition work at the Tacoma LNG site.

Kisielius Decl., Ex. 7. Under RCW 43.21C.080(2)(a), appeals of a SEPA determination like the City's FEIS must be brought within 21 days of the last date of publication of the notice of action. The City's notice of action itself stated that the 21-day deadline for any challenges was December 21, 2015. *Id.* Moreover, the notice of action procedure also precludes administrative or judicial challenges to the adequacy of SEPA review in any appeal of subsequent governmental action that rely on the same SEPA review. In other words, when notice of action has been issued, opponents must challenge the accompanying SEPA procedural determination (DNS, MDNS, or EIS) in relation to the action (here, the City authorizing demolition on Tacoma LNG site), and cannot wait to challenge the DNS, MDNS, or EIS in conjunction with an appeal of subsequent action on that proposal (here, PSCAA issuing order of approval). RCW 43.21C.080(2)(a); R. Settle, *The Washington State Environmental Policy Act: A Legal and Policy Analysis*, § 20.05[3] (2019) (expiration of 21-day limitation period bars SEPA procedural challenges of any subsequent government action on same proposal unless two exceptions are met). Here, no party timely challenged the FEIS by the December 21, 2015, deadline. Thus, the challenges to the FEIS in issues 3(b) – 3(f) must be dismissed as time barred under RCW 43.21C.080(2)(a), unless Appellants demonstrate exceptions to the notice of action's preclusive effect in subsection 2(b) applies. *Wells v. Whatcom County Water Dist. No. 10*, 105 Wn. App. 143, 152, 19 P.3d 453 (2001); *Walker v. Dep't of Ecology*, PCHB No. 01-034 (June 5, 2001) (applying RCW 43.21C.080 to bar untimely SEPA challenge); *Millennium Bulk Terminals v. Cowlitz County*, SHB No. 17-017c, pp. 8, 19-21 (Apr. 20, 2018) (where notice of action had

been issued and no appeal filed, adequacy of previously unappealed FEIS could not be challenged in subsequent proceeding using earlier FEIS to deny a shoreline permits).

ACT nonetheless contends that PSCAA "reopened" SEPA review when it supplemented the FEIS with the SEIS on lifecycle greenhouse gas emissions, making the preclusive effect of the notice of action inapplicable. *ACT Opp./Cross Motion, pp. 21-25.* This is unsupported by the plain terms of RCW 43.21C.080(2)(b), case law, and the SEPA provisions on preparing supplemental EISs.

As stated, PSCAA determined that the FEIS did not account for "upstream" greenhouse gas (GHG) emissions associated with natural gas extraction and transmission and determined that a supplemental EIS using the "lifecycle" approach to characterizing GHG emissions was needed for its review of PSE's NOC application. *Dold Decl., Ex. B.* PSCAA then followed its own regulation and SEPA regulations on supplementing EISs. When PSCAA is not the SEPA agency, as here, PSCAA regulation directs that PSCAA "shall not prepare or require preparation of a DNS or EIS in addition to that prepared by the lead agency, unless required under WAC 197-11-600," but in some cases, PSCAA "may conduct supplemental environmental review under WAC 197-11-600." PSCAA Reg. I, § 2.04(b).

In turn, WAC 197-11-600 governs the use of existing environmental documents. Subsection (3) provides in part that an agency acting on the same proposal "shall use an environmental document unchanged except that for EISs, preparation of a supplemental EIS is required if there are "(i) [s]ubstantial changes . . . likely to have significant adverse environmental impacts . . . or (ii) [n]ew information indicating probable significant adverse

impact." WAC 197-11-600(3). Subsection (4) then gives agency the discretion to use existing environmental documents by *one or more of the following*: adoption (where an agency may use all or part of an existing environmental document), incorporation by reference, addendum or preparation of a SEIS, if there are, among other things, substantial changes likely to have significant adverse environmental impacts or new information indicating a proposal's probable significant adverse environmental impacts. WAC 197-11-600(4)(a)-(d). PSCAA was allowed under WAC 197-11-600(4) to use the FEIS and prepare an SEIS, thus refuting Appellants' claim that PSCAA committed procedural error by not adopting or incorporating by reference the City's FEIS.[12]

More importantly, Appellants provide no authority for the claim that by availing itself of the methods under WAC 197-11-600 of using an existing EIS and supplementing it, PSCAA somehow "reopened" SEPA review of the FEIS and bypassed the preclusive effect of the notice of action procedure in RCW 43.21C.080(2)(a). Indeed, the Court of Appeals in *Wells* differentiated between the standards for preparing an SEIS under WAC 197-11-600(3)(b)(ii) and the standard for applying the exception to RCW 43.21C.080(2)(b)'s preclusive effect.

In *Wells*, the water district had issued a SEPA notice of action to build a sewage interceptor for which an EIS had been prepared. No one appealed the EIS within the 21-day period triggered by the notice of action. *Wells*, 105 Wn. App. at 150. Later, the water district obtained a conditional use permit which opponents of the project challenged, arguing that a

[12] Furthermore, WAC 197-11-620(1) directs that the SEIS should not include analysis of actions, alternatives, or impacts that is in the previously prepared EIS.

supplemental EIS should have been prepared because of "new information" under WAC 197-11-600(4). The Court of Appeals held that opponents did not satisfy the "new information" standard, and that even if the standard was met, the claim that the EIS should have been supplemented was precluded by the notice of action unless the two exceptions to the notice of action's preclusive effect under RCW 43.21C.080(2)(b) could be established. *Id*., at 152-53. Since neither exception applied, the court rejected the claim that a supplemental EIS should have prepared. *Id*. In sum, the weight of authority does not support Appellants' claim that PSCAA's use of the City's FEIS and preparation of the SEIS in reviewing PSE's NOC application eliminates the preclusive effect of the notice of action. *See also*, *Settle*, *supra*, at § 20.05[3]; *May v. Robertson*, SHB No. 06-031 (Apr.16, 2007) (issuance of correction and addendum to environmental document did not justify reopening earlier environmental document unless challenger can establish exceptions to the preclusive effect of notice of action under RCW 43.21C.080(2)(b)). The preclusive effect of the notice of action still applies unless Appellants can show that one of the two exceptions to the preclusive effect applies.

Two exceptions to the preclusive effect of the notice of action procedure are provided in RCW 43.21C.080(2)(b). Appellants only argue that the first of the two exceptions apply here: "a substantial change in the proposal between the time of the first governmental action and the subsequent governmental action that is likely to have adverse environmental impacts beyond the range of impacts previously analyzed." RCW 43.21C.080(2)(b).

Specifically, Appellants contend that PSE made changes to the Tacoma LNG project after the City issued its FEIS that qualifies as a substantial change under RCW 43.21C.080(2)(b).

The change ACT identifies is eliminating bunkering on the Hylebos waterway (with ships refueling only on the Blair waterway) and the possible attendant increased risk of fire and explosion from concentrating refueling in one place. *ACT's Opp./Cross Motion, pp. 25-27.* ACT claims that neither the City nor PSCAA evaluated or further analyzed the possible risks associated with this change, and thus urges the Board "to review whether safety risks were adequately disclosed pursuant to SEPA" under the exception in RCW 43.21C.080(2)(b). *ACT's Opp./Cross Mot., p. 27.*

PSCAA replies that ACT's argument above falls under Issue 3(a), which ACT so acknowledges. *ACT Opp./Cross Mot., p. 25.* Issue 3(a) is not the subject of dismissal in PSE's instant motion. Issue 3(a) challenges the City's FEIS on the basis that PSCAA's reliance on the FEIS is erroneous when the project has changed substantially in scope and purpose since the FEIS was issued in November of 2015. *PSCAA Reply, p. 40.* Indeed, PSE states in its motion that "PSE does not seek to dismiss Appellants' claim that PSE has made substantial changes in the proposal that are likely to have adverse environmental impacts beyond the range of impacts previously analyzed in the FEIS. PSE contests these assertions, but is not seeking to dismiss those claims in this motion." *PSE's Motion, pp. 17, n.71.*[13]

[13] PSE's position shifts and becomes unclear as briefing progressed. In a lengthy footnote in its reply, PSE characterizes Issue 3(a) as challenging PSCAA's evaluation of the need for supplemental review under WAC 197-11-600 (requiring supplemental review when there are "substantial changes to a proposal so that the proposal is likely to have significant adverse environmental impacts"). *PSE's Reply, p. 43, n.161.* PSE then states that the fact that Respondents did not seek to dismiss Issue 3(a) has no bearing on the Board's resolution regarding the preclusive effect of the notice of action on Issues 3(b) – 3(f) since the standard for supplemental review under WAC 197-11-600 in Issue 3(a) is different than the standard for notices of action in RCW 43.21C.080(2)(b).

Regardless of how the parties characterize Issue 3(a), that issue is not before the Board in the instant motion. With respect to LNG project changes made after the FEIS, ACT is only arguing that the change of eliminating vessel fuel bunkering in the Hylebos waterway qualifies as an exception to the preclusive effect of the notice of action under RCW 43.21C.080(2)(b), i.e., whether it's a substantial change that is likely to have adverse environmental impacts beyond the range of impacts previously analyzed in the FEIS. In the end, given PSE's statement in its motion that it was not seeking to dismiss such a claim, and ACT's acknowledgment that its argument falls under Issue 3(a), the Board does not consider it. To the extent Appellants claim that eliminating fuel bunkering at the Hylebos waterway or other changes to the project occurring after the issuance of the FEIS in November 2015 required supplemental environmental review under SEPA or otherwise violated SEPA, those arguments could be made under another issue.

Appellants also argue that that the City's notice of action was invalid, rendering its preclusive effect of RCW 43.21C.080(2)(b) inapplicable. *ACT's Opp./Cross Motion, pp. 28-29.* They contend that the City's notice of action was invalid because SEPA allows an agency to provide only one process for appealing a FEIS under RCW 43.21.075(3)(a), and the City had already provided such a process to the Shorelines Hearings Board when it issued its shoreline substantial development permit. *See* RCW 43.21.075(7) (shorelines hearings board has sole jurisdiction over both SEPA appeal and appeal under Shoreline Management Act). Given that under the City's municipal code and SEPA the shoreline permit already provided the sole basis

for an EIS appeal, Appellants conclude that the City created an impermissible second, separate process for appealing the FEIS by issuing a notice of action on its demolition permits.

The Board rejects Appellants' contention that the notice of action was invalid because it is premised on an incorrect understanding of when the shoreline permit was issued. At the time the City gave its notice of action on the demolition permits on November 19, 2015, no shoreline permit existed; and there was still no final shoreline permit at the expiration of the notice of action's 21-day time period on December 21, 2015. *Kisielius Decl., Ex. E, p. 11*; *Puyallup Tribe of Indians v. City of Tacoma*, SHB No. 16-002, p. 5 (April 27, 2016) (after reconsideration, City issued final shoreline permit with amended conditions in December 2015). Thus, the City did not create a second impermissible FEIS appeal process at the time it issued its notice of action.

Additionally, assuming, without deciding, that it was invalid, RCW 43.21C.080(2)(a) bars Appellants' invalidity challenge as untimely. The statute's time limit for SEPA challenges applies to "*any action* to set aside, enjoin, review, or otherwise challenge any such governmental action or subsequent governmental action for which notice [of action] is given . . . on grounds of noncompliance with the provisions of this chapter shall be commenced within twenty-one days[.]" RCW 43.21C.080(2)(a) (emphasis added). Here, Appellants filed the instant action challenging, among other things, that the notice of action was invalid under SEPA. The plain terms of RCW 43.21C.080(2)(a) precludes this untimely action. *See* RCW 43.21C.080(8) ("[f]or purposes of RCW 43.21C.080, the words "action", "decision", and "determination" mean substantive agency action including any accompanying procedural determinations under [SEPA] (*except where the word "action" means "appeal" in RCW 43.21C.080(2)* (Emphasis added)).

Because the Board's decision on these issues rests on the preclusive effect of the notice of action under RCW 43.21C.080(2)(a), the Board does not consider Respondents' additional claims that collateral estoppel principles and Appellants' alleged failure to exhaust administrative remedies bars their challenges to the FEIS in this proceeding.

The Board concludes that Issues 3(b)-(f) is dismissed; however, Appellants may raise the claim that changes PSE made to the LNG project after the issuance of the FEIS in November 2015 required supplemental environmental review under SEPA or otherwise violated SEPA.

D. Issue 4(f) —Violations of WAC 173-400-111, WAC 173-400-112, and WAC 173-400-113

Issue 4(f) provides:

> Whether PSCAA's December 10, 2019 Order of Approval violates PSCAA Regulations, the Washington Clean Air Act (RCW Ch. 70.94), and/or the federal Clean Air Act, including but not limited to the following: …
>
> f. Whether PSCAA erroneously concluded that the emissions from Tacoma LNG will not violate WAC 173-400-111, WAC 173-400-112, and WAC 173-400-113 (i.e., not cause or contribute to a violation of any ambient air quality standard).

PSE moves to dismiss Issue 4(f), joined in by PSCAA. PSCAA also separately filed a reply in support of PSE's Motion, in which PSCAA specifically requested that WAC 173-400-111 and WAC 173-400-112 be stricken from Issue 4(f). *PSCAA's Reply, pp. 43.* The regulations referenced in this issue relate to the process for reviewing a notice of construction for a new source of air pollutant emissions. Appellant Tribe filed a response to PSE's motion, joined in by ACT. In its response, the Tribe agreed with PSE that WAC 173-400-112 does not

apply. *Tribe's Response, p. 6.* Thus, Issue 4(f) only involves whether PSCAA erroneously concluded that Tacoma LNG emissions will not violate WAC 173-400-111 and WAC 173-400-113.

Entitled "Processing notice of construction applications for sources, stationary sources and portable sources," WAC 173-400-111 provides requirements for processing notice of construction applications, including: requirements for a complete application, coordination with ch. 173-401 WAC, criteria for approval, final determination, appeals, revisions, fees, and enforcement. WAC 173-400-111(1)-(10). Subsection (3) of the regulation states that order of approvals cannot be issued until the following criteria are met, and lists the requirements of WAC 173-400-113 as one of the criteria. WAC 173-400-111(3)(c). In turn, WAC 173-400-113 establishes substantive requirements in reviewing new source applications. WAC 173-400-113 (permitting authority reviewing new source application shall issue order of approval if the proposed project satisfies enumerated requirements). Those requirements include compliance with national and state emission standards for hazardous air pollutants, use of best available control technology, and compliance with ambient air quality standard. WAC 173-400-113.

PSE argues that PSCAA's order of approval on its notice of construction application cannot violate WAC 173-400-111 as a matter of law because the regulation establishes only procedural requirements that PSCAA must follow in processing its application for Tacoma LNG, and does not prohibit or limit any emissions from Tacoma LNG that could be violated. *PSE Motion, pp. 24-25*. The Tribe responds that WAC 173-400-111 is not merely "ministerial" because subsection (3) states that a notice of construction approval cannot be issued unless

substantive criteria are met, including requirements in ch. 173-460 WAC for control of new sources of toxic air pollutants which are in Issues 4(g)-(j) in this case. WAC 173-400-113(3)(h).

The Board concludes that WAC 173-400-111 does not limit or prohibit emissions except by reference in subsection (3) to other enumerated WACs that do contain emission requirements. Appellants have identified ch. 173-460 WAC as one such enumerated emission requirement, which they claim PSCAA erroneously concluded Tacoma LNG emissions will not violate. Appellants may raise such claim in the remaining issues. Neither PSE nor PSCAA addressed Issue 4(f)'s reference to WAC 173-400-113 in their briefing. Thus, PSE's motion to dismiss Issue 4(f) is granted only in part, with Issue 4(f) remaining for hearing solely as to compliance with WAC 173-400-113. Reference to other WACs in Issue 4(f) is stricken.

E. Issue 4(k) —Enforceability of requirement that the sole source of natural gas supply used in all operations at the Tacoma LNG facility comes from British Columbia or Alberta, Canada

Issue 4(k) asks whether PSCAA's December 10, 2019, Order of Approval violates PSCAA Regulations, the Washington Clean Air Act (RCW Ch. 70.94), and/or the federal Clean Air Act, including but not limited to the following: … (k) the Order of Approval's requirement that "the sole source of natural gas supply used in all operations at the Tacoma LNG facility comes from British Columbia or Alberta, Canada" is enforceable. The requirement is contained in condition 41 of PSCAA's Order of Approval. PSE moves to dismiss this issue on two bases: (1) lack of Board jurisdiction over hypothetical future enforcement of a condition of approval "to the extent" that Appellants in this issue is challenging PSCAA's likelihood or manner of future

enforcement, and (2) Appellants' lack standing to raise the issue. PSCAA joins in PSE's motion, and also provided its separate arguments in its reply supporting PSE's motion. The Tribe and ACT oppose dismissal of Issue 4(k).

Condition 41 of the order of approval states that pursuant to provisions in SEPA statute and regulations, and PSCAA agency regulation relating to SEPA substantive authority to condition or deny a proposal, "[t]he owner and/or operator shall ensure" that Tacoma LNG's sole source of natural gas supply comes from British Columbia or Alberta, Canada." *Kisielius Decl., Ex. 9.* It further states that compliance with the condition "shall be verified by the owner and/or operator maintaining the following records," and specifies in great detail the required records/reports: monthly records on natural gas purchasing, delivery, receipt, and flow; reporting requirements in case gas flow is not north to south (from Canada to Tacoma LNG); and semiannual reporting requirements. *Id.*

Respondents argue that Issue 4(k) is essentially a claim that condition 41 may be violated and therefore concerns PSCAA's future enforcement of the condition, which the Board lacks jurisdiction to consider. *PSE's Motion, pp. 9-11; PSCAA's Reply, pp. 15-21.* Respondents cite numerous Board cases generally stating that the Board lacks jurisdiction to consider future violations and enforcement of those violations. Alternatively, Respondents argue that Appellants lack standing to raise Issue 4(k) because the alleged injury is a threatened, future one and therefore fails to satisfy the injury in fact element of standing. *Green v. Dep't of Ecology,* PCHB No. 07-012 (Aug. 22, 2007); *Magnolia Neighborhood Planning Council v. City of Seattle,* 155 Wn. App. 305, 312, 230 P.3d 190, *review denied,* 170 Wn.2d 1003 (2010).

The Board rejects the argument that Appellants lack standing to raise Issue 4(k) for failure to allege a concrete, immediate, and specific injury required to satisfy the injury in fact element of standing. This Board has repeatedly rejected claims that the Tribe lacked standing to challenge other permit approvals for Tacoma LNG. *The Puyallup Tribe of Indians v. Dep't of Ecology*, PCHB No. 16- 120C, pp. 16-17 (Jan. 16, 2018). Moreover, the Board agrees with Appellants that condition 41 is intertwined with Issue 2's challenge to the SEIS's analysis of greenhouse gas emissions that relies on mitigation such as condition 41 (discussed below). Respondents do not contest, and the Board does not find, that Appellants lack standing to challenge the SEIS.

As to whether Issue 4(k) is an improper order of approval enforcement matter, Appellants respond that the Board has jurisdiction over Issue 4(k) because it is essentially a SEPA issue in that it asks whether PSCAA can even rely on the condition as a means of ensuring SEPA compliance.[14] Respondents object to what they allege as the Tribe's recasting of Issue 4(k) from a future enforceability issue over which the Board lacks jurisdiction to a SEPA issue of whether PSCAA properly relied on condition 41 as mitigation to ensure compliance with SEPA and the Clean Air Act. However, both PSE and PSCAA agree that Appellants can indeed challenge

[14] Appellants explain that condition 41 is central to PSCAA's conclusion in its SEIS that operating the Tacoma LNG facility will result in overall decrease in greenhouse gas emissions in the Puget Sound region compared to the no action alternative because one of the key assumptions underlying that conclusion is that gas sourced from BC and Alberta has a very low rate of methane loss. SEIS, pp. 4-11 (in Ex. 1 to Bridgman Decl. in support of Tribe's Opp'n to PSE's Second Dispositive Mot.). The Tribe provides evidence that the natural gas pipeline feeding into Tacoma LNG has multiple sources and therefore cannot be traced to ensure that only BC and Alberta natural gas arrives at Tacoma LNG. *Sahu Decl., ¶¶ 7-8.*

condition 41 as part of their challenge to PSCAA's exercise of SEPA substantive authority to condition a proposal in Issue 2(d).

Appellants also argue that Issue 4(k) presents a fact dispute as to whether condition 41 can ensure that only British Columbia and Alberta natural gas arrives at Tacoma LNG. *Sahu Decl.*, ¶¶ *7-8.* The Board agrees that material questions of fact remain in Issue 4(k) since PSCAA contests Dr. Sahu's declaration, and contends that monthly records can prove the direction of natural gas flow to ensure that condition 41 is satisfied. *PSCAA Reply, pp. 19-20.*

Given that all parties agree that condition 41 is intertwined with the challenge to PSCAA's exercise of SEPA substantive authority to condition a proposal in Issue 2(d), and the Board's conclusion that genuine issues of material fact remain as to condition 41 of the Permit, the Board denies PSE's motion to dismiss Issue 4(k).

F. **Issue 4(l) —Whether order of approval is contrary to principles of environmental justice, including Executive Order 12898 as well as PSCAA's mandate concerning avoiding environmental injustices**.

PSE moves to dismiss Issue 4(l), joined in by PSCAA, on the basis that the Board lacks jurisdiction to consider it. PSCAA also separately argues in its reply that the Board lacks authority to consider this issue under RCW 43.21B.110. Executive Order 12898 is entitled "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," and directs federal agencies to, among other things, identify and address disproportionately high and adverse human health or environmental effects of their actions on

minority and low income populations, and develop a strategy for implementing environmental justice.[15] 59 Fed. Reg. 7629, § 6-609 (Feb. 11, 1994); *Dold Decl*., *Ex. F*.

The Tribe identifies a PSCAA report on "Highly Impacted Communities" within its jurisdiction as an example of PSCAA's mandate to avoid environmental injustices. *Tribe's Response, p. 37, n.30.*

The Board is a creature of statute and has only those powers expressly granted to it or necessarily implied therein. RCW 43.21B.010; *Skagit Surveyors and Engineers LLC v. Friends of Skagit County*, 135 Wn.2d 542, 558, 958 P.2d 962 (1998); *Kailin v. Clallam County*, 152 Wn. App. 974, 979, 220 P.23d 222 (2009). RCW 43.21B.110 defines the Board's subject matter jurisdiction, conferring authority on the Board to hear and decide appeals from certain enumerated "decisions" of state agencies and air pollution control authorities related to "the issuance, modification, or termination of any permit, certificate, or license by . . . [any air authority]." RCW 43.21B.110(1)(d). The Board also has jurisdiction to review "[a]ny other decision by the department [of Ecology] or air authority which pursuant to law must be decided as an adjudicative proceeding under ch. 34.05 RCW [APA]" RCW 43.21B.110(1)(i). An adjudicative proceeding under the APA results in an order that is limited to resolving the rights and duties of specific persons. *Am. Waterways Operators v. Dep't of Ecology*, 7 Wn. App. 2d 808, 818-19, 435 P.3d 856 (2019). Accordingly, the Board's jurisdiction to hear appeals of

[15] Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. United States Environmental Protection Agency, environmental justice webpage, https://www.epa.gov/environmentaljustice.

decisions from PSCAA is limited to permits, certificates, licenses, or an order resolving addressing the rights and duties of specific persons.

Resolving whether PSCAA's order of approval is contrary to environmental justice principles, including Executive Order 12898 and PSCAA's mandates on environmental injustices, would require the Board to adjudicate and/or enforce a federal executive order and PSCAA plans and policies, matters which the Board has ruled that it lacks subject matter jurisdiction.[16] Such a conclusion compels the Board to dismiss Issue 4(l). *Inland Foundry Co. Inc. v. Spokane County Air Pollution Control Authority*, 98 Wn. App. 121, 123-24, 989 P.2d 102 (1999) (without subject matter jurisdiction, administrative tribunal can only enter dismissal order). However, the Board's dismissal of Issue 4(l) is not a comment on environmental justice principles implemented or being implemented.

Because the Board concludes that it lacks jurisdiction to consider compliance with federal executive orders, broad principles of environmental justice, and PSCAA's mandate in the form of PSCAA reports and strategic plans, the Board does not decide the parties' dispute over

[16] *West v. Dep't of Ecology,* PCHB No. 09-077, p. 11 (Oct. 29, 2009) (Board had no authority under RCW 43.21B.110 to consider claim that Ecology's issuance of NPDES permit violated National Environmental Policy Act, Open Public Meetings Act, and harbor improvement plan); *Kavanagh v. Spokane County Air Pollution Control Agency*, PCHB No. 89-127, p. 4 (Dec. 7, 1989) (Board lacked jurisdiction over claim that air permit violated county solid waste plan); *Devine v. Dep't of Ecology*, PCHB Nos. 09-075 and 09-082, p. 11. (Apr. 9, 2010) (Board lacked jurisdiction to consider water right transfer application's compliance with federal law; Board does not have jurisdiction to enforce federal law provisions); *Harrison v. Dep't of Ecology*, PCHB No. 04-074 (Nov. 10, 2004) (Board lacked jurisdiction over claim that water right transfer did not comply with Growth Management Act where water right transfer statute did not make compliance with Act a requirement); *West v. Weyerhaeuser Co*., PCHB No. 08-076, pp. 2-3 (Jan. 14, 2009) (Board had no jurisdiction over Ecology stormwater coverage determination under RCW 43.21B.110, which limits jurisdiction to orders issued pursuant to specific statutory provisions; referencing federal statutes does not confer jurisdiction absent showing that statutes provide right to adjudicate matter before Board).

whether Executive Order 12898 creates a right of action for judicial review or any other dispute under Issue 4(l) that does not concern the Board's jurisdiction under RCW 43.21B.110.

G. Issue 4(m) — Violation of PSCAA's obligations under Title VI of the Civil Rights Act (42 U.S.C. § 2000d et seq.)

Issue 4(m) asks whether PSCAA's issuance of the order of approval violates Title VI of the Civil Rights Act, 42 U.S.C. § 2000d et seq. PSE, joined by PSCAA, contends the Board lacks jurisdiction to review the issue. The analysis and authorities discussed above on Issue 4(l) also compels the conclusion that the Board lacks jurisdiction to review compliance with federal civil rights law. Appellants have provided no authority to the contrary. Issue 4(m) is also dismissed.

H. Issue 4(o) —Failure to include the requirements of NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.) relating to the handling of acid gas from the facility. Issue 4(p) —Failure to include a requirement that Tacoma LNG monitor and control fugitive GHG and VOC emissions in accordance with NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.)

Finally, Issues 4(o) and 4(p) concern the order of approval's compliance with federal regulations establishing standards for controlling acid gas, GHG, and volatile organic compounds (VOC) from affected facilities in the crude oil and natural gas production source category. 40 C.F.R § 60.5360a. Appellants contend in Issue 4(o) that PSCAA's order of approval incorrectly fails to include the requirements of new source performance standards (NSPS) Subpart OOOOa (40 C.F.R. § 60.5430a et seq.) relating to the handling of acid gas from the facility. In Issue 4(p) the Appellants argue that the order of approval incorrectly fails to

include a requirement that Tacoma LNG monitor and control fugitive greenhouse gas and volatile organic compounds (VOC) emissions in accordance with NSPS Subpart OOOOa (40 C.F.R. § 60.5430a et seq.).[17]

PSE asserts that 40 C.F.R. Part 60, Subpart OOOOa ("Subpart OOOOa"), which establishes emission standards and compliance schedules for control of GHG, cannot apply to Tacoma LNG because it only applies to facilities in the "crude oil and natural gas source category" as defined in 40 C.F.R. § 60.5430a. PSE claims that Tacoma LNG is not a facility in the "crude oil and natural gas source category" (and therefore not subject to Subpart OOOOa) because the term is defined to include "natural gas production, processing, transmission and storage, which include the well and *extends to, but do not include, the local distribution company custody transfer station*." Former 40 C.F.R. § 60.5430a (2019) (emphasis added).

Under this definition, PSE asserts that Subpart OOOOa does not apply to Tacoma LNG because it is downstream of the LDC custody transfer station, and the regulation does not apply to any equipment downstream of the LDC custody transfer station. *PSE Motion, p. 26-27.* PSCAA, in its Reply, also argues that the Environmental Protection Agency (EPA) made clear in published presentation (with graphics) that Subpart OOOOa does not apply downstream of the "*City Gate*", which PSCAA states is defined as the "*Local distribution company (LDC) custody transfer station."* 40 C.F.R. §60.5430a. PSCAA explains that according to the EPA graphic, Tacoma LNG is a "Large Volume Customer," which is depicted in the graphic as downstream of

[17] These EPA regulations at issue were amended in September 2020, after briefing on the motions were completed. *See* Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 85 Fed. Reg. 57018 (Sept. 14, 2020)].

the "City Gate" or LDC custody transfer station, making Subpart OOOOa inapplicable to Tacoma LNG. *PSCAA Reply, pp. 45-46.*

In response, the Tribe states that PSE's interpretation is counter to EPA's statements in proposed rulemaking on Subpart OOOOa that it is intended to regulate the natural gas sector "from the well to the customer." *Tribe's Response, p. 9*; *Fuller Decl., Ex. F, p. 50247*; 84 Fed. Reg. 50247 (Sept. 24, 2019). In addition, the Tribe argues that such a reading would create an unlimited exemption when Subpart OOOOa already provides definitions of facilities and specific circumstances where those facilities may be exempt. *Tribe's Response, p. 9.* The Tribe also claims other LNG facilities similar to the Tacoma LNG facility have been subject to Subpart OOOOa.[18]

Based on the evidence presented by the parties, the Board concludes there are material issues of fact regarding whether Tacoma LNG is downstream of the LDC custody transfer station, as defined under 40 CFR § 60.5430a, and whether it is part of the natural gas distribution segment. PSE's motion to dismiss issue 4 (o) and (p) is denied.

In accordance with the analysis above, the Board issues the following Order:

IV. ORDER

Puget Sound Energy's Motion to Dismiss and for Partial Summary Judgment is **GRANTED in part and DENIED in part**. Issues 1, 3(b)-(f), 4(f) (as to WAC 173-400-111 and

[18] The Tribe claims the Texas, Freeport LNG facility is similar and regulated by Subpart OOOOa. The Freeport LNG facility, they claim, also includes an amine sweetening system; gas dehydration unit; natural gas liquids (NGL) extraction unit; liquefaction unit, storage vessels, and flare system. *Tribe's Response, p. 11*; *Fuller Decl., Ex. C*, Sections 2.1, 2.2 and 3.4.

-WAC 173-400-112), 4(l) and 4(m) are **DISMISSED**. Issues 4(n), 4(q), 4(r), 4(s), 4(t) and 5 are **DISMISSED** by agreement of the parties. Issues 4(b), 4(f) (solely as to WAC 173-400-113), 4(k), 4(o) and 4(p) remain for hearing.

SO ORDERED this 26th day of March, 2021.

POLLUTION CONTROL HEARINGS BOARD

NEIL L. WISE, Board Chair

CAROLINA SUN-WIDROW, Member

MICHELLE GONZALEZ, Member

HEATHER C. FRANCKS, Presiding
Administrative Appeals Judge