

Federal Authority Advice Record

Response due by: July 21, 2016

Pacific Future Energy Refinery Project – Pacific Future Energy Corporation
Agency File No.: 005565

Department/Agency:	Environment and Climate Change Canada		
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1. (a) Indicate whether the description of potential environmental effects presented in the Project Description is sufficient in characterizing project effects to the components of the environment, as defined under section 5 of CEAA 2012, that relate to your mandate, including whether these effects may be adverse.

The Pacific Future Energy Refinery Project Description, dated June 2016, does not sufficiently characterize potential effects from the proposed project to components of the environment, as defined under section 5 of CEAA 2012. For example:

- ***Migratory Birds and non-aquatic Species at Risk:*** *The project description categorically tables the designated species at risk that are known to occur in the project area and generally identifies some of the migratory birds listed under the Migratory Birds Convention Act (1994). Potential project effects on Species at Risk and migratory birds are identified, however a general accounting does not provide an adequate project-specific understanding of potential effects on migratory birds and species at risk, or the habitats upon which they depend. While additional information is required to determine whether impacts to the identified species at risk are linked to a section 5 environmental effect, it is important for the proponent to identify species at risk to assist the Canadian Environmental Assessment Agency in meeting its responsibilities pursuant to section 79 of the Species at Risk Act.*
- ***Air Quality:*** *The proponent indicates that sulphur dioxide emissions (SO₂/SO_x) will be “kept very low” (p. 51). However, even with a Sulphur Recovery Unit and a 99.8% efficient Tail Gas Treatment Unit, SO₂ emissions will be on the order of 2,000 tonnes per year; as a result of bitumen that would be processed at the refinery containing a relatively high amount of sulphur. Emissions of this magnitude could result in impacts to air quality and the environment that have not been adequately characterized.*

Nitrogen Oxides (NO_x) are identified as a pollutant of concern and there is mention of considering low NO_x technologies. NO_x emissions can be significant for a refinery of this size, and can also significantly contribute to smog. The proponent may need to consider use of ultra-low NO_x technologies and other technologies to minimize these emissions.

The proponent indicates that they are “considering” capture of CO₂ from the refinery. The proponent has estimated that 7 million metric tonnes of CO₂ emissions will be produced per year. The proponent also indicates that it is “in discussion with technology suppliers for the use of CO₂ for manufacturing of various products”; as such, there is uncertainty in how CO₂ emissions will be prevented from entering the atmosphere. More than half of the proposed CO₂ emissions are expected to come from combustion flue gas (i.e., boilers and heaters). Technologies for removing CO₂ from flue gas are not currently in common use, therefore it is uncertain how much of the CO₂ emissions from flue gas will be captured. If CO₂ emissions are not adequately captured and stored, then the refinery will be a significant emitter of CO₂, which is a section 5 environmental effect.

Flares are identified, but there is no mention of the potential for flares to produce air emissions. Recently in the U.S., there has been a significant focus on refinery flaring events and the underestimation of emissions.

- *Process upsets within a refinery can cause gas mixtures to be routed to flare and depending on the frequency and duration the emissions could be significant. Flare gas recovery systems and measurement devices are some of the systems that are now being required to manage and minimize the impacts of flaring events.*

- Acid gas flaring can also be a significant source of SO₂ emissions if there are no back-up systems for the sulphur recovery system.

The proponent did not identify the specific hydrocarbons that are commonly of concern in refining operations. Some of the hydrocarbons that are emitted from refineries and are the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act (CEPA 1999) include: benzene; 1,3-butadiene; and volatile organic compounds (VOCs).

Accurate quantification of emissions will be important to ensure that emissions are managed adequately on an ongoing basis.

Section 7.1.3 in the project description indicates that air quality will be assessed as part of the project. In Section 11, degradation of air quality is identified as a human health concern; however, the project description does not adequately characterize other potential section 5 effects. Effects that are not adequately characterized include:

- How impacts to air quality could adversely affect migratory birds and non-aquatic species at risk.
- Adverse effects of SO_x /NO_x emissions associated with refineries as a result of deposition.

(b) Identify any additional potential adverse environmental effects of the Project that are not described in the Project Description and their linkage to components of the environment under federal jurisdiction (as defined under section 5 of CEAA 2012).

Additional adverse environmental effects that were not included in the project description include:

- Surface and groundwater are mentioned in the project description however information concerning potential water quality issues (e.g. impacts on migratory birds, fish, and non-aquatic species at risk) is limited and there is no mention of how the drawing of groundwater may potentially affect wetlands important to migratory birds.
- The impact of artificial lighting on migratory birds and wildlife is not described.
- The project description has not included information on upstream GHG emissions associated with the project.

c) List any species at risk as defined by the *Species at Risk Act* (SARA) or species of conservation concern that have been assessed by COSEWIC that may be affected by the Project and are not identified in the Project Description. This information will inform the Agency's Section 79(1) notification obligations under SARA.

Mammals:

Myotis lucifugus Little Brown Bat

2. (a) List the potential powers, duties, or functions that your department may issue to enable the Project to proceed, why they might be issued, and which project components and activities are related to the powers, duties, or functions.

The Project may be subject to the disposal at sea provisions of the Canadian Environmental Protection Act, 1999 (CEPA, 1999). Environment and Climate Change Canada notes that all in-water sediment disturbances and management activities associated with the Project have the potential to require a disposal at sea permit under CEPA 1999 and should be described in sufficient detail to support such a determination.

A Species at Risk Act (SARA) permit under Section 73 of SARA is not currently listed as a permit required for the Project. If the Project is located: 1) on federal land; or 2) on non-federal land that is part of an emergency order or protection order, Environment and Climate Change Canada will advise that a permit would be required to authorize a person to engage in an activity affecting a listed wildlife species, any part of its critical habitat or its residences.

(b) Identify the potential environmental effects, associated with that power, duty or function identified above, as described in subsection 5(2) of CEEA 2012. Please include in your response a description of the scope or extent (i.e., project activities addressed and components of the environment included) under this power, duty or function.

Legislation	Regulated Activity	Environmental Effects
<i>Species at Risk Act</i>	<i>If the Project is located: 1) on federal land; or 2) on non-federal land that is part of an emergency order or protection order, the regulated activity would include any activity affecting a listed wildlife species, any part of its critical habitat or its residences</i>	<i>Impacts on a listed wildlife species, any part of its critical habitat or its residences.</i>
<i>Canadian Environmental Protection Act, CEPA 1999</i>	<i>Loading, transport and disposal of material at sea</i>	<i>Impacts on the marine environment including fish and fish habitat, migratory birds, non-aquatic species at risk, and any uses of the sea</i>

(c) Has your department or agency already exercised the above-noted power or performed a duty or function to enable the proposed Project to proceed in whole or in part? If yes, please describe.

Yes No

3. (a) Under the former Act, did your department or agency determine that an EA of this Project was likely?

Yes No

If yes, provide additional details regarding the timing, reason for determination, and the proponent notification of the decision.

(b) Has your department or agency taken an EA course of action decision under paragraph 20(1)(a) or (b) or subsection 37(1) of the former Act in relation to the Project?

Yes No

If yes, please describe. This information is requested in order to determine application of section 128(1) of CEEA 2012.

4. Identify and describe the specialist or expert information or knowledge within your department that would be relevant to the conduct of the environmental assessment of the Project, should an environmental assessment be required. Provide the contact information for individual that will provide the specialist or expert advice.

- *Migratory birds under authority of the Migratory Birds Convention Act, 1994 and their associated habitats;*
- *Non-aquatic species at risk under authority of the Species at Risk Act, including recovery strategies and management plans;*
- *Water quality as it relates to a. shellfish growing area and to b. section 36(3) of the Fisheries Act, administered by Environment and Climate Change Canada;*
- *Application and implementation of the Federal Policy on Wetland Conservation to ecological wetland communities supporting migratory birds and species at risk;*
- *Air quality, greenhouse gases, environmental emergencies, climate and meteorological conditions, as those subjects relate to departmental mandate and applicable regulations;*
- *Environmental Emergencies (E2) regulations under Part 8 of CEPA, 1999;*

- *Environmental effects of potential disposal at sea activities related to Environment and Climate Change Canada 's authority under CEPA, 1999: and,*
- *Potential impact of the project to Indigenous People related to the departmental mandate.*

<Original signed by>

(Al Hodaly on behalf of) Marc LaPointe

Print Name of Project Contact

Signature

A/Head

Environmental Assessment

Pacific and Yukon Region

Environment and Climate Change Canada

Title of responder

July 22nd, 2016

Date

Please respond to the above questions by July 21, 2016 via email at Rob.Hajdu@ceaa-acee.gc.ca.
(As requested, timeline extended to July 22, 2016)

Thank you.