

**MEMORANDUM OF UNDERSTANDING AND AGREEMENT No. 09-100**  
**BY AND BETWEEN**  
**JORDAN COVE ENERGY PROJECT AND**  
**THE STATE OF OREGON FOR**  
**EMERGENCY PREPAREDNESS, CO<sub>2</sub>, AND RETIREMENT AND**  
**FINANCIAL ASSURANCE**

**I. Background**

Until 2005, the siting and all pertinent environmental analysis and permitting of Liquefied Natural Gas facilities would have been conducted under the authority of Oregon's Energy Facility Siting Council (EFSC) and the Oregon Department of Energy (ODOE). The federal Energy Policy act of 2005 preempted the states' siting authorities giving the responsibility to the Federal Energy Regulatory Commission (FERC).

In January 2006, the governor designated ODOE as lead state agency to work with FERC to assure that Oregon's interests are protected and addressed in the federal siting process. This includes working with LNG developers to address state concerns regarding protection of public health and safety, the environment, and the region's economy throughout the life of an LNG project.

**II. Purposes**

This Memorandum of Understanding (MOU) establishes a framework for cooperation and outlines responsibilities for the State of Oregon and the Jordan Cove Energy Project (JCEP) for 1) providing risk mitigation measures to reduce vulnerability and prevent incidents; 2) preparedness and response to emergencies at LNG terminals and events along the waterway transit route; 3) mitigation of carbon dioxide (CO<sub>2</sub>) emissions from the operation of the proposed LNG terminal and associated electric cogeneration facility; and 4) providing a retirement cost estimate and funding surety that is consistent with the state requirements for energy facilities.

**III. Objectives**

ODOE and JCEP agree to cooperate to develop an emergency preparedness program for LNG emergencies described in Section IV, which establishes and ensures uniform policies and procedures for response at the federal, state, local and industry levels to (1) protect public health, safety and the environment, (2) ensure public awareness of and confidence in ODOE and JCEP response to an LNG accident, and (3) provide JCEP with certainty as to Oregon emergency preparedness requirements.

JCEP agrees to cooperate to mitigate carbon dioxide (CO<sub>2</sub>) emissions from the operation of the proposed LNG terminal and associated electric cogeneration facility pursuant to Section V, which establishes that CO<sub>2</sub> mitigation terms shall be consistent with the existing requirements that apply to electric generating facilities under EFSC jurisdiction.

JCEP agrees to cooperate to provide a retirement cost estimate and funding surety described in Section VI, which is consistent with the existing requirements for energy facilities under EFSC jurisdiction.

#### **IV. Emergency Preparedness and Response Authorities and Responsibilities**

The Governor of Oregon is responsible for emergency preparedness and response in Oregon (ORS 401). ODOE has authorities and responsibilities for emergency preparedness and response as delegated by the Governor (ORS 469). Therefore, ODOE is responsible for ensuring that LNG developers operating in Oregon design an emergency response plan (Emergency Plan) that meets state and local safety and security standards and requirements as specified in this MOU. This includes:

(1) *PLAN DEVELOPMENT AND COMMITMENT TO EMERGENCY RESPONSE*

*RESOURCES* - JCEP will work with ODOE and local emergency response organizations to develop and maintain an Emergency Plan for the import terminal and the LNG carrier transit route.

In addition, JCEP will provide ODOE and local emergency response organizations adequate funding, personnel, equipment, and other resources as appropriate to implement the Emergency Plan.

- a) Thirty (30) days following the issuance to JCEP of an order from FERC authorizing the siting, construction, and operation of an LNG terminal, JCEP will provide a comprehensive fire and response plan for the import terminal for ODOE and local emergency response organizations review for compliance with federal regulations and the state and National Fire Protection Association (NFPA) standards for a four-minute response to a 1<sup>st</sup> Alarm Fire at an industrial facility as shown in Table 7.2.1 below. The proposed plan will include a resource list which details the location and number of facilities, personnel, equipment, and apparatus provided, and other pertinent information as appropriate.

Table 7.2.1 - - Required Resources for a “Medium-Hazard Occupancies” Response. This includes apartments, offices, mercantile and industrial occupancies not normally requiring extensive rescue or fire-fighting forces.

- At least 3 pumpers
- 1 ladder truck (or combination apparatus with equivalent capabilities)
- Other specialized apparatus as may be needed or available
- No fewer than 16 fire fighters, 1 chief officer, 1 safety officer, and a Rapid Intervention Team (4 - 5 fire fighters on standby at event scene).

*Note:* Refer to Volume 1 - NFPA Handbook, 19<sup>th</sup> Edition, Chapter 2, Section 7, Organizing for Fire and Rescue Services.

Upon issuing a Notice to Proceed to its contractor(s) to commence construction, JCEP will begin acquiring resources listed in Table 7.2.1. All personnel, training, facilities, equipment, systems and supplies provided to ensure effective fire and rescue response must be in place 30 days prior to import terminal operation and maintained throughout the life of the project by JCEP.

- b) Prior to construction, JCEP will provide a comprehensive marine firefighting plan for ODOE and local emergency response organizations review for consistency with U.S. Coast Guard requirements for responding to shipboard fires and other LNG carrier events along the transit route. The proposed plan will also include a resource list which details the location and number of personnel, equipment, and apparatus provided, and other pertinent information as appropriate. Upon state and local approval of the plan, all personnel, equipment, and resources provided to marine firefighting must be dedicated to LNG response, in place prior to operation and maintained throughout the life of the project by JCEP.
- c) Prior to construction, JCEP will provide a comprehensive shore-side security plan that is consistent with U.S. Coast Guard standards in 33 CFR 105 for ODOE and local emergency response organizations review and approval. The proposed plan will assess and identify additional local law enforcement personnel and resources needed, if any, as a result of the project. This includes, but is not limited to JCEP expectation of local law enforcement to conduct shore-side patrols, provide traffic control during evacuations, and respond to reported suspicious activity from 911 calls or those captured on security cameras as the LNG carrier is in the channel and at the import terminal. Upon state and local approval of the plan, all personnel, equipment, and resources provided to enhance security on shore must be dedicated to LNG response, in place prior to operation and maintained throughout the life of the project by JCEP.
- d) Prior to construction, JCEP will provide a comprehensive LNG Management and Transit Plan (water-side security plan) that is consistent with U.S. Coast Guard standards in 33 CFR 105 for ODOE and local emergency response organizations review and approval. The proposed plan will assess and identify additional local law enforcement personnel and resources needed, if any, as a result of the project. This includes, but is not limited to JCEP expectation of local law enforcement to conduct water-side patrols and enforce LNG vessel and terminal security zones along the channel and at the import terminal. Upon state and local approval of the plan, all personnel, equipment, and resources provided to enhance security on the water must be dedicated to LNG response, in place prior to operation and maintained throughout the life of the project by JCEP.
- e) Prior to construction, JCEP will provide as part of the Emergency Plan a comprehensive public warning system plan for the region for ODOE and local emergency response organizations review and approval. This plan must be consistent with the Federal Emergency Management Agency (FEMA) Guidance for public warning systems for all hazard events, the National Response Framework, and the Oregon Department of Geology and Mineral Industries

Tsunami Warning Systems and Procedures (ORS 516.030). The proposed plan will include the following alert and notifications systems:

- Reverse 911 (24-Port) System for the host county - The system will include the following capabilities: high volume calling; compatible with major mapping systems; E911 data ready; multiple devices (recorded voice messages, text messages to wireless receivers, and digital pages); geo-dimensional calling; full networking capabilities; off-site back-up notification; remote launching capability; and other capabilities as appropriate.
- Sirens - Outdoor siren system throughout the entire transit route covering all three zones of concern up to the import terminal. The system will include the following capabilities: multiple high intensity warning signals; live and digital voice messaging with flat frequency response from 200 - 2000 Hz for clear voice reproduction; 360-degree coverage with no sound variation in the horizontal plane (106 to 125 dBc at 100ft/30m); continued emergency operation regardless of primary power outages, and other capabilities as appropriate. JCEP will include a map of the proposed number and locations of sirens showing the coverage area of each proposed siren for state and local review and approval.
- Reader Boards - Reader boards located along the major highways in Coos County to provide event information, direct traffic, and facilitate evacuations. JCEP will include a map of the proposed number and locations of reader boards for state and county approval. Reader board specifications must be consistent with the Oregon Department of Transportation reader boards located throughout the state.
- Other Alert and Notification Systems - JCEP, state, and local emergency response organizations will continue to assess and implement other alert and notification needs as appropriate.

Upon state and local approval of the plan, all equipment and systems provided to enhance the host county's public warning system must be in place, tested, and operational prior to import terminal operation and maintained throughout the life of the project by JCEP.

- f) Prior to construction, JCEP will provide, as part of the Emergency Plan, a comprehensive plan for a remote gas detection system for the region for ODOE and local emergency response organizations review and approval. The proposed plan will include a list with a breakdown of all proposed fixed and portable gas detectors and designated locations for the equipment. The plan will include information about the following systems:
- Fixed Gas Detectors - Fixed gas detectors will be provided in all high risk and high population areas along the entire transit route in the host county. Fixed gas detector capabilities will include remote wireless operations and the ability to provide readouts in multiple locations.

- Portable Gas Detectors – JCEP will provide three layers of portable gas detectors. 1) All emergency responder vehicles in the region will be provided a methane gas detector. 2) Methane gas and oxygen meters will be assigned to all fire trucks, and 3) Multi-meters will be provided to hazardous materials responders.
- Other Gas Detection Equipment and Systems – JCEP, state, and local emergency response organizations will continue to assess and implement other gas detection needs as appropriate.

Upon state and local approval of the plan, all fixed and portable gas detectors and systems provided must be in place, tested, and operational prior to import terminal operation and maintained throughout the life of the project by JCEP.

- g) Prior to construction, JCEP will provide, as part of the Emergency Plan, a comprehensive plan for an interoperable communications system for the region for ODOE and local emergency response organizations review and approval. This plan must be consistent with the Federal Emergency Management Agency (FEMA) Guidance for interoperable communications systems for all hazard events, the National Response Framework, and the Oregon Statewide Communications Interoperability Plan and Guidelines. The proposed plan will be compatible with state and local communications capabilities and include the following systems:

- Repeaters and Cell Towers - Specify the number of repeaters and cell towers needed to ensure uninterrupted cell and radio coverage along the entire transit route to the import terminal, covering all three zones of concern. JCEP will provide a map of the proposed repeater and cell tower locations showing the coverage area of each proposed repeater and cell tower location for state and local review and approval.
- Incident Command - Specify the number and locations of intrinsically safe handheld radios to be provided to fire, law enforcement, and other responders to an LNG mishap. Include information on FCC licensing requirements and proposed frequencies, antenna system, base station console, and other pertinent information.
- Emergency Operations Centers - Multiple federal, state, and local emergency operations centers (EOCs) may be activated in response to an LNG mishap. EOCs support the incident command. JCEP will specify the primary and redundant backup communications systems to be used to ensure uninterrupted communications between the import terminal and the federal, state, and local EOCs. This includes, but is not limited to a dedicated phone system, video teleconference system, satellite phones, Internet, e-mail, and other technology as appropriate.

- Other Communications Equipment and Systems – JCEP, state, and local emergency response organizations will continue to assess and implement other communications needs as appropriate.

Upon state and local approval of the plan, all equipment and systems provided to enhance the region's interoperable communications system must be in place, tested, and operational prior to import terminal operation and maintained throughout the life of the project by JCEP.

- h) Prior to construction, JCEP will provide, as part of the Emergency Plan, a comprehensive plan for upgrading and equipping the Coos County primary EOC for state and local emergency response organization review and approval. The proposed plan will be consistent with the National Response Framework to ensure adequate work space for affected federal, state, and local emergency responders reporting to the EOC jointly responding to LNG emergencies at the import terminal or along the transit route.

ODOE also requires the Coos County EOC to be located outside of the three zones of concern. If Coos County's EOC is within the three zones of concern, JCEP will work with Coos County to complete one of the following tasks:

- Relocate the EOC to a facility outside of the three zones of concern. The relocated EOC will be equipped to accommodate affected federal, state, and local emergency responders reporting to the EOC jointly responding to LNG emergencies at the import terminal or along the transit route.
- Pre-designate an alternate EOC and ensure this location has sufficient work space to accommodate affected federal, state, and local emergency responders reporting to the EOC jointly responding to LNG emergencies at import terminal or along the transit route. This includes equipping the pre-designated alternate EOC with the same capabilities as the primary EOC to ensure a seamless transition to the alternate EOC if a LNG mishap prevents the use of the primary county EOC. Pre-designating and equipping an alternate EOC ensures the host county can maintain direction and control of local protective actions and decisions, providing a sustained response throughout the duration of an LNG event.

Upon state and local approval of the plan, the facility, equipment and systems must be in place, tested, and operational prior to import terminal operation and maintained throughout the life of the project by JCEP.

- i) Prior to construction, JCEP will provide, as part of the Emergency Plan, a comprehensive plan for pre-designating and equipping a Joint Information Center (JIC) for ODOE and local emergency response organizations review and approval. The proposed plan will be consistent with the National Response Framework guidelines to identify a location for the JIC outside of the three zones of concern. The proposed plan will ensure adequate space and equipment for conducting news

conferences. The proposed plan will also ensure adequate work space for public information officers from federal, state, and local emergency response organizations reporting to the JIC to coordinate the release of emergency information and instructions.

The purpose of the JIC is to ensure the coordination of event information among the federal, state, and local agencies responding to the event. The goal is to provide a consistent message to news media and the public. The JIC will be the location for news conferences; coordinating news releases from responding federal, state, and local jurisdictions as well as JCEP; addressing public and media inquiries; and other public information activities as appropriate. Failure to provide a central clearing house to manage the receipt and dissemination of emergency information may result in misinformation, inconsistent information, and unconfirmed information getting out to the public and news media creating public panic, confusion, and mistrust.

Upon state and local approval of the plan, the facility, equipment and systems must be in place, tested, and operational prior to import terminal operation and maintained throughout the life of the project by JCEP.

- j) Thirty (30) days following the issuance to JCEP of an order from FERC authorizing the siting, construction, and operation of an LNG terminal, JCEP will provide, as part of the Emergency Plan, a comprehensive training plan for ODOE and local emergency response organizations review and approval. The proposed training plan allows state and local organizations the ability to determine whether the project's training program is adequate for preparing this region's emergency responders and decision-makers for an LNG emergency at the import terminal and along the transit route. The proposed training plan will include, but is not limited to:
- Construction of an LNG Fire Training Center in Coos County - It is more cost effective to build an LNG training facility locally and bring in instructors from Texas A & M or other accredited training institutions than to send fire fighters to training in Texas or elsewhere in the country. JCEP will work with state and local emergency responders to determine location and facility design and layout.
  - Type of training to include, but is not limited to: 1) Incident Command System; 2) facility security; 3) oil & hazmat spill response; 4) LNG for fire fighters, emergency responders, and law enforcement; 5) marine fire fighting; 6) general LNG training; 7) advanced LNG fire fighting; 8) hospital training; 9) tabletops, drill, and exercises and other training as appropriate.
  - Schedule of training detailing the type of training, required training hours, and number of anticipated trainees from JCEP, state, and local agencies.

Upon state and local approval of the plan, the facility, instructors, equipment and systems must be in place, tested, and operational three months prior to the first LNG cargo delivery and maintained throughout the life of the project by JCEP.

- k) Prior to the start of construction, JCEP will provide funding to Coos County for hiring a full-time County LNG Planner & Fire Response Coordinator. The position description for the County LNG Planner & Fire Response Coordinator will include 1) drafting the county LNG emergency response plan; 2) working with first responders to prepare for LNG vessel arrivals and departures; 3) working with first responders, the state, and JCEP to conduct plan review, coordinate training, exercises, public outreach, and 4) performing other LNG emergency preparedness activities as appropriate. Funding of this position will be maintained throughout the life of the project by JCEP.
- l) Prior to construction, JCEP will provide a comprehensive plan to address burn victims as a result of an LNG emergency at the import terminal or along the transit route for ODOE and local emergency response organization review for consistency with the capabilities outlined in the Burn Mass Casualty Plan for the Oregon Burn Center at Legacy Emanuel Hospital. Specifically, JCEP will provide area hospital(s) with the personnel and resources necessary to implement the Burn Mass Casualty Plan's 72 Hour Burn Plan - Care of Burn Patients in a Non-Burn Hospital. This includes, but is not limited to:
- Identifying resources and procedures necessary for treating burn victims if immediate transfer to a regional burn center is not feasible. This includes ongoing resuscitation and care.
  - Identify medical supplies, pharmaceuticals, and equipment needed to support a triage station capable of treating 5 victims with severe burns. This includes pre-packed medical resources.
  - Communications capabilities including 800 mhz trunked radio and web-based client/server applications to coordinate communications between the event scene and Bay Area Hospital and serve as the patient information tracking mechanism in events involving multiple burn victims.
  - Staffing requirements for care of burn patients in a non-burn hospital. Admission of a burn patient with 20-40 percent burn requires a minimum of 1 RN and 1 assisting staff member (CNA, LPN, technician) for up to 4 hours. Ongoing staff should be assigned based on patient acuity criteria of the institution. However, Burn Wound Care requires additional staff resources not ordinarily required in non-burn hospitals. The time it takes to do a complete dressing change is dependent on the size and location of the wound and the experience personnel performing the wound care. It is recommended that non-burn hospitals use the Wound Care Ostomy Nurses as the primary resource to direct the daily wound care.

Upon state and local approval of the plan, the facility, personnel, equipment and systems must be in place, tested, and operational prior to import terminal operation and maintained throughout the life of the project by JCEP.

- (2) *STATE OF OREGON EMERGENCY RESPONSE PLAN DEVELOPMENT AND ODOE COMMITMENTS* – ODOE has authorities and responsibilities as delegated by the Governor to develop and maintain the state of Oregon’s LNG Emergency Response Plan. The plan will define the state’s role and responsibilities to prepare for, respond to, and recover from LNG emergencies that threaten the health and safety of Oregon citizens, the environment, and the region’s economy. ODOE will:
- a) Direct and control the Oregon’s overall response to LNG emergencies impacting the state. This includes:
    - Receiving initial notifications from JCEP about an event at the import terminal and along the transport route.
    - Notifying and/or establishing contact with all affected federal, state, and county emergency response organizations to ensure a coordinated response to LNG emergencies in Oregon.
    - Working with JCEP, U.S. Coast Guard, and Coos County to assess the severity of the event, determine impacts to Oregon, and advise the Governor on protective actions for the public. This includes but is not limited to declaring a state of emergency and requesting federal support.
    - Working with JCEP, U.S. Coast Guard, and Coos County to recover from an LNG emergency at the import terminal and along the transport route.
  - b) ORS 176.810 authorizes ODOE to oversee the development of county government LNG plans. The county LNG plans should meet the needs of first responders in all affected jurisdictions. The county LNG plans must also meet state safety and security requirements and be consistent with the statewide LNG plan as specified in Section IV, under number 1) of this agreement.
- (3) *EVENT NOTIFICATIONS AND INFORMATION SHARING* – JCEP will provide timely notifications (within 15 minutes of event onset) to the ODOE Duty Officer in the event of an incident at the import terminal and along the transit route with potential impacts to the health and safety of site workers, the public, or the environment. This includes security threats and any other event that may generate media attention. JCEP will call the 24/7 “All Call” number at (503) 370-3500 to reach the ODOE Duty Officer. If primary communications are down, JCEP will notify of an event by texting the ODOE Duty Officer as per procedures.

JCEP will maintain ongoing communications with and provide event information to decision-makers at the ODOE EOC throughout the duration of an emergency. This includes, but is not limited to information about the emergency classification, facility

conditions, LNG release, mitigation measures taken, vessel information, meteorological data, protective action recommendations, maps, and other pertinent emergency information as appropriate.

ODOE will use this event information to assess the severity of the event, determine impacts to Oregonians, advise the Governor on protective actions for the public, issue emergency information and instructions to the news media and the public, and perform other actions as appropriate.

- (4) *MAINTAINING LNG EMERGENCY PROGRAM READINESS* – JCEP will work with ODOE and local emergency response organizations to ensure that the state and local decision makers and responders are prepared to respond to an LNG crisis at the import terminal and along the transport route. It is recognized that JCEP does not control federal, state, and local agencies and their participation is controlled by management outside of JCEP. This includes:
- a) Plan Update – Coordinate the review and update of emergency response plans at all levels annually or as needed. Revisions will include improvements identified through training, drills, and exercises. JCEP’s Safety and Security Manager is responsible for working with the ODOE Emergency Preparedness Manager to conduct the review and coordinating revisions with industry, federal, state, and county emergency response agencies.
  - b) Drills and Exercises – Schedule and coordinate drills and exercises as needed.
    - Annual Tabletop Drill - To talk through JCEP response as well as federal, state, and local responses to an LNG emergency at the import terminal and along the transit route.
    - Annual Full Scale Exercise – To evaluate the actual response capabilities JCEP and federal, state, and local emergency response organizations as discussed in the Tabletop Drills.

For full-scale exercises, JCEP will work with ODOE to establish an Exercise Planning Team. This Team will include representatives from JCEP, U.S. Coast Guard, ODOE, Coos County, local emergency response agencies as appropriate, and professional emergency response organizations. The Exercise Planning Team will develop the exercise objectives and limitations, the extent-of-play, and the scenario. All information pertaining to drill and exercise scenarios are to be kept under the custody of the trusted agent for each organization and not to be released to participants. The Team also organizes control and critique of the exercise.

Team members will develop specific objectives for drills and exercises based on their organization’s training needs. ODOE will work with the Team to develop the appropriate scenario to allow for the demonstration of the objectives identified. Team members, or designated professional staff, will

serve as controllers and evaluators of their organization's performance during the exercise.

After each drill or exercise, members of the Exercise Planning Team will report needed corrective actions to ODOE. It is the responsibility of each team member to ensure corrective actions are taken. ODOE will provide information about the corrective actions to the U.S. Department of Energy in the quarterly reports on the State Energy Program.

- Quarterly Communications Exercises – Testing JCEP's initial notification methods with offsite federal, state, and local emergency response agencies. This includes primary and backup communications methods. Communications exercises can run in conjunction with quarterly import terminal drills.
  - Annual Review of Training and Equipment Needs – Consistent with the needs covered in Section III, under number 1) of this agreement. JCEP will evaluate resources and make modifications to the Emergency Plan.
- c) Conferences and Workshops – JCEP will inform ODOE and local emergency response organizations of regional and national LNG conferences and workshops to ensure information sharing on LNG issues and topics of mutual concern. JCEP will provide funding for a representative of state and local participants interested in attending the workshop and conferences.
- (5) *PUBLIC OUTREACH AND EDUCATION* – JCEP will work with ODOE and Coos County to ensure LNG public outreach is conducted as required by FERC in host communities and throughout the state as needed. This includes but is not limited to:
- a) Public meetings or workshops
  - b) Presentations to community and business groups, elected officials, schools, and other audiences as appropriate
  - c) News Media
  - d) Provide pre-printed materials about JCEP and LNG to libraries, schools, businesses, government offices, and other locations as appropriate. This includes but is not limited to brochures, fact sheets, and calendars.
  - e) Other public outreach activities as appropriate.
- (6) *IMPORT TERMINAL PROJECT AND TRANSIT ROUTE EXPANSION AND CHANGES* – JCEP will notify ODOE of all material project changes and expansions. JCEP will work with ODOE to assess potential impacts to state and local emergency response capabilities, resources, and activities as a result of the proposed material project change or expansion. JCEP will cover all costs incurred by ODOE and local emergency response organizations as a result of the proposed expansion or change. Proposed "material project changes and expansions include, but are not limited to:
- a) Increases to the current shipment schedule

- b) Increasing the current carrier vessel size
- c) Increases to the current emergency planning zones
- d) Constructing additional LNG storage tanks on site
- e) Expanding current dockside capabilities
- f) Other

## V. CO2 Authorities and Responsibilities

JCEP will commit to mitigate carbon dioxide (CO<sub>2</sub>) emissions from the operation of the proposed LNG terminal and associated electric cogeneration facility pursuant to the terms of this Section V. Notwithstanding anything to the contrary herein, to the extent JCEP is required to mitigate, offset, or reduce CO<sub>2</sub> emissions pursuant to any future state or federal CO<sub>2</sub> emissions mitigation, offset, or reduction program. ODOE shall, to the extent allowable under the applicable program consider the CO<sub>2</sub> mitigation performed pursuant to this agreement as being applicable toward the new program. CO<sub>2</sub> mitigation terms shall be consistent with the current requirements that apply to electric generating facilities under EFSC jurisdiction. For such facilities, the EFSC standard for CO<sub>2</sub> is written in terms of output CO<sub>2</sub> per unit electricity produced. There is no parallel standard for LNG terminals. However, the basic CO<sub>2</sub> standard for EFSC facilities requires that licensees match the best available technology, and then improve on the best available technology by 17%. EFSC jurisdictional facilities that improve on the best available technology by 17% or more are deemed to meet the CO<sub>2</sub> standard outright. Any emissions in excess of 17% below the emissions produced using best available technology must be offset, either directly or by providing offset funds to a "qualified organization" as described in ORS 469.503. The EFSC has found that the Oregon Climate Trust is a qualified organization. Therefore, for the proposed LNG terminal, ODOE and JCEP agree that a CO<sub>2</sub> offset method consistent with the one used by EFSC shall be followed. The proposed LNG terminal would emit CO<sub>2</sub> by the use of natural gas fuel in combustion vaporizers and fired heaters. JCEP has committed to using the most efficient commercially available vaporizer and heater design. Therefore, to be consistent with the EFSC standard for generating facilities, JCEP shall be required to offset 17% of those emissions. Provided The Climate Trust agrees to the terms and conditions of the applicable provisions of this MOU, ODOE and JCEP will adopt the following terms and conditions:

- (1) Before beginning construction of the facility, JCEP shall make payment to The Climate Trust in the amount of the monetary path payment requirement (in 2009 dollars) as determined by the calculations set forth in Condition (3). The purposes of this Site Certificate, the "monetary path payment requirement," as such term is used herein, means the offset funds and selection and contracting funds that JCEP must disburse to The Climate Trust pursuant to this agreement. The offset fund rate for the monetary path payment requirement shall be the rate in dollars per short ton of CO<sub>2</sub> that EFSC has set forth in Oregon Administrative Rules at OAR Chapter 345-024-0560 as in effect at the time of payment. The calculation of 2009 dollars shall be made using the Gross Domestic Product Implicit Price Deflator as published by the Oregon Department of Administrative Services (Index).
  - (a) In the event of any dispute between JCEP and The Climate Trust with respect to whether the monetary path payment complies with the requirements of this

agreement, either JCEP or The Climate Trust may submit the matter to ODOE for its determination as to whether JCEP is in compliance with the requirements of this Section V(1). ODOE shall make its determination within 60 days following receipt of all relevant information regarding the dispute and its decision shall be binding on all parties.

- (b) In the event that FERC approves a new license holder for the LNG facility, the new license holder shall submit to ODOE for ODOE's approval evidence of payment to the Climate Trust in the amount calculated under this agreement for the monetary path payment.
  - (c) If the fuel monetary path payment is not paid by December 31, 2009, the amount of the monetary path payment shall increase annually by the percentage increase in the Index and shall be prorated within the year to the date of disbursement to The Climate Trust from the date FERC approval of the facility.
- (2) JCEP shall disburse to The Climate Trust offset funds and selection and contracting funds as requested by The Climate Trust. JCEP shall make disbursements in response to requests from The Climate Trust in accordance with subsections (a), (b), and (c).
- (a) JCEP shall disburse all selection and contracting funds to the Climate Trust prior to beginning construction, which funds shall not exceed 10% of the offset funds up to \$500,000 and 4.286% of any offset funds in excess of \$500,000.
- (3) JCEP shall submit monetary path payment requirement calculations to ODOE for verification in a timely manner before making the monetary path payment to the Climate Trust. JCEP shall use the contracted design parameters for heat exchanger and combustion turbine heat rates that it reports pursuant to Condition (4) to calculate the monetary path payment requirement.
- (4) JCEP shall include an affidavit certifying the heat rates and capacities reported in subsections (a) and (b).
- (a) Before beginning construction of the facility, JCEP shall notify the ODOE in writing of its final selection of LNG vaporization technology, expected thermal efficiency of combustion vaporizers and fired heaters, the design annual throughput of the facility assuming full time operations at 100% capacity factor, and the expected annual consumption of fuel in vaporizers and fired heaters under the assumption of 100% capacity operations over the full year at annual average site temperature and pressure.
  - (b) Before beginning construction of the associated electric cogeneration facility, if applicable, JCEP shall submit written design information to ODOE sufficient to verify the associated electric cogeneration facility's designed new and clean heat rate and its net power output at average annual site conditions.
- (5) JCEP shall calculate the monetary path payment requirement as follows:

- (a) For submerged combustion vaporizers and hot oil heaters, the monetary path payment requirement is

$$\text{EAC} \times 30 \times 0.17 \times 117/2000 \times \text{MPR}$$

Where

- EAC = the expected annual consumption of natural gas combusted (in MMBTU's) in SCV's and other heaters, assuming 100% capacity operations for the full year at average annual ambient temperature
- 30 is the facility lifetime in years
- 17 is the percentage of emissions for a state of the art facility required to be offset at electric generating facilities under Oregon Statute
- 117/2000 is pounds of CO<sub>2</sub> emitted per MMBTU of natural gas combusted, converted to short tons, and
- MPR is the monetary path rate set for at OAR 345-024-0580 (\$1.27 as of August 2008, but subject to change every two years)

- (b) For a natural gas fired combustion turbine that produces electricity and incorporates waste heat recovery to be used in LNG vaporization, the monetary path payment requirement is

$$[(\text{EACCT} \times 30 \times 117/2000) - (\text{KW} \times 8760 \times 30 \times 0.675/2000)] \times \text{MPR}$$

where

- EACCT is the annual consumption of natural gas expressed in MMBTU's assuming 100% power operations over the full year at average annual ambient temperature and pressure, using the heat rate reported in condition (4) above.
- 30 is the facility lifetime
- 117/2000 is the CO<sub>2</sub> production per MMBTU expressed in tons
- KW is the new and clean nameplate capacity of the electric generating facility
- 0.675/2000 is the EFSC standard for allowed CO<sub>2</sub> emissions from power plants without offsets, expressed in tons per KWH, and
- MPR is as above

- (6) JCEP shall calculate the Fuel Chargeable to Power Heat Rate as that term is defined in OAR 345-01-0010(24), and the percentage of output energy produced in the form of useful thermal energy. JCEP shall provide those calculations for ODOE review.

- (7) Year One Test and True Up Provision:

- (a) At the end of the first full year of commercial operations, JCEP shall report the facility's actual fuel consumption in combustion vaporizers and fired heaters, and the facility's actual throughput of LNG product as a percentage of maximum designed annual throughput that was reported under condition 4(a) above. JCEP shall submit this report to ODOE within six months of the end of the first full year of operations. JCEP shall normalize the actual fuel consumption to actual facility

operating capacity factor as follows:

$$FC_{\text{normalized}} = FC_{\text{actual}} \times TP_d / TP_{\text{actual}}$$

Where

FC<sub>actual</sub> = the actual fuel consumption over the first full year of operations

TP<sub>d</sub> = the design LNG throughput reported under condition 4(a), and

TP<sub>actual</sub> = the actual LNG throughput over the first full year of operations.

If the calculated normalized fuel consumption is less than the annual fuel consumption used in the calculations performed under condition (5), then the facility is considered to be as thermally efficient as was assumed, and no additional payment is required but no refund shall be provided to JCEP. If, however, JCEP has overpaid on account of fuel consumption in combustion vaporizers and fired heaters but underpaid on account of natural gas combusted in the combustion turbine electric generating plant, any overpayment shall be offset against any additional payment required on account of natural gas combusted in the combustion turbine electric generating plant.

If the calculated normalized fuel consumption is within 5% of the annual fuel consumption used in the calculations performed under condition (5) then no additional payment shall be required.

If the calculated normalized fuel consumption is greater than 5% above the annual fuel consumption assumed in the calculations performed under condition (5) then JCEP shall recalculate the monetary path payment requirement for 30 years using the same method as set forth in condition (5) using the normalized annual fuel consumption and the MPR in effect at the time, subtract off the amount already disbursed to the Climate Trust under condition (2), and make a “true up payment” to the Climate Trust, equal to the difference.

- (b) Concurrently with the report described in condition (a) above, JCEP shall report the actual natural gas fuel combusted in the combustion turbine electric generating plant during the first full year of operations, the actual kwhr produced over the year, and the actual heat rate. If the actual calculated heat rate is more than 5% greater than the heat rate used in the calculations performed under condition (5), then JCEP shall recalculate the monetary path payment requirement using the actual heat rate and the MPR in effect at the time, subtract off payments made to the Climate Trust for the electric generating plant, and make an additional “true up” Climate Trust payment equal to the difference. If the actual heat rate is less than the rate reported under condition (5), no refund shall be provided. If, however, JCEP has overpaid on account of natural gas combusted in the combustion turbine electric generating plant but underpaid on account of fuel consumption in combustion vaporizers and fired heaters, any overpayment shall be offset against any additional payment required on account of fuel consumption in combustion vaporizers and fired heaters.

## **VI. Retirement and Financial Assurance Authorities and Responsibilities**

JCEP will commit to providing a retirement cost estimate and funding surety that is consistent with the requirements for energy facilities under EFSC jurisdiction. Therefore, ODOE and JCEP will adopt the following terms, which are consistent with the requirements for the EFSC Retirement and Financial Assurance Standard at OAR Chapter 345 Divisions 21 and 22.

- (1) Two years before closure of the terminal or the associated electric power cogeneration facility, and following consultation with Coos County, JCEP shall submit to the Department a proposed final retirement plan for the facility and site that conforms substantially with the requirements of OAR 345-027-0110, including:
  - (a) A plan for retirement that provides for completion of retirement within two years of permanent cessation of operation of the facility and that protects the public health and safety and the environment;
  - (b) A description of actions JCEP proposes to take to restore the site to a useful, nonhazardous condition, including options for postretirement land use, information on how it would minimize impacts to fish, wildlife and the environment during the retirement process; and measures it would take to protect the public against risk or danger resulting from postretirement site conditions; and
  - (c) A current detailed cost estimate, a comparison of that estimate with the dollar amount contained in the retirement fund, and a plan for ensuring the availability of adequate funds for completion of retirement.
- (2) JCEP shall retire the facility if JCEP permanently ceases construction or operation of the facility. JCEP shall retire the facility according to a final retirement plan prepared pursuant to Condition (1) and which shall be approved by ODOE if the plan complies with OAR 345-027-0110.
- (3) JCEP shall prevent the development of any conditions on the site that would preclude restoration of the site to a useful, nonhazardous condition to the extent that prevention of such site conditions is within the control of JCEP.
- (4) Before beginning any construction of the facility, JCEP shall submit a detailed engineering estimate of the cost to retire the facility and restore the site to a useful and non-hazardous condition, consistent with the site's zoning. The estimate shall include a discussion and justification of the methods and assumptions used to estimate the retirement and restoration cost. The information provided in the estimate shall substantially conform to the information requirements of OAR 345-021-0010(w). An estimate prepared using the methodology developed for ODOE by Pacific Energy Services and generally used in the siting of EFSC jurisdictional facilities will be considered an acceptable method. A different method of estimation may also be acceptable subject to ODOE review.

In estimating the site restoration cost, no credit shall be allowed for scrap value or salvage of equipment, consistent with the EFSC policy for jurisdictional energy facilities.

- (5) Before beginning construction of the facility, JCEP shall submit to the State of Oregon through ODOE a bond or letter of credit in the amount of the above estimate (in 2009 dollars) naming the State of Oregon, acting by and through the Department, as beneficiary or payee.
  - (a) The calculation of 2009 dollars shall be made using the US Gross Domestic Product Implicit Price Deflator, Chain-Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast," or by any successor agency ("the Index"). The amount of the letter of credit account shall increase annually by the percentage increase in the Index. If, at any time, the Index is no longer published, ODOE shall select a comparable calculation of 2009 dollars.
  - (b) The amount of the bond or letter of credit account shall increase annually by the percentage increase in the Index.
  - (c) JCEP shall not revoke or reduce the bond or letter of credit before retirement of the facility without approval by ODOE.
- (6) JCEP shall report annually to the Department the status of the retirement surety to ensure it has adequate funds to restore the site.
- (7) Not later than 10 years after the date of commercial operation, and every 10 years thereafter during the life of the energy facility, JCEP shall complete an independent Phase I Environmental Site Assessment of the energy facility site, in accordance with an accepted industry standard, such as ASTM Standard E1527. Within 30 days after its completion, JCEP shall deliver the Phase I Environmental Site Assessment report to the Office.
- (8) In the event that any Phase I Environmental Site Assessment identifies improper handling or storage of hazardous substances or improper record-keeping procedures, JCEP shall correct such deficiencies within six months after completion of the corresponding Phase I Environmental Site Assessment. It shall promptly report its corrective actions to the Office. JCEP shall comply with Oregon Department of Environmental Quality corrective action requirements.
- (9) JCEP shall report any release of hazardous substances above reportable quantities under state and federal law to the Department within one working day after the discovery of such release. This obligation shall be in addition to any other reporting requirements applicable to such a release.
- (10) If JCEP has not remedied a release consistent with applicable Oregon Department of Environmental Quality standards or if JCEP fails to correct deficiencies identified in the

course of a Phase I Environmental Site Assessment within six months after the date the release becomes known or the date of completion of the Phase I Environmental Site Assessment, JCEP shall, within such six-month period, submit to the Department for its approval an independently prepared estimate of the remaining cost of remediation or correction.

- (a) Upon approval of an estimate by the Department, JCEP shall increase the amount of its bond or letter of credit by the amount of the estimate.
  - (b) In no event, however, shall JCEP be relieved of its obligation to exercise all due diligence in remedying a release of hazardous substances or correcting deficiencies identified in the course of a Phase I Environmental Site Assessment.
- (11) All funds received by JCEP from the salvage of equipment and buildings shall be committed to the restoration of the energy facility site to the extent necessary to fund the approved site restoration and remediation.
- (12) If the Department finds that JCEP has permanently ceased construction or operation of the facility without retiring the facility according to an approved final retirement plan prepared pursuant to Condition (1), the Department will notify JCEP and request that JCEP submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days.
- (a) If JCEP does not submit a proposed final retirement plan by the specified date, the Department may contract with a qualified site restoration contractor at JCEP's expense to prepare a proposed a retirement plan.
  - (b) The Department may draw on the bond or letter of credit described in Condition (5) and shall use the funds to restore the site to a useful, non-hazardous condition according to the final retirement plan
  - (c) If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, JCEP shall pay any additional cost necessary to restore the site to a useful, non-hazardous condition.

## **VII. Agreements**

JCEP will provide adequate funding to ODOE to pay the additional costs ODOE incurs as a result of the responsibilities listed in Section IV, V, and VI.

Oregon agrees to develop a program for carrying out the responsibilities listed in Section IV, V, and VI as they apply to JCEP. The execution of the responsibilities of the Governor of Oregon under this agreement is hereby assigned and delegated to ODOE.

JCEP agrees to provide ODOE annual support for administration of Oregon's LNG Emergency Preparedness Program as specified in section IV while the MOU is operative. Should this MOU be terminated, the parties mutually agree to negotiate in good faith, a revised MOU or some other

agreement to insure continued commitment to provide annual support to the responsibilities of Oregon's LNG Emergency Preparedness Program as specified in Section IV of this MOU.

In exchange, Oregon agrees to maintain the program in a state of readiness. Oregon's responsibility for expenditures for program maintenance as well as for drill and exercise participation is limited to the funding provided by JCEP. Funds provided by JCEP shall be paid directly to ODOE, unless otherwise mutually agreed. These funds include money to be allocated to county and local emergency response organizations for LNG preparedness and response activities as described in Section IV of this agreement.

To the extent the terms or conditions of the order from FERC authorizing the siting, construction, and operation of an LNG terminal by JCEP expressly conflict with the terms or conditions of this agreement, the terms and conditions of the order shall prevail over the terms and conditions of this agreement. To the extent a provision of this agreement imposes a more stringent requirement on JCEP than the order imposes on JCEP, this agreement shall not be deemed to be in conflict with the order unless the order specifically prohibits the imposition of a more stringent requirement. If this agreement addresses an issue but the order is silent with respect to that issue, the order shall not be deemed to be in conflict with this agreement with respect to that issue. JCEP shall not intentionally take any action that would tend to cause FERC to issue an order (i) in conflict with this agreement or (ii) that would prohibit the imposition of more stringent requirements under the terms of this agreement.

#### **VIII. Liabilities**

JCEP will assume liability for all costs incurred by the State of Oregon arising out of an LNG incident at the import terminal and along the transit route except to the extent such incident was caused or exacerbated by the negligence or willful misconduct of the State of Oregon.

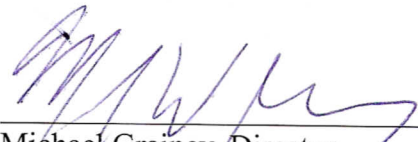
#### **IX. Revisions**

JCEP and ODOE agree to review this agreement and update it as necessary. Amendments or modifications may be made to this agreement only upon written agreement by both parties.

#### **X. Term of Agreement**

This agreement shall become effective upon approval, and shall remain in effect until canceled by either party by 30 days prior written notice to the other party.

The agreement is executed this 27<sup>th</sup> day of FEBRUARY, 2009.



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Michael Grainey, Director  
Oregon Department of Energy



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Bob Braddock, Project Manager / VICE PRESIDENT  
Jordan Cove Energy Project L.P.