

1 **Oregon Territorial Sea Plan**

2
3 **DRAFT PART FIVE:**

4 **Use of the Territorial Sea for the Development of**
5 **Renewable Energy Facilities or Other Related**
6 **Structures, Equipment or Facilities**

7
8 **PART FIVE of the Territorial Sea Plan describes the process for making decisions**
9 **concerning the development of renewable energy facilities (*e.g.* wind, wave, current,**
10 **thermal, etc.) in the state territorial sea, and specifies the areas where that development**
11 **may be sited. The requirements of Part Five are intended to protect areas important to**
12 **renewable marine resources (*i.e.* living marine organisms), ecosystem integrity, marine**
13 **habitat and areas important to fisheries from the potential adverse effects of renewable**
14 **energy facility siting, development, operation, and decommissioning and to identify the**
15 **appropriate locations for that development which minimize the potential adverse impacts**
16 **to existing ocean resource users and coastal communities.**

17
18 **Oregon’s renewable energy portfolio lists ocean energy as a renewable energy source with**
19 **potential to reduce dependence on fossil fuels.¹ Renewable ocean energy facilities**
20 **development may present opportunities to apply technologies that rely on wave, wind,**
21 **current or thermal energy, that may potentially reduce the environmental impact of fossil**
22 **fuels. If developed in a responsible and appropriate manner, in accordance with the**
23 **requirements of this Part and other applicable state and federal authorities, renewable**
24 **ocean energy may help preserve Oregon’s natural resources and enhance our quality of**
25 **life.**

26
27
28 **A. Renewable Energy Facilities Development**

29
30 **1. Background**

31 Oregon’s territorial sea has been identified as a favorable location for siting renewable energy
32 facilities for research, demonstration and commercial power development. These facilities may
33 vary in the type and extent of the technologies employed and will require other related
34 structures, equipment or facilities to connect together, anchor to the seafloor and transfer
35 energy to on-shore substations. The State of Oregon will require the proper siting and
36 development of these facilities in order to minimize damage to or conflict with other existing
37 ocean uses and to reduce or avoid adverse effects on marine ecosystems and coastal
38 communities.

39
40 State agencies, including the Oregon Departments of State Lands, Fish and Wildlife, Parks and
41 Recreation, Environmental Quality, Land Conservation and Development, Water Resources,
42 Energy, and Geology and Mineral Industries, need specific policies and standards for
43 considering the siting and regulation of renewable energy facility development in the territorial
44 sea. The State also needs specific policies and standards to guide federal agencies in the siting

1 and regulation of renewable energy facilities development located in federal waters adjacent to
2 the Oregon territorial sea.²

3
4 **NOTE: Notwithstanding Part One, paragraph F.1.b, the following policies and**
5 **implementation requirements are mandatory. Decisions of state and federal agencies with**
6 **respect to approvals of permits, licenses, leases or other authorizations to construct, operate,**
7 **maintain, or decommission any renewable energy facility to produce, transport or support**
8 **the generation of renewable energy within Oregon’s territorial waters and ocean shore must**
9 **comply with the requirements mandated in the Oregon Territorial Sea Plan. The**
10 **enforceable policies of the Territorial Sea Plan and the Oregon Coastal Management**
11 **Program are applicable to those federal actions that affect Oregon’s coastal zone and are**
12 **subject to the federal consistency requirements of the federal Coastal Zone Management Act.**
13

14 **2. Policies**

15 The following policies apply generally to renewable energy facilities within the Oregon
16 Territorial Sea, and establish the guiding principles for the implementation requirements listed
17 in section B. When making decisions to authorize the siting, development, operation, and
18 decommissioning of renewable energy facilities within the territorial sea, state and federal
19 agencies shall³:

- 20
21
- 22 **a.** Maintain and *protect* renewable marine resources (*i.e.* living marine organisms),
23 ecosystem integrity, *marine habitat* and *areas important to fisheries* from adverse
24 effects that may be caused by the installation or operation or removal of renewable
25 energy facility by requiring that such actions:
26
27 1.) Avoid adverse effects to the integrity, diversity, stability and complexity of the
28 marine ecosystem and coastal communities, and give first priority to the conservation
29 and use of renewable marine resources;
30
31 2.) Minimize effects by limiting the degree or magnitude of the action and its
32 implementation;
33
34 3.) Rectify or mitigate the effects that occur during the lifetime of the facility by
35 monitoring and taking appropriate corrective measures through adaptive management;
36 and
37
38 4.) Restore the natural characteristics of a site to the extent practicable when the facility
39 and structures are decommissioned and removed.
40
 - 41 **b.** Protect marine renewable resources, the biological diversity and functional integrity of
42 marine ecosystem, important marine habitat, areas important to fisheries, navigation,
43 recreation and aesthetic enjoyment as required by Statewide Planning Goal 19.
44
 - 45 **c.** Promote direct communication and collaboration between an applicant for a state or
46 federal authorization for the siting, development and operation of renewable energy
47 facilities and affected ocean users and coastal communities to reduce or avoid conflicts.

1 Agencies will strongly encourage applicants to engage with local, state and federal
2 agencies, community stakeholders, tribal governments and affected ocean users in a
3 collaborative agreement-seeking process prior to formally requesting authorization to
4 initiate a project.⁴

- 5
- 6 **d.** Limit the potential for unanticipated adverse impacts by requiring, as necessary, the use
7 of pilot projects and phased development to collect data and study the effects of the
8 development on the affected marine resources and uses.
- 9
- 10 **e.** Encourage the research and responsible development of ocean-based renewable energy
11 sources including wave, tidal, and wind that meet the state’s need for economic and
12 affordable sources of renewable ocean energy.
- 13
-

14 **B. Implementation Requirements**

15

16

17 State and federal agencies shall apply the following implementation requirements when
18 considering a proposal for the placement or operation of a renewable energy facility
19 development within the Oregon Territorial Sea. Regulating agencies shall comply with the
20 standards and procedural requirements in Part Five of the Territorial Sea Plan as prescribed
21 below. This includes the cables, connectors or other transmission devices that connect, anchor,
22 support or transmit energy between the separate components within a renewable energy
23 facility. The requirements in Part Four, Uses of the Seafloor for Telecommunication Cables,
24 Pipelines, and other Utilities, will apply to the utility cables that transmit the electrical energy
25 from the renewable energy facility to the on-shore substation. The requirements in Part Two,
26 Making Resource Use Decisions, Sections A and B, will not apply to the evaluation, siting or
27 operation of renewable energy development or other related structures, equipment or facilities.

28

29 **1. Siting: areas designated for renewable energy facilities development.**

30 **a. In State Waters:**

31 Pursuant to the requirements for amending the Territorial Sea Plan under ORS 196.471,
32 to carry out the policies of the Oregon Ocean Resources Management Act and
33 consistent with the statewide planning goals, the Land Conservation and Development
34 Commission will designate areas of the territorial sea appropriate for the development
35 of renewable energy facilities.⁵ (See appendix C map). Renewable energy facilities
36 development of the state lands of the territorial sea lying seaward of Extreme Low
37 Water (which is the seaward boundary of the Ocean Shore State Recreation Area) shall
38 be sited within the areas designated for that use so as to avoid, minimize or mitigate the
39 adverse effects of that development, and to protect: renewable marine resources,
40 biological diversity and functional integrity of marine ecosystem, important marine
41 habitat, and areas important to fisheries, as defined in Statewide Planning Goal 19
42 Ocean Resources.

43

44

45 **b. In Federal Waters:**

46 The Department of Land Conservation and Development will review federal decisions
47 to permit, license, or otherwise authorize renewable energy facilities development

1 within the waters and seafloor of the outer continental shelf adjacent to the Oregon
2 Territorial Sea for consistency with the Oregon Territorial Sea Plan and the applicable
3 enforceable policies of the Oregon Coastal Management Program. Federal actions,
4 including the issuance of any federal authorizations, that affect any land or water use or
5 natural resources of the Oregon Coastal Zone shall be supported by environmental
6 studies and analysis as prescribed below, to ensure compliance with the enforceable
7 policies of Oregon Territorial Sea Plan and the Oregon Coastal Management Program.⁶
8

9 **2. State Agency Review Process**

10 Pursuant to ORS 196.485 and ORS 197.180, state agencies shall apply the policies and
11 provisions of the Oregon Ocean Resources Management Plan and Territorial Sea Plan, and
12 Goal 19 Ocean Resources as required to comply with State Agency Coordination Programs
13 (OAR chapter 660, divisions 30 and 31).
14

15 The Department of State Lands shall coordinate the review of requests for approvals of
16 leases, temporary use permit, easements and removal-fill in consultation with the
17 Departments of Fish and Wildlife, Parks and Recreation, Environmental Quality, Land
18 Conservation and Development, Water Resources, Geology and Mineral Industries, Energy,
19 coastal local governments, and tribal governments as appropriate. These agencies, with the
20 addition of the regulating federal agencies, will constitute the joint agency review team
21 (JART) described in subsection B.3 below. Pursuant to the federal Coastal Zone
22 Management Act, the Department of Land Conservation and Development will review the
23 consistency certification together with required necessary data and information submitted
24 by the applicant for federal authorization for a renewable energy facilities development to
25 ensure the project is consistent with enforceable policies of the Oregon Coastal Zone
26 Management Program, including the Territorial Sea Plan.
27

28 **3. Project Review Process and Coordination**

29 The Department of State Lands (DSL) shall convene the JART, in order to facilitate the
30 coordination of state and federal agencies as they apply their separate regulatory,
31 proprietary, or other authorities to the review of a proposed renewable energy facility
32 development. The team shall consist of the state and federal agencies with regulatory or
33 planning authority applicable to the proposed project and location; DSL shall also request
34 that affected local jurisdictions, if any, participate in the JART review and may also invite
35 local or statewide interest groups and advisory committees to participate. The joint agency
36 review team will coordinate the review process, and comment on the adequacy of the
37 resource inventories and effects evaluations required under subsection B.4 (Resource
38 Inventory and Effects Evaluation Standards), below, and NEPA environmental assessments
39 and environmental impact statements. The joint agency review team will also consider the
40 adequacy of the information provided for the operation plan, as required under section C.
41 (Operation Plan Development) below, including the monitoring requirements, mitigation
42 measures, adaptive management plans, construction and operational performance standards,
43 or any other special conditions that a regulating state agency may apply pursuant to the
44 lease, permit, license or other authorization.
45
46
47

1 DSL shall require that an applicant provides documentation verifying their communication
2 and coordination efforts with local communities, interest groups and advisory committees.
3 Those efforts shall, at a minimum, include information on the proposed project operation
4 protocols, response to emergencies and procedures for on-going communication as
5 specified in section C (Operation Plan Development), below.
6

7 **4. Resource Inventory and Effects Evaluation Standards**

8

9 Regulating agencies will require the applicant to provide a resource inventory and effects
10 evaluation, as required by this subsection, prior to making any decision. State agencies will
11 assist the applicant by providing readily available data and other information as applicable
12 to the review process.
13

14 **a. Sufficiency of Inventory and Evaluation**

15 The resource inventory and effects evaluation shall be sufficient to identify and quantify
16 the short-term and long-term effects of the proposed renewable energy facility
17 development on the affected marine resources and uses.
18

19 **b. Purpose of the Effects Evaluation**

20 The purpose of the effects evaluation is to determine whether the proposed actions can
21 meet the policies and standards for the protection of resources, resource users and
22 coastal communities referred to above in subsection A.2 (Policies), above. The
23 evaluation will help identify where the applicant needs to address deficiencies. The
24 regulating agency will use the evaluation to develop specific measures for
25 environmental protection and mitigation, measures to protect ocean uses, monitoring,
26 and adaptive management.
27

28 **c. Use of Available Environmental Information**

29 Regulating agencies may allow the applicant to use existing data and information from
30 any source when complying with the requirements for resource inventory and effects
31 evaluation. All data and information used for the inventory and evaluation, including
32 existing data from federal environmental impact statements or assessments, shall meet
33 the same standards of adequacy required for the inventory and the evaluation.
34

35 **d. Inventory Content**

36 To evaluate the magnitude of the proposed project, the likelihood of the effects of the
37 project, and the significance of the resources and uses that the project may affect,
38 regulating agencies shall require that the applicant include consideration of the
39 following factors in the inventory:
40

- 41 1) Proposed factors associated with the development, placement, operation,
42 maintenance, and decommissioning of the project:
 - 43 A) Location (using maps, charts, descriptions, etc.);
 - 44 B) Numbers and sizes of equipment, structures;
 - 45 C) Methods, techniques, activities to be used;
 - 46 D) Transportation and transmission systems needed for service and support;
 - 47 E) Materials to be disposed of and method of disposal;

- 1 F) Physical and chemical properties of hazardous materials, if any, to be used or
2 produced;
3 G) Navigation aids; and
4 H) Proposed time schedule.
5
- 6 2) Location and description of all affected areas, including, but not limited to:
7 A) Site of the renewable energy facility;
8 B) Adjacent areas that may be affected by physical changes in currents and
9 waves caused by the facility;
10 C) Utility corridor transiting territorial sea and ocean shore; and
11 D) Shoreland facilities.
12
- 13 3) Physical and chemical conditions including, but not limited to:
14 A) Water depth;
15 B) Wave regime;
16 C) Current velocities;
17 D) Dispersal, horizontal transport, and vertical mixing characteristics;
18 E) Meteorological conditions; and
19 F) Water quality.
20
- 21 4) Bathymetry (bottom topography) and Shoreline Topography (LIDAR (Light
22 Detection And Ranging))
23
- 24
- 25 5) Geologic structure, including, but not limited to:
26 A) Geologic hazards, such as faults or landslides of both marine and shoreline
27 facility areas;
28 B) Mineral deposits;
29 C) Seafloor substrate type; and
30 D) Hydrocarbon resources.
31
- 32 6) Biological features, including, but not limited to:
33 A) Critical marine habitats (see Appendix A);
34 B) Other marine habitats;
35 C) Fish and shellfish stocks and other biologically important species;
36 D) Recreationally or commercially important finfish or shellfish species;
37 E) Planktonic and benthic flora and fauna;
38 F) Other elements important to the marine ecosystem; and
39 G) Marine species migration routes.
40
- 41 7) Cultural, economic, and social uses affected by the project including, but not
42 limited to:
43 A) Commercial and sport fishing;
44 B) State or Federally protected areas;
45 C) Scientific research;
46 D) Ports, navigation, and Dredge Material Disposal sites;
47 E) Recreation;
48 F) Coastal Communities Economy;

- G) Aquaculture;
- H) Waste water or other discharge;
- I) Utility or pipeline corridors and transmission lines;
- J) Military Uses; and
- K) Aesthetic Resources.

8) Significant historical, cultural or archeological resources.

9) Other data that the regulating agencies determine to be necessary and appropriate to evaluate the effects of the proposed project.

e. Written Evaluation.

Regulating agencies shall require the applicant to submit a written evaluation of all the reasonably foreseeable adverse effects associated with the development, placement, operation, and decommissioning of the proposed renewable energy facility. For purposes of the evaluation, the submittal shall base the determination of “reasonably foreseeable adverse effects” on scientific evidence. The evaluation shall describe the potential short-term and long-term effects of the proposed renewable energy facility on marine resources and uses of the territorial sea, continental shelf, onshore areas and coastal communities based on the inventory data listed in paragraph B.4.d above and the following considerations:

1) Biological and Ecological Effects:

Biological and ecological effects include those on critical marine habitats and other habitats, and on the species those habitats support. The evaluation will determine the probability of exposure and the magnitude of exposure and response, as well as the level of confidence (or uncertainty) in those determinations. The evaluation need not discuss highly speculative consequences. However, the evaluation will discuss catastrophic environmental effects of low probability. Factors to consider include, but are not limited to:

- A) The time frames/periods over which the effects will occur;
- B) The maintenance of ecosystem structure, biological productivity, biological diversity, and representative species assemblages;
- C) Maintaining populations of threatened, endangered, or sensitive species;
- D) Vulnerability of the species, population, community, or the habitat to the proposed actions; and
- E) The probability of exposure of biological communities and habitats to adverse effects from operating procedures or accidents.

2) Current Uses:

Evaluate the effects of the project on current uses and the continuation of a current use of ocean resources such as fishing, recreation, navigation, and port activities. Factors to consider include, but are not limited to:

- A) Local and regional economies;
- B) Archeological and historical resources; and
- C) Transportation safety and navigation.

1
2 3) Natural and Other Hazards

3 Evaluate the potential risk to the renewable energy facility, in terms of its
4 vulnerability to certain hazards and the probability that those hazards may cause
5 loss, dislodging, or drifting of structures, buoys, or facilities. Consider both the
6 severity of the hazard and the level of exposure it poses to the renewable marine
7 resources and coastal communities. Hazards to be considered should include the
8 scouring action of currents on the foundations and anchoring structures, slope
9 failures and subsurface landslides, faulting, tsunamis, variable or irregular bottom
10 topography, weather related, or due to human cause.
11

12 4) Cumulative Effects

13 Evaluate the cumulative effects of a project, including the shoreland component, in
14 conjunction with effects of any prior phases of the project, past projects, other
15 current projects, and probable future projects.⁷ The evaluation should analyze the
16 biological, ecological, physical, and socioeconomic effects of the renewable energy
17 facility development and of other renewable energy facility projects along the
18 Oregon coast, while also taking into account the effects of existing and future
19 human activities and the regional effects of global climate change.

20 A) In conducting the cumulative effects analysis, the applicant should focus on
21 the specific resources and ecological components, as detailed under paragraph
22 B.4.d above, that may be affected by the incremental effects of the proposed
23 project and other projects in the same geographic area. The evaluation should
24 consider whether:

- 25 1) the resource is especially vulnerable to incremental effects;
26 2) the proposed project is one of several similar projects in the same
27 geographic area;
28 3) other developments in the area have similar effects on the resource;
29 4) these effects have been historically significant for this resource; and
30 5) other analyses in the area have identified a cumulative effects concern.
31

32 B) The Joint Agency Review Team may determine the scope of the cumulative
33 effects analysis through a set of guidelines developed by JART that regulating
34 agencies will require for phased development projects as described below under
35 subparagraph B.4.f.3 and subsection C.1. The JART will make a determination
36 from the analysis to inform location, scale, scope and technology of the phased
37 development project; to provide input on any other factors it determines to be
38 relevant; or both. The renewable energy project developer will conduct a
39 comprehensive cumulative effects analysis at the initial phase of a development
40 designed to inform future phases of development. The regulating agencies and
41 project developer will use adaptive management or a similar process to evaluate the
42 project at each subsequent phase; the intent of such evaluation is to inform the
43 design, installation and operation of successive phases.
44

1 **f. Insufficient/Incomplete Information**

2 An applicant may not be able to obtain or provide the information required by
3 subsection B.4 (Resource Inventory and Effects Evaluation Standards), above, due to
4 the lack of data available about the effect that the proposed development may have on
5 environmental resources and uses. When a regulating agency determines that the
6 information provided by the applicant is not sufficient or complete enough to fulfill the
7 requirements of subsection B.4,⁸ the agency has the following options:
8

9 1) Agency Discretion

10 The regulating agency may terminate the decision-making process or suspend the
11 process until the applicant provides the information.
12

13 2) Pilot Project

14 The regulating agency may recommend that an applicant conduct a pilot project to
15 obtain adequate information and data and measure the effects. Pilot projects are
16 renewable energy facility developments which are removable or able to be shut
17 down quickly, are not located in sensitive areas, and are for the purpose of testing
18 new technologies or locating appropriate sites.⁹ The agency's decision to allow the
19 use of a pilot project is for the purpose of obtaining the data and information
20 necessary to fulfill the requirements of subsection B.4., and shall be based on the
21 following approval criteria:
22

23 A) The exclusive purpose of the pilot project shall be to provide information on
24 the performance, structural integrity, design and environmental effects of a
25 specific renewable energy technology or its supporting equipment and
26 structures.

27 B) The applicant shall complete adequate inventories of baseline conditions, as
28 required by paragraph B.4.d (Inventory Content) above, prior to conducting the
29 pilot project.

30 C) The risk of adverse effects from the pilot project shall be insignificant,
31 because:
32

- 33 1. of low probability of exposure of biological communities and habitats;
- 34 2. of low sensitivity of the biological communities and habitats to the
35 exposure; or
- 36 3. the effects of exposure to sensitive communities and habitats will be
37 insignificant.
38

39 D) The pilot project shall not adversely affect any "important marine habitat" or
40 "critical marine habitat" (see Appendix A: Glossary of Terms).
41

42 E) The pilot project will have a term, not to exceed five years, and authorization
43 for the project will include a standard condition requiring project alteration or
44 shutdown in the event that an unacceptable level of environmental effect occurs.
45

46 F) The pilot project shall avoid significant or long-term interference with other
47 human uses of marine resources, and will require decommissioning and site

1 restoration at expiration of the authorization period if federal and state
2 authorization for a commercial renewable energy facility is not sought.

3
4 G) All data shall be in the public domain subject to ORS 192.410 *et seq.*

5
6 H) Work Plan: The applicant shall provide a written work plan which will
7 include, but not be limited to the following:¹⁰

- 8
9 1. A list of the information needed to satisfy the requirements of subsection
10 B.4. above.
11 2. Specific pilot project objectives to obtain the needed information and an
12 explanation of how the study or test design will meet the objectives.
13 3. Description of study or test methods to meet the objectives, such as:
14 (a) Literature review;
15 (b) Collection of any needed baseline data;
16 (c) Hypotheses to address the study objectives;
17 (d) Descriptions of field sampling and data-analyses methods to be
18 used; and
19 (e) Use of adequate controls to allow the effects of the proposed
20 action to be separated from natural fluctuations in resources and habitats.
21
22 4. Supporting documentation demonstrating that the study design is
23 scientifically appropriate and statistically adequate to address the research
24 objectives.
25 5. Descriptions of how the data and analyses will be reported and delivered
26 to the regulating agency for review and approval.

27
28 3) Phased Development

29 The regulating agency may recommend that an applicant conduct a project as a
30 phased development in order to obtain adequate information and data and to
31 measure the incremental effects of each phase prior to further or complete build-out
32 of the project. Phased development projects are renewable energy facility
33 developments which are limited in scale and area, but are designed to produce
34 energy for commercial use. The applicant for a phased development project will
35 need to comply with the requirements of subsection B.4. A regulating agency's
36 decision to allow the use of a phased development project is designed to allow for
37 commercial energy production while obtaining certain data and information that are
38 necessary to fulfill the requirements of subsection B.4., but can only be obtained
39 through the monitoring and study of the effects of the development as it is installed
40 and operated for a discrete period of time.

41
42 **g. Test Facility**

43 Applications for a permit, license, or other authorization for the installation and use of
44 an experimental or test device at the Northwest National Marine Renewable Energy
45 Center Mobile Test Berth Site zone, are not subject to the requirements of section B.
46 See section D: Northwest National Marine Renewable Energy Center Mobile Test Berth
47 Site, below, for the specific requirements for the use of these facilities.

1 **C. Operation Plan Development**

2 The regulating agency shall require the applicant to submit an operation plan as a condition of
3 approval for a state or federal permit, license, lease or other authorization for renewable energy
4 facility development. The operation plan must explain the procedures and mechanisms that the
5 operator will employ so that the facility will comply with regulatory standards and other
6 conditions of permit or license approval related to water and air quality, adverse environmental
7 effects, maintenance and safety, operational failure and incident reporting. The operation plan
8 shall be designed to prevent or mitigate harm or damage to the marine and coastal environment
9 and at a minimum shall include the following information:

10
11 **1. Phased Development Plan**

12 A regulating agency may require that a facility be developed in phases in order to determine
13 whether the environmental effects of the structures and the operation of the facility are
14 consistent with the inventory and effects evaluation conducted under subsection B.4. The
15 requirements for an operation plan listed in this section would apply to each stage of the
16 phased development so as to account for any changes in design, technology or operation
17 that may result from monitoring the initial phase of the operation. The state and federal
18 joint agency review team will assist the developer in assessing the environmental effects of
19 the initial phase and in determining what, if any, changes in the development and operation
20 of future phases of the facility might be necessary to mitigate or prevent harm or damage to
21 the marine ecosystem.

22
23 A facility that has been developed to the full extent of its design and operating capacity
24 may, during the lifetime of its authorization, require systematic improvements to the
25 technology, structures and operational procedures that were originally authorized. The
26 regulating agency will require a new facility development plan, as appropriate and
27 necessary, to provide the data and information for the redevelopment and operation of the
28 new facility components.

29
30 **2. Facility Development Plan**

31 A plan is required that describes the physical and operational components of the proposed
32 facility and must contain, at minimum, detailed technical information, data, protocols and
33 references for:

- 34
35 **a.** Structural and project design, materials used, anchoring and installation information;
36 **b.** All cables and pipelines, including lines on project easements;
37 **c.** A description of the deployment activities;
38 **d.** A listing of chemical products used;
39 **e.** A description of vessels, vehicles, aircraft and the transit lanes that will be used;
40 **f.** A general description of the operating procedures and systems;
41 **g.** Construction schedule; and
42 **h.** Other information as required by the Department of State Lands.

43
44 **3. Project Operation Plan**

45 An operation plan is required that describes, at a minimum, information regarding the
46 routine environmental monitoring, safety management and emergency response procedures,
47 facility inspections, and the decommissioning of the project. The operation plan should

1 explain the procedures and mechanisms that will be employed so that the facility will
2 comply with regulatory standards and other conditions of permit or license approval related
3 to water and air quality, environmental protection and mitigation, facility maintenance and
4 safety, operational failure and incident reporting. An operation plan will include the
5 following information:
6

7 **a. Contingency Plan:**

8 A plan to describe how the facility operator will respond to emergencies caused by a
9 structural or equipment failure due to human error, weather, geologic or other natural
10 event. The plan should include a description of the types of equipment, vessels and
11 personnel that would be deployed, the chain of command or management structure for
12 managing the facility repairs, recovery or other forms of remedial action, and the
13 process and timeline for notification of state and federal authorities.
14

15 **b. Inspection Plan:**

16 A plan to provide for the implementation of a routine inspection program to ensure the
17 mechanical, structural and operational integrity of renewable energy project facilities
18 and other related structures, equipment or facilities. In addition, unscheduled
19 inspections are to be required after any major geologic or meteorologic event to ensure
20 continued operational safety and environmental protection.
21

22 **c. Monitoring Plan:**

23 A plan to provide for the implementation of a routine standardized monitoring program
24 for potential impacts on specific resources as specified by the resource inventory and
25 effects evaluation. The operator shall monitor activities related to the operation of the
26 facility and demonstrate that its performance satisfies specified standards in its
27 approved plans. Monitoring shall be sufficient to accurately document and quantify the
28 short-term and long-term effects of the actions on the affected resources and uses.
29 Plans for monitoring must include, at a minimum:
30

- 31 1) A list of the information needed to satisfy an effects evaluation.
- 32
- 33 2) Specific study objectives to obtain the needed information and explanation of
34 how the study design will meet the objectives.
- 35
- 36 3) Description of study methods to meet the objectives, such as:
37
38 A) Literature review;
39 B) Collection of needed baseline data;
40 C) Hypotheses to address the study objectives;
41 D) Descriptions of field sampling and data-analyses methods to be used; and
42 E) Use of adequate controls, such as control sites, to allow the effects of the
43 proposed action to be separated from natural fluctuations in resources and
44 habitats.
- 45
- 46 4) The monitoring plan will include supporting documentation demonstrating that
47 the study design is scientifically appropriate and statistically adequate to address
48 the research objectives.¹¹

- 1
2 5) The monitoring plan will include a description of the method that will be used to
3 report and deliver data and analyses information to the authorizing state agency
4 for review in a timely and efficient manner.¹²
5

6 **d. Adaptive Management Plan**

7 An adaptive management plan to provide a mechanism for incorporating new findings
8 and new technologies into the operation and management of the project. The adaptive
9 management plan shall include performance standards that are based on results of the
10 resource inventory and effects evaluation and incorporated in the study design of the
11 monitoring plan as described in paragraph C.3.c (Monitoring Plan), above. The plan
12 will explain the processes for how adaptation measures are applied to the operation of
13 the project. When the monitoring results show that the performance standards are not
14 being met due to the operation of the facility, adaptation measures designed to bring the
15 operation into compliance with the performance standard will be applied to the
16 operation of the project. The adaptive management plan will explain processes for how
17 adaptation measures will be applied to the operation and management of the project.
18 The adaptive management plan should account for:

- 19
20 1) Variable conditions in the marine environment;
21 2) Change in the status of resources;
22 3) New information provided by monitoring of the project;
23 4) Data and information provided by research and from other sources;
24 5) New technologies that would provide for greater protection of ocean resources;
25 6) Ocean fisheries, or other ocean uses to be protected from adverse effects and
26 operational conflicts; and
27 7) Unanticipated cumulative effects.
28

29 **4. Decommissioning Plan:**

30 An applicant is required to provide a plan to restore the natural characteristics of the site to
31 the extent practicable by describing the facilities to be removed.¹³ The plan should include;
32 a proposed decommissioning schedule; a description of removal and containment methods;
33 description of site clearance activities; plans for transporting and recycling, reusing, or
34 disposing of the removed facilities; a description of those resources, conditions, and
35 activities that could be affected by or could affect the proposed decommissioning activities;
36 results of any recent biological surveys conducted in the vicinity of the structure and recent
37 observations of marine mammals at the structure site; mitigation measures to protect
38 archaeological and sensitive biological features during removal activities; and a statement
39 as to the methods that will be used to survey the area after removal to determine any effects
40 on marine life. A decommissioning plan should identify how the project owner will restore
41 the site to the natural condition that existed prior to the development of the site, to the
42 extent practicable.
43

44 **5. Financial Assurance Plan:**

45 The applicant must provide a financial assurance compliance plan that describes their
46 ability to comply with the state regulating agency requirements for financial assurance
47 instruments to guarantee performance, and any other financial terms and conditions that
48 may be applied. Wave energy facilities or devices shall comply with the requirements of

1 ORS 274.867,¹⁴ and the implementing administrative rules of the Department of State
2 Lands, OAR 141-140-0080 and OAR 141-140-0090.

3
4 **6. Agreements:**

5 Applicants are required to communicate with traditional ocean users and stakeholders with
6 an interest in the area of the proposed project to address issues of concern.¹⁵ Applicants are
7 encouraged to memorialize agreements with those ocean users and stakeholders on the
8 specific actions that the applicant will take to address their issues of concern.
9

10
11 **D. Northwest National Marine Renewable Energy Center Mobile**
12 **Test Berth Site**

13
14 **1. Test Berth Site Plan**

15 The Northwest National Marine Renewable Energy Center mobile test berth site is
16 established to conduct short-term experimental testing of renewable energy technologies at
17 the mobile test berth facility.
18

19 **2. Test Berth Site Use**

20 An application for a permit, license, or other authorization for the installation and use of the
21 Northwest National Marine Renewable Energy Center mobile test berth site, is not subject
22 to the requirements of sections B or C, above.
23

24 An experimental or test device or other structure for use at the Northwest National Marine
25 Renewable Energy Center mobile test berth site is required to obtain any applicable license,
26 permit or authorization.

1 **Appendix A: Definitions and Terms**

2
3 **As used in Part Five, unless the context requires otherwise, the following definitions shall**
4 **apply:**

5
6 **Applicant:** An applicant for a state permit, license, lease or other authorization for renewable
7 energy facilities development or other related structures, equipment or facilities will be referred
8 to as “the applicant”.

9
10 **Areas important to fisheries:** (Goal 19)

- 11 a.) areas of high catch (e.g., high total pounds landed and high value of landed catch); or
12 b.) areas where highly valued fish are caught even if in low abundance or by few fishers; or
13 c.) areas that are important on a seasonal basis; or
14 d.) areas important to commercial or recreational fishing activities, including those of
15 individual ports or particular fleets; or
16 e.) habitat areas that support food or prey species important to commercially and recreationally
17 caught fish and shellfish species.

18
19 **Conservation:** a principle of action guiding Oregon's ocean-resources management, which
20 seeks to protect the integrity of marine ecosystems while giving priority to the protection and
21 wise use of renewable resources over nonrenewable; as used in the Oregon Ocean Resources
22 Management Plan, the act of conservation means "that the integrity, diversity, stability,
23 complexity, and the productivity of marine biological communities and their habitats are
24 maintained or, where necessary, restored" and "...accommodat(ing) the needs for economic
25 development while avoiding wasteful uses and maintaining future availability. (Territorial Sea
26 Plan Appendix A: Glossary of Terms)

27
28 **Critical marine habitat:** means one or more of the following land and water areas:

- 29 a.) areas designated as "critical habitat" in accordance with federal laws governing threatened
30 and endangered species; or
31 b.) areas designated in the Territorial Sea Plan as either:
32 1.) as needed for the survival of animal or plant species listed by state or federal laws as
33 "threatened", "endangered", or "sensitive". Such areas might include special areas used for
34 feeding, mating, breeding/spawning, nurseries, parental foraging, overwintering, or haul
35 out or resting. This is not intended to limit the application of federal law regarding
36 threatened and endangered species; or
37 2.) "unique" (i.e. one of a kind in Oregon) habitat for scientific research or education
38 within the Oregon territorial sea. (Territorial Sea Plan, Part Two)

39
40 **Ecosystem:** the living and non-living components of the environment which interact or
41 function together, including plant and animal organisms, the physical environment, and the
42 energy systems in which they exist. All the components of an ecosystem are interrelated.
43 (Oregon Statewide Planning Goals)

44
45 **Habitat:** the environment in which an organism, species, or community lives. Just as humans
46 live in houses, within neighborhoods, within a town or geographic area, within a certain region,

1 and so on, marine organisms live in habitats which may be referred to at different scales. (see
2 also "critical marine habitat", "important marine habitat") (Territorial Sea Plan Appendix A:
3 Glossary of Terms)
4

5 **Important marine habitat:** (Goal 19) are areas and associated biologic communities that are:

6 a.) important to the biological viability of commercially or recreationally caught species or that
7 support important food or prey species for commercially or recreationally caught species; or

8 b.) needed to assure the survival of threatened or endangered species; or

9 c.) ecologically significant to maintaining ecosystem structure, biological productivity, and
10 biological diversity; or

11 d.) essential to the life-history or behaviors of marine organisms; or

12 e.) especially vulnerable because of size, composition, or location in relation to chemical or
13 other pollutants, noise, physical disturbance, alteration, or harvest; or

14 f.) unique or of limited range within the state.
15

16 Important marine habitats must be specifically considered when an inventory-and-effects
17 evaluation is conducted pursuant to Goal 19: including but not limited to: habitat necessary for
18 the survival and conservation of Oregon renewable resources (*e.g.* areas for spawning, rearing,
19 or feeding), kelp and other algae beds, seagrass beds, seafloor gravel beds, rock reef areas and
20 areas of important fish, shellfish and invertebrate concentration. (Oregon Statewide Planning
21 Goal 19).
22

23 **Phased development projects:** Renewable energy facility developments which are limited in
24 scale and area, but are designed to produce energy for commercial use.
25

26 **Regulating agency or regulating agencies:** State and federal agencies making decisions to
27 authorize the siting, development and operation of renewable energy facilities development or
28 other related structures, equipment or facilities within the Oregon Territorial Sea.
29

30 **Renewable Energy Facility or Facilities:** The term “renewable energy facilities development
31 or other related structures, equipment or facilities,” means energy conversion technologies and
32 devices that convert the energy or natural properties of the water, waves, wind, current or
33 thermal to electrical energy, including all associated buoys, anchors, energy collectors, cables,
34 control and transmission lines and other equipment that are a necessary component of an
35 energy conversion device research project, demonstration project or commercial operation. The
36 terms “renewable energy facility” or “renewable energy facilities” are used to describe any and
37 all components of these developments.

Appendix B: Endnotes

¹ The state’s renewable energy portfolio is described under ORS 469A.025, entitled “Renewable energy sources.” ORS 469A.025(1) provides:

“Electricity generated utilizing the following types of energy may be used to comply with a renewable portfolio standard:

- “(a) Wind energy.
- “(b) Solar photovoltaic and solar thermal energy.
- “(c) Wave, tidal and ocean thermal energy.
- “(d) geothermal energy.”

² Part One, subsections E.1 and E.2 of the Territorial Sea Plan provide a brief description of programs of certain state and federal agencies with regulatory, consultation or other authority or responsibility for management of ocean resources.

³ State and federal agencies making decisions to authorize the siting, development and operation of renewable energy facilities development or other related structures, equipment or facilities within the Oregon Territorial Sea, will be referred to as “the regulating agency” or “regulating agencies”.

⁴ In its “Rules Governing the Placement of Ocean Energy Conversion Devices On, In or Over State-Owned-Land within the Territorial Sea”, the Department of State Lands requires applicants to meet with the agency, as well as affected ocean users and other government agencies having jurisdiction in the Territorial Sea, prior to applying for a lease or temporary authorization. OAR 141-140-0040.

⁵ ORS 196.471, entitled “Territorial Sea Plan review requirements, provides in part:

“(1) The Land Conservation and Development Commission shall review the Territorial Sea Plan and any subsequent amendments recommended by the Ocean Policy Advisory Council to either the Territorial Sea Plan or the Oregon Ocean Resources Management Plan and make findings that the plan or amendments:

“(a) Carry out the policies of ORS 196.405 to 196.515; and

“(b) Are consistent with applicable statewide planning goals, with emphasis on the four coastal goals.

“(2) After making the findings required by subsection (1) of this section, the commission shall adopt the Territorial Sea Plan or proposed amendments as part of the Oregon Coastal Management Program.”

⁶ The regulations for federal consistency with approved state coastal programs are prescribed in 15 CFR, Part 930. “Energy projects” are defined under 15 CFR § 930.123(c) to mean “projects related to the siting, construction, expansion, or operation of any facility designed to explore, develop, produce, transmit or transport energy or energy resources that are subject to review by a coastal State under subparts D, E, F or I of this part.”

⁷ Under the National Environmental Policy Act (NEPA), “cumulative impacts” means “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 CFR § 1508.7.

⁸ One measure of whether the information provided by an applicant is sufficient are the federal consistency regulations under 15 CFR §930.58 (a), which provides “The applicant shall furnish the State agency with necessary data and information along with the consistency certification.”

⁹ Pilot Project has the same meaning as “Demonstration Project” under the Department of State Lands rules governing the placement of ocean energy conversion devices on, in, or over state-owned land within the Territorial Sea. OAR 141-140-0020(7) defines “Demonstration Project” as “a limited duration, non-commercial activity authorized under a temporary use authorization granted by the Department to a person for the construction, installation, operation, or removal of an ocean energy facility on, in or over state-owned submerged and submersible land in the Territorial Sea to test the economic and/or technological viability of establishing a commercial operation. A demonstration project may be temporarily connected to the regional power grid for testing purposes without being a commercial operation.”

¹⁰ Pilot projects that are authorized under the standards and conditions of this subparagraph f.2 are not required to fulfill the requirements of section C below. The standards and requirements of section C will apply to an application for authorization to expand the pilot project from a short-term limited scope facility to a commercial operation scale facility.

¹¹ Standardized monitoring protocols would result in data sets that are comparable and transferable among sites and technologies. The protocols would include a Before, After, Control, Impact (BACI) experimental study design.

¹² Example: the data and analysis will be applied to determine if conditions meet the standard established under the Oregon Department of Environmental Quality rule for “Biocriteria” at OAR 340-041-0011, which provides “Waters of the State must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.”

¹³ The requirement for a decommissioning plan is based upon, and will be applied by, the Department of State Lands under OAR 141-140-0080. Under subsection (5)(e) of that rule, the holder of a temporary use authorization or lessee is required to:

“Remove ocean energy monitoring equipment, ocean energy facilities and any other material, substance or related or supporting structure from the authorized area as directed by the Department within a period of time to be established by the Department as a condition of the authorization. If the holder of the temporary use authorization or lessee fails or refuses to remove such equipment, facility or other material, substance or related or supporting structure, the Department may remove them or cause them to be removed, and the holder of the authorization or lessee shall be liable for all costs incurred by the State of Oregon for such removal.”

The decommissioning of the transmission cable is required under OAR 141-083-0850(6), which provides:

“If determined necessary by [DSL] in consultation with the easement holder and other interested parties, and if permitted by the applicable federal agency(ies) regulating the cable, the easement holder shall remove the cable from the state-owned submerged and submersible land within one (1) year following the termination of use of the cable or expiration of the easement.”

¹⁴ ORS 274.867 provides in part:

“(2) Unless exempted under rules adopted by the director under this section, an owner or operator of a facility or device sited within Oregon’s territorial sea, as defined in ORS 196.405, that converts the kinetic energy of waves into electricity shall maintain cost estimates of the amount of financial assurance that is necessary, and demonstrate evidence of financial assurance, for:
“(a) The costs of closure and post-closure maintenance, excluding the removal of anchors that lie beneath submerged lands in Oregon’s territorial sea, of the facility or device; and
“(b) Any corrective action required to be taken at the site of the facility or device.

“(3) The financial assurance requirements established by subsection (2) of this section may be satisfied by any one or a combination of the following:

“(a) Insurance;

“(b) Establishment of a trust fund;

“(c) A surety bond;

“(d) A letter of credit;

“(e) Qualification as a self-insurer; or

“(f) Any other method set forth in rules adopted by the director.”

¹⁵ The Department of State Lands rule on Pre-Application Requirements, OAR 141-140-0040, provides:

“Before submitting an application to the Department, a person wanting to install, construct, operate, maintain or remove ocean energy monitoring equipment or an ocean energy conversion facility for a research project, demonstration project or commercial operation shall meet with:

“(a) Department staff to discuss the proposed project; and

“(b) Affected ocean users and other government agencies having jurisdiction in the Territorial Sea to discuss possible use conflicts, impacts on habitat, and other issues related to the proposed use of an authorized area for the installation, construction, operation, maintenance or removal of ocean energy monitoring equipment or an ocean energy facility.”