

1 **Oregon Territorial Sea Plan**

2
3 **DRAFT PART FIVE:** *(This document is a working Draft only prepared by OPAC)*

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

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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, or**
10 **thermal etc)¹ in the state territorial sea, and specifies the areas where that development**
11 **may be sited. The requirements of Part Five are designed 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 development, and to identify the appropriate locations for that development which**
15 **minimize the potential adverse impacts to existing ocean resource users and coastal**
16 **communities.**

17
18 **Oregon’s renewable energy portfolio lists ocean energy as renewable sources with**
19 **potential to reduce dependence on fossil fuels.² 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, renewable ocean energy**
23 **may help preserve Oregon’s natural resources and enhance our quality of life.**

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27 **A. Renewable Energy Facilities Development**

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29 **1. Background**

30 Oregon’s territorial sea has been identified as a favorable location for siting renewable energy
31 facilities for research, demonstration and commercial power development. These facilities may
32 vary in the type and extent of the technologies employed and will require other related

¹ For the purposes of this chapter of the Territorial Sea Plan, the term “renewable energy facilities development or other related structures, equipment or facilities,” means energy conversion technologies and devices that convert the energy or natural properties of the water, waves, wind, current or thermal to electrical energy, including all associated buoys, anchors, energy collectors, cables, control and transmission lines and other equipment that are a necessary component of an energy conversion device research project, demonstration project or commercial operation. The terms “renewable energy facility” or “renewable energy facilities” will be used to describe any and all components of these developments.

² The state’s renewable energy portfolio is described under ORS 469A.025 Renewable energy sources. (1) Electricity generated utilizing the following types of energy may be used to comply with a renewable portfolio standard to include: (a) Wind energy, (b) Solar photovoltaic and solar thermal energy, (c) Wave, tidal and ocean thermal energy, and (d) geothermal energy.

1 structures, equipment or facilities to connect together, anchor to the seafloor and transfer
2 energy to on-shore substations. The State of Oregon will require the proper siting and
3 development of these facilities in order to minimize damage to or conflict with other existing
4 ocean uses and to reduce or avoid adverse effects on marine ecosystems and coastal
5 communities.

6
7 State agencies, including the Oregon Departments of State Lands, Fish and Wildlife, Parks and
8 Recreation, Environmental Quality, Land Conservation and Development, Water Resources,
9 and Geology and Mineral Industries, need specific policies and standards for considering the
10 siting and regulation of renewable energy facility development in the territorial sea. The State
11 also needs specific policies and standards to guide federal agencies in the siting and regulation
12 of renewable energy facilities development located in federal waters adjacent to the Oregon
13 territorial sea.³

14
15 ***NOTE: The following policies and implementation requirements are mandatory. Decisions***
16 ***of state and federal agencies with respect to approvals of permits, licenses, leases or other***
17 ***authorizations to construct, operate, or maintain any facility to produce, transport or support***
18 ***the generation of renewable energy within Oregon’s territorial waters and ocean shore must***
19 ***conform with the requirements mandated in the Oregon Territorial Sea Plan. The***
20 ***enforceable policies of the Territorial Sea Plan and the Oregon Coastal Management***
21 ***Program are applicable to those federal actions that impact Oregon’s coastal zone and are***
22 ***subject to the federal consistency requirements of the federal Coastal Zone Management Act.***
23

24 **2. Policies**

25 The following policies apply generally to the development of renewable energy facilities within
26 the Oregon Territorial Sea, and establish the guiding principles for the implementation
27 requirements listed in section B. below. When making decisions to authorize the siting,
28 development and operation of renewable energy facilities within the territorial sea, state and
29 federal agencies shall⁴:

- 30
31
- 32 **a.** Maintain and protect renewable marine resources (i.e. living marine resources),
33 ecosystem integrity, marine habitat and areas important to fisheries from adverse effects
34 that may be caused by the installation or operation or removal of renewable energy
35 facility by requiring that such development or operation:
36
37 1.) Avoid adverse effects to the integrity, diversity, stability and complexity of the
38 marine ecosystem and coastal communities, and give priority to the conservation and
39 use of renewable marine resources as a first priority;
40
41 2.) Minimize effects by limiting the degree or magnitude of the action and its
42 implementation; and

³ A listing and description of the state and federal agencies with regulatory, consultation or other authority or responsibility for management of ocean resources is located in Part 1 of the Territorial Sea Plan.

⁴ 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”.

1
2 3.) Rectify or mitigate the effects over time by monitoring and taking appropriate
3 corrective measures through adaptive management.

4
5 4.) Restore the natural characteristics of a site to the extent practicable.

6
7 **b.** Protect marine renewable resources, the biological diversity and functional integrity of
8 marine ecosystem, important marine habitat, areas important to fisheries, navigation,
9 recreation and aesthetic enjoyment as required by Statewide Planning Goal 19.

10
11 **c.** Promote direct communication and collaboration between an applicant⁵ for a state or
12 federal authorization for the siting, development and operation of renewable energy
13 facilities and affected ocean users and coastal communities to reduce or avoid conflicts.
14 Agencies should encourage applicants to engage with local, state and federal agencies,
15 community stakeholders, tribal governments and affected users in a collaborative
16 agreement-seeking process prior to formally requesting authorization to initiate a
17 project.⁶

18
19 **d.** Limit the potential for unanticipated adverse impacts by requiring, as necessary, the use
20 of pilot projects and phased development to collect data and study the effects of the
21 development on the affected marine resources and uses.

22
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24 **B. Implementation Requirements**

25
26 The following implementation requirements will be applied by state and federal agencies when
27 considering a proposal for the placement or operation of a renewable energy facility
28 development within the Oregon Territorial Sea. Regulating agencies shall comply with the
29 standards and procedural requirements in Part 5 of the Territorial Sea Plan as prescribed below.
30 This includes the cables, connectors or other transmission devices that connect, anchor, support
31 or transmit energy between the separate components within a renewable energy facility. The
32 requirements in Part 4, Uses of the Seafloor for Telecommunication Cables, Pipelines, and
33 other Utilities, will apply to the utility cables that transmit the electrical energy from the
34 renewable energy facility to the on-shore substation.⁷

35
36 **1. Siting: areas designated for renewable energy facilities development.**

37
38 **a. In State Waters:**

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

⁶ The Department of State Lands pre-application requirements under OAR 141-140-0040 (Rules Governing the Placement of Ocean Energy Conversion Devices on, in or over State-Owned-Land within the Territorial Sea) requires applicants to meet with the agency prior to applying for a lease or temporary authorization.

⁷ The requirements in Part 2 of the Territorial Sea Plan, Making Resource Use Decisions, will not apply to the evaluation, siting or operation of renewable energy development or other related structures, equipment or facilities.

1 Pursuant to the requirements for amending the Territorial Sea Plan under ORS 196.471,
2 and as consistent with the statewide planning goals, the Land Conservation and
3 Development Commission has identified areas for the development of renewable energy
4 facilities.⁸ Renewable energy facilities development within the state lands of the
5 territorial sea lying seaward of Extreme Low Water (which is the seaward boundary of
6 the Ocean Shore State Recreation Area) shall be sited within the areas designated for
7 that use so as to avoid, reduce or mitigate the adverse effects of that development, and
8 to protect: renewable marine resources, biological diversity and functional integrity of
9 marine ecosystem, important marine habitat, and areas important to fisheries, as defined
10 in Statewide Planning Goal 19 Ocean Resources. (see appendix or map)
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12

13 **b. In Federal Waters:**

14 Decisions to permit, license, or otherwise authorize renewable energy facilities
15 development within the waters and seafloor of the outer continental shelf adjacent to the
16 Oregon Territorial Sea will be reviewed by the Oregon Department of Land
17 Conservation and Development for consistency with the Oregon Territorial Sea Plan
18 and the applicable enforceable policies of the Oregon Coastal Management Program.
19 Federal actions affecting coastal uses and resources within the Oregon Coastal Zone
20 shall be supported by environmental studies and analysis, as prescribed below, to ensure
21 compliance with the enforceable policies of Oregon Territorial Sea Plan and the Oregon
22 Coastal Management Program.⁹
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25 **2. State Agency Review Process**

26
27 State agencies apply the policies and provisions of the Territorial Sea Plan as required to
28 conform with ORS 196.485 Oregon Ocean Resources Management, and ORS 197.180 State
29 Agency Coordination agreements (OAR 660 Divisions 030 and 031), and Goal 19 Ocean
30 Resources.
31

32 The Department of State Lands shall coordinate the review of requests for approvals of
33 leases, temporary use permit, easements and removal-fill in consultation with the
34 Departments of Fish and Wildlife, Parks and Recreation, Environmental Quality, Land

⁸ ORS 196.471 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.

⁹ The regulations for federal consistency with approved state coastal programs are prescribed in 15 CFR 930. Energy projects are defined under § 930.123 Definitions as (c) The term “energy project” means 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.

1 Conservation and Development, Water Resources, and Geology and Mineral Industries, and
2 coastal local governments, and tribal governments as appropriate. These agencies, with the
3 addition of the regulating federal agencies, will constitute the joint agency review team
4 described in subsection B.2 above. The Department of Land Conservation and
5 Development will use its authority under the federal Coastal Zone Management Act to
6 review the consistency determination submitted by the applicant for federal authorization
7 for a renewable energy facilities development to ensure the project is consistent with
8 enforceable policies of the Oregon Coastal Zone Management Program, including the
9 Territorial Sea Plan.

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

12
13 A joint agency review team, as described below, shall be convened in order to facilitate the
14 coordination of state and federal agencies as they apply their separate regulatory or other
15 authorized responsibilities to the review of a proposed renewable energy facility
16 development. The team shall consist of the state and federal agencies with regulatory or
17 planning authority applicable to the proposed project and location, the affected local
18 jurisdictions, and may also include local interest groups and advisory committees. The
19 review team will coordinate the agency review and comment on the adequacy of the
20 resource inventories and effects evaluations required under subsection B.4 Resource
21 Inventory and Effects Evaluation Standards, below, NEPA environmental assessments and
22 environmental impact statements. The joint agency review team will also consider the
23 adequacy of the information provided for the operation plan, as required under Section C.
24 Operation Plan Development below, including the monitoring requirements, mitigation
25 measures, adaptive management plans, construction and operational performance standards,
26 or any other special conditions that may be applied pursuant to the lease, permit, license or
27 other authorization by the regulating state agency.

28
29 The regulating state agency shall require an applicant to provide documentation of their
30 communication and coordination efforts with local communities, interest groups and
31 advisory committees. Those efforts shall, at a minimum, include information on the
32 proposed project operation protocols, response to emergencies and procedures for on-going
33 communication as specified in Section C. Operation Plan Development, below.

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

36
37 Regulating agencies will require a resource inventory and effects evaluation be prepared by
38 the applicant, as required by this section, prior to making any decision.

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

41 The resource inventory and effects evaluation shall be sufficient to understand the short-
42 term and long-term effects of the proposed renewable energy facility development on
43 the affected marine resources and uses.

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

46 The purpose of the effects evaluation is to determine whether the proposed actions can
47 meet the policies and standards for the protection of resources, resource users and
48 coastal communities referred to above in subsection A.2, Policies. The evaluation will

1 help identify where the applicant needs to address deficiencies. Results of the
2 evaluation will be used by the authorizing agency to develop specific measures for
3 environmental protection and mitigation, measures to protect ocean uses, monitoring,
4 and adaptive management.
5

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

7 Regulating agencies may allow the use of existing data and information from any
8 source when complying with the requirements for resource inventory and effects
9 evaluation. All data and information used for the inventory and evaluation, including
10 existing data from federal environmental impact statements or assessments, shall meet
11 the same standards of adequacy required for the inventory and the evaluation.
12

13
14 **d. Inventory Content**

15 Regulating agencies shall request that the following factors be considered for inclusion
16 in the inventory to evaluate the magnitude of the proposed project, the likelihood of the
17 effects of the project, and the significance of the resources and uses that may be affected
18 by the project:
19

- 20 1) Proposed factors associated with the development, placement, operation, and
21 decommissioning of the project:
 - 22 A) Location (using maps, charts, descriptions, etc.);
 - 23 B) Numbers and sizes of equipment, structures;
 - 24 C) Methods, techniques, activities to be used;
 - 25 D) Transportation and transmission systems needed for service and support;
 - 26 E) Materials to be disposed of and method of disposal;
 - 27 F) Physical and chemical properties of hazardous materials, if any, to be used or
28 produced;
 - 29 G) Navigation aids; and
 - 30 H) Proposed time schedule.
- 31
32 2) Location and description of all affected areas, including, but not limited to:
 - 33 A) Site of the renewable energy facility;
 - 34 B) Adjacent areas that may be affected by physical changes in currents and
35 waves caused by the facility;
 - 36 C) Utility corridor transiting territorial sea and ocean shore; and
 - 37 D) Shoreland facilities
- 38
39 3) Physical and chemical conditions including, but not limited to:
 - 40 A) Water depth;
 - 41 B) Wave regime;
 - 42 C) Current velocities;
 - 43 D) Dispersal, horizontal transport, and vertical mixing characteristics;
 - 44 E) Meteorological conditions; and
 - 45 F) Water quality.
- 46
47 4) Bathymetry (bottom topography) and Shoreline Topography (LIDAR)
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- 5) Geologic structure, including, but not limited to:
 - A) geologic hazards, such as faults or landslides of both marine and shoreline facility areas;
 - B) mineral deposits;
 - C) seafloor substrate type, and;
 - D) hydrocarbon resources.
 - 6) Biological features, including, but not limited to:
 - A) Critical marine habitats (see Definitions);
 - B) Other marine habitats;
 - C) Fish and shellfish stocks and other biologically important species;
 - D) Recreationally or commercially important finfish or shellfish species;
 - E) Planktonic and benthic flora and fauna;
 - F) Other elements important to the marine ecosystem; and
 - G) Marine species migration routes.
 - 7) Cultural, economic, and social uses affected by the project including, but not limited to:
 - A) Commercial and sport fishing;
 - B) State or Federally protected areas;
 - C) Scientific research;
 - D) Ports, navigation, and Dredge Material Disposal sites;
 - E) Recreation;
 - F) Coastal Communities Economy;
 - G) Aquaculture;
 - H) Waste 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 as determined to be necessary and appropriate to evaluate the effects of the proposed project by the regulating agencies.

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 determination of "reasonably foreseeable adverse effects" shall be based 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 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, 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

3) Geologic Hazards

Evaluate the potential risk to the facility, in terms of its vulnerability to certain hazards and the probability that those hazards may cause it damage or interrupt operation. Consider both the severity of the hazard and the level of exposure it poses to the facility or its operation. Hazards to be considered should include the scouring action of currents on the foundations and anchoring structures, slope failures and subsurface landslides, faulting, tsunamis, and variable or irregular bottom topography.

4) Cumulative Effects

Evaluate the cumulative effects of a project, including the shoreland component, in conjunction with effects of past projects, other current projects, and probable future projects.¹⁰ The report should extrapolate the biological, ecological, physical, and socioeconomic effects of the renewable energy facility development to those of other renewable energy facility projects along the Oregon coast, while also taking

¹⁰ National Environmental Policy Act (NEPA), defining “cumulative effects” as: “the impact on the environment encompassing the environmental (ecology, biology, physical) parameters and human dimension (economic, social, etc.) 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 (40 CFR § 1508.7).”

1 into account the effects of existing and future human activities and the regional
2 effects of global climate change.

3 In conducting the cumulative effects analysis, the applicant should focus on the
4 specific resources and ecological components, as detailed under subsection 4.d
5 above, that may be affected by the incremental effects of the proposed project and
6 other projects in the same geographic area. The evaluation should consider
7 whether:

- 8 A) the resource is especially vulnerable to incremental effects;
- 9 B) the proposed project is one of several similar projects in the same geographic
10 area;
- 11 C) other developments in the area have similar effects on the resource;
- 12 D) these effects have been historically significant for this resource; and
- 13 E) other analyses in the area have identified a cumulative effects concern.

14
15
16 **f. Insufficient/Incomplete Information**

17 An applicant may not be able to obtain or provide the information required by
18 subsection B.4 above due to the lack of data available about the effect that the proposed
19 development may have on environmental resources and uses. When a regulating
20 agency determines that the information provided by the applicant is not sufficient or
21 complete enough to fulfill the requirements of subsection B.4,¹¹ the agency has the
22 following options:

23
24 1. Agency Discretion

25 The regulating agency may terminate the decision-making process or suspend the
26 process until the applicant provides the information.

27
28 2. Pilot Project

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

- 37
38 A) The exclusive purpose of the pilot project shall be to provide information on
39 the performance, structural integrity, design and environmental effects of a

¹¹ One measure of whether the information provided by an applicant is sufficient are the federal consistency regulations under § 15 CFR 930.58 Necessary data and information (a) The applicant shall furnish the State agency with necessary data and information along with the consistency certification.

1 specific renewable energy technology or its supporting equipment and
2 structures.

3 B) Adequate inventories of baseline conditions, as required by subsection 4(d)
4 above, shall be completed by the applicant prior to conducting the pilot project.

5 C) The risk of adverse effects from the pilot project shall be insignificant,
6 because:

- 7
8 1. of low probability of exposure of biological communities and habitats; or
9 2. of low sensitivity of the biological communities and habitats to the
10 exposure;
11 3. or the effects of exposure to sensitive communities and habitats will be
12 insignificant.

13
14 D) The pilot project shall not adversely affect any “critical marine habitat” (see
15 Appendix A: Glossary of Terms).

16
17 E) The pilot project will have a term, not to exceed five years, and authorization
18 for the project will include a standard condition requiring project alteration or
19 shutdown in the event that there was an unacceptable level of environmental
20 effect.

21
22 F) The pilot project shall avoid significant or long-term interference with other
23 human uses of marine resources, and will require decommissioning and site
24 restoration at expiration of the authorization period if federal and state
25 authorization for a commercial renewable energy facility is not sought.

26
27 G) All data shall be in the public domain subject to ORS 192.410 et seq.

28
29 H) Work Plan: The applicant shall provide a written work plan which will
30 include, but not be limited to the following:¹²

- 31
32 1. A list of the information needed to satisfy the requirements of subsection
33 B.4. above.
34 2. Specific pilot project objectives to obtain the needed information and an
35 explanation of how the study or test design will meet the objectives.
36 3. Description of study or test methods to meet the objectives, such as:
37 (a) Literature review;
38 (b) Collection of any needed baseline data;
39 (c) Hypotheses to address the study objectives;
40 (d) Descriptions of field sampling and data-analyses methods to be
41 used; and
42 (e) Use of adequate controls to allow the effects of the proposed
43 action to be separated from natural fluctuations in resources and habitats.

¹² Pilot projects that are authorized under the standards and conditions of this subsection 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.

1
2 4. Supporting documentation demonstrating that the study design is
3 scientifically appropriate and statistically adequate to address the research
4 objectives.

5
6 5. Descriptions of how the data and analyses will be reported and delivered
7 to the authorizing state agency for review and approval.
8

9
10 **g. Test Facility**

11 Applications for a permit, license, or other authorization for the installation and use of
12 an experimental or test device at the Northwest National Marine Renewable Energy
13 Center Mobile Test Berth Site zone, are not subject to the requirements of Section B.
14 See Section D: Northwest National Marine Renewable Energy Center Mobile Test
15 Berth Site, below, for the specific requirements for the use of these facilities.
16
17

18
19 **C. Operation Plan Development**

20 The regulating agency shall require an operation plan to be prepared as a condition of approval
21 for a state or federal permit, license, lease or other authorization for renewable energy facility
22 development. The operation plan should explain the procedures and mechanisms that will be
23 employed by the operator so that the facility will comply with regulatory standards and other
24 conditions of permit or license approval related to water and air quality, adverse environmental
25 effects, maintenance and safety, operational failure and incident reporting. The operation plan
26 shall be designed to prevent or mitigate harm or damage to the marine and coastal environment
27 and at a minimum shall include the following information.
28

29 **1. Phased Development Plan**

30 The regulating agency may require that a facility be developed in phases in order to
31 determine whether the environmental effects of the structures and the operation of the
32 facility are consistent with the inventory and effects evaluation conducted under subsection
33 B.4. The requirements for an operation plan listed in this subsection would apply to each
34 stage of the phased development so as to account for any changes in design, technology or
35 operation that may result from monitoring the initial phase of the operation.
36

37 A facility that has been developed to the full extent of its design and operating capacity
38 may, during the lifetime of its authorization, require systematic improvements to the
39 technology, structures and operational procedures that were originally authorized. The
40 regulating agency will require a new facility development plan, as appropriate and
41 necessary, to provide the data and information for the redevelopment and operation of the
42 new facility components.
43

44 **2. Facility Development Plan**

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

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

3. **Project Operation Plan**

The operation plan is required that describes, at a minimum, information regarding the routine environmental monitoring, safety management and emergency response procedures, facility inspections, and the decommissioning of the project. The operation plan should explain the procedures and mechanisms that will be employed so that the facility will comply with regulatory standards and other conditions of permit or license approval related to water and air quality, environmental protection and mitigation, facility maintenance and safety, operational failure and incident reporting. An operation plan will include the following information:

a. Contingency Plan:

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

b. Inspection Plan:

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

c. Monitoring Plan:

A plan is required to provide for the implementation of a routine standardized monitoring program for potential impacts on specific resources as specified by the resource inventory and effects evaluation. The operator is required to monitor activities related to the operation of the facility and demonstrate that its performance satisfies

1 specified standards in its approved plans. Monitoring shall be sufficient to understand
2 the short-term and long-term effects of the actions on the affected resources and uses.
3 Plans for monitoring must include, at a minimum:

- 4
- 5 1) A list of the information needed to satisfy an effects evaluation.
 - 6
 - 7 2) Specific study objectives to obtain the needed information and explanation of
8 how the study design will meet the objectives.
 - 9
 - 10 3) Description of study methods to meet the objectives, such as:
 - 11 A) Literature review;
 - 12 B) Collection of needed baseline data;
 - 13 C) Hypotheses to address the study objectives;
 - 14 D) Descriptions of field sampling and data-analyses methods to be used; and
 - 15 E) Use of adequate controls, such as control sites, to allow the effects of the
16 proposed action to be separated from natural fluctuations in resources and
17 habitats.
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 - 19
 - 20 4) The monitoring plan will include supporting documentation demonstrating that
21 the study design is scientifically appropriate and statistically adequate to address
22 the research objectives.¹³
 - 23
 - 24 5) The monitoring plan will include a description of the method that will be used to
25 report and deliver data and analyses information to the authorizing state agency
26 for review in a timely and efficient manner.¹⁴
 - 27
 - 28

29 **d. Adaptive Management Plan**

30 An adaptive management plan is required to provide a mechanism for incorporating
31 new findings and new technologies into the operation and management of the project.
32 The adaptive management plan shall include performance standards that are based on
33 results of the resource inventory and effects evaluation and incorporated in the study
34 design of the monitoring plan as described in subsection 2 (c.) above. Processes for
35 how adaptation measures are applied to the operation of the project will be explained in
36 the plan. When the monitoring results show that the performance standards are not
37 being met due to the operation of the facility, adaptation measures designed to bring the
38 operation into compliance with the performance standard will be applied to the
39 operation of the project. Processes for how adaptation measures will be applied to the

¹³ 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.

¹⁴ Example: the data and analysis will be applied to determine if conditions meet the standard established under the Oregon Department of Environmental Quality Biocriteria OAR 340-041-0011, as; Waters of the State must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.

1 operation and management of the project will be explained in the adaptive management
2 plan. The adaptive management plan should account for:

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4 1) Variable conditions in the marine environment;
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6 2) Change in the status of resources;
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8 3) New information provided by monitoring of the project;
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10 4) Data and information provided by research and from other sources;
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12 5) New technologies that would provide for greater protection of ocean resources;
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14 6) Ocean fisheries, or other ocean uses from adverse effects and operational
15 conflicts; and
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17 7) Unanticipated cumulative effects.

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20 **4. Decommissioning Plan:**

21 An applicant is required to provide a plan describing the facilities to be removed; a
22 proposed decommissioning schedule; a description of removal and containment methods;
23 description of site clearance activities; plans for transporting and disposing of the removed
24 facilities; a description of those resources, conditions, and activities that could be affected
25 by or could affect the proposed decommissioning activities; results of any recent biological
26 surveys conducted in the vicinity of the structure and recent observations of marine
27 mammals at the structure site; mitigation measures to protect archaeological and sensitive
28 biological features during removal activities; and a statement as to the methods that will be
29 used to survey the area after removal to determine any effects on marine life. A
30 decommissioning plan should identify how the site will be restored to the natural condition
31 that existed prior to the development of the site, to the extent practicable.
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34 **5. Financial Assurance Plan:**

35 The applicant must provide a financial assurance compliance plan that describes their
36 ability to comply with the state regulating agency requirements for financial assurance
37 instruments to guarantee performance, and any other financial terms and conditions that
38 may be applied. Wave energy facilities or devices shall comply with the requirements of
39 ORS 274.867 Wave energy; financial assurance; rules, and any administrative rules issued
40 by the Department of State Lands to implement this statutory authority.
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43 **6. Agreements:**

44 Applicants are encouraged to communicate with traditional ocean users and stakeholders
45 with an interest in the area of the proposed project to address issues of concern. Applicants
46 are encouraged to memorialize agreements with those ocean users and stakeholders on the
47 specific actions that will be taken by the applicant to address their issues of concern.

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D. Northwest National Marine Renewable Energy Center Mobile Test Berth Site

1. Test Berth Site Plan

The Northwest National Marine Renewable Energy Center has obtained the required permits, lease, and authorizations to conduct short-term experimental testing of renewable energy technologies at the test berth site located at the “test zone”.

2. Test Berth Site Use

Applications for a permit, license, or other authorization for the installation and use of an experimental or test device at the Northwest National Marine Renewable Energy Center Mobile Test Berth Site zone, are not subject to the requirements of Section B. above.

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