

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF OCEAN ENERGY MANAGEMENT COMMERCIAL LEASE OF SUBMERGED LANDS FOR RENEWABLE ENERGY DEVELOPMENT ON THE OUTER CONTINENTAL SHELF <i>Paperwork Reduction Act of 1995 statement: This form does not constitute an information collection as defined by 44 U.S.C. § 3501 et seq. and therefore does not require approval by the Office of Management and Budget.</i>	Office Sterling, VA	Renewable Energy Lease Number OCS-A 0498
	Cash Bonus and/or Acquisition Fee \$880,715	Resource Type Wind
	Effective Date March 1, 2016	Block Number(s) See Addendum A

This lease, which includes any addenda hereto, is hereby entered into by and between the United States of America, ("Lessor"), acting through the Bureau of Ocean Energy Management ("BOEM"), its authorized officer, and

Lessee	Interest Held
RES America Developments Inc.	100%

("Lessee"). This lease is effective on the date written above ("Effective Date") and will continue in effect until the lease terminates as set forth in Addendum "B." In consideration of any cash payment heretofore made by the Lessee to the Lessor and in consideration of the promises, terms, conditions, covenants, and stipulations contained herein and attached hereto, the Lessee and the Lessor agree as follows:

Section 1: Statutes and Regulations.

This lease is issued pursuant to subsection 8(p) of the Outer Continental Shelf Lands Act ("the Act"), 43 U.S.C. §§ 1331 *et seq.* This lease is subject to the Act and regulations promulgated pursuant to the Act, including but not limited to, offshore renewable energy and alternate use regulations at 30 CFR Part 585 as well as other applicable statutes and regulations in existence on the Effective Date of this lease. This lease is also subject to those statutes enacted (including amendments to the Act or other statutes) and regulations promulgated thereafter, except to the extent that they explicitly conflict with an express provision of this lease. It is expressly understood that amendments to existing statutes, including but not limited to the Act, and regulations may be made, and/or new statutes may be enacted or new regulations promulgated, which do not explicitly conflict with an express provision of this lease, and that the Lessee bears the risk that such amendments, regulations, and statutes may increase or decrease the Lessee's obligations under the lease.

Section 2: Rights of the Lessee.

- (a) The Lessor hereby grants and leases to the Lessee the exclusive right and privilege, subject to the terms and conditions of this lease and applicable regulations, to: (1) submit to the Lessor for approval a Site Assessment Plan (SAP) and Construction and Operations Plan (COP) for the project identified in Addendum “A” of this lease; and (2) conduct activities in the area identified in Addendum “A” of this lease (“leased area”) that are described in a SAP or COP that has been approved by the Lessor. This lease does not, by itself, authorize any activity within the leased area.
- (b) The rights granted to the Lessee herein are limited to those activities described in any SAP or COP approved by the Lessor. The rights granted to the Lessee are limited by the lease-specific terms, conditions, and stipulations required by the Lessor per Addendum “C.”
- (c) This lease does not authorize the Lessee to conduct activities on the Outer Continental Shelf (OCS) relating to or associated with the exploration for, or development or production of, oil, gas, other seabed minerals, or renewable energy resources other than those renewable energy resources identified in Addendum “A.”

Section 3: Reservations to the Lessor.

- (a) All rights in the leased area not expressly granted to the Lessee by the Act, applicable regulations, this lease, or any approved SAP or COP, are hereby reserved to the Lessor.
- (b) The Lessor will decide whether to approve a SAP or COP in accordance with the applicable regulations in 30 CFR Part 585. The Lessor retains the right to disapprove a SAP or COP based on the Lessor’s determination that the proposed activities would have unacceptable environmental consequences, would conflict with one or more of the requirements set forth in subsection 8(p)(4) of the Act (43 U.S.C. § 1337(p)(4)), or for other reasons provided by the Lessor pursuant to 30 CFR 585.613(e)(2) or 30 CFR 585.628(f)(2). Disapproval of plans will not subject the Lessor to liability. The Lessor also retains the right to approve with modifications a SAP or COP, as provided in applicable regulations.
- (c) The Lessor reserves the right to suspend the Lessee’s operations in accordance with the national security and defense provisions of section 12 of the Act and applicable regulations.
- (d) The Lessor reserves the right to authorize other uses within the leased area that will not unreasonably interfere with activities described in Addendum “A.”

Section 4: Payments.

- (a) The Lessee must make all rent payments to the Lessor in accordance with applicable regulations in 30 CFR Part 585, unless otherwise specified in Addendum “B.”
- (b) The Lessee must make all operating fee payments to the Lessor in accordance with applicable regulations in 30 CFR Part 585, as specified in Addendum “B.”

Section 5: Plans.

The Lessee may conduct those activities described in Addendum “A” only in accordance with a SAP or COP approved by the Lessor. The Lessee may not deviate from an approved SAP or COP except as provided in applicable regulations in 30 CFR Part 585.

Section 6: Associated Project Easements.

Pursuant to 30 CFR 585.200(b), the Lessee has the right to one or more project easements, without further competition, for the purpose of installing gathering, transmission, and distribution cables, pipelines, and appurtenances on the OCS, as necessary for the full enjoyment of the lease, and under applicable regulations in 30 CFR Part 585. As part of submitting a COP for approval, the Lessee may request that one or more easement(s) be granted by the Lessor. If the Lessee requests that one or more easement(s) be granted when submitting a COP for approval, such project easements will be granted by the Lessor in accordance with the Act and applicable regulations in 30 CFR Part 585 upon approval of the COP in which the Lessee has demonstrated a need for such easements. Such easements must be in a location acceptable to the Lessor, and will be subject to such conditions as the Lessor may require. The project easement(s) that would be issued in conjunction with an approved COP under this lease will be described in Addendum “D” to this lease, which will be updated as necessary.

Section 7: Conduct of Activities.

The Lessee must conduct, and agrees to conduct, all activities in the leased area in accordance with an approved SAP or COP, and with all applicable laws and regulations.

The Lessee further agrees that no activities authorized by this lease will be carried out in a manner that:

- (a) could unreasonably interfere with or endanger activities or operations carried out under any lease or grant issued or maintained pursuant to the Act, or under any other license or approval from any Federal agency;
- (b) could cause any undue harm or damage to the environment;
- (c) could create hazardous or unsafe conditions; or
- (d) could adversely affect sites, structures, or objects of historical, cultural, or archaeological significance, without notice to and direction from the Lessor on how to proceed.

Section 8: Violations, Suspensions, Cancellations, and Remedies.

If the Lessee fails to comply with (1) any of the applicable provisions of the Act or regulations, (2) the approved SAP or COP, or (3) the terms of this lease, including associated Addenda, the Lessor may exercise any of the remedies that are provided under the Act and applicable regulations, including, without limitation, issuance of cessation of

operations orders, suspension or cancellation of the lease, and/or the imposition of penalties, in accordance with the Act and applicable regulations.

The Lessor may also cancel this lease for reasons set forth in subsection 5(a)(2) of the Act (43 U.S.C. § 1334(a)(2)), or for other reasons provided by the Lessor pursuant to 30 CFR 585.437.

Non-enforcement by the Lessor of a remedy for any particular violation of the applicable provisions of the Act or regulations, or the terms of this lease, will not prevent the Lessor from exercising any remedy, including cancellation of this lease, for any other violation or for the same violation occurring at any other time.

Section 9: Indemnification.

The Lessee hereby agrees to indemnify the Lessor for, and hold the Lessor harmless from, any claim caused by or resulting from any of the Lessee's operations or activities on the leased area or project easements or arising out of any activities conducted by or on behalf of the Lessee or its employees, contractors (including Operator, if applicable), subcontractors, or their employees, under this lease, including claims for:

- a. loss or damage to natural resources,
- b. the release of any petroleum or any Hazardous Materials,
- c. other environmental injury of any kind,
- d. damage to property,
- e. injury to persons, and/or
- f. costs or expenses incurred by the Lessor.

Except as provided in any addenda to this lease, the Lessee will not be liable for any losses or damages proximately caused by the activities of the Lessor or the Lessor's employees, contractors, subcontractors, or their employees. The Lessee must pay the Lessor for damage, cost, or expense due and pursuant to this section within 90 days after written demand by the Lessor. Nothing in this lease will be construed to waive any liability or relieve the Lessee from any penalties, sanctions, or claims that would otherwise apply by statute, regulation, operation of law, or could be imposed by the Lessor or other government agency acting under such laws.

"Hazardous Material" means

1. Any substance or material defined as hazardous, a pollutant, or a contaminant under the *Comprehensive Environmental Response, Compensation, and Liability Act* at 42 U.S.C. §§ 9601(14) and (33);
2. Any regulated substance as defined by the Resource Conservation and Recovery Act ("RCRA") at 42 U.S.C. § 6991 (7), whether or not contained in or released from underground storage tanks, and any hazardous waste regulated under RCRA pursuant to 42 U.S.C. §§ 6921 *et seq.*;
3. Oil, as defined by the Clean Water Act at 33 U.S.C. § 1321(a)(1) and the Oil Pollution Act at 33 U.S.C. § 2701(23); or

4. Other substances that applicable Federal, state, tribal, or local laws define and regulate as “hazardous.”

Section 10: Financial Assurance.

The Lessee must provide and maintain at all times a surety bond(s) or other form(s) of financial assurance approved by the Lessor in the amount specified in Addendum “B.” As required by the applicable regulations in 30 CFR Part 585, if, at any time during the term of this lease, the Lessor requires additional financial assurance, then the Lessee must furnish the additional financial assurance required by the Lessor in a form acceptable to the Lessor within 90 days after receipt of the Lessor’s notice of such adjustment.

Section 11: Assignment or Transfer of Lease.

This lease may not be assigned or transferred in whole or in part without written approval of the Lessor. The Lessor reserves the right, in its sole discretion, to deny approval of the Lessee’s application to transfer or assign all or part of this lease. Any assignment will be effective on the date the Lessor approves the Lessee’s application. Any assignment made in contravention of this section is void.

Section 12: Relinquishment of Lease.

The Lessee may relinquish this entire lease, or any officially designated subdivision thereof by filing with the appropriate office of the Lessor a written relinquishment application, in accordance with applicable regulations in 30 CFR Part 585. No relinquishment of this lease or any portion thereof will relieve the Lessee or its surety of the obligations accrued hereunder, including but not limited to, the responsibility to remove property and restore the leased area pursuant to section 13 of this lease and applicable regulations.

Section 13: Removal of Property and Restoration of the Leased Area on Termination of Lease.

Unless otherwise authorized by the Lessor, pursuant to the applicable regulations in 30 CFR Part 585, the Lessee must remove or decommission all facilities, projects, cables, pipelines, and obstructions and clear the seafloor of all obstructions created by activities on the leased area, including any project easements within two years following lease termination, whether by expiration, cancellation, contraction, or relinquishment, in accordance with any approved SAP, COP, or approved Decommissioning Application, and applicable regulations in 30 CFR Part 585.

Section 14: Safety Requirements.

The Lessee must:

- a. maintain all places of employment for activities authorized under this lease in compliance with occupational safety and health standards and, in addition, free

from recognized hazards to employees of the Lessee or of any contractor or subcontractor operating under this lease;

- b. maintain all operations within the leased area in compliance with regulations in 30 CFR Part 585 and orders from the Lessor and other Federal agencies with jurisdiction, intended to protect persons, property and the environment on the OCS; and
- c. provide any requested documents and records, which are pertinent to occupational or public health, safety, or environmental protection, and allow prompt access, at the site of any operation or activity conducted under this lease, to any inspector authorized by the Lessor or other Federal agency with jurisdiction.

Section 15: Debarment Compliance.

The Lessee must comply with the Department of the Interior's non-procurement debarment and suspension regulations set forth in 2 CFR Parts 180 and 1400 and must communicate the requirement to comply with these regulations to persons with whom it does business related to this lease by including this requirement in all relevant contracts and transactions.

Section 16: Equal Opportunity Clause.

During the performance of this lease, the Lessee must fully comply with paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended (reprinted in 41 CFR 60-1.4(a)), and the implementing regulations, which are for the purpose of preventing employment discrimination against persons on the basis of race, color, religion, sex, or national origin. Paragraphs (1) through (7) of section 202 of Executive Order 11246, as amended, are incorporated in this lease by reference.

Section 17: Certification of Nonsegregated Facilities.

By entering into this lease, the Lessee certifies, as specified in 41 CFR 60-1.8, that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. As used in this certification, the term "facilities" means, but is not limited to, any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees. Segregated facilities include those that are segregated by explicit directive or those that are in fact segregated on the basis of race, color, religion, sex, or national origin, because of habit, local custom, or otherwise; provided, that separate or single-user restrooms and necessary dressing or sleeping areas must be provided to assure privacy as appropriate. The Lessee further agrees that it will obtain identical certifications from proposed contractors and subcontractors prior to awarding contracts or subcontracts unless they are exempt under 41 CFR 60-1.5.

Section 18: Notices.

All notices or reports provided from one party to the other under the terms of this lease must be in writing, except as provided herein and in the applicable regulations in 30 CFR Part 585. Written notices must be delivered to the party's Lease Representative, as specifically listed in Addendum "A," either electronically, by hand, by facsimile, or by United States first class mail, adequate postage prepaid. Either party may notify the other of a change of address by doing so in writing. Until notice of any change of address is delivered as provided in this section, the last recorded address of either party will be deemed the address for all notices required under this lease. For all operational matters, notices must be provided to the party's Operations Representative, as specifically listed in Addendum "A," as well as the Lease Representative.


Section 19: Severability Clause.

If any provision of this lease is held unenforceable, all remaining provisions of this lease will remain in full force and effect.

Section 20: Modification.

Unless otherwise authorized by the applicable regulations in 30 CFR Part 585, this lease may be modified or amended only by mutual agreement of the Lessor and the Lessee. No such modification or amendment will be binding unless it is in writing and signed by duly authorized signatories of the Lessor and the Lessee.

RES America Developments Inc.

Lessee


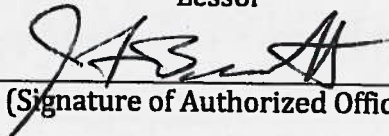
(Signature of Authorized Officer)
Brian Evans

(Name of Signatory)
President

(Title)
1/11/16

(Date)

The United States of America

Lessor


(Signature of Authorized Officer)
James F. Bennett

(Name of Signatory)
Program Manager, Office of
Renewable Energy Programs

(Title)
2/4/16

(Date)

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

ADDENDUM "A"

DESCRIPTION OF LEASED AREA AND LEASE ACTIVITIES

Lease Number OCS-A 0498

I. Lessor and Lessee Contact Information

Lessee Company Number: 15021

(a) Lessor's Contact Information

	Lease Representative	Operations Representative
Title	Program Manager	<i>SAME AS LEASE REPRESENTATIVE</i>
Address	U.S. Department of the Interior Bureau of Ocean Energy Management 45600 Woodland Road Mail Stop VAM-OREP Sterling, VA 20166	
Phone	(703) 787-1300	
Fax	(703) 787-1708	
Email	renewableenergy@boem.gov	

(b) Lessee's Contact Information

	Lease Representative	Operations Representative
Name	<i>DR. CAROLYN HEEPS</i>	<i>SAME AS LEASE REPRESENTATIVE</i>
Title	<i>DEVELOPMENT STRATEGY MANAGER</i>	
Address	<i>11101 W. 120th AVE. STE. 400 BROOMFIELD, CO 80021</i>	
Phone	<i>(617) 535-7639</i>	
Fax	<i>(303) 439-4299</i>	
Email	<i>carolyn.heeps@rcs-offshore.com</i>	

II. Description of Leased Area

The total acreage of the lease area is approximately 64,944 hectares (160,480 acres)

This area is subject to later adjustment, in accordance with applicable regulations (e.g., contraction, relinquishment, etc.).

Lease OCS-A 0498

The following Blocks or portions of Blocks lying within Official Protraction Diagram Wilmington NJ18-02 and Salisbury NJ18-05 are depicted on the map below and comprise 64,944 hectares (160,480 acres), more or less.

Official Protraction Diagram Wilmington NJ18-02

- 1) Block 6833, E1/2, SE1/4 of NW1/4, SW1/4
- 2) Block 6834, NW1/4 of SW1/4, S1/2 of SW1/4
- 3) Block 6883, W1/2
- 4) Block 6884, SW1/4 of NE1/4, NW1/4, S1/2
- 5) Block 6885, SW1/4, SW1/4 of SE1/4
- 6) Block 6931, SE1/4 of NE1/4, SE1/4 of SW1/4, SE1/4
- 7) Block 6932, N1/2
- 8) Block 6933, All of Block
- 9) Block 6934, All of Block
- 10) Block 6935, All of Block
- 11) Block 6936, SW1/4 of NW1/4, SW1/4, SW1/4 of SE1/4
- 12) Block 6982, S1/2
- 13) Block 6983, All of Block
- 14) Block 6984, All of Block
- 15) Block 6985, All of Block
- 16) Block 6986, N1/2, SW1/4, N1/2 of SE1/4, SW1/4 of SE1/4
- 17) Block 6987, SW1/4 of NW1/4
- 18) Block 7030, E1/2, NE1/4 of NW1/4, S1/2 of NW1/4, SW1/4
- 19) Block 7031, S1/2
- 20) Block 7032, All of Block
- 21) Block 7033, All of Block
- 22) Block 7034, All of Block
- 23) Block 7035, N1/2, SW1/4, N1/2 of SE1/4, SW1/4 of SE1/4
- 24) Block 7036, N1/2 of NW1/4, SW1/4 of NW1/4
- 25) Block 7080, All of Block
- 26) Block 7081, All of Block
- 27) Block 7082, All of Block
- 28) Block 7083, All of Block
- 29) Block 7084, N1/2, SW1/4, N1/2 of SE1/4, SW1/4 of SE1/4
- 30) Block 7085, N1/2 of NW1/4, SW1/4 of NW1/4
- 31) Block 7131, All of Block
- 32) Block 7132, All of Block
- 33) Block 7133, N1/2, SW1/4, N1/2 of SE1/4, SW1/4 of SE1/4
- 34) Block 7134, N1/2 of NW1/4, SW1/4 of NW1/4

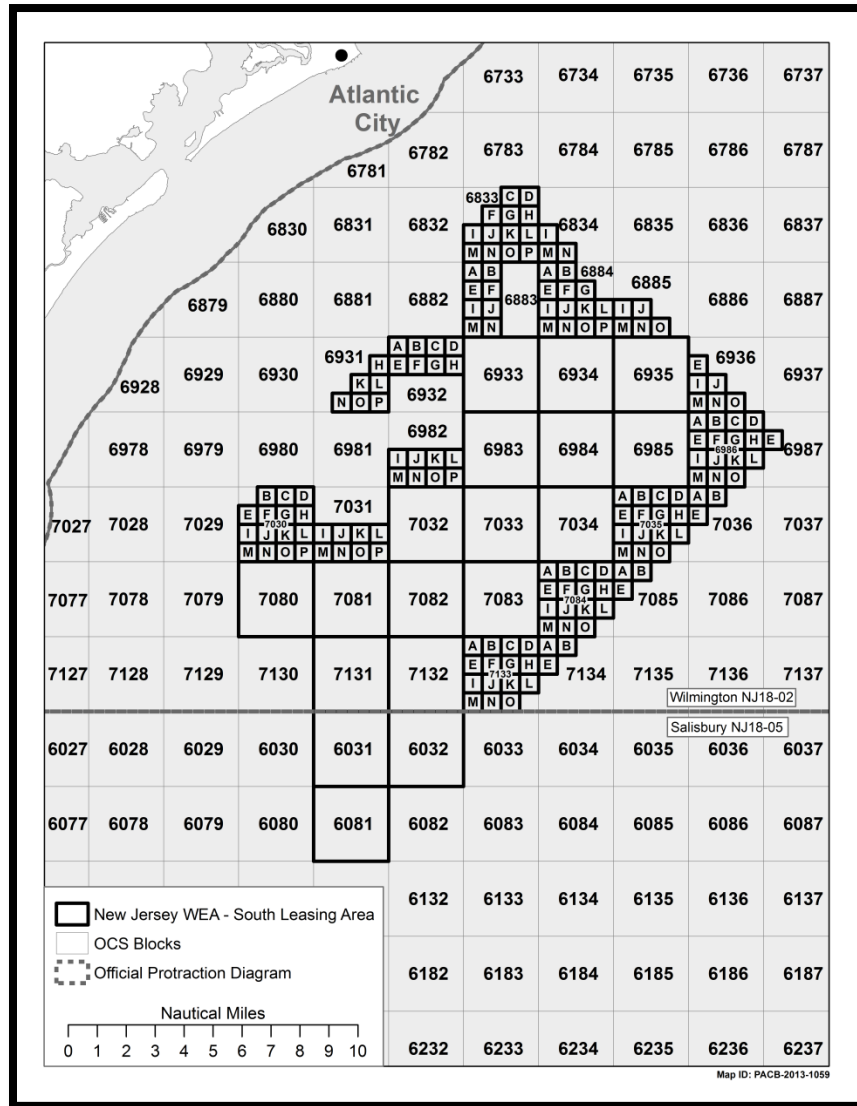
Official Protraction Diagram Salisbury NJ18-05

- 35) Block 6031, All of Block
- 36) Block 6032, All of Block

Form BOEM-0008 (September 2015)

Previous Editions are Obsolete.

37) Block 6081, All of Block



Map of Lease OCS-A 0498

III. Renewable Energy Resource

Wind

IV. Description of the Project

A project to generate energy using wind turbine generators and any associated resource assessment activities, located on the OCS in the leased area, as well as associated offshore substation platforms, inner array cables, and subsea export cables.

V. Description of Project Easement(s)

Once approved, the Lessor will incorporate Lessee's project easement(s) in this lease as Addendum "D."

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

ADDENDUM “B”

LEASE TERM AND FINANCIAL SCHEDULE

Lease Number OCS-A 0498

I. Lease Term

The duration of each term of the lease is described below. The terms may be extended or otherwise modified in accordance with applicable regulations in 30 CFR Part 585.

Lease Term	Duration
Preliminary Term	1 year
Site Assessment Term	5 years
Operations Term	25 years

Schedule: Addendum C includes a schedule and reporting requirements for conducting site characterization activities.

Renewal: The Lessee may request renewal of the operations term of this lease, in accordance with applicable regulations in 30 CFR Part 585. The Lessor, at its discretion, may approve a renewal request to conduct substantially similar activities as were originally authorized under this lease or in an approved plan. The Lessor will not approve a renewal request that involves development of a type of renewable energy not originally authorized in the lease. The Lessor may revise or adjust payment terms of the original lease as a condition of lease renewal.

Unless otherwise described below, the Preliminary Term begins on the Effective Date of this lease for leases issued competitively. Unless otherwise described below, for noncompetitively issued leases, the Site Assessment Term begins on the Effective Date of this lease. The Operations Term begins on the date that the Lessor approves the Lessee’s Construction and Operations Plan (COP).

II. Definitions

“Available for Commercial Operations” means the status of an individual wind generation turbine on or after the first day that it engages in Commercial Operations on the lease until the day when it is permanently decommissioned. These dates are determined by the COP.

“Commercial Operations” means the generation of electricity or other energy product for commercial use, sale, or distribution.

“Commercial Operation Date,” or “COD,” refers to the date on which the Lessee first begins Commercial Operations on the lease.

“Delivery Point” is the meter identified in the COP where the Lessee’s facility interconnects with the electric grid to deliver electricity for sale.

“Lease Issuance Date” refers to the date on which this lease has been signed by *both* the Lessee and the Lessor.

“Effective Date” has the same meaning as “effective date” in BOEM regulations provided in 30 CFR 585.237.

“End Date” refers to the earlier of a) the last calendar day of the last month of the Operations Term; or b) the date on which the lease terminates in the event of a lease termination.

“Lease Anniversary” refers to the anniversary of the Effective Date of the lease.

III. Payments

Unless otherwise authorized by the Lessor in accordance with the applicable regulations in 30 CFR Part 585, the Lessee must make payments as described below.

(a) **Rent.** The Lessee must pay rent as described below:

Rent payments prior to the COD, or prior to the lease End Date in the event that the lease terminates prior to the COD, are calculated by multiplying the acres in the leased area by the rental rate per acre as follows:

Lease OCS-A 0498

- Acres in Project Area: 160,480
- Annual Rental Rate: \$3.00 per acre or fraction thereof
- Rental Fee for Entire Project Area: \$3.00 x 160,480 = \$481,440

The first year’s rent payment of \$481,440 is due within 45 days of the date that the lease is received by the Lessee for execution, in accordance with 30 CFR 585.503. Rent for the entire leased area for the next year and for each subsequent year is due on or before each Lease Anniversary through the year in which the COD occurs. The rent for each year subsequent to the COD on the imputed portion of the lease not authorized for Commercial Operations is due on or before each Lease Anniversary. The imputed portion of the lease that is not authorized for Commercial Operations at each Lease Anniversary in year t , S_t , and the corresponding Adjusted Annual Rent Payment will be determined as follows:

$$(A) S_t = \left(1 - \frac{M'_t}{MAX(M'_t: \text{for all } t \geq 2)} \right)$$

(B) *Adjusted Annual Rent Payment* = S_t * *Rental Fee for Entire Leased Area*

Where:

S_t = Portion of the lease not authorized for Commercial Operations in year t based on the definition of t in Section III (b) (4) below.

M'_t = Actual Nameplate capacity expressed in megawatts (MW) rounded to the nearest second decimal in year t of Commercial Operations on the lease as defined in Section III (b) (4) below, prior to any adjustments as specified in the most recent approved COP for turbine maintenance, replacements, repowering, or decommissioning. For our purposes nameplate capacity is the maximum rated electric output the turbines of the wind farm facility under commercial operations can produce at their rated wind speed designated by the turbine's manufacturer.

$MAX(M'_t)$ = Highest value of M'_t projected in the most recent approved version of the COP to be achieved in any year of Commercial Operations on the lease.

The Adjusted Annual Rent Payment calculated in Equation (A) herein, will be rounded up to the nearest dollar. The annual rent payments will be set forth in Addendum "E" when the COP is initially approved or subsequently revised.

Consider an example of a 1,000 MW project on a lease with an Effective Date of January 1, 2014 and a COD of January 1, 2022 on a lease area consisting of 100,000 acres as follows:

Payment (Jan. 1 st)	M'_t (MW)	$MAX(M'_t)$ (MW)	$\left(1 - \frac{M'_t}{MAX(M'_t)}\right)$	Rental Fee for Entire Area	Payment Amount
2014	0	1,000	1.0	\$300,000	\$300,000
...
2021	0		1.0		\$300,000
2022	500		0.5		\$150,000
2023	500		0.5		\$150,000
2024	500		0.5		\$150,000
2025	800		0.2		\$60,000
2026	800		0.2		\$60,000
2027	800		0.2		\$60,000
2028	1,000		0.0		\$0

In the event a revised COP is approved by BOEM with an alternative installation schedule that differs from the previously-approved COP, the Lessee must make subsequent payments based on the revised installation schedule. In addition, the Lessee must make a payment equal to the sum of any incremental annual rent payments that would have been due at the Lease Anniversary of prior years based on the differences between the Initial Installation Schedules specified in the previously-approved COP and the revised COP, plus interest on the annual balances, in accordance with 30 CFR 1218.54.

Consider an example whereby the initial COP specified an installation schedule with all 1,000 MW online at the COD, i.e., M'_t is 1,000 MW at COD. The following table demonstrates how the back rent payments would be calculated if the project was initially scheduled as a single phase, but then later determined to be the three-phase project as shown in the previous example in a revised COP approved prior to the payment due on January 1, 2023.

Payment (Jan. 1 st)	Initial M'_t (MW)	Revised M'_t (MW)	Single-Phase Payment Amount	Three-Phase Payment Amount	Back Rent Payment Amount	Subsequent Rent Payment Amount
2014	0	0	\$300,000	\$300,000	\$0	\$0
...
2021	0	0	\$300,000	\$300,000	\$0	\$0
2022	1,000	500	\$0	\$150,000	\$150,000	\$0
2023	1,000	500	\$0	\$150,000	\$0	\$150,000
2024	1,000	500	\$0	\$150,000	\$0	\$150,000
2025	1,000	800	\$0	\$60,000	\$0	\$60,000
2026	1,000	800	\$0	\$60,000	\$0	\$60,000
2027	1,000	800	\$0	\$60,000	\$0	\$60,000
2028	1,000	1,000	\$0	0	\$0	\$0

The last rent payment prior to Commercial Operations being authorized on the entire lease area, i.e., the year in which the value of S_t is equal to zero, or prior to the lease End Date, in the event that the lease terminates prior to Commercial Operations being authorized on the entire lease area, will represent the final rent payment, unless a revised COP identifying an alternative maximum initial capacity is approved by BOEM. All rent payments, including the last rent payment, are payable for the full year and will not be prorated to the COD or other installation milestones. The COD is equivalent to the authorization date for the first phase of development on the lease, to be updated based on the initial or revised approved COP documentation. The schedule of rent payments on the lease is defined in Addendum "E". All rent payments must be made as required in 30 CFR 1218.51. Late rent payments will be charged interest in accordance with 30 CFR 1218.54.

(1) ***Project Easement.***

Rent for any project easement(s) is described in Addendum "D".

(2) ***Relinquishment.***

If the Lessee submits an application for relinquishment of a portion of the leased area within the first 45 calendar days following the date that the lease is received by the Lessee for execution, and the Lessor approves that application, no rent payment will be due on that relinquished portion of the leased area. Later relinquishments of any leased area will reduce the Lessee's rent payments due the year following the Lessor's approval of the relinquishment, through a reduction in the Acres in Leased Area, the corresponding Rental Fee for the Entire Leased Area, and any related Adjusted Annual Rent Payments.

(b) ***Operating Fee.*** The Lessee must pay an operating fee as described below:

(1) Initial Operating Fee Payment.

The Lessee must pay an initial prorated operating fee within 45 calendar days after the COD. The initial operating fee payment covers the first year of Commercial Operations on the lease and will be calculated in accordance with the following subsection (4), using an operating fee rate of 0.02 and a capacity factor of 0.4.

(2) Annual Operating Fee Payments.

The Lessee must pay the operating fee for each subsequent year of Commercial Operations on or before each Lease Anniversary following the formula in subsection (4). The Lessee must calculate each operating fee annually subsequent to the initial operating fee payment using an operating fee rate of 0.02 through the twenty-five year operations term of the lease. The capacity factor of 0.4 will remain in effect until the Lease Anniversary of the year in which the Lessor adjusts the capacity factor.

(3) Final Operating Fee Payment.

The final operating fee payment is due on the Lease Anniversary prior to the End Date. The final operating fee payment covers the last year of Commercial Operations on the lease and will be calculated in accordance with the formula in subsection (4) as follows.

(4) The formula for calculating the operating fee in year *t*.

F_t	=	M_t	*	H	*	C_p	*	P_t	*	r_t
(annual operating fee)		(nameplate capacity)		(hours per year)		(capacity factor)		(power price)		(operating fee rate)

Where:

$t =$	the year of Commercial Operations on the lease starting from each Lease Anniversary, where t equals 1 represents the year beginning on the Lease Anniversary prior to, or on, the COD.
$F_t =$	the dollar amount of the annual operating fee in year t .
$M_t =$	<p>the nameplate capacity expressed in megawatts (MW) rounded to the nearest second decimal place in year t of Commercial Operations on the lease.</p> <p>The value of M_t, reflecting the availability of turbines, will be determined based on the COP. This value will be adjusted to reflect any modifications to the COP approved by BOEM as of the date each operating fee payment is due, in accordance with the calculation in Equation 1, for each year of Commercial Operations on the lease.</p> $(1) M_t = \sum_{w=1}^{W_t} \left(N_w * \left[\frac{\left(\sum_{d=1}^D E_{w,t,d} \right)}{D} \right] \right)$

Where:

W_t = Number of individual wind generation turbines, w , that will be available for Commercial Operations during any day of the year, t , per the COP.

N_w = Nameplate capacity of individual wind generation turbine, w , per the COP expressed in MW.

$E_{w,t,d}$ = Indicates whether individual wind generation turbine, w , will be available for Commercial Operations on day d of year t . The value is set to 1 for any day in year t for which the condition is true, i.e., the wind turbine will be available for Commercial Operations, and zero for any day in year t for which the condition is false, i.e., the wind turbine will not be available for Commercial Operations. The month of February is always assumed to have 28 days for purposes of this calculation, where March 1st will be counted as the first day of Commercial Operations if Commercial Operations commence on February 29th of a leap year.

D = Days in the year set equal to 365 in all years for purposes of this calculation.

M_t may be reduced only in the event that installed capacity is permanently decommissioned per the COP. M_t will not be changed in response to routine or unplanned maintenance of units, including the temporary removal of a nacelle for off-site repair or replacement with a similar unit.

EXAMPLE: Assume that the Lease Anniversary is January 1st, the COD is July 1, 2018, that the facility will ultimately have 100 individual wind generation turbines with a nameplate capacity of 5.0 MW each, and that the COP specifies the following, cumulative installation schedule for wind turbines to become available for Commercial Operations:

- July 1, 2018 (COD): 20 turbines (20 new units);
- October 1, 2018: 45 turbines (25 new units);
- January 1, 2019: 50 turbines (5 new units);
- July 1, 2019: 65 turbines (15 new units);
- January 1, 2020: 95 turbines (30 new units);
- February 29, 2020: 100 turbines (5 new units).

Further assume that the COP calls for 50 of the turbines to be decommissioned after September 30, 2039 ($t = 22$), and that the remaining turbines are decommissioned at the End Date of March 15, 2040 ($t = 23$).

The value of M_t would be estimated as demonstrated in Table 1a for each year of Commercial Operations on the lease in this example.

Table 1a: Example of M_t Calculations for Installation and Decommissioning

t	Turbines	MW	Commercial Operations Period	Comm. Ops. Days	Days in Year	Share of Days	MW	M_t
1	20	100	Jul. 1 st to Dec. 31 st	184	365	50.41%	50.41	81.92
	25	125	Oct. 1 st to Dec. 31 st	92		25.21%	31.51	
2	50	250	Jan. 1 st to Dec. 31 st	365		100.00%	250.00	287.81
	15	75	Jul. 1 st to Dec. 31 st	184		50.41%	37.81	
3	95	475	Jan. 1 st to Dec. 31 st	365		100.00%	475.00	495.96
	5	25	Mar. 1 st to Dec. 31 st	306		83.84%	20.96	
4	100	500	Jan. 1 st to Dec. 31 st	365		100.00%	500.00	500.00
...
21	100	500	Jan. 1 st to Dec. 31 st	365		100.00%	500.00	500.00
22	50	250	Jan. 1 st to Dec. 31 st	365		100.00%	250.00	436.98
	50	250	Jan. 1 st to Sep. 30 th	273		74.79%	186.98	
23	50	250	Jan. 1 st to Mar. 15 th	74	20.27%	50.68	50.68	

To illustrate the impact of decommissioning a portion of the individual wind generation turbines and replacing them with units of greater capacity on the calculation of M_t , assume that at the end of March 31, 2022, 10 units are to be made unavailable due to decommissioning, and that the incremental units have a capacity of 7.0 MW and are expected to be made available for Commercial Operations on September 15, 2022. The impact on M_t in 2022 and in subsequent years starting in 2023 and continuing until decommissioning is illustrated in Table 1b.

Table 1b: Example of M_t Calculations for Repowering

t	Turbines	MW	Commercial Operations Period	Comm. Ops. Days	Days in Year	Share of Days	MW	M_t
5	90 (5.0)	450	Jan. 1 st to Dec. 31 st	365	365	100.00%	450.00	483.04
	10 (5.0)	50	Jan. 1 st . to Mar. 31 st	90		24.66%	12.33	
	10 (7.0)	70	Sep. 15 th to Dec. 31 st	108		29.59%	20.71	
6	90 (5.0)	450	Jan. 1 st to Dec. 31 st	365		100.00%	450.00	520.00
	10 (7.0)	70	Jan. 1 st to Dec. 31 st	365		100.00%	70.00	

H = the number of hours in the year for billing purposes which is equal to 8,760 for all years of Commercial Operations on the lease.

C_p = the “Capacity Factor” in Performance Period p, which represents the share of anticipated generation of the facility that is delivered to where the Lessee’s facility interconnects with the electric grid (i.e. the Delivery Point) relative to its generation at continuous full power operation at the nameplate capacity, expressed as a decimal between zero and one.

The initial Capacity Factor (C_0) will be set to 0.4.

The Capacity Factor will be subject to adjustment at the end of each Performance Period. After the sixth year of Commercial Operations on the lease has concluded, the Lessee will utilize data gathered from years two through six of Commercial Operations on the lease and propose a revised Capacity Factor to be used to calculate subsequent annual payments, as provided for in Table 2 below. A similar process will

be conducted at the conclusion of each five-year Performance Period, thereafter.

Table 2: Definition of Performance Periods

Performance Period (<i>p</i>)	Commercial Operation Years (<i>t</i>)	Payments Affected by Adjustment	Capacity Factor (<i>c</i>)	Date End Year (<i>n</i>)
0 (COD)	Not Applicable	Payments 1 to 7	$c_0=0.4$	--
1	$t = 2$ to 6	Payments 8 to 12	c_1	$n_1=6$
2	$t = 7$ to 11	Payments 13 to 17	c_2	$n_2=11$
3	$t = 12$ to 16	Payments 18 to 22	c_3	$n_3=16$
4	$t = 17$ to 21	Payments 23 to End Date	c_4	$n_4=21$

Adjustments to the Capacity Factor

The Actual 5-year Average Capacity Factor (X_p) is calculated for each Performance Period after COD ($p > 0$) per Equation 2 below. X_p represents the sum of actual, metered electricity generation in megawatt-hours (MWh) at the Delivery Point to the electric grid (A_t) divided by the amount of electricity generation in MWh that would have been produced if the facility operated continuously at its full, stated capacity (M_t) in all of the hours (h_t) in each year, t , of the corresponding five-year period.

$$(2) X_p = \frac{\sum_{t=n-4}^n A_t}{\left(\sum_{t=n-4}^n M_t * h_t \right)}$$

Where:

M_t = Nameplate Capacity as defined above.

n = “Date End Year” value for the Performance Period, p , as defined in Table 2.

p = Performance Period as defined in Table 2.

A_t = Actual generation in MWh associated with each year of Commercial Operations, t , on the lease that is transferred at the Delivery Point; Delivery Point meter data supporting the values submitted for annual actual generation must be recorded, preserved, and timely provided to the Lessor upon request. In the event the Lessor requires the assistance of the Lessee in obtaining information useful in verifying such information, for example by waiving confidentiality with respect to data held by a third party, such assistance must be timely provided.

h_t = Hours in the year on which the Actual Generation associated with each year of Commercial Operations, t , on the lease is based; this definition of “hours in the year” differs from the definition of H in the operating fee equation above. The hours in the year for purposes of calculating the capacity factor must take into account the actual number of hours, including those in leap years.

The value of the Capacity Factor at the outset of Commercial Operations ($p = 0$) is set to 0.4 as stated in equation 3:

	<p>(3) $c_0 = 0.4$</p> <p>The value of the Capacity Factor corresponding to each Performance Period (c_p) is set according to equations 4A, 4B, and 4C as follows for each value of p greater than zero. The Capacity Factor is set equal to the Actual 5-Year Average Capacity Factor provided that the value falls within a range of plus or minus 10 percent of the previous Performance Period's capacity factor.</p> <p>(4A) $c_p = X_p$ for $c_{p-1} * 0.90 \leq X_p \leq c_{p-1} * 1.10$</p> <p>(4B) $c_p = c_{p-1} * 0.90$ for $X_p < c_{p-1} * 0.90$</p> <p>(4C) $c_p = c_{p-1} * 1.10$ for $X_p > c_{p-1} * 1.10$</p> <p>All values for c_p must be rounded to the nearest third decimal place.</p>
<p>$P_t =$</p>	<p>a measure of the annual average wholesale electric power price expressed in dollars per MW hour.</p> <p>The Lessee must calculate P_t at the time each operating fee payment is due, subject to approval by the Lessor. The Base Price (P_b) must equal the weighted average of the peak and off-peak spot price indices for the PJM West power market for the most recent year of data available as reported by the Federal Energy Regulatory Commission (FERC) as part of its annual <u>State of the Markets Report</u> with specific reference to the summary entitled "Electric Market Overview: Regional Spot Prices." The latest version of this report is available at http://www.ferc.gov/market-oversight/mkt-electric/overview/elec-ovr-3yr-regional-elec-pr.pdf. If FERC stops publishing its annual <u>State of the Markets Report</u> required for this calculation or the specified location of the data changes over time, the Lessor must specify an alternate source of data and methodology that is approximately equivalent.</p> <p>The peak and off-peak price indices must be weighted 52.0% and 48.0%, respectively, for purposes of estimating the weighted index value for the Base Price. For example, in the March 12, 2012 State of the Markets Report the peak price index for 2011 was \$51.99/MWh and the corresponding off-peak price index for 2011 was \$33.94/MWh, resulting in a weighted index value for the Base Price for 2011 (P_{2011}) of \$43.33/MWh ($=52.0\% * \\$51.99 / \text{MWh} + 48.0\% * \\$33.94 / \text{MWh}$). The calculation of P_b must be rounded up to the nearest, second decimal place.</p> <p>The Base Price must be adjusted for inflation from the year associated with the published spot prices to the year in which the operating fee is to be paid as shown in equations (5A) and (5B):</p>

$$(5A) P_t = P_b * \left(\frac{GDP_g}{GDP_{g-1}} \right)^{y-g} * \left(\frac{GDP_g}{GDP_b} \right) \text{ for } g \geq b$$

$$(5B) P_t = P_b * \left(\frac{GDP_g}{GDP_{g-1}} \right)^{y-b} \text{ for } g < b$$

Where:

GDP = Annual Implicit Price Deflators for Gross Domestic Product (GDP deflator index) from Table 1.1.9, line 1, in the Survey of Current Business published by the U.S. Bureau of Economic Analysis (BEA) in the specified period; the latest version of this data is currently available at:

<http://bea.gov/iTable/iTable.cfm?ReqID=9&step=1>

If BEA stops publishing the data required for this calculation, or the specified location of the data changes over time, the Lessor will specify an alternative source of data and methodology that it considers approximately equivalent.

b = The most recent year for which FERC reports the appropriate electricity spot price data expressed as the year, e.g., 2009, as in the illustrative example below.

g = The most recent year for which GDP deflator indices are available from BEA expressed as the year, e.g., 2011, as in the illustrative example below.

y = The year the annual payment is due expressed as the year corresponding to the value of *t* described above, e.g., 2013, as in the illustrative example below.

The second term on the right-hand side of equation (5A) represents a projected annual change in the index of inflation employing the last year of data available from BEA, while the third term represents the cumulative change in the index of inflation up to the previous year.

Example:

The following hypothetical example is provided to illustrate the methodology using Equation (5A) and the illustrative values provided for *b*, *g*, and *y* above, applied to historical GDP deflator data. If the actual FERC price indices are based on 2009 data and the GDP deflator indices are available for 2011, the inflation-adjusted price index value would be determined from equation (5A) as follows for a payment occurring in *y* = 2013:

	$P_{t(2013)} = P_{2009} * \left(\frac{GDP_{2011}}{GDP_{2010}} \right)^{2013-2011} * \left(\frac{GDP_{2011}}{GDP_{2009}} \right) = \frac{\$40.69}{\text{MWh}} * \left(\frac{113.361}{110.992} \right)^2 * \left(\frac{113.361}{109.729} \right) = \frac{\$43.85}{\text{MWh}}$ <p>Note: The current GDP deflator index is 113.361 for 2011, 110.992 for 2010, and 109.729 for 2009 (last revised by BEA on April 27, 2012); the FERC index price for the year 2009 is \$38.40/MWh (On-peak: \$44.60/MWh; Off-peak: \$31.68/MWh; last revised March 12, 2012). Although 2011 FERC prices are available, the 2009 prices are used in the example to illustrate the concept.</p> <p>The Lessor and the Lessee will use the latest FERC price indices and revised BEA GDP deflator index values at the time the pricing adjustments are made. The source of data used in the calculations must be noted in the Lessee's documentation supporting their estimate of the value of P_t each year for review and approval by the Lessor.</p>
r _t =	the operating fee rate of 0.02 (2%).

(c) Reporting, Validation, Audits, and Late Payments.

The Lessee must submit the values used in the operating fee formula to the Lessor at the time the annual payment based on these values is made. Submission of this and other reporting, validation, audit and late payment information as requested by the Lessor must be sent to the Lessor using the contact information indicated in Addendum "A", unless the Lessor directs otherwise. Failure to submit the estimated values and the associated documentation on time to the Lessor may result in penalties as specified in applicable regulations.

Within 60 days of the submission by the Lessee of the annual payment, the Lessor will review the data submitted and validate that the operating fee formula was applied correctly. If the Lessor validation results in a different operating fee amount, the amount of the annual operating fee payment will be revised to the amount determined by the Lessor.

The Lessor also reserves the right to audit the meter data upon which the Actual 5-year Average Capacity Factor is based at any time during the lease term. If, as a result of such audit, the Lessor determines that any annual operating fee payment was calculated incorrectly, the Lessor has the right to correct any errors and collect the correct annual operating fee payment amount.

If the annual operating fee is revised downward as a result of the Lessee's calculations, as validated by the Lessor, or an audit of meter data conducted by the Lessee or Lessor, the Lessee will be refunded the difference between the amount of the payment received and the amount of the revised annual operating fee, without interest. Similarly, if the payment amount is revised upward, the Lessee is required to pay the difference between the amount

of the payment received and the amount of the revised annual operating fee, plus interest on the balance, in accordance with 30 CFR § 1218.54.

Late operating fee payments will be charged interest in accordance with 30 CFR § 1218.54.

III. Financial Assurance

The Lessor will base the determination for the amounts of all SAP, COP, and decommissioning financial assurance requirements on estimates of the cost to meet all accrued lease obligations. The Lessor determines the amount of supplemental and decommissioning financial assurance requirements on a case-by-case basis. The amount of financial assurance required to meet all lease obligations includes:

(a) **Initial Financial Assurance.** Prior to the Lease Issuance date and in accordance with 30 CFR 585.515, the Lessee must provide an initial lease-specific bond, or other approved means of meeting the Lessor's initial financial assurance requirements in an amount equal to \$100,000.

(b) **Additional Financial Assurance.** In addition to the initial lease-specific financial assurance previously discussed and as set forth in 30 CFR 585.516-.517, the Lessee is also required to provide additional supplemental bonds associated with the SAP and COP, or other form of financial assurances and a decommissioning bond or other approved means of meeting the Lessee's decommissioning obligations.

(1) Prior to the Lessor's approval of a SAP, the Lessor will require an additional supplemental bond or other form of financial assurance in an amount determined by the Lessor based on the complexity, number, and location of all facilities involved in the site assessment activities planned in the SAP, and estimates of the costs to meet all accrued obligations, in accordance with applicable BOEM regulations (30 CFR 585.515-537). The supplemental financial assurance requirement is in addition to the initial lease-specific financial assurance in the amount of \$100,000. The Lessee may meet these obligations by providing a new bond or other acceptable form of financial assurance, or increasing the amount of its existing bond or other form of financial assurance.

(2) Prior to the Lessor's approval of a COP, the Lessor may require an additional supplemental bond or other form of financial assurance in an amount determined by the Lessor based on the complexity, number, location of all facilities, activities and Commercial Operations planned in the COP, and estimates of the costs to meet all accrued obligations, in accordance with applicable BOEM regulations (30 CFR 585.515-537). The supplemental financial assurance requirement is in addition to the initial lease-specific financial assurance in the amount of \$100,000, and any additional supplemental bond or other form of financial assurance required with the SAP. The Lessee may meet these obligations by providing a new bond or

other acceptable form of financial assurance, or increasing the amount of its existing bond or other form of financial assurance.

- (3) The Lessor will require a decommissioning bond or other form of financial assurance based on the anticipated decommissioning costs in accordance with applicable BOEM regulations (30 CFR 585.515-537). The decommissioning obligation must be guaranteed through an acceptable form of financial assurance, and will be due on a schedule to be approved by BOEM in accordance with the number of facilities installed or being installed.

(c) **Adjustments to Financial Assurance Amounts.** The Lessor reserves the right to adjust the amount of any financial assurance requirement (initial, supplemental, or decommissioning) associated with this lease and/or reassess the Lessee's cumulative lease obligations, including decommissioning obligations, at any time. If the Lessee's cumulative lease obligations and/or liabilities increase or decrease, the Lessor will notify the Lessee of any intended adjustment to the financial assurance requirements and provide the Lessee an opportunity to comment in accordance with applicable BOEM regulations.

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

ADDENDUM “C”

LEASE-SPECIFIC TERMS, CONDITIONS, AND STIPULATIONS

Lease Number OCS-A 0498

The Lessee’s rights to conduct activities on the leased area are subject to the following terms, conditions, and stipulations. The Lessor reserves the right to impose additional terms, and conditions incident to the future approval or approval with modifications of plans, such as a Site Assessment Plan (SAP) or Construction and Operations Plan (COP).

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1 DEFINITIONS

- 1.1 Definition of “Archaeological Resource”: The term “archaeological resource” has the same meaning as “archaeological resource” in BOEM regulations provided in 30 CFR 585.112.
- 1.2 Definition of “Dynamic Management Area (DMA)”: The term “DMA” refers to a temporary area designated by the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) and a circle around a confirmed North Atlantic right whale sighting. The radius of this circle expands incrementally with the number of whales sighted, and a buffer is included beyond the core area, as designated by NMFS, to allow for whale movement. NOAA NMFS may apply mandatory or voluntary speed restrictions. Information regarding the location and status of applicable DMAs is available from the NMFS Office of Protected Resources.
- 1.3 Definition of “Effective Date”: The term “Effective Date” has the same meaning as “effective date” in BOEM regulations provided in 30 CFR 585.237.
- 1.4 Definition of “Geological and Geophysical Survey (G&G Survey)”: The term “G&G Survey” serves as a collective term for surveys that collect data on the geology of the seafloor and landforms below the seafloor. High resolution geophysical surveys and geotechnical (sub-bottom) exploration are components of G&G surveys.
- 1.5 Definition of “Geotechnical Exploration”: The term “Geotechnical Exploration” is used to refer to the process by which site-specific sediment and underlying geologic data are acquired from the seafloor and the sub-bottom and includes geotechnical surveys utilizing borings, vibracores, and cone penetration tests.
- 1.6 Definition of “High Resolution Geophysical Survey (HRG Survey)”: The term “HRG Survey” means a marine remote-sensing survey using, but not limited to, such equipment as side-scan sonar, magnetometer, shallow and medium (seismic) penetration sub-bottom profiler systems, narrow beam or multibeam echo sounder, or other such equipment employed for the purposes of providing data on geological conditions, identifying shallow hazards, identifying archaeological resources, charting bathymetry, and gathering other site characterization information.
- 1.7 Definition of “Listed Species”: The term “listed species,” also referred to in adjective form as “listed,” means any species of fish, wildlife, or plant that has been determined to be endangered or threatened under Section 4 of the Endangered Species Act. Listed species are provided in 50 CFR 17.11-17.12.
- 1.8 Definition of “Plan”: The term “plan” means a Site Assessment Plan (SAP) and/or a Construction and Operations Plan (COP).

- 1.9 Definition of “Protected-Species Observer”: The term “protected-species observer,” or “observer,” means an individual who is trained in the shipboard identification and behavior of protected species. Protected species include marine mammals (those protected under the Endangered Species Act and those protected under the Marine Mammal Protection Act) and sea turtles.
- 1.10 Definition of “Ramp-up”: The term “ramp-up” means the process of incrementally increasing the acoustic source level of the survey equipment when conducting HRG surveys until it reaches the operational setting.
- 1.11 Definition of “Site Assessment Activities”: The term “site assessment activities” or “site assessment,” has the same meaning as “site assessment activities” in 30 CFR 585.112.
- 1.12 Definition of “Qualified Marine Archaeologist”: The term “qualified marine archaeologist” means a person retained by the Lessee who meets the Secretary of the Interior's Professional Qualifications Standards for Archaeology (48 FR 44738-44739), and has experience analyzing marine geophysical data.
- 1.13 Definition of “Take”: The terms “Takes,” “Taken,” and “Taking” have the same meaning as the term “take” as defined in 16 U.S.C. § 1532(19).

2 SCHEDULE

2.1 Site Characterization

2.1.1 Survey Plan(s).

- 2.1.1.1 **SAP Survey Plan.** If the Lessee proposes to conduct site assessment activities during the site assessment term, then the Lessee must submit to the Lessor a complete SAP survey plan. This SAP survey plan must include details and timelines of the surveys to be conducted on this lease necessary to support the submission of a SAP (i.e., necessary to satisfy the information requirements in the applicable regulations, including but not limited to 30 CFR 585.606, 610, 611).

The Lessee must submit the SAP survey plan to the Lessor at least 30 calendar days prior to the date of the required pre-survey meeting with the Lessor (See 2.1.2). The Lessor may require that the Lessee modify the SAP survey plan to address any comments the Lessor submits to the Lessee on the contents of the SAP survey plan in a manner deemed satisfactory to the Lessor prior to the commencement of any survey activities described in the SAP survey plan.

- 2.1.1.2 COP Survey Plan. The Lessee must submit to the Lessor a complete COP survey plan providing details and timelines of the surveys to be conducted on this lease that are necessary to support the submission of a COP (i.e., necessary to satisfy the information requirements in the applicable regulations, including but not limited to 30 CFR 585.621, 626, 627). The Lessee must submit the COP survey plan to the Lessor at least 30 calendar days prior to the date of the pre-survey meeting with the Lessor (see 2.1.2). The Lessee must modify the COP survey plan to address any comments the Lessor submits to the Lessee on the contents of the COP survey plan in a manner deemed satisfactory to the Lessor prior to the commencement of these survey activities.
- 2.1.2 Pre-Survey Meeting(s) with the Lessor. At least 60 days prior to the initiation of survey activities in support of the submission of a plan (i.e., SAP and/or COP), the Lessee must hold a pre-survey meeting with the Lessor to discuss the applicable proposed survey plan and timelines. The Lessee must ensure the presence at this meeting of a Qualified Marine Archaeologist (see 4.2.2). The Lessor may request the presence of other relevant subject matter experts at this meeting.

2.2 Progress Reporting

- 2.2.1 Semi-Annual Progress Report. The Lessee must submit to the Lessor a semi-annual (i.e., every six months) progress report through the duration of the site assessment term that includes a brief narrative of the overall progress since the last progress report, or – in the case of the first report – since the Effective Date. The progress report must include an update regarding progress in executing the activities included in the survey plan(s), and include as an enclosure an updated survey plan(s) accounting for any modifications in schedule.

3 NATIONAL SECURITY AND MILITARY OPERATIONS

The Lessee must comply with the requirements specified in stipulations 3.1, 3.2, and 3.3 when conducting site characterization activities in support of plan submittal.

3.1 Hold and Save Harmless

The Lessee assumes all risks of damage or injury to persons or property that occurs in, on, or above the OCS, to any persons or to any property of any person or persons in connection with any activities being performed by the Lessee in, on, or above the OCS, if such injury or damage to such person or property occurs by reason of the activities of any agency of the United States Government, its contractors, or subcontractors, or any of its officers, agents or employees, being conducted as a part of, or in connection with, the programs or activities of the individual military command headquarters (hereinafter “the appropriate command headquarters”) listed in the contact information provided as an Enclosure to this lease, whether compensation for such damage or injury might be due under a theory of strict or absolute liability or otherwise.

Notwithstanding any limitation of the Lessee's liability in Section 9 of the lease, the Lessee assumes this risk whether such injury or damage is caused in whole or in part by any act or omission, regardless of negligence or fault, of the United States, its contractors or subcontractors, or any of its officers, agents, or employees. The Lessee further agrees to indemnify and save harmless the United States against all claims for loss, damage, or injury in connection with the programs or activities of the command headquarters, whether the same be caused in whole or in part by the negligence or fault of the United States, its contractors, or subcontractors, or any of its officers, agents, or employees and whether such claims might be sustained under a theory of strict or absolute liability or otherwise.

3.2 Evacuation or Suspension of Activities

- 3.2.1 General. The Lessee hereby recognizes and agrees that the United States reserves and has the right to temporarily suspend operations and/or require evacuation on this lease in the interest of national security pursuant to Section 3(c) of this lease.
- 3.2.2 Notification. Every effort will be made by the appropriate military agency to provide as much advance notice as possible of the need to suspend operations and/or evacuate. Advance notice will normally be given before requiring a suspension or evacuation. Temporary suspension of operations may include but is not limited to the evacuation of personnel and appropriate sheltering of personnel not evacuated.

“Appropriate sheltering” means the protection of all Lessee personnel for the entire duration of any Department of Defense activity from flying or falling objects or substances, and will be implemented by an order (oral and/or written) from the BOEM Office of Renewable Energy Programs (OREP) Program Manager, after consultation with the appropriate command headquarters or other appropriate military agency or higher Federal authority. The appropriate command headquarters, military agency or higher authority will provide information to allow the Lessee to assess the degree of risk to, and provide sufficient protection for, the Lessee's personnel and property.

- 3.2.3 Duration. Suspensions or evacuations for national security reasons will not generally exceed 72 hours; however, any such suspension may be extended by order of the OREP Program Manager. During such periods, equipment may remain in place, but all operations, if any, must cease for the duration of the temporary suspension if so directed by the OREP Program Manager. Upon cessation of any temporary suspension, the OREP Program Manager will immediately notify the Lessee that such suspension has terminated and operations on the leased area can resume.

- 3.2.4 Lessee Point-of-Contact for Evacuation/Suspension Notifications. The Lessee must inform the Lessor of the persons/offices to be notified to implement the terms of 3.2.2 and 3.2.3.
- 3.2.5 Coordination with Command Headquarters. The Lessee must establish and maintain early contact and coordination with the appropriate command headquarters (see Contact Information for Reporting Requirements Sheet), in order to avoid or minimize the potential to conflict with and minimize the potential effects of conflicts with military operations.
- 3.2.6 Reimbursement. The Lessee is not entitled to reimbursement for any costs or expenses associated with the suspension of operations or activities or the evacuation of property or personnel in fulfillment of the military mission in accordance with 3.2.1 through 3.2.5 above.

3.3 Electromagnetic Emissions

Prior to entry into any designated defense operating area, warning area, or water test area for the purpose of commencing survey activities undertaken to support SAP or COP submittal, the Lessee must enter into an agreement with the commander of the appropriate command headquarters to coordinate the electromagnetic emissions associated with such survey activities. The Lessee must ensure that all electromagnetic emissions associated with such survey activities are controlled as directed by the commander of the appropriate command headquarters.

4 STANDARD OPERATING CONDITIONS

4.1 General Requirements

- 4.1.1 Prior to the start of operations, the Lessee must hold a briefing to establish responsibilities of each involved party, define the chains of command, discuss communication procedures, provide an overview of monitoring procedures, and review operational procedures. This briefing must include all relevant personnel, crew members and protected species observers (PSO). New personnel must be briefed as they join the work in progress.
- 4.1.2 The Lessee must ensure that all vessel operators and crew members, including PSOs, are familiar with, and understand, the requirements specified in Addendum C.
- 4.1.3 The Lessee must ensure that a copy of the standard operating conditions (Addendum C) is made available on every project-related vessel.

4.1.4 Marine Trash and Debris Prevention. The Lessee must ensure that vessel operators, employees, and contractors actively engaged in activity in support of plan (i.e., SAP and COP) submittal are briefed on marine trash and debris awareness and elimination, as described in the Bureau of Safety and Environmental Enforcement (BSEE) Notice to Lessees and Operators (NTL) No. 2012-G01 (“Marine Trash and Debris Awareness and Elimination”) or any NTL that supersedes this NTL, except that the Lessor will not require the Lessee, vessel operators, employees, and contractors to undergo formal training or post placards. The Lessee must ensure that these vessel operator employees and contractors are made aware of the environmental and socioeconomic impacts associated with marine trash and debris and their responsibilities for ensuring that trash and debris are not intentionally or accidentally discharged into the marine environment. The above-referenced NTL provides information the Lessee may use for this awareness briefing.

4.2 Vessel Strike Avoidance Measures

- 4.2.1 The Lessee must ensure that all vessels conducting activities in support of plan submittal comply with the vessel-strike avoidance measures specified in stipulations 4.2.1 through 4.2.9.1, except under extraordinary circumstances when complying with these requirements would put the safety of the vessel or crew at risk.
- 4.2.2 The Lessee must ensure that vessel operators and crews maintain a vigilant watch for cetaceans, pinnipeds, and sea turtles and slow down or stop their vessel to avoid striking these protected species.
- 4.2.3 The Lessee must ensure that all vessel operators comply with 10 knot (18.5 km/hr) speed restrictions in any Dynamic Management Area (DMA).
- 4.2.4 The Lessee must ensure that vessels 65 feet in length or greater, operating from November 1 through July 31, operate at speeds of 10 knots (18.5 km/hr) or less.
- 4.2.5 The Lessee must ensure that all vessel operators reduce vessel speed to 10 knots or less when mother/calf pairs, pods, or large assemblages of non-delphinoid cetaceans are observed near an underway vessel.
- 4.2.6 North Atlantic right whales.
- 4.2.6.1 The Lessee must ensure all vessels maintain a separation distance of 500 meters (1,640 ft) or greater from any sighted North Atlantic right whale.
- 4.2.6.2 The Lessee must ensure that the following avoidance measures are taken if a vessel comes within 500 meters (1,640 ft) of any North Atlantic right whale:

- 4.2.6.2.1 If underway, vessels must steer a course away from any sighted North Atlantic right whale at 10 knots (18.5 km/h) or less until the 500 meters (1,640 ft) minimum separation distance has been established (except as provided in 4.2.6.2.2).
- 4.2.6.2.2 If a North Atlantic right whale is sighted in a vessel's path, or within 100 meters (328 ft) to an underway vessel, the underway vessel must reduce speed and shift the engine to neutral. The lessee must not engage engines until the North Atlantic right whale has moved outside the vessel's path and beyond 100 meters (328 ft), at which point the Lessee must comply with 4.2.6.2.1.
- 4.2.6.2.3 If a vessel is stationary, the vessel must not engage engines until the North Atlantic right whale has moved beyond 100 meters (328 ft), at which point the Lessee must comply with 4.2.6.2.1.

4.2.7 Non-delphinoid cetaceans other than the North Atlantic right whale.

- 4.2.7.1 The Lessee must ensure all vessels maintain a separation distance of 100 meters (328 ft) or greater from any sighted non-delphinoid cetacean.
- 4.2.7.2 The Lessee must ensure that the following avoidance measures are taken if a vessel comes within 100 meters (328 ft) of any sighted non-delphinoid cetacean:
 - 4.2.7.2.1 If any non-delphinoid cetacean is sighted, the vessel underway must reduce speed and shift the engine to neutral, and must not engage the engines until the non-delphinoid cetacean has moved outside of the vessel's path and beyond 100 meters (328 ft).
 - 4.2.7.2.2 If a vessel is stationary, the vessel must not engage engines until the sighted non-delphinoid cetacean has moved out of the vessel's path and beyond 100 meters (328 ft).

4.2.8 Delphinoid cetaceans and Pinnipeds.

- 4.2.8.1 The Lessee must ensure that all vessels underway do not divert to approach any delphinoid cetacean and/or pinniped.
- 4.2.8.2 The Lessee must ensure that if a delphinoid cetacean and/or pinniped approaches any vessel underway, the vessel underway must avoid excessive speed or abrupt changes in direction to avoid injury to the delphinoid cetacean and/or pinniped.

4.2.9 Sea Turtles.

- 4.2.9.1 The Lessee must ensure all vessels maintain a separation distance of 50 meters (164 ft) or greater from any sighted sea turtle.

4.3 Archaeological Survey Requirements

- 4.3.1 Archaeological Survey Required. The Lessee must provide the results of an archaeological survey with its plans.
- 4.3.2 Qualified Marine Archaeologist. The Lessee must ensure that the analysis of archaeological survey data collected in support of plan submittal and the preparation of archaeological reports in support of plan submittal are conducted by a Qualified Marine Archaeologist.
- 4.3.3 Tribal Pre-Survey Meeting. The Lessee must invite by certified mail the Narragansett Indian Tribe, the Shinnecock Indian Nation, and the Lenape Tribe of Delaware to a tribal pre-survey meeting. The purpose of this meeting will be for the Lessee and the Lessee's Qualified Marine Archaeologist to discuss the Lessee's Survey Plan and consider requests to monitor portions of the archaeological survey and the geotechnical exploration activities, including the visual logging and analysis of geotechnical samples (*e.g.*, cores). This meeting must be held subsequent to the pre-survey meeting with the Lessor (see 2.1.2). Invitation to the tribal pre-survey meeting must be made at least 15 calendar days prior to the date of the proposed tribal pre-survey meeting. The meeting must be scheduled for a date at least 30 calendar days prior to the commencement of survey activities performed in support of a plan and at a location and time that affords the participants a reasonable opportunity to participate. The anticipated date for the meeting must be identified in the timeline of activities described in the applicable survey plan (see 2.1.1).
- 4.3.4 Geotechnical Exploration.
- 4.3.4.1 The Lessee may only conduct geotechnical exploration activities in support of plan submittal in locations where an analysis of the results of geophysical surveys has been completed. This analysis must include a determination by a Qualified Marine Archaeologist as to whether any potential archaeological resources are present in the area.
- 4.3.4.2 Except as allowed by the Lessor under 4.3.6, the geotechnical exploration activities must avoid potential archaeological resources by a minimum of 50 meters, and the Qualified Marine Archaeologist must calculate the avoidance distance from the maximum discernible extent of the archaeological resource.
- 4.3.4.3 Upon completion of geotechnical exploration activities, a Qualified Marine Archaeologist must certify, in the Lessee's archaeological reports, that such activities did not impact potential historic properties identified as a result of the HRG surveys performed in support of plan submittal, except as follows: in the event that the geotechnical exploration activities did impact potential historic properties identified in the archaeological surveys without the Lessor's prior approval, the Lessee and the Qualified Marine Archaeologist who prepared the report must instead provide a statement documenting the extent of these impacts.

- 4.3.5 Monitoring and Avoidance. The Lessee must inform the Qualified Marine Archaeologist that he or she is permitted to be present during HRG surveys and bottom-disturbing activities performed in support of plan submittal to ensure avoidance of potential archaeological resources, as determined by the Qualified Marine Archaeologist (including bathymetric, seismic, and magnetic anomalies; side scan sonar contacts; and other seafloor or sub-surface features that exhibit potential to represent or contain potential archaeological sites or other historic properties). In the event that the Qualified Marine Archaeologist indicates that he or she wishes to be present, the Lessee must facilitate the Qualified Marine Archaeologist's presence, as requested by the Qualified Marine Archaeologist, and provide the Qualified Marine Archaeologist the opportunity to inspect data quality.
- 4.3.6 No Impact without Approval. The Lessee must not knowingly impact a potential archaeological resource without the Lessor's prior approval.
- 4.3.7 Post-Review Discovery Clauses. If the Lessee, while conducting site characterization activities in support of plan submittal, discovers a potential archaeological resource, such as the presence of a shipwreck (*e.g.*, a sonar image or visual confirmation of an iron, steel, or wooden hull, wooden timbers, anchors, concentrations of historic objects, piles of ballast rock), prehistoric artifacts, or relict landforms within the project area, the Lessee must:
- 4.3.7.1 Immediately halt seafloor/bottom-disturbing activities within the area of discovery;
 - 4.3.7.2 Notify the Lessor within 24 hours of discovery;
 - 4.3.7.3 Notify the Lessor in writing via report to the Lessor within 72 hours of its discovery;
 - 4.3.7.4 Keep the location of the discovery confidential and take no action that may adversely affect the archaeological resource until the Lessor conducts an evaluation and instructs the applicant on how to proceed; and
 - 4.3.7.5 Conduct any additional investigations as directed by the Lessor to determine if the resource is eligible for listing in the National Register of Historic Places (30 CFR 585.802(b)). The Lessor will direct the Lessee to conduct such investigations if: (1) the site has been impacted by the Lessee's project activities; or (2) impacts to the site or to the area of potential effect cannot be avoided. If investigations indicate that the resource is potentially eligible for listing in the National Register of Historic Places, the Lessor will tell the Lessee how to protect the resource or how to mitigate adverse effects to the site. If the Lessor incurs costs in protecting the resource, under Section 110(g) of the National Historic Preservation Act, the Lessor may charge the Lessee reasonable costs for carrying out preservation responsibilities under the OCS Lands Act (30 CFR 585.802(c-d)).

4.4 Geological and Geophysical (G&G) Survey Requirements

- 4.4.1 The Lessee must ensure that all vessels conducting activity in support of a plan (*i.e.*, SAP and COP) submittal comply with the geological and geophysical survey requirements specified in 4.4, except under extraordinary circumstances when complying with these requirements would put the safety of the vessel or crew at risk.
- 4.4.2 Visibility. The Lessee must not conduct G&G surveys in support of plan submittal at any time when lighting or weather conditions (*e.g.*, darkness, rain, fog, sea state) prevent visual monitoring of the high-resolution geophysical (HRG) survey exclusion zone (see 4.4.6) or the geotechnical exploration exclusion zone (see 4.4.7), except as allowed under 4.4.3.
- 4.4.3 Modification of Visibility Requirement. If the Lessee intends to conduct G&G survey operations in support of plan submittal at night or when visual observation is otherwise impaired, it must submit to the Lessor an alternative monitoring plan detailing the alternative monitoring methodology (*e.g.*, active or passive acoustic monitoring technologies). The alternative monitoring plan must demonstrate the effectiveness of the methodology proposed to the Lessor's satisfaction. The Lessor may, after consultation with National Marine Fisheries Service (NMFS), decide to allow the Lessee to conduct G&G surveys in support of plan submittal at night or when visual observation is otherwise impaired using the proposed alternative monitoring methodology.
- 4.4.4 Protected-Species Observer. The Lessee must ensure that the exclusion zone for all G&G surveys performed in support of plan submittal is monitored by NMFS-approved protected species observers around the sound source. The number of protected species observers must be sufficient to effectively monitor the exclusion zone at all times. In order to ensure effective monitoring, observers must be on watch for no more than 4 consecutive hours, with at least a 2-hour break after a 4-hour watch, unless otherwise accepted by the Lessor. Observers must be on watch for no more than 12 hours in a 24-hour period. The Lessee must provide to the Lessor a list of observers and their résumés no later than 45 calendar days prior to the scheduled start of surveys performed in support of plan submittal. The Lessee must provide the résumés of additional observers at least 15 calendar days prior to each observer's start date. The Lessor will send the observer qualifications to NMFS for approval.
- 4.4.5 Observation Location and Optical Device Availability. The Lessee must ensure that monitoring occurs from the highest available vantage point on the associated operational platform, allowing for 360-degree scanning. The Lessee must ensure that each observer has access to reticle binoculars and other suitable equipment to adequately perceive and monitor protected species within the exclusion zone during surveys conducted in support of plan submittal.

- 4.4.6 High-Resolution Geophysical (HRG) Surveys. The following stipulations are specific to HRG surveys conducted in support of plan submittal where one or more acoustic sound source is operating at frequencies below 200 kHz:
- 4.4.6.1 Establishment of Default Exclusion Zone. The Lessee must ensure that a protected species observer monitors a 200-meter default exclusion zone for cetaceans, pinnipeds, and sea turtles. In the case of the North Atlantic right whale, the Lessee must observe a minimum separation distance of 500 m (1,640 ft), as required under 4.2.6.1.
- 4.4.6.1.1 If the Lessor determines that the exclusion zone does not encompass the 180 dB Level A harassment threshold calculated for the acoustic source having the highest source level, the Lessor will consult with NMFS and may impose additional, relevant requirements on the Lessee, including, but not limited to, required expansion of this exclusion zone.
- 4.4.6.2 Field Verification of HRG Survey Exclusion Zone. The Lessee must conduct field verification of the exclusion zone for the HRG survey equipment operating below 200 kHz. As part of such field verification, the Lessee must take acoustic measurements at a minimum of two reference locations and in a manner that is sufficient to establish the following: source level (peak at 1 meter) and distance to the 207, 180, 166, 160, and 150 dB(RMS) re 1 μ Pa sound pressure level (SPL) isopleths as well as the 187 dB re 1 μ Pa cumulative sound exposure level (cSEL) and 206 dB_{peak}. The Lessee must take these sound measurements at the reference locations at two depths (i.e., a depth at mid-water and a depth at approximately 1 meter (3.28 ft) above the seafloor). The Lessee must report the field verification results to the Lessor in the SAP and COP Survey Plans, unless otherwise authorized by the Lessor.
- 4.4.6.3 Field Verification Plan for HRG Survey Exclusion Zone. No later than 45 days prior to the commencement of the field verification activities, the Lessee must submit a plan for verifying the sound source levels of any electromechanical survey equipment operating at frequencies below 200 kHz. The plan must demonstrate how the field verification activities will comply with the requirements of 4.4.6.2. Prior to the commencement of the field verification activities, the Lessor may require the Lessee to modify the plan to address any comments the Lessor submits to the Lessee on the contents of the plan in a manner deemed satisfactory to the Lessor.

- 4.4.6.4 Modification of Exclusion Zone Per Lessee Request. The Lessee may use the results from its field verification to request modification of the exclusion zone for the specific HRG survey equipment under consideration. The Lessee must base any proposed new exclusion zone radius on the largest safety zone configuration of the target Level A or Level B harassment acoustic threshold zone as defined by NMFS. The Lessee must use this modified zone for all subsequent use of field-verified equipment. The Lessee may periodically reevaluate the modified zone using the field verification procedures described in 4.4.6.2. The Lessee must obtain Lessor approval of any new exclusion zone before it is implemented.
- 4.4.6.5 Clearance of Exclusion Zone. The Lessee must ensure that active acoustic sound sources are not activated until the protected species observer has reported the exclusion zone clear of all marine mammals and sea turtles for at least 60 minutes.
- 4.4.6.6 Seasonal Management Areas (SMAs) Right Whale Monitoring. The Lessee must ensure that between November 1 and July 31, vessel operators monitor NMFS North Atlantic Right Whale reporting systems (*e.g.*, the Early Warning System, Sighting Advisory System, and Mandatory Ship Reporting System) for the presence of North Atlantic right whales during HRG survey operations.
- 4.4.6.7 Dynamic Management Area (DMA) Shutdown Requirement. The Lessee must ensure that vessels cease HRG survey activities within 24 hours of NMFS establishing a DMA in the Lessee's HRG survey area. The Lessee may resume HRG survey activities in the affected area as soon as the DMA has expired.
- 4.4.6.8 Electromechanical Survey Equipment Ramp-Up. The Lessee must ensure that, when technically feasible, a ramp-up of the electromechanical survey equipment occurs at the start or re-start of HRG survey activities. A ramp-up must begin with the power of the smallest acoustic equipment for the HRG survey at its lowest power output. The power output must be gradually increased and other acoustic sources added in such a way that the source level would rise in steps not exceeding 6 dB per 5-minute period.
- 4.4.6.9 Shutdown for Non-Delphinoid Cetaceans and Sea Turtles. If a non-delphinoid cetacean or sea turtle is sighted at or within the exclusion zone, the Lessee must immediately shut down all the electromechanical survey equipment. The Lessee must ensure that the vessel operator immediately complies with such a call by the observer. Any disagreement or discussion must occur only after shutdown. Subsequent restart of the electromechanical survey equipment must use the ramp-up provisions described in 4.4.6.8 and must only occur following clearance of the exclusion zone of all marine mammals and sea turtles for at least 60 minutes as described in 4.4.6.5.

4.4.6.10 Power Down for Delphinoid Cetaceans and Pinnipeds. If a delphinoid cetacean or pinniped is sighted at or within the exclusion zone, the Lessee must immediately power down the electromechanical survey equipment to the lowest power output that is technically feasible. The Lessee must ensure that the vessel operator immediately complies with such a call by the observer. Any disagreement or discussion must occur only after power-down. Subsequent restart of the electromechanical survey equipment must use the ramp-up procedures described in 4.4.6.8 and may occur only after (1) the exclusion zone is clear of delphinoid cetaceans and pinnipeds or (2) a determination by the protected species observer after a minimum of 10 minutes of observation that the delphinoid cetacean and/or pinniped is approaching the vessel or towed equipment at a speed and vector that indicates voluntary approach to bow-ride or chase towed equipment.

4.4.6.10.1 Pauses in Electromechanical Survey Sound Source. The Lessee must ensure that if the electromechanical sound source shuts down for reasons other than encroachment into the exclusion zone by a non-delphinoid cetacean or sea turtle, including, reasons such as, but not limited to, mechanical or electronic failure, resulting in the cessation of the sound source for a period greater than 20 minutes, restart of the electromechanical survey equipment commences only after clearance of the exclusion zone, as described in 4.4.6.5, and the implementation of ramp-up procedures, as described in 4.4.6.8. If the shutdown is less than 20 minutes, the equipment may be restarted as soon as practicable at its operational level as long as visual surveys were continued diligently throughout the silent period and the exclusion zone remained clear of marine mammals and sea turtles. If visual surveys were not continued diligently during a shutdown of 20 minutes or less, the Lessee must restart the electromechanical survey equipment following clearance of the exclusion zone, as described in 4.4.6.5, and implementation of ramp-up procedures, as described in 4.4.6.8.

4.4.7 Geotechnical (Sub-bottom) Exploration. Stipulations specific to geotechnical exploration conducted in support of plan submittal are provided in 4.4.7.1 through 4.4.7.6.

4.4.7.1 Establishment of Default Exclusion Zone. The Lessee must ensure that a protected species observer monitors a 200-meter (656 ft) default exclusion zone for all marine mammals and sea turtles around any vessel conducting geotechnical surveys.

- 4.4.7.2 Modification of Default Exclusion Zone Per Lessee Request. If the Lessee wishes to modify the 200 m (656 ft) default exclusion zone for specific geotechnical exploration equipment, the Lessee must submit a plan for verifying the sound source levels of the specific geotechnical exploration equipment to the Lessor. The plan must demonstrate how the field verification activities will comply with the requirements of 4.4.7.3. The Lessor may require that the Lessee modify the plan to address any comments the Lessor submits to the Lessee on the contents of the plan in a manner deemed satisfactory to the Lessor prior to the commencement of field verification activities. Any new exclusion zone radius proposed by the Lessee must be based on the largest safety zone configuration of the target Level A or Level B harassment acoustic threshold zone as defined by NMFS. The Lessee must use this modified zone for all subsequent use of field-verified equipment. The Lessee may periodically reevaluate the modified zone using the field verification procedures described in 4.4.7.3. The Lessee must obtain Lessor approval of any new exclusion zone before it is implemented.
- 4.4.7.3 Field Verification of Geotechnical Exclusion Zone. If the Lessee wishes to modify the existing exclusion zone, the Lessee must conduct field verification of the exclusion zone for specific geotechnical exploration equipment. The Lessee must use the results of the sound measurements from the survey equipment to establish a new exclusion zone, which may be greater than or less than the 200 m (656 ft) default exclusion zone depending on the results of the field tests. As part of such field verification, the Lessee must take acoustic measurements at a minimum of two reference locations and in a manner that is sufficient to establish the following: source level (peak at 1 meter) and distance to the 207, 180, 166, 160, and 150 dB(RMS) re 1 μ Pa sound pressure level (SPL) isopleths as well as the 187 dB re 1 μ Pa cumulative sound exposure level (cSEL) and 206 dB_{peak}. The Lessee must take these sound measurements at the reference locations at two depths (i.e., a depth at mid-water and a depth at approximately 1 meter above the seafloor).
- 4.4.7.4 Clearance of Exclusion Zone. The Lessee must ensure that the geotechnical sound source is not activated until the protected species observer has reported the exclusion zone clear of all marine mammals and sea turtles for 60 minutes.
- 4.4.7.5 Shutdown for Non-Delphinoid Cetaceans and Sea Turtles. If any non-delphinoid cetaceans or sea turtles are sighted at or within the exclusion zone, the Lessee must immediately shut down the geotechnical survey equipment. The vessel operator must comply immediately with such a call by the observer. Any disagreement or discussion should occur only after shutdown. Subsequent restart of the geotechnical survey equipment must only occur following clearance of the exclusion zone as described in 4.4.7.4.

4.4.7.6 Pauses in Geotechnical Survey Sound Source. The Lessee must ensure that if the geotechnical sound source shuts down for reasons other than encroachment into the exclusion zone by a non-delphinoid cetacean or sea turtle, including, but not limited to, mechanical or electronic failure resulting in the cessation of the sound source for a period greater than 20 minutes, restart of the geotechnical survey equipment commences only after clearance of the exclusion zone, as described in 4.4.7.4. If the shutdown is less than 20 minutes, the equipment may be restarted as soon as practicable as long the Lessee has continued visual surveys diligently throughout the silent period and the exclusion zone remained clear of marine mammals and sea turtles. If visual surveys were not continued diligently during a shutdown of 20 minutes or less, the Lessee must restart the geotechnical survey equipment following clearance of the exclusion zone, as described in 4.4.7.4.

4.5 Protected-Species Reporting Requirements

The Lessee must ensure compliance with the following reporting requirements for site characterization activities performed in support of plan submittal, and, where appropriate, must fulfill these requirements using the contact information provided as an Enclosure to this lease, or updated contact information as provided by the Lessor:

4.5.1 Reporting Injured or Dead Protected Species. The Lessee must ensure that sightings of any injured or dead protected species (*e.g.*, marine mammals, sea turtles or sturgeon) are reported to the Lessor, NMFS and the NMFS Northeast Region's Stranding Hotline (866-755-6622 or current) within 24 hours of sighting, regardless of whether the injury or death is caused by a vessel. In addition, if the injury or death was caused by a collision with a project-related vessel, the Lessee must notify the Lessor of the strike within 24 hours. The Lessee must use the form provided in Appendix A to ADDENDUM "C" to report the sighting or incident. If the Lessee's activity is responsible for the injury or death, the Lessee must ensure that the vessel assists in any salvage effort as requested by NMFS.

4.5.2 Reporting Observed Impacts to Protected Species.

4.5.2.1 The Lessee must report any observed takes of listed marine mammals, sea turtles or sturgeon (as defined in 1.13) resulting in injury or mortality within 24 hours to the Lessor and NMFS.

4.5.2.2 The Lessee must report any observations concerning any impacts on Endangered Species Act listed marine mammals, sea turtles or sturgeon to the Lessor and NMFS Northeast Region's Stranding Hotline within 48 hours.

4.5.2.3 The Lessee must record injuries or mortalities using the form provided in Appendix A to ADDENDUM "C".

- 4.5.3 Protected Species Observer Reports. The Lessee must ensure that the protected-species observer record all observations of protected species using standard marine mammal observer data collection protocols. The list of required data elements for these reports is provided in Appendix B to ADDENDUM “C”.
- 4.5.4 Reports of G&G Survey Activities and Observations. The Lessee must provide BOEM and NMFS with reports every 90 calendar days following the commencement of HRG and/or geotechnical exploration activities, and a final report at the conclusion of the HRG and/or geotechnical exploration activities. Each report must include a summary of survey activities, all protected species observer and incident reports (See Appendices A and B), a summary of the survey activities, and an estimate of the number of listed marine mammals and sea turtles observed and/or taken during these survey activities.
- 4.5.5 Marine Mammal Protection Act Authorization(s). If the Lessee is required to obtain an authorization pursuant to section 101(a)(5) of the Marine Mammal Protection Act prior to conducting survey activities, the Lessee must provide to the Lessor a copy of such authorization prior to commencing survey activities, pursuant to 30 CFR 585.801(b).

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

APPENDIX "A"

Lease Number OCS-A 0498

Incident Report: Protected Species Injury or Mortality

Photographs/Video should be taken of all injured or dead animals.

Observer's full name: _____

Reporter's full name: _____

Species Identification: _____

Name and type of platform: _____

Date animal observed: _____ Time animal observed: _____

Date animal collected: _____ Time animal collected: _____

Environmental conditions at time of observation (i.e. tidal stage, Beaufort Sea State, weather):

Water temperature (°C) and depth (m/ft) at site: _____

Describe location of animal and events 24 hours leading up to, including and after, the incident (incl. vessel speeds, vessel activity and status of all sound source use):

Photograph/Video taken: YES / NO If Yes, was the data provided to NMFS? YES / NO
(Please label *species, date, geographic site* and *vessel name* when transmitting photo and/or video)

Date and Time reported to NMFS Stranding Hotline: _____

Sturgeon Information: *(please designate cm/m or inches and kg or lbs)*

Species: _____

Fork length (or total length): _____ Weight: _____

Condition of specimen/description of animal: _____

Fish Decomposed: NO SLIGHTLY MODERATELY SEVERELY

Fish tagged: YES / NO If Yes, please record all tag numbers.

Tag #(s): _____

Genetic samples collected: YES / NO

Genetics samples transmitted to: _____ on ____/____/20....

Sea Turtle Species Information: (please designate cm/m or inches)

Species: _____ Weight (kg or lbs): _____

Sex: Male Female Unknown

How was sex determined?: _____

Straight carapace length: _____ Straight carapace width: _____

Curved carapace length: _____ Curved carapace width: _____

Plastron length: _____ Plastron width: _____

Tail length: _____ Head width: _____

Condition of specimen/description of animal: _____

Existing Flipper Tag Information

Left: _____ Right: _____

PIT Tag#: _____

Miscellaneous:

Genetic biopsy collected: YES NO Photographs taken: YES NO

Turtle Release Information:

Date: _____ Time: _____

Latitude: _____ Longitude: _____

State: _____ County: _____

Remarks: (note if turtle was involved with tar or oil, gear or debris entanglement, wounds, or mutilations, propeller damage, papillomas, old tag locations, etc.) _____

Marine Mammal information: *(please designate cm/m or ft/inches)*

Length of marine mammal (note direct or estimated): _____

Weight (if possible, kg or lbs): _____

Sex of marine mammal (if possible): _____

How was sex determined?: _____

Confidence of Species Identification: SURE UNSURE BEST GUESS

Description of Identification characteristics of marine mammal: _____

Genetic samples collected: YES / NO

Genetic samples transmitted to: _____ on ____ / ____ /20....

Fate of marine mammal: _____

Description of Injuries Observed: _____

Other Remarks/Drawings: _____

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF OCEAN ENERGY MANAGEMENT

APPENDIX “B”

Lease Number OCS-A 0498

REQUIRED DATA ELEMENTS FOR PROTECTED SPECIES OBSERVER REPORTS

The Lessee must ensure that the protected-species observer record all observations of protected species using standard marine mammal observer data collection protocols. The list of required data elements for these reports is provided below:

1. Vessel name;
2. Observers' names and affiliations;
3. Date;
4. Time and latitude/longitude when daily visual survey began;
5. Time and latitude/longitude when daily visual survey ended; and
6. Average environmental conditions during visual surveys including:
 - a. Wind speed and direction;
 - b. Sea state (glassy, slight, choppy, rough, or Beaufort scale);
 - c. Swell (low, medium, high, or swell height in meters); and
 - d. Overall visibility (poor, moderate, good).
7. Species (or identification to lowest possible taxonomic level);
8. Certainty of identification (sure, most likely, best guess);
9. Total number of animals;
10. Number of juveniles;
11. Description (as many distinguishing features as possible of each individual seen, including length, shape, color and pattern, scars or marks, shape and size of dorsal fin, shape of head, and blow characteristics);
12. Direction of animal's travel relative to the vessel (preferably accompanied by a drawing);
13. Behavior (as explicit and detailed as possible, noting any observed changes in behavior);
14. Activity of vessel when sighting occurred.

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ADDENDUM "D"

PROJECT EASEMENT

Lease Number OCS-A 0498

This section includes a description of the Project Easement(s), if any, associated with this lease, and the financial terms associated with it. This section will be updated as necessary.

I. Rent

The Lessee must begin submitting rent payments for any project easement associated with this lease commencing on the date that BOEM approves the Construction and Operations Plan (COP) or modification of the COP describing the project easement. Annual rent for a project easement 200 feet wide, centered on the transmission cable, is \$70.00 per statute mile. For any additional acreage required, the Lessee must also pay the greater of \$5.00 per acre per year or \$450.00 per year.

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ADDENDUM "E"

RENT SCHEDULE

Lease Number OCS-A 0498

This section includes a description of the schedule for rent payments that will be determined after the Construction and Operations Plan (COP) has been approved or approved with modifications. This section will be updated as necessary.

Unless otherwise authorized by the Lessor in accordance with the applicable regulations in 30 CFR Part 585, the Lessee must make rent payments as described below.

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Lease Number OCS-A 0498

CONTACT INFORMATION FOR REPORTING REQUIREMENTS

The following contact information must be used for the reporting and coordination requirements specified in Addendum C, Stipulation 3.2.5:

United States Fleet Forces (USFF) N46
1562 Mitscher Ave, Suite 250
Norfolk, VA 23551
(757) 836-6206

The following contact information must be used for the reporting requirements in Addendum C, Stipulation 4.4:

Reporting Injured or Dead Protected Species

NOAA Fisheries Northeast Region's Stranding Hotline
866-755-6622

All other reporting requirements in Stipulation 4.4

Bureau of Ocean Energy Management
Environment Branch for Renewable Energy
Phone: 703-787-1340
Email: renewable_reporting@boem.gov

National Marine Fisheries Service
Northeast Regional Office, Protected Resources Division
Section 7 Coordinator
Phone: 978-281-9328
Email: incidental.take@noaa.gov; kellie.foster-taylor@noaa.gov

Vessel operators may send a blank email to ne.rw.sightings@noaa.gov for an automatic response listing all current dynamic management areas (DMAs).