Maryland Task Force Meeting Fiscal Terms & Offshore Wind Auction Format 29 January 2013

Fiscal Terms

Overview

- Annual rent
 - First year's payment due within 45 days of lessee receiving lease
 - Subsequent payments due on lease anniversary on portion of lease not authorized for commercial operations
- Annual project easement rent
 - Initial payment due upon approval of the COP
 - Subsequent payments due annually thereafter until the lease terminates
- Annual operating fee
 - Initial fee due within 45 days of commercial operations
 - Subsequent payments due annually thereafter until commercial operations cease
- Financial assurance requirements
 - Prior to lease issuance the Lessee must provide assurance for initial financial obligations on the lease

Annual Rent Payment

- Formula: Leased acreage x \$3 per acre
 - Proposed lease sale acreage offshore Maryland: 79,706 acres
 - Initial annual rent payment: \$239,118
- Rent payments would reflect adjustments for relinquished acreage or phased development at the time a payment is due
- Last rent payment prior to the start of commercial operations will not be pro-rated

Annual Project Easement Rent

- Simplified to same treatment as transmission system
- Formula: \$70 per statute mile x statute miles in easement
- Last annual project easement rent payment prior to lease termination will not be pro-rated

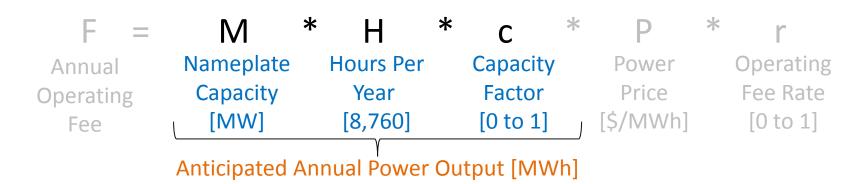


 Formula is based on the value of the *anticipated* annual power output of a project in a regional wholesale power market times an operating fee rate

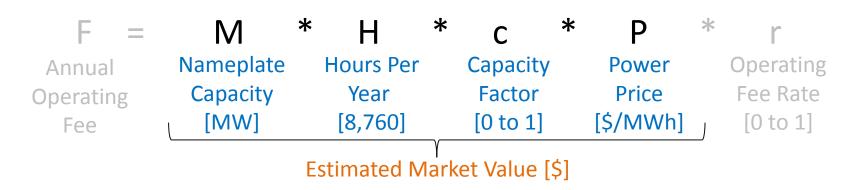


Generation at Continuous Full Power Operation [MWh]

- Nameplate capacity is the planned available capacity measured in megawatts (MW)
 - Based on COP to reflect installation, repowering, and decommissioning activities on the lease



- The capacity factor is the share of anticipated generation relative to its generation at continuous full power operation
 - Value set to 0.400 for first 6 full years of commercial operations
 - Value adjusted in 5-year increments thereafter to reflect actual metered generation over the previous 5 years



- Power price is determined at the time each payment is due based on the latest year's annual spot price index for PJM-West as reported by FERC (in \$/MWh)
 - The 2011 PJM-West price index is \$43.33/MWh which would be adjusted for one year of inflation to \$44.25/MWh for payments in 2012



- Operating fee rate is the share of the estimated market value of the power produced payable to the lessor
 - The operating fee rate is 0.02 through the 8th year of commercial operations on the lease, and 0.04 thereafter

• An example

Nameplate Capacity (M)	500 MW
Hours Per Year (H)	8,760
Generation at continuous full power operation	4.38 million MWh
• Capacity Factor (C)	0.400
Anticipated annual power output	1.752 million MWh
Power Price (P)	\$44.25/MWh
Estimated market value	\$77,526,000
• Operating Fee Rate (r)	0.02
Annual Operating Fee (F)	\$1,550,520

Financial Assurance

- \$100,000 initial financial assurance due prior to lease issuance in the form of a bond or other approved form
- Additional financial assurance is required to cover all decommissioning, operating fees, and other obligations as the lease progresses
 - Upon approval of a SAP
 - Upon approval of a COP
 - Commencement of installation of commercial facilities
 - Past due payment amounts or any other monetary obligations
 - Adjustments to financial assurance amounts

Financial Assurance

- Any bond or other acceptable financial assurance instrument that the lessee provides must:
 - Be payable to BOEM upon demand; and
 - Guarantee compliance with all terms and conditions of the lease, any subsequent approvals and authorizations, and all applicable regulations
- All financial assurance must be in a form approved by BOEM
 - Surety bonds are the primary form of assurance
 - BOEM will consider pledges of other forms of assurance
 - BOEM may also consider your financial strength and reliability or third-party guarantor

Auction Design

Ascending Clock Auction

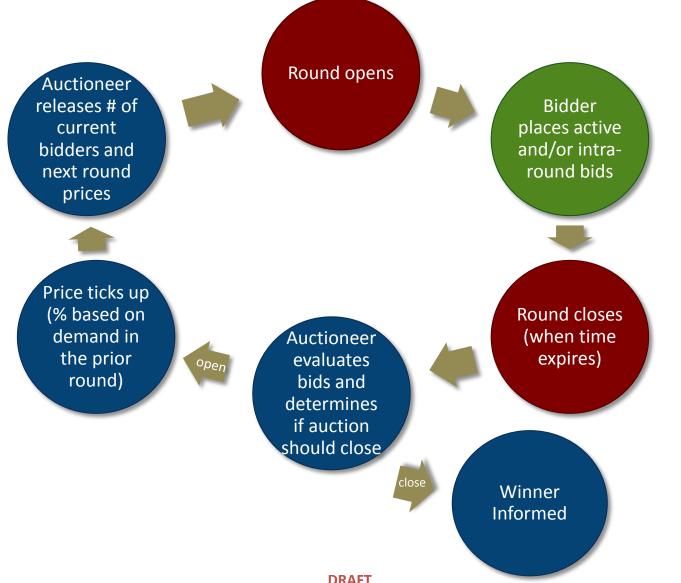
- Sale will be conducted using an internet-based auction system
- Multiple zones (leases) may be offered in the sale
- Bidding will be on a cash bonus basis
- The auction will be conducted over a series of rounds with escalating prices based on demand in each round
 - Simple bidding procedure ensures transparent process
 - Allows for price discovery
 - Discourages harmful bidding practices

- BOEM will set the stated auction "clock" price for each zone at the opening of each round of bidding
- In each round, bidders are allowed to submit a "live" bid for each zone
 - Live bid indicates bidder is willing to pay the current round's stated auction price for that zone
- Number of zones a bidder is able to bid on in first round of the auction is based upon the bidder's bid deposit
 - Subsequent rounds eligibility based on bidder's bidding in the prior round
- Additional rounds occur as long as at least one of the zones has demand greater than one in the current round
 - Otherwise the auction ends

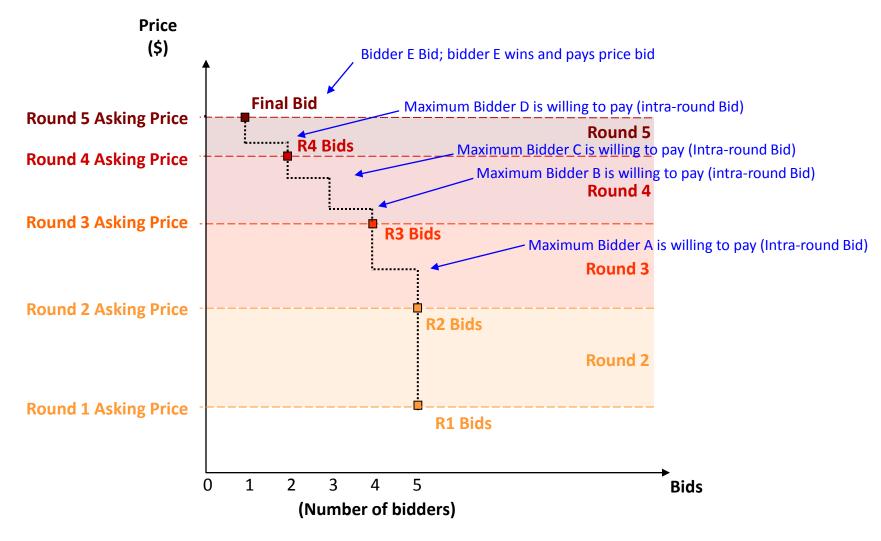
- In each round (after the first round), bidders also have the option to submit an "intra-round" bid based on bid eligibility
 - Single price bidder would be willing to pay for a set of zones (treated as a "package" bid)
 - Price submitted must be between the previous and current rounds prices
 - Bid eligibility must decrease after placing intra-round bid

- Bidders eligible to earn a percentage credit applied to cash bonus bid
 - BOEM will conduct a technical evaluation phase to determine each bidder's eligibility for a percentage credit
 - Assigned to highest valued zone on which the bidder bids in each round
 - Terms and conditions for credits for Maryland lease sale still to be finalized

Illustrative Single Item Ascending Clock Auction Round Process



Ascending clock auction (single item)



Auction Mechanics

R		Time left in F		14	January 2013	, 03:04:35 EST	Γ				
BUREAU O	F OCEAN ENERGY MANAG	EMENT				24:2	5	Round	1 started at 02 at 03:29:0	2:59:00 and will 00 EST	lend
	Current Bids	Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction S	chedule	Messages	Downloads	

Auction Schedule

[View Printable Format]

The Auction Schedule is shown below. The number of rounds will be dependent on bidding in the auction, and thus this screen does not reflect the expected number of rounds.

Round	Status	Start	End
Round 1	Active View Price	s 02:59:00 EST	03:29:00 EST
Recess		03:29:00 EST	04:29:00 EST
Round 2	Future	04:29:00 EST	04:59:00 EST
	Recess	04:59:00 EST	05:59:00 EST
Round 3	Future	05:59:00 EST	06:29:00 EST
	Recess	06:29:00 EST	07:29:00 EST
Round 4	Future	07:29:00 EST	07:59:00 EST
	Recess	07:59:00 EST	08:59:00 EST

BUREAU O						Time left in Ro 15:16				, 03:26:44 EST 3:07:00 and will	
	Current Bids Generate Bid Confirmation		My Results	Auction Info	View Demand	Round Results	Auction 8	Schedule	Messages	Downloads	

	Auction Info - Products	
Products	My Auction Info	[View Printable F
	Zone	Opening Price
Commercial Le	ease Zone 1 ("North Zone")	\$248,530
Commence	ease Zone 2 ("South Zone")	\$150,000

BOEN	Time left in Ro 14:17	14 January 2013, 03:27:43 EST Round 1 started at 03:07:00 and will er								
BUREAU OF OCEAN ENERGY MANAG								at 03:42: Messages	:00 EST Downloads	1
		ing ribband		John Domand				meesugee	2 cm loudo	
My Auction Info										
Products	ly Auction Info								[View Printable Fo	ormat]
My Initial Eligibi My Deposit: \$3										

ROEM	Time left in Ro		14	January 2013	, 03:28:43 EST	Г			
BUREAU OF OCEAN ENERGY MANAGEMENT	13:17		Round	1 started at 03 at 03:42:	3:07:00 and will 00 EST	lend			
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction So	chedule	Messages	Downloads	

Activity: 0 pts Eligibility: 2 pts Eligibility of Next Round: 0 pts



Zone	Live Bid
Commercial Lease Zone 1 ("North Zone")	\$248,530
Commercial Lease Zone 2 ("South Zone")	\$150,000
Imputed price:	\$0
Credit (25.00%):	\$0
Cash bid:	\$0

Note:

	Time left in Ro		14	January 2013	, 03:30:11 EST	Г			
BUREAU OF OCEAN ENERGY MANAGEMENT	11:49)	Round	1 started at 03 at 03:42:	3:07:00 and will 00 EST	l end			
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction S	Schedule	Messages	Downloads	

Activity: **1 pt** Eligibility: **2 pts** Eligibility of Next Round: **1 pt**



Zone		Live Bid
Commercial Lease Zone 1 ("North Zone")	۷	\$248,530
Commercial Lease Zone 2 ("South Zone")		\$150,000
Imputed price:		\$248,530
Credit (25.00%):		\$62,133
Cash bid:		\$186,398

Note:

	Time left in Ro	ound	14	January 2013	, 03:32:34 EST	Г			
BUREAU OF OCEAN ENERGY MANAGEMENT	09:26	5	Round	1 started at 03 at 03:42:	3:07:00 and will 00 EST	lend			
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction S	Schedule	Messages	Downloads	

Current Bids - Round 1

Activity: **1 pt** Eligibility: **2 pts** Eligibility of Next Round: **1 pt**



Zone		Live Bid
Commercial Lease Zone 1 ("North Zone")		\$248,530
Commercial Lease Zone 2 ("South Zone")	۷	\$150,000
Imputed price:		\$150,000
Credit (25.00%):		\$37,500
Cash bid:		\$112,500

Note:

	I	Time left in Round 10:57			-	, 03:31:03 EST 3:07:00 and will en 00 EST		
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction \$	Schedule	Messages	Downloads
		Current	Bids - Round	1				
				Activity: 2 Eligibility o	-	ibility: 2 pts ınd: 2 pts		
		Zone					Live Bid	
Commercial Lease Zone 1 ("North Z	Zone")					۷	\$248,530)
Commercial Lease Zone 2 ("South Z	Zone")					۷	\$150,000	
Imputed price:							\$398,530	

Credit (25.00%): Cash bid:

Note:

Credit applies only to the highest priced zone selected.

\$62,133

\$336,398

RNEM			Time left in Round		14	January 2013,	03:34:35 EST	
UREAU OF OCEAN ENERGY MANAGEMENT				07:25		at 03:07:00 and will e 3:42:00 EST		
Current Bids Generate Bid Co	nfirmation My Results	Auction Info	View Demand	Round Results	Auction 8	Schedule	Messages	Downloads
		Bid Confirm	ation – Round	1				
Round: Round 1	Bid data as of Monday, 1	4 January 2013	, 03:34:07 EST.			말. [building and a second	t this page]	
This round's Elig Next round's Elig	ibility: 2 pts jibility: 2 pts (based on cu	rrent Live Bid)						
		Zone				Live B	lid	
Commercial Lease	Zone 1 ("North Zone")				1	(T	\$248,530	
Commercial Lease	Zone 2 ("South Zone")				1	Ś	\$150,000	
Imputed price:						C T	\$398,530	
Credit (25.00%):							\$62,133 ⁶	
Cash bid:						ę	\$336,398 [']	
Note:								



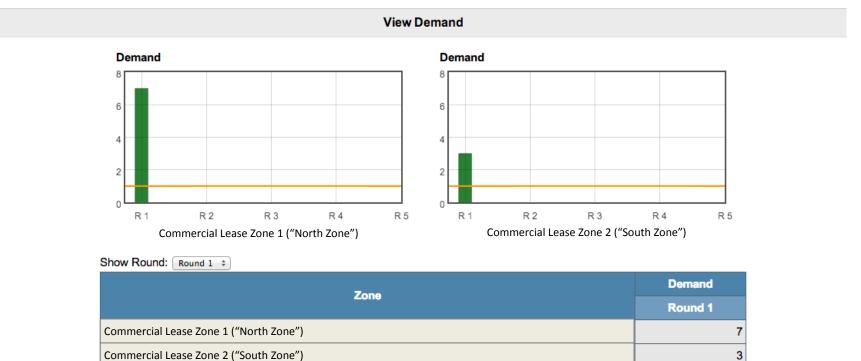
Round Results

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Round 1

Zone	Price	Quantity Posted	Increment	Price
2016			Round 2	
Commercial Lease Zone 1 ("North Zone")	\$248,530	7	N/A	N/A
Commercial Lease Zone 2 ("South Zone")	\$150,000	3	N/A	N/A



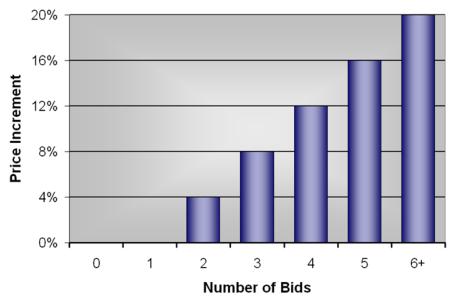


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Price Movements

- Asking price movements based on demand
- A percentage increase is applied to each zone's price in the previous round based on the level of demand and the pace of the auction

Illustrative Default Increment Percentages for a Clock Auction



Ausubel and Cramton (2011c), p. 39.

			[Time left in Ro		14	January 2013	, 03:40:09 EST	
BUREAU OF OCEAN ENERGY MANAGEMENT				28:51		Round	2 started at 03 at 04:09:0	3:39:00 and will 00 EST	lend
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction S	Schedule	Messages	Downloads	

Activity: 0 pts Eligibility: 2 pts Eligibility of Next Round: 0 pts



	Zone	Previous Round Bid	Live Bid
Commercial Lease Zone 1 ("N	lorth Zone")	\$248,530	\$298,236
Commercial Lease Zone 2 ("S	outh Zone")	\$150,000	\$162,000
Intra-Round Bid	Place Intra-round Bid	Imputed price:	\$0
Credit (25.00%):	-		\$0
Cash bid:	-		\$0

- · Credit applies only to the highest priced zone selected.
- An intra-round bid may be made on the same set of zones you bid on in the previous round. The price must be more than the total price for that set of zones in the last round and less that the total price for that set of zones in the current round. By making an intra-round bid you reduce your eligibility by one for live bids in this and future rounds.

ROEM			,	Time left in Ro		14	January 2013	, 03:42:31 EST	Г
BUREAU OF OCEAN ENERGY MANAGEMENT			Ľ	26:29)	Round	2 started at 03 at 04:09:	3:39:00 and will 00 EST	lend
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction Sch	nedule	Messages	Downloads	

Activity: 2 pts Eligibility: 2 pts Eligibility of Next Round: 2 pts



	Zone	Previous Round Bid		Live Bid
Commercial Lease Zone 1 ("N	lorth Zone")	\$248,530	۷	\$298,236
Commercial Lease Zone 2 ("S	outh Zone")	≤ \$150,000	۷	\$162,000
Intra-Round Bid	Place Intra-round Bid	Imputed price:		\$460,236
Credit (25.00%):	-			\$74,559
Cash bid:	-			\$385,677

- · Credit applies only to the highest priced zone selected.
- An intra-round bid may be made on the same set of zones you bid on in the previous round. The price must be more than the total price for that set of zones in the last round and less that the total price for that set of zones in the current round. By making an intra-round bid you reduce your eligibility by one for live bids in this and future rounds.

				Time left in Ro		14	January 2013	3, 03:43:23 EST	Г
BUREAU OF OCEAN ENERGY MANAGEMENT				25:37	7	Round	2 started at 0 at 04:09:	3:39:00 and will 00 EST	lend
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction S	Schedule	Messages	Downloads	

Activity: **1 pt** Eligibility: **2 pts** Eligibility of Next Round: **1 pt**



	Zone	Previous Round Bid		Live Bid
Commercial Lease Zone 1 ("N	North Zone")	≤ \$248,530	۷	\$298,236
Commercial Lease Zone 2 ("S	outh Zone")	≤ \$150,000		\$162,000
Intra-Round Bid	Place Intra-round Bid	Imputed price:		\$298,236
Credit (25.00%):	-			\$74,559
Cash bid:	-			\$223,677

- · Credit applies only to the highest priced zone selected.
- An intra-round bid may be made on the same set of zones you bid on in the previous round. The price must be more than the total price for that set of zones in the last round and less that the total price for that set of zones in the current round. By making an intra-round bid you reduce your eligibility by one for live bids in this and future rounds.

ROEM	Time left in Ro	14 January 2013, 03:48:27 EST							
BUREAU OF OCEAN ENERGY MANAGEMENT				20:33	3	Round	2 started at 0 at 04:09:	3:39:00 and will 00 EST	lend
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction S	Schedule	Messages	Downloads	

Curren	t Bids -	Round 2
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Activity: **1 pt** Eligibility: **1 pt** Eligibility of Next Round: **1 pt**



	Zone						vious Rou	nd Bid	Live Bid		
Commercial Lease Zone 1 ("N	Commercial Lease Zone 1 ("North Zone")							\$248,530	۷	\$298,236	
Commercial Lease Zone 2 ("S	South Zone	e")						\$150,000		\$162,000	
Intra-Round Bid		4000 5 00				Imputed price	ce:			\$298,236	
Credit (25.00%):		\$398,530 <			< \$460,236					\$74,559	
Cash bid:				enter a	a price greater tha ncel	an \$398,530				\$223,677	
Note:											

- · Credit applies only to the highest priced zone selected.
- An intra-round bid may be made on the same set of zones you bid on in the previous round. The price must be more than the total price for that set of zones in the last round and less that the total price for that set of zones in the current round. By making an intra-round bid you reduce your eligibility by one for live bids in this and future rounds.

				Time left in Ro		14	January 2013	, 03:53:20 EST	Г
BUREAU OF OCEAN ENERGY MANAGEMENT				15:40)	Round	2 started at 03 at 04:09:	3:39:00 and will 00 EST	lend
Current Bids Generate Bid Confirmation	My Results	Auction Info	View Demand	Round Results	Auction S	chedule	Messages	Downloads	

Activity: **1 pt** Eligibility: **1 pt** Eligibility of Next Round: **1 pt**



	Zone	Previous Round Bid			Live Bid
Commercial Lease Zone 1 ("N	North Zone")	\checkmark	\$248,530	۷	\$298,236
Commercial Lease Zone 2 ("S	outh Zone")		\$150,000		\$162,000
Intra-Round Bid	Edit Or Delete \$425,000	Imputed price:			\$298,236
Credit (25.00%):	\$62,133				\$74 <i>,</i> 559
Cash bid:	\$362,868				\$223,677

- · Credit applies only to the highest priced zone selected.
- An intra-round bid may be made on the same set of zones you bid on in the previous round. The price must be more than the total price for that set of zones in the last round and less that the total price for that set of zones in the current round. By making an intra-round bid you reduce your eligibility by one for live bids in this and future rounds.

BOEN JUREAU OF OCEAN ENERGY MAN					Time left in Ro 14:37			-	, 03:54:23 EST 3:39:00 and will 00 EST
Current Bids	Current Bids Generate Bid Confirmation My Results Auction Info View Demand Round Results Auction S					Schedule	Messages	Downloads	
			Bid Confirm	ation – Round	10				
					1 2				
Round: Round 2 + Bid data as of Monday, 14 January 2013, 03:53:51 EST.						த[Prin	t this page]		
	This round's Eligibility: 2 pts	i -							

Next round's Eligibility: 1 pt (based on current Live Bid)

You eligibility will be reduced next Round.

Zone	Intra-round Bid	Live Bid
Commercial Lease Zone 1 ("North Zone")	1	✓ \$298,23
Commercial Lease Zone 2 ("South Zone")	1	
Imputed price:	\$425,000	\$298,230
Credit (25.00%):	\$62,133	\$74,559
Cash bid:	\$362,868	\$223,67

- · Credit applies only to the highest priced zone selected.
- · An intra-round bid may be made on the same set of zones you bid on in the previous round. The price must be more than the total price for that set of zones in the last round and less that the total price for that set of zones in the current round. By making an intra-round bid you reduce your eligibility by one for live bids in this and future rounds.



Round Results

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Round 2

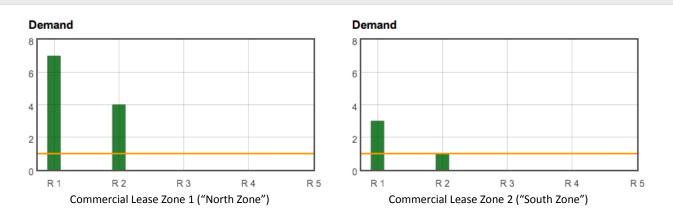
Zone	Price	Quantity Posted	Increment	Price
20110		Round 3		
Commercial Lease Zone 1 ("North Zone")	\$298,236	4	N/A	N/A
Commercial Lease Zone 2 ("South Zone")	\$162,000	1	N/A	N/A

Round 1

Zone	Price	Quantity Posted	Increment	Price
2016		Round 2		
Commercial Lease Zone 1 ("North Zone")	\$248,530	7	20.00%	\$298,236
Commercial Lease Zone 2 ("South Zone")	\$150,000	3	8.00%	\$162,000



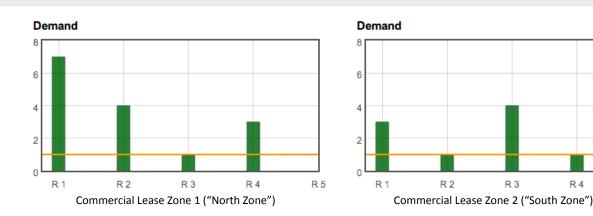
View Demand



Show Round: Round 2 + (and up to 1 Round before)

Zone	Den	hand
20119	Round 2	Round 1
Commercial Lease Zone 1 ("North Zone")	4	7
Commercial Lease Zone 2 ("South Zone")	1	3





Show Round: Round 4 + (and up to 3 Rounds before)

Zone	Demand					
20119	Round 4	Round 3	Round 2	Round 1		
Commercial Lease Zone 1 ("North Zone")	3	1	4	7		
Commercial Lease Zone 2 ("South Zone")	1	4	1	3		

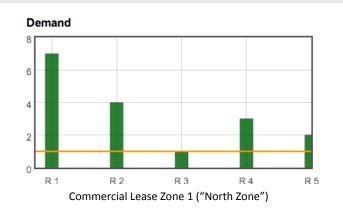
View Demand

R 4

R 5

R 3





Show Round: Round 5 + (and up to 4 Rounds before)

Zone			Demand		
20119	Round 5	Round 4	Round 3	Round 2	Round 1
Commercial Lease Zone 1 ("North Zone")	2	3	1	4	7
Commercial Lease Zone 2 ("South Zone")	1	1	4	1	3

View Demand

Demand

8

6

4

2

0 R 1

R 2

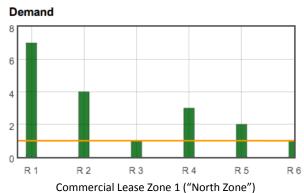
R 3

Commercial Lease Zone 2 ("South Zone")

R 4

R 5





Show Round: Round 6 + (and up to 5 Rounds before)

Demand Zone Round 5 Round 3 Round 6 Round 4 Round 2 Round 1 Commercial Lease Zone 1 ("North Zone") 1 2 3 1 4 7 Commercial Lease Zone 2 ("South Zone") 1 1 1 4 1 3

View Demand (Final Round)



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Auction Ends



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Final Results

	Winners	Zones	Activity	Price as Bid	Credit	Payment
ID	Company Name	LUIIES	Activity	Frice as Diu	Great	Fayment
Tot	al Sold	Commercial Lease Zone 1 ("North Zone"), Commercial Lease Zone 2 ("South Zone")		Nur	nber of Winni	ng Bidders: 2

Round 6

Zone	Price	Quantity Posted	Increment	Price
2010		Round 7		
Commercial Lease Zone 1 ("North Zone")	\$375,176	1	N/A	N/A
Commercial Lease Zone 2 ("South Zone")	\$181,440	1	N/A	N/A

Round 5

What if one zone has zero demand when the auction ends? ROFM

14 January 2013, 04:56:06 EST

Ocean Energy Manag						The	Auction ha	as conclude
Current Bids Generate Bid Confirmation My Results Auction Info View Demand Round Results Auction Schedule Messages Download								Downloads
			Ro	und Results				

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Final Results

Winners		Zones	A oth the	Price as Bid	Credit	Payment
ID	Company Name	Zones	Activity	FICE as DIU	Credit	Fayment
Total Sold		Commercial Lease Zone 1 ("North Zone"), Commercial Lease Zone 2 ("South Zone")	Number of Winning Bidders:			

Round 6

Zone	Price	Quantity Posted	Increment	Price
2010		Round 7		
Commercial Lease Zone 1 ("North Zone")	\$375,176	1	N/A	N/A
Commercial Lease Zone 2 ("South Zone")	\$181,440	0	N/A	N/A

Round 5

Winner Determination: Stage 2

- Unsold zones are awarded to bidders whose bids in prior-tofinal rounds yield the highest auction revenue to BOEM, subject to the conditions noted below
- BOEM considers all live bids from prior-to-final rounds and intra-round bids from any round
- Live bids submitted in a particular round are considered as package bids in the same way as intra-round bids
 - Valued at an aggregate price based on the sum of the prices in the round when each live bid was submitted
- Bids must not conflict with zones awarded already awarded
 - Bids from bidders who were not awarded a zone in final round are eliminated if they contain any zone that was already awarded
 - Bids from bidders who were awarded one or more zones in the final round are eliminated if they do not contain all of the zones the bidder was already awarded (i.e., a "super-set")
- Ties among bids are resolved by a random process

Questions and Answers

David Harper 703-787-1657 <u>David.Harper@boem.gov</u>

Aditi Mirani 703-787-1752 <u>Aditi.Mirani@boem.gov</u>

BOEM Auction Format Research

http://www.boem.gov/Renewable-Energy-Program/Regulatory-Information/Renewable-Energy-Auction-Formats.aspx