

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

**SCHEDULE 13D**

Under the Securities Exchange Act of 1934

**LRR Energy, L.P.**

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(Name of Issuer)

**Common Units Representing Limited Partner Interests**

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(Title of Class of Securities)

**50214A 104**

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(CUSIP Number)

**Richard A. Robert  
Executive Vice President and Chief Financial Officer  
Vanguard Natural Resources, LLC  
5847 San Felipe, Suite 3000  
Houston, Texas 77057  
(832) 327-2255**

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(Name, Address and Telephone Number of Person  
Authorized to Receive Notices and Communications)

**April 20, 2015**

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(Date of Event Which Requires Filing of This Statement)

If the filing person has previously filed a statement on Schedule 13G to report the acquisition which is the subject of this Schedule 13D, and is filing this schedule because of §§ 240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

NOTE: Schedules filed in paper format shall include a signed original and five copies of the schedule, including all exhibits. See § 13d-7(b) for other parties to whom copies are to be sent.

\*The remainder of the cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

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1.	NAME OF REPORTING PERSON Vanguard Natural Resources, LLC		
2.	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (SEE INSTRUCTIONS)  (a) <input type="checkbox"/> (b) <input checked="" type="checkbox"/>		
3.	SEC USE ONLY		
4.	SOURCE OF FUNDS (SEE INSTRUCTIONS)  OO		
5.	CHECK IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) OR 2(e)  <input type="checkbox"/>		
6.	CITIZENSHIP OR PLACE OF ORGANIZATION  Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7.	SOLE VOTING POWER  0	
	8.	SHARED VOTING POWER 8,569,600 <sup>(1)(2)</sup>	
	9.	SOLE DISPOSITIVE POWER  0	
	10.	SHARED DISPOSITIVE POWER 8,569,600 <sup>(1)(2)</sup>	
11.	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  8,569,600 <sup>(1)(2)</sup>		
12.	CHECK IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES (SEE INSTRUCTIONS)  <input type="checkbox"/>		
13.	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11)  30.5% <sup>(3)</sup>		
14.	TYPE OF REPORTING PERSON (SEE INSTRUCTIONS)  OO (Limited Liability Company)		

(1) Represents 1,224,544 common units representing limited partner interests in LRR Energy, L.P. ("LRE Common Units") held by Lime Rock Resources A, L.P., 405,995 LRE Common Units held by Lime Rock Resources B, L.P. and 6,939,061 LRE Common Units held by Lime Rock Resources C, L.P., representing, in the aggregate, approximately 30.5% of the outstanding LRE Common Units.

(2) Beneficial ownership of the above referenced securities is being reported hereunder solely because the reporting person may be deemed to have beneficial ownership of such securities as a result of the Voting Agreement (as defined in Item 3 below) entered into with the beneficial owners of such securities as described herein. Neither the filing of this Schedule 13D nor any of its contents shall be deemed to constitute an admission by the reporting person that it is the beneficial owner of any of the securities referred to herein for purposes of Section 13(d) or 13(g) of the Securities Exchange Act of 1934, as amended, or for any other purpose, and such beneficial ownership is expressly disclaimed.

(3) Based on 28,074,433 LRE Common Units outstanding as of April 20, 2015.

**ITEM 1. Security and Issuer.**

This Schedule 13D ("Schedule 13D") relates to the common units representing limited partner interests in LRR Energy, L.P. ("LRE Common Units"), a Delaware limited partnership ("LRE"). The address of the principal executive offices of LRE is Heritage Plaza, 1111 Bagby Street, Suite 4600, Houston, Texas 77002.

**ITEM 2. Identity and Background.**

(a) This Schedule 13D is being filed by Vanguard Natural Resources, LLC, a Delaware limited liability company ("Vanguard"). Vanguard is an independent energy company focused on the acquisition, exploitation and development of mature, long-lived oil and natural gas properties in the United States. Vanguard's properties and oil and natural gas reserves are located primarily in nine operating basins in Wyoming, Colorado, Texas, New Mexico, Mississippi, Montana, Arkansas, Oklahoma and North Dakota.

(b) The address of the principal offices of Vanguard is 5847 San Felipe, Suite 3000, Houston, Texas 77057.

(c) Schedule I hereto sets forth the present principal occupation or employment of each director and executive officer of Vanguard and the name, principal business and address of any corporation or other organization in which such employment is conducted. The information set forth in Schedule I hereto is incorporated herein by reference.

(d) Vanguard has not, and, to the best of Vanguard's knowledge, during the last five years, each of the persons listed in Schedule I hereto has not, been convicted in a criminal proceeding (excluding traffic violations or similar misdemeanors).

(e) Vanguard has not, and, to the best of Vanguard's knowledge, during the last five years, each of the persons listed in Schedule I hereto has not, been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction resulting in a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activity subject to, federal or state securities laws or finding any violations with respect to such laws.

(f) Each of the directors and officers of Vanguard named in Schedule I to this Schedule 13D is a United States citizen.

**ITEM 3. Source and Amount of Funds of Other Consideration.***Merger Agreement*

As described in Vanguard's Current Report on Form 8-K filed with the Securities and Exchange Commission ("SEC"), on April 22, 2015, on April 20, 2015, Vanguard and Lighthouse Merger Sub, LLC, a direct wholly owned subsidiary of Vanguard ("Merger Sub," and, together with Vanguard, the "Vanguard Entities"), entered into a Purchase Agreement and Plan of Merger (the "Merger Agreement") with Lime Rock Management LP ("LR Management"), Lime Rock Resources A, L.P. ("LRR A"), Lime Rock Resources B, L.P. ("LRR B"), Lime Rock Resources C, L.P. ("LRR C"), Lime Rock Resources II-A, L.P. ("LRR II-A"), Lime Rock Resources II-C, L.P. ("LRR II-C," and, together with LRR A, LRR B, LRR C, LRR II-A and LR Management, the "GP Sellers"), LRR Energy, L.P. ("LRE"), and LRE GP, LLC ("LRE GP," and, together with the Partnership and the GP Sellers, the "LRE Entities").

Pursuant to the Merger Agreement, Vanguard will acquire LRE and LRE GP in exchange for common units representing limited liability company interests in Vanguard ("Vanguard Common Units"), implying, as of April 20, 2015, an aggregate transaction value of approximately \$539 million, including the assumption of LRE's existing net debt. The Merger Agreement provides that, upon the terms and subject to the conditions set forth in the Merger Agreement, Merger Sub will be merged with and into LRE, with LRE continuing as the surviving entity and a direct wholly owned subsidiary of Vanguard (the "Merger") and, at the same time, Vanguard will acquire all of the limited liability company interests in LRE GP from the GP Sellers, resulting in both LRE and LRE GP becoming wholly owned subsidiaries of Vanguard.

Under the terms of the Merger Agreement, (i) each outstanding LRE Common Unit will be converted into the right to receive 0.550 newly issued Vanguard Common Units or, in the case of fractional Vanguard Common Units, cash (without interest and rounded up to the nearest whole cent) (the "Merger Consideration") and (ii) Vanguard will

purchase all of the outstanding limited liability company interests in the LRE GP in exchange for 12,320 newly issued Vanguard Common Units. Further, in connection with the Merger Agreement, each award of restricted LRE Common Units issued under LRE's long-term incentive plan that is subject to time-based vesting and that is outstanding and unvested immediately prior to the effective time of the Merger will become fully vested and will be deemed to be a LRE Common Unit with the right to receive the Merger Consideration.

The LRE Entities and the Vanguard Entities have each made certain representations and warranties and agreed to certain covenants in the Merger Agreement. Each of LRE, the LRE GP and Vanguard has agreed, among other things, subject to certain exceptions, to conduct its respective business in the ordinary course during the period between the execution of the Merger Agreement and the effective time of the Merger (unless the Merger Agreement is earlier terminated in accordance with its terms). In addition, LRE has agreed not to solicit alternative business combination transactions during such period, and, subject to certain exceptions, not to engage in discussions or negotiations regarding any alternative business combination transactions during such period.

The closing of the Merger is subject to satisfaction or waiver of customary closing conditions, including, among others, (1) the approval of the Merger Agreement by the affirmative vote or consent of the holders of at least a majority of the outstanding LRE Common Units, voting as a class, (2) the registration statement on Form S-4 used to register the Vanguard Common Units to be issued in the merger being declared effective by the SEC, (3) the approval for listing of the Vanguard Common Units issuable as part of the Merger Consideration on the NASDAQ Global Select Market, (4) subject to specified materiality standards, the accuracy of the representations and warranties of, and the performance of all covenants by, the parties, (5) the delivery of certain tax opinions and (6) other customary conditions.

The Merger Agreement contains certain termination rights for both Vanguard and LRE and further provides that, upon termination of the Merger Agreement, under certain circumstances, either party may be required to reimburse the other party's expenses up to \$1,215,000, and LRE may be required to pay Vanguard a termination fee equal to \$7,288,000.

None of the persons listed on Schedule I hereto has or will contribute any funds or other consideration towards the transactions contemplated by the Merger.

The description contained in this Item 3 of the transactions contemplated by the Merger Agreement is qualified in its entirety by reference to the full text of the Merger Agreement, a copy of which is incorporated herein by reference to Exhibit A.

#### *Voting Agreement*

Simultaneously with the execution of the Merger Agreement, Vanguard also entered into a Voting and Support Agreement (the "Voting Agreement") with each of LRR A, LRR B and LRR C (collectively, the "LRE Unitholders" and each, a "LRE Unitholder"), LRE, and the LRE GP, and, solely for purposes of the 90-day lock-up provision described below, LR Management, LRR II-A, L.P. and LRR II-C, L.P. (the "Non-Fund I GP Sellers"). Pursuant to the Voting Agreement, the LRE Unitholders are required to vote all LRE Common Units owned by such LRE Unitholders in favor of the Merger and the adoption of the Merger Agreement at any meeting of the LRE Unitholders called for such purpose and against any alternative proposal or any proposal made in opposition to adoption of the Merger Agreement, without regard to the terms of the alternative proposal. If at any time prior to the Expiration Date, LRE makes a change in recommendation regarding the Merger, then the foregoing obligation of the LRE Unitholders will be extinguished. The foregoing obligations will terminate upon the earliest to occur of (a) the consummation of the Merger and (b) the termination of the Merger Agreement in accordance with its terms (the "Expiration Date").

The LRE Unitholders agree (i) not to initiate, solicit or knowingly encourage any third person to make a third party proposal or to assist any third person in connection therewith, (ii) not to sell, transfer or dispose of the LRE Common Units owned by the LRE Unitholders at any time prior to the Expiration Date, and (iii) that any additional units in LRE acquired by the LRE Unitholders after the execution of the Voting Agreement would be subject to the Voting Agreement. Further, for 90 days after the closing date, the LRE Unitholders and the Non-Fund I GP Sellers agree not to sell, transfer or dispose of any Vanguard Common Units received pursuant to the Merger Agreement.

The Voting Agreement also generally prohibits, during the two-year period following the closing date, (i) the LRE Unitholders and their respective controlled affiliates from soliciting or hiring, without the prior written consent of

Vanguard, anywhere in North America, any person employed by or on behalf of Vanguard or one of its controlled affiliates, and (ii) Vanguard from soliciting or hiring, without the prior written consent of the applicable LRE Unitholder, anywhere in North America, any person employed by or on behalf of the LRE Unitholders or their controlled affiliates.

As of April 20, 2015, the LRE Unitholders, in the aggregate, beneficially owned 8,569,600 LRE Common Units, representing approximately 30.5% of the outstanding LRE Common Units as of such date. Pursuant to the Voting Agreement, therefore, Vanguard may be deemed to have acquired beneficial ownership of the LRE Common Units held by the LRE Unitholders and subject to the Voting Agreement.

No funds were borrowed or otherwise obtained for the purpose of acquiring, holding, trading or voting the LRE Common Units or covered by the Voting Agreement.

The description contained in this Item 3 of the transactions contemplated by the Voting Agreement is qualified in its entirety by reference to the full text of the Voting Agreement, a copy of which is incorporated herein by reference to Exhibit B.

#### *Registration Rights Agreement*

On April 20, 2015, Vanguard also entered into a Registration Rights Agreement (the "Registration Rights Agreement") with each of LR Management, LRR A, LRR B, LRR C, LRR II-A and LRR II-C. Pursuant to the Registration Rights Agreement, Vanguard is required to file or cause to be filed with the SEC a registration statement with respect to the public resale of the Vanguard Common Units issued pursuant to the Merger Agreement. Vanguard is required to file or cause to be filed the registration statement within 90 days following the closing under the Merger Agreement and is required to cause the registration statement to become effective as soon as reasonably practicable thereafter but in no event later than 120 days after the closing under the Merger Agreement.

The description contained in this Item 3 of the transactions contemplated by the Registration Rights Agreement is qualified in its entirety by reference to the full text of the Registration Rights Agreement, a copy of which is incorporated herein by reference to Exhibit C.

#### **ITEM 4. Purpose of the Transaction.**

The information set forth in Item 3 is incorporated herein by reference.

(a) N/A.

(b) See Item 3.

(c) N/A.

(d) It is a condition to the closing of the transactions contemplated by the Merger Agreement that Vanguard must have received the written resignation of each member of the board of directors of LRE GP and each officer of LRE GP, dated to be effective as of the Effective Time.

(e) N/A.

(f) N/A.

(g) N/A.

(h) N/A.

(i) N/A.

(j) Other than as described above, Vanguard currently has no plan or proposal which relates to, or may result in, any of the matters listed in Items 4(a) – (i) of Schedule 13D.

**ITEM 5. Interest in Securities of the Issuer.**

(a)-(b) Vanguard does not directly own any LRE Common Units. However, as a result of the Voting Agreement, as of April 20, 2015, Vanguard may be deemed to hold shared power to vote 1,224,544 LRE Common Units held by LRR A, 405,995 LRE Common Units held by LRR B and 6,939,061 Common Units held by LRR C, representing, in the aggregate, approximately 30.5% of the outstanding LRE Common Units (based on 28,074,433 LRE Common Units outstanding as of April 20, 2015).

Vanguard does not have sole voting or sole dispositive power with respect to the LRE Common Units held by the LRE Unitholders, but may be deemed to have shared voting and shared dispositive power with respect to such LRE Common Units. Vanguard may be deemed to share with the LRE Unitholders the power to vote such LRE Common Units solely with respect to those matters described in Item 3 of this Schedule 13D and in the Voting Agreement, which is incorporated herein by reference. Vanguard also may be deemed to share with the LRE Unitholders the power to dispose of such LRE Common Units solely to the extent provided for in the Voting Agreement, as more fully described in Item 3 of this Schedule 13D and in the Voting Agreement, which is incorporated herein by reference.

Pursuant to Rule 13d-4 of the Act, however, Vanguard expressly declares that neither the filing of this Schedule 13D nor any of its contents shall be deemed to constitute an admission by Vanguard that it is the beneficial owner of the LRE Common Units held by the LRE Unitholders and subject to the Voting Agreement, and such beneficial ownership is expressly disclaimed.

Except as set forth in this Schedule 13D, Vanguard does not, and, to the best of Vanguard's knowledge, each of its executive officers and directors do not, beneficially own any LRE Common Units.

(c) Vanguard has not, and, to the best of Vanguard's knowledge, each of the persons listed in Schedule I hereto has not, effected any transaction in Common Units of LRE during the past 60 days, except as disclosed herein.

(d) To the best of Vanguard's knowledge, no person, other than the LRE Unitholders, has the right to receive or the power to direct the receipt of dividends or distributions from, or the proceeds from the sale of, the LRE Common Units covered by this Schedule 13D.

(e) N/A.

**ITEM 6. Contracts, Arrangements, Understandings or Relationships with Respect to Securities of the Issuer.**

Other than as described in this Schedule 13D, to the knowledge of Vanguard, there are no contracts, arrangements, understandings or relationships (legal or otherwise) among the persons named in Item 2 and between such persons and any person with respect to any securities of LRE, including, but not limited to, transfer or voting of any securities, finder's fees, joint ventures, loan or option arrangements, puts or calls, guarantees of profits, division of profits or loss, or the giving or withholding of proxies.

**ITEM 7. Material to Be Filed as Exhibits.**

<b>Exhibit Number</b>	<b>Description</b>
Exhibit A	Purchase Agreement and Plan of Merger, dated as of April 20, 2015, by and among Vanguard Natural Resources, LLC, Lighthouse Merger Sub, LLC, Lime Rock Management LP, Lime Rock Resources A, L.P., Lime Rock Resources B, L.P., Lime Rock Resources C, L.P., Lime Rock Resources II-A, L.P., Lime Rock Resources II-C, L.P., LRR Energy, L.P. and LRE GP, LLC (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed by LRR Energy, L.P. with the SEC on April 22, 2015).
Exhibit B	Voting and Support Agreement, dated as of April 20, 2015, by and among Vanguard Natural Resources, LLC, Lime Rock Resources A, L.P., Lime Rock Resources B, L.P., Lime Rock Resources C, L.P. LRR Energy, L.P., LRE GP, LLC, and, solely for purposes of Section 3.2, Lime Rock Management LP, Lime Rock Resources II-A, L.P. and Lime Rock Resources II-C, L.P. (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by LRR Energy, L.P. with the SEC on April 22, 2015).
Exhibit C	Registration Rights Agreement, dated as of April 20, 2015, by and among Vanguard Natural Resources, LLC, Lime Rock Management LP, Lime Rock Resources A, L.P., Lime Rock Resources B, L.P., Lime Rock Resources C, L.P., Lime Rock Resources II-A, L.P. and Lime Rock Resources II-C, L.P. (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by LRR Energy, L.P. with the SEC on April 22, 2015).

**SIGNATURE**

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Dated: April 29, 2015

**VANGUARD NATURAL RESOURCES, LLC**

By: /s/ Richard A. Robert  
Richard A. Robert  
Executive Vice President and Chief Financial Officer  
(Principal Financial Officer and Principal Accounting Officer)

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**SCHEDULE I****EXECUTIVE OFFICERS OF VANGUARD NATURAL RESOURCES, LLC  
AS OF APRIL 20, 2015**

<b><u>NAME</u></b>	<b><u>PRINCIPAL OCCUPATION OR EMPLOYMENT</u></b>
Scott W. Smith	President, Chief Executive Officer and Director
Richard A. Robert	Executive Vice President, Chief Financial Officer, Secretary and Director
Britt Pence	Executive Vice President of Operations

All individuals named in the above table are employed by Vanguard Natural Resources, LLC. The address of the principal offices of Vanguard Natural Resources, LLC is 5847 San Felipe, Suite 3000, Houston, Texas 77057

**DIRECTORS OF VANGUARD NATURAL RESOURCES, LLC  
AS OF APRIL 20, 2015**

<b><u>NAME</u></b>	<b><u>BUSINESS ADDRESS</u></b>	<b><u>TITLE</u></b>	<b><u>PRINCIPAL OCCUPATION AND EMPLOYER</u></b>
Scott W. Smith	5847 San Felipe, Suite 3000, Houston, Texas 77057	President, Chief Executive Officer and Director	Not applicable.
Richard A. Robert	5847 San Felipe, Suite 3000, Houston, Texas 77057	Executive Vice President, Chief Financial Officer, Secretary and Director	Not applicable.
W. Richard Anderson	5847 San Felipe, Suite 3000, Houston, Texas 77057	Director	Chief Financial Officer and a Director of Eurasia Drilling Company, Limited GDR
Loren Singletary	5847 San Felipe, Suite 3000, Houston, Texas 77057	Director	Vice President Investor and Industry Relations for National Oilwell Varco
Bruce W. McCullough	5847 San Felipe, Suite 3000, Houston, Texas 77057	Director	Not applicable.