PEABODY ENERGY CORP Form SC 13G February 10, 2011

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

> > SCHEDULE 13G

Under the Securities Exchange Act of 1934

(Amendment No.)*

PEABODY ENERGY

(Name of Issuer)

COMMON STOCK

(Title of Class of Securities)

704549104

(CUSIP Number)

December 31, 2010

(Date of Event which Requires Filing of Statement)

Check the appropriate box to designate the Rule pursuant to which this Schedule is filed:

[x] Rule 13d - 1(b)

Rule 13d - 1(c)

Rule 13d - 1(d)

*The remainder of this 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 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.)

(Continued on following page(s) Page 1 of 6 Pages CUSIP NO. 704549104 13G Page 2 of 6 Pages Name of Reporting Person S.S. or I.R.S. Identification No. of Above Person T. ROWE PRICE ASSOCIATES, INC. 52-0556948

2 Check the Appropriate Box if a Member of a Grou

NOT APPLICABLE

(a) ____ (b) ____

3 SEC Use Only

4	Citizenship or Place of Organization						
	MARYLAND						
Numb	per of		Sole Voting Power				
Shar	es	**	6,762,359				
Bene	ficially	6 **	Shared Voting Power				
Owne	ed By Each		-0-				
Repo	orting	7	Sole Dispositive Power				
Pers	on		24,647,132				
With	1	8	Shared Dispositive Power				
			-0-				
9 A	Aggregate Am	noun	t Beneficially Owned by Each Reporting Person				
2	24,647,132						
	.0 Check Box if the Aggregate Amount in Row (9) Excludes Certain Shares*						
N	NOT APPLICABLE						
11 F	11 Percent of Class Represented by Amount in Row 9						
ç	0.0%						
12 Type of Reporting Person*							
	IA **Any CDULE 13G C 3 OF 6		E INSTRUCTION BEFORE FILLING OUT! res reported in Items 5 and 6 are also reported in Item 7.				
	n 1(a) Name	e of	Issuer:				
			ce is made to page 1 of this Schedule 13G				
Item			of Issuer's Principal Executive Offices:				
1000			ET ST, ST LOUIS, MO 63101				
Item	n 2(a) Name	e of	Person(s) Filing:				

(1) T. Rowe Price Associates, Inc. ("Price Associates")

	(2)							
	the Persons Fil	ing (as specif:	A is a copy of an agreement between (as specified hereinabove) that this ang filed on behalf of each of them.					
Item 2(b)	Address of Prin	cipal Business	Office:					
	100 E. Pratt St	reet, Baltimore	e, Maryland 21202					
Item 2(c)	Item 2(c) Citizenship or Place of Organization:							
	(1) Maryland							
	(2)							
Item 2(d)	Title of Class	of Securities:						
	Reference is ma	de to page 1 o:	f this Schedule 13G					
Item 2(e)	CUSIP Number: 7	04549104						
Item 3	The person fili	ng this Schedu	le 13G is an:					
Х	Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940							
CUSIP 7045 PAGE 4 OF	under Section 8 of)	the						
Item 4	Ownership		Deemed Outstanding And Beneficially					
		Units Deemed Beneficially Owned	Owned Directly Subject to					
		Directly		otal				
PRICI (inc) report	RESPECT TO E ASSOCIATES ludes shares rted in pelow):							
I	nount Beneficially Dwned	22,490,314	2,156,818 24,6	47 , 132				
	ercent of Class			9.0%				
ı t	umber of units as to which such							

person has: . . .

(i)	*sole power to vote or to direct the vote	6,490,767	271,592	6,762,359
(ii)	*shared power to vote or to direct the vote	-0-	-0-	-0-
(iii)	*sole power to dispose or to direct the disposition of	22,490,314	2,156,818	24,647,132
(iv)	*shared power to dispose or to direct the disposition of	-0-	-0-	-0-
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- Item 5 Ownership of Five Percent or Less of a Class.
 - X Not Applicable.

This statement is being filed to report the fact that, as of the date of this report, the reporting person(s) has (have) ceased to be the beneficial owner of more than five percent of the class of securities.

- Item 6 Ownership of More than Five Percent on Behalf of Another Person
 - Price Associates does not serve as custodian of the assets of any of its clients; accordingly, in each instance only the client or the client's custodian or trustee bank has the right to receive dividends paid with respect to, and proceeds from the sale of, such securities.

The ultimate power to direct the receipt of dividends paid with respect to, and the proceeds from the sale of, such securities, is vested in the individual and institutional clients which Price Associates serves as investment adviser. Any and all discretionary authority which has been delegated to Price Associates may be revoked in whole or in part at any time.

Except as may be indicated if this is a joint filing with one of the registered investment companies sponsored by Price Associates which it also serves as investment adviser ("T. Rowe Price Funds"), not more than 5% of the class of such securities is owned by any one client subject to the investment advice of Price Associates.

(2) With respect to securities owned by any one of the T.

Rowe Price Funds, only State Street Bank and Trust Company, as custodian for each of such Funds, has the right to receive dividends paid with respect to, and proceeds from the sale of, such securities. No other person is known to have such right, except that the shareholders of each such Fund participate proportionately in any dividends and distributions so paid.

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on By the Parent Holding Company.

Not Applicable.

Item 8 Identification and Classification of Members of the Group.

Not Applicable.

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Item 9 Notice of Dissolution of Group.

Not Applicable.

Item 10 Certification.

By signing below I (we) certify that, to the best of my (our) knowledge and belief, the securities referred to above were acquired in the ordinary course of business and were not acquired for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired in connection with or as a participant in any transaction having such purpose or effect. T. Rowe Price Associates, Inc. hereby declares and affirms that the filing of this Schedule 13G shall not be construed as an admission that Price Associates is the beneficial owner of the securities referred to, which beneficial ownership is expressly denied.

Signature.

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

Dated: February 14, 2011

T. ROWE PRICE ASSOCIATES, INC.

By: /s/ David Oestreicher David Oestreicher, Vice President

with the Securities and Exchange Commission, and a copy hereof must be sent to the issuer by registered or certified mail not later than February 14th following the calendar year covered by the statement or within the time specified in Rule 13d-1(b)(2), if applicable.

12/31/2010