

Prospectus Supplement

(To Prospectus Supplement Dated April 2, 2010 and Prospectus Dated April 2, 2010)

WESTAR ENERGY, INC.

Common Stock

This prospectus supplement supplements and amends the prospectus supplement dated April 2, 2010 and its accompanying prospectus dated April 2, 2010. This supplement should be read together with that prospectus supplement and prospectus, which are to be delivered with this supplement.

Pursuant to a Sales Agency Financing Agreement dated as of April 2, 2010 by and among Westar Energy, Inc., a Kansas corporation (the “Company”), BNY Mellon Capital Markets, LLC, a registered broker-dealer organized under the laws of New York (“BNYMCM”) and The Bank of New York Mellon (the “Sales Agency Financing Agreement”, filed as an exhibit to our registration statement on Form S-3 with the Securities Exchange Commission (“SEC”) on April 2, 2010), as amended on May 26, 2010 (which amendment was filed as an exhibit to our Quarterly Report on Form 10-Q with the SEC on August 7, 2012), and as subsequently amended on April 23, 2012 (which amendment, the “SAFA Second Amendment”, was filed as an exhibit to our Quarterly Report on Form 10-Q with the SEC on May 9, 2012) and the Master Confirmation for Forward Stock Sale Transactions, dated April 2, 2010 by and among the Company, BNYMCM and The Bank of New York Mellon (the “Master Confirmation”, filed as an exhibit to our current report on Form 8-K with the SEC on April 2, 2010), during the period November 13, 2012 through February 28, 2013, we entered into forward sale transactions (the “Forward Transactions”), through BNYMCM, as our agent, for an aggregate of approximately 0.7 million shares of our common stock, par value \$5.00 per share (the “Common Stock”). In connection with the Forward Transactions, we did not receive any proceeds from the sale of the borrowed shares of our Common Stock by BNYMCM. We expect to receive proceeds from the sale of such shares, subject to certain adjustments, upon future physical settlement(s) of the Forward Transactions pursuant to the terms of the Master Confirmation for Forward Stock Sale Transactions. The Sales Agency Financing Agreement, as amended, and the Master Confirmation are incorporated by reference herein.

Pursuant to the SAFA Second Amendment, the maximum term of any forward sale agreement made pursuant to the Sales Agency Financing Agreement is 18 months.

Investing in these securities involves certain risks. See “Risk Factors” on page S-2 of the prospectus supplement dated April 2, 2010 and “Item 1A—Risk Factors” in our most recent annual report on Form 10-K. Our annual report is incorporated by reference into the accompanying prospectus.

Neither the SEC nor any state securities regulators or other regulatory bodies have approved or disapproved of these securities, or determined if this prospectus supplement is truthful or complete. Any representation to the contrary is a criminal offense.

BNY Mellon Capital Markets, LLC

The date of this prospectus supplement is March 1, 2013.