

## FORM 11-K

(Mark One)

☑ ANNUAL REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2009

OR

□ TRANSITION REPORT PURSUANT TO SECTION 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

**Commission File Number 001-13828** 

A. Full title of the plan and the address of the plan, if different from that of the issuer named below:

# **MEMC RETIREMENT SAVINGS PLAN**

B. Name of issuer of the securities held pursuant to the plan and the address of its principal executive office:

501 Pearl Drive (City of O'Fallon) St. Peters, Missouri 63376

Financial Statements and Supplemental Schedule

December 31, 2009 and 2008

(With Report of Independent Registered Public Accounting Firm Thereon)

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Participants of the MEMC Retirement Savings Plan and The Board of Directors of MEMC Electronic Materials, Inc.

We have audited the accompanying statements of net assets available for benefits of the MEMC Retirement Savings Plan as of December 31, 2009 and 2008, and the related statements of changes in net assets available for benefits for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Plan is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the MEMC Retirement Savings Plan as of December 31, 2009 and 2008, and the changes in its net assets available for benefits for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Our audits were conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets (held at end of year) is presented for the purpose of additional analysis and is not a required part of the basic financial statements but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This supplemental schedule is the responsibility of the Plan's management. The supplemental schedule has been subjected to the auditing procedures applied in the audits of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Burn Smith Wallace, Ch

St. Louis, Missouri June 24, 2010

> MEMBER AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS AND AN INDEPENDENT FIRM ASSOCIATED WITH THE NORTH AMERICAN REGION OF MOORE STEPHENS INTERNATIONAL LIMITED KNOWN INTERNATIONALLY AS MOORE STEPHENS BROWN SMITH WALLACE, LLC

## Statements of Net Assets Available for Benefits

December 31, 2009 and 2008

	2009		2008		
Assets: Non-interest bearing cash	\$ 3	,071	\$	102	
Investments at fair value: Shares of registered investment companies MEMC Electronic Materials, Inc. common stock Common/Collective trusts Brokerage accounts Participant loans Total Investments	57,943 10,586 64,136 2,376 5,107 140,149	5,626 5,073 5,864 7,113	8,92 60,30 80 6,31	38,299 28,538 03,213 52,867 93,344 76,261	
Receivables: Participant Employer Total Receivables	126 301	5,625 5,175 1,800	<u> </u>	78,240 00,169 78,409 54,772	
Net assets available for benefits at fair value Adjustments from fair value to contract value for fully benefit-responsive investment contracts Net assets available for benefits	140,454 (1,776 \$ 138,677	6,946)	3,0	04,565 59,337	

See accompanying notes to financial statements.

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## Statements of Changes in Net Assets Available for Benefits

Years ended December 31, 2009 and 2008

	2009	2008
Additions:		
Earnings from investments:		
Interest income	\$ 359,502	\$ 476,140
Dividend income	2,384,833	4,470,060
Realized and unrealized gains / (losses)	14,335,774	(69,852,401)
Total income / (losses) from investments	17,080,109	(64,906,201)
Contributions:		
Employer	4,911,257	5,025,675
Participants	7,300,971	7,661,355
Participants rollover	181,358	596,900
Total contributions	12,393,586	13,283,930
Total additions / (reductions)	29,473,695	(51,622,271)
Deductions:		
Benefit payments to participants	13,739,143	15,714,046
Administrative expense	16,125	20,695
Total deductions	13,755,268	15,734,741
Net increase / (decrease) in assets available for benefits	15,718,427	(67,357,012)
Assets available for benefits:		
Beginning of year	122,959,337	190,316,349
End of year	\$ 138,677,764	\$ 122,959,337

See accompanying notes to financial statements.

Notes to Financial Statements December 31, 2009 and 2008

#### (1) Description of the Plan

The following description of the MEMC Retirement Savings Plan (the "Plan") provides only general information. Participants should refer to the plan document for a more complete description of the Plan's provisions.

#### (a) General

The Plan was established on April 1, 1989 under the provisions of Section 401(k) of the Internal Revenue Code and is a defined contribution retirement savings plan, subject to the provisions of the Employee Retirement Income Security Act of 1974 ("ERISA"), sponsored by MEMC Electronic Materials, Inc. (the "Company"). The MEMC Electronic Materials, Inc. Investment Committee is the designated administrator of the Plan (the "Plan Administrator"), including having the responsibility for reviewing the performance of the Plan's investment alternatives. Generally, all employees of the Company compensated in U.S. dollars from a payroll location within the Unites States are eligible to participate in the Plan.

#### (b) Contributions

Participants may elect to contribute from 1% to 50% of their covered compensation as described in the Plan on a before-tax basis. The before-tax contribution is limited to the amount specified by Section 402(g) of the Internal Revenue Code (\$16,500 in 2009 and \$15,500 in 2008). A participant is eligible to receive employer-matching contributions of 100% of the first 3% of the employee's contribution, 50% of the next 2% contributed, and 20% of the next 1% contributed, up to 4.2% of the participant's covered compensation for the Plan year. The Company contributes 2% of compensation as a special employer contribution on behalf of those individuals whose benefits are frozen in the MEMC Pension Plan or hired on or after January 2, 2002.

#### (c) Participant's Accounts

Each participant account is comprised of the following subaccounts: a before-tax account, an after-tax account, a Safe Harbor matching account, a matching account, and a rollover account, as applicable. Participants may elect to participate and/or adjust contribution elections at any time. Each participant account is credited with participant contributions as specified by the participant; an allocation of the Company's contributions; and the income, loss, appreciation, and depreciation attributable thereto.

#### (d) Vesting

Participant matching accounts are immediately and fully vested.

#### (e) Investment Options

Participants may direct investment or reinvestment of contributions credited to their individual accounts in any one or a combination of the 23 available investment options in increments of 1% of the amount credited. Interfund transfers in and out of the MEMC Stock Fund are limited to one per week. Participants may elect to adjust all other investment options daily.

#### (f) Participant Loans

Participants may apply for and receive loans from their vested account. No more than two loans may be outstanding to a participant at any one time. The amount of loans to an individual participant shall not exceed the lesser of \$50,000 or one-half of the vested portion of the account balance of the participant as of the date the loan is requested by the participant without regard to any contributions allocated to the account of the participant on or after such date. The minimum amount of any loan shall be \$1,000.

#### (g) Payment of Benefits

Under the terms of the Plan, participants or their designated beneficiaries are entitled to receive the amounts credited to their accounts upon normal retirement at age 65, early retirement, disability, or death. Participants terminating prior to retirement are entitled to receive the portion of their account that is vested. Distributions are made in the form of a lump-sum payment. If the participant's vested balance exceeds \$5,000, the participant may elect to defer receipt of the distribution.

Participants may elect to withdraw all or any portion of the amount credited to their After-Tax Accounts that exceeds the aggregate amount of matched After-Tax contributions to such account in the 24-month period ending on the Valuation Date as of which such withdrawal is made.

Participants may elect to withdraw the amount credited to their Matching Accounts that exceeds the aggregate contributions credited to such accounts in the 24-month period ending on the Valuation Date immediately preceding the date as of which such withdrawal is made.

Participants who have attained age 59½ may elect to withdraw the amounts credited to their Before-Tax and Safe Harbor Matching Accounts and Nonmatching Accounts that exceeded the aggregate contributions credited to such accounts in the 24-month period ending on the valuation date immediately preceding the date as of which such withdrawal is made. Participants who have not yet attained 59½ shall not be eligible to withdraw amounts credited to their Before-Tax and Safe Harbor Matching Accounts, and their Nonmatching Accounts except as provided for hardship withdrawals of Before-Tax contributions.

Participants may elect to withdraw all or any portion of the amount credited to their Rollover Account.

In addition, hardship withdrawals are allowed for employees under age 59½ under certain circumstances in an amount equal to the value of accumulated before-tax contributions and the Safe Harbor Match Account. Account earnings are not eligible for inclusion in the withdrawal amount. Participants incurring a hardship withdrawal will not be eligible to make further contributions to the Plan for at least 12 months after the receipt of such distribution.

#### (h) Additional Events

During the plan year ended December 31, 2008, the Plan replaced eight funds with new funds on June 13, 2008. Age based funds were also added and are the Qualified Default Investment Alternative of the Plan. A self-directed brokerage option was also added to the Plan.

In May 2010, the Company limited the amount of future contributions in MEMC Electronic Materials, Inc. common stock to 15% of a participant's total contributions. In addition, participants will not be allowed to transfer existing balances into MEMC Electronic Materials, Inc. common stock to the extent the amount invested would exceed 15% of the participant's account.

### (2) Summary of Accounting Policies

The following are the significant accounting policies followed by the Plan:

### (a) Accounting Standards Codification

On July 1, 2009, the Plan adopted the Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 105-10 ("ASC 105-10"). ASC 105-10 establishes the FASB Accounting Standards Codification (the "Codification") as the source of authoritative accounting principles recognized by the FASB to be applied by nongovernmental entities in the preparation of financial statements in conformity with U.S. generally accepted accounting principles ("US GAAP"). Rules and interpretive releases of the Securities and Exchange Commission ("SEC") under authority of federal securities laws are also sources of authoritative US GAAP for SEC registrants. All guidance contained in the Codification carries an equal level of authority. The Codification superseded all existing non-SEC accounting and reporting standards. All other non-grandfathered, non-SEC accounting literature not included in the Codification is non-authoritative. The adoption of this accounting standard did not have a material impact on the Plan's financial statements.

#### (b) Basis of Accounting

The accompanying financial statements have been prepared on the accrual basis of accounting, except for benefit payments, which are recorded when paid.

#### (c) Use of Estimates

The preparation of the accompanying financial statements in conformity with US GAAP requires the Plan Administrator to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

#### (d) Valuation of Investments

Purchases and sales of investments are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

#### (e) Administrative Expenses

The reasonable expenses incident to the operation of the Plan shall be paid out of the trust fund, unless the Company, in its sole discretion, elects at any time to pay part or all of such expenses.

#### (f) Subsequent Events

Effective April 1, 2009, the Plan adopted an accounting standards update included in ASC 855, *Subsequent Events*. This update is intended to establish general standards of accounting for and disclosure of events that occur after the balance sheet date but before financial statements are issued or are available to be issued. It requires the disclosure of the date through which an entity has evaluated subsequent events and the basis for selecting that date; that is, whether that date represents the date the financial statements were issued or were available to be issued. We have evaluated subsequent events or transactions that occurred after the balance sheet date of December 31, 2009 up through June 24, 2010, which is the date the accompanying financial statements and supplemental scheduled were issued.

#### (3) Trust Fund Managed by the Trustee

The Plan assets are maintained in a trust fund. The investments and changes therein, of this trust fund have been reported to the Plan by Putnam Investments (the "Trustee").

#### (4) Plan Termination

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA.

#### (5) Tax Status

The Internal Revenue Service issued its latest determination letter on October 29, 2008, which stated that the Plan and its underlying trust qualify under the applicable provisions of the Internal Revenue Code and, therefore, are exempt from federal income taxes. The Plan Administrator and the Plan's counsel believe that the Plan is currently designed and being operated in compliance with the applicable requirements of the Internal Revenue Code.

#### (6) Investments

The following table presents investments that represent 5% or more of the net assets available for benefits at December 31.

	 2009	 2008
Investments: Putnam Stable Value Fund ** Ssga S&P 500 Series C Fund PIMCO Total Return Fund MEMC Electronic Materials, Inc. common stock T. Rowe Price Capital Appreciation Fund Thomburg Int'L Value Fund Class R5 Participant Loans	\$ 41,085,367 21,273,760 11,522,782 10,586,626 8,997,659 8,287,482 *	\$ 46,416,883 16,890,895 9,607,698 8,928,538 6,708,335 * 6,393,344

\* Amounts were less than 5% of total net assets as of December 31 of such year.

\*\* Amount represents contract value for this investment.

### Net Appreciation (Depreciation) in Fair Value

The Plan's investments (including investments bought, sold, and held during the year) appreciated (depreciated) in value by \$14,335,774 in 2009 and (\$69,852,401) in 2008 as follows:

	2009		 2008
Shares of registered investment companies MEMC Electronic Materials, Inc. common stock Brokerage accounts Common/collective trusts	\$	8,721,165 (390,614) 1,513,998 4,491,225 14,335,774	\$ (27,322,599) (33,224,447) (811,666) (8,493,689) (69,852,401)

#### (7) Fair Value Measurements

Fair value accounting guidance establishes a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs that market participants would use in pricing the asset or liability, and are based on market data obtained from

sources independent of the Plan. Unobservable inputs reflect assumptions market participants would use in pricing the asset or liability based on the best information available in the circumstances. The hierarchy is broken down into three levels based on the reliability of inputs as follows:

- Level 1—Valuations based on quoted prices in active markets for identical assets or liabilities that the Plan has the ability to access. Valuation adjustments and block discounts are not applied to Level 1 instruments. Because valuations are based on quoted prices that are readily and regularly available in an active market, valuation of these instruments does not entail a significant degree of judgment.
- Level 2—Valuations based on quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly. Valuations for Level 2 assets are prepared on an individual asset basis using data obtained from recent transactions for identical securities in inactive markets or pricing data from similar assets in active and inactive markets.
- Level 3—Valuations based on inputs that are unobservable and significant to the overall fair value measurement.

The Plan uses appropriate valuation techniques based on the available inputs to measure the fair value of its investments. When available, the Plan measures fair value using Level 1 inputs because they generally provide the most reliable evidence of fair value. Level 3 inputs were only used when Level 1 or Level 2 inputs were not available.

#### Level 1 Fair Value Measurements

 Investments in the stock fund, shares of a registered investment company, common/collective trusts, common stocks and mutual funds are valued based on the fair value as determined by quoted market price on a daily basis.

#### Level 2 Fair Value Measurements

 Investments in common/collective or pooled funds maintained by the Trustee are valued using data obtained from recent transactions for identical securities in inactive markets or pricing data from similar assets in active and inactive markets.

#### Level 3 Fair Value Measurements

 Participant loans are not actively traded and significant other observable inputs are not available. The fair value of participant loans is equal to the amortized cost of the loans because the loans are secured by each respective participant's account balance.

The Plan's investments are reported at fair value in the accompanying statement of net assets available for benefits.

December 31, 2009:	 Fair Value	 Level 1	 Level 2	Level 3
Shares of registered investment companies: US equity funds International equity funds Bond funds Asset allocation funds Other Total shares of registered investment companies	\$ 33,788,500 8,287,482 11,522,782 4,151,338 193,061 57,943,163 10,586,626	\$ 33,788,500 8,287,482 11,522,782 4,151,338 193,061 57,943,163 10,586,626	\$ - \$    	\$  - - - - - - -
MEMC Electronic Materials, Inc. common stock Common/Collective trusts: Fixed income funds US equity funds	42,862,313 21,273,760	21,273,760	42,862,313	-
Total common/collective trusts Brokerage accounts (a)	 64,136,073 2,376,864	 21,273,760 2,376,864	 42,862,313	 5,107,113
Participant loans Total Investments	\$ 5,107,113 140,149,839	\$ 92,180,413	\$ 42,862,313	\$ 5,107,113

December 31, 2008:	 Fair Value	 Level 1	 Level 2	 Level 3
Shares of registered investment companies: MEMC Electronic Materials, Inc. common stock Common/Collective trusts: Brokerage accounts (a) Participant loans Total Investments	\$ 43,188,299 8,928,538 60,303,213 862,867 6,393,344 119,676,261	\$ 43,188,299 8,928,538 16,890,895 862,867 - -	43,412,318 - - 43,412,318	\$ 6,393,344 6,393,344

(a) The brokerage account is invested in a variety of categories of common stocks, mutual funds and other investments as directed by participants.

The following table provides further details of the total investments using Level 3 fair value measurements.

Participant loans:		2009
Beginning Balance Purchases, sales, issuances, and settlements (net) Ending Balance	\$	6,393,344 (1,286,231) 5,107,113

Gains and losses (realized and unrealized) included in changes in net assets available for benefits for the year ended December 31, 2009 and 2008 are reported in realized and unrealized gains (losses).

#### (8) Investment Contract

Prior to January 1, 2008, the Plan had entered into a benefit-responsive investment contract with Invesco. The contract was terminated on June 13, 2008 and account balances were transferred to the Putnam Stable Value Fund. Putnam Investments maintains the contributions in a general account. The account is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses. The average yield and crediting interest rates for benefit-responsive investment contracts was 2.74% and 4.77% in 2009 and 2008, respectively.

#### (9) Related Party Transactions

Certain Plan investments are shares of registered investment companies and common/collective trusts managed by Putnam Investments. Because Putnam Investments is the Trustee, these

transactions qualify as party-in-interest transactions. Fees paid by the Plan for the investment management services amounted to \$2,500 and \$11,635 for the years ended December 31, 2009 and 2008, respectively.

#### (10)Risks and Uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities could occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the statement of net assets available for benefits.

#### Schedule 1

## MEMC RETIREMENT SAVINGS PLAN

Schedule H, Line 4i – Schedule of Assets (Held at End of Year)

December 31, 2009

Identity of issuer, borrower, lessor or similar party	Description of issue, maturity date, rate of interest, collateral, par or maturity value	 rrent Value
Putnam Stable Value Fund*	Common/Collective Trust	\$ 42,862,313
Ssga S&P 500 Series C Fund	Common/Collective Trust	21,273,760
PIMCO Total Return Fund	Mutual Fund	11,522,782
MEMC Electronic Materials, Inc*	Common Stock	10,586,626
T. Rowe Price Capital Appreciation Fund	Mutual Fund	8,997,659
Thornburg Int'L Value Fund Class R5	Mutual Fund	8,287,482
American Beacon Large Cap Value	Mutual Fund	6,636,325
Van Kampen Small Cap Growth I	Mutual Fund	6,093,731
Participant Loans*	Interest rates range from 3.25% to 8.25%	5,107,113
Northern Small Cap Value Fund	Mutual Fund	4,627,277
Janus Advisor Forty S Fund	Mutual Fund	4,009,615
Loomis Sayles Mid Cap Growth Fund	Mutual Fund	3,423,886
Brokerage Securities	Brokerage	2,376,864
Fidelity Freedom 2025 Fund	Mutual Fund	831,585
Fidelity Freedom 2030 Fund	Mutual Fund	765,939
Fidelity Freedom 2015 Fund	Mutual Fund	712,644
Fidelity Freedom 2020 Fund	Mutual Fund	488,665
Fidelity Freedom 2010 Fund	Mutual Fund	350,210
Fidelity Freedom 2040 Fund	Mutual Fund	321,641
Fidelity Freedom 2035 Fund	Mutual Fund	278,583
Federated Prime - Sdb	Mutual Fund	193,061
Fidelity Freedom 2045 Fund	Mutual Fund	168,974
Fidelity Freedom Income Fund	Mutual Fund	145,402
	Mutual Fund	87,695
Fidelity Freedom 2050 Fund Putnam OTC & Emerging Growth Fund*	Mutual Fund	 7
Total Investment	s	\$ 140,149,839

\* Represents a party-in-interest allowable by ERISA.

See accompanying report of independent registered public accounting firm.

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#### SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Plan Administrator has duly caused this annual report to be signed on its behalf by the undersigned hereunto duly authorized.

#### MEMC Electronic Materials, Inc. MEMC Retirement Savings Plan

By: MEMC Electronic Materials, Inc. Investment Committee

**Plan Administrator** 

By:

Member, MEMC Electronic Materials, Inc. Investment Committee

Date: June 24, 2010

### EXHIBIT INDEX

<u>Exhibit No.</u>

**Description** 

23.1

Consent of Brown, Smith, Wallace, L.L.C.

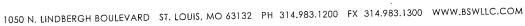




Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to incorporation by reference in the Registration Statement (Form S-8 No. 333-19159) of our report dated June 24, 2010, relating to the statements of net assets available for benefits of the MEMC Retirement Savings Plan as of December 31, 2009 and 2008, the related statements of changes in net assets available for benefits for the years then ended, and the related supplemental schedule of assets (held at end of year) as of December 31, 2009, which report appears in the December 31, 2009 Annual Report on Form 11-K of the MEMC Retirement Savings Plan.

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St. Louis, Missouri June 24, 2010

> MEMBER AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS AND AN INDEPENDENT FIRM ASSOCIATED WITH THE NORTH AMERICAN REGION OF MOORE STEPHENS INTERNATIONAL LIMITED KNOWN INTERNATIONALLY AS MOORE STEPHENS BROWN SMITH WALLACE, LLC