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**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**

Washington, DC  
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Washington, D.C. 20549

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**FORM 11-K**

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(Mark One)

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

For the fiscal year ended December 31, 2008

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

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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  
(Address of principal executive offices)

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**MEMC RETIREMENT SAVINGS PLAN**

Financial Statements and Supplemental Schedule

December 31, 2008 and 2007

(With Report of Independent Registered Public Accounting Firm Thereon)

# MEMC RETIREMENT SAVINGS PLAN

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## Report of Independent Registered Public Accounting Firm

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, 2008 and 2007, 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 the 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, 2008 and 2007, 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.

*Brown Smith Wallace, LLC*

St. Louis, Missouri  
June 24, 2009

**MEMC RETIREMENT SAVINGS PLAN**  
**Statements of Net Assets Available for Benefits**  
December 31, 2008 and 2007

	<u>2008</u>	<u>2007</u>
<b>Assets:</b>		
Non-interest bearing cash	\$ 102	\$ 28,402
Investments at fair value:		
Money market funds	-	657,284
Shares of registered investment companies	43,188,299	75,580,807
MEMC Electronic Materials, Inc. common stock	8,928,538	33,326,853
Common/Collective trusts	60,303,213	72,240,814
Brokerage accounts	862,867	-
Participant loans	<u>6,393,344</u>	<u>7,625,573</u>
Total Investments	<u>119,676,261</u>	<u>189,431,331</u>
Receivables:		
Participant	178,240	247,333
Employer	<u>100,169</u>	<u>162,869</u>
Total Receivables	<u>278,409</u>	<u>410,202</u>
<b>Net assets available for benefits at fair value</b>	119,954,772	189,869,935
Adjustments from fair value to contract value for fully benefit-responsive investment contracts	3,004,565	446,414
<b>Net assets available for benefits</b>	<u>\$ 122,959,337</u>	<u>\$ 190,316,349</u>

See accompanying notes to financial statements.

**MEMC RETIREMENT SAVINGS PLAN**

Statements of Changes in Net Assets Available for Benefits

Years ended December 31, 2008 and 2007

	<u>2008</u>	<u>2007</u>
<b>Additions:</b>		
Earnings from investments:		
Interest income	\$ 476,140	\$ 488,948
Dividend income	4,470,060	8,798,135
Realized and unrealized (losses) / gains	<u>(69,852,401)</u>	<u>18,841,963</u>
Total (losses) / income from investments	(64,906,201)	28,129,046
Contributions:		
Employer	5,025,675	5,182,319
Participants	7,661,355	7,832,377
Participants rollover	<u>596,900</u>	<u>486,021</u>
Total contributions	<u>13,283,930</u>	<u>13,500,717</u>
Total (reductions) / additions	(51,622,271)	41,629,763
Deductions:		
Benefit payments to participants	15,714,046	15,082,381
Administrative expense	<u>20,695</u>	<u>25,955</u>
Total deductions	<u>15,734,741</u>	<u>15,108,336</u>
<b>Net (decrease) / increase in assets available for benefits</b>	<b>(67,357,012)</b>	<b>26,521,427</b>
Assets available for benefits:		
Beginning of year	<u>190,316,349</u>	<u>163,794,922</u>
End of year	<u>\$ 122,959,337</u>	<u>\$ 190,316,349</u>

See accompanying notes to financial statements.

## MEMC RETIREMENT SAVINGS PLAN

Notes to Financial Statements

December 31, 2008 and 2007

### (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 the Company. Generally, all employees of MEMC Electronic Materials, Inc. (the Company) compensated in U.S. dollars from a payroll location within the United States are eligible to participate in the Plan.

#### (b) Contributions

Each participant may elect to contribute from 1% to 50% of his/her 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 (\$15,500 in both 2008 and 2007). 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 who were 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 his/her individual account 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 calendar month. 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.

A participant may elect to withdraw all or any portion of the amount credited to his After-Tax Account 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.

A participant may elect to withdraw the amount credited to his Matching Account that exceeds the aggregate contributions credited to such account in the 24-month period ending on the Valuation Date immediately preceding the date as of which such withdrawal is made.

A participant who has attained age 59½ may elect to withdraw the amounts credited to his Before-Tax and Safe Harbor Matching Account and his Nonmatching Account 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. A participant who has not yet attained 59½ shall not be eligible to withdraw amounts credited to his Before-Tax and Safe Harbor Matching Account, and his Nonmatching Account except as provided for hardship withdrawals of Before-Tax contributions.

A participant may elect to withdraw all or any portion of the amount credited to his 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.

**(2) Summary of Accounting Policies**

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

**(a) 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.

**(b) Use of Estimates**

The preparation of the accompanying financial statements in conformity with accounting principles generally accepted in the United States of America 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.

**(c) 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.

**(d) Administrative Expenses**

The reasonable expenses incident to the operation of this 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.

**(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 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.

	2008	2007
Investments:		
Putnam Stable Value Fund	\$ 43,412,318	*
Ssga S&P 500 Series C Fund	16,890,895	*
PIMCO Total Return Fund	9,607,698	9,643,018
MEMC Electronic Materials, Inc. common stock	8,928,538	33,326,853
T. Rowe Price Capital Appreciation Fund	6,708,335	*
Participant Loans	6,393,344	*
The George Putnam Fund of Boston	*	11,141,184
Putnam S&P 500 Index Fund	*	31,222,310
Dodge and Cox Stock Fund	*	13,489,996
RS Diversified Growth Fund	*	9,998,128
Putnam International Growth Fund	*	16,064,755

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

### **Net Appreciation in Fair Value**

The Plan's investments (including investments bought, sold, and held during the year) (depreciated) appreciated in value by (\$69,852,401) in 2008 and by \$18,841,963 in 2007 as follows:

	<u>2008</u>	<u>2007</u>
Shares of registered investment companies	\$ (27,322,599)	\$ (5,286,195)
MEMC Electronic Materials, Inc. common stock	(33,224,447)	22,353,983
Brokerage accounts	(811,666)	-
Common/collective trusts	(8,493,689)	1,774,175
	<u>\$ (69,852,401)</u>	<u>\$ 18,841,963</u>

### **(7) Fair Value Measurements**

In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards No. 157, "Fair Value Measurements" (SFAS 157), which establishes a framework for measuring fair value and expands disclosures about fair value measurements. Effective January 1, 2008, the Plan adopted SFAS 157 for financial assets and liabilities recognized at fair value on a recurring basis which did not have a material impact on the Plan's Statements of Net Assets Available for Benefits or the Statements of Changes in Net Assets Available for Benefits.

SFAS 157, *Fair Value Measurements* 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 developed, 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 and common/collective trusts 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 Putnam Investments (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.

<b>December 31, 2008:</b>	<b>Fair Value</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>
Shares of registered investment companies	\$ 43,188,299	\$ 43,188,299	\$ -	\$ -
MEMC Electronic Materials, Inc. common stock	8,928,538	8,928,538	-	-
Common/Collective trusts	60,303,213	16,890,895	43,412,318	-
Brokerage accounts	862,867	862,867	-	-
Participant Loans	6,393,344	-	-	6,393,344
Total Investments	<u>\$ 119,676,261</u>	<u>\$ 69,870,599</u>	<u>\$ 43,412,318</u>	<u>\$ 6,393,344</u>

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

<b>December 31, 2008:</b>	<b>Participant Loans</b>
Beginning Balance	\$ 7,625,573
Purchases, sales, issuances, and settlements (net)	(1,232,229)
Ending Balance	<u>\$ 6,393,344</u>

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

**(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 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 4.77% in 2008 and ranged from 4.62% to 5.5% at December 31, 2007.

**(9) Related Party Transactions**

Certain Plan investments are shares of registered investment companies managed by Putnam Investments. Putnam Investments is the Trustee, as defined by the Plan, and, therefore, these transactions qualify as party-in-interest transactions. Fees paid by the Plan for the investment

management services amounted to \$11,635 and \$25,955 for the years ended December 31, 2008 and 2007, 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, 2008

<b>Identity of issuer, borrower, lessor or similar party</b>	<b>Description of issue, maturity date, rate of interest, collateral, par or maturity value</b>	<b>Current Value</b>
Putnam Stable Value Fund*	Common/Collective Trust	\$ 43,412,318
Ssga S&P 500 Series C Fund	Common/Collective Trust	16,890,895
PIMCO Total Return Fund	Mutual Fund	9,607,698
MEMC Electronic Materials, Inc	Common Stock	8,928,538
T. Rowe Price Capital Appreciation Fund	Mutual Fund	6,708,335
Thornburg Int'L Value Fund Class R5	Mutual Fund	6,072,598
American Beacon Large Cap Value	Mutual Fund	5,525,399
Van Kampen Small Cap Growth I	Mutual Fund	5,266,735
Dimensional Adv Us Small Cap Value	Mutual Fund	3,813,250
Loomis Sayles Mid Cap Growth Fund	Mutual Fund	2,588,775
Janus Advisor Forty S Fund	Mutual Fund	1,808,060
Brokerage Securities	Brokerage	862,867
Participant Loans	Interest rates range from 4% to 9.5%	6,393,344
Fidelity Freedom 2025 Fund	Mutual Fund	353,638
Fidelity Freedom 2030 Fund	Mutual Fund	328,849
Fidelity Freedom 2010 Fund	Mutual Fund	253,700
Fidelity Freedom 2020 Fund	Mutual Fund	252,868
Federated Prime - Sdb	Mutual Fund	216,784
Fidelity Freedom Income Fund	Mutual Fund	95,449
Fidelity Freedom 2040 Fund	Mutual Fund	86,092
Fidelity Freedom 2015 Fund	Mutual Fund	75,589
Fidelity Freedom 2045 Fund	Mutual Fund	70,300
Fidelity Freedom 2035 Fund	Mutual Fund	42,593
Fidelity Freedom 2050 Fund	Mutual Fund	21,587
<b>Total Investments</b>		<b>\$ 119,676,261</b>

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

See accompanying report of independent registered public accounting firm.

## SIGNATURES

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

**MEMC Retirement Savings Plan**



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**Plan Administrator**

**Date: June 24, 2009**

**EXHIBIT INDEX**

Exhibit No.

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, 2009, relating to the statements of net assets available for benefits of the MEMC Retirement Savings Plan as of December 31, 2008 and 2007, 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, 2008, which report appears in the December 31, 2008 Annual Report on Form 11-K of the MEMC Retirement Savings Plan.

*Brown Smith Wallace, LLC*

St. Louis, Missouri  
June 24, 2009