

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 11-K

☒ 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: 1-9894

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

ALLIANT ENERGY CORPORATION 401(k) SAVINGS PLAN

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

ALLIANT ENERGY CORPORATION
4902 North Biltmore Lane
Madison, Wisconsin 53718

REQUIRED INFORMATION

The following financial statements and schedules of the Alliant Energy Corporation 401(k) Savings Plan, prepared in accordance with the financial reporting requirements of the Employee Retirement Income Security Act of 1974, as amended, are filed herewith.

ALLIANT ENERGY CORPORATION
401(k) SAVINGS PLAN
FINANCIAL STATEMENTS AS OF DECEMBER 31, 2009 AND 2008
AND FOR THE YEAR ENDED DECEMBER 31, 2009,
SUPPLEMENTAL SCHEDULES AS OF AND FOR THE YEAR ENDED DECEMBER 31, 2009, AND
REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

ALLIANT ENERGY CORPORATION

401(k) SAVINGS PLAN

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Report of Independent Registered Public Accounting Firm

To the Total Compensation Committee and Participants of the Alliant Energy Corporation 401(k) Savings Plan
Madison, Wisconsin

We have audited the accompanying statements of net assets available for benefits of Alliant Energy Corporation 401(k) Savings Plan (the "Plan") as of December 31, 2009 and 2008, and the related statement of changes in net assets available for benefits for the year ended December 31, 2009. 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, such financial statements present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2009 and 2008, and the changes in net assets available for benefits for the year ended December 31, 2009 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 schedules of (1) assets (held at end of year) as of December 31, 2009, and (2) assets (acquired and disposed of within year) for the year ended December 31, 2009, and (3) reportable transactions for the year ended December 31, 2009, are presented for the purpose of additional analysis and are not a required part of the basic financial statements, but are 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. These schedules are the responsibility of the Plan's management. Such schedules have been subjected to the auditing procedures applied in our audit of the basic 2009 financial statements and, in our opinion, are fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole.

/s/ Deloitte & Touche LLP

Milwaukee, Wisconsin
June 24, 2010

ALLIANT ENERGY CORPORATION

401(k) SAVINGS PLAN

STATEMENTS OF NET ASSETS AVAILABLE FOR BENEFITS

	December 31,	
	<u>2009</u>	<u>2008</u>
Investments, other than participant promissory notes (Refer to Notes 7, 8 and 9)	\$572,303,167	\$455,015,943
Participant promissory notes	9,583,720	9,601,321
Total investments	<u>581,886,887</u>	<u>464,617,264</u>
Net assets available for benefits at fair value	581,886,887	464,617,264
Adjustments from fair value to contract value for fully benefit-responsive investment contracts (Refer to Note 2)	<u>3,604,537</u>	<u>7,498,346</u>
Net assets available for benefits	<u><u>\$585,491,424</u></u>	<u><u>\$472,115,610</u></u>

The accompanying Notes to Financial Statements are an integral part of these statements.

ALLIANT ENERGY CORPORATION

401(k) SAVINGS PLAN

STATEMENT OF CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS

For the Year Ended December 31, 2009

Net assets available for benefits - beginning of year	\$472,115,610
Contributions:	
Cash contributions from employees	26,937,852
Employer contributions:	
Cash	13,875,570
Cash for purchase of Alliant Energy Corporation common stock	1,049,447
Rollovers from other qualified plans	552,712
Investment income:	
Net appreciation in fair value of investments (Refer to Note 7)	94,402,345
Interest and dividends	11,850,467
Distributions to participants	<u>(35,292,579)</u>
Net increase	<u>113,375,814</u>
Net assets available for benefits - end of year	<u><u>\$585,491,424</u></u>

The accompanying Notes to Financial Statements are an integral part of this statement.

ALLIANT ENERGY CORPORATION
401(k) SAVINGS PLAN

NOTES TO FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2009

Note 1. Description of the Plan

The Alliant Energy Corporation 401(k) Savings Plan (the Plan) is a qualified defined contribution plan under Section 401(k) of the Internal Revenue Code (the Code), as amended, and meets the applicable requirements of the Employee Retirement Income Security Act of 1974, as amended (ERISA). The following brief description of the Plan is provided for general information purposes only. More complete information regarding the Plan is provided in the plan document and summary plan description, which have been made available to all eligible Plan participants (participants). The Plan is administered by the Total Compensation Committee (the Committee) and the Plan sponsor is Alliant Energy Corporate Services, Inc. (a direct subsidiary of Alliant Energy Corporation). The Committee reserves the right to terminate, amend or modify the Plan if future conditions warrant such action.

Any regular employee of Alliant Energy Corporation and its participating subsidiaries (the Company) age 18 and over may participate in the Plan. Regular full-time employees and regular part-time employees customarily scheduled to work at least half-time may participate immediately following 30 days of service. Part-time employees customarily scheduled to work less than half-time may participate after 12 months of service during which he or she has earned at least 1,000 paid hours.

An Employee Stock Ownership Plan (ESOP) is in place within the Plan. Under these provisions, participants have the option to elect to receive cash for any dividends paid on Company common stock within the Plan or to have the dividends reinvested in additional shares based on the current market price.

The Company provides matching contributions of \$0.50 for each \$1 contributed by the participant up to the first 8% of each respective participant's eligible compensation. In addition, the Company provides a contribution into each active employee's 401(k) account each pay period based on a percentage of their base pay (non-elective Company cash contribution) as follows:

<u>Age plus Years of Service</u>	<u>Company Contribution</u>
≤ 49	4%
50 – 69	5%
70+	6%

There are certain exceptions to the Company matching contributions and non-elective Company cash contributions described above for bargaining unit employees. These exceptions are dependent on the bargaining unit in which the employee participates and the employee's date of hire. These exceptions include certain employees being ineligible for the non-elective Company cash contribution and the Company matching contribution being limited to \$0.50 for each \$1 contributed by the participant up to the first 6% of each respective participant's eligible compensation. In addition, certain bargaining unit employees are eligible for a Company contribution of 1% of their respective eligible compensation (1% Company contribution). This 1% Company contribution is in addition to any other Company provided match and will be invested in the Alliant Energy Corporation Common Stock Fund. Participants must have at least three years of service before they can diversify investments from this 1% Company contribution to different investment funds.

Employee contribution limits for 2009 were as follows:

Eligible employee annual contribution limit as a percentage of compensation	50%
Maximum annual contribution limit*	\$16,500

*Participants who were at least age 50 by Dec. 31, 2009 were eligible to make additional catch-up contributions of up to \$5,500 in 2009. These additional catch-up contributions were not eligible for any Company match.

Company matching contributions and the non-elective Company cash contributions are invested at each participant's discretion. Participants may subsequently redesignate the distribution of future contributions or transfer existing balances between investment funds on a daily basis, subject to the limits set forth in the Plan.

Beginning June 21, 2009, the Company matching contribution for certain non-bargaining and bargaining employees was temporarily suspended. The suspension did not apply to the non-elective Company cash contributions. The Company resumed the matching contribution effective the first pay period of 2010.

An "additional" Company contribution is contributed to the accounts of active participants, as of the last day of the Plan year, who contributed at least the maximum level of their compensation eligible to be matched by the Company and did not receive the maximum level of Company matching contributions based on their contributions during the Plan year. The amount of the "additional" Company contribution is the difference between the maximum level of Company matching contributions based on the participants contributions during the Plan year and the amount of Company matching contributions previously received by the participant during the Plan year.

Participants are immediately vested in their respective employee and employer contributions, except for the non-elective Company cash contribution which is subject to a three year cliff vesting schedule for new employees hired on Aug. 1, 2008 or later, or on a date agreed to pursuant to the terms of the participant's respective bargaining agreement. At Dec. 31, 2009 and 2008, forfeited nonvested accounts totaled \$38,816 and \$0, respectively. These accounts will be used to reduce future employer contributions. During the year ended Dec. 31, 2009, employer contributions were reduced by \$0 from forfeited nonvested accounts.

Contributions under the Plan are held and invested, until distribution, in a Trust Fund maintained by J.P. Morgan Retirement Plan Services LLC (the Trustee or JPMorgan). Individual accounts are maintained by the Trustee for each participant. Each participant's account is credited with the participant's contributions, Company contributions, and an allocation of Plan earnings, and charged with withdrawals and an allocation of Plan losses and administrative expenses. Allocations are based on participant earnings or account balances, as defined. The benefit to which a participant is entitled is the benefit that can be provided from the participant's vested account balance.

The Plan has provisions under which participants who are active employees may take loans up to the lesser of \$50,000 or 50% of their total account balance (a \$1,000 minimum loan amount and a maximum of three loans for each participant also apply). The Committee determines the loan interest rate pursuant to the Plan. Interest rates on participant loans outstanding ranged from 4.25% to 10.5% and 5.0% to 10.5% at Dec. 31, 2009 and 2008, respectively. Principal and interest are repaid bi-weekly through employee payroll deductions.

Note 2. Summary of Significant Accounting Policies

(a) Basis of Accounting - The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP).

(b) New Accounting Pronouncements - In September 2009, the Financial Accounting Standards Board issued authoritative guidance which expands the required disclosures for certain investments with a reported net asset value (NAV). The guidance permits an entity holding investments in certain entities that calculate net asset value per share or its equivalent for which the fair value is not readily determinable, to measure the fair value of such investments on the basis of that net asset value per share or its equivalent without adjustment. The guidance requires enhanced disclosures about the nature and risks of investments, including the nature of any restrictions on an investor's ability to redeem its investments at the measurement date, any unfunded commitments and the investment strategies of the investee. The Plan adopted this guidance on a prospective basis for the year ended Dec. 31, 2009 with no material impact on the fair value determination and disclosure of applicable investments. Refer to Note 8 for disclosures about fair value measurements.

In January 2010, the Financial Accounting Standards Board issued authoritative guidance which adds new fair value measurement disclosure requirements for Level 1 and 2 measurements, separate disclosures of purchases, sales, issuances and settlements relating to Level 3 measurements and clarification of existing fair value disclosures. The guidance is effective for periods beginning after Dec. 31, 2009, except for the requirement to provide Level 3 activity of purchases, sales, issuances and settlements on a gross basis, which will be effective for fiscal years beginning after Dec. 31, 2010. The Plan is currently evaluating the impact this guidance will have on the financial statements of the Plan.

(c) Accounting for Fully Benefit-Responsive Contracts - In accordance with Financial Accounting Standards Board authoritative guidance which defines reporting of fully benefit-responsive contracts held by defined-contribution pension plans, the statements of net assets available for benefits present investments at fair value as well as an additional line item showing an adjustment of fully benefit-responsive contracts from fair value to contract value.

(d) Valuation of Investments and Income Recognition - The Plan's investments are stated at fair value. All Guaranteed Investment Contracts (GICs) held by the Plan are fully benefit-responsive contracts and at Dec. 31, 2009 and 2008 all were synthetic GICs. The synthetic GICs are comprised of a portfolio of bonds and other fixed income securities owned by the Plan and an investment contract issued by an insurance company or other financial institution, designed to provide a contract value "wrapper" around the fixed income portfolio to guarantee a specific interest rate. The contract value of all GIC investments was \$67,122,958 and \$65,386,614 at Dec. 31, 2009 and 2008, respectively. The approximate fair value of these investments was \$63,518,421 and \$57,888,268 at Dec. 31, 2009 and 2008, respectively, based on the fair value of the underlying assets. The weighted average yields for the GICs based on annualized earnings on Dec. 31, 2009 and 2008 were 4.12% and 6.43%, respectively. The weighted average yields for the GICs based on the interest rate credited to participants on Dec. 31, 2009 and 2008 were 2.48% and 3.44%, respectively. Participant loans are carried at unpaid principal balances due, which approximates fair value. All other Plan investments are carried at fair value as determined by quoted market prices or the net asset value of shares held by the Plan on the valuation date. Interest income is accrued when earned. Dividend income is recorded on the ex-dividend date. Investment transactions are recorded on the trade date.

(e) Net Appreciation in Fair Value of Investments - Net realized and unrealized appreciation is recorded in the accompanying statement of changes in net assets available for benefits as "Net appreciation in fair value of investments."

(f) Payment of Benefits - Benefit payments to participants are recorded when paid.

(g) Expenses - All expenses paid through the Plan are recorded with investment earnings in the accompanying statement of changes in net assets available for benefits. On JPMorgan individual participant statements, recordkeeping fees are reported separate from investment earnings and are paid for directly by the Plan participants. Investment management fees are paid from investment earnings prior to crediting earnings to the individual participant account balances, but can be identified in the investment fund information supplied to participants from JPMorgan. Certain other Plan administrative expenses are absorbed by the Company. Expenses incurred in maintaining Self-Managed Brokerage Accounts are the responsibility of the respective Plan participants.

(h) Use of Estimates - The preparation of financial statements in conformity with GAAP requires the Plan administrator to make estimates and assumptions that affect the reported amounts of net assets available for benefits at the date of the financial statements and the reported amounts of changes in net assets available for benefits during the reporting period. Actual results could differ from those estimates.

(i) Risk and Uncertainties - The Plan invests in various investments, including registered investment companies, common/collective trusts, common stock of the Company and synthetic investment contracts. The Plan also offers a Self-Managed Brokerage Account option which allows participants to invest in a wide range of mutual funds. Investments, in general, are exposed to various risks, such as interest rate, credit, and overall market volatility. Due to the level of risk associated with certain investments, it is reasonably possible that changes in the values of certain investments may occur in the near term and that such changes could materially affect the amounts reported in the financial statements.

Note 3. Tax Status

The Internal Revenue Service has determined and informed the Company by a letter dated Aug. 25, 2003, that the Plan and related trust are designed in accordance with the applicable sections of the Code. The Plan has been amended since receiving the determination letter. However, the Committee and the Plan's tax counsel believe that the Plan is designed and is currently being operated in compliance with the applicable requirements of the Code.

Note 4. Plan Termination Provisions

Upon termination of the Plan in its entirety, each participant is entitled to receive, in accordance with the terms of the Plan, the entire balance in their account. The Company has no intention to terminate the Plan.

Note 5. Withdrawals and Distributions

Withdrawals from participants' account balances are allowed when participants who are actively employed reach age 70-1/2 (or age 59-1/2 for certain participants). Withdrawals are also allowed due to special "hardship" circumstances. Distributions from the Plan will be made upon termination of employment (by retirement, death, disability or otherwise) if the participant's account balance is less than \$5,000. If a withdrawing participant's account balance exceeds \$1,000 but is less than \$5,000, and the participant does not make an election to either have the account paid as a direct rollover or as a cash payment, the distribution will be paid as a direct rollover to an individual retirement account established at the Trustee. If a withdrawing participant's account balance exceeds \$5,000, the participant may elect to defer payment until he or she is age 70-1/2. Distributions can be either in the form of a lump sum or substantially equal annual installments. The unpaid portion of all loans made to the participant, including accrued interest, will be deducted from the amount of the participant account to be distributed. Distributions payable to participants at Dec. 31, 2009 and 2008 were \$0. Distributions payable are not included as a liability within net assets available for benefits in the accompanying financial statements, however, they are recorded as liabilities in the Plan's Form 5500.

Note 6. Derivative Financial Instruments

The Plan did not invest in any material derivative financial instruments during 2009 and 2008.

Note 7. Investment Information

Investments held which were greater than 5% of the Plan's net assets available for benefits as of Dec. 31 were as follows:

	2009	2008
American Funds Growth Fund of America, 2,944,334 class R6 and 2,896,125 class R5 shares, respectively	\$80,468,640	\$59,196,798
Alliant Energy Corporation Common Stock* (non-participant directed: \$35,730 (1,181 shares) and \$18,486 (633 shares), respectively) (participant directed: \$78,809,516 (2,604,412 shares) and \$85,697,754 (2,936,870 shares), respectively)	78,845,246	85,716,240
State Street Global Advisors S&P 500 Index Securities Lending Series Fund, (f/k/a State Street Global Advisors S&P 500 Index Fund), 3,447,604 class II and 3,039,432 class C shares, respectively	72,392,795	50,396,823
American Funds EuroPacific Growth Fund, 1,674,252 class R6 and 1,508,183 class R5 shares, respectively	64,190,817	42,153,705
JPMorgan Intermediate Bond Fund*, 4,798,341 and 4,813,223 shares, respectively	60,075,229	54,389,421
PIMCO Total Return Fund, 5,292,023 and 4,527,981 class I shares, respectively	57,153,844	45,913,730
Dodge & Cox Stock Fund, 478,394 and 459,687 shares, respectively	45,992,847	34,186,912
* Represents party known to be a party-in-interest to the Plan.		

During 2009, the Plan's investments, including gains and losses on investments acquired and disposed of, as well as held during the year, appreciated in value as follows:

American Funds Growth Fund of America	\$19,933,546
American Funds EuroPacific Growth Fund	16,434,186
State Street Global Advisors S&P 500 Index Securities Lending Series Fund (f/k/a State Street Global Advisors S&P 500 Index Fund)	15,061,826
Dodge & Cox Stock Fund	10,317,994
Boston Company Emerging Markets Value Equity Fund	9,884,223
Buffalo Small Cap Fund	6,854,511
PIMCO Total Return Fund	3,634,218
Riversource Small Cap Value Fund	3,226,775
Wellington Mid Cap Growth Fund	3,136,306
Perkins Mid Cap Value Fund	1,974,817
Alliant Energy Corporation Common Stock*	1,676,498
State Street Global Advisors U.S. Bond Index Securities Lending Series Fund (f/k/a State Street Global Advisors Bond Index Fund)	1,527,008
Janus Advisor Mid Cap Value Fund	417,221
Self-Managed Brokerage Accounts	323,216
Net appreciation in fair value of investments	\$94,402,345

* Represents party known to be a party-in-interest to the Plan.

Note 8. Fair Value Measurements

Valuation Hierarchy - Fair value measurement accounting establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The three levels of the fair value hierarchy and a description of the Plan's assets for each are as follows:

Level 1 - Pricing inputs are unadjusted quoted prices available in active markets for identical assets or liabilities as of the reporting date. Level 1 Plan assets include investments in registered investment companies and common stocks and are valued at the closing price reported in the active market in which the individual securities are traded. Assets of participant-directed brokerage accounts at Dec. 31, 2009 and 2008 were limited to investments in registered investment companies.

Level 2 - Pricing inputs are quoted prices for similar asset or liabilities in active markets, quoted prices for identical or similar assets or liabilities in inactive markets, inputs other than quoted prices that are observable for the asset or liability and inputs that are derived principally from or corroborated by observable market data by correlation or other means. Level 2 Plan assets include investments in common/collective trusts, corporate bonds and government and agency obligations. Common/collective trusts are valued at the net asset value (NAV) of shares held by the Plan which is based on the fair market value of the underlying investments of the common/collective trusts. The common/collective trusts underlying assets primarily consist of traded securities that have a variety of investment strategies including domestic and international equity and fixed income funds. Corporate bonds and government and agency obligations are valued at the closing price reported in the active market in which the individual securities are traded or based on yields currently available on comparable securities of issuers with similar credit ratings.

Level 3 - Pricing inputs are unobservable inputs for assets or liabilities for which little or no market data exist and require significant management judgment or estimation. Level 3 Plan assets include synthetic guaranteed investment contract wrappers and participant promissory notes. Synthetic guaranteed investment contract wrappers are valued at fair value by discounting the related cash flows based on current yields of similar instruments with comparable durations considering the credit-worthiness of the issuer. The fair value of all synthetic guaranteed investment contract wrappers was \$0 and \$130,687 at Dec. 31, 2009 and 2008, respectively. Participant promissory notes are valued at amortized cost, which approximates fair value.

The fair value hierarchy gives the highest priority to unadjusted quoted prices in active markets (Level 1) and the lowest priority to unobservable data (Level 3). In some cases, the inputs used to measure fair value might fall in different levels of the fair value hierarchy. The lowest level input that is significant to a fair value measurement in its entirety determines the applicable level in the fair value hierarchy. Assessing the significance of a particular input to the fair value measurement in its entirety requires judgment, considering factors specific to the asset or liability.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Recurring Fair Value Measurements - The Plan's recurring items subject to fair value measurements disclosure requirements at Dec. 31, 2009 and 2008 were as follows:

	Fair Value Measurements	Level 1	Level 2	Level 3
Assets at Dec. 31, 2009:				
Registered investment companies:				
U.S. large cap value	\$45,992,847	\$45,992,847	\$--	\$--
U.S. large cap growth	80,468,640	80,468,640	--	--
U.S. mid cap value	9,796,860	9,796,860	--	--
U.S. small cap value	10,138,261	10,138,261	--	--
U.S. small cap growth	25,143,157	25,143,157	--	--
International - developed markets	64,190,817	64,190,817	--	--
Fixed income funds	57,153,844	57,153,844	--	--
Common/collective trusts:				
U.S. large cap core	72,392,795	--	72,392,795	--
U.S. mid cap growth	9,142,062	--	9,142,062	--
International - emerging markets	22,189,216	--	22,189,216	--
Fixed income funds	88,769,442	--	88,769,442	--
Liquidity funds	4,283,346	--	4,283,346	--
Common stocks	78,845,246	78,845,246	--	--
Government and agency obligations	2,306,801	--	2,306,801	--
Participant-directed brokerage accounts	1,489,833	1,489,833	--	--
Participant promissory notes	9,583,720	--	--	9,583,720
Total assets at fair value	\$581,886,887	\$373,219,505	\$199,083,662	\$9,583,720
Assets at Dec. 31, 2008:				
Registered investment companies:				
U.S. large cap value	\$34,186,912	\$34,186,912	\$--	\$--
U.S. large cap growth	59,196,798	59,196,798	--	--
U.S. mid cap value	8,545,394	8,545,394	--	--
U.S. small cap value	6,365,095	6,365,095	--	--
U.S. small cap growth	18,631,204	18,631,204	--	--
International - developed markets	42,153,705	42,153,705	--	--
Fixed income funds	45,913,730	45,913,730	--	--
Common/collective trusts:				
U.S. large cap core	50,396,823	--	50,396,823	--
U.S. mid cap growth	5,065,249	--	5,065,249	--
International - emerging markets	12,816,789	--	12,816,789	--
Fixed income funds	75,674,155	--	75,674,155	--
Liquidity funds	6,334,864	--	6,334,864	--
Common stocks	85,716,240	85,716,240	--	--
Corporate bonds	223,572	--	223,572	--
Government and agency obligations	2,751,656	--	2,751,656	--
Synthetic guaranteed investment contract wrappers	130,687	--	--	130,687
Participant-directed brokerage accounts	913,070	913,070	--	--
Participant promissory notes	9,601,321	--	--	9,601,321
Total assets at fair value	\$464,617,264	\$301,622,148	\$153,263,108	\$9,732,008

Additional information for the Plan's recurring fair value measurements using significant unobservable inputs (Level 3 inputs) for 2009 is as follows:

	Synthetic Guaranteed Investment Contract Wrappers	Participant Promissory Notes
Beginning balance, Jan. 1, 2009	\$130,687	\$9,601,321
Unrealized losses relating to instruments still held at Dec. 31, 2009	(130,687)	--
Purchases, sales, issuances and settlements, net	--	(17,601)
Ending balance, Dec. 31, 2009	\$--	\$9,583,720

Note 9. Non-Participant Directed Investments

Information about the net assets and the significant components of the changes in net assets relating to the non-participant directed investments was as follows:

	Dec. 31,	
	2009	2008
Net assets:		
Alliant Energy Corporation Common Stock*	\$35,730	\$18,486
Changes in net assets:	2009	
Employer contributions	\$30,597	
Investment activity:		
Net appreciation in fair value of investments	6,287	
Investment income	1,511	
Transfers to participant directed investments (Note 1)	(18,981)	
Distributions to participants	(2,170)	
	\$17,244	

* Represents party known to be a party-in-interest to the Plan.

Note 10. Related Party Transactions

Certain Plan investments are shares of common trust funds managed by an affiliate of the Trustee and shares of common stock of the Company. As of Dec. 31, 2009 and 2008, the Plan held 2,605,593 and 2,937,503 shares of Alliant Energy Corporation common stock with a cost basis of \$73,850,129 and \$84,587,117 respectively. In 2009 and 2008, the Plan recorded dividend income of \$4,217,608 and \$4,380,118 respectively, from investments in common stock of the Company. These transactions qualify as exempt party-in-interest transactions.

Note 11. Reconciliation to Form 5500

Net assets available for benefits in the accompanying financial statements are at contract value, however, they are recorded at fair value in the Plan's Form 5500. If applicable, distributions payable to participants are not included as a liability within net assets available for benefits in the accompanying financial statements, however, they are recorded as liabilities in the Plan's Form 5500. The following table reconciles net assets available for benefits per the financial statements to the Plan's Form 5500 as filed by the Company:

	<u>2009</u>	<u>2008</u>
Net assets available for benefits per financial statements	\$585,491,424	\$472,115,610
Adjustments:		
Fair value to contract value for fully benefit-responsive investment contracts	(3,604,537)	(7,498,346)
Deemed distributions of participant loans	(4,378)	--
Amounts reported per Form 5500	<u>\$581,882,509</u>	<u>\$464,617,264</u>

The following table reconciles the net increase in net assets available for benefits per the financial statements to the Form 5500 as filed by the Company for 2009:

	<u>Net increase</u>
Amounts reported per financial statements	\$113,375,814
Adjustments:	
Changes in adjustment from fair value to contract value for fully benefit-responsive investment contracts	3,893,809
Deemed distributions of participant loans	(4,378)
Amounts reported per Form 5500	<u>\$117,265,245</u>

ALLIANT ENERGY CORPORATION

401(k) SAVINGS PLAN

FORM 5500, SCHEDULE H, PART IV, LINE 4i - SCHEDULE OF ASSETS (HELD AT END OF YEAR)

AS OF DECEMBER 31, 2009

Identity of issue, borrower, lessor, or similar party	Description of investment including maturity date, rate of interest, collateral, par or maturity value	Cost*	Current Value
Registered Investment Companies	American Funds Growth Fund of America, 2,944,334 class R6 shares		\$80,468,640
	American Funds EuroPacific Growth Fund, 1,674,252 class R6 shares		64,190,817
	PIMCO Total Return Fund, 5,292,023 class I shares		57,153,844
	Dodge & Cox Stock Fund, 478,394 shares		45,992,847
	Buffalo Small Cap Fund, 1,118,468 shares		25,143,157
	Riversource Small Cap Value Fund, 2,161,676 class R5 shares		10,138,261
	Perkins Mid Cap Value Fund, 494,791 class I shares		9,796,860
Common/Collective Trusts	State Street Global Advisors S&P 500 Index Securities Lending Series Fund, 3,447,604 class II shares (f/k/a State Street Global Advisors S&P 500 Index Fund, class C shares)		72,392,795
	JPMorgan Intermediate Bond Fund**, 4,798,341 shares		60,075,229
	State Street Global Advisors U.S. Bond Index Securities Lending Series Fund, 2,150,990 class II shares (f/k/a State Street Global Advisors Bond Index Fund, class L shares)		28,694,213
	Boston Company Emerging Markets Value Equity Fund, 395,071 shares		22,189,216
	Wellington Mid Cap Growth Fund, 899,809 shares		9,142,062
	JPMorgan Liquidity Fund**, 4,283,346 shares		4,283,346
Corporate Stocks: Common	Alliant Energy Corporation common stock**, 2,605,593 shares	\$73,850,129	78,845,246
Government and Agency Obligations	US TREASURY NOTE 4.750%, 08/15/17, par value \$610,000		661,898
	FHLMC 30 YR FH 1G2450 Mtg Back FRN 8/1/36, par value \$220,146		233,202
	FNMA 10 YR FN 387608 Mtg Back 4.80%, 9/1/15, par value \$206,967		216,475
	FNMA 30 YR FN 826908 Mtg Back FRN, 8/1/35, par value \$127,741		134,980
	FNMA 30 YR FN 866097 Mtg Back FRN, 2/1/36, par value \$107,787		113,165
	FNMA 30 YR FN 887096 Mtg Back FRN, 7/1/36, par value \$100,320		106,155
	FNMA 30 YR FN 844705 Mtg Back FRN, 12/1/35, par value \$74,260		78,991
	FNMA 30 YR FN 705304 Mtg Back FRN, 6/1/33, par value \$74,379		78,715
	FNMA 30 YR FN 725090 Mtg Back FRN, 11/1/33, par value \$72,839		77,159
	US TREASURY NOTE 2.000%, 09/30/10, par value \$75,000		75,891
	FNMA 30 YR FN 902818 Mtg Back FRN, 11/1/36, par value \$71,283		75,602
	FNMA 30 YR FN 849082 Mtg Back FRN, 1/1/36, par value \$65,056		68,812
	FNMA 30 YR FN 809534 Mtg Back FRN, 2/1/35, par value \$58,843		61,842
	FNMA 30 YR FN 799769 Mtg Back FRN, 11/1/34, par value \$54,502		57,129
	FNMA 30 YR FN 764082 Mtg Back FRN, 1/1/34, par value \$50,698		52,242
	FNMA 30 YR FN 801344 Mtg Back FRN, 10/1/34, par value \$46,904		48,135
	FNMA 30 YR FN 872753 Mtg Back FRN, 6/1/36, par value \$42,853		45,305
	US TREASURY NOTE 2.375%, 08/31/10, par value \$35,000		35,463
	US TREASURY NOTE 2.000%, 02/28/10, par value \$25,000		25,071
	US TREASURY NOTE 1.500%, 10/31/10, par value \$20,000		20,177
	US TREASURY NOTE 2.875%, 06/30/10, par value \$15,000		15,196
	US TREASURY NOTE 2.125%, 04/30/10, par value \$15,000		15,097
	US TREASURY NOTE 2.625%, 05/31/10, par value \$10,000		10,099
Investment Contracts	State Street Bank, 2.45% Synthetic Guaranteed Investment Contract Wrapper		--
	Aegon, 2.45% Synthetic Guaranteed Investment Contract Wrapper		--
	ING, 2.45% Synthetic Guaranteed Investment Contract Wrapper		--
Participant-Directed Brokerage Accounts	Self-Managed Brokerage Accounts		1,489,833
Participant Promissory Notes**	Maximum allowable loan per participant -- \$50,000 Various interest rates -- 4.25% to 10.50% Primarily maturing within 5 years		9,583,720
			<u>\$581,886,887</u>

* Cost value is not required to be disclosed for participant-directed investments.

** Represents party known to be a party-in-interest to the Alliant Energy Corporation 401(k) Savings Plan.

ALLIANT ENERGY CORPORATION

401(k) SAVINGS PLAN

FORM 5500, SCHEDULE H, PART IV, LINE 4i - SCHEDULE OF ASSETS (ACQUIRED AND DISPOSED OF WITHIN YEAR)

FOR THE YEAR ENDED DECEMBER 31, 2009

Identity of issue, borrower, lessor, or similar party	Description of investment including maturity date, rate of interest, collateral, par or maturity value	Cost of Acquisitions	Proceeds of Dispositions
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None.

ALLIANT ENERGY CORPORATION

401(k) SAVINGS PLAN

FORM 5500, SCHEDULE H, PART IV

LINE 4j - SCHEDULE OF REPORTABLE TRANSACTIONS

FOR THE YEAR ENDED DECEMBER 31, 2009

Identity of Party Involved and <u>Description of Assets</u>	Total Number of <u>Purchases</u>	Total Value of <u>Purchases</u>	Total Number <u>of Sales</u>	Net Selling <u>Price</u>	Adjusted Cost of <u>Assets Sold</u>	Net Gain <u>(Loss)</u>
Single Transaction Exceeds 5% of Value:						
None.						
Series of Transactions With Same Broker Exceeds 5% of Value:						
None.						
Series of Transactions In Same Security Exceeds 5% of Value:						
None.						
Single Transaction With One Broker Exceeds 5% of Value:						
None.						

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Total Compensation Committee, which administers the Plan, has duly caused this Annual Report to be signed on its behalf by the undersigned, thereunto duly authorized, on this 24th day of June 2010.

ALLIANT ENERGY CORPORATION 401(k) SAVINGS PLAN

/s/ Wayne A. Reschke
Wayne A. Reschke

The foregoing person is the Vice President - Human Resources of Alliant Energy Corporation and Alliant Energy Corporate Services, Inc., and the Chairperson of the Alliant Energy Corporation Total Compensation Committee.

EXHIBIT INDEX TO ANNUAL REPORT ON FORM 11-K

**ALLIANT ENERGY CORPORATION
401(k) SAVINGS PLAN**

FOR THE YEAR ENDED DECEMBER 31, 2009

<u>Exhibit No.</u>	<u>Exhibit</u>	Page Number in Sequentially Numbered <u>Form 11-K</u>
23	Consent of Independent Registered Public Accounting Firm	21

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-117654 of Alliant Energy Corporation on Form S-8 of our report dated June 24, 2010, appearing in this Annual Report on Form 11-K of Alliant Energy Corporation 401(k) Savings Plan for the year ended December 31, 2009.

/s/ Deloitte & Touche LLP

Milwaukee, WI
June 24, 2010