

McMahon John  
Form 3  
August 25, 2010

**FORM 3 UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**

OMB APPROVAL

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**INITIAL STATEMENT OF BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934,  
Section 17(a) of the Public Utility Holding Company Act of 1935 or Section  
30(h) of the Investment Company Act of 1940

(Print or Type Responses)

|   |         |                                      |  |  |
|---|---------|--------------------------------------|--|--|
| 1. Name and Address of Reporting Person * |         | 2. Date of Event Requiring Statement | 3. Issuer Name <b>and</b> Ticker or Trading Symbol                         |  |
| Â McMahon John                            |         | (Month/Day/Year)                     | ADVANCED ENERGY INDUSTRIES INC [AEIS]                                      |  |
| (Last)                                    | (First) | (Middle)                             | 08/18/2010   |  |
| 1625 SHARP POPINT DRIVE                   |         |                                      | 4. Relationship of Reporting Person(s) to Issuer                           | 5. If Amendment, Date Original Filed(Month/Day/Year)                   |
| (Street)                                  |         |                                      | (Check all applicable)   |  |
| FORT COLLINS,Â COÂ 80525                  |         |                                      | <input type="checkbox"/> Director <input type="checkbox"/> 10% Owner       | 6. Individual or Joint/Group Filing(Check Applicable Line)             |
| (City)                                    | (State) | (Zip)                                | <input checked="" type="checkbox"/> Officer <input type="checkbox"/> Other | <input checked="" type="checkbox"/> Form filed by One Reporting Person |
|   |         |                                      | (give title below) (specify below)   | <input type="checkbox"/> Form filed by More than One Reporting Person  |
|   |         |                                      | (see remarks)  |  |

**Table I - Non-Derivative Securities Beneficially Owned**

| 1. Title of Security (Instr. 4) | 2. Amount of Securities Beneficially Owned (Instr. 4) | 3. Ownership Form: Direct (D) or Indirect (I) (Instr. 5) | 4. Nature of Indirect Beneficial Ownership (Instr. 5) |
|---------------------------------|---|--|---|
| Common Stock                    | 4,689 <sup>(1)</sup>                                  | D  | Â   |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

SEC 1473 (7-02)

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**Table II - Derivative Securities Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security (Instr. 4) | 2. Date Exercisable and Expiration Date (Month/Day/Year) | 3. Title and Amount of Securities Underlying Derivative Security (Instr. 4) | 4. Conversion or Exercise Price of Derivative Security | 5. Ownership Form of Derivative Security: Direct (D) or Indirect | 6. Nature of Indirect Beneficial Ownership (Instr. 5) |
|--|--|---|--|--|---|
|  | Date Exercisable   | Expiration Date   | Title  | Amount or Number of  |   |

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|   |       |            |  | Shares |          | (I)<br>(Instr. 5) |   |
|---|-------|------------|--|--------|----------|-------------------|---|
| Employee Stock Option<br>(right to buy) | Â (2) | 10/28/2019 | Common<br>Stock ( the<br>underlying<br>security) | 6,250  | \$ 8.95  | D                 | Â |
| Employee Stock Option<br>(right to buy) | Â (3) | 02/19/2020 | Common<br>Stock ( the<br>underlying<br>security) | 8,625  | \$ 7.69  | D                 | Â |
| Employee Stock Option<br>(right to buy) | Â (4) | 04/24/2020 | Common<br>Stock ( the<br>underlying<br>security) | 11,500 | \$ 7.95  | D                 | Â |
| Employee Stock Option<br>(right to buy) | Â (5) | 07/21/2020 | Common<br>Stock ( the<br>underlying<br>security) | 11,500 | \$ 11.21 | D                 | Â |
| Employee Stock Option<br>(right to buy) | Â (6) | 10/27/2020 | Common<br>Stock ( the<br>underlying<br>security) | 5,250  | \$ 12.77 | D                 | Â |
| Employee Stock Option<br>(right to buy) | Â (7) | 02/16/2021 | Common<br>Stock ( the<br>underlying<br>security) | 5,250  | \$ 15.65 | D                 | Â |
| Employee Stock Option<br>(right to buy) | Â (8) | 04/20/2021 | Common<br>Stock ( the<br>underlying<br>security) | 5,250  | \$ 16.25 | D                 | Â |
| Employee Stock Option<br>(right to buy) | Â (9) | 07/20/2021 | Common<br>Stock ( the<br>underlying<br>security) | 5,250  | \$ 13.85 | D                 | Â |

## Reporting Owners

| Reporting Owner Name / Address                                      | Relationships |           |                 |       |
|---|---------------|-----------|-----------------|-------|
|   | Director      | 10% Owner | Officer         | Other |
| McMahon John<br>1625 SHARP POPINT DRIVE<br>FORT COLLINS,Â COÂ 80525 | Â             | Â         | Â (see remarks) | Â     |

## Signatures

/s/ Thomas O. McGimpsey  
(Attorney-in-Fact)

08/25/2010

\_\_Signature of Reporting Person

Date

## Explanation of Responses:

- \* If the form is filed by more than one reporting person, *see* Instruction 5(b)(v).
  - \*\* Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).
- (1) Represents 4,689 shares of Restricted Stock Units.
  - (2) The option is exercisable in four equal annual installments. The first installment of 1,562 options became exercisable on October 28, 2009 and the next three installments become exercisable on October 28, 2010, October 28, 2011 and October 28, 2012.
  - (3) The remaining portion of the option becomes exercisable in three equal annual installments on February 19, 2011, February 19, 2012 and February 19, 2013.
  - (4) The option is exercisable in four equal annual installments. The first installment of 2,875 options became exercisable on April 24, 2010 and the next three installments become exercisable on April 24, 2011, April 24, 2012 and April 24, 2013.
  - (5) The option is exercisable in four equal annual installments. The first installment of 2,875 options became exercisable on July 21, 2010 and the next three installments become exercisable on July 21, 2011, July 21, 2012 and July 21, 2013.
  - (6) The option is exercisable in four equal annual installments which become exercisable on October 27, 2010, October 27, 2011, October 27, 2012 and October 27, 2013.
  - (7) The option is exercisable in four equal annual installments which become exercisable on February 16, 2011, February 16, 2012, February 16, 2013 and February 16, 2014.
  - (8) The option is exercisable in four equal annual installments which become exercisable on April 20, 2011, April 20, 2012, April 20, 2013 and April 20, 2014.
  - (9) The option is exercisable in four equal annual installments which become exercisable on July 20, 2011, July 20, 2012, July 20, 2013 and July 20, 2014.

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### Remarks:

OfficerÂ Title:Â Â principalÂ financialÂ officer,Â principalÂ accountingÂ officer,Â viceÂ presidentÂ andÂ controller.

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *See* Instruction 6 for procedure.

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