

Registration No. 333-110479
Registration No. 333-121234
Registration No. 333-143004
Registration No. 333-144820
Registration No. 333-159715
Registration No. 333-164792
Registration No. 333-184772
Registration No. 333-189351

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

**POST-EFFECTIVE AMENDMENT NO. 1
TO
FORM S-8**

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

A DVANCED E MISSIONS S OLUTIONS , I NC .

(Exact name of registrant as specified in its charter)

Delaware
(State of Incorporation)

27-5472457
(IRS Employer Identification No.)

**9135 South Ridgeline Boulevard, Suite 200,
Highlands Ranch, Colorado 80129**
(Address of principal executive offices, including zip code)

**ADA-ES, INC. 2003 STOCK COMPENSATION PLAN #1
ADA-ES, INC. 2004 STOCK COMPENSATION PLAN #2
ADA-ES, INC. 2003 STOCK OPTION PLAN
ADA-ES, INC. 2005 DIRECTORS' COMPENSATION PLAN
AMENDED AND RESTATED ADA-ES, INC. 2007 EQUITY INCENTIVE PLAN, AS AMENDED
ADA-ES, INC. PROFIT SHARING RETIREMENT PLAN
AMENDED AND RESTATED ADA-ES, INC. 2010 NON-MANAGEMENT COMPENSATION AND INCENTIVE PLAN**
(Full title of the plans)

Mark H. McKinnies
**9135 South Ridgeline Boulevard, Suite 200,
Highlands Ranch, Colorado 80129**
(303) 339-8850
(Name, address and telephone number,
including area code, of agent for service)

With a copy to:
**Julie A. Herzog, Esq.
Kip Wallen, Esq.
Fortis Law Partners LLC
1900 Wazee Street, Suite 300
Denver, CO 80202
(303) 295-9700**

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer
Non-accelerated filer (Do not check if a smaller reporting company)

Accelerated filer
Smaller reporting company

EXPLANATORY NOTE

On July 1, 2013, ADA-ES, Inc., a Colorado corporation (the “Predecessor Registrant” or “ADA”), merged with ADA Merger Corp., a Colorado corporation and wholly owned subsidiary of Advanced Emissions Solutions, Inc., a Delaware corporation (the “Registrant” or “ADES”), pursuant to an Agreement and Plan of Merger, dated as of March 25, 2013 (the “Reorganization Agreement”), whereby the Predecessor Registrant, as the surviving corporation of the merger, became a wholly owned subsidiary of the Registrant (such transaction, the “Reorganization”). The Reorganization was adopted and recommended to shareholders by the Board of Directors of the Predecessor Registrant on February 6, 2013 and approved by shareholders of the Predecessor Registrant at the Annual Meeting of Shareholders held on June 13, 2013. At the effective time of the Reorganization, each outstanding share of common stock of the Predecessor Registrant was converted into one share of common stock of the Registrant, and the Registrant replaced the Predecessor Registrant as the publicly held company. The issuance of the shares of common stock of the Registrant was registered under the Securities Act of 1933, as amended (the “Securities Act”) pursuant to the Registrant’s Registration Statement on Form S-4, which was declared effective by the Securities and Exchange Commission (the “SEC”) on April 23, 2013 (File No. 333-187505). As with shares of common stock of the Predecessor Registrant prior to the Reorganization, shares of common stock of the Registrant trade on the NASDAQ Capital Market under the symbol “ADES.”

The Reorganization resulted in the creation of a holding company structure with the Registrant as the holding company and the Predecessor Registrant as an operating company. The business, operations, assets and liabilities of the Predecessor Registrant after the Reorganization are substantially the same as they were prior to Reorganization except for certain equity plans that were assumed by the Registrant pursuant to the Reorganization Agreement.

The Predecessor Registrant filed Registration Statements on Form S-8 with the SEC on November 14, 2003 (File No. 333-110479), December 14, 2004 (File No. 333-121234), May 16, 2007 (File No. 333-143004), July 24, 2007 (File No. 333-144820), June 3, 2009 (File No. 333-159715), February 9, 2010 (File No. 333-164792), November 5, 2012 (File No. 333-184772), June 14, 2013 (File No. 333-189351) (collectively, the “Registration Statements”). The Predecessor Registrant filed the Registration Statements to register shares of its common stock for issuance under certain of its employee benefit plans. Pursuant to the Reorganization, the Predecessor Registrant assumed those employee benefits plans except for the 2005 Consultant Stock Plan and the 2006 Contractor Incentive Plan because all securities available for issuance under such plans have all been issued. On March 15, 2012, the SEC issued correspondence to the Predecessor Registrant stating that it will not object to Registrant, as successor to the Predecessor Registrant, making ongoing offerings of securities under the Registration Statements provided that Registrant adopts the Registration Statements by filing post-effective amendments. Pursuant to Rule 414 under the Securities Act, the Registrant files this Post-Effective Amendment No. 1 to the Registration Statements to expressly adopt each of the Registration Statements as its own for all purposes of the Securities Act and the Securities Exchange Act of 1934, as amended.

Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The contents of the Registration Statements are incorporated herein by reference. In addition, the following new documents filed with the SEC by the Registrant are incorporated herein by reference:

- (a) ADA's Annual Report on Form 10-K for the fiscal year ended December 31, 2012 filed with the SEC on March 18, 2013 (File No. 000-50216);
- (b) ADA's Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2013 filed with the SEC on May 10, 2013 (File No. 000-50216);
- (c) ADA's Current Reports on Form 8-K filed with the SEC on February 11, 2013, March 13, 2013, March 22, 2013, March 25, 2013, June 14, 2013 and July 1, 2013 (excluding information furnished under Items 2.02, 7.01, and 9.01) (File No. 000-50216);
- (d) ADA's Definitive Proxy Statement filed with the SEC on April 25, 2013 (File No. 000-50216); and
- (e) The description of the Registrant's Common Stock contained in our Registration Statement on Form S-4 filed with the SEC on March 25, 2013, as amended and declared effective by the SEC.

All documents filed by the Registrant pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended, subsequent to the effective date of this Post-Effective Amendment No. 1, prior to the filing of a post-effective amendment to any of the Registration Statements indicating that all securities offered thereby have been sold or deregistering all securities then remaining unsold shall be deemed to be incorporated by reference herein and to be part hereof from the date of filing of each such document. In no event, however, will any information that the Registrant discloses under Item 2.02, Item 7.01 or Item 9.01 of any Current Report on Form 8-K that the Registrant may from time to time furnish to the SEC be incorporated by reference into, or otherwise become a part of, this Post-Effective Amendment No. 1 or the Registration Statements. Any statement contained in any document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of this Post-Effective Amendment No. 1 to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of this Post-Effective Amendment No. 1 except as so modified or superseded.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers

Limitation of Director Liability

The Registrant's Second Amended and Restated Certificate of Incorporation (the "ADES Certificate") provides, to the fullest extent permitted by Delaware law, that directors will not be liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director. Delaware law currently provides that this waiver may not apply to liability:

- for any breach of the director's duty of loyalty to us or our stockholders;
- for acts or omissions not in good faith or that involve intentional misconduct or a knowing violation of law;

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- under Section 174 of the Delaware General Corporation Law (“DGCL”) (governing distributions to stockholders); or
 - for any transaction from which the director derived any improper personal benefit.

If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, however, then the liability of our directors will be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Indemnification of Directors, Officers and Others

The DGCL allows a corporation to indemnify its directors and officers, as well as other employees and individuals, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement in connection with specified actions, suits or proceedings, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation such as a derivative action) if the individuals acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, has no reasonable cause to believe their conduct was unlawful. Delaware law requires court approval before any indemnification where the person seeking indemnification has been found liable to the corporation.

The ADES Certificate provides that we must, subject to certain limitations, indemnify, advance expenses, and hold harmless, to the fullest extent permitted by applicable law as it presently exists or may be amended, any person who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that he or she, or a person for whom he or she is the legal representative, is or was a director or officer of ADES or, while a director or officer of ADES, is or was serving at the request of ADES as a director, officer, employee or agent of another business, against all liability and loss suffered and expenses (including attorneys’ fees) reasonably incurred by such person.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

The Exhibit Index immediately preceding the exhibits is incorporated herein by reference.

Item 9. Undertakings.

A. The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act;

(ii) To reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum offering price set forth in the “Calculation of Registration Fee” table in the effective Registration Statements; and

(iii) To include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (1)(i) and (1)(ii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed by the Registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in this Registration Statement.

(2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

B. The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

C. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Amendment No. 1 to the Registration Statements on Form S-8 to be signed on its behalf by the undersigned, thereunto duly authorized, in the city of Highlands Ranch, State of Colorado, on July 3, 2013.

Advanced Emissions Solutions, Inc.

/s/ Mark H. McKinnies

By: Mark H. McKinnies

Its: Senior Vice President, Chief Financial Officer and
Secretary

**SIGNATURES
(INCLUDING POWER OF ATTORNEY)**

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Michael D. Durham and Mark H. McKinnies, and each or any one of them, his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to the Registration Statements (including the Post-Effective Amendment No. 1 filed herewith), and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Post-Effective Amendment No. 1 to the Registration Statement on Form S-8 has been signed by the following persons in the capacities and on the dates indicated.

/s/ Kim B. Clarke

Kim B. Clarke, Director

Date: July 3, 2013

/s/ Michael D. Durham

Michael D. Durham, President, Chief Executive Officer and
Director (Principal Executive Officer)

Date: July 3, 2013

/s/ Alan Bradley Gabbard

Alan Bradley Gabbard, Director

Date: July 3, 2013

/s/ Derek C. Johnson

Derek C. Johnson, Director

Date: July 3, 2013

/s/ W. Phillip Marcum

W. Phillip Marcum, Chairman and Director

Date: July 3, 2013

/s/ Robert E. Shanklin

Robert E. Shanklin, Director

Date: July 3, 2013

/s/ Mark H. McKinnies

Mark H. McKinnies, Senior Vice President, Chief Financial Officer
and Director (Principal Financial and Accounting Officer)

Date: July 3, 2013

/s/ Jeffrey C. Smith

Jeffrey C. Smith, Director

Date: July 3, 2013

/s/ Richard J. Swanson

Richard J. Swanson, Director

Date: July 3, 2013

INDEX TO EXHIBITS

Exhibit Number	Description
4.1	ADA-ES, Inc. 2003 Stock Compensation Plan #1 (1)
4.2	ADA-ES, Inc. 2004 Stock Compensation Plan #2 (2)
4.3	ADA-ES, Inc. 2003 Stock Option Plan (3)
4.4	ADA-ES, Inc. 2005 Directors' Compensation Plan (4)
4.5	Amended and Restated ADA-ES, Inc. 2007 Equity Incentive Plan (5)
4.6	Amendment No. 1 to ADA-ES, Inc. Amended and Restated 2007 Equity Incentive Plan (6)
4.7	ADA-ES, Inc. Profit Sharing Retirement Plan (7)
4.8	Amended and Restated ADA-ES, Inc. 2010 Non-Management Compensation and Incentive Plan (8)
5.1*	Opinion of Fortis Law Partners LLC
23.1*	Consent of EKS&H LLLP
23.2*	Consent of Fortis Law Partners LLC (included in Exhibit 5.1)
24.1**	Power of Attorney

Notes:

*Filed herewith.

**Included on the signature page.

- (1) Incorporated by reference to Exhibit 99.2 to the Form S-8 filed on November 14, 2003 (File No. 333-110479).
- (2) Incorporated by reference to Exhibit 99.3 to the Form S-8 filed on December 14, 2004 (File No. 333-121234).
- (3) Incorporated by reference to Exhibit 10.2 to the Form 10-KSB for the year ended December 31, 2005 filed on March 30, 2006 (File No. 000-50216).
- (4) Incorporated by reference to Exhibit 10.29 to the Form 10-KSB for the year ended December 31, 2005 filed on March 30, 2006 (File No. 000-50216).
- (5) Incorporated by reference to Exhibit 10.79 to the Form 10-Q for the quarter ended September 30, 2010 filed on November 12, 2010 (File No. 000-50216).
- (6) Incorporated by reference to Exhibit 10.53 to the Form 10-K for the year ended December 31, 2011 filed on March 15, 2012 (File No. 000-50216).
- (7) Incorporated by reference to Exhibit 4.1 to the Form S-8 filed on June 3, 2009 (File No. 333-159715).
- (8) Incorporated by reference to Exhibit 10.31 to the Form 10-K for the year ended December 31, 2011 filed on March 15, 2012 (File No. 000-50216).



July 3, 2013

Advanced Emissions Solutions, Inc.
9135 South Ridgeline Boulevard, Suite 200
Highlands Ranch, Colorado 80129

Re: Advanced Emissions Solutions, Inc.
Registration Statements on Form S-8
SEC File Nos. 333-110479, 333-121234, 333-143004, 333-144820, 333-159715, 333-164792, 333-184772 and 333-189351

Ladies and Gentlemen:

We have acted as counsel to Advanced Emissions Solutions, Inc., a Delaware corporation (the "Company"). Pursuant to the consummation of the transactions contemplated by that certain Agreement and Plan of Merger, dated as of March 25, 2013 (the "Merger Agreement"), entered into by and among the Company, ADA-ES, Inc., a Colorado corporation ("ADA-ES"), and ADA Merger Corp., a Colorado corporation and a wholly owned subsidiary of the Company ("MergerCo"), MergerCo merged with and into ADA-ES (the "Merger"), ADA-ES became a wholly owned subsidiary of the Company with each share of common stock, no par value, of ADA-ES that was issued and outstanding at the time of the merger converted into one share of common stock, par value \$0.001, of the Company, and each share of common stock of MergerCo becoming a share of ADA-ES.

ADA-ES filed Registration Statements on Form S-8 with the Securities and Exchange Commission (the "SEC") on November 14, 2003 (File No. 333-110479), December 14, 2004 (File No. 333-121234), May 16, 2007 (File No. 333-143004), July 24, 2007 (File No. 333-144820), June 3, 2009 (File No. 333-159715), February 9, 2010 (File No. 333-164792), November 5, 2012 (File No. 333-184772) and June 14, 2013 (File No. 333-189351) (as amended, each a "Registration Statement" and collectively, the "Registration Statements"). The Registration Statements registered shares of common stock of ADA-ES, no par value, under The ADA-ES, Inc. 2003 Stock Compensation Plan #1, the ADA-ES, Inc. 2004 Stock Compensation Plan #2, the ADA-ES, Inc. 2003 Stock Option Plan, the ADA-ES, Inc. 2005 Directors' Compensation Plan, the Amended and Restated ADA-ES, Inc. 2007 Equity Incentive Plan, as amended, the ADA-ES, Inc. Profit Sharing Retirement Plan and the Amended and Restated ADA-ES, Inc. 2010 Non-Management Compensation and Incentive Plan (as amended, each, a "Plan" and collectively, the "Plans"). The Company succeeded to the obligations of ADA-ES as a result of the Merger, and by filing Post-Effective Amendment No. 1 to the Registration Statements ("Post-Effective Amendment No. 1") is expressly adopting each Registration Statement.

The Company has requested our opinion with respect to the legality of the shares of the Company's common stock, par value \$0.001 per share being registered under the Registration Statements, as amended by Post-Effective Amendment No. 1.

In connection with rendering this opinion, we have reviewed copies of the following documents relating to the Shares being included in the Registration Statements:

1. the Registration Statements;
2. the Second Amended and Restated Certificate of Incorporation of the Company;
3. the Bylaws of the Company;

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4. the Merger Agreement;
 5. the Plans and ancillary agreements (which are referred to herein, collectively with the Plans, as the "Plan Documents");
 6. documents evidencing the actions of the Board of Directors and shareholders of ADA-ES relating to the Plans; and
 7. such other documents and records as we have deemed necessary to enable us to express an opinion on the matters covered hereby.

In rendering this opinion, we have: (a) assumed without verification (i) the genuineness of all signatures on all documents reviewed by us, (ii) the legal capacity of natural persons, (iii) the authenticity of all documents submitted to us as originals, (iv) the conformity to original documents of all documents submitted to us as photostatic or conformed copies and the authenticity of the originals of such copies and (v) the Company will receive consideration in an amount not less than the aggregate par value of the shares covered by any issuance of the Company's common stock pursuant to the Plans; and (b) relied on (i) representations, statements and certificates of public officials and others and (ii) as to matters of fact, statements, representations and certificates of officers and representatives of the Company.

Based upon the foregoing, and subject to the qualifications, assumptions and limitations stated herein, we are of the opinion that the Shares included in the Registration Statements have been duly authorized and upon payment of any consideration required under the Plan Documents, will be validly issued, fully paid and non-assessable according to the corporate laws of the State of Delaware.

We hereby consent to the filing of this opinion letter as Exhibit 5.1 to the Post-Effective Amendment No. 1 to the Registration Statements. In giving this consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the SEC thereunder.

In rendering the foregoing opinion, we express no opinion as to the laws of any jurisdiction other than to (i) the corporate laws of the State of Delaware, including all applicable statutory provisions of the Delaware General Corporation Law, all rules and regulations underlying such statutory provisions of law, and all applicable judicial and regulatory determinations concerning such laws as reported in publicly available compilations of such judicial and regulatory determinations and (ii) the federal law of the United States to the extent specifically referred to herein. All opinions expressed are as of the date hereof except where expressly stated otherwise.

Very truly yours,

/s/ Fortis Law Partners LLC
Fortis Law Partners LLC

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Post-Effective Amendment No. 1 to the Registration Statement on Form S-8 of our report dated March 18, 2013, relating to the consolidated financial statements of ADA-ES, Inc. and Subsidiaries as of December 31, 2012, 2011, and 2010 and for the years then ended.

/s/ EKS&H LLLP

EKS&H LLLP

July 3, 2013
Denver, Colorado