

# BEFORE THE PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application of The Cadmus Group, Inc., d/b/a \_\_\_\_\_, for registration as a Conservation Service Provider ("CSP") in the Commonwealth of Pennsylvania.

To the Pennsylvania Public Utility Commission:

1. **IDENTITY OF THE APPLICANT:** The legal name, address, telephone number, FAX number and email address of the Applicant are:  
The Cadmus Group, Inc  
57 Water Street  
Watertown, MA 02472  
phone (617) 673-7000  
fax (617) 673-7001

Please identify any predecessor(s) of the Applicant and provide other names under which the Applicant has operated as a CSP within the preceding five (5) years, including name, address, and telephone number.

2. **CONTACT PERSON:** The name, title, address, telephone number, FAX number and email address of the person to whom questions about this Application should be addressed are:  
Maren Curtis  
Contracts Manager  
The Cadmus Group, Inc.  
720 SW Washington, Suite 400  
Portland, OR 97205  
phone (503) 467-7150  
fax (503) 575-4750

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3. **REGISTERED AGENT:** If the Applicant does not maintain a principal office in the Commonwealth, the required name, address, telephone number and FAX number of the Applicant's Registered Agent in the Commonwealth are:
4. **FICTITIOUS NAME:** (select and complete appropriate statement)

The Applicant will be using a fictitious name or doing business as ("d/b/a"):

Provide proof of compliance with appropriate Pennsylvania Department of State filing requirements.

or

The Applicant will not be using a fictitious name.

5. **BUSINESS ENTITY AND DEPARTMENT OF STATE FILINGS:** (select and complete appropriate statement)

The Applicant is a sole proprietor.

If the Applicant is located outside the Commonwealth, provide proof of compliance with 15 Pa. C.S. §4124 relating to Department of State filing requirements.

or

The Applicant is a:

- domestic general partnership (\*)
- domestic limited partnership (15 Pa. C.S. §8511)
- foreign general or limited partnership (15 Pa. C.S. §4124)
- domestic limited liability partnership (15 Pa. C.S. §8201)
- foreign limited liability general partnership (15 Pa. C.S. §8211)
- foreign limited liability limited partnership (15 Pa. C.S. §8211)

Provide proof of compliance with appropriate Department of State filing requirements as indicated above. Please attach a copy of the proof of compliance to the Application.

Give name, d/b/a, and address of partners. If any partner is not an individual, identify the business nature of the partner entity and identify its partners or officers.

\* If a corporate partner in the Applicant's domestic partnership is not domiciled in Pennsylvania, attach a copy of the Applicant's Department of State filing pursuant to 15 Pa. C.S. §4124.

or

The Applicant is a:

- domestic corporation (none)
- foreign corporation (15 Pa. C.S. §4124)
- domestic limited liability company (15 Pa. C.S. §8913)
- foreign limited liability company (15 Pa. C.S. §8981)
- Other \_\_\_\_\_

Provide proof of compliance with appropriate Department of State filing requirements as indicated above. Please attach a copy of the proof of compliance to the Application. Additionally, provide a copy of the Applicant's Articles of Incorporation.

Give name, title, telephone number and address of officers, partners or directors.

The Applicant is incorporated in the state of Massachusetts.

6. **AFFILIATES AND PREDECESSORS WITHIN PENNSYLVANIA:** (select and complete appropriate statement)

Affiliate(s) of the Applicant doing business in Pennsylvania as a CSP or an electric distribution company ("EDC") are:

Give name and address of the affiliate(s).

7. **APPLICANT'S PRESENT OPERATIONS:** (select and complete the appropriate statement)

- The Applicant is presently doing business in Pennsylvania as a:  
Consultancy providing evaluation, management and verification for Pennsylvania utilities.

Describe nature of business.

**or**

- The Applicant is not presently doing business in Pennsylvania.

8. **APPLICANT'S PROPOSED OPERATIONS**  
(Answer to item 8 has been included at the end due to lack of space)

Describe the type(s) of services that the Applicant is able to provide to an EDC, the EDCs the Applicant is able to serve, and the types of energy efficiency and conservation measures on which the Applicant can provide information and technical assistance to an EDC.

9. **TAXATION:** Complete the TAX CERTIFICATION STATEMENT attached as Appendix A to this application.

10. **COMPLIANCE:** State specifically whether the Applicant, an affiliate, a predecessor of either, or a person identified in this Application is currently under investigation for or has been convicted of a crime involving fraud, theft, larceny, deceit, violation of consumer protection law, violation of deceptive trade law or similar activity. Identify all proceedings, by name, subject and citation, dealing with business operations, in the last three (3) years, whether before an administrative body or in a judicial forum, in which the Applicant, an affiliate, a predecessor of either, or a person identified herein has been a defendant or a respondent. Provide a statement as to the resolution or present status of any such proceedings.

We confirm that The Cadmus Group, Inc. and its individual board members and corporate officers have not been evicted of and are not currently being investigated for any crime involving fraud, theft, larceny, deceit, violation of consumer protection law, violation of deceptive trade law or any similar activity.

11. **DELINQUENCY:** State specifically whether the Applicant, an affiliate, or a predecessor of either is currently delinquent with any taxing authority in Pennsylvania.

There have been no customer complaints against The Cadmus Group, Inc. filed with any regulatory or prosecutor agencies within the last three years.

12. **BANKRUPTCY:** Identify all bankruptcy or liquidation proceedings for prior three years. Provide a statement as to the resolution or present status of any such proceedings.

There have been no bankruptcy or liquidation proceedings at The Cadmus Group, Inc.

13. **CUSTOMER COMPLAINTS:** Identify all customer complaints filed with a regulatory or prosecutory agency for prior three years. Provide a statement as to the resolution or present status of any complaints.

There have been no customer complaints against The Cadmus Group, Inc. filed with any regulatory or prosecutory agencies within the last three years.

14. **FINANCIAL RESPONSIBILITY:**

A. Applicant shall provide sufficient information to demonstrate financial responsibility commensurate with the service proposed to be provided. Examples of such information which may be submitted include the following:

- Organizational structure including parent, affiliated or subsidiary companies.
- Published parent company financial and credit information.
- A description of the types and amounts of insurance carried by Applicant.

Included as Appendix A: Audited financial statements and insurance certificate.

B. Applicant must provide the following information:

- Identify Applicant's principal officers (owners, executives, partners and/or directors, as appropriate for organizational structure, including names, titles, business addresses, telephone numbers and their professional resumes.

Name	Title	Business Address	Phone
Ian P. Kline	President & CEO	57 Water Street, Watertown, MA 02472	(617) 673-7000
Ralph T. Jones	Managing Director	57 Water Street, Watertown, MA 02472	(617) 673-7000
Gene E. Fax	Chairman	57 Water Street, Watertown, MA 02472	(617) 673-7000
Alan V. Sefaerian	CFO/Secretary	57 Water Street, Watertown, MA 02472	(617) 673-7000
Christopher B. Hitchcock	Chief Operating Officer	57 Water Street, Watertown, MA 02472	(617) 673-7000
M. Sami Khawaja	Vice President/Director	720 SW Washington St, Ste 400, Portland OR 97206	(503) 228-2992

15. **TECHNICAL FITNESS:** To ensure that the present quality and availability of service provided by electric utilities does not deteriorate, the Applicant shall provide sufficient information to demonstrate technical fitness commensurate with the service proposed to be provided. Examples of such information which may be submitted include the following:

- The identity of the Applicant's management directly responsible for operations, including names, titles, business addresses, telephone numbers and their professional resumes.
- Copies of any certification(s) or similar documentation that would demonstrate technical fitness, such as membership in a trade association.

16. **FALSIFICATION:** The Applicant understands that the making of false statement(s) herein may be grounds for denying the Application or, if later discovered, for revoking any authority granted pursuant to the Application. This Application is subject to 18 Pa. C.S. §§4903 and 4904, relating to perjury and falsification in official matters.

17. **FEE:** The Applicant has enclosed the appropriate fee:

For an initial application the Applicant has enclosed the required fee of \$125 payable to the Commonwealth of Pennsylvania.

OR

For a renewal application the Applicant has enclosed the required fee of \$25 payable to the Commonwealth of Pennsylvania.

Applicant: The Cadmus Group, Inc.

By: Christopher B. Hitchcock

Title: Chief Operating Officer

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**AFFIDAVIT**

[Commonwealth/State] of Massachusetts :

ss.

County of Middlesex :

Christopher B. Hitchcock, Affiant, being duly [sworn/affirmed] according to law, deposes and says that:

[He/she is the Chief Operating Officer (Office of Affiant) of The Cadmus Group, Inc. (Name of Applicant);]

[That he/she is authorized to and does make this affidavit for said Applicant;]

That the Applicant herein The Cadmus Group, Inc. has the burden of producing information and supporting documentation demonstrating its technical and financial fitness to be registered as a conservation service provider pursuant to Act 129 of 2008.

That the Applicant herein The Cadmus Group, Inc. has answered the questions on the application correctly, truthfully, and completely and provided supporting documentation as required.

That the Applicant herein The Cadmus Group, Inc. acknowledges that it is under a duty to update information provided in answer to questions on this application and contained in supporting documents.

That the Applicant herein The Cadmus Group, Inc. acknowledges that it is under a duty to supplement information provided in answer to questions on this application and contained in supporting documents as requested by the Commission.


That the facts above set forth are true and correct to the best of his/her knowledge, information, and belief, and that he/she expects said Applicant to be able to prove the same at hearing.

  
Signature of Affiant

Sworn and subscribed before me this 23 day of Aug., 2011.

  
Signature of official administering oath

My commission expires 2/8/2013

 **MARYELLEN PAGE**  
Notary Public  
Commonwealth of Massachusetts  
My Commission Expires  
February 8, 2013

COMMONWEALTH OF PENNSYLVANIA  
PUBLIC UTILITY COMMISSION

TAX CERTIFICATION STATEMENT

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A completed Tax Certification Statement must accompany all applications for new registrations or renewals. Failure to provide the requested information and/or any outstanding state income, corporation, and sales (including failure to file or register) will cause your application to be rejected. If additional space is needed, please use white 8 1/2" x 11" paper. Type or print all information requested.

1. CORPORATE OR APPLICANT NAME The Cadmus Group, Inc.	2. BUSINESS PHONE NO. (617) 673-7100 CONTACT PERSON(S) FOR TAX ACCOUNTS: Chudi Ekpunobi
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3. TRADE/FICTITIOUS NAME (IF ANY)

4. LICENSED ADDRESS (STREET, RURAL ROUTE, P.O. BOX NO.) (POST OFFICE) STATE (ZIP)  
57 Water Street, Watertown MA 02472

5. TYPE OF ENTITY  SOLE PROPRIETOR  PARTNERSHIP  CORPORATION

8. LIST OWNER(S), GENERAL PARTNERS, OR CORPORATE OFFICER(S)

NAME (PRINT)	SOCIAL SECURITY NUMBER (OPTIONAL)
Ian Kline, President and CEO	
Ralph Jones, Managing Director, Co-Founder	
Gene Fax, Chairman of the Board, Co-Founder	
Alan Seferian, Chief Financial Officer	
Christopher Hitchcock, Chief Operating Officer	

9. LIST THE FOLLOWING STATE TAX IDENTIFICATION NUMBERS. (ALL ITEMS: A, B, AND C MUST BE COMPLETED)

<b>A. SALES TAX LICENSE (8 DIGITS)</b> APPLICATION PENDING <input type="checkbox"/> N/A <input checked="" type="checkbox"/> [ ] [ ] - [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]	<b>C. CORPORATE BOX NUMBER (7 DIGITS)</b> APPLICATION PENDING <input type="checkbox"/> N/A <input checked="" type="checkbox"/> [ 2 ] [ 0 ] [ 0 ] [ 0 ] [ 3 ] [ 6 ] [ 1 ]
<b>B. EMPLOYER ID (EIN) (9 DIGITS)</b> APPLICATION PENDING <input type="checkbox"/> N/A <input checked="" type="checkbox"/> [ 0 ] [ 4 ] - [ 2 ] [ 7 ] [ 9 ] [ 3 ] [ 7 ] [ 5 ] [ 5 ]	

10. Do you have PA employees either resident or non-resident?  YES  NO

11. Do you own any assets or have an office in PA?  YES  NO

NAME AND PHONE NUMBER OF PERSON(S) RESPONSIBLE FOR FILING TAX RETURNS

N/A	Automatic Data Processing, Inc.	Sansiveri, Kimball & McNamee LLP
PA SALES AND USE TAX	EMPLOYER TAXES	CORPORATE TAXES
N/A	(800) 225-5237	(401) 752-0549
PHONE	PHONE	PHONE

You can contact the Pennsylvania Department of Revenue at the following numbers: (717) 787-1064 or TDD# (800) 447-3020 for further information about tax identification numbers.

## 8. APPLICANT'S PROPOSED OPERATIONS

### 1. **Energy Efficiency and Demand Response Evaluation**

- Impact evaluations, focusing on documenting energy and demand savings.
- Process evaluations, focusing on program design efficiency and improvements.
- Market evaluations, to examine program effects on existing markets for efficient products and services.
- Logic model and program theory development to guide program implementation and develop appropriate indicators of success in short-, medium-, and long-term time frames.
- Customer surveys, focusing on satisfaction, intentions, and attitudes.
- Evaluability assessment, to determine if programs are gathering the appropriate data for comprehensive evaluation.
- Training and guidance in evaluation management and implementation for evaluation staff and program management.
- Preparation of testimony and reporting in support of state regulatory proceedings.
- Development of policies, procedures, and protocols for evaluation of energy-efficiency programs.
- Development and management of tracking databases for program tracking and evaluations.

### 2. **Clean Energy Assessments:** Cadmus provides verification, evaluation, and potential assessments for renewable projects including:

- Field Verification of Renewable Energy and Distributed Generation (DG) System Performance - Cadmus conducts post installation inspections and monitoring studies on a range of renewable energy systems.
- Evaluation of Renewable Energy and Distributed Generation Program Impacts – We conduct evaluations of state level RE/DG programs, to gauge the effectiveness and impacts of these programs on the regional market for renewable energy products and services. Cadmus uses statistical and analysis techniques to provide timely, actionable feedback on program structure and implementation.
- Development of Multi Platform Systems to track Renewable Energy and Distributed Generation System Performance - Cadmus has significant experience in developing and administering software tools to help programs track and quantify program benefits from RE/DG project implementation. Cadmus has built the only system that successfully integrates both automated and manual reporting strategies for RE/DG technologies.
- Solar and Wind Site Surveys and Resource Assessments – We provide site surveys and resource assessment support to a wide range of end use customers, including shading analyses for PV systems, feasibility studies for integration of PV systems into public buildings, wind resource feasibility assessments, and other related services.

### 3. **Utility Resource Planning and Assessment:** Our utility planning and assessment services encompass:

- Evaluating demand-side management resource portfolio options, including financial incentives, education and awareness campaigns, and codes and standards.
- Technology assessment and feasibility studies for demand response, renewables, and fuel conversion.
- Assessing long-term technical, economic, and market potentials for demand-side management options, including energy efficiency, demand response, dispersed generation, renewable resources, and fuel conversion.
- Developing demand-side management resource portfolios and analyzing implications for utility customers, utilities, and communities. Program planning services, including benchmarking and best-practice research, developing technical specifications, incentive structures, marketing plans, delivery mechanism, and cost-effectiveness analysis.
- Providing support in preparation of regulatory filings and stakeholder meetings.
- Cadmus' demand-side management planning and assessment services are supported by a suite of state-of-the-art techniques and advanced software tools expressly designed for analysis and forecasting of energy-efficiency and demand-response options.

### 4. **Regulatory Strategy and Support:** Our services include almost all aspects of resource planning, rate design, and regulatory functions: from revenue requirements to regulatory support, such as witness training and hearing preparation courses. Our list of services includes cost of service, pricing and ratemaking, regulatory strategy and policy, energy supply planning, electric market analysis and deregulation, and load research and forecasting.

### 5. **Load Research and Forecasting:** We provide customized load-forecasting services to address key issues facing specific markets and end uses for electric and gas utilities. Our end use, multi-dimensional, and peak demand forecasting models use state-of-the-art analytical and software solutions. In addition to understanding the influences of the economy and weather, our analyses address impacts of pricing, competition, demand-side management (DSM) and new products on load projections.

THE  
**CADMUS**  
GROUP, INC.



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**APPENDIX A:**  
**FINANCIAL STATEMENTS**  
**AND**  
**INSURANCE**

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**THE CADMUS GROUP, INC.  
AND SUBSIDIARY**

**CONSOLIDATED FINANCIAL STATEMENTS  
FOR THE YEARS ENDED  
APRIL 30, 2010 AND 2009**

**INDEPENDENT AUDITORS' REPORT**



SANSIVERI, KIMBALL & CO., L.L.P.  
CERTIFIED PUBLIC ACCOUNTANTS • BUSINESS ADVISORS

## INDEPENDENT AUDITORS' REPORT

To the Board of Directors of  
The Cadmus Group, Inc.:

We have audited the accompanying consolidated balance sheets of The Cadmus Group, Inc. and Subsidiary (the Company) as of April 30, 2010 and 2009, and the related consolidated statements of income, stockholders' equity and cash flows for the years then ended. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes 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 Company'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 consolidated financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall consolidated financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of The Cadmus Group, Inc. and Subsidiary as of April 30, 2010 and 2009 and the results of their operations and cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

*Sansiveri, Kimball & Co., L.L.P.*

June 30, 2010  
Providence, Rhode Island

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## THE CADMUS GROUP, INC. AND SUBSIDIARY

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### CONSOLIDATED BALANCE SHEETS APRIL 30, 2010 AND 2009

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	2010	2009
<b>ASSETS</b>		
<b>CURRENT ASSETS:</b>		
Cash	\$ 2,862,526	\$ 1,047,375
Receivables:		
Trade, less allowance for doubtful accounts of approximately \$75,000 in 2010 and \$25,000 in 2009	7,732,351	9,107,068
Unbilled	7,115,080	6,852,779
Refundable taxes on income	-	1,060,353
Prepaid expenses and other current assets	291,318	243,074
Total current assets	18,001,275	18,310,649
<b>PROPERTY AND EQUIPMENT:</b>		
Leasehold improvements	1,087,289	1,061,929
Furniture and fixtures	471,453	384,358
Computer equipment	1,229,422	653,420
Testing equipment	917,487	176,937
Vehicles	21,224	21,224
Total	3,726,875	2,297,868
Less accumulated depreciation and amortization	2,090,189	1,595,706
Property and equipment, net	1,636,686	702,162
<b>OTHER ASSETS:</b>		
Goodwill	8,371,091	6,690,606
Deposits and other assets	286,957	139,989
Deferred taxes on income	-	363,000
Total other assets	8,658,048	7,193,595
<b>TOTAL</b>	<b>\$ 28,296,009</b>	<b>\$ 26,206,406</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
<b>CURRENT LIABILITIES:</b>		
Current portion of long-term debt	\$ 1,226,191	\$ 623,429
Accounts payable and accrued expenses	7,645,883	7,978,374
Income taxes payable	334,112	-
Accrued purchase considerations	1,375,000	1,641,146
Deferred taxes on income	3,068,281	3,393,558
Total current liabilities	13,649,467	13,636,507
SUBORDINATED NOTES PAYABLE - Related parties	6,020,000	-
LONG-TERM DEBT - Less current portion	6,682,952	2,904,761
<b>COMMITMENTS</b>		
<b>STOCKHOLDERS' EQUITY:</b>		
Capital stock:		
Class A voting common stock, \$0.01 par value, 1,250,000 shares authorized	10,000	5,100
Class B voting common stock, \$0.01 par value, 740,000 shares authorized	-	4,900
Retained earnings	13,787,914	11,321,547
Unearned ESOP shares	(11,884,000)	(1,680,000)
Accumulated other comprehensive income	29,676	13,591
Total stockholders' equity	1,943,590	9,665,138
<b>TOTAL</b>	<b>\$ 28,296,009</b>	<b>\$ 26,206,406</b>

See notes to consolidated financial statements.

THE CADMUS GROUP, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF INCOME  
FOR THE YEARS ENDED APRIL 30, 2010 AND 2009

	2010	2009
CONTRACT REVENUE	\$ 59,319,427	\$ 45,264,060
OPERATING EXPENSES:		
Salaries and employee benefits	28,167,564	21,875,162
Subcontractors and consulting	18,183,240	14,684,024
Other operating expenses	8,717,254	5,994,659
Total operating expenses	<u>55,068,058</u>	<u>42,553,845</u>
INCOME FROM OPERATIONS	4,251,369	2,710,215
OTHER INCOME (EXPENSE):		
Interest expense	(73,546)	(147,536)
Interest income	545	3,904
Other expense, net	<u>(73,001)</u>	<u>(143,632)</u>
INCOME BEFORE TAXES ON INCOME	4,178,368	2,566,583
PROVISION FOR TAXES ON INCOME	<u>1,821,000</u>	<u>1,132,000</u>
NET INCOME	<u>\$ 2,357,368</u>	<u>\$ 1,434,583</u>

See notes to consolidated financial statements.

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THE CADMUS GROUP, INC. AND SUBSIDIARY

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY  
FOR THE YEARS ENDED APRIL 30, 2010 AND 2009

	Common Stock - Issued and Outstanding				Retained earnings	Unearned ESOP shares	Accumulated other comprehensive income	Stockholders' equity
	Class A - Voting		Class B - Voting					
	Shares	Amount	Shares	Amount				
Balance at April 30, 2008	510,000	\$ 5,100	490,000	\$ 4,900	\$ 9,787,593	\$ (2,460,000)	\$ 35,311	\$ 7,372,904
Comprehensive income:								
Net income					1,434,583			1,434,583
Market value adjustment on investments available for sale, net of tax effect							(21,720)	(21,720)
Total comprehensive income								1,412,863
ESOP compensation expense					165,618	780,000		945,618
Additional ESOP tax expense					(66,247)			(66,247)
Balance at April 30, 2009	510,000	5,100	490,000	4,900	11,321,547	(1,680,000)	13,591	9,665,138
Comprehensive income:								
Net income					2,357,368			2,357,368
Market value adjustment on investments available for sale, net of tax effect							16,085	16,085
Total comprehensive income								2,373,453
Conversion of Class B common stock to Class A common stock	490,000	4,900	(490,000)	(4,900)		(11,020,000)		(11,020,000)
Loan to ESOP						816,000		997,665
ESOP compensation expense					181,665			997,665
Additional ESOP tax expense					(72,666)			(72,666)
Balance at April 30, 2010	1,000,000	\$ 10,000	-	\$ -	\$ 13,787,914	\$ (11,884,000)	\$ 29,676	\$ 1,943,590

See notes to consolidated financial statements.

**THE CADMUS GROUP, INC. AND SUBSIDIARY**

**CONSOLIDATED STATEMENTS OF CASH FLOWS  
FOR THE YEARS ENDED APRIL 30, 2010 AND 2009**

	2010	2009
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net income	\$ 2,357,368	\$ 1,434,583
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	494,483	311,762
Provision for bad debts	50,000	-
Deferred taxes on income	27,000	1,674,000
Loss on disposal of property and equipment	-	528
Excess of ESOP compensation expense over ESOP funding	181,665	165,618
Additional ESOP tax expense	(72,666)	(66,247)
Changes in operating assets and liabilities:		
Trade receivables	1,324,717	(3,075,464)
Unbilled receivables	(262,301)	(2,718,610)
Refundable taxes on income	1,060,353	(772,403)
Prepaid expenses and other current assets	(21,436)	118,103
Deposits and other assets	(146,968)	17,539
Accounts payable and accrued expenses	(332,491)	3,592,585
Income taxes payable	334,112	-
<b>NET CASH PROVIDED BY OPERATING ACTIVITIES</b>	<b>4,993,836</b>	<b>681,994</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Purchases of property and equipment	(1,429,007)	(440,415)
Additions to goodwill	(305,485)	(50,000)
Acquisition, net of cash acquired	-	(2,958,386)
<b>NET CASH USED BY INVESTING ACTIVITIES</b>	<b>(1,734,492)</b>	<b>(3,448,801)</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Loan payment received from ESOP	816,000	780,000
Loan to ESOP	(11,020,000)	-
Proceeds from:		
Long-term debt	11,020,000	-
Subordinated notes payable - related parties	6,020,000	-
Payments on:		
Accrued purchase considerations	(1,641,146)	-
Note payable - bank	-	(2,000,000)
Long-term debt	(6,639,047)	(1,623,810)
<b>NET CASH USED BY FINANCING ACTIVITIES</b>	<b>(1,444,193)</b>	<b>(2,843,810)</b>
<b>NET INCREASE (DECREASE) IN CASH</b>	<b>1,815,151</b>	<b>(5,610,617)</b>
<b>CASH, BEGINNING OF THE YEAR</b>	<b>1,047,375</b>	<b>6,657,992</b>
<b>CASH, END OF THE YEAR</b>	<b>\$ 2,862,526</b>	<b>\$ 1,047,375</b>

See notes to consolidated financial statements.

THE CADMUS GROUP, INC. AND SUBSIDIARY  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Operations

The Cadmus Group, Inc. (Cadmus) provides research and consulting services consisting of scientific, technical and policy analyses and evaluation services to a broad range of clients in the United States and worldwide. Cadmus' service areas include water, energy, social marketing and market transformation, health policy and communications, green building, international development, and strategic environmental consulting.

In April 2008, Cadmus formed a wholly-owned subsidiary named Quantec Acquisition Corp. for the purpose of acquiring Quantec, LLC (Quantec), a limited liability company. On April 10, 2008, Cadmus entered into an agreement to acquire Quantec. Under the terms of the agreement, Cadmus acquired all of the issued and outstanding stock of Quantec and then subsequently merged Quantec Acquisition Corp. with Quantec, with Quantec being the surviving entity of the merger and a wholly-owned subsidiary of its sole member Cadmus.

Quantec provides research, analysis, and planning for the energy industry. During the year ended April 30, 2010, Cadmus and Quantec merged, with Cadmus being the surviving entity.

Basis of Consolidation

The financial statements are consolidated through the date of the merger of Quantec and Cadmus which occurred in fiscal year 2010. Prior to the merger, the consolidated financial statements included the accounts of The Cadmus Group, Inc. and its wholly-owned subsidiary, Quantec, LLC (the Company). All significant intercompany accounts and transactions have been eliminated in consolidation.

Basis of Accounting

The consolidated financial statements have been prepared on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Trade Receivables

The Company reports its trade receivables at cost, less an allowance for doubtful accounts. The Company's management evaluates its trade receivables and adjusts the

allowance for doubtful accounts based upon factors surrounding the credit risk and activity of certain customers, historical trends, economic conditions, and other information. Trade receivables are written off after all reasonable means of collection have been exhausted or when the Company is notified that the customer has declared bankruptcy.

#### Unbilled Receivables

Unbilled receivables consist of services performed at billable value including out-of-pocket expenses, which will be billed in the subsequent period or billed subsequently upon the attainment of certain contractual milestones.

#### Investments – Available for Sale

Investments available for sale are not considered significant, and accordingly, have been reported as other current assets in the accompanying consolidated balance sheets as of April 30, 2010 and 2009.

#### Property and Equipment

Property and equipment are stated at cost. Depreciation and amortization are computed using the straight-line method over the estimated useful lives of the assets or, in the case of leasehold improvements, over the term of the underlying leases. Such periods generally range from 3 to 5 years.

#### Impairment of Long-Lived Assets

In accordance with U.S. GAAP, the Company reviews its long-lived assets periodically to determine potential impairment by comparing the carrying value of the long-lived assets with the estimated future cash flows expected to result from the use of such assets, including cash flows from disposition. Should the sum of the expected future cash flows be less than the carrying value, the Company would recognize an impairment loss. An impairment loss would be measured by comparing the amount by which the carrying value exceeds the estimated fair value of the long-lived assets. No impairment losses have been recognized for the years ended April 30, 2010 and 2009.

#### Goodwill

The Company accounts for goodwill in accordance with U.S. GAAP, which addresses the initial recognition and measurement of intangible assets acquired outside of a business combination and the accounting for goodwill and other intangible assets subsequent to acquisition. U.S. GAAP provides that goodwill has an infinite life and is not to be amortized, but rather is to be tested at least annually for impairment. Management evaluates the recoverability of goodwill annually or more frequently if events or changes in circumstances, such as a decline in revenue, earnings or cash flows, or material adverse changes in the business climate, indicate that the carrying value of goodwill

might be impaired. As of April 30, 2010, the Company completed its annual impairment review and determined that no impairment charge was required.

### Revenue Recognition

The Company receives a significant portion of its operating revenue from contracts issued by various U.S. Government agencies. Accordingly, such revenues are recognized as contract expenditures are incurred. The contracts include provisional indirect rates for billing purposes, which are not finalized until the contracting agency has approved the actual costs submitted. As of April 30, 2010, indirect rates have been finalized for all fiscal years through 2007. Management believes that all final rates will be at least equal to or greater than the provisional rates. While the Company believes the recorded amounts under these contracts to be appropriate, it is possible that management's estimate will change upon negotiation of the final rates with the respective governmental agencies.

### Income Taxes

The Company accounts for income taxes in accordance with U.S. GAAP. Accordingly, deferred tax assets and liabilities are determined based on the differences between the consolidated financial statement and tax bases of assets and liabilities as measured by the currently enacted tax rates expected to be in effect when the taxes are actually paid or recovered. Deferred tax expense represents the change in the net deferred tax liability from the beginning to the end of the year, excluding the tax effect of certain components of other comprehensive income.

The Company files income tax returns in the U.S. Federal jurisdiction and various state jurisdictions. The Company has substantially concluded all U.S. Federal income tax matters and all material state tax matters for years through 2006.

### Comprehensive Income

U.S. GAAP establishes standards for reporting comprehensive income and its components and requires that an enterprise (a) classify items of other comprehensive income by their nature in a consolidated financial statement and (b) display the accumulated balance of other comprehensive income separately from retained earnings and additional paid-in capital in the equity section of the consolidated balance sheets. The Company's accumulated other comprehensive income included in stockholders' equity consists of net unrealized gains on investments available for sale, net of related tax effects.

### Employee Stock Ownership Plan

In March 2003, the stockholders and Board of Directors approved a plan of recapitalization for the purpose of transferring a 51% equity interest in Cadmus to a newly established ESOP Trust. In April 2010, the stockholders and Board of Directors approved the transfer of the remaining 49% equity interest to the ESOP Trust. Upon the

acquisition of the remaining 49% equity interest in Cadmus, all Class B voting shares acquired were subsequently converted into Class A voting shares.

In order to fund the cost associated with the ESOP's initial 51% ownership interest, Cadmus entered directly into a term loan agreement with a bank. Cadmus then entered into a loan agreement with the ESOP in an amount equal to term loan financing with the bank. With respect to the acquisition of the remaining 49% ownership interest, Cadmus entered directly into both a term and a one-day loan agreement with a bank in the aggregate amount of \$11,020,000. Cadmus then entered into a loan agreement with the ESOP for \$11,020,000. The one-day loan in the amount of \$6,020,000 was repaid immediately by Cadmus with funds borrowed from the former Class B stockholders. Also, see Note 11. The loans to the ESOP are secured by the unallocated ESOP shares.

Upon the initial funding of the ESOP, Cadmus recorded a \$6,932,765 charge to unearned ESOP shares. This charge represented the funds necessary for the ESOP to purchase 510,000 shares of common stock of Cadmus at a price of \$13.59 per share. With respect to the acquisition of the remaining 49% ownership interest, Cadmus recorded an \$11,020,000 charge to unearned ESOP shares. This charge represented the funds necessary for the ESOP to purchase 490,000 shares of common stock of Cadmus at a price of \$22.49 per share. Unearned shares are released as principal payments are made to the Company by the ESOP Trust. As unearned shares of the ESOP are released and allocated to employee accounts, a credit to unearned ESOP shares is recorded in an amount equal to the product of the shares released times the original acquisition price per share.

The Company records ESOP compensation expense based upon the number of ESOP shares to be allocated to employee accounts for the current ESOP plan year. The number of shares to be allocated is based upon the percentage of principal paid by the ESOP for the current year in proportion to the payments being made on the loan. This percentage is then multiplied by unallocated ESOP shares at the beginning of the year. The resulting allocated shares are valued based upon the most recent independent appraisal of Cadmus shares. Any difference between the ESOP compensation expense for the current year and the credit to unearned ESOP shares is charged to retained earnings.

#### Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant estimates include the allowance for doubtful accounts, depreciation and amortization, costs billed to the government subject to audit and adjustment, and the fair value of Cadmus stock used to recognize ESOP-related compensation.

## Reclassifications

Certain amounts reported in the 2009 consolidated financial statements have been reclassified to conform to the 2010 presentation.

## Subsequent Events

Management has evaluated subsequent events through June 30, 2010, which is the date the financial statements were available to be issued.

## 2. BUSINESS ACQUISITION

On May 1, 2008, Cadmus acquired substantially all of the assets of Quantec for an aggregate initial purchase price of approximately \$8,060,000, net of adjustments, as defined in the agreement dated April 10, 2008, and including certain contingent considerations determinable at the date of acquisition, as defined below.

The purchase agreement provided for the following additional purchase considerations:

- **Earn-Out Amounts** – Up to \$4,125,000 in payments are due to the former members of Quantec based upon the achievement of certain specified financial performance targets over the next three fiscal years. Such earn-out amounts were not recorded on the date of acquisition in accordance with U.S. GAAP as they are not determinable at the date of acquisition. As the earn-out amounts are determined, Cadmus will record the amounts as additions to goodwill. As of April 30, 2010, the former members have earned \$2,750,000 of the \$4,125,000 in potential earn-out amounts and such amounts have been recorded as additions to goodwill.
- **Quantec Advisory Payments** – Up to \$200,000 is due to the former members of Quantec for the reimbursement of reasonable professional fees incurred by them in connection with the sale of Quantec. As of April 30, 2010, the former members have been reimbursed \$100,000 for advisory payments. Such amounts were not recorded in the initial purchase price, but have been recorded as additions to goodwill upon reimbursement.
- **Holdback Amounts** – Cadmus held \$250,000 in escrow until final adjustments to the May 1, 2008 purchase had been agreed upon between Cadmus and the former members of Quantec. After final adjustments, the former members were paid approximately \$167,000. Such amounts were included in the initial purchase price.

The agreement also includes provisions for the establishment of a retention pool for the retention of certain employees of Quantec. The retention pool provides for three retention payments to be made. The third payment is contingent upon the achievement of

certain financial benchmarks as defined in the agreement and will be recorded when such financial benchmarks can be reasonably determined to have been achieved. The first two retention payments, totaling \$519,792, were included in the purchase price and recorded as an accrued liability at the date of acquisition. The third payment, totaling \$278,646, is due on September 30, 2011.

Cadmus recorded the business acquisition under the purchase method in accordance with U.S. GAAP. The following table summarizes the estimated fair values of assets acquired and liabilities assumed in the initial purchase as of May 1, 2008:

<u>Assets Acquired</u>	
Cash	\$ 10,420
Accounts receivable	2,447,700
Prepaid expenses	85,528
Property and equipment	217,638
Deposits	33,182
Subtotal	<u>2,794,468</u>
Intangibles	<u>5,265,606</u>
 Total assets acquired	 <u><u>\$ 8,060,074</u></u>

The consideration for the initial purchase price was as follows:

Cash, including cash acquired of \$10,420	\$ 2,968,806
Accrued retention pool payments	266,146
Liabilities assumed:	
Accounts payable	720,934
Accrued liabilities	104,188
Term note payable with a bank	<u>4,000,000</u>
 Total	 <u><u>\$ 8,060,074</u></u>

The following table reconciles changes in goodwill recorded by Cadmus from the date of initial acquisition on May 1, 2008 through April 30, 2010:

Purchase price for assets acquired	\$ 8,060,074
Less fair value of assets received	<u>(2,794,468)</u>
Goodwill at May 1, 2008	5,265,606
Additions to goodwill during the year ended April 30, 2009:	
Earn-out amounts	1,375,000
Advisory payments	<u>50,000</u>
Goodwill at April 30, 2009	6,690,606
Additions to goodwill during the year ended April 30, 2010:	
Earn-out amounts	1,375,000
Advisory payments	50,000
Adjustments to purchase price	<u>255,485</u>
Goodwill at April 30, 2010	<u>\$ 8,371,091</u>

During the year ended April 30, 2010, certain adjustments were made to the purchase price pursuant to an agreement between Cadmus and the former members of Quantec.

### 3. NOTE PAYABLE - BANK

The Company maintains a line-of-credit agreement with a bank for working capital purposes. In September 2009, the Company amended the line-of-credit agreement to increase the maximum available borrowings from \$2,000,000 to \$6,000,000. Such agreement is secured by substantially all assets of the Company and is cross-collateralized with the term notes payable discussed in Note 4. The agreement requires monthly interest payments at the Company's election of either the bank's prime rate or either the one, three, nine or twelve month London Interbank Offered Rate (LIBOR) plus 1.50%. As of April 30, 2010, the applicable LIBOR rates ranged from 0.280% to 1.016% and the bank's prime rate was 3.25%.

In addition, the Company is required to pay a commitment fee equal to .38% of the unused available borrowings. The line-of-credit agreement is renewable annually and expires on May 1, 2011. There were no amounts outstanding under this agreement as of April 30, 2010 and 2009.

In connection with the line-of-credit agreement and term notes payable to a bank discussed in Note 4, the Company is subject to certain restrictive covenants that require, among other things, a minimum fixed charge coverage ratio and a maximum leverage ratio. Such restrictive covenants become effective on July 31, 2010.

#### 4. LONG-TERM DEBT

As of April 30, 2010 and 2009, long-term debt consisted of the following:

	2010	2009
On April 30, 2010, the Company entered into a term note payable (2010 term note payable) with a bank for the purpose of partially funding the ESOP's acquisition of the remaining 49% ownership interest in Cadmus stock. Such note is secured by substantially all assets of the Company and is cross-collateralized with the note payable - bank referred to in Note 3 and a \$4,000,000 term note payable noted below. The 2010 term note payable bears interest at the Company's election of either the one, three, nine or twelve month LIBOR Rates plus 2.00%, and requires monthly principal payments of \$59,524 plus accrued interest through May 1, 2015, at which time all unpaid principal and interest is due.	\$ 5,000,000	\$ -
On May 1, 2008, the Company entered into a \$4,000,000 term note payable (2008 term note payable) with a bank to partially fund the acquisition of Quantec referred to in Note 2. Such note is secured by substantially all assets of the Company and is cross-collateralized with the note payable - bank referred to in Note 3 and the 2010 term note payable noted above. The 2008 term note payable bears interest at the Company's election of either the one, three, nine or twelve month LIBOR Rates plus 2.00% and requires monthly principal payments of \$47,619 plus accrued interest through May 1, 2013, at which time all unpaid principal and interest is due.	2,909,143	3,476,190
Carried forward	7,909,143	3,476,190

	2010	2009
Brought forward	\$ 7,909,143	\$ 3,476,190
As of April 30, 2009, the Company had a term note payable to a bank which was secured by substantially all assets of the Company and was cross-collateralized with the note payable - bank referred to in Note 3 and the 2008 term note payable above. Such term note required escalating monthly principal payments ranging from \$72,000 to \$100,000 through May 2009, at which time all remaining unpaid amounts were due and payable. Interest was computed at the Company's election of either the bank's prime rate plus .25% or LIBOR plus 1.25%. Such interest rate election was dependent on the Company's ability to achieve certain financial ratios as defined in the agreement. All outstanding amounts due under this term note payable were paid in full during the year ended April 30, 2010.		
Total	7,909,143	3,528,190
Less current portion	1,226,191	623,429
	-	52,000
Long-term portion	<u>\$ 6,682,952</u>	<u>\$ 2,904,761</u>

As of April 30, 2010, scheduled maturities of long-term debt are as follows:

<u>Fiscal Year Ending</u>	<u>Amount</u>
2011	\$ 1,226,191
2012	1,285,715
2013	1,285,715
2014	1,909,142
2015	714,286
2016	1,488,094
Total	<u>\$ 7,909,143</u>

Also, see Note 3 as to restrictive covenants in connection with the term notes payable referred to above and the Company's line-of-credit agreement.

## 5. FAIR VALUE MEASUREMENT

U.S. GAAP defines fair value and establishes a framework for measuring fair value. It establishes a fair value hierarchy that distinguishes between assumptions developed based on market data obtained from independent external sources and an entity's own

assumptions. The fair value measurement should consider adjustment for risk, such as risk inherent in a valuation technique or its input. The fair value hierarchy assigns priorities to the inputs to valuation techniques into three broad levels as follows:

- Level 1 – Generally quoted prices in active markets for identical assets or liabilities.
- Level 2 – Inputs other than quoted prices in active markets that are observable for the asset or liability.
- Level 3 – Generally are unobservable and allow for situations in which there is little, if any, market activity.

Goodwill is reported at fair value on a nonrecurring basis. The following table provides fair value measurement information for Goodwill at April 30, 2010 and 2009.

	Fair Value	Quoted Prices in Active Markets (Level 1)	Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)
<b>2010</b>				
Goodwill	\$ 8,371,091	\$ -	\$ -	\$ 8,371,091
<b>2009</b>				
Goodwill	\$ 6,690,606	\$ -	\$ -	\$ 6,690,606

For the year ended April 30, 2010, level 3 activity consisted of increases resulting from additional earn-out amounts recorded in the current year of \$1,375,000, subsequent adjustments to the purchase price of Quantec of \$255,485 and advisory payments made of \$50,000 as discussed in Note 2.

## 6. EMPLOYEE STOCK OWNERSHIP PLAN

Employees become eligible to participate in the ESOP upon reaching 21 years of age and having completed 1,000 hours of employment during the twelve month period immediately prior to the year in which they joined the ESOP.

Individual accounts are maintained for each participant in the ESOP. On an annual basis, each participant's stock account is credited with such participant's allocated share of Cadmus stock that has been earned by the ESOP or contributed in kind by Cadmus, and with shares of Cadmus stock forfeited by participants that terminated their participation in the ESOP. The ESOP is required to repurchase vested shares from separated employees of the Company.

Employer securities that have been acquired by the ESOP with the proceeds of the loan from Cadmus have been recorded in stockholders' equity as unearned ESOP shares on

the accompanying consolidated balance sheets. For each plan year during the duration of the loan, the number of shares of Cadmus securities to be released from unearned ESOP shares and allocated to participants' accounts is determined by multiplying the total number of unearned shares by the ratio of principal payments made on the loans divided by the total principal amount of the loans.

Cadmus makes annual contributions to the ESOP equal to the debt service on the ESOP's loan. As the debt is repaid, shares are released from collateral and allocated to eligible participants' accounts according to the ratio that each eligible participant's compensation bears to the total compensation of all eligible participants. For the years ended April 30, 2010 and 2009, Cadmus made contributions to the ESOP totaling \$816,000 and \$780,000, respectively, which the ESOP repaid to Cadmus in accordance with the loan agreement between Cadmus and the ESOP. No dividends were declared in 2010 and 2009.

Scheduled annual principal payments due on the ESOP's loans from Cadmus, which are the basis for determining annual ESOP compensation expense, are due as follows:

<u>Fiscal Year Ending</u>	<u>Amount</u>
2011	\$ 864,000
2012	1,102,000
2013	1,102,000
2014	1,102,000
2015	1,102,000
2016 and thereafter	<u>6,612,000</u>
Total	<u>\$ 11,884,000</u>

The ESOP owned 1,000,000 and 510,000 shares of Cadmus common stock at April 30, 2010 and 2009, respectively. For the years ended April 30, 2010 and 2009, the ESOP released 60,028 and 57,380 shares, respectively, from unallocated shares. There were 622,177 and 192,205 unallocated shares at April 30, 2010 and 2009, respectively.

Based upon the annual appraisal of Cadmus stock, Cadmus charged \$997,665 and \$945,618 to ESOP compensation expense for the years ended April 30, 2010 and 2009, respectively. Based upon such appraisals, the estimated fair value of unallocated ESOP shares amounted to approximately \$10,341,000 and \$3,168,000 at April 30, 2010 and 2009, respectively.

7. **DEFINED CONTRIBUTION PLAN**

The Company sponsors a defined contribution plan covering substantially all of its employees. Such plan qualifies under Section 401(k) of the Internal Revenue Code (IRC). Under the terms of the plan, employees are allowed to contribute a portion of their annual compensation up to the maximum amount allowed by the IRC. The Company matches employees' contributions up to 3% of each employee's total compensation, subject to IRC limitations. For the years ended April 30, 2010 and 2009, the Company's contribution to the plan was approximately \$421,000 and \$338,000, respectively.

8. **STOCK APPRECIATION RIGHTS PLAN**

On April 30, 2010, Cadmus established The Cadmus Group Stock Appreciation Rights Plan (the Plan). The Plan is effective beginning May 1, 2010 and will continue until April 30, 2020 unless terminated earlier by the Board of Directors. Each stock appreciation right (SAR) entitles the holder to receive an amount in cash, on the date the participant becomes vested in the SAR, equal to the amount of increase in the fair market value of Cadmus stock as determined on the date of SAR grant. Fair market value is determined by the Board of Directors based upon the most recent appraisal of Cadmus stock performed by an independent appraiser.

Under the Plan, Cadmus has 250,000 SARs reserved and available for issuance to eligible employees at the discretion of the Board of Directors. With the consent of the ESOP Trustee, the Board of Directors of Cadmus may grant an additional 50,000 SARs based upon the financial performance of Cadmus. The former Class B stockholders of Cadmus are not eligible for participation in the Plan.

The Board of Directors may grant three types of SARs to eligible employees: Retention SARs, Performance SARs and Inducement SARs. The rights under each of the three types of SARs grants are equivalent. The Board of Directors have imposed certain limitations and fiscal performance requirements on the number and type of SARs that can be issued in each fiscal year as defined in the Plan agreement. SARs granted under the Plan vest in 25% increments beginning on the second anniversary of the SARs grant date. SARs become fully vested in the event of the sale of more than 50% of the issued and outstanding stock of Cadmus.

Effective May 1, 2010, compensation cost and related liabilities equal to the increase in the fair value of Cadmus stock over the fair market value at the SARs grant date will be recognized over the five-year service period and, subsequently through the date of settlement, if later. The SARs will be remeasured at each financial reporting date through the date of settlement.

## 9. COMMITMENTS

### Employment Agreements

Cadmus maintains employment agreements with certain executives. In the event of termination without cause during the term of the employment agreement period, Cadmus is obligated to make a lump-sum payment of the remaining cumulative minimum base salary and annual bonus, as defined in the agreement. Such employment agreements expire at various dates through April 2016.

### Operating Leases

Cadmus leases certain office space under non-cancelable operating leases. The leases, which expire at various dates through September 2015, contain renewal options, known escalation clauses, and provide for the payment of contingent lease payments based upon escalation of real estate taxes and certain operating expenses. Aggregate rent expense for such operating leases was approximately \$2,092,000 and \$1,635,000 for the years ended April 30, 2010 and 2009, respectively.

Cadmus periodically subleases portions of its office space under non-cancelable agreements. Total rental income received under such sublease agreements for the years ended April 30, 2010 and 2009 was approximately \$72,000 and \$50,000, respectively. As of April 30, 2010, there was one sublease agreement in place. The agreement expires in June 2011, and requires future minimum lease payments of approximately \$45,000.

As of April 30, 2010, approximate future minimum operating lease payments required under the non-cancelable operating leases noted above are as follows:

<u>Fiscal Year Ending</u>	<u>Amount</u>
2011	\$ 1,939,000
2012	1,878,000
2013	1,253,000
2014	923,000
2015	808,000
2016	<u>340,000</u>
Total	<u>\$ 7,141,000</u>

## 10. TAXES ON INCOME

As of April 30, 2010 and 2009, the components of the net deferred tax liability as presented in the accompanying consolidated balance sheets are as follows:

	<u>2010</u>	<u>2009</u>
Gross deferred tax asset	\$ -	\$ 363,000
Gross deferred tax liability	<u>(3,068,281)</u>	<u>(3,393,558)</u>
Net deferred tax liability	<u>\$ (3,068,281)</u>	<u>\$ (3,030,558)</u>

For the years ended April 30, 2010 and 2009, the major temporary differences that gave rise to the net deferred tax liability are depreciation and amortization differences, the accrual-to-cash basis adjustment, and the unrealized gain on investments available for sale.

The components of the provision for taxes on income for the years ended April 30, 2010 and 2009 are as follows:

	<u>2010</u>	<u>2009</u>
Provision (credit) for current taxes on income:		
Federal	\$ 1,482,000	\$ (457,000)
State	<u>312,000</u>	<u>(85,000)</u>
Total	<u>1,794,000</u>	<u>(542,000)</u>
Provision for deferred taxes on income:		
Federal	23,000	1,428,000
State	<u>4,000</u>	<u>246,000</u>
Total	<u>27,000</u>	<u>1,674,000</u>
Total provision for taxes on income	<u>\$ 1,821,000</u>	<u>\$ 1,132,000</u>

As of April 30, 2009, refundable taxes on income represent Federal and state estimated income tax payments in excess of the required tax liabilities for the year then ended. In addition, the refundable taxes on income as of April 30, 2009 also included Federal and state net operating loss carrybacks from the prior year which were utilized in the current year.

On May 1, 2010, Cadmus filed an election with the Internal Revenue Service to be treated as an S Corporation as provided under the Internal Revenue Code. As an S Corporation, Federal and certain state income taxes are the liabilities of the stockholder. In accordance with U.S. GAAP, the effect of making the S election is to be recorded in

the year in which it becomes effective. The election is effective as of May 1, 2010 and for the year ending April 30, 2011.

## 11. RELATED PARTY TRANSACTIONS

### Subordinated Notes Payable – Related Parties

On April 30, 2010, Cadmus entered into two unsecured subordinated notes payable with two former stockholders of Cadmus. Such former stockholders are also employees of Cadmus. Such notes are subordinate to the note-payable bank (as discussed in Note 3) and to the long-term debt (as discussed in Note 4). In accordance with the subordination agreement with the bank, Cadmus is prohibited from making principal payments on such notes until 91 days after the senior indebtedness has been paid off, or until otherwise authorized by the bank, whichever is first. Such notes bear interest at 7%, and require monthly payments of interest through August 1, 2015, at which time all unpaid principal and interest is due. Accordingly, such subordinated notes payable have been classified as long-term in the accompanying 2010 consolidated balance sheet.

### Warrants

In connection with the subordinated notes payable – related parties referred to above, each note has attached to it a warrant that will permit the holder to purchase, in the aggregate, up to 33,270 shares of Class B voting common stock of Cadmus for \$16.62. Each warrant may be exercised beginning on the date the subordinated notes are paid in full and at any time during the five years thereafter, or upon a change in control, as defined in the agreement. Cadmus has the option to call and purchase the warrants at any time following the exercise date, as defined in the agreement.

## 12. MAJOR CUSTOMER AND CONCENTRATIONS OF CREDIT RISK

Financial instruments which subject Cadmus to a concentration of credit risk consist principally of cash and trade and unbilled receivables.

In connection with the note payable – bank and the term notes payable, Cadmus is required to maintain all cash deposits with their principal bank as defined in the loan agreements. As of and during the year ended April 30, 2010, cash deposits exceeded the FDIC insurance limit of \$250,000. Management considers such circumstances to be necessary and normal business risks.

For the year ended April 30, 2010, contracts with the U.S. Government and another major customer represented approximately 43% and 17%, respectively, of contract revenue, while contracts with the U.S. Government and another major customer represented approximately 50% and 12%, respectively, of contract revenue for the year ended April 30, 2009. In addition, amounts due from the U.S. Government and another major

customer represent approximately 28% and 23%, respectively, of trade and unbilled receivables as of April 30, 2010.

### 13. SUPPLEMENTAL CASH FLOW INFORMATION

Net cash flows from operating activities, as reported in the accompanying consolidated statements of cash flows for the years ended April 30, 2010 and 2009, reflect cash payments for income taxes and interest as follows:

	<u>2010</u>	<u>2009</u>
Income taxes paid	\$ 472,000	\$ 383,000
Interest paid	71,000	152,000

The accompanying consolidated statement of cash flows for the year ended April 30, 2010 excludes the effect of the noncash investing and financing activities relating to the addition to goodwill through the accrual of purchase considerations in the amount of \$1,375,000.

The accompanying consolidated statement of cash flows for the year ended April 30, 2009 excludes the effect of noncash investing and financing activities relating to the acquisition of Quantec, as referred to in Note 2, through the execution of long-term debt in the aggregate amount of \$4,000,000, through the accrual of purchase considerations in the amount of \$1,641,146 and the assumption of liabilities of \$825,122.



# CERTIFICATE OF LIABILITY INSURANCE

OP ID: AJC

DATE (MM/DD/YYYY)

08/23/11

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).


<b>PRODUCER</b> SCS Agency, Inc. P.O. Box 220493 11 Grace Avenue - Suite 300 Great Neck, NY 11022-0493		516-466-6007 516-829-5857	<b>CONTACT NAME:</b> PHONE (A/C, No, Ext): E-MAIL ADDRESS: PRODUCER CUSTOMER ID #: CADMU-1	FAX (A/C, No):
<b>INSURED</b> The Cadmus Group, Inc 57 Water Street Watertown, MA 02472		<b>RECEIVED</b> AUG 26 2011 PA PUBLIC UTILITY COMMISSION		<b>INSURER(S) AFFORDING COVERAGE</b> INSURER A: The Hartford MAIC # 22357 INSURER B: Federal Insurance Co. 20281 INSURER C: Steadfast Insurance Company INSURER D: INSURER E: INSURER F:

**COVERAGES**      **CERTIFICATE NUMBER: 0 BUREAU**      **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVP	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	GENERAL LIABILITY			12UUNUU5013	08/01/11	08/01/12	EACH OCCURRENCE	\$ 1,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY						DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 1,000,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						MED EXP (Any one person)	\$ 10,000
	<input checked="" type="checkbox"/> Contractual						PERSONAL & ADV INJURY	\$ 1,000,000
	<input checked="" type="checkbox"/> Per Location Aggr			GENERAL AGGREGATE	\$ 2,000,000		PRODUCTS - COMP/OP AGG	\$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:							
	<input type="checkbox"/> POLICY	<input type="checkbox"/> PRO-JECT	<input type="checkbox"/> LOC					
A	AUTOMOBILE LIABILITY			12UENUC4516	08/01/11	08/01/12	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000
	<input type="checkbox"/> ANY AUTO						BODILY INJURY (Per person)	\$
	<input type="checkbox"/> ALL OWNED AUTOS						BODILY INJURY (Per accident)	\$
	<input type="checkbox"/> SCHEDULED AUTOS						PROPERTY DAMAGE (Per accident)	\$
	<input checked="" type="checkbox"/> HIRED AUTOS				\$			
	<input checked="" type="checkbox"/> NON-OWNED AUTOS				\$			
A	UMBRELLA LIAB	<input checked="" type="checkbox"/>	OCCUR	12XHUUU2401	08/01/11	08/01/12	EACH OCCURRENCE	\$ 10,000,000
	EXCESS LIAB	<input type="checkbox"/>	CLAIMS-MADE				AGGREGATE	\$ 10,000,000
	DEDUCTIBLE							\$
	<input checked="" type="checkbox"/> RETENTION \$ 10,000							\$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			12WEKT8604	08/01/11	08/01/12	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS	OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	<input type="checkbox"/>	N/A				E.L. EACH ACCIDENT	\$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	\$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	\$ 1,000,000
B	Crime/Fidelity			81324354	10/31/10	10/31/11	Limit	1,000,000
C	Profession Llab			EEC224660709	10/31/10	10/31/11	Limit	4,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

<b>CERTIFICATE HOLDER</b>  FOR INFORMATION PURPOSE ONLY	<b>CANCELLATION</b>  SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE 

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**APPENDIX B:**

TECHNICAL FITNESS DOCUMENTATION  
(RESUMES OF ENERGY SERVICES MANAGEMENT)

**RECEIVED**  
AUG 26 2011  
PA PUBLIC UTILITY COMMISSION  
SECRETARY'S BUREAU



## Education and Certifications

PhD, Systems Science/Economics, Portland State University

MS, Economics, Portland State University

BS, Economics, Portland State University

## Professional Experience and Qualifications

M. Sami Khawaja, a vice president with The Cadmus Group Inc., oversees the firm's Energy Services Group (formerly Quantec, LLC). He specializes in performance measurement, market research, market transformation assessment, forecasting, pricing, cost/benefit analysis, and statistical and quantitative analysis for utilities and government agencies. In addition, he has provided expert testimony for various projects.

Nationally recognized for his expertise, Dr. Khawaja was one of the authors of the International Performance Measurement and Verification Protocol (IPMVP). For the public-private collaborative National Action Plan for Energy Efficiency (NAPEE), he co-authored the Program Impact Evaluation Guide. Most recently, he is the lead author on the Impact Evaluation Guide for the Electric Power Research Institute (EPRI).

Before co-founding Quantec, Dr. Khawaja was a project director with Barakat & Chamberlin, Inc., where he specialized in evaluating utility customer programs, including both process and impact evaluations. He performed statistical and quantitative analyses, designed and developed models, conducted feasibility studies, and projected evaluation needs of utility companies.

## Examples of Relevant Experience

### *Energy Efficiency and Conservation*

Dr. Khawaja has led more than 150 energy efficiency-related projects. An expert in program design and evaluation methods, his skill encompasses program theory and planning, implementation and evaluation.

Two representative projects are the following:

- Working with organizations in Oregon and Washington on projects regarding (1) market transformation and energy-efficiency programs in competitive markets; (2) the allocation of system benefits charge resources; and (3) evaluation protocols in competitive markets.
- Currently serving as the principal-in-charge of several portfolios of DSM program evaluations for clients such as Consumers Energy, Dayton Power & Light, Ameren Utilities in Illinois, and Ameren Utilities in Missouri. He has also participated in portfolio evaluations for Detroit Edison, Progress Energy, and PECO.

### *Expert Testimony*

- 2010, Prepared testimony before the Public Utilities Commission of Ohio to discuss Dayton Power & Light's DSM evaluation effort.
- 2008, Appeared before the Utah Public Utilities Commission to discuss PacifiCorp's energy efficiency potentials assessment and the Company's renewable plan.



- 2004, Testified before the Oregon Public Utilities Commission in the River and Bar Pilots rate case.

### *Demand Side Management (DSM)*

Dr. Khawaja has led more than 100 DSM-related projects. He has been particularly active in development of real-time tracking systems that allow for continual program evaluation and mid-course corrections. (Early in his career, he was one of the chief evaluators of the Hood River Conservation Project, which was the nation's largest test of energy-efficiency programs to date). Additionally, he conducts trainings on various aspects of DSM planning, design, and evaluation for both Cadmus clients and the Association of Energy Services Professionals (AESP).

### *Low-Income Program Services*

Dr. Khawaja has conducted more than 50 evaluations of low-income energy programs. As the leader of low-income program services for Quantec (1998-2008), Dr. Khawaja demonstrated his personal commitment by guiding the firm's work in this area. He is a highly regarded expert and speaker on low-income energy programs, and he is helping to lead a national shift toward a menu of services approach that also integrates adult energy education.

### *Statistical Expertise*

Dr. Khawaja has conducting statistical and economic analysis for clients worldwide for over 20 years.

### *Guidelines and Protocols*

Dr. Khawaja has contributed to or co-authored widely used energy-efficiency guidelines and protocols. He was one of the authors of the International Performance Measurement and Verification Protocol (IPMVP), which set the gold standard for evaluating energy-efficiency programs. Several of these standards have, through international agreements, been adopted across North America and Europe.

Additionally, for the public-private collaborative National Action Plan for Energy Efficiency (NAPEE), Dr. Khawaja co-authored the Program Impact Evaluation Guide. Most recently, he was the lead author on the Impact Evaluation Guide for the Electric Power Research Institute (EPRI). He also participated in the development of the World Resources Institute (WRI) Greenhouse Gases (GHG) Protocols, used by hundreds of companies worldwide to manage their GHG footprint.

### *Sampling*

Dr. Khawaja's experience has involved statistical sampling design, which has ranged from simple random sampling for some residential surveys to more sophisticated sampling design for quality control of large commercial and industrial programs. He is well versed in common sampling techniques in load research, including ratio-based sampling and model based statistical sampling (MBSS).

### **Teaching and Training**

From 1984 to the present, Dr. Khawaja has taught courses in the Departments of Management and Economics at Portland State University (PSU), where he is an adjunct professor. In addition, he is a co-founder of the Applied Energy Economics and Policy graduate certificate program.

From 1984 to the present, Dr. Khawaja has taught over 40 workshops for clients throughout the US and internationally.



## **Education and Certifications**

Ph.D., Regional Science, Portland State University

B.A., Quantitative Social Research, University of Oregon

## **Professional Experience and Qualifications**

Hossein Haeri, an Executive Director at The Cadmus Group, Inc., has more than 25 years of experience in research, consulting, utility management and teaching in the energy utility industry. Working in Cadmus' Energy Services team, Dr. Haeri specializes in utility strategic planning, integrated resource assessment and portfolio analysis, demand response planning and market assessment, and performance measurement.

Before joining Cadmus, Dr. Haeri was the director of Energy Information Systems at Chevron Energy Solutions (formerly PG&E Energy Services), where he led a team of engineers and IT professionals to design and develop the remote monitoring and control systems to support the company's performance contracts. He was a principal at the consulting firm of Barakat and Chamberlin and managed demand-side planning and assessment at Central Maine Power.

## **Examples of Relevant Experience**

### *Demand Side Management (DSM) Resource Assessment*

Dr. Haeri is a nationally recognized expert in energy efficiency and load management resource assessment, planning and impact evaluation. His work has encompassed all aspects of assessing technical, economic and achievable potentials, including innovative approaches to determining market potentials. He has led, or been the key technical advisor on, numerous market studies of electric and natural gas efficiency, demand response, distributed generation (including renewable energy), and fuel conversion for investor-owned and public utilities throughout the United States, including Bonneville Power Administration, Black Hills Energy, Mid American Energy, Alliant Energy, Puget Sound Energy, Portland General Electric, Great River Energy, Rocky Mountain Power, Pacific Power, Seattle City Light, and Snohomish County PUD

### *Integrated Resource Planning and Forecasting*

Dr. Haeri's work has addressed both theoretical and practical aspects of modeling demand-side management potentials in the IRP process. He is familiar with the various IRP models used by utilities, such as portfolio-based and capacity expansion models. Dr. Haeri typically works with utility clients to develop overall strategies for resource planning and on the mechanics of incorporating DSM resources in the IRP process.

### *Resource Portfolio Planning and Assessment*

Dr. Haeri has worked closely with utilities in various jurisdictions having energy-efficiency resource standards (EERS), helping them formulate effective strategies to meet their targets. Numerous energy utilities have engaged him to translate the results of DSM market studies into effective and successful programs, and to develop portfolios of DSM products and services with associated targets, budgets and

implementation, evaluation plans. His efforts include providing the necessary public process and regulatory support to gain approval for these plans.

Dr. Haeri has also worked with stakeholder groups to create optimal outcomes for his clients in a number of states, and he has worked with regulators on behalf of utilities in several jurisdictions including Maine, Iowa, New York, Nevada, Oregon, Utah, and Washington.

In addition, Dr. Haeri has worked extensively on the development of cost-effective tools for program planning and portfolio assessment. He was the architect and lead developer of DSM Portfolio Pro, Cadmus's tool for DSM portfolio planning and risk assessment; DR Pro, an analytic tool for assessing the market potentials and costs for demand response strategies; and the DSM Planner, an Excel-based model for long-term planning and budgeting of DSM portfolios.

### *Evaluation, Measurement and Verification*

Dr. Haeri brings more than 20 years of experience to projects involving measurement, verification, and quantitative methods for determining the gross and net impacts of energy efficiency and demand response programs. He has led impact evaluation projects involving sample design, primary data collection and engineering and statistical assessment of load impacts.

Dr. Haeri is currently leading the evaluations of the Industrial Sector Initiative for the Northwest Energy Efficiency Alliance, BC Hydro's Power Smart Partners Program, and Southern California Edison's Peak Plus demand response initiative.

### **Recent Publications and Presentations**

Dr. Haeri has authored many technical reports and papers published in refereed journals such as The Energy Journal, Public Policy Journal and the Utilities Fortnightly. His recent presentations, conference papers, and publications include:

- "Extreme Efficiency: Performance Standards are a Valid Idea if Targets are Achievable," Public Utility Fortnightly, September 2010.
- "Energy efficiency in New York: Balancing the Risks and Opportunities," Public Utilities Fortnightly, January 2010.
- "Using Experimental Design to Assess the Impacts of Education and Rate Design: The PEAK Plus Pilot Project," Proceedings, International Energy Program Evaluation Conference, Portland, August 2009.
- "Technical and Economic Feasibility of Direct Irrigation Load Control in the Northwest," Peak Load Management Alliance Conference, Austin, Texas, October 2008.
- "Do Stock Prices Reflect Operational Efficiency?" With Matei Perussi and M. Sami Khawaja, Public Utilities Fortnightly, February 1999.
- "The Fortnightly 100, Which Utility Ranks the Highest?" With Janice Forrester and Michael Carter, Public Utilities Fortnightly, September 1997.



## Education and Certifications

Ph.D., Political Science, University of Oregon

## Professional Experience and Qualifications

Dr. Ben Bronfman, an executive director at The Cadmus Group, Inc., oversees the DSM Evaluation and Sustainability Practice. A nationally recognized expert in evaluation, technology assessment, and policy analysis,

Dr. Bronfman has more than 35 years experience evaluating new and existing energy technologies and energy policy. He has conducted macro- and micro-level evaluations in such diverse areas as energy conservation, new technology implementation, alternative futures, and urban development. His experience also encompasses staff development and coaching, and he has worked extensively on survey design, analysis and implementation, and econometrics and statistics. Dr. Bronfman has significant experience working in an interdisciplinary environment with other social scientists, planners, economists, engineers, and life science professionals.

In addition to working with public utility commissions, investor-owned and municipal utilities, and public interest groups throughout North America, Dr. Bronfman has also consulted international in Italy, Sweden, Ghana, and Nigeria.

Before joining Cadmus in 2005, Dr. Bronfman was the evaluation manager at the Energy Trust of Oregon, where he developed and managed evaluations of conservation and renewable energy programs and was responsible for an annual budget of \$1.5 million. He was also the evaluation manager for the Northwest Energy Efficiency Alliance, where he was responsible for a budget of \$4 million. Dr. Bronfman's career also included serving as vice president of DSM evaluation services at ERC International and being the group leader for Social Impact Analysis at Oak Ridge National Laboratory.

## Examples of Relevant Experience

As principal-in-charge of DSM evaluations, Dr Bronfman has supervised numerous program-specific evaluations and several portfolio evaluations encompassing a range of residential and commercial programs. Recent clients include Southern California Edison, the Ontario Power Authority, Salt River Project, Energy Trust of Oregon, and New York State Energy and Research Authority.

Dr. Bronfman's efforts on these projects encompassed the following:

- Development of logic models, including short-, medium-, and long-term indicators of success and researchable issues.
- Development of an evaluability assessment protocol for program managers and implementers to ensure that appropriate data will be available when evaluations are required.
- Development of measurement and verification plans, including site-visit and metering plans, equipment specification, and integration of billing analysis into the calculation of program impacts.

- Development of process evaluation protocols and plans involving process flows, ongoing program feedback, and recommendations for program opportunities and improvement.
- Development of net-to-gross survey instruments to determine the potential impacts of freeriders, program spillover, and indirect impacts.
- Identification of market barriers and opportunities in program design, and assessment of program success in overcoming the barriers.
- Conducting process and impact evaluations of new technologies, technologies new to specific market segments, and new or innovative marketing and outreach approaches.
- Conducting multiyear evaluations of residential and commercial programs.
- Conducting management reviews of program solicitations and responses.

## Recent Publications

*Integrating Evaluability Assessment into the Program Planning, Implementation and Evaluation Process.* Proceedings from the 18th National Energy Services Conference, 2008.

*Southern California Edison 2004-2005 IDEEA Constituent Program Evaluations.* Prepared for Southern California Edison, June 2008.

*Early Assessment of 2006-2008 InDEE/IDEEA Programs, Final Report.* Prepared for Southern California Edison, November 2007.

*Evaluating the 2004 and 2005 IDEEA Solicitation Processes: A Comparative Process Evaluation.* Prepared for Southern California Edison, April 2006.

*Anticipating Alternative National and Regional Futures in Energy Efficiency in World Futures.* The Journal of General Evolution, Volume 59, Number 5, July-August 2003, pp. 335-360(26).



## Education and Certifications

Ph.D. Political Science, University of Oregon

Certified Measurement and Verification Professional (CMVP-IPMVP)

## Professional Experience and Qualifications

Dr. David Sumi, a principal at The Cadmus Group Inc., has over 25 years of experience in evaluation and performance measurement research. Dr. Sumi's work focuses on energy efficiency, demand side management (DSM), and quantifying a range of impacts from DSM programs (such as direct energy, environmental, economic, and other non-energy benefits). His work has entailed managing research and evaluation projects (including several multi-year evaluation projects) for more than 30 utilities, energy research consortia, and government agencies. His experience encompasses coordination between measurement and verification protocols for energy efficiency programs and the WRI Greenhouse Gas (GHG) Protocol.

Before joining Cadmus in 2010, Dr. Sumi was a managing consultant for PA Consulting Group, where he developed and managed the evaluation of the Wisconsin statewide Focus on Energy Program (from 2001 through mid-2010). This \$19 million project required managing a team that designed, conducted, and reported evaluation results for all of the statewide programs. Dr. Sumi's career has also included serving as a senior consultant at Hagler Bailly, at HBRS, Inc., and as an evaluation analyst at Seattle City Light.

In addition to evaluation research assignments throughout North America, Dr. Sumi has consulted on energy-efficiency programs in Italy, Brazil, Thailand, and Mexico. He has been an evaluation advisor to BC Hydro since 2009.

## Examples of Relevant Experience

Dr. Sumi has managed a variety of evaluation projects with particular emphases on the following types of research projects:

### *Comprehensive Impact and Process Evaluations*

Dr. Sumi has directed numerous program-specific evaluations where near-term program energy impacts have been critical to resource acquisition objectives of utilities and state governments. He has been responsible for managing evaluation activities that identify, document, quantify, and monetize these impacts. In this capacity, his process evaluation expertise has often also been important to:

- validate and diagnose program logic models
- reduce uncertainty in program-attributable impacts
- provide greater internal and external accountability for programs

### *Measurement and Verification Protocols*

In 2007, Dr. Sumi accepted an invitation to participate on the Technical Committee for the U.S. EPA's Model Evaluation Guideline for Energy Efficiency, a work product of the National Action Plan for Energy Efficiency that focused on impact evaluation methods.

### *Load Management Programs*

Dr. Sumi has managed evaluations of residential load management programs for WE Energies, Consumers Energy, AmerenUE, Xcel, and Salt River Project. These projects included impact and process evaluations as well as market assessments

### *Additional Project Efforts Have Encompassed the Following*

- Development of measurement and verification plans, including sample designs.
- Development of program logic models and process flows as integral elements of process evaluations
- Development of net-to-gross data collection instruments to assess effects of free-ridership, program spillover, and other indirect effects
- Conducting program offer reviews and overall process evaluations

### **Recent Presentations**

Dr. Sumi has presented numerous conference papers on linkages between energy-efficiency program evaluation and greenhouse gas mitigation quantification protocols. Recently, at the European Parliament, Dr. Sumi delivered to a workshop for member countries sponsored by the European Commission, "*A Concept Paper Toward a Bottom-up Measurement and Evaluation Protocol for Energy Efficiency Programs.*"

### **Recent Publications**

"Energy Efficiency Emissions and Policy," Proceedings of the ACEEE Summer Study on Energy Efficiency in Buildings, 2008.

"Selecting an Appropriate Approach for Calculating Displaced Emissions for Different Energy Efficiency Projects and Program Types," Proceedings from the 18<sup>th</sup> National Energy Services Conference & Exposition, 2008.

"Building Bridges Between Energy Efficiency Program Evaluation and Greenhouse Gas Mitigation Quantification Protocols," Proceedings of the International Energy Program Evaluation Conference, 2007.

"The Potential for Creating Pollution Credits in a U.S. Statewide 'Public Benefits' Energy Efficiency Program." Proceedings from the 26<sup>th</sup> Annual International Conference of the International Association for Energy Economics (IAEE). Prague, Czech Republic, 2003.



## **Education and Certifications**

Ph.D., Policy Analysis, RAND Graduate School

M.S., Policy Analysis, RAND Graduate School

M.S., Aerospace Engineering, University of Southern California

B.S., Engineering, California Institute of Technology

LEED Accredited Professional

Courses on Decision Analysis, Artificial Intelligence, and Sustainable Development

## **Professional Experience and Qualifications**

Dr. Allen Lee, an Executive Director at The Cadmus Group, Inc., has more than 25 years of experience in conducting a wide range of projects and programs involving energy policy, energy efficiency, renewables, environmental analysis, and sustainability. He has brought multidisciplinary expertise to challenging research projects for public and private sector clients. In addition, he has been directly involved in formulating public policy for public agencies.

Before joining Cadmus, Dr. Lee was a senior manager with XENERGY, a leading national energy consulting firm, where he managed several projects including an evaluation of SCE's Non-Residential Standard Performance Contract Program. He has also worked for the Rand Corporation, California Energy Commission, and Pacific Northwest National Laboratory.

## **Examples of Relevant Experience**

In his efforts for clients, Dr. Lee applies quantitative analysis tools (such as econometrics, decision analysis, life cycle cost analysis, and cost-effectiveness analysis), engineering analysis, and qualitative analysis tools (such as focus groups and surveys). His professional experience has included the following:

- Conducting more than 40 energy program evaluations, assessing cost-effectiveness and analyzing markets, market barriers, and market incentives for diverse technologies;
- Characterizing new technologies and their markets;
- Managing state and national building energy-efficiency standards programs;
- Conducting environmental impact analyses and providing technical leadership for green building programs; and
- Playing a key role in evaluating the Energy Trust of Oregon's Transition Projects (commercial and industrial retrofit).

### *Evaluations and Green Building Studies*

Dr. Lee's research has focused on California and the Pacific Northwest, but he also has extensive experience with studies across the U.S. for clients in locations such as Massachusetts and Iowa. Before joining Cadmus, he developed and implemented two energy-efficiency programs in California and evaluated several commercial and residential energy-efficiency programs.

- In Dr. Lee's analysis of the impacts and cost-effectiveness of multiple demand reduction programs proposed and implemented by PacifiCorp in several northwest states, he applied cost-effectiveness tests that included total resource cost, utility cost, rate impact, and participant cost.
- For a multi-year evaluation of California utilities' program to upgrade building energy codes and appliance standards, Dr. Lee developed innovative techniques for assessing energy impacts and credit attributable to the program.
- Dr. Lee has conducted multiple studies for BC Hydro to assess its energy-efficiency programs. One study focused on providing recommendations for improving the process used to implement the utility's major commercial/industrial sector efficiency program.
- A LEED-accredited professional, Dr. Lee has performed several green building studies including evaluations of two green building programs, impact and cost analyses of green roofs, and ongoing measurement and verification studies of nearly 30 green building projects for the City of Portland.
- Dr. Lee analyzed three City of Portland buildings to determine energy-efficiency and green building design options to meet the LEED green building requirements. This study estimated incremental cost, energy savings, environmental impacts, productivity enhancements, and life cycle costs.

### *Renewable Energy and Environmental Analysis*

Dr. Lee has conducted studies of renewable energy options as components of utility-integrated resource plans. He has characterized the status of the technologies and assessed their costs, energy generation, regulations, and environmental impacts. As part of support provided to Portland for its Green Investment Fund Program, he oversaw data collection and analysis of renewable energy technologies. For San Diego Gas & Electric's Sustainable Communities Program, he analyzed the performance of several projects using PVs and one project utilizing a fuel cell.

He has led numerous projects that assessed environmental impacts of generation technologies and energy-efficiency programs. He recently completed a project for the Northeast Energy Efficiency Partnerships that assessed and recommended reporting requirements for energy-efficiency programs that could be used to estimate air emissions impacts.

### **Conference Papers and Invited Presentations**

Dr. Lee has published more than 150 reports and papers on his research and has given more than 50 presentations at national conferences and other meetings. He has been a regular speaker at the ACEEE Summer Study and International Energy Program Evaluation Conference.



## Education and Certifications

Ph.D. Candidate, Communications Research, University of Washington, Seattle, WA

M.A. Communications Research, University of Washington, Seattle, WA

B.A. Playwriting, University of Missouri, Columbia, MO

## Professional Experience and Qualifications

Linda Dethman, a principal with The Cadmus Group Inc., oversees the firm's Process Evaluation practice for the Energy Services Group. Ms. Dethman combines a broad range of social science research skills with technical expertise to assess the need and opportunity for efficient products, services, and policies for business, government, and residential audiences; plan and implement successful efficiency programs. She also evaluates the delivery process and impacts of client programs, and she is an expert at qualitative and quantitative research approaches.

During her 25-year career, Ms. Dethman has assessed over 150 efficiency programs across all sectors. She has worked throughout the United States and internationally with all types of efficiency program designs, including those aimed at achieving immediate savings and those that hope to transform markets. She has met and conducted research with thousands of customers, including school children, low-income renters, high income homeowners, landlords, commercial and industrial building owners, and trade allies, such as HVAC contractors, architects and engineers. She is an award-winning writer and a trainer and speaker at many energy efficiency conferences.

## Examples of Relevant Experience

### *Energy Efficiency Process Evaluations*

- **Evaluation of the Path to Net Zero Pilot Program, Energy Trust of Oregon, 2009-2010.** This assessment, over several years, looks closely at a program that hopes to produce a set of commercial and institutional buildings that reduce energy use by at least 60% from current code, with a number of projects hoping for "net zero" energy use. Evaluation findings from this pioneering program will be used to design larger efforts to push new buildings toward more integrated design, higher efficiencies, and use of renewable energy sources and are likely to inform similar efforts nationally.
- **BetterBricks Assessment, Northwest Energy Efficiency Alliance, 2007-present.** This ongoing project looks across all the target markets for BetterBricks, a program designed to transform business practices in regard to energy efficiency and sustainability. Dethman & Associates, as a sub-contractor to Research Into Action, is analyzing the efforts in the Office Real Estate Sector.
- **Corvallis Community Energy Efficiency Pilot Program Evaluation, Energy Trust of Oregon, 2009-10.** This evaluation estimated savings from a behavioral change community-based efficiency

initiative, assessed its efficacy, documented its history and recommended improvements for similar future projects. Key insights from this evaluation presented at the IEPEC Conference in Paris, 2010.

### *Market and Consumer Research*

- **Comparison of Seven West Coast Residential Customer Segmentation Studies, Energy Trust of Oregon, 2009-2010.** Recently energy organizations in the West have undertaken segmentation studies with their residential customers, including Energy Trust of Oregon, BPA, Puget Sound Energy, BC Hydro, Snohomish PUD, Tacoma Power, and SMUD. This study analyzed what could be learned by looking across these studies about target audiences, marketing strategies, and efficiency programs, and outlined steps that organizations needed to take to successfully use market segmentation results. Key elements of this research were presented at the recent Behavior, Environment, and Climate Change conference and will be published as a chapter in an upcoming BECC on-line book.
- **CFL Lighting Survey, Tacoma Public Utilities, 2007-8.** This mail survey asked Tacoma Power residential customers to do their own lighting audit so that we could assess market saturation of CFLs and strategies for growing the CFL marketing. Achieved a 43% response rate, and results were applied to CFL programs.
- **Research to Support Power Smart's Behavioral Change Initiatives, BC Hydro, 2007- 2009.** Dethman & Associates conducted qualitative assessments to guide new BC Hydro initiatives to foster behavior changes that save energy. Programs were targeted local governments, residences, and businesses. For instance, focus groups we conducted built on psychographic segmentation conducted by the utility and resulted in a refined on-line behavioral program. Focus groups for the Challenge pilot programs with local governments spurred program changes.

### *Program Design*

- **Design Assistance for New Commercial Buildings, Washington State Energy Office.** This project evaluated a program that matched commercial developers and their owners and design teams with energy consultants who were experts in computerized building energy modeling and energy efficient building design. Tasks included review of records, and conduct of 62 in-depth interviews with energy consultants and participants involved with the first 21 buildings.
- **Program Profiles and Needs Assessment - Electric Utility Commercial Conservation Acquisition Programs, Northwest Power Planning Council.** This project gathered information on all commercial and industrial programs in the Pacific Northwest, to develop "Commercial and Industrial Energy Efficiency Profiles of 1992 Northwest Electric Utility Programs." Conducted a needs assessment with commercial program managers in the region, and five issue papers addressing these needs were written, published, and disseminated.

### *Training and Facilitation*

- **Facilitation and Planning Services, Energy Smart Services Advisory Committee, Seattle City Light, 2006-present.** Worked in concert with City Light managers and staff, and an advisory committee of fifteen experts to articulate new directions for the commercial efficiency services at the utility. Responsibilities include designing and conducting meetings to gain feedback from the group, analyzing the data collected, and writing a report encompassing the committee's recommendations.



## Education and Certifications

Certified Energy Manager (CEM); Association of Energy Engineers

B.S., Mechanical Engineering, Concentration in Energy Systems, Cornell University

Graduate study, Environmental Engineering and Aquatic Science, Cornell University

Massachusetts EIT Certification

Special Topics in Industrial Ventilation, ACGIH

Joint MIT/Harvard Industrial Ecology Seminar

ASCE Computer-Aided Hydraulics Course

Serves on the IPMPV Committee for M&V Standards

## Professional Experience and Qualifications

David Korn, Vice President of Measurement & Engineering at Cadmus, has more than 15 years of experience with the firm and more than 20 years of experience in energy and environmental consulting and engineering. His expertise encompasses a broad range of energy conservation issues, ranging from preparing detailed technical evaluations of products (such as industrial transformers) to auditing and metering buildings and building systems. Additionally, Mr. Korn has developed specifications for battery charging systems, dehumidifiers, water coolers, computers, and for the correct installation of air conditioning equipment. He has supervised the construction of cogeneration systems and performed energy audits on millions of square feet of buildings.

Specializing in laboratory and *in-situ* metering, Mr. Korn and his engineering team have investigated energy use of consumer products ranging from air conditioners, dehumidifiers, water coolers, computers, computer monitors, external power supplies, and battery charging systems. These efforts included developing the ENERGY STAR® quality installation specifications for central air conditioners.

## Examples of Relevant Experience

### *ENERGY STAR® and Energy Conservation Projects*

The following are representative of Mr. Korn's work related to energy conservation efforts:

- Mr. Korn leads a team expert in helping large enterprises to reduce the energy use of their plug loads, and in particular their computing systems. His team offers free software and consulting help to help IT departments cut enterprise operating costs.
- After evaluating the state of installations of residential air conditioners, Mr. Korn supported the development of a quality installation (QI) program that aligns with specifications written by an ACCA committee. Over the past year, he has helped EPA develop pilot QI programs in Texas and California.



- For questions regarding loading (related to low-voltage transformer energy analysis), Mr. Korn designed and managed a research project to determine the average loading of commercial and industrial transformers. The project entailed surveying nearly 400 transformers in 4 million square feet of commercial and industrial space and metering 86 of those transformers. This ground-breaking research showed that the 35-percent load factor used to develop TP-1 is much higher than average transformer loads, which are less than 20 percent.
- Mr. Korn led an effort to examine the energy and water use of selected industrial facilities and recommended savings measures for a variety of facilities (microbreweries, a plastic extruder, food processors, a jewelry manufacturer, and several printed circuit board manufacturers). He analyzed in detail industrial ventilation practices and energy efficiency of various design choices.
- Regarding the energy conservation potential of projects in hospitals, manufacturing facilities, college campuses, and municipal buildings, Mr. Korn monitored electrical loads of equipment and buildings, wrote equipment specifications, analyzed capital recovery, and supervised construction. He also audited several hundred thousand square feet of office and industrial facilities.
- To assess energy use and energy conservation potential in the U.S. semiconductor manufacturing industry, Mr. Korn led an effort that developed a model for evaluating energy use in facility HVAC systems. In addition, he managed two annual conferences attended by the industry and by U.S. EPA in San Jose and Austin.
- As part of a team effort, Mr. Korn assisted in providing the technical and program assistance to the Energy Smart Local Government Energy-Efficient Product Procurement Program (GEEP – NY). This program assisted local government agencies in New York in complying voluntarily with Executive Order 111, and it emphasized no-cost and low cost measures to save energy.
- Mr. Korn identified opportunities for and barriers to efficiency including evaluating RTUs, commercial kitchen equipment, and building controls (for the Massachusetts Technology Collaborative).
- For the U.S. EPA, Mr. Korn studied the cost of saving energy through the utility purchase of energy-efficient pole-mounted transformers. He developed a model that simulated the effect of varying transmission loading on the cost of saved energy, using Monte Carlo techniques.
- To help electric utilities conduct efficient energy audits of commercial customers and recommend energy conservation measures, Mr. Korn assisted in developing a computerized energy auditing system. His efforts included developing new measures, verifying computations, and writing code.

## Publications and Selected Presentations

Korn, David, R. Huang, M. Walker, and T. Bolioli. *Computer Power Management – It's Time to Wake Up*. ACEEE Summer Study on Energy-Efficiency in Buildings, 2006.

Korn, David, R. Huang, M. Walker, and T. Bolioli. *Power Management*. ITAK. February 2005.

Webber, Carrie (Lawrence Berkeley National Laboratory), D. Korn (The Cadmus Group, Inc.), and M. Sanchez (Lawrence Berkeley National Laboratory). *Savings Potential of ENERGY STAR<sup>®</sup> External Power Adapters and Battery Chargers*. ACEEE Summer Study on Energy-Efficiency in Buildings, 2006.



## Education and Certifications

M.B.A., University of Utah

B.S., Economics, University of Utah, *cum laude*

## Professional Experience and Qualifications

Bryan Ward, a principal at Cadmus, has more than 20 years of experience conducting market and survey research. Much of Mr. Ward's research has focused on DSM program evaluation and DSM potential studies. He has extensive experience designing and developing data management and analysis processes to improve the quality, effectiveness, and efficiency of research projects.

Before joining Cadmus, Mr. Ward was a managing consultant with PA Consulting Group, where he led a number of DSM market potential studies and energy impact evaluations. Most recently, he completed an evaluation of AmerenUE's Personal Energy Management Pilot program and a study for the Department of Housing and Urban Development to determine the feasibility of benchmarking utility costs and consumption by the public housing authorities. Mr. Ward has worked on the evaluation of Wisconsin's Focus on Energy portfolio of programs since its inception 10 years ago. This work included developing a comprehensive reporting system that integrated program tracking data with evaluation findings to report program energy impacts in numerous ways, including program cost-effectiveness and non-energy impacts.

## Examples of Relevant Experience

### *Project Management*

Mr. Ward has successfully managed a variety of projects, primarily DSM program evaluations and DSM potential studies, including the following:

For the *California Public Utilities Commission*, he led the evaluation of the non-resource activities of the government partnership programs, with a focus on identifying and quantifying indirect impacts. After identifying non-resource activities across all 56 of the government partnership programs, Mr. Ward's evaluation team prioritized the programs, and the results of the prioritization were approved by the California IOU's before work proceeded. The evaluation included quantitative surveys with program participants and qualitative interviews with utility program managers and partnership program managers and staff.

For the *Public Service Commission of Wisconsin*, he led the Focus on Energy evaluation team's design of a data management system that collects program tracking and budget/invoice data from the program administrators, and integrates that data with evaluation findings, allowing for regular reporting (semi-annual) of verified and net energy impacts by program, measure category, and geographic region. The evaluated impacts data are combined with the budget/invoice data for reporting cost-effectiveness metrics. This data is also combined with the analysis of EPA emissions data for Wisconsin's generating facilities for reporting of avoided emissions. Mr. Ward coordinated the team's valuation efforts, including the valuation of economic impacts and the distribution of those impacts geographically and by industry sector, non-energy effects, and benefit-cost analysis.



For the *Central Louisiana Electric Company (Cleco)*, he led a study to estimate the market potential for DSM in Cleco's territory. The project encompassed several stages: (1) developing baseline forecasts of the basic facility and technology characteristics of the three major customer sectors; (2) identifying a broad range of DSM measures and practices appropriate to the service territory; (3) initially screening these measures and practices to determine their suitability; (4) developing a final list of measures/practices; and (5) estimating achievable (market) potential for the residential, commercial, and industrial sectors.

### *Survey Design and Implementation*

For four years in the late 1990s, Mr. Ward managed Hagler Bailly's survey research center, providing primary data collection services utilizing a 25-station telephone lab.

Prior to his work at Hagler Bailly, Mr. Ward was a project manager for eight years at the University of Utah Survey Research Center. During this time, he managed a team of analysts who programmed surveys for computer assisted telephone interviewing, managed field collection for telephone and mail surveys, prepared data for analysis, and provided data documentation and basic crosstabs and frequencies. Mr. Ward also designed dozens of surveys for clients, many of which were utilities. Since deregulation, much of the data collection focused on helping utilities understand the market for services they could provide beyond delivering energy. Many of Mr. Ward's projects at Cadmus utilize some form of primary data collection.

### *Quantitative Data Analysis and Data Management*

Mr. Ward has analyzed primary and secondary data to allocate residential and commercial sector loads by end-use, typically as one step in a market potential study. He has extensive experience working with a variety of data types including survey, program tracking, customer billing, interval meter, and system load. He has also worked with data from other sources such as the Residential Energy Consumption Survey and the Commercial Business Energy Consumption Survey.

In addition to using tools such as Transact-SQL, DSMore, Cadmus' Portfolio Pro, SPSS, and SAS to process and analyze data, Mr. Ward has developed data systems and models, such as an evaluation reporting system for Wisconsin's Focus on Energy program. This system imports data from multiple program tracking systems and integrates that data with quantitative evaluation findings to report evaluated program impacts, cost-effectiveness analysis, cost of conserved energy, avoided emissions, and comparison of realized impacts to estimated potential. Mr. Ward has conducted statistical analysis for litigation support on vehicle tread separation, breast implant failure, and the environmental justice of increased rail traffic on specific rail corridors.

### **Recent Publications**

PA Consulting Group as part of the Summit Blue Government Partnership Program Evaluation Team. *Government Partnerships Programs Effectiveness and Impacts for Non-Resource Elements of the 2006-2008 Government Partnerships Programs*. January 26, 2010.

Ujjwal Bhattacharjee, Drake, S., Rambo, E, and Ward, B. (PA Consulting Group). *Focus on Energy Evaluation: A Review and Update of NEBS Values for Residential Programs*. February 19, 2010.



## Education and Certifications

Graduate Psych. Dept. Statistics & Data Analysis Course, University of Oregon

B.S., *Energy and Environmental Systems*, The Evergreen State College

Undergraduate Research Participant, Argonne National Laboratory US DOE

## Professional Experience and Qualifications

Anne West, a principal at Cadmus, has more than 25 years of experience in the energy industry. Ms. West's work encompasses quantitative and qualitative evaluations of energy-efficiency programs in all sectors, and it includes established, new, and emerging technologies and low-income customer assistance programs. In addition to her extensive data management and analysis efforts, she has expertise in on-site inspection, verification, and research. She has developed and implemented all phases of research, including protocol, data collection forms, inspections, testing, and surveys.

Ms. West has worked with energy utilities, government agencies, and non-profit organizations throughout the United States. Before joining Cadmus in 2006, she was owner and principal of West and Company Research, LLC. She has also worked as an energy assistant for the University of Oregon Facilities Services, a conservation project field specialist for Pacific Power & Light and Bonneville Power Administration for the Hood River Conservation Project, and an energy program coordinator in Washington State's Energy Office.

## Examples of Relevant Experience

### *Program Evaluations*

As a Cadmus principal, Ms. West has overseen, managed, and/or coordinated numerous large research and evaluation projects. These major evaluations entail some (or all) of the following activities: developing evaluation, measurement, and verification plans and surveys; developing surveys and interview guides; conducting interviews; refining methods and conducting analysis of net-to-gross, freeridership, and other relevant data analysis; making presentations; and writing interim and final reports.

- For *PPL Electric Utilities* based in Pennsylvania, Ms. West is managing the four-year evaluation of the portfolio of energy-efficiency and demand response programs designed to meet regulatory requirements set forth under Act 129 of 2008. The portfolios evaluations contain process, impact, and cost/benefit components, and Ms. West developed the evaluation plans and sampling strategies for the 13 residential and commercial programs in the portfolio. Cadmus currently supports PPL in performing program evaluations and maintaining a continuous improvement process of these energy-efficiency plans and programs. The evaluation includes three main components: (1) accurate and relevant evaluation, measurement, and verification; (2) activity tracking; and (3) quality assurance/quality control.
- For the *Salt River Project* (based in Phoenix, Arizona), she is managing and conducting annual evaluations of a portfolio of energy-efficiency programs and demand reduction programs in both residential and commercial sectors. Evaluations include process, impact, cost/benefit analyses with net-to-gross adjustments for freeridership. Cadmus completed evaluations of nine fiscal year 2009



programs, 14 fiscal year 2010 programs, and 15 fiscal year 2011 programs. Recently, Cadmus contracted to evaluate two commercial and three residential programs for fiscal year 2012.

- For the *California Public Utility Commission (CPUC)*, Ms. West managed a staff of engineers, field technicians, and analysts in a three-year evaluation of multiple measures included in 15 programs funded by the CPUC within the Specialized Commercial and Residential Retrofit contract groups. Programs and measures evaluated largely focused on HVAC high impact measures. Evaluations and M&V plans followed the California Protocols, California Framework for Evaluation, and IMPVP.
- For *Southern California Edison's 2006-2008 Innovative Designs for Energy Efficiency Activities (IDEEA) 28 Programs*, she conducted early evaluability assessments and assisted in the development and refinement of the evaluability assessment templates used for these and other programs. She followed the early assessments with process evaluations for six programs.
- For *Southern California Edison's 2004-2005 IDEEA*, she managed the evaluation of a suite of 13 programs, which served the residential, agricultural, and small commercial sectors. Evaluations included both process and impact evaluations and entailed engineering and billing analyses. The evaluation included over 1,000 surveys and in-depth interviews with program implementers, stakeholders, and participants.
- For the *Bonneville Power Administration (BPA)*, she conducted a nationwide review of proven and promising energy-efficiency programs and technologies. This new opportunities assessment supplemented the process for selecting conservation programs implementable through local utilities.
- For *BPA*, she assisted with the evaluation of a Technical Services Initiative, conducting interviews of industrial customers and recommending program modifications.
- For *BPA*, she managed and conducted field research for the Bonneville Persistence Study, a persistence study of weatherization seven years after installation of BPA-funded weatherization efforts. Field research included surveys and extensive testing in participant and nonparticipant homes, blower door and duct blaster tests, and weatherization verification home audits.
- For *BPA and Pacific Power*, she conducted a two-year indoor air quality diagnostic research and mitigation project and was responsible for all aspects of the project, including study design, data collection, and the design and installation of radon mitigation systems.
- In her evaluation for the *State of Nevada Energy Assistance and Weatherization Assistance* programs, she made site visits, interviewed with contracting agencies, and analyzed low-income customer bills and payment behavior.
- For *Southern California Gas Company and Southern California Edison*, in a verification evaluation of the Residential Energy-Efficiency Program First-Year Load Impacts, she conducted savings verification billing analyses and examined *ex ante* estimates, measures, and related issues.
- For *Philadelphia Electric Company Low-Income Universal Service Program* (with 80,000 participants), her evaluation focused on rate affordability and her efforts included surveys, interviews, and billing and payment analysis.
- For *ComElec's Commercial and Industrial Customized Rebate Program*, in which rebates were based on energy savings, she conducted a process re-engineering evaluation.



## Education and Certifications

Ph.D., Mechanical Engineering, Cornell University (minor in physical chemistry)

B.A., Physics, Oberlin College

## Professional Experience and Qualifications

Tina Jayaweera, a senior associate at Cadmus, performs research and data analysis on projects concerning distributed-generation technologies and energy efficiency. These projects include potentials assessments and program planning and design for utilities across the country. Dr. Jayaweera has also evaluated energy-efficiency programs and conducted training for a residential energy education program and has been selected as a trainer for AESP's P2: Program Planning and Implementation course.

Before joining Cadmus, Dr. Jayaweera was a senior research scientist at FM Global, where she designed and directed experimental and numerical studies to improve fire-suppression systems. She has presented her findings at several conferences and has been published in numerous peer-reviewed journals. In addition, Dr. Jayaweera was a post-doctoral research associate at Lawrence Livermore National Laboratory.

## Examples of Relevant Experience

### *Project Management*

Dr. Jayaweera has effectively managed significant projects of varying scope and duration. These include:

- **Black Hills Energy:** Managing Cadmus's support to Black Hills Energy in preparing its five-year energy-efficiency plan in Iowa and three-year energy-efficiency plan in Colorado. This involved managing Cadmus's research, analysis, and testimonial efforts, as well as assisting with the organization of several collaborative sessions to gain stakeholder feedback.
- **PacifiCorp:** Currently managing Cadmus's research to assess DSM opportunities in energy efficiency, demand response, and supplemental resources across six states. This includes managing frequent internal and external communication to ensure tasks were completed efficiently, on time and within budget.
- **Bonneville Power Administration:** Currently managing Cadmus's research on nonprogrammatic savings opportunities for BPA's territory. This multi-year project involves working closely with regional entities to support BPA in its assessment of nonprogrammatic savings historically as well as for the current five-year planning cycle.

### *Energy Efficiency and Conservation Plans*

Dr. Jayaweera has worked with several utilities including Black Hills Energy, PPL Electric Utilities and Alliant Energy as well as the Bonneville Power Administration in developing energy-efficiency plans. She has helped the utilities in designing programs composed of an optimal mix of cost-effective energy-efficiency measures and demand response programs that best serve the utility's customers and reduce loads.

The programs developed were for the three major customer sectors (residential, including low income, commercial, and industrial) and included incentives for renewable resources.

### *Potentials Studies*

Dr. Jayaweera has worked on various potential studies for electric and gas utilities including

- Puget Sound Energy
- Black Hills Energy
- PacifiCorp
- Tacoma Power

Her analysis consisted of characterizing the potential from small renewable energy and combined heat and power projects, emerging technology measure identification, commercial building simulations (using eQuest) that determine building end-use energy consumption and measure savings potentials, and she has worked to improve the energy-efficiency analysis for the industrial sector.

### **Publications**

“Scaling of Fire Cooling by Water Mist under Low Drop Reynolds Number Conditions,” *Fire Safety J.*, 43 (1): 63-70 (2008), with Yu, H-Z.

“Water Absorption by Horizontally Positioned Corrugated Board,” *Fire Safety J.*, 41:335-342 (2006), with Yu, H-Z.

“Flame Inhibition by Phosphorus-Containing Compounds over a Range of Equivalence Ratios,” *Combust. Flame*, 140:103-115 (2005), with Melius, C. F., Pitz, W. J., Westbrook, C. K., Korobeinichev, O. P., Shvartsberg, V. M., Shmakov, A. G., Bolshova, T. A. and Curran, H.

### **Conference Presentations**

“Making Home Performance Accessible to Everyone: A New Initiative,” AESP National Conference, Tucson, Arizona, February 2010, with Daunis, M., Rice, P., Marshall, A., Wist, S.

“Why Utilities Care About Non-Programmatic Energy Savings and How To Measure Them?” 2011 International Energy Program Evaluation Conference, Boston, Massachusetts, August 2011, with Gage, L., Cobb C., Haeri, H. (accepted).

“Reconciling National and Local Policy Objectives on Energy Efficiency in the United States,” EEDAL 2011- Energy Efficiency in Domestic Appliances and Lighting, Copenhagen, May 2011, with Haeri, H., Morris, E. (accepted).

### **Professional Association Memberships**

Sigma Xi, the Scientific Research Society

Association of Energy Services Professionals



## Education and Certifications

M.S., Statistics, Portland State University (*in progress*)

B.S., Mathematics, Portland State University

## Professional Experience and Qualifications

Elizabeth Daykin, a senior associate with Cadmus, specializes in planning demand-side management (DSM) programs and leading impact and process evaluations. Her efforts encompass estimating market potential, setting rebate levels, and developing program budgets. An expert in cost-effectiveness analysis, Ms. Daykin has conducted and reviewed cost-effectiveness analyses for dozens of utilities throughout North America, and she frequently presents trainings regarding DSM economics. In addition to developing cost-effectiveness models for utility clients, Ms. Daykin led the development of DSM Portfolio Pro, Cadmus' cost-effectiveness model.

Before joining Cadmus, Ms. Daykin was a graduate teaching assistant at Portland State University, where she taught mathematics and statistics. She is also an experienced paralegal.

## Examples of Relevant Experience

### *Program Planning and Design*

In her program planning and design efforts, Ms. Daykin has worked with several large utilities. Her recent representative projects include these:

- ***PPL Electric's EE&C Plan*** (filed as part of Pennsylvania's Act 129 requirements). For energy-efficiency and demand response programs, Ms. Daykin planned program participation and budgets from the measure level to meet energy and demand savings goals within a constrained budget. Additionally, she ensured the portfolio met specific sector targets, such as 10 percent savings for non-profit and institutional customers.
- ***Consolidated Edison***. Ms. Daykin estimated technical and achievable potential for seven energy-efficiency programs in Con Edison's service territory, which included projecting the participation levels in and evaluating the cost-effectiveness of the proposed programs.

### *Cost-Effectiveness Analysis*

Ms. Daykin's cost-effectiveness efforts encompass assessing measures, programs, and DSM portfolios for planning and evaluation. During the past three years, she has led the design of Cadmus' DSM Portfolio Pro model, a SQL-based model for evaluating cost-effectiveness. Her representative projects include:

- ***Salt River Project***. As part of an integrated resource plan, Ms. Daykin performed a cost-effectiveness analysis for two program plans. Recently, she oversaw the cost-effectiveness analysis for program evaluations and led the effort to modify DSM Portfolio Pro to aid in interdepartmental coordination.

- ***PacifiCorp.*** As part of program evaluations and gap analyses, Ms. Daykin assisted in evaluating the cost-effectiveness of existing programs and their component measures. Her representative projects include an impact evaluation of a low-income weatherization program in Washington State, annual reporting for PacifiCorp-sponsored energy-efficiency programs, and integrated resource planning (gap analysis).
- ***Sacramento Municipal Utility District.*** As part of an evaluation of resource acquisition strategies and program portfolios under various assumptions about future market conditions and energy costs, Ms. Daykin assisted in the analysis of program goals and cost-effectiveness on a program-by-program and utility basis.
- ***Ameren Illinois.*** Ms. Daykin coordinated the cost-effectiveness analysis of Ameren Illinois' DSM portfolio, which entailed working with contractors to collect the appropriate tracked and evaluated program information.
- ***E.ON U.S.*** Ms. Daykin led the effort to rebuild a Microsoft Excel<sup>®</sup>-based cost-effectiveness tool for use by Louisville Gas & Electric Company and Kentucky Utilities Company. The modeling requirements included time-of-use rates and analyzing demand response programs.

In addition to her work on these projects, Ms. Daykin has provided similar services to Black Hills Energy (formerly Aquila Networks), MidAmerican Energy, Alliant Energy, Seattle City Light, NV Energy (formerly Nevada Power), Bonneville Power Administration, Puget Sound Energy, and Tacoma Power.

### *Quantitative and Qualitative Data Analysis*

For numerous clients, Ms. Daykin contributes to sample design and statistical analysis to evaluate various marketing campaigns. This work involves developing samples and using statistical techniques (regression analysis, ANOVAs, t-tests) to evaluate the effectiveness of company-deployed marketing campaigns. Typically, the data sets for these evaluations exceed one billion observations.

Ms. Daykin analyzed treatment data for a non-profit organization to determine high-risk demographics. This included substantial data manipulation and building of a predictive regression model.

### **Technical Skills**

Working with clients throughout the United States to model cost-effectiveness, Ms. Daykin has led the development of Excel and Web-based versions of analytical tools such as DSM Portfolio Pro.

Ms. Daykin is also a proficient SAS programmer and an expert Excel user.

### **Conference Papers**

Daykin, Elizabeth, J. Aiona, and B. Hedman. *Picking a Standard: Implications of Differing TRC Requirements.* AESP National Conference and Expo, Orlando, Florida. January 2011.

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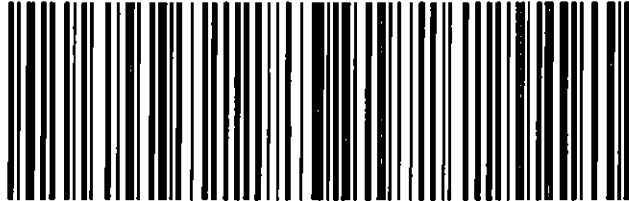
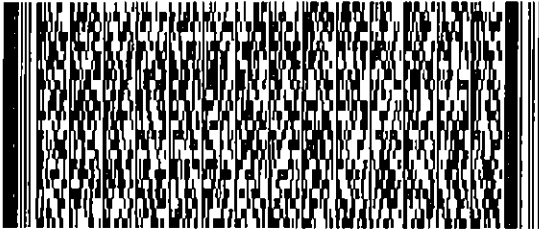
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