

2009

Energy Independence and Market Trends:

AEE Survey of the Energy Industry 2009



Trends, Opportunities, Projections & Resources

Presented by the Association of Energy Engineers

Part I - Energy Independence

Part II - Renewable Energy

Part III - Market Trends

Part IV - Salary Survey & Experience

Part V - Information & Resources



Energy Independence and Market Trends: AEE Survey of the Energy Industry 2009

Seventy-nine percent of the survey respondents (79%) are Certified in one or more of the following categories:

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2. Energy Manager in Training (EMIT®)
3. Certified Sustainable Development Professional (CSDP®)
4. Certified Green Building Engineer (GBE®)
5. Business Energy Professional (BEP®)
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Market Trends: AEE Survey of the Energy Industry 2009

The Association of Energy Engineers (AEE), a nonprofit professional society of over 9,500 members, issued a survey to its members to determine state of the energy industry, technology trends, as well as policy and market trends. The results represented are based on 978 responses and are outlined in this report. AEE was founded in 1977 and its mission is “to *promote the scientific and educational interests of those engaged in the energy industry and to foster action for sustainable development.*”

Fast Fact – AEE Member Profile

- Eighty-seven percent (87%) have graduated from a four-year accredited college.
- Thirty-nine percent (39%) have a post-graduate degree from an accredited college.
- Thirty-seven percent (37%) are registered Professional Engineers (P.E.s) or Architects.

Respondents were asked a cross-section of Energy and Industry questions....

Part I – Energy Independence

1. A national energy policy for energy independence must include encouraging energy supplies from a multitude of sources, including nuclear energy, renewable energy and off-shore drilling.

	Total	Percentage
Agree	858	88%
Disagree	113	12%
<i>Total Responses</i>	971	

2. A national energy policy for energy independence must implement a cap-and-trade program to reduce greenhouse gas emissions by 80% by 2050.

	Total	Percentage
Agree	470	49%
Disagree	488	51%
<i>Total Responses</i>	958	

3. A national energy policy for energy independence must ensure 10% of the U.S. electricity is generated from renewable sources by 2012 and 25% by 2025.

	Total	Percentage
Agree	689	71%
Disagree	281	29%
<i>Total Responses</i>	970	

4. The adoption of energy efficient technologies must be a major part of a national energy policy in order to achieve energy independence.

	Total	Percentage
Agree	946	97%
Disagree	29	3%
<i>Total Responses</i>	975	

Part II – Renewable Energy

5. With current energy costs, what has happened to the level of interest shown by your upper management with regards to renewable energy?

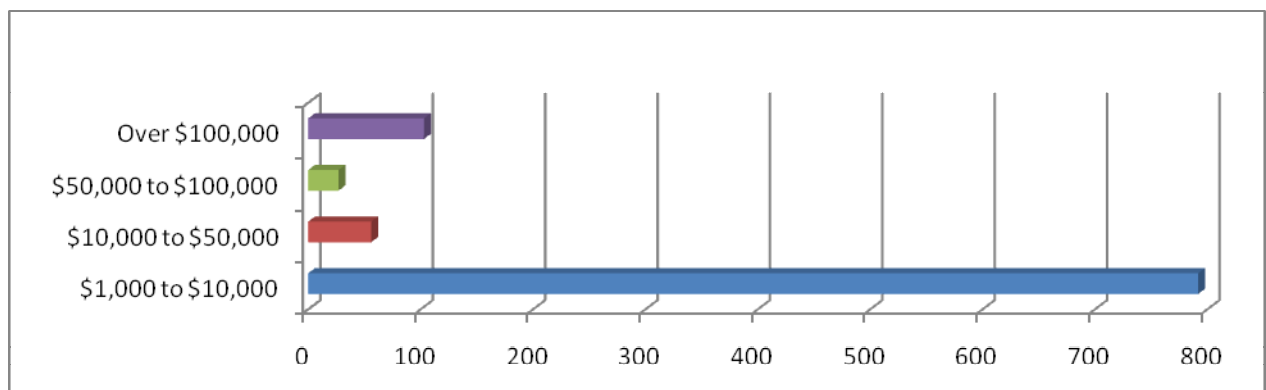
	Total	Percentage
Decreased	54	6%
Increased	308	31%
Notably Increased	313	32%
Stayed Relatively the Same	303	31%
<i>Total Responses</i>	978	

6. Has your company purchased any green credits or green energy in the past year?

	Total	Percentage
No	716	74%
Yes	246	26%
<i>Total Responses</i>	962	

7. If yes, approximately how much additional money was spent in the calendar year for green power or green credits?

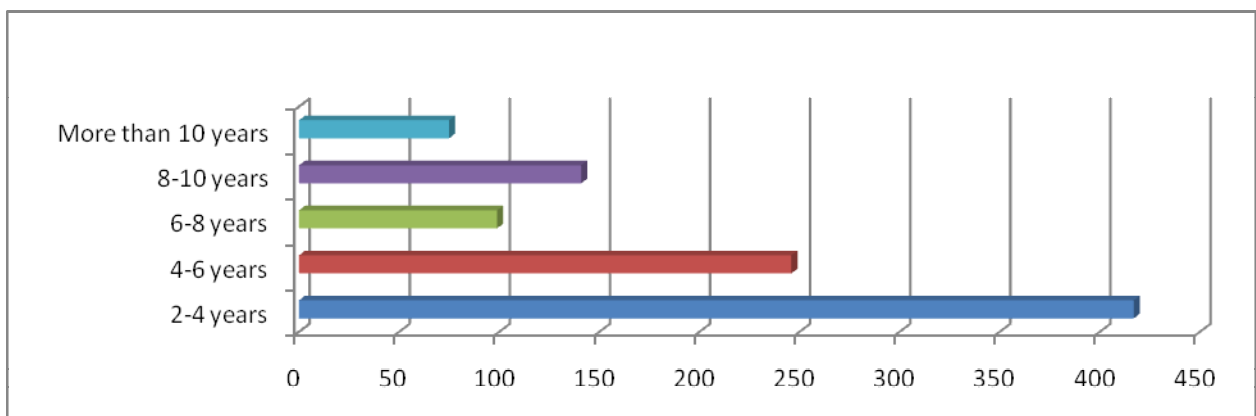
	Total	Percentage
\$1,000 to \$10,000	792	81%
\$10,000 to \$50,000	56	6%
\$50,000 to \$100,000	27	3%
Over \$100,000	103	11%
<i>Total Responses</i>	978	



8. Has your company considered the installation of renewable technologies such as wind or solar at one of your facilities?

	Total	Percentage
No	347	36%
Yes	614	64%
<i>Total Responses</i>	<i>961</i>	

9. What would be an acceptable payback for your organization with regards to renewable energy on-site?



2-4 years	417	43%
4-6 years	246	25%
6-8 years	99	10%
8-10 years	141	14%
More than 10 years	75	8%
<i>Total</i>	<i>978</i>	

10. Please indicate which technologies are most likely to be installed at your facilities within the next 3 years.

Wind	Total	Percentage
Very Likely	114	13%
Somewhat Likely	193	22%
Not Likely	563	65%
<i>Total Responses</i>	<i>870</i>	

Photovoltaics	Total	Percentage
Very Likely	288	31%
Somewhat Likely	338	37%
Not Likely	293	32%
<i>Total Responses</i>	<i>919</i>	

Solar Absorption	Total	Percentage
Very Likely	101	12%
Somewhat Likely	274	32%
Not Likely	483	56%
<i>Total Responses</i>	<i>858</i>	

Heat Absorption	Total	Percentage
Very Likely	89	11%
Somewhat Likely	207	25%
Not Likely	545	65%
<i>Total Responses</i>	<i>841</i>	

Biomass	Total	Percentage
Very Likely	69	8%
Somewhat Likely	134	16%
Not Likely	641	76%
<i>Total Responses</i>	<i>844</i>	

Biogas	Total	Percentage
Very Likely	55	7%
Somewhat Likely	118	14%
Not Likely	667	79%
<i>Total Responses</i>	<i>840</i>	

Part III – Market Trends

11. Do you believe the United States should support the [Kyoto Protocol](#)?

	Total	Percentage
Yes	509	55%
No	419	45%
<i>Total Responses</i>	<i>928</i>	

12. Does your company have a policy to reduce green house gas?

	Total	Percentage
Yes	587	61%
No	374	39%
<i>Total Responses</i>	<i>961</i>	

13. Do you feel you understand the new terminology, opportunities and risks within the subject of carbon emissions?

	Total	Percentage
Yes	702	73%
No	265	27%
<i>Total Responses</i>	967	

14. Do you feel you understand the benefits of carbon trading and its applications for your business?

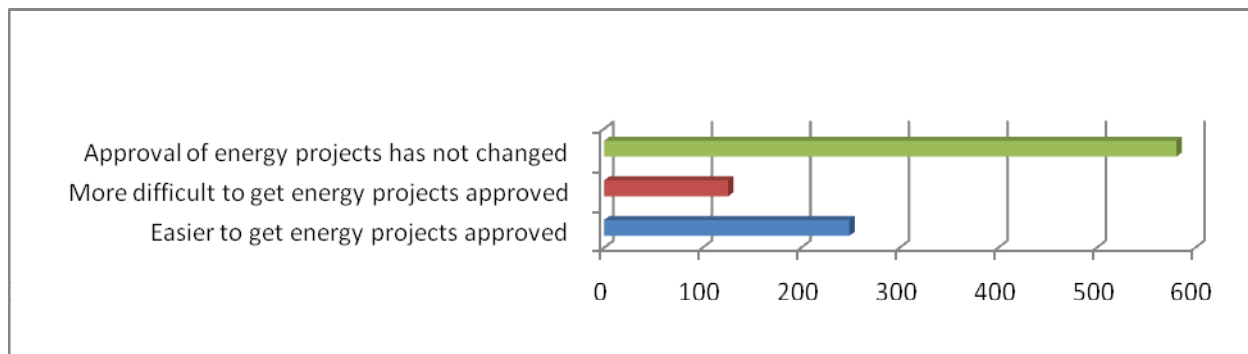
	Total	Percentage
Yes	557	58%
No	410	42%
<i>Total Responses</i>	967	

15. Has your local government implemented legislation to reduce carbon emissions?

	Total	Percentage
Yes	348	36%
No	618	64%
<i>Total Responses</i>	966	

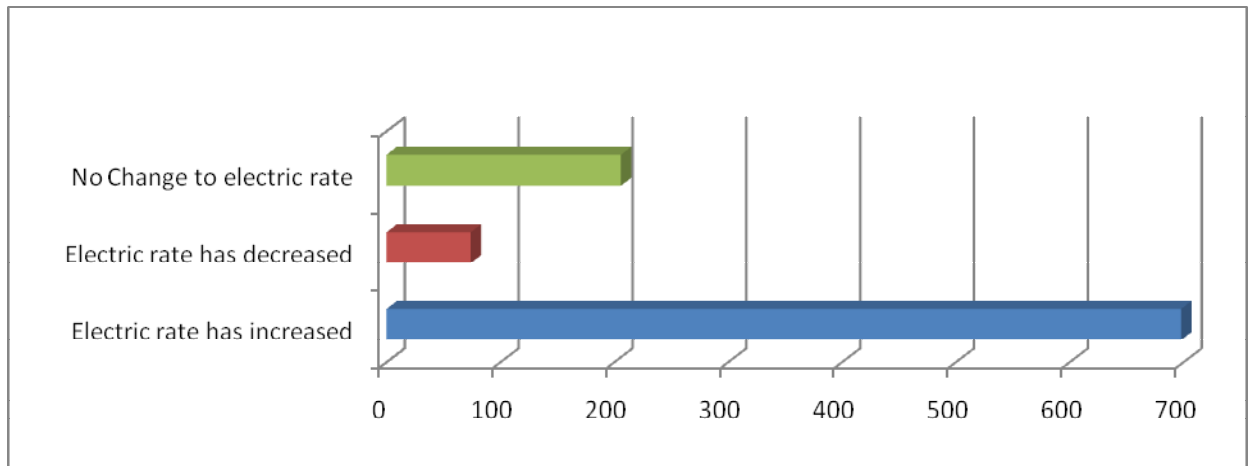
16. As a result of current or pending utility restructuring, it is:

	Total	Percentage
Easier to get energy projects approved	249	26%
More difficult to get energy projects approved	126	13%
Approval of energy projects has not changed	581	61%
<i>Total Responses</i>	956	



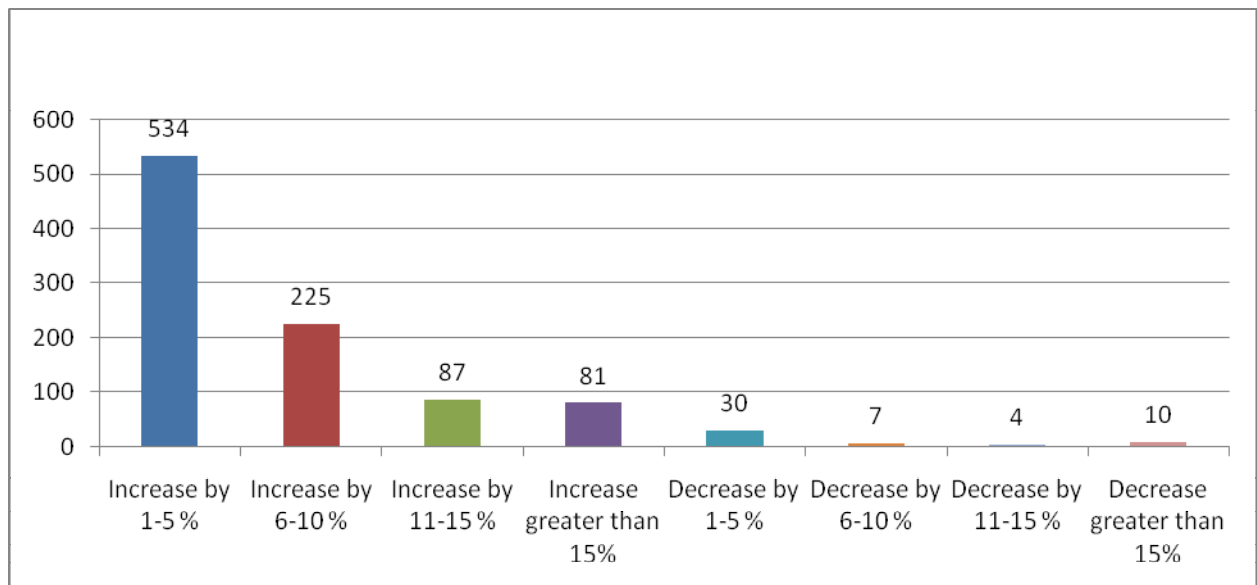
17. How has your electric rate changed in the past year?

	Total	Percentage
Electric rate has increased	698	71%
Electric rate has decreased	74	8%
No Change to electric rate	206	21%
<i>Total Responses</i>	978	100%



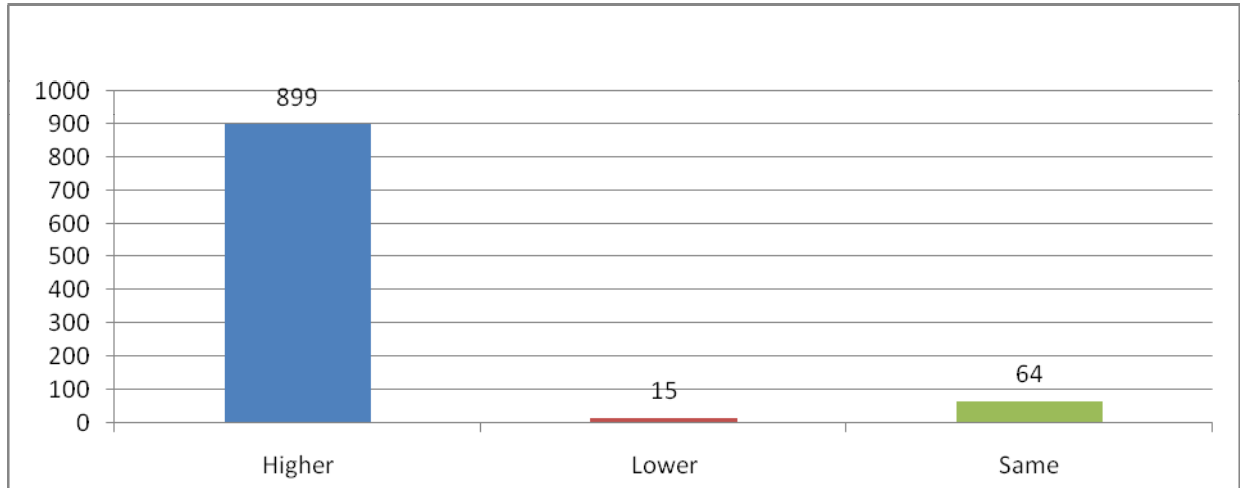
18. If your electric rate has changed, by how much has it changed?

	Total	Percentage
Increase by 1-5 %	534	55%
Increase by 6-10 %	225	23%
Increase by 11-15 %	87	9%
Increase greater than 15%	81	8%
Decrease by 1-5 %	30	3%
Decrease by 6-10 %	7	1%
Decrease by 11-15 %	4	0%
Decrease greater than 15%	10	1%
<i>Total Responses</i>	978	



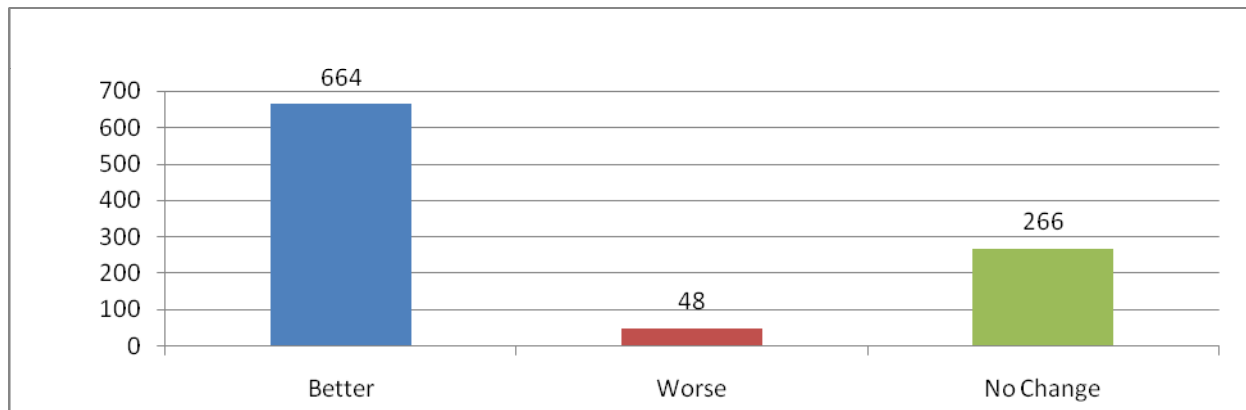
19. What will the average electrical costs be in three years?

	Total	Percentage
Higher	899	92%
Lower	15	2%
Same	64	7%
<i>Total Responses</i>	978	



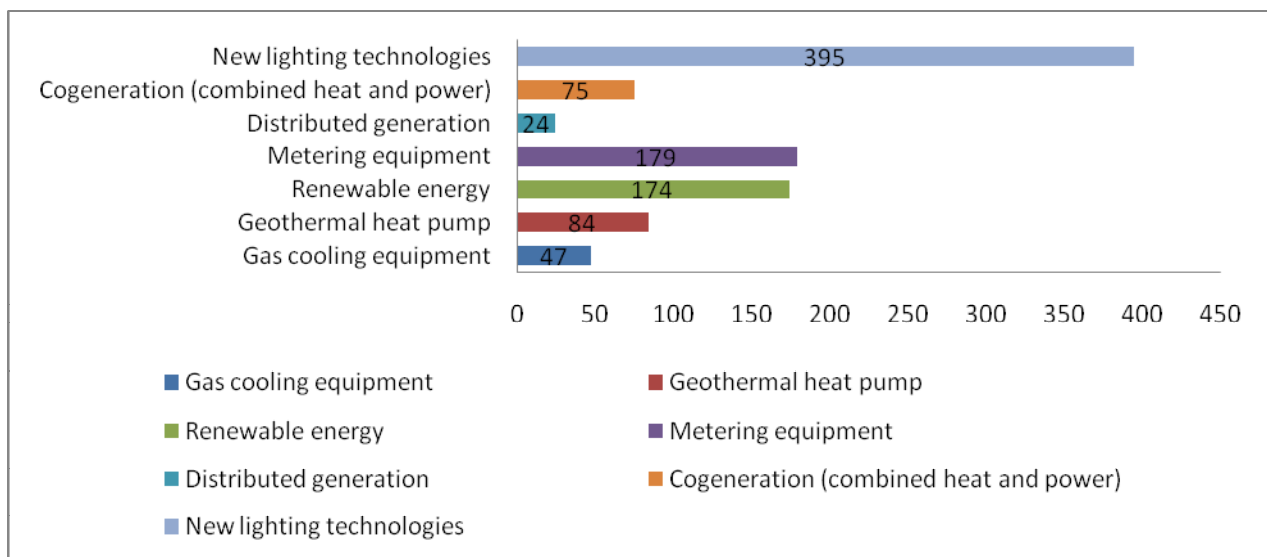
20. How effective is your energy and cost reduction program this year as compared to one year ago?

	Total	Percentage
Better	664	68%
Worse	48	5%
No Change	266	27%
<i>Total Responses</i>	978	



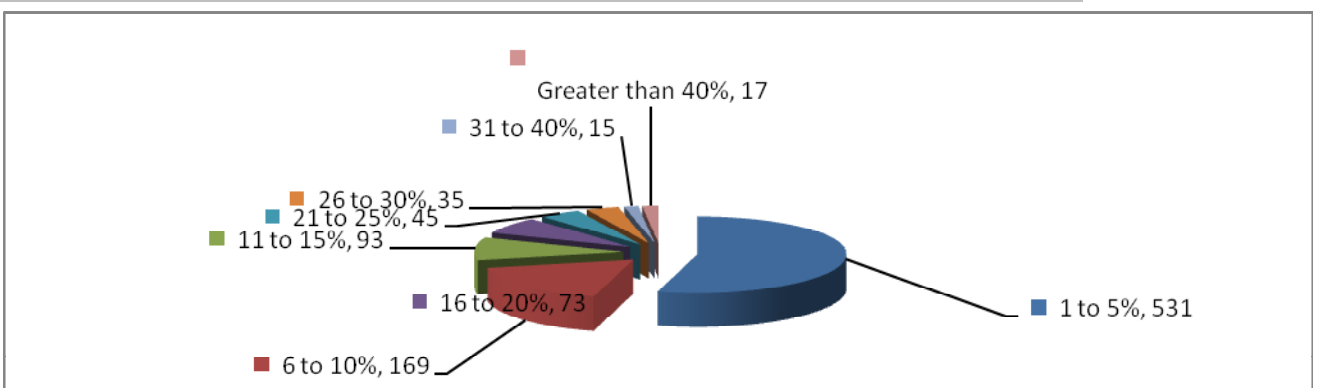
21. Which technology(s) listed below is the highest priority for application at your facility in the near future?

	Total	Percentage
Gas cooling equipment	47	5%
Geothermal heat pump	84	9%
Renewable energy	174	18%
Metering equipment	179	19%
Distributed generation	24	2%
Cogeneration (combined heat and power)	75	8%
New lighting technologies	395	41%
<i>Total Responses</i>	978	



22. If you are an energy user, what are the estimated accumulated energy savings that your company has made since the program began?

	Total	Percentage
1 to 5%	531	54%
6 to 10%	169	17%
11 to 15%	93	10%
16 to 20%	73	7%
21 to 25%	45	5%
26 to 30%	35	4%
31 to 40%	15	2%
Greater than 40%	17	2%
<i>Total Responses</i>	978	



23. If you are an energy user, what is the estimated total accumulated energy cost reductions since the energy reduction program began?

	Total	Percentage
Less than \$1 million	717	73%
\$1-10 million	196	20%
Greater than \$10 million	65	7%
<i>Total Responses</i>	978	

24. If you are an end user, has your company used an energy service company to implement energy projects?

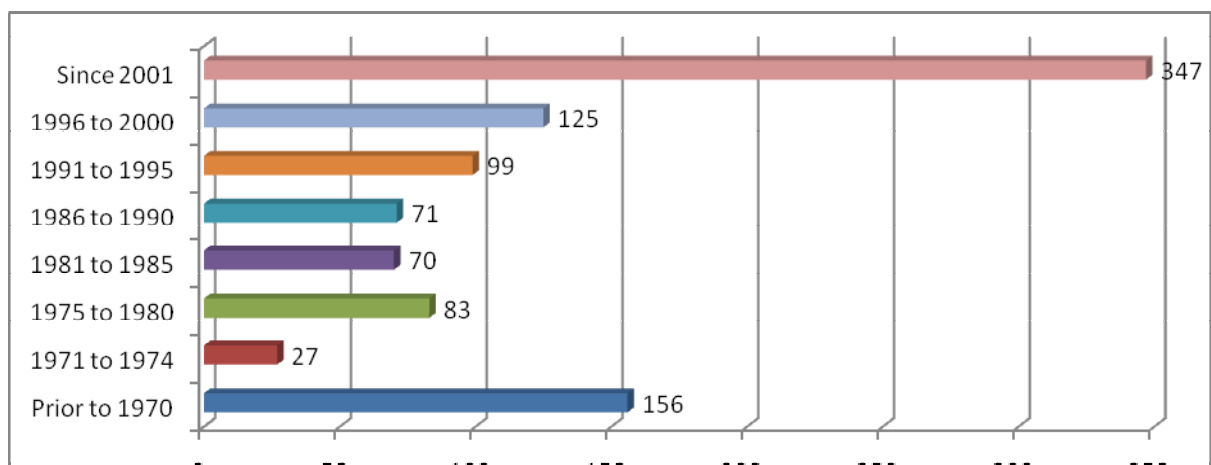
	Total	Percentage
No	525	55%
Yes	331	34%
<i>Total Responses</i>	856	

25. If you are an end user, does your company plan to use an energy service company to implement energy projects in the future?

	Total	Percentage
No	476	50%
Yes	357	37%
<i>Total Responses</i>	833	

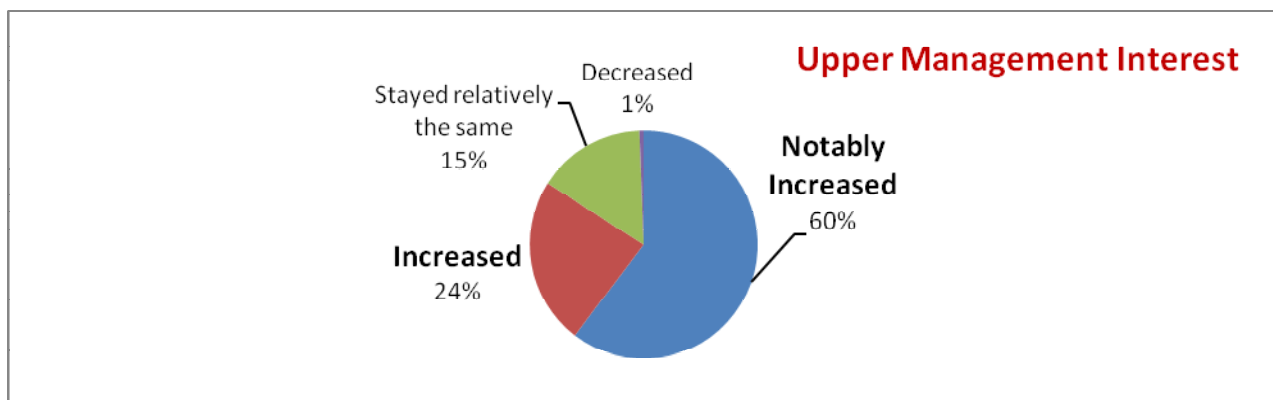
26. In what year did your company/organization begin an energy management program?

	Total	Percentage
Prior to 1970	156	16%
1971 to 1974	27	3%
1975 to 1980	83	8%
1981 to 1985	70	7%
1986 to 1990	71	7%
1991 to 1995	99	10%
1996 to 2000	125	13%
Since 2001	347	35%
<i>Total Responses</i>	978	



27. With the recent increase in energy costs, what has happened to the level of interest shown by you and by your upper management?

	Total	Percentage
Notably Increased	590	60%
Increased	232	24%
Stayed relatively the same	150	15%
Decreased	6	1%
<i>Total Responses</i>	978	



28. Distributed generation and cogeneration (combined heat and power) will become more important because of reliability and energy security issues

	Total	Percentage
Agree	476	57%
Disagree	357	43%
<i>Total Responses</i>	833	

29A. Is your company planning to install a combined heat and power system?

	Total	Percentage
No	758	81%
Yes	176	19%
<i>Total Responses</i>	934	

29B. If yes, when?

	Total	Percentage
Within the next 0 to 2 years	129	73%
Within the next 3 to 5 years	35	20%

Over 5 years	12	7%
<i>Total Responses</i>	176	

30. Do you believe it is a good idea to restructure the electric utility industry?

	Total	Percentage
Yes	517	56%
No	413	44%
<i>Total Responses</i>	930	

31. Do you believe the reliability of the national electric transmission grid has become less reliable in the past few years?

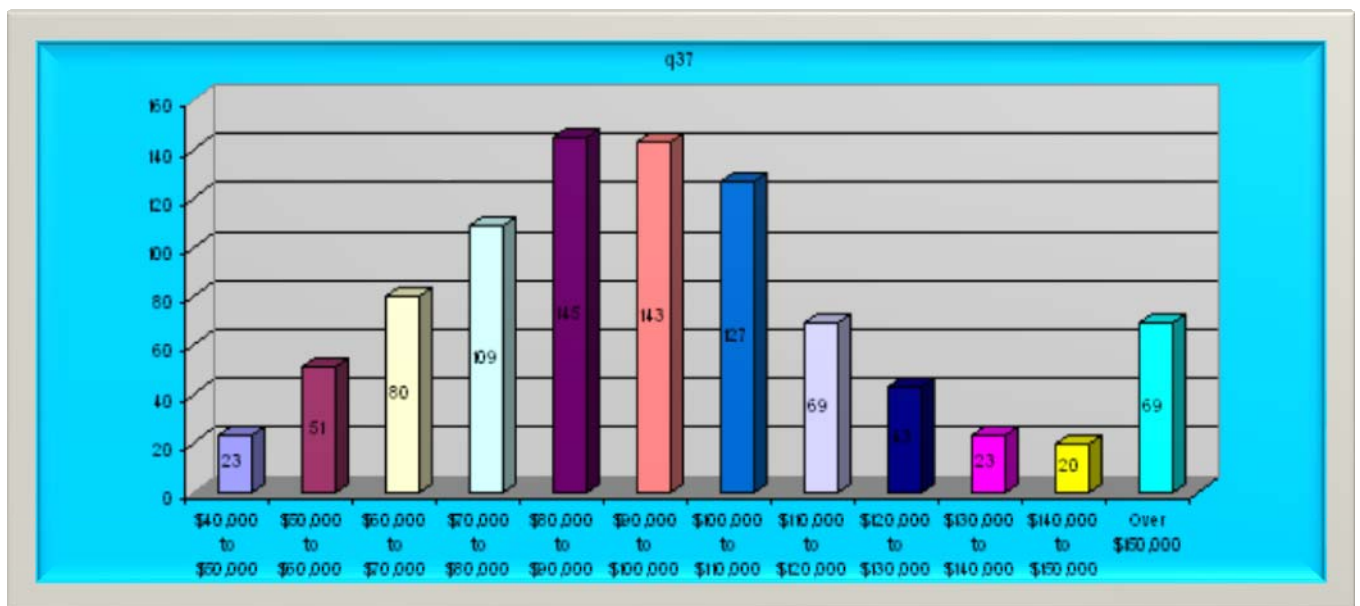
	Total	Percentage
Yes	683	72%
No	261	28%
<i>Total Responses</i>	944	

Part Four: Salary Survey

The information in this section is based on the salary survey conducted by the Association of Energy Engineers.

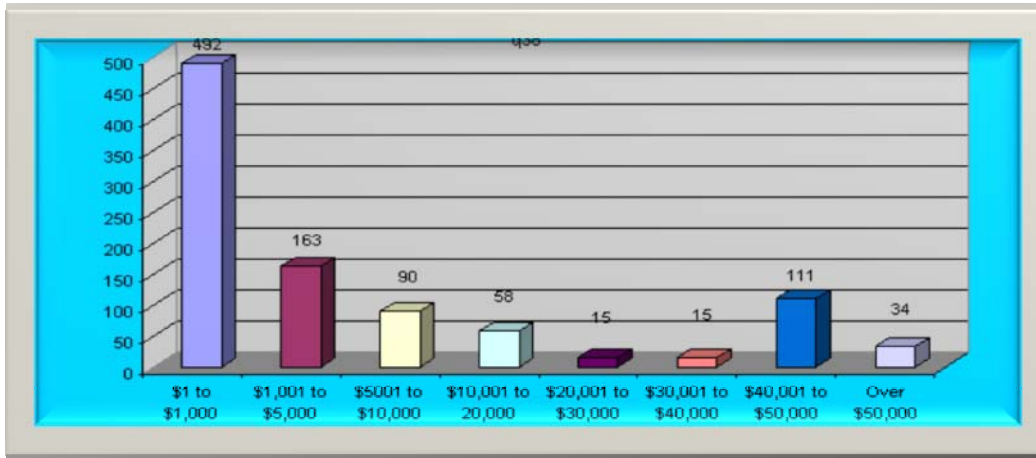
1. Salary

The salary is for full time employment and excludes bonus, overtime and fees from secondary employment. Salaries are effective as of January 1, 2009:



***Average salary was approximately: \$95,864.75 USD**

2. Bonus- Bonuses received in by respondents:



***Average additional income – bonus was approximately: \$10,187.63 (USD)**

3. Years of Experience of Energy Professionals Surveyed

0-5 Years: 11%
6-10 Years: 7%
11-15 Years: 7%
16-20 Years: 14%
21-25 Years: 19%
26-30 Years: 20%
31-35 Years: 12%
Over 36 Years: 10%

4. Locations of Employment

Northeast: 28%
Mid-Atlantic and Southeast: 21%
Northern Mid-West: 18%
Southern Mid-West: 18%
West and Pacific Northwest: 15%

Part 5: Information & Resources

The [American Recovery and Reinvestment Act](#) of 2009 (ARRA) will fund:

A) Energy Efficiency

- \$3.1 billion for State Energy Programs which will encourage states to improve building energy improvement and retrofits.
- \$5 billion for weatherization of low income housing.
- \$4.5 billion for Green Federal Buildings.
- \$3.6 billion for the Department of Defense for energy efficient projects and facilities upgrade.
- \$3.2 billion for Energy Efficiency and Conservation Block Grants to help state and local governments implement energy efficiency.
- \$500 million dollars for job training, and programs to prepare individuals for careers in energy efficiency and renewable energy.

B) Smart Grid/Advanced Battery/Energy Efficiency:

- \$30 billion will be provided for such initiatives as a new, smart power grid, advanced battery technology, and energy efficiency measures. According to the fact sheet, 500,000 energy jobs will be created. *Source: [Fact Sheet of Speaker Nancy Pelosi](#) – Wall Street Journal*

C) Growing Energy Market

- The revenue for the energy management services market in North America in 2008 was \$20.35 billion (USD) and is projected to double to over \$40 billion (USD) by 2013 due to favorable new government legislations and increased knowledge about the benefits of energy management. *Source: [Frost & Sullivan](#)*

[Employment Opportunities & Papers](#)

The Association of Energy Engineers maintains a career web site detailing energy, green, sustainable and power positions and jobs available as well as a resume databank with individuals seeking employment. Details are indicated at <http://www.aeecenter.org/jobs>

There is also access to an energy industry dictionary of terms, free access to energy – green white papers, industry news portal, as well as professional reference books. <http://www.energyvortex.com>

Training Opportunities

The Association of Energy Engineers offers a variety of professional training and re-training programs including:

- Training Seminars, Conferences & Industry Networking (Energy, Sustainability, Energy Auditing, Power, Green Facilities, Certification Programs)
 - www.aeecenter.org/realtime (Online training seminars)
 - <https://www.aeecenter.org/seminars/calendar.htm> (Live seminar training)
 - www.aeecenter.org/shows (Energy Industry Conferences & Networking Events)

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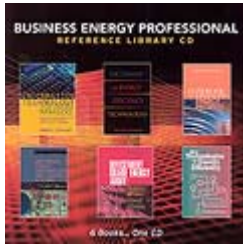
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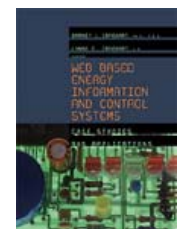
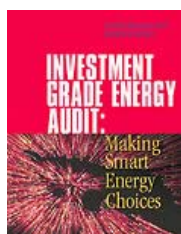
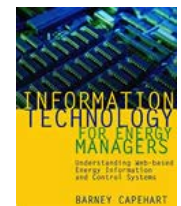
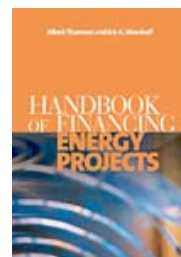
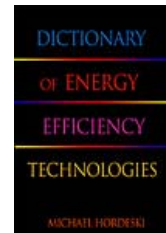
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	TOTAL			\$
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ISBN: 0-88173-565-5 6 x 9, Illus., 455 pp., Hardcover ORDER CODE: 0594 Price: \$115

Visions for a Sustainable Energy Future

This book offers a unique insight into the corporate health of energy companies in an evolving landscape of deregulation. Cutting across both historical and present-day situations, it demonstrates important elements vital to the success of energy companies coming out of a safe regulated structure, and dealing with a new, competitive environment. Targeted at corporate executives, energy professionals, the financial and investment communities, strategic planners, and regulators, readers will find this resource helpful to understand how energy companies can meet the challenges of a competitive environment, what it will take to evolve into healthy energy companies, the impacts of deregulation and assessment of successful and unsuccessful strategies for energy companies, the role of technology in business/product re-invention and a successful business model, and the differences and similarities of electricity to other commodities-the challenges to generation, power delivery, environmental science and end-use sectors of the business.



ISBN: 0-88173-513-2 6 x 9, 254 pp, Illus., Hardcover ORDER CODE: 0579 Price: \$98

Alternate Energy: Assessment & Implementation Reference Book

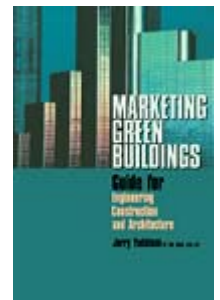


Here's your opportunity to look into the future of energy technologies, with emphasis on alternative, or non-conventional technologies, their potential impacts, and the technical, economic and policy issues that will affect their successful integration into global energy markets. Over the past several years, industry and government have turned to a strategic planning technique called "road mapping" to help assess future energy management practices and technologies. This book considers energy management and technology development over the next several decades by exploring data from these energy technology roadmaps. International in scope, the book examines both the technical and non-technical aspects of emerging technologies. Detailed technology assessments for specific alternative energy resources are presented. An overview of the problems associated with conventional energy consumption is included, as well as an insightful discussion of technology implementation issues from the author's own well-informed and cautiously optimistic perspective.

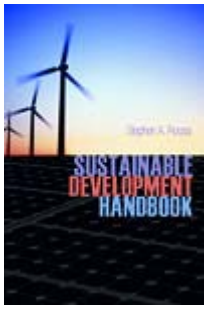
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