

AEE Survey of the Energy Industry 2011



Green Energy & Market Trends

Relevant Trends, Opportunities, Projections & Resources

Presented by AEE



Part I – Green Jobs

Part II – Salary & Experience Survey

Part III – Market Trends & Energy Policy

Part IV – AEE Education Programs

Part V – Information & Resources



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Green Jobs: Survey of the Energy Industry

The Association of Energy Engineers (AEE), a nonprofit professional society of over 14,000 members, issued a survey to its members to determine the need for Green Jobs, Energy Industry Potential, Stimulus Results and Salary Data. The results represented are based on 1,934 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.”

Profile of Respondents

- Eighty-six percent (86%) have graduated from a four-year accredited college.
- Forty percent (40%) have a post-graduate degree from an accredited college.
- Thirty-five percent (35%) are registered Professional Engineers (P.E.s) or Architects.
- Eighty percent (80%) are Certified in one or more of the following categories:

1. Certified Energy Manager (CEM®)
2. Energy Manager in Training (EMIT™)
3. Certified Energy Auditor (CEA™)
4. Certified Sustainable Development Professional (CSDP™)
5. Certified Green Building Engineer (GBE™)
6. Business Energy Professional (BEP™)
7. Certified Lighting Efficiency Professional (CLEP™)
8. Certified Power Quality Professional (CPQ®)
9. Certified Building Commissioning Professional (CBCP™)
10. Distributed Generation Certified Professional (DGCP™)
11. Certified Measurement and Verification Professional (CMVP™)
12. Certified Energy Procurement Professional (CEP®)
13. Certified Indoor Air Quality Professional (CIAQP™)
14. Certified Indoor Air Quality Professional in Training (CIAQT™)
15. Certified Geo-Exchange Designer (CGD®)
16. Certified Carbon Reduction Manager (CRM™)
17. Certified Building Energy Simulation Analyst (BESA™)
18. Certified in the Use of RETScreen® (CRU™)
19. Certified High Performance Building Professional (HPB™)
20. Certified Building & Sustainability Technician (BEST™)

1934 individuals responded to this survey

2011 AEE MEMBER SURVEY

Part I. Green Jobs

Is there a shortage today of energy management professionals?		
Answer Options	Response Percent	Response Count
Yes	74.3%	1426
No	25.7%	492

Do you plan to retire in the next five years?		
Answer Options	Response Percent	Response Count
Yes	12.4%	237
No	87.6%	1681

Do you plan to retire in the next ten years?		
Answer Options	Response Percent	Response Count
Yes	32.5%	611
No	67.5%	1267

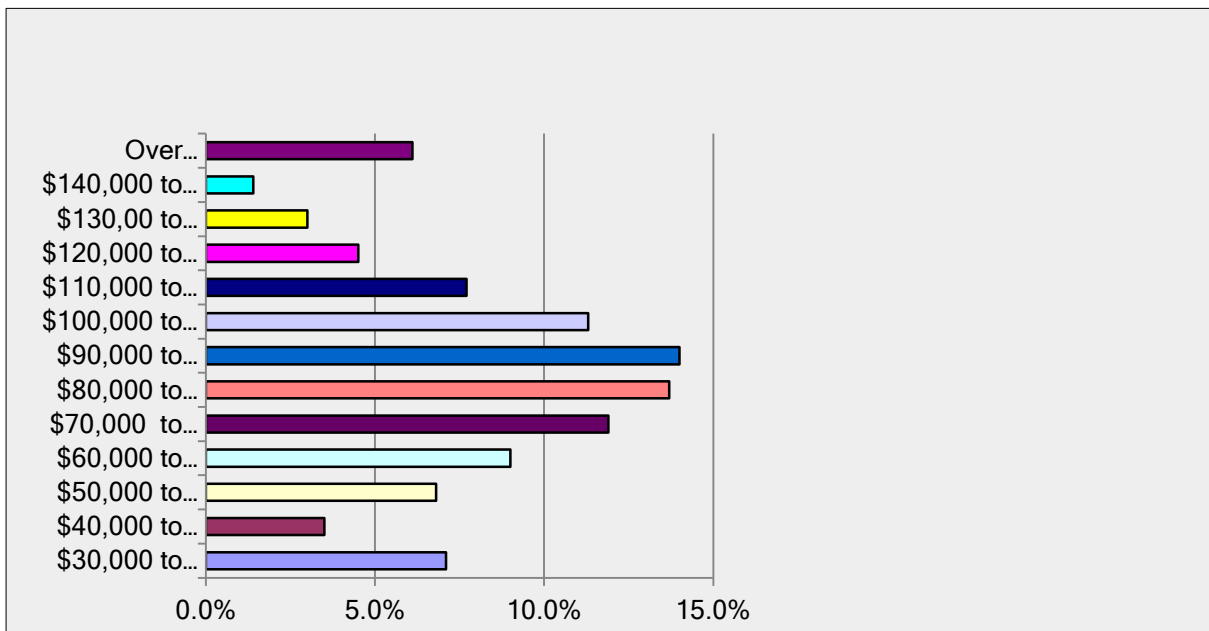
Do you feel there will be a shortage of qualified professionals in the energy efficiency and renewable energy field within the next five years?		
Answer Options	Response Percent	Response Count
Yes	67.5%	1291
No	32.5%	622

Is there a need for national and state training for "Green Jobs" to address job shortages that are impairing growth in green industries, such as energy efficient buildings and construction, renewable electric power, energy efficient vehicles, and biofuels development?		
Answer Options	Response Percent	Response Count
Yes	72.2%	1378
No	27.8%	531

Part II. Salary & Experience Survey

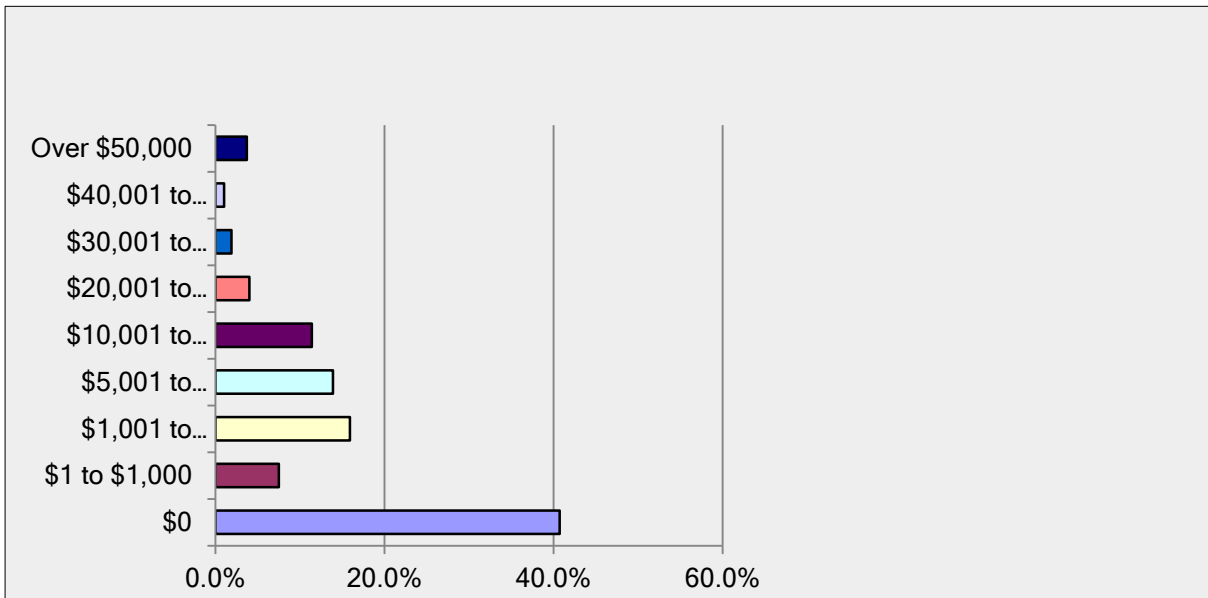
Please input your base salary as of January 1, 2011

Answer Options	Response Percent	Response Count
\$30,000 to \$40,000	7.1%	125
\$40,000 to \$50,000	3.5%	61
\$50,000 to \$60,000	6.8%	119
\$60,000 to \$70,000	9.0%	159
\$70,000 to \$80,000	11.9%	210
\$80,000 to \$90,000	13.7%	241
\$90,000 to \$100,000	14.0%	247
\$100,000 to \$110,000	11.3%	198
\$110,000 to \$120,000	7.7%	136
\$120,000 to \$130,000	4.5%	79
\$130,00 to \$140,000	3.0%	53
\$140,000 to \$150,000	1.4%	24
Over \$150,000	6.1%	107



Please indicate the bonus you received last year

Answer Options	Response Percent	Response Count
\$0	40.7%	719
\$1 to \$1,000	7.5%	132
\$1,001 to \$5,000	15.9%	281
\$5,001 to \$10,000	13.9%	246
\$10,001 to \$20,000	11.4%	201
\$20,001 to \$30,000	4.0%	71
\$30,001 to \$40,000	1.9%	33
\$40,001 to \$50,000	1.0%	18
Over \$50,000	3.7%	66



Are you a graduate from a 4-year accredited college?

Answer Options	Response Percent	Response Count
Yes	86.4%	1591
No	13.6%	250

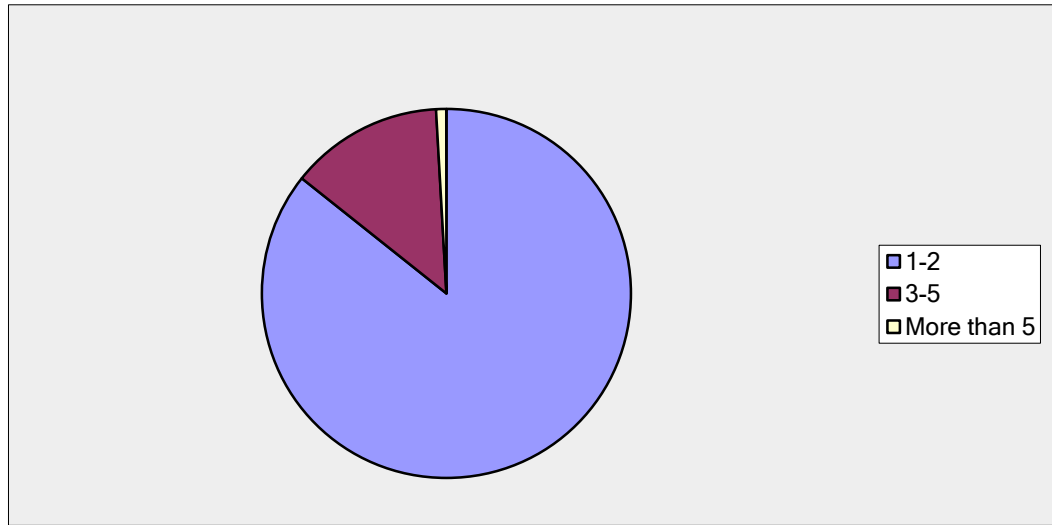
Do you have a post-graduate degree from an accredited college?

Answer Options	Response Percent	Response Count
Yes	40.2%	739
No	59.8%	1100

Are you a registered Professional Engineer or Registered Architect?		
Answer Options	Response Percent	Response Count
Yes	35.3%	653
No	64.7%	1199

Do you hold a valid certification from AEE? (CEM, EMIT, CLEP, CPQ, CBCP, DGCP, CMVP, CDSM, CEP, CIAQP, CIAQT, CGD, BEP, GBE, CRM, CSDP, CEA, BESA, REP, REA, CRU, HPB, or BEST)		
Answer Options	Response Percent	Response Count
Yes	80.7%	1504
No	19.3%	360

How many AEE certifications do you hold?		
Answer Options	Response Percent	Response Count
1-2	85.7%	1293
3-5	13.4%	202
More than 5	0.9%	14



Since you have received your AEE certification, are you receiving higher visibility?		
Answer Options	Response Percent	Response Count
Yes	52.2%	783
No	47.8%	718

Has your company benefitted since you received your AEE certification?

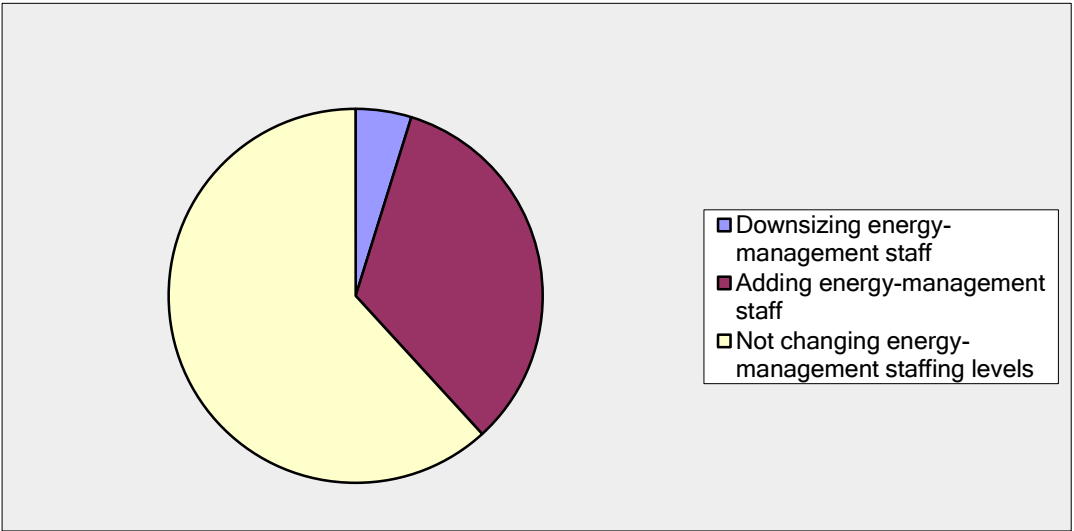
Answer Options	Response Percent	Response Count
Yes	74.3%	1111
No	25.7%	385

How has your company benefitted from your AEE certification? Select all that apply.

Answer Options	Response Percent	Response Count
Able to respond to more requests for proposals	85.9%	687
Received more contracts	34.6%	277

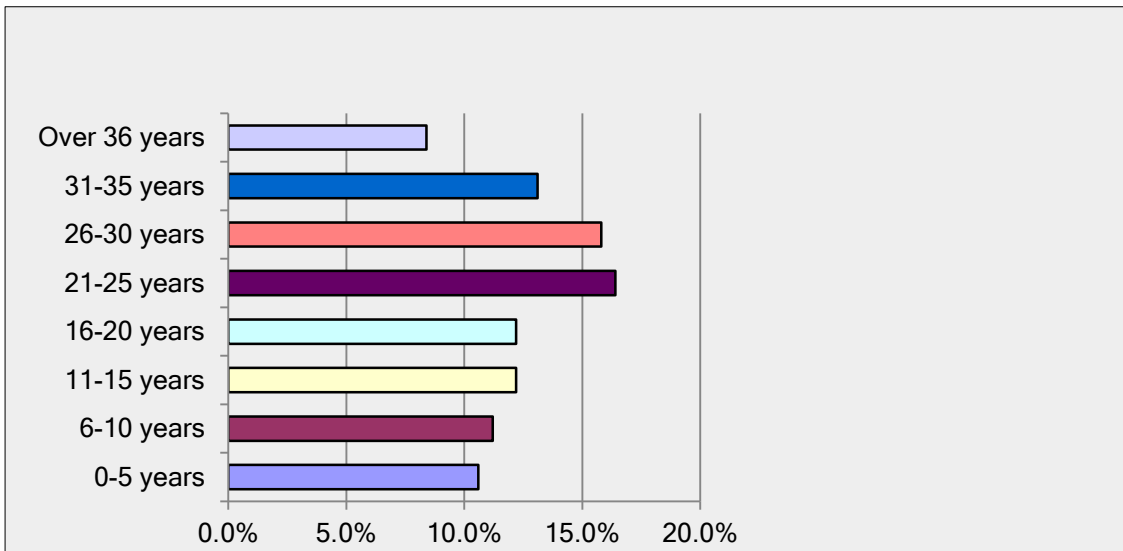
Is your company currently

Answer Options	Response Percent	Response Count
Downsizing energy-management staff	4.8%	88
Adding energy-management staff	33.4%	610
Not changing energy-management staffing levels	61.8%	1130



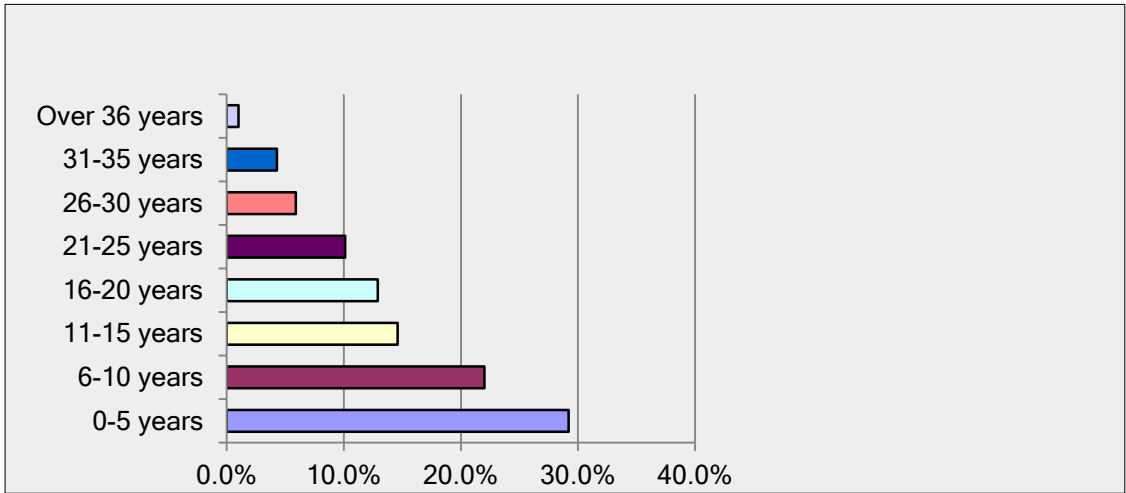
How many years of experience do you have?

Answer Options	Response Percent	Response Count
0-5 years	10.6%	196
6-10 years	11.2%	207
11-15 years	12.2%	225
16-20 years	12.2%	225
21-25 years	16.4%	302
26-30 years	15.8%	291
31-35 years	13.1%	242
Over 36 years	8.4%	154



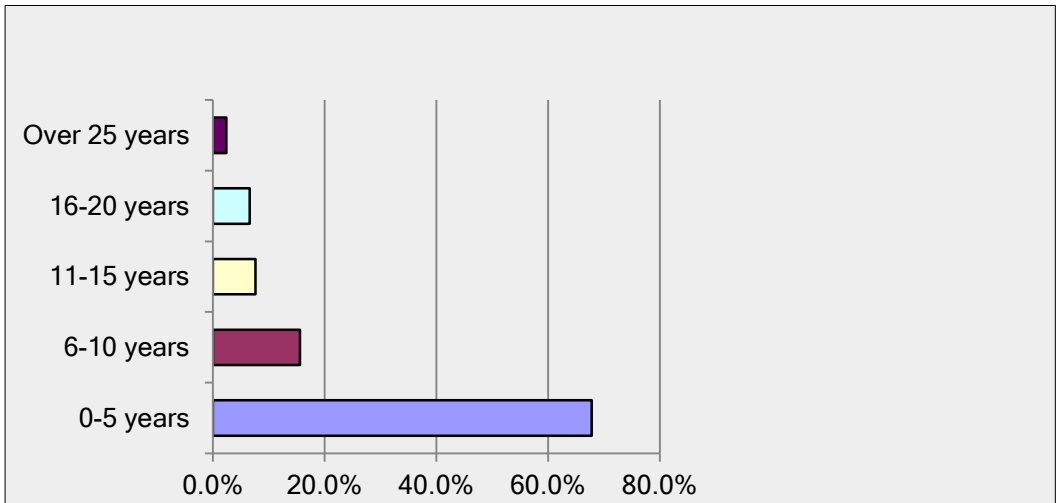
For how many of those years have you been involved in energy management?

Answer Options	Response Percent	Response Count
0-5 years	29.2%	538
6-10 years	22.0%	404
11-15 years	14.6%	268
16-20 years	12.9%	238
21-25 years	10.1%	185
26-30 years	5.9%	108
31-35 years	4.3%	80
Over 36 years	1.0%	19



For how many of those years have you been a member of the Association of Energy Engineers?

Answer Options	Response Percent	Response Count
0-5 years	67.8%	1249
6-10 years	15.6%	288
11-15 years	7.6%	140
16-20 years	6.6%	121
Over 25 years	2.4%	45



Part III. Market Trends & Energy Policy

Do you believe that the partial nuclear reactor meltdown in Japan will result in a decrease or slowdown in the construction of new nuclear power plants in the U.S.?

Answer Options	Response Percent	Response Count
Yes	81.6%	1494
No	18.4%	338

Should U.S. energy policy with regard to nuclear power change as a result of the partial nuclear reactor meltdown in Japan?

Answer Options	Response Percent	Response Count
Yes	41.4%	754
No	58.6%	1066

Do you believe that safety regulations and permitting processes should be altered to factor in regions vulnerable to natural disasters?

Answer Options	Response Percent	Response Count
Yes	96.5%	716
No	3.5%	26

Given recent discoveries of significant natural gas reserves in the United States, should utilities turn to natural gas as a baseload source of power?

Answer Options	Response Percent	Response Count
Yes	62.8%	1112
No	37.2%	658

Given recent discoveries of significant natural gas reserves in the United States, should the federal government incentivize the development of natural gas-powered vehicles?

Answer Options	Response Percent	Response Count
Yes	57.8%	1024
No	42.2%	749

Lawmakers are currently discussing making cuts to Department of Energy funding in order to reduce the US government's budget deficit. Do you feel that funding for the Department of Energy should:

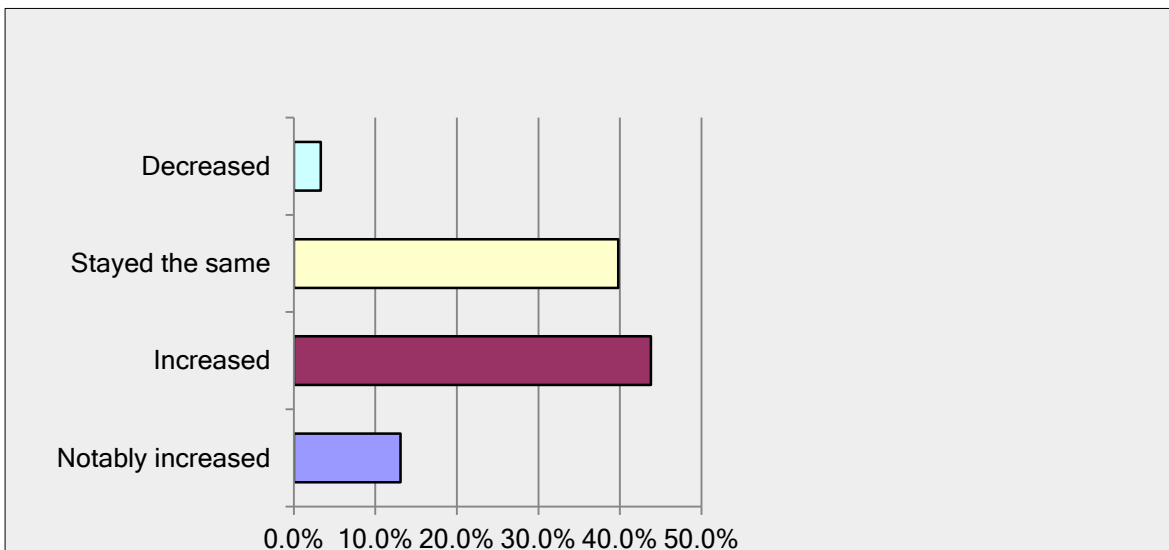
Answer Options	Response Percent	Response Count
Increase	40.7%	722
Decrease	23.9%	423
Stay the same	35.4%	627

Lawmakers are currently discussing making cuts to the Environmental Protection Agency's funding in order to reduce the US government's budget deficit. Do you feel that funding for the Environmental Protection Agency should:

Answer Options	Response Percent	Response Count
Increase	28.9%	517
Decrease	34.1%	609
Stay the same	37.0%	661

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

Answer Options	Response Percent	Response Count
Notably increased	13.1%	233
Increased	43.8%	782
Stayed the same	39.8%	710
Decreased	3.3%	59

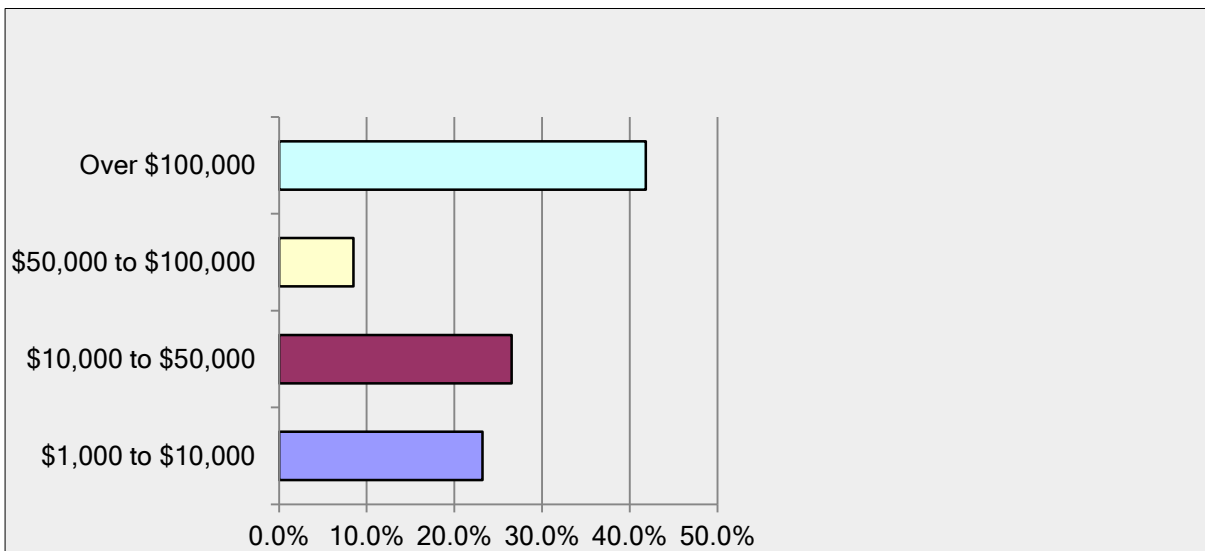


Has your company purchased any green credits/green energy in the past year?

Answer Options	Response Percent	Response Count
Yes	28.9%	511
No	71.1%	1256

Approximately how much additional money was spent in the calendar year for green power or green credits?

Answer Options	Response Percent	Response Count
\$1,000 to \$10,000	23.2%	98
\$10,000 to \$50,000	26.5%	112
\$50,000 to \$100,000	8.5%	36
Over \$100,000	41.8%	177

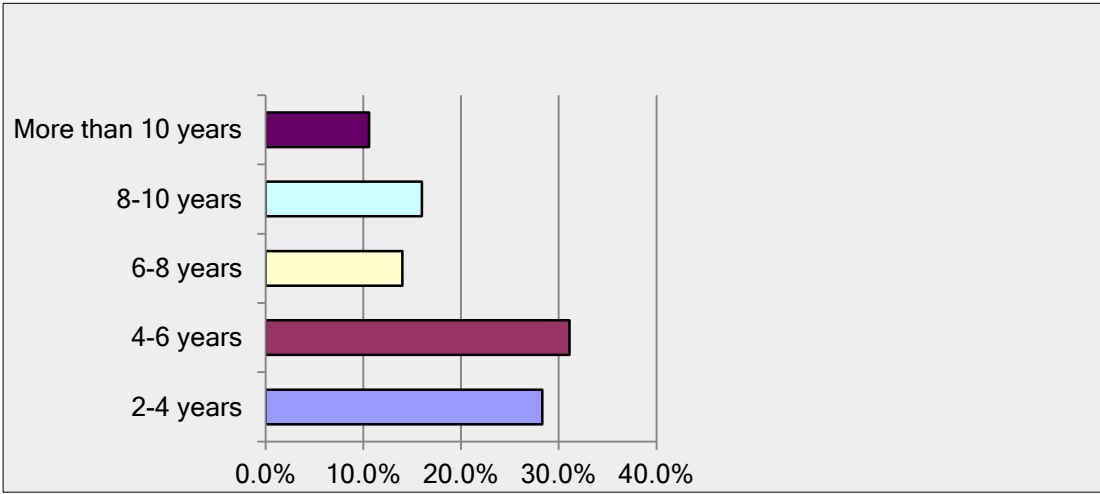


Has your company considered the installation of renewable technologies such as wind or solar at one of your facilities?

Answer Options	Response Percent	Response Count
Yes	62.4%	1044
No	37.6%	629

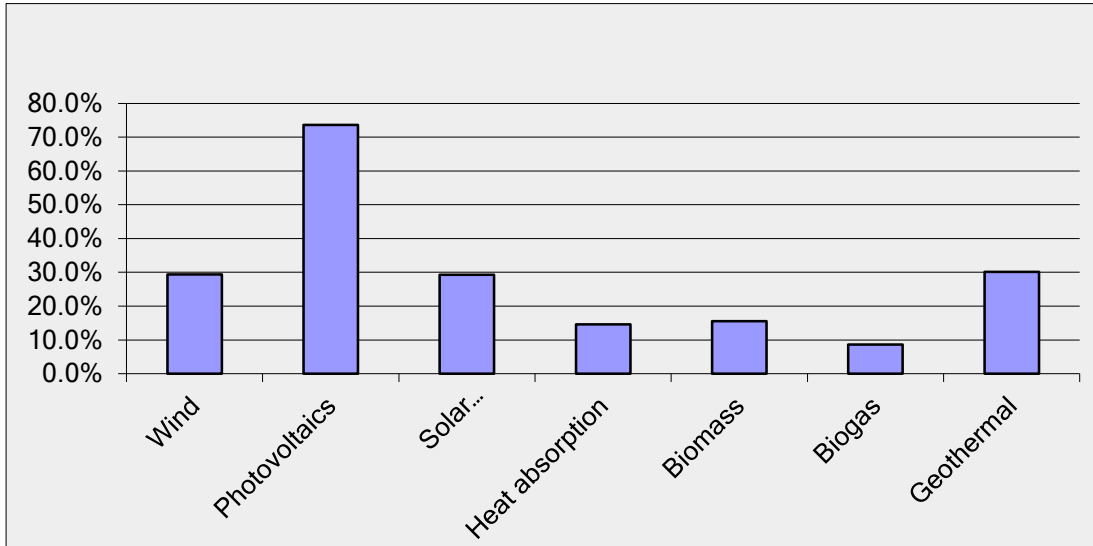
What would be an acceptable payback for your organization with regards to renewable energy on-site?

Answer Options	Response Percent	Response Count
2-4 years	28.3%	456
4-6 years	31.1%	501
6-8 years	14.0%	225
8-10 years	16.0%	257
More than 10 years	10.6%	171



Please indicate which technologies are most likely to be installed at your facilities within the next 3 years (check all that apply)

Answer Options	Response Percent	Response Count
Wind	29.4%	400
Photovoltaics	73.6%	1000
Solar absorption	29.3%	398
Heat absorption	14.6%	198
Biomass	15.5%	211
Biogas	8.6%	117
Geothermal	30.1%	409



Has the availability of federal stimulus funding created more or less opportunity for your company or governmental entity to implement energy conservation or alternative energy projects?

Answer Options	Response Percent	Response Count
More opportunity	56.0%	928
No change	40.9%	678
Less opportunity	3.0%	50

If you are an end user, how has the availability of utility rebate programs for energy conservation or alternative projects changed in the last five years?

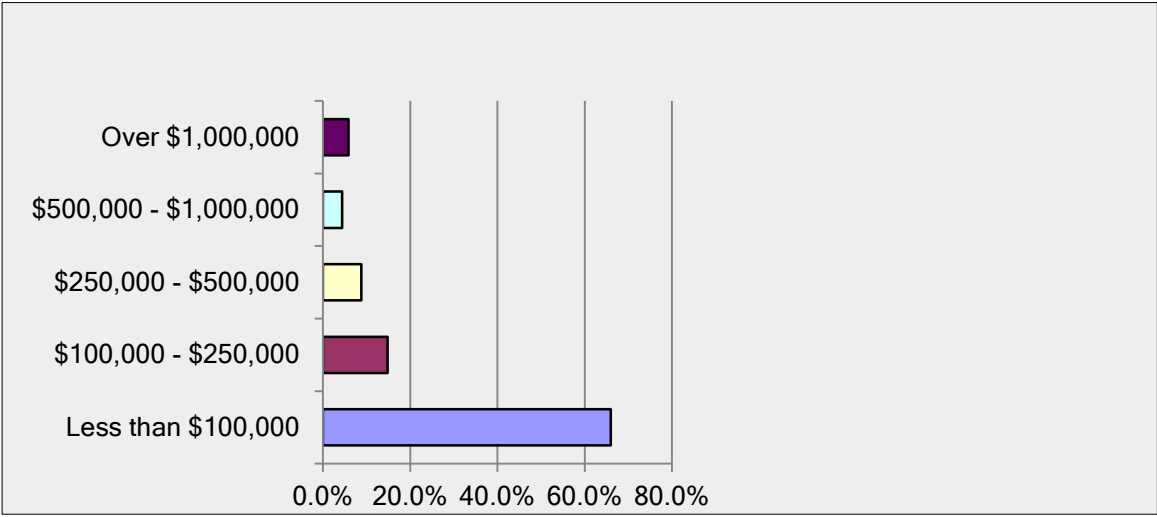
Answer Options	Response Percent	Response Count
More available	57.2%	750
Less available	9.8%	128
No change in program availability	33.0%	433

If you are an end user, have you received utility rebate programs to support the implementation of energy conservation or alternative energy projects in the last five years?

Answer Options	Response Percent	Response Count
Yes	58.1%	718
No	41.9%	517

If you are an end user who has received utility rebates in the last year, what is the estimated amount of rebates?

Answer Options	Response Percent	Response Count
Less than \$100,000	66.0%	570
\$100,000 - \$250,000	14.8%	128
\$250,000 - \$500,000	8.8%	76
\$500,000 - \$1,000,000	4.4%	38
Over \$1,000,000	5.9%	51



Does your company or governmental entity have an established policy concerning sustainability or sustainable development?

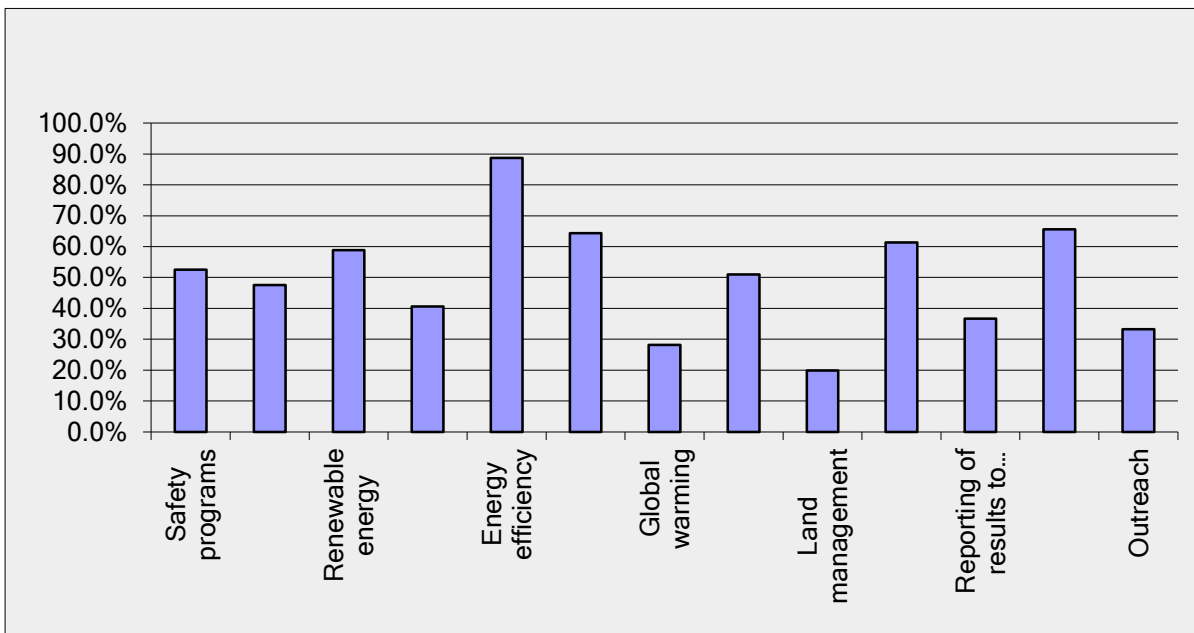
Answer Options	Response Percent	Response Count
Yes	66.6%	1049
No	33.4%	525

If your company or governmental entity has an established policy concerning sustainability or sustainable development, does it identify a set of established goals associated with this policy?

Answer Options	Response Percent	Response Count
Yes	66.4%	904
No	33.6%	458

If your company or governmental entity has an established policy concerning sustainability or sustainable development, check any of the components that are included in the policy:

Answer Options	Response Percent	Response Count
Safety programs	52.5%	606
Corporate Social Responsibility (CSR)	47.6%	549
Renewable energy	58.9%	680
Alternative energy	40.6%	469
Energy efficiency	88.7%	1024
Environmental impacts	64.4%	743
Global warming	28.2%	326
Carbon management	51.0%	589
Land management	19.9%	230
Waste reduction and management planning	61.4%	709
Reporting of results to public	36.7%	423
Employee education	65.6%	757
Outreach	33.3%	384



As a result of current or pending deregulation, it is

Answer Options	Response Percent	Response Count
Easier to get energy projects approved	22.8%	334
More difficult to get energy projects approved	17.7%	259
Approval of energy projects has not changed	59.5%	872

How has your electric rate changed in the past year?		
Answer Options	Response Percent	Response Count
Electric rate has increased	69.2%	1107
Electric rate has decreased	10.1%	161
No change in electric rate	20.8%	332

If your electric rate has changed, by how much has it changed?		
Answer Options	Response Percent	Response Count
Increase of 1-5%	43.6%	554
Increase of 6-10%	30.8%	391
Increase of 11-15%	7.5%	95
Increase greater than 15%	7.8%	99
Decrease of 1-5%	5.7%	73
Decrease of 6-10%	2.6%	33
Decrease of 11-15%	0.8%	10
Decrease greater than 15%	1.2%	15

Part IV. AEE Education Programs

Earning an AEE certification credential has helped or will help my career?		
Answer Options	Response Percent	Response Count
Yes	85.6%	1341
No	14.4%	225

Earning an AEE certification has benefited or will benefit my firm?		
Answer Options	Response Percent	Response Count
Yes	84.1%	1310
No	15.9%	248

Earning an AEE certification has given my firm a competitive edge in respect to requests for proposals?		
Answer Options	Response Percent	Response Count
Yes	60.0%	881
No	40.0%	587

Part V – Information & Resources

The [American Recovery and Reinvestment Act of 2009](#) (ARRA) energy-related funding allocates:

- \$1.6 billion for renewable energy
- \$2 billion for science and innovation
- \$6 billion for environmental cleanup
- \$4.5 billion for modernizing the electric grid
- \$12 billion for energy efficiency
- \$3.4 billion for carbon capture and storage
- \$2.85 billion for transportation

Compelling Nationwide Opportunity

- “By 2020, the United States could reduce annual energy consumption by 23 percent from a business-as-usual (BAU) projection by deploying an array of NPV-positive efficiency measures, saving 9.1 quadrillion BTUs of end-use energy (18.4 quadrillion BTUs in primary energy). This potential exists because significant barriers impede the deployment of energy efficient practices and technologies.” *Source:* [McKinsey & Company](#)

Growing Energy Market

- The revenue for the energy management services market in North America in 2008 was \$20.35 billion and is projected to double to over \$40 billion 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 website 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, and industry networking (energy, sustainability, energy auditing, power, green facilities, certification programs)
 - <http://www.aeecenter.org/realtime> (Online training seminars)
 - <https://www.aeecenter.org/seminars/calendar.htm> (Live seminar training)
 - <http://www.aeecenter.org/shows> (energy industry conferences and networking events)

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