

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Sustainable Energy

- Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
131	Alternative Uses of Land	0%		2%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		43%	
202	Plant Genetic Resources	0%		43%	
402	Engineering Systems and Equipment	30%		2%	
504	Home and Commercial Food Service	0%		3%	
511	New and Improved Non-Food Products and Processes	30%		7%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	40%		0%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2014	Extension		Research	
	1862	1890	1862	1890
Plan	0.6	0.0	4.0	0.0
Actual Paid	0.0	0.0	1.1	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
581	0	71366	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
49905	0	143421	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
0	0	2084413	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Applied Research
 Facilitated Group Meetings and Conferences
 Printed Materials
 Single day workshop, presentation or event

2. Brief description of the target audience

Growers, agricultural businesses, real estate developers, building managers, municipalities, public utilities, homeowners, institutional leaders and decision-makers

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2014	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	592	560	8	0

2. Number of Patent Applications Submitted (Standard Research Output)
Patent Applications Submitted

Year: 2014
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2014	Extension	Research	Total
Actual	0	1	1

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Applied Research Projects
Not reporting on this Output for this Annual Report

Output #2

Output Measure

- Facilitated Group Meetings and Conferences
Not reporting on this Output for this Annual Report

Output #3

Output Measure

- Printed Materials

Year	Actual
2014	1

Output #4

Output Measure

- Single day workshop, presentation or event

Year	Actual
2014	5

Output #5

Output Measure

- Websites or Other Computer-based Delivery
Not reporting on this Output for this Annual Report

Output #6

Output Measure

- Peer review publications
Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Analytic Tools and Techniques

Year	Actual
2014	7

Output #8

Output Measure

- Demonstrations

Year	Actual
2014	1

Output #9

Output Measure

- Diagnostic Services

Year	Actual
2014	1

Output #10

Output Measure

- Grant Submission or Other Funding Proposal

Year	Actual
2014	3

Output #11

Output Measure

- Individual Consultations and Site Visits

Year	Actual
2014	36

Output #12

Output Measure

- Academic Poster or Presentation

Year	Actual
2014	1

Output #13

Output Measure

- Published News, Professional or Trade Article

Year	Actual
2014	2

Output #14

Output Measure

- Academic Article, Book or Chapter

Year	Actual
2014	3

Output #15

Output Measure

- Applied Research Project

Year	Actual
2014	1

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Creation and synthesis of knowledge related to environmentally sustainable energy resources
2	Target audiences adopt practices that increase energy efficiency
3	Target audiences increase knowledge and skill for practices that increase energy efficiency
4	Target audiences increase use of energy from renewable sources
5	Target audiences increase knowledge and skill for utilizing energy from renewable sources

Outcome #1

1. Outcome Measures

Creation and synthesis of knowledge related to environmentally sustainable energy resources

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Target audiences adopt practices that increase energy efficiency

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	400

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Businesses, government officials and individuals make decisions that impact energy use. UMass Extension conveys current energy efficiency, renewable energy, and building science information to stakeholders including those in the building trades, design professionals, agencies, building owners and occupants through workshops, web publication, and consulting. We seek to establish long-term and recurring energy savings statewide through information transfer to stakeholders and through consultations and integrated extension research projects.

What has been done

We worked extensively with towns on planning/renovating school buildings for low and net zero energy building design. In collaboration with Massachusetts we DOER, we organized and promoted a conference for 200 MA municipal officials to share information, best practices, and resources for clean energy projects. We also served the residential market through site visits, phone and email communications. In this manner we served 82 individuals over the past year representing approximately 290,000 square feet of building floor area.

Results

Mass DCR and EEOEA used an earlier result from our research to justify a pilot tree planting program. A plan we provided to a local Disability Services provider resulted in an energy cost reduction of 80%. In our work with the Food Bank of Western Massachusetts, we developed and provided operations engineering advice to dramatically reduce energy costs and food wastage. Data are preliminary, but changes implemented should reduce energy use by about 30%. Working with UMass collaborators, we secured a \$6 Million seed grant to create a Massachusetts Energy Extension Initiative. The Initiative provides Energy Extension service to municipalities and commercial enterprises through collaboration and applied research.

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #3

1. Outcome Measures

Target audiences increase knowledge and skill for practices that increase energy efficiency

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	1082

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

Outcome #4

1. Outcome Measures

Target audiences increase use of energy from renewable sources

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	100

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

Outcome #5

1. Outcome Measures

Target audiences increase knowledge and skill for utilizing energy from renewable sources

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2014	300

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
402	Engineering Systems and Equipment

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Public Policy changes
- Government Regulations

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Mass DCR and EEOEA used an earlier result from our research to justify a pilot tree planting program. A plan we provided to a local Disability Services provider resulted in an energy cost reduction of 80%. In our work with the Food Bank of Western Massachusetts, we developed and provided operations engineering advice to dramatically reduce energy costs and food wastage. Data are preliminary, but changes implemented should reduce energy use by about 30%. Working with UMass collaborators, we secured a \$6 Million seed grant to create a Massachusetts Energy Extension Initiative. The Initiative provides Energy Extension service to municipalities and commercial enterprises through collaboration and applied research.

Key Items of Evaluation