V(A). Planned Program (Summary)

Program # 9
1. Name of the Planned Program
1.3 Renewable/Alternative Energy and Conservation

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
<th>%1862 Extension</th>
<th>%1890 Extension</th>
<th>%1862 Research</th>
<th>%1890 Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>Structures, Facilities, and General Purpose Farm Supplies</td>
<td>40%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>402</td>
<td>Engineering Systems and Equipment</td>
<td>27%</td>
<td>77%</td>
<td>23%</td>
<td>23%</td>
</tr>
<tr>
<td>404</td>
<td>Instrumentation and Control Systems</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

<table>
<thead>
<tr>
<th>Year: 2009</th>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1862</td>
<td>1890</td>
</tr>
<tr>
<td>Plan</td>
<td>2.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Actual</td>
<td>16.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

2. **Institution Name:** Cornell University

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

<table>
<thead>
<tr>
<th></th>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1890 Extension</td>
<td>Hatch</td>
</tr>
<tr>
<td>Smith-Lever 3b &amp; 3c</td>
<td>72716</td>
<td>1890</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1862 Matching</td>
</tr>
<tr>
<td>1862 Matching</td>
<td>72716</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1890 All Other</td>
<td>0</td>
</tr>
<tr>
<td>1862 All Other</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

2. **Institution Name:** NY State Agricultural Experiment Station

Actual dollars expended in this Program (includes Carryover Funds from previous years)
V(D). Planned Program (Activity)

1. Brief description of the Activity

This is a statewide educational program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

2. Brief description of the target audience

Agricultural/horticulture/natural resource and supporting businesses are targeted both regarding biofuels production opportunities and information regarding alternative energy sources and conservation. Consumers, property managers, and community leaders are targeted for information regarding energy supply alternatives and energy conservation options for residential, facilities, and transportation needs. Citizens, community agencies and organizations are targeted for energy-related policy education efforts particularly as related to development of alternative energy sources and the interaction between land use and energy conservation.

V(E). Planned Program (Outputs)

1. Standard output measures

<table>
<thead>
<tr>
<th></th>
<th>Direct Contacts Adults</th>
<th>Indirect Contacts Adults</th>
<th>Direct Contacts Youth</th>
<th>Indirect Contacts Youth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>17500</td>
<td>200000</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>Actual</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

Patent Applications Submitted

Year: 2009
Plan: 0
Actual: {No Data Entered}

Patents listed
{No Data Entered}

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

<table>
<thead>
<tr>
<th>2009</th>
<th>Extension</th>
<th>Research</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>0</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Actual</td>
<td>{No Data Entered}</td>
<td>{No Data Entered}</td>
<td>0</td>
</tr>
</tbody>
</table>

V(F). State Defined Outputs
Output Target

Output #1
Output Measure
- # non-credit instructional activities directed to this program.
  Not reporting on this Output for this Annual Report

Output #2
Output Measure
- # non-credit instructional activity contact hours directed to this program.
  Not reporting on this Output for this Annual Report

Output #3
Output Measure
- # agricultural producers and agribusiness representatives completing educational programs on the potential for development of biologically-based fuels. (1.3.1a)
  Not reporting on this Output for this Annual Report

Output #4
Output Measure
- # local and state leaders completing educational programs on the potential for development of biologically-based fuels such as biodiesel, ethanol, methane, recycled vegetable oils, space heating fuels etc. (1.3.1b)
  Not reporting on this Output for this Annual Report

Output #5
Output Measure
- # agricultural producers and agribusiness, and natural resource business representatives completing educational programs about cropping for biofuels production. 1.3.1c)
  Not reporting on this Output for this Annual Report

Output #6
Output Measure
- # agricultural/horticulture/ natural resource and supporting business representatives completing educational programs about the availability and pros and cons of alternative energy sources and/or about potential energy savings in operations. (1.3.2a)
  Not reporting on this Output for this Annual Report

Output #7
Output Measure
- # consumers and community leaders completing educational programs about the availability and pros and cons of alternative energy. (1.3.3a)
  Not reporting on this Output for this Annual Report

Output #8
Output Measure
- # community members, leaders and officials completing education programs about the relationships between development patterns and energy use/costs. (1.3.4a)
  Not reporting on this Output for this Annual Report
## V(G). State Defined Outcomes

### V. State Defined Outcomes Table of Content

<table>
<thead>
<tr>
<th>O. No.</th>
<th>OUTCOME NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td># agricultural/horticulture/ natural resource and supporting businesses who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources and/or potential energy savings in operations. (1.3.2b)</td>
</tr>
<tr>
<td>2</td>
<td># consumers and/or community leaders who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources especially related to housing and transportation. (1.3.3b)</td>
</tr>
<tr>
<td>3</td>
<td># of consumers documented to have adopted appropriate alternative energy sources. (1.3.3c)</td>
</tr>
<tr>
<td>4</td>
<td># community members, leaders and officials who demonstrate knowledge gains about the relationships between development patterns and energy use/costs. (1.3.4b)</td>
</tr>
<tr>
<td>5</td>
<td># of community agencies/organizations documented to have adopted appropriate alternative energy sources. (1.3.3d)</td>
</tr>
<tr>
<td>6</td>
<td># producers, economic development organizations and other groups collaborate to establish biofuels as a viable alternative crop. (1.3.1f)</td>
</tr>
<tr>
<td>7</td>
<td># of existing or new producers documented to have modified existing practices or technologies and/or adopted new production management practices for biofuels production. (1.3.1g)</td>
</tr>
<tr>
<td>8</td>
<td># of agricultural/horticultural/natural resource businesses documented to have adopted appropriate alternative energy sources and/or energy conservation practices. (1.3.2c)</td>
</tr>
<tr>
<td>9</td>
<td># of consumers who report savings on energy costs attributable to adopting alternative energy sources. (1.3.3e)</td>
</tr>
<tr>
<td>10</td>
<td># of community agencies/organizations reporting savings on energy costs attributable to adopting alternative energy sources. (1.3.3f)</td>
</tr>
<tr>
<td>11</td>
<td># communities documented to have assessed local energy development proposals and/or the relationships between current policies and regulations and energy conservation. (1.3.4c)</td>
</tr>
<tr>
<td>12</td>
<td># of producers, horticulture businesses and/or natural resource managers reporting that cropping for and/or use of biofuels leads to increased economic returns to their enterprises. (1.3.1h)</td>
</tr>
<tr>
<td>13</td>
<td># of producers/horticulture businesses/natural resource managers documented to have improved economic returns to agricultural/ horticultural business profitability and vitality resulting from adopting alternative energy sources and/or energy conservation. (1.3.2d)</td>
</tr>
<tr>
<td>14</td>
<td># of consumers who report savings on energy costs attributable to adopting alternative energy sources and/or energy conservation measures. (1.3.3h)</td>
</tr>
<tr>
<td>15</td>
<td># of communities documented to have established or modified land use and development policies to promote energy conservation. (1.3.4d)</td>
</tr>
<tr>
<td>16</td>
<td># agricultural producers, agribusiness, or local and state leaders who demonstrate knowledge gains about the potential for development of biologically-based fuels. (1.3.1d)</td>
</tr>
<tr>
<td>17</td>
<td># forest owners and purchasers of forest products who demonstrate knowledge or skills gains about current markets for firewood and chips/pellets and associated cropping practices. (1.3.1e)</td>
</tr>
</tbody>
</table>
Outcome #1

1. Outcome Measures

# agricultural/horticulture/ natural resource and supporting businesses who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources and/or potential energy savings in operations. (1.3.2b)

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

# consumers and/or community leaders who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources especially related to housing and transportation. (1.3.3b)

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

# of consumers documented to have adopted appropriate alternative energy sources. (1.3.3c)

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

# community members, leaders and officials who demonstrate knowledge gains about the relationships between development patterns and energy use/costs. (1.3.4b)

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

# of community agencies/organizations documented to have adopted appropriate alternative energy sources. (1.3.3d)

Not Reporting on this Outcome Measure

Outcome #6

1. Outcome Measures

# producers, economic development organizations and other groups collaborate to establish biofuels as a viable alternative crop. (1.3.1f)

Not Reporting on this Outcome Measure
Outcome #7

1. Outcome Measures

# of existing or new producers documented to have modified existing practices or technologies and/or adopted new production management practices for biofuels production. (1.3.1g)

Not Reporting on this Outcome Measure

Outcome #8

1. Outcome Measures

# of agricultural/horticultural/natural resource businesses documented to have adopted appropriate alternative energy sources and/or energy conservation practices. (1.3.2c)

Not Reporting on this Outcome Measure

Outcome #9

1. Outcome Measures

# of consumers who report savings on energy costs attributable to adopting alternative energy sources. (1.3.3e)

Not Reporting on this Outcome Measure

Outcome #10

1. Outcome Measures

# of community agencies/organizations reporting savings on energy costs attributable to adopting alternative energy sources. (1.3.3f)

Not Reporting on this Outcome Measure

Outcome #11

1. Outcome Measures

# communities documented to have assessed local energy development proposals and/or the relationships between current policies and regulations and energy conservation. (1.3.4c)

Not Reporting on this Outcome Measure

Outcome #12

1. Outcome Measures

# of producers, horticulture businesses and/or natural resource managers reporting that cropping for and/or use of biofuels leads to increased economic returns to their enterprises. (1.3.1h)

Not Reporting on this Outcome Measure
Outcome #13

1. Outcome Measures

# of producers/horticulture businesses/natural resource managers documented to have improved economic returns to agricultural/ horticultural business profitability and vitality resulting from adopting alternative energy sources and/or energy conservation. (1.3.2d)

Not Reporting on this Outcome Measure

Outcome #14

1. Outcome Measures

# of consumers who report savings on energy costs attributable to adopting alternative energy sources and/or energy conservation measures. (1.3.3h)

Not Reporting on this Outcome Measure

Outcome #15

1. Outcome Measures

# of communities documented to have established or modified land use and development policies to promote energy conservation. (1.3.4d)

Not Reporting on this Outcome Measure

Outcome #16

1. Outcome Measures

# agricultural producers, agribusiness, or local and state leaders who demonstrate knowledge gains about the potential for development of biologically-based fuels. (1.3.1d)

Not Reporting on this Outcome Measure

Outcome #17

1. Outcome Measures

# forest owners and purchasers of forest products who demonstrate knowledge or skills gains about current markets for firewood and chips/pellets and associated cropping practices. (1.3.1e)

Not Reporting on this Outcome Measure

V(H). Planned Program (External Factors)

External factors which affected outcomes
- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

Brief Explanation

See unplanned programs reflecting NIFA priorities.

V(I). Planned Program (Evaluation Studies and Data Collection)
1. Evaluation Studies Planned
   ● After Only (post program)
   ● Retrospective (post program)
   ● During (during program)
   ● Case Study

Evaluation Results
   See unplanned programs reflecting NIFA priorities.

Key Items of Evaluation
   See unplanned programs reflecting NIFA priorities.