

**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

1800 Washington Boulevard ● Baltimore Maryland 21230  
(410) 537-3000 ● 1-800-633-6101 ● <http://www.mde.state.md.us>

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**MARYLAND CO<sub>2</sub> BUDGET TRADING PROGRAM**  
**COMAR 26.09.03**

Instructions for Submitting Applications for Offsets Projects

**Consistency Applications**

1. Complete and sign Section I - Consistency Application.
2. Attach all required documentation in Section I, including reports, diagrams, statements, specifications, plans, calculations, and certifications.
3. Check the box on Section II – Independent Verifier Report for Consistency Application.
4. Complete and sign Section II – Independent Verifier Report.
5. Attach all required documentation in Section II, including reports, diagrams, statements, specifications, plans, calculations, and certifications.
6. Submit to the Department: 1) hard copies of all required documentation and 2) electronic copies of all required documentation on a CD or DVD. Identify the offset project name and I.D. code on the face of the CD or DVD. Mail original applications and documentation to:

Maryland Department of the Environment  
Air Quality Planning Program, Offsets  
1800 Washington Boulevard  
Baltimore MD 21230

**Monitoring and Verification Applications**

1. Check the box on Section II – Independent Verifier Report for Monitoring and Verification.
2. Complete and sign Section II – Independent Verifier Report.
3. Attach all required documentation in Section II, including reports, diagrams, statements, specifications, plans, calculations, and certifications.
4. Complete and sign Section III – Monitoring and Verification.
5. Attach all required documentation in Section III, including reports, diagrams, statements, specifications, plans, calculations, and certifications.
6. Submit to the Department: 1) hard copies of all required documentation and 2) electronic copies of all required documentation on a CD or DVD. Identify the offset project name and I.D. code on the face of the CD or DVD. Mail original applications and documentation to:

Maryland Department of the Environment  
Air Quality Planning Program, Offsets  
1800 Washington Boulevard  
Baltimore MD 21230

- For offsets projects commenced before January 1, 2009, a consistency application must be submitted by June 30, 2009.
- For offsets projects commenced on or after January 1, 2009, a consistency application must be submitted within 6 months after the commencement of the offset project.
- Contact Scott Zacharko, Air Quality Planning Program at (410) 537-4177 with questions or for further guidance.



**MARYLAND DEPARTMENT OF THE ENVIRONMENT**

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**MARYLAND CO<sub>2</sub> BUDGET TRADING PROGRAM  
 COMAR 26.09.03**

<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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**Reduction or Avoidance of CO<sub>2</sub> Emissions from Natural Gas, Oil, or Propane End-Use Combustion due to  
 End-Use Energy Efficiency Offset Application  
 Section I – Consistency Application**

**An indication of “Yes” to any of the following will deem the project ineligible under COMAR 26.09.03.**

<b><i>Eligibility Requirements</i></b>		
<b>E.1</b>	Did the offset project initially commence before December 20, 2005? <small>COMAR 26.09.03.02A</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.2</b>	Is the offset project required by a local, state, or federal law, regulation or administrative or judicial order? <small>COMAR 26.09.03.02D(2)</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.3</b>	Does the offset project include an electric generation component that is additionally being used for compliance with a renewable energy portfolio standard or other regulatory requirement? <small>COMAR 26.09.03.02D(4)</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.4</b>	Does the offset project receive funding or other incentives provided through the Strategic Energy Investment Fund? <small>COMAR 26.09.03.02D(5)</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.5</b>	Is the offset project awarded credits or allowances under any other mandatory or voluntary greenhouse gas program? <small>COMAR 26.09.03.02D(6)</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No

**An indication of “No” to any of the following will deem the project ineligible under COMAR 26.09.03.**

<b><i>Eligibility Requirements</i></b>		
<b>E.6</b>	If the offset project is to be located in a new building, is that new building: <ul style="list-style-type: none"> <li>• A zero net energy building; or</li> <li>• Designed to replace an existing building?</li> </ul> <small>COMAR 26.09.03.06A</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.7</b>	Does the offset project reduce CO <sub>2</sub> emissions through one or more of the following energy conservation measures (ECMs) as required by COMAR 26.09.03.06B(1) through (7)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.8</b>	Are performance standards concurrent with those outlined in COMAR 26.09.03.06C(1) through (4)?	<input type="checkbox"/> Yes <input type="checkbox"/> No



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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**An indication of "No" to any of the following will deem the project ineligible under COMAR 26.09.03.**

<b><i>Eligibility Requirements</i></b>		
<b>E.9</b>	Does commercial fuel burning equipment meet or exceed the energy efficiency criteria as required under COMAR 26.09.03.06D?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.10</b>	Does residential combustion equipment, including furnaces, boilers, and water heaters, meet or exceed the energy efficiency criteria required by COMAR 26.09.03.06E?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.11</b>	Do all other energy conservation measures implemented as part of the offset project meet the prescriptive requirements, as applicable, in New Buildings Institute, Inc., Benchmark, Advanced Buildings Energy Benchmark for High Performance Buildings (EBHPB), or State building energy codes, as defined in Public Utility Companies Article, §7-401(e), Annotated Code of Maryland, whichever result in better energy performance? <small>COMAR 26.09.03.06F(1)</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>E.12</b>	Do energy conservation measures without specified performance criteria in the referenced EBHPB meet the requirements of: <ul style="list-style-type: none"> <li>• Federal Energy Management Program (FEMP) Product Energy Efficiency Recommendations, issued pursuant to Executive Orders 13123 and 13221; or</li> <li>• Energy Star criteria issued jointly by the U.S. EPA and U.S. Department of Energy, whichever result in better energy performance?</li> </ul> <small>COMAR 26.09.03.06.F(2)</small>	<input type="checkbox"/> Yes <input type="checkbox"/> No

**Complete the following information (all fields are required):**

<b><i>Project Sponsor Information</i></b>			
<i>Organization Name</i>		<i>Project Sponsor Name</i>	
<i>Street Address</i>			
<i>City</i>	<i>State/Province</i>	<i>Postal Code</i>	<i>Country</i>
<i>Telephone and Facsimile Transmission Number</i>		<i>E-Mail Address</i>	
<i>COATS General Account Number</i>		<i>Offset Project Date of Commencement</i> <small>See COMAR 26.09.03.02G(2)</small>	



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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<b><i>Point of Contact Information</i></b>			
<i>Point of Contact Name</i>			
<i>Street Address</i>			
<i>City</i>	<i>State/Province</i>	<i>Postal Code</i>	<i>Country</i>
<i>Telephone and Facsimile Transmission Number</i>		<i>E-Mail Address</i>	

<b><i>Building Location</i></b>			
<i>Physical Street Address</i>			
<i>City</i>	<i>State/Province</i>	<i>Postal Code</i>	<i>Country</i>

**All applicants must provide the following information as attachments to this application. Each attachment must be identified by attachment number as provided below, as well as the offset project name and offset project I.D. code.**

<b><i>Attachment Number:</i></b>	
<b>I.1</b>	A detailed narrative of the actions to be taken as part of the offset project, including an explanation of how the projected reduction or avoidance of atmospheric loading, or the sequestration of carbon is to be quantified, monitored, and verified. COMAR 26.09.03.02H(1)(b), COMAR 26.09.03.02H(1)(e), COMAR 26.09.03.06G
<b>I.2</b>	Documentation that the offset project meets applicable Eligibility Requirements (E.1 through E.12 on pages 1-2 of this application) and baseline emissions. COMAR 26.09.03.02H(1)(c)
<b>I.3</b>	A statement and certification report certifying that all offset projects for which the project sponsor has received CO <sub>2</sub> offset allowances under the project sponsor's ownership or control are in compliance with all applicable requirements in all participating states. COMAR 26.09.03.02H(1)(g)
<b>I.4</b>	A statement regarding the adequacy of the monitoring and verification plan and other evaluations and statements as required by the Department. COMAR 26.09.03.02H(1)(j)
<b>I.5</b>	Disclosure of any voluntary or mandatory programs to which greenhouse gas emissions data related to the offset project has been or will be reported. COMAR 26.09.03.02H(1)(k)



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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<b>Attachment Number:</b>	
<b>I.6</b>	For offset projects located in a state or United States jurisdiction that is not a participating state, a demonstration that the project sponsor has complied with all requirements of the cooperating regulatory agency in the state or United States jurisdiction where the offset project is located. COMAR 26.09.03.02H(1)(l)
<b>I.7</b>	If the offset project was initiated on or after January 1, 2009, attach provisions that demonstrate that the energy conservation measures implemented as part of the offset project have a market penetration rate of less than 5 percent. COMAR 26.09.03.06F(3)
<b>I.8</b>	Specifications of the building where the offset project actions will occur, including: <ul style="list-style-type: none"> <li>• Complete contact information for the parties implementing the offset project, including lead contractor, subcontractors, and consulting firms.</li> <li>• Specifications of the equipment and materials to be installed as part of the offset project.</li> <li>• Building plans and offset project technical schematics, as applicable.</li> </ul> COMAR 26.09.03.06G(1), COMAR 26.09.03.06G(3), COMAR 26.09.03.06G(4), COMAR 26.09.03.06G(5)
<b>I.9</b>	The name, address, email address, telephone number, and facsimile transmission number of the owner and operator of the building. COMAR 26.09.03.06G(2)
<b>I.10</b>	The baseline emissions determination. (Attach all calculations) COMAR 26.09.03.06H(1) through (4), COMAR 26.09.03.02H(d)
<b>I.11</b>	A monitoring and verification plan certified by an independent accredited verifier. COMAR 26.09.03.06H(7)(a)
<b>I.12</b>	All offset project documentation, including the consistency application and monitoring and verification reports, signed by a professional engineer and identified by license number. COMAR 26.09.03.06H(8)(a)

<b>Consistency Application Agreement</b>
<p>“The undersigned project sponsor recognizes and accepts that the application for, and the receipt of, CO<sub>2</sub> offset allowances under the CO<sub>2</sub> Budget Trading Program is predicated on the project sponsor complying with all applicable requirements. I have been granted all the necessary authority to carry out the duties and responsibilities for the offset project under this subtitle. I understand that eligibility for the award of CO<sub>2</sub> offset allowances is contingent on meeting all applicable requirements. I authorize the Department or its agent to audit this offset project for purposes of verifying that the offset project, including the monitoring and verification plan, has been implemented as described in this application. I understand that the Department’s right to audit shall include the right to enter the physical location of the offset project. I submit to the legal jurisdiction of the State.”</p> <p>COMAR 26.09.03.02H(1)(f)</p>

<b>Access Agreement Statement</b>
<p>“The undersigned project sponsor agrees to provide the Department access to the physical location of the offset project to inspect for compliance. For offset projects located in any state or other U.S. jurisdiction that is not a participating state, the undersigned project sponsor agrees to provide the cooperating regulatory agency with access to the physical location of the offset project to inspect for compliance.”</p> <p>COMAR 26.09.03.02F(1)</p>



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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<p><b><i>Statement of Truth, Accuracy, and Completeness</i></b></p> <p>"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision and in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."</p> <p>COMAR 26.09.03.02H(1)(i)</p>
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_____ <b>Signature of Applicant (Project Sponsor)</b>	_____ <b>Date</b>
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_____ <b>Applicant's (Project Sponsor's) Name (Print)</b>	_____ <b>Title</b>
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For questions regarding this application form, please contact the Department at (410) 537-3240



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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**Reduction or Avoidance of CO<sub>2</sub> Emissions from Natural Gas, Oil, or Propane End-Use Combustion due to  
End-Use Energy Efficiency Offset Application  
Section II – Independent Verifier Report**

The following information is being provided for:	<input type="checkbox"/> Consistency Application <input type="checkbox"/> Monitoring and Verification
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**Complete the following information (all fields are required):**

<b><i>Independent Verifier Information (Required for Consistency Application and Monitoring and Verification Report)</i></b>			
<i>Independent Verifier Organization Legal Name</i>			
<i>Independent Verifier Point of Contact</i>			
<i>Physical Street Address</i>			
<i>City</i>	<i>State/Province</i>	<i>Postal Code</i>	<i>Country</i>
<i>Telephone Number</i>		<i>E-Mail Address</i>	

**All applicants must provide the following information as attachments to this application. Each attachment must be identified by attachment number as provided below, as well as the offset project name and offset project I.D. code.**

<b><i>Attachment Number, (if submitting for Consistency Application):</i></b>	
<b>II.1</b>	A verification report. COMAR 26.09.03.02H(1)(h)
<b>II.2</b>	A monitoring and verification plan certified by an independent accredited verifier, as part of the consistency application. COMAR 26.09.03.06H(7)(a)
<b>II.3</b>	If the offset project saves more than 1,500 million Btu per year, attach a site audit conducted by the independent verifier. If the offset project saves less than 1,500 million Btu per year, attach equipment specifications and copies of equipment invoices and other relevant offset project-related invoices provided to the independent verifier by the project sponsor. COMAR 26.09.03.06H(7)(b)
<b><i>Attachment Number, (if submitting for Monitoring and Verification):</i></b>	
<b>II.4</b>	An annual review by the independent verifier of the monitoring and verification report. COMAR 26.09.03.06H(7)(a)



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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<b><i>Certification Statement</i></b>
“I certify, under penalty of law, that I, the independent verifier, have reviewed the entire application and evaluated the report in relation to all applicable requirements and any applicable guidance issued by the Department.” COMAR 26.09.03.02H(1)(h)

<b><i>Statement of Truth, Accuracy, and Completeness</i></b>
“I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision and in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” COMAR 26.09.03.02H(1)(i)

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**Signature of Independent Verifier**

**Date**

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**Independent Verifier’s Name (Print)**

**Title**

For questions regarding this application form, please contact the Department at (410) 537-3240



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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**Reduction or Avoidance of CO<sub>2</sub> Emissions from Natural Gas, Oil, or Propane End-Use Combustion due to  
End-Use Energy Efficiency Offset Application  
Section III – Monitoring and Verification**

**Complete the following information (all fields are required):**

<b><i>Project Sponsor Information</i></b>			
<i>Organization Name</i>		<i>Project Sponsor Name</i>	
<i>Street Address</i>			
<i>City</i>	<i>State/Province</i>	<i>Postal Code</i>	<i>Country</i>
<i>Telephone and Facsimile Transmission Number</i>		<i>E-Mail Address</i>	
<i>COATS General Account Number</i>		<i>Offset Project Date of Commencement</i> <small>See COMAR 26.09.03.02G(2)</small>	

<b><i>Point of Contact Information</i></b>			
<i>Point of Contact Name</i>			
<i>Street Address</i>			
<i>City</i>	<i>State/Province</i>	<i>Postal Code</i>	<i>Country</i>
<i>Telephone and Facsimile Transmission Number</i>		<i>E-Mail Address</i>	



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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<b><i>Building Location</i></b>			
<i>Physical Street Address</i>			
<i>City</i>	<i>State/Province</i>	<i>Postal Code</i>	<i>Country</i>

**All applicants must provide the following information as attachments to this application. Each attachment must be identified by attachment number as provided below, as well as the offset project name and offset project I.D. code.**

<b><i>Attachment Number:</i></b>	
<b>III.1</b>	A statement regarding the adequacy of the monitoring and verification plan. COMAR 26.09.03.02H(j)
<b>III.2</b>	The name, address, email address, telephone number, and facsimile transmission number of the owner and operator of the building. COMAR 26.09.03.06G(2)
<b>III.3</b>	Complete contact information for the parties implementing the offset project, including lead contractor, subcontractors, and consulting firms. COMAR 26.09.03.06G(3)
<b>III.4</b>	The emissions reductions. (Attach all calculations) COMAR 26.09.03.06H(5), COMAR 26.09.03.06H(6)
<b>III.5</b>	Annual monitoring and verification plan certified by an independent accredited verifier. COMAR 26.09.03.06H(7)(a), COMAR 26.09.03.06H(8) through (10)
<b>III.6</b>	All monitoring and verification reports, signed by a professional engineer and identified by license number. COMAR 26.09.03.06H(8)(a)
<b>III.7</b>	Provisions for sampling of multiple similar offset projects in residential buildings. COMAR 26.09.03.06H(11)

<b><i>Statement of Truth, Accuracy, and Completeness</i></b>
"I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision and in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." COMAR 26.09.03.02H(1)(i)



<i>COATS Offset Project Name</i>	<i>COATS Offset Project I.D. Code</i>
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**Signature of Project Sponsor**

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**Date**

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**Project Sponsor's Name (Print)**

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**Title**

For questions regarding this application form, please contact the Department at (410) 537-3240



TECHNICAL GUIDANCE DOCUMENT  
 REDUCTION OR AVOIDANCE OF CO<sub>2</sub> EMISSIONS FROM NATURAL GAS, OIL, OR PROPANE END-USE  
 COMBUSTION DUE TO END-USE ENERGY EFFICIENCY  
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## GENERAL INSTRUCTIONS

**The instructions for completing the offset project application are identified in the guidance document. It is necessary to read the entire guidance document to fully understand the requirements and instructions for completing the offset project application. In addition to the instructions below, the prospective Project Sponsor's application should be organized and numbered in the same order as provided in the guidance document.**

**Print or type all information where requested.**

**Attach all requested information to the application. Ensure each attachment is identified properly.**

- **Submit hard copies of all attached documents. The Project Sponsor and Independent Verifier signatures must be originals.**
- **Submit electronic copies of all attached documents on a CD or DVD. Ensure that all Microsoft Excel spreadsheets are non-encrypted and accessible by the Department. Spreadsheets and calculations in the .pdf format will not be accepted.**

**Upload all requested information to COATS. See [www.rggi.org](http://www.rggi.org) for instructions.**

## SUGGESTED PROCESS

**The following is the Department's suggested process for applicants:**

1. Create a COATS Account at <https://rggi-coats.org/eats/rggi/>.
2. Complete the Consistency Application and Independent Verifier Report. Provide both hard copies and electronic copies of all documents.
3. Upload all requested information into COATS. This information will not be made publicly available until the Department determines the application's completeness.
4. The Department will make a completeness determination within 30 days of receipt of the application, at which point the offset project information uploaded to COATS will be made publicly available.
5. The Department will make a consistency determination within 60 days after the completeness determination.
6. Complete the Monitoring and Verification Report and the Independent Verifier Report. Provide both hard copies and electronic copies of all documents.
7. Allowances will be awarded at the discretion of the Department after approval of the Monitoring and Verification Report.
8. A Monitoring and Verification Report and Independent Verifier Report must be submitted annually to maintain eligibility.



**REDUCTION OR AVOIDANCE OF CO<sub>2</sub> EMISSIONS FROM NATURAL GAS, OIL, OR PROPANE END-  
USE COMBUSTION DUE TO END-USE ENERGY EFFICIENCY  
OFFSET PROJECT  
SECTION I – CONSISTENCY APPLICATION**

**For all fields where information must be provided, print of type all required information.**

**COATS OFFSET PROJECT NAME**

- Provide the COATS offset project name, which is the same as the RGGI COATS General Account Name. The RGGI COATS general account is the RGGI COATS account into which any awarded CO<sub>2</sub> offset allowances related to the offset project will be transferred. Complete this field on every page of the offset project application.

**COATS OFFSET PROJECT I.D. CODE**

- Provide the COATS offset project I.D. code, which is the alphanumeric code automatically generated when the Project Sponsor makes the initial entry of the offset project in the RGGI CO<sub>2</sub> Allowance Tracking System (RGGI COATS). See the RGGI COATS User's Guide at <http://www.rggicoats.org> for information about creating an offset project record. Complete this field on every page of the offset project application.

**ELIGIBILITY REQUIREMENTS**

**Complete the Eligibility Requirements by indicating “Yes” or “No” to each requirement on the application. Indicating “Yes” to E.1 through E.5 or indicating “No” to E.6 through E.12 will deem the project ineligible.**

- E.1 – Check the “No” box if the offset project was initially commenced on or after December 20, 2005. Offset projects commenced before December 20, 2005 are not eligible for the award of CO<sub>2</sub> offset allowances.
- E.2 – Check the “No” box if the offset project is not required by any local, state, or federal law, regulation or administrative or judicial order. Offset projects required by local, state, or federal law, regulation or administrative or judicial order are not eligible for the award of CO<sub>2</sub> offset allowances.
- E.3 – Check the “No” box if the offset project does not include an electric generation component that is additionally being used for compliance with a renewable energy portfolio standard or other regulatory requirement. If the offset project includes an electric generation component, CO<sub>2</sub> offset allowances may not be awarded if the project is additionally being used for compliance with a renewable portfolio standard or other regulatory requirement.
- E.4 – Check the “No” box if the offset project does not and will not receive funding or other incentives provided through the Strategic Energy Investment Fund. Offset projects are not eligible for the award of CO<sub>2</sub> offset allowances if funding or other incentives are received from the Strategic Energy Investment Fund or from any state fund resulting from the auction of CO<sub>2</sub> allowances.
- E.5 – Check the “No” box if the offset project is not awarded credits or allowances under any mandatory or voluntary greenhouse gas program. Offset projects that are awarded credits or allowances under mandatory or voluntary greenhouse gas programs are not eligible for the award of CO<sub>2</sub> offset allowances.



- E.6 – Check the “Yes” box if the offset project is to be located in a new building that is either a zero net energy building or is designed to replace an existing building. Offset projects that are not located in a new building that is designed to replace an existing building or in a new building that is a zero net energy building are not eligible for the award of CO<sub>2</sub> offset allowances.
- E.7 – Check the “Yes” box if the offset project reduces CO<sub>2</sub> emissions through one or more of the energy conservation measures (ECMs) identified in COMAR 26.09.03.06B(1) through (7). Offset projects that do not reduce CO<sub>2</sub> emissions through one or more of the ECMs identified in COMAR 26.09.03.06B(1) through (7) are not eligible for the award of CO<sub>2</sub> offset allowances.
- E.8 – Check the “Yes” box if the offset project performance standards are concurrent with those outlined in COMAR 26.09.03.06C(1) through (4). Offset projects that have performance standards that are not concurrent with those outlined in COMAR 26.09.03.06C(1) through (4) are not eligible for the award of CO<sub>2</sub> offset allowances.
- E.9 – Check the “Yes” box if the commercial fuel burning equipment used in the offset project meets or exceeds the energy efficiency criteria required under COMAR 26.09.03.06D. Offset projects that have commercial fuel burning equipment that does not meet the energy efficiency criteria required under COMAR 26.09.03.06D are not eligible for the award of CO<sub>2</sub> offset allowances.
- E.10 – Check the “Yes” box if the residential combustion equipment, including furnaces, boilers, and water heaters used in the offset project, meet or exceed the energy efficiency criteria required by COMAR 26.09.03.06E. Offset projects that have residential combustion equipment that does not meet the energy efficiency criteria required by COMAR 26.09.03.06E are not eligible for the award of CO<sub>2</sub> offset allowances.
- E.11 – Check the “Yes” box if all other energy conservation measures implemented as part of the offset project meet the prescriptive requirements, as applicable, in New Buildings Institute, Inc., Benchmark, Advanced Buildings Energy Benchmark for High Performance Buildings (EBHPB), or State building energy codes, as defined in Public Utility Companies Article, §7-401(e), Annotated Code of Maryland, whichever result in better energy performance.
- E.12 – Check the “Yes” box if energy conservation measures without specified performance criteria in the referenced EBHPB meet the requirements of:
  - a. Federal Energy Management Program (FEMP) Product Energy Efficiency Recommendations, issued pursuant to Executive Orders 13123 and 13221; or
  - b. Energy Star criteria issued jointly by the U.S. EPA and U.S. Department of Energy, whichever result in better energy performance.

## PROJECT SPONSOR INFORMATION

**Print or type all required information pertaining to the Project Sponsor in the spaces provided.**

- Organization Name and Project Sponsor Name: Provide the full legal name of the organization the Project Sponsor represents and the name of the Project Sponsor. If the Project Sponsor is representing him or herself, provide the name of the individual. The Project Sponsor is the person who is the Authorized Account Representative for the RGGI COATS general account.
- Street Address, City, State/Province, Postal Code, Country: In the appropriate areas, provide the full contact address of the organization the Project Sponsor represents.



- Telephone and Facsimile Transmission Number: Provide the primary contact telephone number and the facsimile transmission number for the Project Sponsor.
- E-Mail Address: Provide the primary contact E-mail address for the Project Sponsor.
- COATS General Account Number: Provide the COATS General Account Number established by the Project Sponsor in COATS. The Project Sponsor must establish a general account in the RGGI CO<sub>2</sub> Allowance Tracking System (RGGI COATS). For information about establishing a RGGI COATS general account, consult the RGGI COATS User's Guide, available at <http://www.rggi-coats.org>.
- Offset Project Date of Commencement: Provide the date that the offset project initially commenced. For offset projects commenced between December 20, 2005 and December 31, 2008, the Consistency Application must be submitted by June 30, 2009. For offset projects commenced on or after January 1, 2009, the Consistency Application must be submitted within six months after the project is commenced.

### POINT OF CONTACT INFORMATION

**Print or type all required information pertaining to the Point of Contact in the spaces provided.**

- Point of Contact Name: Provide the full legal name of the Point of Contact for the offset project.
- Street Address, City, State/Province, Postal Code, Country: In the appropriate areas, provide the full contact address for the Point of Contact for the offset project.
- Telephone and Facsimile Transmission Number: Provide the primary contact telephone number and the facsimile transmission number for the Point of Contact for the offset project.
- E-Mail Address: Provide the primary contact E-mail address for the Point of Contact for the offset project.

### BUILDING LOCATION

**Print or type all required information pertaining to the Building in the spaces provided.**

- Physical Street Address, City, State/Province, Postal Code, Country: In the appropriate areas, provide the complete physical address of the building used in the offset project.

### ATTACHMENT NUMBER

**Attach all of the following requested information with the application. Clearly indicate the corresponding attachment number (i.e.: I.1, I.2, etc.), the offset project name, and the offset project I.D. on all attached documents.**

- I.1 – Attach a detailed description of the actions to be taken as part of the offset project. Include the type of project and explain how the reduction of atmospheric loading or the sequestration of carbon will be quantified, monitored, and verified.
- I.2 – Attach documentation verifying that each of the Eligibility Requirements and the baseline emissions has been met.





- a. E.1 – Provide records verifying that the offset project commenced between December 20, 2005 and December 31, 2008, or that the offset project commenced on or after January 1, 2009.
- b. E.2 – Provide records that verify that the offset project is not required pursuant to any local, state, or federal law, regulation, or administrative or judicial order.
- c. E.3 – Provide records that verify that, if applicable, the electric generation component included in the offset project is not additionally being used for compliance with a renewable portfolio standard or other regulatory requirement.
- d. E.4 – Provide records or statements that document the offset project has not and will not receive any funding or other incentives from the Strategic Energy Investment Fund (the Fund), incentives derived from the Fund, or any states' fund receiving proceeds resulting from the auction of CO<sub>2</sub> allowances.
- e. E.5 – Provide records or statements that the offset project has not and will not be awarded credits or allowances under any other greenhouse gas program.
- f. E.6 – Attach documentation of building eligibility under one of the following provisions for each building included in the offset project:
  - i. Existing Buildings: For existing buildings, provide documentation of the date of completion of building construction.
  - ii. Whole-Building Retrofit: For whole-building retrofits, describe the building system(s) and/or building components to be replaced as part of the offset project and reference the applicable provisions in State or local building codes that require a building permit for such actions.
  - iii. New Buildings: Provide records that the offset project is located in either a new building that is a zero net energy building or is designed to replace an existing building. For new buildings, provide documentation that the building meets eligibility requirements under one of the two following scenarios for new building eligibility:
    1. New buildings replacing existing buildings at the same site: For each new building included in the offset project, provide a design intent statement and building specifications indicating that the new building is designed to replace an existing building on the same property where the existing building is or was located. Provide plans for each new building indicating that the building footprint is located on the same property as the existing building is or was located.
    2. New buildings designed to be “zero-net-energy” buildings: For each new building included in the offset project, provide documentation that the new building will be a zero-net-energy building. A zero-net-energy building is defined as a building designed to produce as much energy, using renewable energy designed to produce as much energy, using renewable energy sources, as the building is projected to use, as measured on an annual basis. Provide the following documentation to demonstrate that the building is designed to be a zero-net-energy building:
      - a. Narrative of the design approach taken to achieve zero-net-energy performance
      - b. Building simulation software input file, output file, and assumptions for the design building documenting estimated annual energy use and estimated annual energy production for the as-designed building, on CD-ROM



- c. Copy of software manufacturer literature showing the modeling program name and version number
  - d. Document demonstrating that software is certified by the BESTEST method (commercial building software) or is RESNET certified (residential building software)
- g. E.7 – Provide records verifying the eligibility of the offset project:
- i. Reduces CO<sub>2</sub> emissions through one or more of the following ECMs:
    - 1. Improvements in the energy efficiency of combustion equipment that provides space heating and hot water, including a reduction in fossil fuel consumption through the use of solar and geothermal energy.
    - 2. Improvements in the efficiency of heating distribution systems, including proper sizing and commissioning of heating systems.
    - 3. Installation or improvement of energy management systems.
    - 4. Improvement in the efficiency of hot water distribution systems and reduction in demand for hot water.
    - 5. Measures that improve the thermal performance of the building envelope or reduce building envelope air leakage.
    - 6. Measures that improve the passive solar performance of buildings and utilization of active heating systems using renewable energy.
    - 7. Fuel switching to a less carbon-intensive fuel for use in combustion systems, including the use of liquid or gaseous renewable fuels, excluding conversions to electricity.
  - ii. Note that equipment, materials, or actions required under state building codes or required pursuant to any local, state, or federal law, regulation, or administrative or judicial order are not eligible for the award of CO<sub>2</sub> offset allowances. This includes instances where initiation of the offset project itself triggers certain requirements pursuant to state building codes or other legal requirements.

**Pay careful attention to the specific documentation that must be submitted for each type of ECM and for each of the eligibility requirements described in this section applicable to the offset project. When references are required, cite the reference standard's name and publication year, applicable section number and title, and specific page number. Note that in cases where documentation for an offset project that has not yet been completed reflects the intent of the project, further documentation of the as completed offset project must be submitted with the first annual Monitoring and Verification Report submitted for the project to confirm that the design intent specified in the Consistency Application was actually implemented.**

- iii. Documentation of ECM Installation: For all ECMs included in the offset project, attach the following documentation of ECM installation, as applicable:
  - 1. For all categories of ECMs, provide invoices or completed work orders for completed offset projects that show purchases of materials, equipment, and design and installation services that detail the date of installation, what was installed, and what services were provided. Note, for offset projects in progress, this information must be submitted as part of the first annual Monitoring and Verification Report submitted for the project.
  - 2. For certain categories of ECMs, provide additional documentation, as follows:
    - a. Building Envelope Measures (category (e)): Provide a pre-implementation infiltration report, along with the citation of the reference standard that defines the blower door test or other measurement procedure that was used for baseline measurement and will be used to measure post-installation infiltration. For completed projects, also include the post-



implementation infiltration report. Note that for in-progress projects, the post-implementation infiltration report must be submitted as part of the first annual Monitoring and Verification Report submitted for project.

- b. Energy Management Systems (EMS) (category (c)): Provide either a design intent statement indicating that there was/is no EMS installed prior to the offset project, or a short narrative about the pre-existing control strategy, including documentation of the model and manufacturer of the EMS, the settings, the control mechanisms (e.g., schedule/sensors), and evidence of EMS installation. Include computer screenshots to illustrate system settings. For in-progress projects, provide a narrative of the proposed EMS control strategy, including the model and manufacturer of the EMS, the settings, and the control mechanisms (e.g., schedule/sensors). Note that for in-progress projects, a post-implementation narrative about the new control strategy, including documentation of the model and manufacturer of the EMS, the settings, the control mechanisms (e.g., schedule/sensors), and evidence of EMS installation, including computer screenshots, must be provided with the first annual Monitoring and Verification Report submitted for the project.
3. For all documentation, indicate the ECM ID number specified in the Equipment and Materials Specification Table in I.8.d.ii (page 27 of 47 of this document) to which the documentation applies.
- iv. HVAC Installation Best Practice: Attach documentation demonstrating that all combustion equipment and related air-handling equipment (HVAC systems) installed or to be installed as part of the offset project have been sized and installed or will be sized and installed according to industry best practices for the applicable type of building. Documentation must demonstrate that the following requirements are or will be met:
    1. Commercial Buildings: Provide documentation of the following (see subsection I.2.E.7.iv.3 below on page 20 of 47 of this document for specific documentation requirements):
      - a. Sizing calculations were or will be performed according to accepted manufacturer or engineering standards.
      - b. Installation requirements, which vary by type of equipment and are listed within specific sections of the ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings and ANSI/ASHRAE Standard 62.1-2007: Ventilation for Acceptable Indoor Air Quality, were met or will be met.
      - c. HVAC systems have been balanced or will be balanced. Cite the reference standard that defines the system balancing procedure.
      - d. The building has been commissioned or will be commissioned according to appropriate standards. Cite applicable commissioning standards of ASHRAE 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings.
    2. Residential Buildings: Provide documentation of the following (see subsection I.2.E.7.iv.3 below on page 20 of 47 of this document for specific documentation requirements):
      - a. Sizing calculations were performed or will be performed according to the Air Conditioning Contractors of America (ACCA) Manual J, Eighth Edition, Version 2.00.
      - b. Installation requirements, equipment-specific tests, and verifications of Air Conditioning Contractors of America (ACCA), ANSI/ACCA 5 QI-2007, HVAC Quality Installation



Specification: Residential and Commercial Heating, Ventilating, and Air Conditioning (HVAC) Applications, were met or will be met.

3. Documentation Requirements: To demonstrate conformance with the documentation requirements at subsections I.2.E.7.iv.1 and I.2.E.7.iv.2 above (page 19 of 47 of this document), provide the following:
  - a. For both Completed and In-Progress Projects:
    - i. Copies of HVAC system sizing calculations. Reference the standard that was used to define calculation methodologies. Include all worksheets in accordance with the following standards, as applicable:
      1. Commercial Buildings:
        - a. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings
        - b. ANSI/ASHRAE 62.1-2007: Ventilation for Acceptable Indoor Air Quality
      2. Residential Buildings:
        - a. Air Conditioner Contractors of America (ACCA), Manual J: Residential Load Calculation, Eighth Edition, Version 2.00
    - ii. For projects in commercial buildings, location, performance, and general configuration of installed equipment and duct and pipe distribution systems, including sizes, and the terminal air or water design flow rates.
  - b. For Completed Projects:
    - i. Copies of the installation instructions that accompany all HVAC equipment to be installed.
    - ii. Invoices or completed work orders that show purchases of materials, equipment, and design and installation services that detail what was installed.
    - iii. A statement that HVAC installation was completed in accordance with manufacturer instructions and the applicable reference standards:
      1. Commercial Buildings:
        - a. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings
        - b. ANSI/ASHRAE 62.1-2007: Ventilation for Acceptable Indoor Air Quality
      2. Residential Buildings:
        - a. Air Conditioning Contractors of America (ACCA), ANSI/ACCA 5 QI-2007, HVAC Quality Installation Specification: Residential and Commercial Heating, Ventilating, and Air Conditioning (HVAC) Applications



3. Include documentation showing which tests/verifications were performed in accordance with the guidance given by the reference standards listed above, along with evidence of completion.
  - iv. Memo signed by a representative of the building owner indicating receipt of all equipment operations and maintenance manuals and other O&M information, and identifying the specific documentation received.
  - v. Copy of HVAC system balance report.
  - vi. Copy of HVAC system commissioning report.
- c. For In-Progress Projects:
- i. A design intent statement that HVAC installation will be completed in accordance with manufacturer instructions and the following reference standards:
    1. Commercial Buildings:
      - a. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings
      - b. ANSI/ASHRAE 62.1-2007: Ventilation for Acceptable Indoor Air Quality
    2. Residential Buildings:
      - a. Air Conditioning Contractors of America (ACCA), ANSI/ACCA 5 QI-2007, HVAC Quality Installation Specification: Residential and Commercial Heating, Ventilating, and Air Conditioning (HVAC) Applications
    3. For each type of equipment installed, cite the applicable standard that will be used to define the installation, testing, and verification requirements for the equipment in accordance with the guidance given by the reference standards listed above.
  - ii. A design intent statement that all operations and maintenance information for new equipment will be provided to the building owner at completion of the project, including a template of the form acknowledging receipt of the information.
  - iii. A design intent statement that HVAC systems will be balanced, citing the reference standard that will define the system balancing procedure.
  - iv. A design intent statement certifying that the building will be commissioned, citing of the reference standard that will define the commissioning procedure in accordance with ASHRAE 90.1-2007.
  - v. Note that documentation confirming application of the design intent in the as-completed offset project for the items listed at I.2.E.7.iv.3.c.i (page 21 of 47 of this document) through I.2.E.7.iv.3.c.iv above (page 21 of 47 of this document) must be submitted with the first annual Monitoring and Verification Report submitted for the project.



- h. E.8 – Provide records verifying that performance standards are concurrent with the following:
  - i. Commercial HVAC systems shall meet the applicable sizing and installation requirements of:
    - 1. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings
    - 2. ANSI/ASHRAE Standard 62.1-2007: Ventilation for Acceptable Indoor Air Quality
  - ii. Residential HVAC systems shall meet:
    - 1. The applicable sizing specifications of Air Conditioner Contractors of America (ACCA), Manual J: Residential Load Calculation, Eighth Edition, Version 2.00
    - 2. The applicable installation specifications of Air Condition Contractors of America (ACCA), ANSI/ACCA 5 QI-2007, HVAC Quality Installation Specification: Residential and Commercial Heating, Ventilating, and Air Condition (HVAC) Applications
  - iii. Commercial Buildings shall exceed the energy performance requirements of:
    - 1. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings, by 30 percent, with the exception of multi-family residential buildings classified as commercial by ANSI/ASHRAE/IESNA Standard 90.1-2007, which shall exceed these energy performance requirements by 20 percent.
  - iv. Residential buildings shall exceed the energy performance requirements of the International Code Council, Inc. (ICC), International Energy Conservation Code by 30 percent.
- i. E.9 – Provide records verifying that commercial fuel burning equipment meets or exceeds the following energy efficiency criteria:
  - i. Minimum Commercial Fuel Burning Equipment Energy Efficiency:

<b>Technology</b>	<b>Size (Btu/hr)</b>	<b>Rating Method</b>	<b>Minimum Efficiency</b>
Gas-fired <sup>1</sup>	125,000 – 300,000	AFUE	≥ 88%
	300,000 – 12,500,000	Thermal Efficiency <sup>2</sup>	≥ 90%
Oil-fired	>300,000	Thermal Efficiency	≥ 88%

<sup>1</sup> Gas-fired boilers shall be installed with controls that allow the boiler to operate in condensing mode and installed with vents designed for positive vent static pressure and vent gas temperature that leads to condensate production in the vent.

<sup>2</sup> Thermal efficiency is defined as useful energy output (Btu) divided by energy input (Btu), and presented as a percentage. This shall be measured under steady state conditions, at full treated useful thermal output, 140°F supply from, and 120°F return water temperature to, the boiler.

- j. E.10 – Provide records verifying that residential combustion equipment, including furnaces, boilers, and water heaters, meet or exceed the following energy efficiency criteria:
  - i. Minimum Residential Combustion Equipment<sup>1</sup>:



Technology	Rating Method	Minimum Efficiency
Gas-fired furnace	AFUE	≥ 94%
Oil-fired furnace	AFUE	≥ 92%
Gas/oil-fired boiler	AFUE	≥ 90%
Gas/oil-fired water heater	Energy Factor	≥ 0.62

<sup>1</sup> For furnaces, defined as equipment with a heat input rate of less than 225,000 Btu/hr; for boilers, defined as equipment with a heat input rate of less than 300,000 Btu/hr; for water heaters, defined as equipment subject to 10 CFR 430.

- k. E.11 – For offset projects commencing prior to January 1, 2009, provide documentation in table or narrative form indicating that all other ECMs (all non-combustion equipment ECMs) installed or to be installed as part of the offset project meet the more stringent of the minimum energy performance standards specified in the following (whichever result in better energy performance):
  - i. Energy Benchmark for High Performance Buildings (EBHPB) Version 1.1. (New Buildings Institute, 2005); or
  - ii. State building energy codes, as defined in the Public Utility Companies Article, §7-401(e), Annotated Code of Maryland.
  
- l. E.12 – Provide records verifying that energy conservation measures without specified performance criteria in the referenced EBHPB meet the requirements of:
  - i. Federal Energy Management Program (FEMP) Product Energy Efficiency Recommendations, issued pursuant to Executive Orders 13123 and 13221; or
  - ii. Energy Star criteria issued jointly by the U.S. EPA and U.S. Department of Energy, whichever result in better energy performance
  - iii. Documentation must include the following:
    - 1. A copy of the relevant section of the applicable standard that clearly shows the required energy performance criteria for the specific ECM
    - 2. Equipment or material information and specifications (e.g., R-value, U-factor) that identify energy performance
    - 3. A copy of the product specification sheet and, if applicable, Energy Star label
    - 4. The ECM ID number specified in the Equipment and Materials Specification Table in I.8.d.ii (page 27 of 47 of this document) to which the documentation for each ECM applies.
  
- m. Baseline Emissions – See Attachment Number I.10.
  
- I.3 – Attach a statement and certification report that documents that the offset project is in compliance with all applicable requirements in all participating states.
- I.4 – Attach a statement that documents that the monitoring and verification plan has adequately met all of the Department requirements.
- I.5 – Attach appropriate documentation if greenhouse gas emissions data related to the offset project have been or will be reported to any voluntary or mandatory programs, other than COMAR 26.09.01 to .04. For each program for which data have been or will be reported, provide the following:
  - a. Program name
  - b. Program type (voluntary or mandatory)



- c. Program contact information (website or street address)
- d. Categories of emissions data reported
- e. Frequency of reporting
- f. Commencement date of reporting
- g. Reporting status (prior, current, future)

Attach a statement in place of the above information if no greenhouse gas emissions data have been or will be reported to any voluntary or mandatory programs, other than COMAR 26.09.01 to .04.

- I.6 – If the offset project is located in a state or United States jurisdiction that is not a participating state, attach documentation that demonstrates that the Project Sponsor has complied with all requirements of the cooperating regulatory agency in the state or United States jurisdiction where the offset project is located.
- I.7 – If the offset project was initiated on or after January 1, 2009, attach documentation that demonstrate that the energy conservation measures implemented as part of the offset project have a market penetration rate of less than 5 percent.
  - a. For new building or whole-building retrofit offset projects, documentation that the energy performance of the project building(s) falls within the top 5 percent of energy performance for a similar class of buildings may be used to demonstrate conformance with this requirement.
  - b. Market penetration rate is defined as a measure of the diffusion of a technology, product, or practice in a defined market, as represented by the percentage of annual sales for a product or practice, or as the percentage of the existing installed stock for a product or category of products, or as the percentage of existing installed stock that utilizes a practice.
    - i. Note that the Department will determine the sufficiency of the market penetration rate documentation provided, including the appropriateness of the market definition and market penetration metric used. Documentation must include the following information:
      - 1. Documentation of the defined market
      - 2. Market penetration or market saturation studies, market assessments, building stock, performance data, sales data, or other data that indicate market penetration of the energy conservation measures included in the offset project.
- I.8 – Attach specifications of the building where the offset project actions will occur. Include:
  - a. Building Location(s) and Specifications:
    - i. Provide a Project Summary Table that includes the following information:
      - 1. Unique I.D. number (e.g., 1,2,3) for each building included in the offset project
      - 2. Address of each building
      - 3. Type of each building (existing building, whole-building retrofit, or new construction)
      - 4. Use of each building (commercial or residential)
      - 5. Square footage of each building
      - 6. Total number of buildings included in the offset project
      - 7. Total square footage for all buildings included in the offset project
    - ii. An example of the Project Summary Table is provided below:





**[Sample] Project Summary Table**

<i>Building ID</i>	<i>Building Address/Location</i>	<i>Building Type</i>	<i>Building Use</i>	<i>Building Sq Ft</i>
		<input type="checkbox"/> Existing <input type="checkbox"/> Whole-building retrofit <input type="checkbox"/> New construction	<input type="checkbox"/> Residential <input type="checkbox"/> Commercial	
		<input type="checkbox"/> Existing <input type="checkbox"/> Whole-building retrofit <input type="checkbox"/> New construction	<input type="checkbox"/> Residential <input type="checkbox"/> Commercial	
		<input type="checkbox"/> Existing <input type="checkbox"/> Whole-building retrofit <input type="checkbox"/> New construction	<input type="checkbox"/> Residential <input type="checkbox"/> Commercial	
<b>Total # of Buildings:</b> _____		<b>Total Sq Ft:</b> _____		

1. Note that multifamily residential buildings more than three stories above grade should be classified as “commercial,” in accordance with ASHRAE Standard 90.1-2007.

b. Owners and Operators of Buildings:

- i. For each building included in the offset project, provide the company name, contact name, address, phone number, and website (if available) of the building owner and the building operator (if different from the owner). Provide the name, address, phone number, and e-mail of the facility manager for each building.
- ii. Provide organization legal name, contact information, and physical address for the parent company if the building owner or operator is a subsidiary.

c. Parties Implementing Offset Project:

- i. Provide the company name, contact name, phone number, and e-mail of all general or prime contractors, subcontractors, consultants, and vendors providing significant goods and services to the offset project. Provide the company name, contact name, address, phone number, license number, and e-mail of the professional engineer that has reviewed all project documentation included in and attached to the Consistency Application.

d. Equipment and Materials Specifications:

- i. Provide an Equipment and Materials Specifications Table to summarize specifications for each planned or installed eligible energy conservation measure (ECM). Include the following information:
  - 1. Identify the category of each applicable ECM, using the corresponding identification letter for the Categories of Eligible Energy Conservation Measures key in the Table (include only eligible ECMs)
  - 2. Assign each ECM a unique I.D. number (e.g., 1,2,3)
  - 3. Describe the specific measure taken or to be taken, including the manufacturer, model, capacity, and energy efficiency or energy performance of both original and new equipment or materials
  - 4. Specify the building I.D. numbers, consistent with those specified in the Project Summary Table in I.8.a.ii (page 25 of 47 of this document), for all buildings affected by the ECM



5. For each ECM, enter the quantity of equipment or material installed and the unit of measure for the equipment or material installed (e.g., for a furnace, one unit or piece of equipment; for ceiling insulation upgrades, ceiling square footage; etc.)
6. Specify the type(s) of fuel impacted using the letter codes provided in the Types of Fuel key in the table. Include both pre-installation and post-installation fuel type(s), even if there will be no fuel change

ii. An example of the Equipment and Materials Specifications Table is provided below:



## [Sample] Equipment and Materials Specifications Table

ECM Category <sup>†</sup>	ECM ID	Description of Specific Energy Conservation Measure	List the ID Numbers of Buildings Affected by the ECM	Total Equipment/Material Installed		Fuel Type <sup>‡</sup>	
				Quantity Installed	Unit	Original	New
(a)	1.	Upgrade boiler: original Acme XYZ3 250 BTU boiler, AFUE = 75. Replace with ACME ZZZ90 250 BTU boiler, AFUE = 80.	Building 1, Building 5, Building 7	10	Boiler units	NG	NG
<i>Add additional rows as necessary</i>							

- <sup>†</sup> **Categories of Eligible Energy Conservation Measures**
- (a) improvements in the energy efficiency of combustion equipment that provides space heating and hot water, including a reduction in fossil fuel consumption through the use of solar and geothermal energy
  - (b) improvements in the efficiency of heating distribution systems, including proper sizing and commissioning of heating systems
  - (c) installation or improvement of energy management systems
  - (d) improvement in the efficiency of hot water distribution systems and reduction in demand for hot water
  - (e) measures that improve the thermal performance of the building envelope and/or reduce building envelope air leakage
  - (f) measures that improve the passive solar performance of buildings and utilization of active heating systems using renewable energy
  - (g) fuel switching to a less carbon-intensive fuel for use in combustion systems, including the use of liquid or gaseous eligible biomass, provided that conversions to electricity are not eligible

<sup>‡</sup> **Types of Fuels**  
 NG = natural gas    P = propane    O = heating oil    K = kerosene

e. Documentation of Equipment and Materials Specifications:

- i. Provide the following documentation of equipment and materials identified in the Equipment and Materials Specification Table:
  - 1. For equipment, building components, and building materials installed or to be installed as part of the offset project, copies of relevant sections of the manufacturer specification that verify all information provided in the Equipment and Materials Specifications Table. Include ENERGY STAR specifications if applicable. For building envelope components and materials, also provide documentation of R-value or U-value.
  - 2. For original equipment, building components, and building materials being replaced, photos of original equipment and building components/materials, equipment nameplates, energy performance or ENERGY STAR labels (as applicable, showing manufacturer, model number, and energy efficiency or energy performance), and locations of installations. For building envelope components and materials, provide documentation of R-value or U-value (if applicable) and photos showing wall condition and wall layers.
- ii. If equipment or building component/building material documentation is not available (e.g., due to missing labels or manuals, or discontinued equipment), provide documentation of average or generic specifications for equipment or components/materials of equivalent age and features. Documentation may include, for example, market studies from the time period of original installation or state building codes for the time period of original installation.
- iii. Note that the Equipment Materials Specification Table and accompanying documentation will be used by the Department to establish ECM eligibility pursuant to COMAR 26.09.03.06B. If the offset project

described in the Consistency Application is in progress, documentation of actual post-installation equipment and materials specification will be required as part of the first annual Monitoring and Verification Report submitted for the project to confirm as-installed ECM eligibility.

- f. **Building Plans and Project Technical Schematics:** For building systems to be affected by the offset project, attach the following for each building included in the offset project:
- i. **Pre-Installation Plans and Schematics:** Pre-installation building plans and technical schematics of the whole building (for new buildings or whole-building retrofits) or of the affected building areas or building systems (for existing buildings with localized retrofits). Plans and schematics provided should include only sections relevant to the offset project and the following information:
    1. Building footprint
    2. Design specifications, technical schematics, and drawings
    3. Elevations, plans, and sections
    4. Location, configuration, and size of all equipment, building components and building materials, and distribution systems
    5. Copies of any calculations performed, including methodology and references (e.g., flow rates, solar heating-specific calculations)
  - ii. **Post-Installation Plans and Schematics:** Post-Installation building plans and technical schematics of the whole building (for new buildings or whole-building retrofits) or of the affected building areas or building systems (for existing buildings with localized retrofits). Plans and schematics provided should include only sections relevant to the offset project and the following information:
    1. Building footprint and demolition plan, if applicable (e.g., for changes in building footprint)
    2. Design specifications, technical schematics, and drawings
    3. Elevations, plans, and sections
    4. Location, configuration, and size of all equipment, building components and building materials, and distribution systems
    5. Copies of any calculations performed, including methodology and references (e.g., flow rates, solar heating-specific calculations)
  - iii. **Additional Measure-Specific Documentation:**
    1. Provide the following additional documentation (both pre- and post-installation) for the following ECMs if included in the offset project:
      - a. Heating Distribution Systems (category (b)): Duct plan, system insulation and air sealing specifications, duct tightness specification, terminal air and water flow rate measurements, and system leakage measurements
      - b. Hot Water Distribution Systems/Demand Reductions (category (d)): Pipe layout, riser diagram (for commercial buildings), fixture schedule, fixture flow rates, system insulation and sealing, terminal flow rate measurements, and system leakage measurements
      - c. Building Envelope Measures (category (e)): Window schedule, sectional diagram of wall layers, insulation specifications, and thermal bridging details
      - d. Passive/Active Solar Heating Systems (category (f)): For passive solar ECMs only, include design intent narrative highlighting passive solar features



2. Note that the documentation outlined above will be used by the Department to establish ECM eligibility pursuant to COMAR 26.09.03.06B. If the offset project specified in the Consistency Application is in progress, final post-installation building plans and technical schematics representing the as-installed offset project must be submitted with the first annual Monitoring and Verification Report submitted for the project to confirm as installed ECM eligibility.
- I.9 – Attach documentation of the full legal name, address, email address, telephone number, and facsimile transmission number of the owner and operator of the building where the offset project will occur.
  - I.10 – Attach calculations showing how the emissions baseline was determined. Include the baseline year where requested. The baseline year is the most recent calendar year prior to commencement of the offset project for which historic fuel data is available for 12 consecutive months. If the offset project involves a new building, the baseline year is the calendar year preceding the submission of the Consistency Application. Where requested, for each fuel type include energy baseline usage (in MMBTUs) and associated CO<sub>2</sub> emissions (in lbs CO<sub>2</sub>). Include the following:
    - a. Documentation of Baseline Energy Monitoring Approach:
      - i. Provide narrative documentation of the energy monitoring or modeling procedures used to determine baseline energy use, including demonstration of conformance with the appropriate guidelines and standards applicable to the buildings types included in the offset project, as follows:
        1. Commercial Buildings:
          - a. IPMVP Volume I: Concepts and Options for Determining Energy and Water Savings, DOE/GO-102001-1187, Chapter 3, “Option B: Retrofit Isolation” and “Option D: Calibrated Simulation”
          - b. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
        2. Commercial Buildings, where the only change to the building as part of the energy efficiency project will involve eligible ECMs included in the offset project:
          - a. IPMVP Volume I: Concepts and Options for Determining Energy and Water Savings, DOE/GO-102001-1187, Chapter 3, “Option C: Whole Building”
          - b. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
        3. New Commercial Buildings:
          - a. IPMVP: Concepts and Practices for Determining Energy Savings in New Construction, Volume III, Part I, Chapter 4, “Option D: Whole Building Calibrated Simulation,” EVO 30000-1: 2006
          - b. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
        4. New and Existing Residential Buildings:
          - a. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”
      - ii. Documentation of conformance with the above-listed references must include the following:
        1. Clear identification of any data gaps and estimated or modeled data



2. Documentation of all conditions that affect baseline measurement (e.g., measurement process and equipment, weather, building occupancy, time of day)
  - iii. Note, for projects implementing similar measures in multiple residential buildings, a representative sampling of buildings may be used to determine baseline energy use, rather than measurement of each building. If sampling is employed, attach a copy of the sampling protocol that provides demonstration at the 95 percent confidence interval that the reported value is within 10 percent of the true value. The sampling protocol and statistical method must include uncertainty and confidence interval calculations.
- b. Baseline Energy Use Data: Provide documentation of baseline energy use for each building included in the offset project, as outlined below:
- i. Existing Commercial Buildings: For each building included in the offset project, provide total building fuel consumption data for the baseline year, by fuel type (MMBtu). For each building, provide records of whole-building metered energy use by fuel type for the baseline year and records of metered energy use, if available, for individual end-uses or building systems to be targeted by eligible ECMs.
  - ii. Eligible New Commercial Buildings: For each new building included in the offset project, provide energy simulation modeling of baseline energy use for a reference building with similar configuration, orientation, and location using BESTEST certified software. The reference building must meet the ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings, energy performance standard. Provide the following documentation of energy simulation modeling:
    1. Building simulation software input file, output file, and assumptions for a reference building that meets the ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings, on CD-ROM
    2. Copy of software manufacturer literature showing the modeling program name and version number
    3. Document demonstrating that software is certified by the BESTEST method
  - iii. Existing Low-Rise Residential Buildings: For each building included in the offset project, provide total building fuel consumption data for the baseline year, by fuel type (MMBtu). For each building, provide records of whole-building metered energy use by fuel type for the baseline year and records of metered energy use, if available, for individual end-uses or building systems to be targeted by eligible ECMs.
  - iv. Eligible New Low-Rise Residential Buildings: For each new building included in the offset project, provide energy simulation modeling of baseline energy use for a reference building with similar configuration, orientation, and location using RESNET certified software. The reference building must meet the International Code Council, Inc. (ICC), International Energy Conservation Code energy performance standard. Provide the following documentation of energy simulation modeling:
    1. Building simulation software input file, output file, and assumptions for a reference building that meets the International Code Council, Inc. (ICC), International Energy Conservation Code energy performance standard, on CD-ROM
    2. Copy of software manufacturer literature showing the modeling program name and version number
    3. Document demonstrating that software is RESNET certified
- c. Isolation of Energy Use:
- i. Provide documentation of the isolation of energy use for each end-use or building system to be targeted by eligible ECMs as part of the offset project. Such isolation must ensure that each eligible ECM, once implemented, will be able to be isolated from all other eligible and non-eligible ECMs, as well as from



overall building energy use. There are two options for isolation of energy use for end-uses or building systems to be targeted by eligible ECMs:

1. Direct metering of end-use or building system to be affected by eligible ECMs (note that if the only change to the building as part of the energy efficiency project will involve eligible ECMs included in the offset project, metering of whole-building energy use is sufficient under this approach)
  2. Use of energy simulation modeling to apportion building energy use to each end-use or building affected by eligible ECMs
- ii. For both of the above options, ECMs must be isolated from whole-building or whole-system energy use and also adjusted for areas where multiple ECMs interact with one another (required to avoid double-counting of ECM energy use) or where one ECM utilizes more than one eligible fuel type. Provide a narrative identifying the procedures used to isolate energy use for end-uses or building systems to be targeted by eligible ECMs in conformance with the following guidelines and/or standards applicable to the building types included in the offset project:
1. Commercial Buildings:
    - a. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
    - b. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings
  2. Residential Buildings:
    - a. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, "Chapter Three: National Energy Rating Technical Standards," and "Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features"
- iii. If energy simulation modeling is used to isolate energy use, provide the following documentation:
1. Building simulation software input file, output file, and assumptions, on CD-ROM
  2. Copy of software manufacturer literature showing the modeling program name and version number
  3. Document demonstrating that software is BESTEST or RESNET certified, as applicable
- d. Adjustments to Baseline Energy Use: Provide documentation of adjustments that were made to baseline energy use as follows
- i. Equipment and Materials Adjustments: Provide documentation of adjustments to account for minimum equipment energy efficiency standards or minimum building component energy performance standards. If applicable building codes or equipment standards require that equipment or materials installed as part of the offset project meet certain minimum energy efficiency or energy performance requirements, baseline energy use must assume the existence of such equipment or materials during the baseline period. If such requirements apply, the baseline must assume – for all building equipment and building components to be targeted by ECMs as part of the offset project – that equipment and materials were present during the baseline period that meet current minimum energy efficiency or energy performance requirements (e.g., State and local building codes or federal equipment standards). If the ECM involves the replacement of combustion equipment, baseline energy use must assume the existence during the baseline period of new equipment that meets minimum energy efficiency requirement and that burns the same fuel as the ECM replacement equipment.



- ii. Operating and Weather Condition Adjustments: Provide documentation of measurement conditions during the baseline period that are unusual or measurement conditions that are expected to change between the baseline period and reporting period, and adjustment factors applied to baseline energy use to account for such measurement conditions. Adjustments may address issues such as weather, building occupancy, and changes in building use or function. Provide documentation of adjustments applied to baseline energy use in accordance with the following equation:

$$1. \text{ Energy Use (MMBtu)} = BEU_{AECM} \bullet A_b$$

2. Where:

- a.  $BEU_{AECM}$  = Annual pre-installation baseline energy use by fuel type (MMBtu) attributable to the applications to be targeted by the energy conservation measure. If applicable building codes or equipment standards require that equipment or materials installed as part of the offset project meet certain minimum energy performance requirements, baseline energy usage for the application shall assume that equipment or materials are installed that meet these minimum requirement. For offset projects that replace existing combustion equipment, the assumed minimum energy performance required by applicable building codes or equipment standards shall be that which applies to new equipment that uses the same fuel type as the equipment being replaced. Baseline energy usage shall be determined in accordance with applicable requirements in RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, "Chapter Three: National Energy Rating Technical Standards," and "Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features"
- b.  $A_b$  = Adjustments to account for any differing conditions during the two time periods (pre-installation and post-installation), such as weather (weather normalized energy usage based on heating and cooling degree days), building occupancy, and changes in building use or function. For commercial buildings, adjustments shall be consistent with the specifications of ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1-2007, Section 11 and Appendix G. For residential buildings, adjustments shall be consistent with the specifications of RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, "Chapter Three: National Energy Rating Technical Standards," and "Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features"

3. Provide documentation demonstrating that the application of any adjustments are consistent with the following guidelines and standards applicable to the building types included in the offset project:

- a. Commercial Buildings:





- i. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
- ii. ANSI/ASHRAE/IESNA 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings

b. Residential Buildings:

- i. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”

4. If any of the adjustments applied under I.10.d.i and I.10.d.ii (pages 31 and 32 of 47 of this document) above required energy simulation modeling, provide the following documentation:

- a. Building simulation software input file, output file, and assumptions, on CD-ROM
- b. Copy of software manufacturer literature showing the modeling program name and version number
- c. Document demonstrating that software is BESTEST or RESNET certified, as applicable

e. Total Baseline Energy Use: Provide a spreadsheet documenting the calculation of total baseline energy use. Baseline energy use is the sum of energy use, by fuel type, for all the isolated end uses or building systems that will be affected by eligible ECMs included in the offset project. Baseline energy use includes the application of any adjustment factors in accordance with I.10.c above (page 30 of 47 of this document).

f. Baseline Emissions: Provide a spreadsheet documenting the calculation of baseline emissions derived from baseline energy use and associated fuel-specific emissions and oxidation factors. Use the following formula to calculate total (summed over all combustion fuel types) baseline emissions in lbs of CO<sub>2</sub> (calculate each combustion fuel’s emissions contribution separately):

$$i. \text{ Emissions (lbs. CO}_2\text{)} = \sum_{i=1}^n (BEU_i \cdot EF_i \cdot OF_i)$$

ii. Where:

- 1. BEU<sub>i</sub> = Annual baseline energy use for fuel type *i* (MMBtu)
- 2. EF<sub>i</sub> = Emissions factor (lbs. CO<sub>2</sub>/MMBtu) for fuel type *i* as shown below in Table 4
- 3. OF<sub>i</sub> = Oxidation factor for fuel type *i* as shown below in Table 4

**Table 4. Emissions and Oxidation Factors**

Fuel	Emissions Factor (lbs CO <sub>2</sub> /MMBtu)	Oxidation Factor
Natural Gas	116.98	0.995
Propane	139.04	0.995
Distillate Fuel Oil	161.27	0.99
Kerosene	159.41	0.99



- I.11 – Attach a Monitoring and Verification Plan that has been certified by an independent accredited verifier and that includes the following information:
  - a. Documentation of Energy Monitoring Approach:
    - i. For each building included in the offset project, provide narrative documentation of the energy monitoring procedures to be used during the reporting period to determine energy use. Specify the data sources and calculations to be used to determine annual post-installation energy use by fuel type. Actual energy usage must be measured, with simulation modeling used only to isolate energy use related to end-uses or building systems targeted by eligible ECMs included in the offset project. Documentation must include demonstration of conformance with the appropriate guidelines and standard applicable to the building types included in the offset project:
      1. Commercial Buildings:
        - a. IPMVP, Volume I: Concepts and Options for Determining Energy and Water Savings, DOE/GO-102001-1187, Chapter 3, “Option B: Retrofit Isolation” and “Option D: Calibrated Simulation”
        - b. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
      2. Commercial Buildings, where the only change to the building as part of the energy efficiency project will involve eligible ECMs included in the offset project:
        - a. IPMVP, Volume I: Concepts and Options for Determining Energy and Water Savings, DOE/GO-102001-1187, Chapter 3, “Option C: Whole Building”
        - b. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
      3. New Commercial Buildings:
        - a. IPMVP: Concepts and Practices for Determining Energy Savings in New Construction, Volume III, Part I, Chapter 4, “Option D: Whole Building Calibrated Simulation,” EVO 30000-1: 2006
        - b. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
      4. New and existing residential buildings:
        - a. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”
    - ii. Documentation of conformance with the above-listed references must include the following:
      1. Clear identification of any data gaps and estimated or modeled data
      2. Documentation of all conditions that affect reporting period measurement (e.g., measurement process and equipment, weather, building occupancy, time of day)
    - iii. Note, for projects implementing similar measures in multiple residential buildings, a representative sampling of buildings may be used to determine reporting period energy use, rather than measurement of each building. If sampling is to be employed, attach a copy of the sampling protocol to be used that provides demonstration at a 95 percent confidence interval that the reported value will be within 10 percent of the true value. The sampling protocol and statistical method must include uncertainty and confidence interval calculations.



- b. Procedures for Collection of Reporting Period Energy Use Data: Provide documentation of the procedures to be used during the reporting period to collect actual metered energy use data by fuel type for each building included in the offset project. Specify the metered energy use data to be collected for each building.
- c. Isolation of Energy Use:
- i. Provide documentation of the procedures to be used for isolation of energy use during the reporting period for each end-use or building system to be targeted by eligible ECMs as part of the offset project. Such isolation must ensure that each eligible ECM will be isolated from all other eligible and non-eligible ECMs, as well as from overall building energy use. There are two options for isolation of energy use for end-uses or building systems to be targeted by eligible ECMs:
    1. Direct metering of end-use or building system affected by eligible ECMs (note that if the only change to the building as part of the energy efficiency project will involve eligible ECMs included in the offset project, metering of whole-building energy use is sufficient under this approach)
    2. Use of energy simulation modeling to apportion building energy use to each end-use or building system affected by eligible ECMs
  - ii. For both of these options, ECMs must be isolated from whole-building or whole-system energy use and also adjusted for areas where multiple ECMs interact with one another (required to avoid double-counting of ECM energy use) or where one ECM utilizes more than one eligible fuel type. Provide a narrative identifying the procedures to be used during the reporting period to isolate energy use in conformance with the following guidelines and/or standards applicable to the building types included in the offset project:
    1. Commercial Buildings:
      - a. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
      - b. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings
    2. Residential Buildings:
      - a. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, "Chapter Three: National Energy Rating Technical Standards," and "Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features"
  - iii. If energy simulation modeling is to be used to isolate energy use, provide the following documentation:
    1. Building simulation software input file, output file, and assumptions, on CD-ROM
    2. Copy of software manufacturer literature showing the modeling program name and version number
    3. Document demonstrating that software is BESTEST or RESNET certified, as applicable
- d. Procedures for Adjustments in Energy Use to Account for Differing Conditions:
- i. Provide documentation of measurement conditions during the reporting period that may be unusual or measurement conditions that are expected to change between the baseline period and reporting period, and adjustment factors that may be applied to reporting period energy use to account for such measurement conditions. Specify the data sources and calculations to be used to account for differing



conditions, and the procedures for collecting data. Adjustments may address issues such as weather, building occupancy, and changes in building use or function. Provide documentation of adjustments to be applied to reporting period energy use in accordance with the following equation:

1.  $Energy\ Use\ (MMBtu) = PIEU_{AECM} \bullet A_b$

2. Where:

a.  $PIEU_{AECM}$  = Annual post-installation energy use by fuel type (MMBtu) attributable to the energy conservation measure, to be verified based on annual energy usage after installation of the energy conservation measure or measures, consistent with the requirements of ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings. Where energy simulation modeling is used to evaluate a new existing building, modeling shall be conducted in accordance with ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1-2007, Section 11 and Appendix G. For existing and new residential buildings, energy simulation modeling shall be consistent with the requirements of RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”

b.  $A_b$  = Adjustments to account for any differing conditions during the two times periods (pre-installation and post-installation), such as weather (weather normalized energy usage based on heating and cooling degree days), building occupancy, and changes in building use or function. For commercial buildings, adjustments shall be consistent with the specifications of ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1-2007, Section 11 and Appendix G. For residential buildings, adjustments shall be consistent with the specifications of RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”

ii. Provide documentation demonstrating that the application of any adjustments is consistent with the following guidelines and standards applicable to the building types included in the offset project:

1. Commercial Buildings:

- a. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
- b. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings

2. Residential Buildings:



- a. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”
  - iii. If any of the adjustments to be applied require energy simulation modeling, provide the following documentation:
    1. Building simulation software input file, output file, and assumptions, on CD-ROM
    2. Copy of software manufacturer literature showing the modeling program name and version number
    3. Document demonstrating that software is BESTNET or RESNET certified, as applicable
  - e. Procedures to Determine Reduction in Energy Use by Fuel Type: Provide a spreadsheet that specifies the building-specific data sources, methods, and calculations to be used for each building included in the offset project to determine reporting period energy savings by fuel type relative to baseline energy use. Energy use for all end-uses and building systems included in the energy use baseline must be addressed during the reporting period.
  - f. Documentation of Project Implementation: For offset projects that were not completed when the Consistency Application was submitted, document the procedures that will be followed to ensure that the offset project will be implemented as specified in the Consistency Application. Specify the procedures for conducting a site audit of the buildings included in the offset project, or if a site audit is not required pursuant to COMAR 26.09.03.06, specify procedures for the collection and provision of specifications of equipment and materials installed and copies of equipment invoices and other project-related invoices documenting installation of the offset project.
  - g. Quality Assurance/Quality Control (QA/QC) Procedures: Document the procedures for recording names and contact information for the personnel responsible for project monitoring and documentation and the personnel responsible for QA/QC of project monitoring data and documentation. Document the procedures that will be taken for QA/QC of project monitoring data and documentation, including but not limited to the following:
    - i. Energy use metering and collection of energy use data
    - ii. Adjustment to energy use to account for differing conditions during the reporting period relative to the baseline year
    - iii. Building energy simulation modeling, if used
    - iv. Calculation of energy use reductions and emissions reductions
    - v. Compilation of an annual QA/QC report summarizing findings of QA/QC activities conducted and any remedial actions taken
  - h. Record Keeping and Records Retention Protocol: Document the record keeping and records retention protocol that will be used to maintain offset project documentation throughout the duration of the offset project, including maintenance of an electronic index and/or hardcopy of all project documentation.
- I.12 – Provide all offset project documentation, including the consistency application and monitoring and verification reports, signed by a professional engineer and identified by license number.
- 



## PROJECT SPONSOR SIGNATURE

**Read and agree to the following by signing the Signature of Applicant.**

**An original signature is required for the following:**

- Consistency Application Agreement
- Access Agreement Statement
- Statement of Truth, Accuracy, and Completeness



**REDUCTION OR AVOIDANCE OF CO<sub>2</sub> EMISSIONS FROM NATURAL GAS, OIL, OR PROPANE END-  
USE COMBUSTION DUE TO END-USE ENERGY EFFICIENCY  
OFFSET PROJECT  
SECTION II – INDEPENDENT VERIFIER REPORT**

**Check the Consistency Application box if the Independent Verifier Report is being submitted with the Consistency Application.**

**Check the Monitoring and Verification box if the Independent Verifier Report is being submitted with the Monitoring and Verification Report.**

**Print or type all required information in all required fields.**

**INDEPENDENT VERIFIER INFORMATION**

**Print or type all required information pertaining to the Project Sponsor in the spaces provided.**

- Independent Verifier Organization Legal Name: Provide the full legal name of the organization the Independent Verifier represents.
- Independent Verifier Point of Contact: Provide the full name of the Independent Verifier.
- Physical Street Address, City, State/Province, Postal Code, Country: In the appropriate areas, provide the contact address for the Independent Verifier represents.
- Telephone Number: Provide the primary contact telephone number for the Independent Verifier.
- E-Mail Address: Provide the E-mail address for the Independent Verifier.

**ATTACHMENT NUMBER**

**Attach the following requested information to the end of the application. Clearly indicate the corresponding attachment number (i.e.: II.1, II.2, etc.), the offset project name, and the offset project I.D. on all attached documents.**

**Attach II.1, II.2, and II.3 if the information is being submitted with the Consistency Application.**

**Attach II.4 if the information is being submitted with the Monitoring and Verification Report.**

- II.1 – Attach a verification report.
  - a. The verification report must document the following:
    - i. The verifier has reviewed the entire Consistency Application and evaluated the contents of the application in relation to the applicable requirements of COMAR 26.09.03.02.
    - ii. The verifier has evaluated the adequacy and validity of information supplied by the Project Sponsor to demonstrate that the offset project meets the applicable eligibility requirements of COMAR 26.09.03.02.



- iii. The verifier has evaluated the adequacy and validity of information supplied by the Project Sponsor to demonstrate baseline emissions, pursuant to the applicable requirements of COMAR 26.09.03.06H.
- iv. The verifier has evaluated the adequacy of the monitoring and verification plan submitted pursuant to COMAR 26.09.03.06H.

a. The verification report must include the following contents:

- i. Cover page with report title and date
- ii. Table of contents
- iii. List of acronyms and abbreviations
- iv. Executive summary
- v. Description of objective of report
- vi. Identification of the client, including name, address, and other contact information
- vii. Identification of the offset project
- viii. Description of evaluation criteria (applicable regulatory provisions and documentation requirements specified in Consistency Application)
- ix. Description of the review and evaluation process, including any site visits and interviews
- x. Identification of individuals performing the verification work, including the verification team leader and key personnel, and contact information for the team leader
- xi. Description of the materials provided to the verifier by the Project Sponsor
- xii. Evaluation conclusions and findings, including level of assurance provided

- II.2 – Attach documentation verifying that the monitoring and verification plan submitted as part of the consistency application has been certified by an independent verifier. Annual monitoring and verification reports shall be certified by an independent accredited verifier.
- II.3 – Attach documentation for the following:
  - a. The independent verifier conducted a site visit and site audit when reviewing the first monitoring and verification report submitted by the project sponsor, except for offset projects that save less than 1,500 million Btu per year.
  - b. If the offset project saves less than 1,500 million Btu per year, attach equipment specifications and copies of equipment invoices and other relevant offset project-related invoices provided to the independent verifier by the project sponsor.
- II.4 – Attach an annual review by the independent verifier of the monitoring and verification report.

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### INDEPENDENT VERIFIER SIGNATURE

**Read and agree to the following by signing the Signature of Independent Verifier.**

**An original signature is required for the following:**

- Certification Statement
- Statement of Truth, Accuracy, and Completeness





**REDUCTION OR AVOIDANCE OF CO<sub>2</sub> EMISSIONS FROM NATURAL GAS, OIL, OR PROPANE END-  
USE COMBUSTION DUE TO END-USE ENERGY EFFICIENCY  
OFFSET PROJECT  
SECTION III – MONITORING AND VERIFICATION**

**For all fields where information must be provided, print or type all required information.**

**PROJECT SPONSOR INFORMATION**

**Print or type all required information pertaining to the Project Sponsor in the spaces provided.**

- Organization Name and Project Sponsor Name: Provide the full legal name of the organization the Project Sponsor represents and the name of the Project Sponsor. If the Project Sponsor is representing him or herself, provide the name of the individual. The Project Sponsor is the person who is the Authorized Account Representative for the RGGI COATS general account.
- Street Address, City, State/Province, Postal Code, Country: In the appropriate areas, provide the full contact address of the organization the Project Sponsor represents.
- Telephone and Facsimile Transmission Number: Provide the primary contact telephone number and the facsimile transmission number for the Project Sponsor.
- E-Mail Address: Provide the primary contact E-mail address for the Project Sponsor.
- COATS General Account Number: Provide the COATS General Account Number established by the Project Sponsor in COATS. The Project Sponsor must establish a general account in the RGGI CO<sub>2</sub> Allowance Tracking System (RGGI COATS). For information about establishing a RGGI COATS general account, consult the RGGI COATS User's Guide, available at <http://www.rggi-coats.org>.
- Offset Project Date of Commencement: Provide the date that the offset project initially commenced. For offset projects commenced between December 20, 2005 and December 31, 2008, the Consistency Application must be submitted by June 30, 2009. For offset projects commenced on or after January 1, 2009, the Consistency Application must be submitted within six months after the project is commenced.

**POINT OF CONTACT INFORMATION**

**Print or type all required information pertaining to the Point of Contact in the spaces provided.**

- Point of Contact Name: Provide the full legal name of the Point of Contact for the offset project.
- Street Address, City, State/Province, Postal Code, Country: In the appropriate areas, provide the full contact address for the Point of Contact for the offset project.
- Telephone and Facsimile Transmission Number: Provide the primary contact telephone number and the facsimile transmission number for the Point of Contact for the offset project.
- E-Mail Address: Provide the primary contact E-mail address for the Point of Contact for the offset project.



## BUILDING LOCATION

**Print or type all required information pertaining to the Building in the spaces provided.**

- Physical Street Address, City, State/Province, Postal Code, Country: In the appropriate areas, provide the complete physical address of the building used in the offset project.

## ATTACHMENT NUMBER

**Attach all of the following requested information to the end of the application. Indicate the corresponding attachment number (i.e.: III.1, III.2, etc.), the offset project name, and the offset project I.D. on all attached documents.**

**When submitting electronic copies of the following, ensure that all Microsoft Excel spreadsheets are non-encrypted and accessible by the Department. Files in the .pdf format will not be accepted.**

- III.1 – Attach a statement that the monitoring and verification plan has adequately met all Department requirements.
- III.2 – Attach documentation of the full legal name, address, email address, telephone number, and facsimile transmission number of the owner and operator of the building where the offset project will occur. Provide the name, address, phone number, and e-mail of the facility manager for each building.
- III.3 – Attach documentation of the company name, contact name, phone number, and e-mail of all general or prime contractors, subcontractors, consultants, and vendors providing significant goods and services to the offset project. Provide the company name, contact name, address, phone number, license number, and e-mail of the professional engineer that has reviewed all project documentation included in and attached to the Consistency Application.
- III.4 – Attach all emissions reductions calculations. These calculations must include:
  - a. For each fuel type, enter baseline year and reporting year energy use, reporting year energy savings relative to baseline year energy use, and associated CO<sub>2</sub>emissions reductions (in lbs CO<sub>2</sub>). Enter the following:
    - i. Baseline Energy Use: Enter total annual baseline energy use by fuel type for all isolated end-uses or building systems targeted by eligible ECMs (MMBtu)
    - ii. Reporting Period Energy Use: Enter total annual reporting period energy use for all isolated end-uses or building system targeted by eligible ECMs (MMBtu)
    - iii. Energy Savings: Enter total annual reporting period energy savings relative to the baseline year for all isolated end-uses or building systems targeted by eligible ECMs (MMBtu)
    - iv. Emissions Reductions: Enter total annual reporting period CO<sub>2</sub> emissions reductions due to total annual energy savings, in lbs CO<sub>2</sub>, by applying the appropriate emissions and oxidation factors show in the example table below:
    - v. An example table is provided below:



	<i>Natural Gas</i>	<i>Propane</i>	<i>Fuel Oil</i>	<i>Kerosene</i>	<i>Other</i>
baseline fuel use					
post-installation use					
annual energy savings					
emissions factor	116.98	139.04	161.27	159.41	
oxidation factor	0.995	0.995	0.99	0.99	
emissions reductions					

b. Attach documentation supporting calculations of reporting year energy use and CO<sub>2</sub> emissions reductions. Documentation must include the following:

i. Documentation of Energy Monitoring Approach:

1. Provide narrative documentation of the energy monitoring procedures used to determine reporting period energy use, including demonstration of conformance with the appropriate guidelines and standards applicable to the building types included in the offset project, as follows:

a. Commercial Buildings:

- i. IPMVP, Volume I: Concepts and Options for Determining Energy and Water Savings, DOE/GO-102001-1187, Chapter 3, “Option B: Retrofit isolation” and “Option D: Calibrated Simulation”
- ii. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings

b. Commercial Buildings, where the only change to the building as part of the energy efficiency project involves eligible, ECMs included in the offset project:

- i. IPMVP, Volume I: Concepts and Options for Determining Energy and Water Savings, DOE/GO-1002001-1187, Chapter 3, “Option C: Whole Building”
- ii. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings

c. New Commercial Buildings:

- i. IPMVP: Concepts and Practices for Determining Energy Savings in New Construction, Volume III, Part I, Chapter 4, “Option D: Whole Building Calibrated Simulation,” EVO 30000-1: 2006
- ii. ASHRAE Guidelines 14-2002: Measurement of Energy and Demand Savings

d. Residential Buildings

- i. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”

2. Documentation of conformance with the above-listed references must include the following:

a. Clear identification of any data gaps and estimated or modeled data



- b. Documentation of all conditions that affect reporting period measurement (e.g., measurement process and equipment, weather, building occupancy, time of day)
  - 3. Note, for projects implementing similar measures in multiple residential buildings, a representative sampling of buildings may be used to determine reporting period energy use, rather than measurement of each building. If sampling was employed during the reporting period, attach a copy of the sampling protocol used that provides demonstration at a 95percent confidence interval that the reported value is within 10 percent of the true value. The sampling protocol and statistical method must include uncertainty at confidence interval calculations.
- ii. Reporting Year Energy Use Data: Provide documentation of reporting year energy use for each building included in the offset project, as outlined below:
  - 1. Commercial Buildings: For each building included in the offset project, provide total building fuel consumption data for the reporting year, by fuel type (MMBtu). For each building, provide records of whole-building metered energy use by fuel type for the reporting year and records of metered energy use, if available, for individual end-uses or building systems targeted by eligible ECMs.
  - 2. Low-Rise Residential Buildings: For each building included in the offset project, provide total building fuel consumption data for the reporting year, by fuel type (MMBtu). For each building, provide records of whole-building metered energy use by fuel type for the reporting year and records of metered energy use, if available, for individual end-uses or building systems targeted by eligible ECMs.
- iii. Isolation of Energy Use:
  - 1. Provide documentation of the isolation of energy use for each end-use or building system targeted by eligible ECMs as part of the offset project. Such isolation must ensure that each eligible ECM is isolated from all other eligible and non-eligible ECMs, as well as from overall building energy use. There are two options for isolation of energy use for end-uses or building systems targeted by eligible ECMs:
    - a. Direct metering of end-use or building system affected by eligible ECMs (note that if the only change to the building as part of the energy efficiency project involves eligible ECMs included in the offset project, metering of whole-building energy use is sufficient under this approach)
    - b. Use of energy simulation modeling to apportion building energy use to each end-use or building system affected by eligible ECMs
  - 2. For both of the above options, ECMs must be isolated from whole-building or whole-system energy use and also adjusted for areas where multiple ECMs interact with one another (required to avoid double-counting of ECM energy use) or where one ECM utilizes more than one eligible fuel type. Provide a narrative identifying the procedures used to isolate energy use for end-uses or building systems targeted by ECMs in conformance with the following guidelines and/or standard applicable to the building types included in the offset project, as follows:
    - a. Commercial Buildings:
      - i. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
      - ii. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings



b. Residential Buildings:

- i. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”

3. If energy simulation modeling is used to isolate energy use, provide the following documentation:

- a. Building simulation software input file, output file, and assumptions, on CD-ROM
- b. Copy of software manufacturer literature showing the modeling program name and version number
- c. Document demonstrating that software is BESTEST or RESNET certified, as applicable

iv. Adjustments to Reporting Year Energy Use:

1. Provide documentation of adjustments that were made to reporting year energy use to address operating and weather conditions. Provide documentation of measurement conditions during the reporting year that are unusual, or that changed between the baseline period and reporting period, and adjustment factors that were applied to reporting year energy use to account for such measurement conditions. Adjustments may address issues such as weather, building occupancy, and changes in building use or function. Provide documentation of adjustments applied to reporting year energy use in accordance with the following equation:

a.  $Energy\ Use\ (MMBtu) = EU_{AECM} \bullet A_b$

b. Where:

- i.  $EU_{AECM}$  = Annual energy use by fuel type (MMBtu) attributable to the application(s) targeted by the energy conservation measure(s)

- ii.  $A_b$  = Adjustments to account for any differing conditions during the two time periods (pre-installation and post-installation), such as weather (weather normalized energy usage based on heating and cooling degree days), building occupancy, and changes in building use or function. For commercial buildings, adjustments shall be consistent with the specifications of ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1-2007, Section 11 and Appendix G. For residential buildings, adjustments shall be consistent with the specifications of RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”

2. Provide documentation demonstrating that the application of any adjustments are consistent with the following guidelines and/or standards:

a. Commercial Buildings:



- i. ASHRAE Guideline 14-2002: Measurement of Energy and Demand Savings
- ii. ANSI/ASHRAE/IESNA Standard 90.1-2007: Energy Standard for Buildings Except Low-Rise Residential Buildings

b. Residential Buildings:

- i. RESNET 2006 Mortgage Industry National Home Energy Rating Systems Standards, “Chapter Three: National Energy Rating Technical Standards,” and “Appendix A: National Home Energy Rating Technical Guidelines, On-Site Inspection Procedures for Minimum Rated Features”

3. If any of the adjustments applied above required energy simulation modeling, provide the following documentation:

- a. Building simulation software input file, output file, and assumptions, on CD-ROM
- b. Copy of software manufacturer literature showing the modeling program name and version number
- c. Document demonstrating that software is BESTEST or RESNET certified, as applicable

v. Total Reporting Year Energy Use: Provide a spreadsheet documenting the calculation of total reporting year energy use. Reporting year energy use is the sum of energy use, by combustion fuel type, for all the isolated end-uses or building systems that are affected by ECMs included in the offset project. Reporting year energy use includes the application of any adjustment factors in accordance with III.4.b.iii (page 44 of 47 of this document).

vi. Reporting Year CO<sub>2</sub> Emissions: Provide a spreadsheet documenting the calculation of reporting year CO<sub>2</sub> emissions derived from energy use and associated fuel-specific emissions and oxidation factors. Use the following formula to calculate total (summed over all combustion fuel types) reporting year CO<sub>2</sub> emissions in lbs of CO<sub>2</sub>. Calculate each combustion fuel’s emissions contribution separately in accordance with the following equation:

$$1. \text{ Emissions (lbs CO}_2\text{)} = \sum_{i=1}^n (EU_i \cdot EF_i \cdot OF_i)$$

2. Where:

- a. EU<sub>i</sub> = Reporting year energy use for fuel type *i* (MMBtu)
- b. EF<sub>i</sub> = Emissions factor (lbs CO<sub>2</sub>/MMBtu) for fuel type *i* as shown below in Table 1
- c. OF<sub>i</sub> = Oxidation factor for fuel type *i* as shown below in Table 1

**Table 1. Emissions and Oxidation Factors**

Fuel	Emissions Factor (lbs. CO <sub>2</sub> /MMBtu)	Oxidation Factor
Natural Gas	116.98	0.995
Propane	139.04	0.995
Distillate Fuel Oil	161.27	0.99
Kerosene	159.41	0.99

- III.5 – Attach an annual monitoring and verification report, certified by the independent verifier, that includes the following:



- a. Documentation of Project Implementation: (Note: Only applicable to first monitoring and verification report for offset projects that were not completed at a time of consistency application submittal.) Attach documentation that all ECMs were implemented as specified in the Consistency Application. The following documentation must be provided, as applicable:
    - i. Documentation of Equipment and Materials Specifications: Provide final post-installation equipment and materials specifications for the as-installed offset project. See the documentation specifications provided in the instructions in I.8.e.
    - ii. Building Plans and Project Technical Schematics: Provide final post-installation building plans and technical schematics representing the as-installed offset project. See the documentation specifications provided in the instructions in I.8.f.i (page 28 of 47 of this document).
    - iii. Documentation of ECM Installation: Provide final post-installation documentation of ECM installation for the as-installed offset project. See the documentation specifications provided in the instructions in I.2.E.7.iii (page 18 of 47 of this document).
    - iv. HVAC Installation Best Practice: If applicable, provide documentation confirming application of the design intent statements provided in the Consistency Application. See the documentation specifications provided in the instructions in I.2.E.7.iv (page 19 of 47 of this document).
  - b. Quality Assurance/Quality Control (QA/QC) Report: Provide a QA/QC report documenting the activities conducted during the reporting period for QA/QC of project monitoring data and documentation in conformance with the QA/QC procedures specified in the monitoring and verification plan and summarizing findings and any remedial actions taken.
- III.6 – Attach all monitoring and verification reports signed by a professional engineer and identified by license number.
  - III.7 – Attach provisions for sampling multiple similar offset projects in residential buildings. For projects implementing similar measures in multiple residential buildings, a representative sampling of buildings may be used to determine baseline energy use, rather than measurement of each building. If sampling is employed, attach a copy of the sampling protocol that provides demonstration at the 95 percent confidence interval that the reported value is within 10 percent of the true value. The sampling protocol and statistical method must include uncertainty and confidence interval calculations.

**PROJECT SPONSOR SIGNATURE**

**Read and agree to the following by signing the Signature of Project Sponsor.**

**An original signature is required for the following:**

- Statement of Truth, Accuracy, and Completeness.

