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OVERVIEW

This User Guide is designed to give a comprehensive overview of how to put together a PACE project under programs administered by the Texas PACE Authority (TPA). TPA operates using an open-market model under the framework of the PACE in a Box program design. This guide is a working document and is updated frequently. Please direct any questions or comments to admin@texaspaceauthority.org.

HOW PACE PROJECTS ARE ASSESSED

The primary activity of the Texas PACE Authority will be in reviewing and approving applications for PACE assessments. The application review process is based on the PACE in a Box model which was developed by stakeholder groups in the aftermath of the passing of the PACE statute.

REVIEW PROCESS

A detailed application process explanation is included in this guide which lists the steps and relevant personnel in reviewing a project application. The general process of applying for PACE financing is shown below. The application process consists broadly of a technical review component and an underwriting review component.

TECHNICAL REVIEW

The technical methodology incorporated into the review process relies primarily upon the Investor Confidence Project (ICP) - Energy Performance Protocols (EPP) for Standard and Large Commercial Facilities. The ICP EPP contain processes that form a framework for bringing together all aspects of project implementation from establishing a baseline and audit, through M&V. They have been created by a large stakeholder community of industry experts and are continuously reviewed and improved. TPA relies on the EPP because they are the result of a nationwide effort to standardize the technical review of energy efficiency projects to bring uniformity and reliability on a national scale. The EPP help ensure that conservation measures are evaluated consistently throughout the state and create a national standard for lender review of PACE projects. More information can be found in the Technical Standards Manual, also included in this guide.

PROTOCOL

All projects must first determine what category of technical review they fall under. All projects will involve either a Fast Track review or Full Assessment protocol. Technical reviews are based on the ICP standards. The Full Assessment Protocol divides an energy/water conservation project into three basic tasks:

1. Establish energy and water baseline conditions
2. Create an Energy/Water Assessment Report
3. Implement the Project

The Fast Track uses a simpler analysis, and is suitable for three types of projects:

- **Like-for-Like Replacement** - involves like-for-like replacement of energy/water inefficient equipment with more energy/water efficient equipment.
- **Single-Measure Efficiency Projects** – installation of single efficiency measures such as window film, additional insulation, or reflective roof coating.
- **Distributed Renewable Generation** - installation of an industry accepted renewable energy system such as solar photovoltaic (PV).

**SAVINGS TO INVESTMENT RATIO**

The key metric in evaluating a PACE project is the Savings to Investment Ratio (SIR). In Texas, PACE projects generally must show an SIR>1 in order to be approved by TPA. This means that over the life of the assessment, the savings from the project are likely to be greater than the cost of the assessment (including financing). This logically requires that all projects must have a robust savings projection, which must be validated by a third party reviewer.

Example: HVAC and Light improvements

<table>
<thead>
<tr>
<th>Project Cost</th>
<th>Project Savings</th>
<th>Savings to Investment Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,000,000</td>
<td>$1,500,000</td>
<td>$1,500,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$1,000,000</td>
</tr>
</tbody>
</table>

= SIR 1.5

Note that TPA does not guarantee savings, and there is no recourse on the administrator or the local government if savings do not materialize. The issue of long-term project performance is best dealt with between the owner, contractor, and lender.

**USEFUL LIFE**

The term of the PACE assessment is limited by the useful life of the improvements, or in the case of multiple improvements, the weighted average useful life. This is calculated on a cost basis.

Example: HVAC and Light improvements

<table>
<thead>
<tr>
<th>HVAC</th>
<th>Lights</th>
</tr>
</thead>
<tbody>
<tr>
<td>$500,000</td>
<td>$100,000</td>
</tr>
</tbody>
</table>

HVAC - $500,000 and useful life 20 years
Lights - $100,000 and useful life 10 years
Weighted Average  
\[(\$500,000)(20 \text{ years}) + (\$100,000)(10 \text{ years}) = 10,000,000 \text{ yrs} + 1,000,000 \text{ yrs}\]

Projected Life  
\[(\$500,000 + \$100,000) = \$600,000\]

\[= 18.3 \text{ years}\]

**INDEPENDENT THIRD PARTY REVIEWER**

To successfully complete a PACE application, all projects must be accompanied by an audit from an Independent Third Party Reviewer (ITPR). To be of value, the work of the ITPR must be both professionally qualified and without conflict or relationship to the project they are reviewing. An ITPR must be a licensed Professional Engineer with energy/water efficiency experience. The Professional Engineer should have one of the following certifications:

- American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE)
  - Building Energy Assessment Professional (BEAP)
  - Building Energy Modeling Professional
- Association of Energy Engineers (AEE)
  - Certified Energy Manager (CEM)
  - Certified Measurement and Verification Professional (CMVP)
  - Certified Energy Auditor (CEA)
- Building Commissioning Association
  - Certified Commissioning Professional
- Investor Confidence Project
  - Credentialed Quality Assurance Provider

Ideally, the same ITPR should follow a project from initial review to project completion. TPA maintains a list of ITPRs who are qualified and familiar with PACE projects and encourages applicants to use an established ITPR. The ITPR must have a site visit both before and after the project is installed.

“The independent reviewer is required to protect the property owner, the lender, and the administrator. It’s all about reducing risk.”

- ITPR Professional
UNDERWRITING REVIEW

Every project will also undergo a financial and underwriting review of the applicant’s solvency and ability to repay the PACE assessment. TPA will require a list of documents to be submitted, as well as require information from the lender verifying the applicant’s credit worthiness. These documents can be found in Appendix B.

QUALIFIED LENDERS

PACE lending in Texas is open-market; the property owner can choose their own capital provider. Eligible third-party lenders may include:

- Any federally insured depository institution such as a bank, savings bank, savings and loan association and federal or state credit union;
- Any insurance company authorized to conduct business in one or more states;
- Any registered investment company, registered business development company, or a Small Business Administration small business investment company;
- Any publicly traded entity; or
- Any private entity that:
  - Has a minimum net worth of $5 million;
  - Has at least three years’ experience in business or industrial lending or commercial real estate lending (including multifamily lending), or has a lending officer that has at least three years’ experience in business or industrial lending or commercial real estate lending; and
  - Can provide independent certification as to availability of funds.

TPA maintains a list of lenders who meet these qualifications and are familiar with PACE projects and encourages applicants to choose a lender familiar with PACE. This lender list can be found at:

www.texaspaceauthority.org/lender-list

“Choose a Lender familiar with PACE. Your lender will help you manage all the financial details of getting your project to closing.”

- Qualified Lender
ADMINISTRATION PROGRAM

ADMINISTRATIVE FEES

The goal of the TPA is to have a well-funded, efficient, and financially healthy organization, while keeping costs to a minimum and operating in a lean fashion. To that ends, initially the TPA will charge two types of fees as part of administration, an application fee and an ongoing interest rate residual. These fees cover the basic administrative service to complete a PACE project as well as the ongoing reporting program to municipalities that enact a PACE district.

➢ Application Fee
  - Amounting to 1% of total project cost
  - Initial $500 to be paid at application. Balance to be paid as part of loan closing as an origination fee.

➢ Ongoing Residual Fee
  - Amounting to 25 basis point interest rate adder.
  - To be paid as part of annual assessment.
  - Note: This fee can be capitalized and paid in full at closing.
  - This fee can be paid by check or by draft.

SCHEDULE OF ADMINISTRATIVE SERVICES

The following are included as part of the administrative fee:

☐ Application intake and review for administrative/statutory completeness
☐ ITPR support, before and after construction (Owner funded)
☐ Pre-Qualification Letter to Property Owner
☐ Underwriting review of submitted documents
☐ Technical review of submitted documents
☐ Preparation of Mortgagee Consent Letter
☐ Preparation of Owner Contract and Lender Contract
☐ Participation in closing
☐ Filing of Assessment Lien
☐ Engagement of ongoing annual reporting plan
WHAT CAN BE INCLUDED IN THE ASSESSMENT

The goal of PACE financing is that no out of pocket costs are required by the owner. To that end, the final PACE assessment can include:

- The cost of materials and labor necessary for the installation of a qualified improvement;
- Permit fees;
- Inspection fees;
- Lender’s fees;
- Program application and administrative fees;
- Project development and engineering fees;
- ITPR fees, including verification fees;
- Any other fees or costs that may be incurred by the property owner incidental to the installation, modification, or improvement (limited to no more than 20% of the total assessment);
- Legal, consulting and other fees on an actual cost basis; and
- Changes to the existing property that are incidental to the installation (limited to no more than 20% of the total assessment)
PACE PROJECT PROCESS

Here we detail the steps involved in putting together a PACE project.

TASK: DETERMINE PROJECT ELIGIBILITY

First, you should determine if you have an eligible project. TPA maintains an Eligibility Assessment tool on its website where you can answer a number of questions and determine if your project is likely to be eligible. The eligibility criteria are as follows:

ELIGIBLE PROPERTIES

- Commercial real property – including non-profit real property such as private schools, medical facilities, churches, etc.
- Industrial real property – including privately owned agricultural real property
- Residential real property with five or more dwelling units.

NOTE: Nonprofit properties, such as charter schools, private hospitals, and houses of worship, are eligible to use PACE financing.

ELIGIBLE PROJECTS

The PACE Act authorizes PACE funding for the installation of Qualified Improvements. Qualified improvements must:

- Be permanently fixed to the real property;
- Have a demonstrated capacity to decrease –
  - Water consumption or demand; and/or
  - Energy consumption or demand (includes renewables and distributed generation products or devices on the customer’s side of the meter that use energy technology to generate electricity, provide thermal energy, or regulate temperature);
- Have a useful life that exceeds the term of the PACE financing agreement.

INELIGIBLE PROJECTS

The most notable ineligible projects are:
- Residential property (i.e., single family homes, as opposed to multifamily with five or more units)
- Government owned property (including public Universities and school districts)
- New construction (i.e. greenfield)
**TASK: PRE-AUDIT AND DETERMINE PROJECT SCOPE**

Before investing effort in a PACE project, you should first determine if the project is likely to have an SIR greater than one. This requires a rough draft calculation (normally a desktop audit) of what technologies are being proposed and what the savings are that they are likely to result in. The best PACE projects encompass multiple measures in a holistic look at a building retrofit. We encourage you to look across silos at a suite of technologies and upgrade the entire building all at once. TPA or a PACE developer can help you determine what those most promising technologies are likely to be.

Also, TPA has partnered with the US Green Building Council’s Texas Green Building Marketplace for providing a directory of PACE service providers. After attending a training workshop, a firm can receive a listing. The directory can be found at: [http://texasgreenbuildingmarketplace.org/listing/guide/pace-related](http://texasgreenbuildingmarketplace.org/listing/guide/pace-related)

**TASK: DETERMINE LENDER**

PACE in Texas is open-market, and consequently a wide range of parties can make PACE loans. The decision of the capital provider is ultimately up to the property owner; however, there is great benefit in choosing a lender with PACE experience. In many cases, lenders will manage the various tasks associated with a project and ensure that the process is smooth and efficient.

TPA maintains a list of qualified lenders on its website. Although we do not endorse any of these parties, they are all familiar with PACE and ready to lend on PACE projects. This list can be found at: [http://www.texaspaceauthority.org/home/lender-list/](http://www.texaspaceauthority.org/home/lender-list/)

**TASK: PREPARE APPLICATION AND GATHER REQUIRED DOCUMENTS**

A PACE project requires an application to TPA. In addition, TPA will verify potential projects to make sure they meet all statutory requirements. Here again, your PACE lender can help manage this process, as most if not all of what TPA requires will also be required by the lender. See Appendix B for the PACE application and list of what documents will need to be submitted to complete application review.

**TASK: OBTAIN MORTGAGEE CONSENT**

If a property has an existing mortgage, the holder of the mortgage must consent to a PACE assessment being placed on the property. While this requirement may at first seem daunting, the reality is that a majority of commercial PACE projects involve consent, and this consent can be obtained if you make a thorough business case for it. Here, your PACE lender can and should help you get consent. There are many reasons, and to date over 100 mortgage lenders have found that approving PACE funded projects makes sense.
• Relationships matter. Every PACE project involves a lender’s customer who wants or needs to complete an energy or water related project, such as the installation of solar panels that will reduce or eliminate the cost of purchased electricity or the purchase of a more efficient heating and cooling system to replace one that is obsolete or failing. PACE funded projects make good business sense for the building owner, and therefore, the building’s mortgage lender.

• Lenders already factor property taxes and assessments into their underwriting models. Some lenders begin their PACE analysis by seeing how the incremental PACE assessment would effect a lending decision. If adding the PACE assessment wouldn’t cause the building to exceed established parameters for lending, there should be no reason to object to the use of PACE funding for a project that makes sense.

• PACE projects can increase the debt coverage ratio for mortgage lenders. Unlike other property tax based assessments, PACE projects directly reduce a building’s operating costs. Coupled with long-term PACE funding, PACE projects can result in energy or water cost savings that exceed the amount of the annual PACE assessment, increasing cash flow and a corresponding increase in the debt coverage ratio.

• Because real estate value is based on net operating income, the increased cash flow from PACE projects actually increase a building’s collateral value to the mortgage lender.

• PACE assessments do not accelerate upon default. This means that only the current or past due portion of a PACE financing is ever senior to a mortgage lender’s claim. The increase in property value resulting from PACE project savings will more than offset this fractional amount of the total project cost.

TASK: ENGAGE A THIRD PARTY REVIEWER

As already discussed, all PACE projects must be reviewed by an independent third party to validate projected savings. TPA or your PACE lender can help connect you with an appropriate reviewer. The review component will consist of 2 parts:

• “Before” analysis – the ITPR will review the project, assumptions, and projected savings
• “After” verification – the ITPR will verify that the project was completed and is operating as intended

To see the forms that must be submitted with the ITPRs report, see Appendix B.
**TASK: VALIDATE PROJECT SAVINGS**

The ITPR once selected will execute a review of the project savings and determine if the savings are reasonable.

**TASK: CLOSE ON LOAN**

PACE requires a set of contracts be put in place, wherein the property owner voluntarily agrees to the assessment and wherein the local government assigns the proceeds to the assessment to the PACE lender. TPA will put these contracts together, and at the closing of the loan will have them executed. After the loan closes, TPA will then ensure the filing of the assessment lien on the property. The legal documents as part of a PACE project are:

- Owner and Local Government Contract
- Lender and Local Government Contract
- Assessment Lien
- Mortgagee Consent (If Applicable)

**TASK: VERIFY INSTALLATION**

After project completion, the ITPR will visit the site one final time to verify completion and that the project is operating as intended. Note that long-term Measurement and Verification as traditionally defined is *recommended, but not required*, in Texas. ICP requires a M&V plan to exist and recommends following it, but there is no mandate to follow the plan.
SAMPLE PROJECT TIMELINE

In general, project speed will be driven by the diligence of the contractor and energy engineer, not the administrator. For reference, a sample project timeline is below. This timeline could be quickened depending on the diligence of the property owner and the contractor.

<table>
<thead>
<tr>
<th>Date</th>
<th>Task</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1</td>
<td>Begin Data Collection/Baseline</td>
<td>CTR</td>
</tr>
<tr>
<td>1/15</td>
<td>Begin Energy/Water modeling</td>
<td>CTR</td>
</tr>
<tr>
<td>2/15</td>
<td>Begin Project Pre-design and underwriting</td>
<td>PO/CTR/LND</td>
</tr>
<tr>
<td></td>
<td>Application Submittal in conjunction with Lender</td>
<td>LND</td>
</tr>
<tr>
<td>3/1</td>
<td><strong>All documents are submitted, including Pro Forma model &lt; see Required Documentation Checklist &gt;</strong></td>
<td>PO</td>
</tr>
<tr>
<td>3/10</td>
<td>Pre-Qualification Letter to Property Owner</td>
<td>TPA</td>
</tr>
<tr>
<td></td>
<td>Mortgagee Consent Letter provided to Property Owner</td>
<td>TPA</td>
</tr>
<tr>
<td>3/15</td>
<td>Engage ITPR</td>
<td>PO</td>
</tr>
<tr>
<td></td>
<td>Detailed Engineering Begins</td>
<td>CTR</td>
</tr>
<tr>
<td>4/1</td>
<td>ITPR Review Complete – Certificate submitted</td>
<td>TPA/ITPR</td>
</tr>
<tr>
<td></td>
<td>Lender Underwriting Complete</td>
<td>LND</td>
</tr>
<tr>
<td>4/5</td>
<td>Mortgagee Consent Letter Returned</td>
<td>PO</td>
</tr>
<tr>
<td></td>
<td>Final Application Approval/Notice to Proceed to Closing</td>
<td>TPA</td>
</tr>
<tr>
<td>4/10</td>
<td>Closing</td>
<td>TPA/PO/LND</td>
</tr>
<tr>
<td></td>
<td>Contracts with County signed</td>
<td>TPA/PO/LND</td>
</tr>
<tr>
<td></td>
<td>Assessment Lien filed, verification sent, Notice to Proceed with Construction sent to Property Owner</td>
<td>TPA</td>
</tr>
<tr>
<td>4/11</td>
<td>Project Construction commences</td>
<td>PO/CTR</td>
</tr>
<tr>
<td>6/1</td>
<td>Construction Complete</td>
<td>PO/CTR</td>
</tr>
<tr>
<td></td>
<td>ITPR Installation Verification – Certificate submitted</td>
<td>TPA/ITPR</td>
</tr>
<tr>
<td>6/10</td>
<td>Completion Certificates Issued to County and Lender</td>
<td>TPA</td>
</tr>
</tbody>
</table>
RESOURCES

Below we have included a number of relevant links to resources that you may find useful.

- Texas PACE Authority - http://www.texaspaceauthority.org/
  - http://www.texaspaceauthority.org/for-your-business/
  - http://www.texaspaceauthority.org/for-contractors/
  - http://www.texaspaceauthority.org/for-lenders/

- PACE Animation Video:
  - https://www.youtube.com/watch?v=5gnN72buvw4&feature=youtu.be

- Expansion and Keeping PACE in Texas:
  - http://www.keepingpaceintexas.org/links-and-resources/
  - Charlene.heydinger@keepPace.org

- Program Contacts:
  - Jonathon.Blackburn@texaspaceauthority.org
  - peter@texaspaceauthority.org

- Texas Green Building Marketplace:
  - http://texasgreenbuildingmarketplace.org/listing/guide/pace-related

- Questions
  - admin@texaspaceauthority.org
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OVERVIEW

For any PACE program to succeed, its property owners, lenders, and community leaders must be able to confidently and objectively evaluate projected energy and water utility savings. The purpose of this technical standards manual is to outline the technical requirements necessary to qualify a project for the PACE in a Box program.

Once a project satisfies all underwriting requirements of PACE in a Box, it must meet three technical requirements outlined in this manual. First, the property’s current water and energy use is measured so that a baseline for comparison is established. Second, each potential energy or water conserving measure is evaluated to determine projected savings compared to the baseline in a technically sound, consistent and transparent manner. Findings from these two steps together are compiled in a document referred to as an energy /water assessment report. PACE law requires that each report is evaluated by an independent third party reviewer (ITPR). Third, after the project retrofit activities are completed, the project must be reviewed by the ITPR to ensure that the project meets the intent of the energy/water assessment report, is properly completed, and is operating as intended.

On their own initiative, property owners are encouraged to maintain the retrofits to ensure they receive the ongoing and full benefit of the improvements over time. Best practices are discussed further in the PACE Technical Standards Best Practices Guide for Property Owners.

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1 See PACE in a Box Section 6.
2 See PACE in a Box Section 8
REFERENCE MATERIALS

Accepted methods for data collection, measurement, and savings calculations should be used on proposed projects. This manual references several technical documents which will assist in determining pre-retrofit energy and water consumption, predicting retrofit energy and water savings, and verifying whether an installed measure or group of measures is performing as intended.

The technical methodology incorporated into the review process relies primarily upon the PACE in a Box (Section 6 – Guide to PACE Project Underwriting and Technical Standards) guidelines and the Investor Confidence Project (ICP) - Energy Performance Protocols (EPP) for Standard and Large Commercial Facilities. Should there be a condition where the guidelines and the protocols are in conflict, the guidelines should be followed.

The ICP EPP contain processes that form a framework for bringing together all aspects of project implementation from establishing a baseline and audit, through M&V. They have been created by a large stakeholder community of industry experts and are continuously reviewed and improved. PACE in a Box relies on the EPP because they are the result of a nationwide effort to standardize the technical review of energy efficiency projects to bring uniformity and reliability on a national scale. The EPP help ensure that conservation measures are evaluated consistently throughout the state and create a national standard for lender review of PACE projects.

The EPP technical processes are based on nationally accepted standards. The technical standards in EPP relating to baseline determination/calculation, performing energy assessments, and guidelines for performance measurement and verification of energy and water conservation measures respectively are:

- American Society for Testing and Materials (ASTM) E2797-11, Building Energy Performance Assessment (BEPA) Standard (data collection and baseline calculations for the energy audit, building asset data);
- International Performance Measurement and Verification Protocol (IPMVP) (latest edition);
- American National Standards Institute/Building Owners and Managers Association (ANSI/BOMA) Z65.3-2009 (gross floor area measurement);
- ASHRAE Guideline 14-2002 (measurement of energy and demand savings);
- ASHRAE Procedures for Commercial Building Energy Audits (latest edition);
- National Institute of Standards and Technology (NIST) Life-Cycle Costing Manual, NIST Handbook 135 (latest edition);

3 http://www.eeperformance.org
- ASHRAE Standard 202, Commissioning Process for Buildings and Systems (latest edition);
- ASHRAE Guideline 4, Preparation of Operating and Maintenance Documentation for Building Systems (latest edition);
- ASHRAE Guideline 1.4, The Systems Manual for Facilities; (latest edition);
- ASHRAE Handbook-2011, Fundamentals, Chapter 39 (Codes and Standards); and

Other acknowledged resources that may be considered are:

- The Alliance for Water Efficiency (AWE) Conservation Tracking Tool; and
- EPA WaterSense Product Guide.
INDEPENDENT THIRD PARTY MONITORING

The Texas PACE law requires an independent third party to review the water or energy baseline conditions and the projected water or energy savings for each proposed qualified project. It is the responsibility of the Independent Third Party Reviewer (ITPR) to validate projected future energy or water savings. Additionally, after a qualified project is completed, the ITPR must verify that the qualified project was properly completed and is operating as intended. This requirement provides assurances to the PACE in a Box program, the property owner, and the lender that due diligence has been executed, that a standard of consistency has been applied throughout the PACE process, and that a professional licensed engineer has validated the expected energy and water savings from the proposed project.

THIRD PARTY REVIEW PROCESS

SITE VISIT 1 / REVIEWER’S CERTIFICATION

Once an engineer, contractor or installer has prepared an energy/water assessment report, a qualified ITPR selected by the property owner makes a site visit and reviews the energy/water assessment report using the EPP to determine if the report complies with PACE in a Box guidelines. When the project is deemed compliant with EPP/Pace in a Box guidelines, the ITPR prepares a Reviewer’s Certification to the PACE program. The Reviewer’s Certification shall include:

- A statement that the ITPR has no financial interest in the project.
- A letter stating the savings (energy, demand, water, and cost) expected project life, and cost are reasonable, are in compliance with PACE in a Box program guidelines, and follow the EPP protocols.
- A Texas Professional Engineer signature and engineering seal.

An application for PACE financing will not be considered complete until Reviewer’s Certification is submitted.

SITE VISIT 2 / STATEMENT OF COMPLIANCE

Once the project retrofit activities have been completed, the ITPR must revisit the site to confirm that the improvements were properly installed, meet EPP guidelines, and are operating as intended. The reviewer must submit a Statement of Compliance to the

---

4 Texas Local Government Code Chapter 399.011
PACE program indicating that the project was properly completed and is operating in accordance with the PACE in a Box guidelines.

The Statement of Compliance shall include:

- A statement that the ITPR has no financial interest in the project;
- A project documentation review letter that covers the PACE Project Report, detailed engineering drawings, designs, and specifications, copies of mechanical, electrical, plumbing, and building permits, and copies of equipment test and balance commissioning reports as well as any change orders; and
- A Texas Professional Engineer signature and engineering seal.

Retainage funding for the qualified project will not be provided for progress beyond the construction phase, if applicable, until the Statement of Compliance is received by the PACE program.

The process described above is required by PACE in a Box. The PACE program does not guarantee projected savings, and it is the responsibility of the property owner to exercise best practices to protect his interests through a contract with the engineer, contractor or installer responsible for the project’s success as recommended in the energy/water assessment report.5

**INDEPENDENT THIRD PARTY REVIEWER QUALIFICATIONS**

To be of value, the work of the ITPR must be both professionally qualified and without conflict or relationship to the project they are reviewing. An ITPR must be a licensed Professional Engineer with energy/water efficiency experience. Preferably, the Professional Engineer should have one of the following certifications:

- American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE)
  - Building Energy Assessment Professional (BEAP)
  - Building Energy Modeling Professional (BEMP)
- Association of Energy Engineers (AEE)
  - Certified Energy Manager (CEM)
  - Certified Measurement and Verification Professional (CMVP)
  - Certified Energy Auditor (CEA)
- Building Commissioning Association
  - Certified Commissioning Professional (CCP)

5 See PACE in a Box Technical Best Practices Guide in Section 8
Ideally, the same ITPR should follow a project from initial review to project completion.

**FULL ASSESSMENT PROTOCOL**

A project satisfying the underwriting requirements in *PACE in a Box* must also satisfy the Technical Standards required in this manual. This section establishes the basic protocol for complying with *PACE in a Box* technical standards. A proposed project qualifying for a FAST TRACK Protocol established in Section IV, shall use the technical standards in that section.

The Full Assessment Protocol divides an energy/water conservation project into four basic tasks:

1. Establish a Baseline. Establish energy and water baseline conditions (collecting utility provider information, consumption and cost data);
2. Prepare an Energy and Water Assessment. Create an Energy/Water Assessment Report (projecting savings of proposed projects when measured against the baseline data);
3. Implement the Project (installation of energy conservation measures (ECM) and/or water conservation measures (WCM)); and
4. Verify Completion and Operation. Verification that the qualified project was properly completed and is operating as intended.

Projects can range from installation of a single ECM or WCM, such as a new high efficiency boiler, installation of low-flow toilets, or a renewable energy system, to a whole building energy and water upgrade involving multiple, interactive ECMs and WCMs. Many projects will also achieve both energy and water savings, such as an energy efficiency measure that reduces heat load, thereby also reducing cooling tower water use.

**ESTABLISH A BASELINE**

A sound energy and water usage baseline consists of collecting the utility provider information and establishing the critical starting point for accurate projection of potential savings and measurement after implementing ECMs/WCMs. The baseline establishes how much fuel, electricity, and/or water a facility used over the previous 12-month period. It also factors in the impact of independent variables such as weather, occupancy, and operating hours on the property’s energy/water use.

For the majority of energy projects, the requirements for establishing a baseline are
outlined in the ICP EPP. These protocols currently target energy measures in commercial facilities, but are readily adapted to other projects including applicable areas of industrial and agricultural energy as well as water conservation. The EPP provide a roadmap for key elements in performing a successful energy/water retrofit project.

For water conservation projects, the requirements for establishing a baseline are outlined in Federal Energy Management Program’s M&V Guidelines: Measurement and Verification for Federal Energy Projects, Version 2.2/3.0. The M&V Guidelines provide applied methodologies for baseline accomplishment. At this time, these protocols do not provide a high level of detail for baselining water efficiency projects. As future nationally recognized protocols are developed, the PACE Technical Standards will be updated for water projects.

The following table outlines which protocols should be used for establishing a baseline based on facility, project type, and scope.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Full Assessment Requirements</th>
</tr>
</thead>
</table>
| Standard Commercial / Multifamily | Energy: ICP EPP - Standard Commercial (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data)  
Water: M&V Guidelines v2.2 (Sec VII, p203)* |
| Large Commercial / Multifamily   | Energy: ICP EPP - Large Commercial (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data)  
Water: M&V Guidelines v2.2 (Sec VII, p203)* |
| Industrial (Facility)              | Energy: ICP EPP - Large Commercial (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data)  
Water: ICP EPP - Large Commercial (Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data) |
| Agricultural (Facility)            | Energy: ICP EPP - Standard Commercial, ICP EPP - Large Commercial  
(Baselining –Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data)  
Water: ICP EPP - Standard Commercial, ICP EPP - Large Commercial  
(Baselining – Core Requirements, Rate Analysis, Demand, Load Profile, Interval Data) |

6 For purposes of the PACE in a Box Technical Standards, the Term “Distributed Generation” includes energy generation technologies such as CHP, co-generation, small wind, solar, and biomass systems that generate electricity on the customer’s side.
The protocols listed above are intended as minimum requirements for an energy and water assessment report to be considered for funding.

**ENERGY AND WATER AUDIT**

The EPP rely upon industry accepted ASHRAE Procedures for Commercial Building Energy Assessment as a technical basis. These procedures define the level of effort for energy audits and provide best practices for auditors and associated project deliverables. ASHRAE also provides necessary sample audit forms and templates for data collection during the audit process.

The level of audit selected is contingent on the complexity of the facility and its installed systems and components, as well as the number and types of anticipated energy and/or water saving opportunities. Information collected during the energy/water audit is integral in determining the facility energy/water baseline conditions. The auditor will also identify energy and water savings opportunities which meet threshold investment requirements and provide verifiable energy and water savings while conducting the audit.

**INDUSTRIAL AND AGRICULTURAL PROJECTS**

For industrial and agricultural projects, an ECM/WCM may affect the facility, a process or equipment used within the facility, or a distinct area outside the facility. Depending on the project, a different protocol shall be used. See Exhibit A for Industrial Protocols and Exhibit B for Agricultural Protocols.

**DISTRIBUTED GENERATION (DG)**

DG projects have no pre-retrofit conditions as typically encountered in an energy conservation project. Since DG delivers energy rather than conserves or reduces energy, establishing a pre-retrofit baseline is not a strict project requirement. Metering of delivered energy without a baseline is often recommended in the M&V approach.

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of the retail electric meter and technologies such as solar water heating and geothermal heat pumps that utilize renewable energy resources to reduce electricity consumption and demand.
DG protocol requirements can be found in *IPMVP Concepts and Practices for Determining Energy Savings in Renewable Energy Technologies Applications Volume III; August 2003*. Other specific information relevant to DG measurement and verification can be found in *IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012*.

**PRIOR AUDIT**

A prior ASHRAE Level II or Level III energy/water audit may be used provided that it was completed within the last three (3) years and that:

- Specific ECMs/WCMs were detailed in the audit and are still viable;
- Energy / water savings were projected for each proposed ECM/WCM;
- Any major facility renovations and/or building additions that occurred after the last audit do not negate relevant findings of the prior audit; and
- Changes in facility equipment and/or facility end-use do not negate findings of the prior audit.

The level of effort associated with updating the project baseline is dependent on the date of prior audit. If the audit is older than six months, additional energy/water use data will be available, and must be included in the updated audit.

In the case where a previous audit was completed in the last six months, savings calculations may be taken directly from the report if applicable. For older energy/water audits, still within the three year allowable time frame, the following items must be verified and accounted for in updated savings calculations:

- Any change in energy/water and/or demand rates or billing structure;
- Any change to existing facility, system, or project area that significantly affects savings; and
- Any change in building use and/or occupancy that significantly affects savings.

**PROJECTED SAVINGS**

EPP provide processes that should be used in projecting energy and water conservation savings. Models, spreadsheets, and similar tools must be based on “open book” methodology with sufficient explanation and documentation that savings calculations are transparent and results are readily verifiable. The use of “closed book” calculation methods or proprietary software is prohibited unless all methodologies associated with
their use are well documented by transparent savings calculations and readily verifiable results.

The following table outlines the protocols that should be used to determine projected savings.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Full Assessment Requirements</th>
</tr>
</thead>
</table>
| Standard Commercial / Multifamily | Energy:  [ICP EPP - Standard Commercial](#) (Savings Calculation)  
Water:  [M&V Guidelines v3.0](#) (Sec 11.6)* |
| Large Commercial / Multifamily | Energy:  [ICP EPP - Large Commercial](#) (Savings Calculation)  
Water:  [M&V Guidelines v3.0](#) (Sec 11.6)* |
| Industrial (Facility)          | Energy:  [ICP EPP - Large Commercial](#) (Savings Calculation)  
Water:  [M&V Guidelines v3.0](#) (Sec 11.6)* |
| Agricultural (Facility)        | Energy:  ICP EPP - Standard Commercial, ICP EPP - Large Commercial  
Water:  [M&V Guidelines v3.0](#) (Sec 11.6)* |
Water:  [IPMVP Concepts and Options for Determining Energy and Water Savings](#), 2012 (Section 4) |


The protocols listed above are intended as minimum requirements for an energy assessment report to be considered for funding.

**VERIFYING COMPLETION AND OPERATION**

The Texas PACE law states, “After a qualified project is completed, the local government shall obtain verification that the qualified project was properly completed and is operating as intended.” The following table outlines the protocols that should be used for verifying proper project completion and operation.

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>Full Assessment Requirements</th>
</tr>
</thead>
</table>
| Standard Commercial / Multifamily | Energy:  [ICP EPP - Standard Commercial](#) (Operations, Maintenance, and Monitoring, Measurement and Verification)  
Water:  [M&V Guidelines v3.0](#) (Sec 11.6)* |
| Large Commercial / Multifamily | Energy:  [ICP EPP - Large Commercial](#) (Operations, Maintenance, and Monitoring, Measurement and Verification)  
Water:  [M&V Guidelines v3.0](#) (Sec 11.6)* |

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7 Texas Local Government Code chapter §399.011(b)
<table>
<thead>
<tr>
<th>Category</th>
<th>Energy</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial (Facility)</td>
<td>ICP EPP - Large Commercial (Operations, Maintenance, and Monitoring, Measurement and Verification)</td>
<td>M&amp;V Guidelines v3.0 (Sec 11.6)*</td>
</tr>
<tr>
<td>Agricultural (Facility)</td>
<td>ICP EPP - Standard Commercial (pgs. 19-22), ICP EPP - Large Commercial (Operations, Maintenance, and Monitoring, Measurement and Verification)</td>
<td>M&amp;V Guidelines v3.0 (Sec 11.6)*</td>
</tr>
</tbody>
</table>

**FAST TRACK APPROACH**

The FAST TRACK approach allows for faster implementation of projects. These projects must meet specific eligibility criteria in order to utilize the FAST TRACK process. The FAST TRACK approach reduces project expenses associated with audit costs and, in some cases, the time required to review the proposed project. The property owner and contractor must decide whether the project qualifies for the FAST TRACK approach and whether this approach is applicable. For those projects that do not qualify under the FAST TRACK eligibility criteria, the FULL ASSESSMENT protocols are required. The qualifications for an ITPR under the FAST TRACK approach are the same as qualifications for a FULL ASSESSMENT.

The FAST TRACK approach is deemed relevant and appropriate for the three (3) project types specified below. The required procedures and documentation are unique to each project.

**Type 1 – Like-for-Like Replacement.** The FAST TRACK approach may be used for a project that involves like-for-like replacement of energy/water inefficient equipment with more energy/water efficient equipment. Examples may include a lighting retrofit or A/C unit upgrade.

**Type 2 – Single-Measure Efficiency Projects.** The FAST TRACK approach may be used for projects that install single efficiency measures such as window film, additional insulation, or reflective roof coating.

**Type 3 - Distributed Renewable Generation.** The FAST TRACK approach may be used for a project that involves only the installation of an industry accepted renewable energy system such as solar photovoltaic (PV).

Projects that fall within the above criteria do not qualify for the FAST TRACK approach if the project value to building appraisal ratio exceeds 0.10 (10%).

**ESTABLISHING A BASELINE**

The following information is required to establish a baseline for a FAST TRACK approach project.

**Site Visit**

- Confirm building characteristics and major components
- Records collection (equipment, systems, utilities)
Staff/occupant interviews
Walk-through inspection (written and photo documentation)
Verification of all collected information by a third party reviewer

Records/Data Collection

- Building construction data
- Equipment data – HVAC, etc.
- Building operating data
- Energy consumption data
- Water consumption data
- Weather data
- Previous audit reports

Note: Not all items listed will be applicable. Data collected is at the discretion of the professional performing the baseline work and subject to third party review.

Pertinent Interviews (optional)

- Concerning general building characteristics
- Operations of major building systems/components
- Past building operational history (service call logs)

Note: Verification of all collected information is required as part of the Site Visit to determine if there has been significant change; if verified, it is not necessary to conduct repeat interviews.

Review/Analysis of Collected Materials

- Data conversion and normalization
- Determine building energy and water consumption metrics
- Perform modeling and simulation as applicable
- Determine renewable energy system production as applicable

Preparation of Final Assessment Report

- Includes building energy/ water cost and performance
- Energy and use by area (HVAC, lighting), fuel (gas, electric), indoor v. outdoor water usage
If a unit of energy or water using equipment is beyond its useful service life, the work associated with the baseline analysis can be considerably reduced. Document the building’s age, condition, operating parameters, and expected useful life based on manufacturer’s warranty data or ASHRAE guidelines. If the project is a distributed renewable generation project, collect and document information on building structure and orientation relevant to installation, production and maintenance. For WCMs not all baseline data collection and analysis apply.

**PROJECTED SAVINGS**

The requirements in this section are derived in part from the EPP for commercial facilities and are applicable to multifamily units. For single component/system ECMs or WCMs, the contractor should provide appropriate annotations to assist in determining whether a listed requirement is necessary.

The following are considered the minimum requirements in determining savings from energy and water conservation measures under a FAST TRACK approach:

- Use of “open book” methodology, spreadsheet or software used in savings calculations;
- Detailed outline for savings calculation methodology; should be transparent and easily replicated by independent third party reviewer;
- Reasonable comparison of energy/water pre-retrofit estimates to historical end use data (for single measure/single component retrofits, use only necessary data set for calibration);
- Consideration of interactive effects of related loads or systems and potential for additional ECMs/WCMs which would affect the appropriate capacity or cost-effectiveness of equipment being replaced;
- Validation of return on investment (ROI) figures based on previous audit or newly incorporated data sets;
- Validation of ECM/WCM implementation costs including labor and materials estimates; and
- Validation of savings.

The following items are the minimum that must be verified and accounted for in savings calculations for projects that propose the installation of an industry accepted renewable energy system, e.g., solar photovoltaic (PV), approved for interconnection by local utility:

- Current energy and demand rates;
- Applicability of incentives, rebates, and local utility requirements;
Current distributed renewable generation component pricing, including design and installation of systems;
Current electrical and/or building code requirements; and
Current zoning and emissions requirements as they impact the project.

VERIFYING COMPLETION AND OPERATION

The Texas PACE law states, “After a qualified project is completed, the local government shall obtain verification that the qualified project was properly completed and is operating as intended.”

The requirements in this section follow M&V as referenced in the EPP for standard and large commercial facilities in conjunction with IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012. The requirements support projects with a single component replacement or multiple ECMs/WCMs or distributed renewable generation system, qualifying as a FAST TRACK project.

For single component/system conservation measures, the following are the minimum requirements in verifying completion and operation of installed measures under the FAST TRACK method:

- ITPR review of the installation of the required number and type of ECMs/WCMs as specified in the audit and project design/construction documents; and
- ITPR review of the proper installation and operation of all ECMs/WCMs as specified in the audit and project design/construction documents:
  - Ensure that operation and function meet design intent of the project;
  - Determine that installed ECMs/WCMs will provide savings as estimated in original audit findings and commensurate with baseline analysis; and
  - Determine that installed ECMs/WCMs will meet or exceed service life estimates based on observed operation.

For distributed renewable generation projects, the following are the minimum requirements in verifying completion and operation of installed measures under the FAST TRACK method:

- ITPR review of the installation of the required number and type of system components as specified in the audit and project design/construction documents; and

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8 Texas Local Government Code chapter §399.011(b)
ITPR review of the proper installation and operation of all components as specified in the audit and project design/construction documents:
- Ensure that operation and function meet design intent of the project;
- Determine that the installed system will provide savings as estimated in original audit findings and commensurate with baseline analysis; and
- Determine that the installed system will meet or exceed service life estimates based on observed operation.

**REPORTING**

The property owner is required to provide a post-construction Annual Savings Reports to the PACE administrator to measure impact of the PACE program. This report shall be submitted during the term of the assessment or through a term negotiated between the PACE Program Administrator and the property owner. Information required within the post-construction Annual Savings Reports shall be determined between the PACE Program Administrator and the property owner. These Annual Savings Reports shall be submitted by the property owner. Section 5 of PACE in a Box outlines the reporting requirements of individual PACE projects.
Industrial energy/water conservation projects can impact 1) the facility, 2) a process inside the facility, or 3) a combination of the facility and process inside the facility. It will be necessary to determine the affected area of the facility or the site before moving forward with the auditing and baseline determination process. This protocol serves as a general guideline for the facility owner.

**INDUSTRIAL ENERGY/WATER PROTOCOL (FACILITY)**

For ECMs/WCMs considered to affect, conserve or reduce energy/water resources in the facility and are not directly linked to any process application, the EPP for Standard and Large Commercial will be followed as applicable. The sections below reference the appropriate EPP and indicate the minimum procedures and documentation required. Since all targeted measures or combination of measures are not known at this time, applicable portions of the EPP will be followed as necessary.

### ESTABLISHING A BASELINE

<table>
<thead>
<tr>
<th>Document</th>
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</tr>
</thead>
<tbody>
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<tr>
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### SAVINGS CALCULATION

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<tr>
<td>ICP EPP Standard Commercial</td>
<td>Operations, Maintenance, and Monitoring, Measurement and Verification</td>
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</tbody>
</table>
INDUSTRIAL ENERGY/WATER PROTOCOL (PROCESS)

For ECMs/WCMs considered to affect, conserve or reduce energy/water resources for a selected process in an industrial facility, it is expected that most measures will conform to appropriate IPMVP Concepts and Options for Determining Energy and Water Savings Volume I, January 2012. In particular, Option A – Retrofit Isolation: Key Parameter Measurement or Option B – Retrofit Isolation: All Parameter Measurement will provide the necessary requirements for savings verification, while other sections of the IPMVP document will be pertinent to establishing the baseline.

ESTABLISHING A BASELINE

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</tr>
</tbody>
</table>

REPORTING

The property owner is required to provide a post-construction Annual Savings Reports
to the PACE administrator to ensure the success of the PACE program. This report shall be submitted during the term of the assessment or through a negotiated duration between the PACE Program Administrator and the property owner. Information required within the post-construction Annual Savings Reports shall be determined between the PACE Program Administrator and the property owner. These Annual Savings Reports shall be submitted by the property owner. Section 5 of PACE in a Box outlines the reporting requirements of individual PACE projects.

**EXHIBIT B  AGRICULTURAL PROTOCOL**

For agricultural conservation projects, it is necessary to determine the affected area of the facility, site, or property. In general, a proposed project for agricultural energy/water conservation may affect 1) a facility related to agricultural operations, 2) an isolated equipment component or system (pumps, motors, etc.), or 3) a distinct water use area (i.e., irrigation). This protocol serves as a general guideline to direct the facility owner towards actions which have a basis in proven engineering concepts.

Agricultural activities outside the facility differ from those normally encountered in commercial and/or industrial areas in that water use and the energy associated with delivery of water may account for a larger percentage of costs relative to the overall energy/water budget. This may be especially true in the farming sector including greenhouse operations.

**AGRICULTURAL ENERGY PROTOCOL (FACILITY)**

For ECMs/WCMs considered to affect, conserve or reduce energy/water resources in an agricultural facility and that are not directly linked to agricultural irrigation or any process application outside the facility, the EPP for Standard and Large Commercial should be followed as applicable. The sections below reference the appropriate EPP and indicate the minimum required items as listed in the document. Since all targeted measures or combination of measures are not known at this time, applicable portions of the EPP should be followed as necessary.

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</tr>
</tbody>
</table>
Implementing water-efficiency in the agricultural sector where the majority of water and energy are consumed in irrigation most often use IPMVP Option A (Retrofit Isolation: Key Parameter Measurement) although Option B (Retrofit Isolation: All Parameter Measurement) is also viable depending on the specific measure and the affected equipment or system. The sections below reference the appropriate IPMVP protocols and indicate the minimum required items as listed in the document. Since all targeted measures or combination of measures are not known at this time, applicable portions of the IPMVP should be followed as necessary.
AGRICULTURAL WATER PROTOCOL

Water conservation projects are intended to provide savings through reduced water consumption as a result of improved performance of water consuming equipment, fixtures, or controls. Savings can also result from reduced water supply charges, sewer charges, and/or energy costs depending on the conservation measure implemented. Energy savings are commonly achieved from reduced water heating, and additional savings may be realized for facilities that use pumps to boost water pressure or to irrigate with groundwater, or at facilities with on-site water treatment systems. The performance of many common water conservation projects can be accounted for through short-term measurements and usage factors can be estimated, water savings are most often verified using IPMVP Option A (Retrofit Isolation: Key Parameter Measurement).

Key issues related to water conservation projects which should be observed are:

- Determining equipment inventory for baseline and post-installation;
- Establishing existing equipment performance for each type of device/system;
- Determining usage characteristics of each type of device/system;
- Determining post-installation equipment performance for each type of device/system; and
- Accounting for any known or observed interactive effects.

The sections below reference the appropriate IPMVP protocols and indicate the minimum required items as listed in the document. Since all targeted measures or combination of measures are not known at this time, applicable portions of the IPMVP should be followed as necessary.

**ESTABLISHING A BASELINE**
SAVINGS CALCULATION

<table>
<thead>
<tr>
<th>Document</th>
<th>Reference</th>
</tr>
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<tbody>
<tr>
<td>IPMVP Concepts and Options for Determining Energy and Water Savings Volume I</td>
<td>Chapter 4 (as applicable); selection criteria Fig. 4 p. 33 and Table 3 p. 34</td>
</tr>
</tbody>
</table>

VERIFYING COMPLETION AND OPERATION

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# PACE PROJECT APPLICATION

## SECTION 1. APPLICANT INFORMATION

**Applicant Primary Contact** - Person to whom all communication will be directed

<table>
<thead>
<tr>
<th>Name:</th>
<th>Title:</th>
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<table>
<thead>
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<table>
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<table>
<thead>
<tr>
<th>City</th>
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<tr>
<th>Relationship of Primary Contact to Property:</th>
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## Property Legal Owner Name(s) - As they appear on property title

**Owner 1 Name:**

<table>
<thead>
<tr>
<th>Organization/Title:</th>
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<table>
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<tr>
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<tr>
<th>Owner 3 Name:</th>
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<tr>
<th>Organization/Title:</th>
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</table>

## Property Owner Type - Check one

- □ Corporation
- □ LLC
- □ 501(c)(3)
- □ Trust
- □ Partnership
- □ Other
- □ Individual(s)/Joint Tenants/Common Property (not in trust)

<table>
<thead>
<tr>
<th>IRS Tax ID Number:</th>
<th>Business Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Legal Business Name (if different)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
## SECTION 2. PROPERTY INFORMATION

### Property Physical Address

<table>
<thead>
<tr>
<th>Street Address</th>
<th>County:</th>
</tr>
</thead>
<tbody>
<tr>
<td>City</td>
<td>State:</td>
</tr>
<tr>
<td></td>
<td>Zip Code:</td>
</tr>
</tbody>
</table>

Property Tax Assessor-Collector ID or Reference Number:

### Property Type - Check one

- [ ] Commercial
- [ ] Multifamily (>5 units)
- [ ] Industrial
- [ ] Other

Description:

### Property Characteristics

<table>
<thead>
<tr>
<th>Question</th>
<th>Value</th>
<th>Date:__________</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the current assessed value of the property?</td>
<td>$</td>
<td>Date:__________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the most recent appraised value of the property?</td>
<td>$</td>
<td>Date:__________</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is there currently a mortgage on the property?</td>
<td></td>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>If there is a mortgage, who currently holds it?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the outstanding principal on the mortgage?</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Which PACE program area is the property located in?
What is the anticipated life of the proposed improvements?
# SECTION 3. OWNER INFORMATION

## Please Confirm the Following:

<table>
<thead>
<tr>
<th>Please Confirm the Following:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner is not subject to any outstanding, unsatisfied judgment:</td>
<td></td>
</tr>
<tr>
<td>Owner has not had any property sold at foreclosure in the previous 5 years:</td>
<td></td>
</tr>
<tr>
<td>Owner grants consent for the PACE program administrator to pull credit information:</td>
<td></td>
</tr>
<tr>
<td>Owner is current with all taxes and assessments on property and has been for 3 years:</td>
<td></td>
</tr>
<tr>
<td>Owner is current on all debts secured by the property:</td>
<td></td>
</tr>
<tr>
<td>Owner has clear title to the property with no encumbrances:</td>
<td></td>
</tr>
<tr>
<td>Property is not subject to any outstanding tax liens or notices of default:</td>
<td></td>
</tr>
</tbody>
</table>

## Owner is able and willing to provide:

<table>
<thead>
<tr>
<th>Owner is able and willing to provide:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Certificate of Status from the Secretary of State of Texas:</td>
<td></td>
</tr>
<tr>
<td>Certificate of Account Status from the Texas Comptroller of Public Accounts:</td>
<td></td>
</tr>
<tr>
<td>Current Credit Report or if not available, a reasonable alternative:</td>
<td></td>
</tr>
<tr>
<td>Current Title Report demonstrating property is free of all liens including mechanics liens:</td>
<td></td>
</tr>
<tr>
<td>Written consent to PACE lien from property Mortgagee, if applicable:</td>
<td></td>
</tr>
</tbody>
</table>
# SECTION 4. PROPOSED PROJECT DETAILS

## Project Development Status:

<table>
<thead>
<tr>
<th>Status</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning investigation, i.e. unsure of which property improvements to pursue:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Has a very specific set of desired property improvements:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have had an energy audit conducted:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have identified a contractor to implement the property improvements:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have developed a detailed scope of work for the project:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have identified what rebates or incentives are applicable to project:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have approached existing mortgage holder to inquire about obtaining written acknowledgement for participation in the program:</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Have identified which project investor will provide capital for the project:</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

## Property Utility Information

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the name of property’s electric provider?</td>
<td></td>
</tr>
<tr>
<td>What is the name of property’s water provider?</td>
<td></td>
</tr>
<tr>
<td>What is the name of property’s natural gas provider?</td>
<td></td>
</tr>
<tr>
<td>Most recent year’s total utility cost?</td>
<td></td>
</tr>
</tbody>
</table>
## Utility Consumption Summary

<table>
<thead>
<tr>
<th>Utility</th>
<th>Use Before Project</th>
<th>Use After Project</th>
<th>Utility Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity Consumption (kWh/yr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity Sales (kWh/year)</td>
<td>N/A</td>
<td></td>
<td></td>
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<tr>
<td>Electricity Demand</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Water Consumption (kgal/yr)</td>
<td></td>
<td></td>
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<tr>
<td>Natural Gas Consumption (mmBTU/year)</td>
<td></td>
<td></td>
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<tr>
<td>Steam Consumption (mmBTU/year)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Chilled Water Consumption (mmBTU/year)</td>
<td></td>
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</tbody>
</table>

## Project Details Table

<table>
<thead>
<tr>
<th>Measure Name</th>
<th>Measure Cost ($)</th>
<th>Useful Life (yrs)</th>
<th>Electricity (kWh/yr)</th>
<th>Water (kgal/yr)</th>
<th>Natural Gas (mmBTU/yr)</th>
<th>Rebates ($)</th>
<th>UCRM Info</th>
<th>Annual Savings</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Totals
# SECTION 5. PROJECT FINANCIAL SUMMARY

<table>
<thead>
<tr>
<th>Total Project Cost</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Estimate Project Costs</td>
<td>$</td>
</tr>
<tr>
<td>Less: Preliminary Estimate of Rebates/Incentives:</td>
<td>$</td>
</tr>
<tr>
<td>Less: Property Owner Contribution:</td>
<td>$</td>
</tr>
<tr>
<td><strong>Total Estimated PACE Financing Amount:</strong></td>
<td>$</td>
</tr>
</tbody>
</table>
PROPERTY ASSESSED CLEAN ENERGY PROGRAM
REQUIRED DOCUMENTS CHECKLIST

The following will be required as part of the PACE application review process:

- Signed Owner Certification
- Copy of the Property tax bill and/or Travis Central Appraisal District Property ID number
- Certificate of Fact from the Texas Secretary of State’s Office showing entity in good standing
- Certificate of Account Status from the Texas Comptroller of Public Accounts
- Certificate of Occupancy

The following will be required prior to closing:

- Copy of feasibility study and/or energy audit (If not Fast Track)
- Signed and Sealed ITPR Project Verification Certificate
- Property Title Report prepared by Title Insurance Company
- Certificate of Incumbency and Consents (Authorizing Signatory)
- Signed Lender Certification

The following may be required for final project approval prior to closing:

- Appraisal of Property completed during prior 6 months (if required by Lender)
- Property zoning report which shows whether the property constitutes one or multiple lots for property tax purposes (if required by Lender)
- Organizational Chart, List of all Officers and Directors for Borrower and General Partner/Managing Member, and Certificate of Formation and all amendments (if necessary to determine signatory authority)
- Copy of most recent survey of the Property (if required by Lender)
- Consent Letter to PACE from Mortgagee (if applicable)

The following will be required post-construction for final project completion:

- Signed and Sealed ITPR Statement of Compliance
- Receipts of Expenditures
PROPERTY ASSESSED CLEAN ENERGY PROGRAM
PROPERTY OWNER CERTIFICATION

I, the undersigned Property Owner, hereby certify the following facts with respect to the project described in the Project Application No. _____________________ (the “Project”) under the ______________ Property Assessed Clean Energy Program:

OWNER CERTIFIES:
- Owner is not subject to any outstanding, unsatisfied judgment.
- Owner has not had any property sold at foreclosure in the previous 5 years.
- Owner is current with all taxes & assessments on property and has been for 3 years.
- Owner is current on all debts secured by the property.
- Owner has clear title to the property with no encumbrances.
- The Property is not subject to any outstanding tax liens or notices of default.

OWNER IS ABLE AND WILLING TO PROVIDE:
- Certificate of Status from the Secretary of State of Texas.
- Certificate of Account Status from the Texas Comptroller of Public Accounts.
- Current Title Report demonstrating property is free of all liens including mechanics liens.
- Written consent to PACE lien from property Mortgagee, if applicable.

I UNDERSTAND THAT: UNDER STATE LAW, THE PROGRAM ADMINISTRATOR IS REQUIRED TO VERIFY THAT OWNERS CAN DEMONSTRATE FINANCIAL STANDING. I CERTIFY THAT THE ABOVE RESPONSES ARE TRUE AND CORRECT AND THAT I WILL PROVIDE EVIDENCE OF SUCH TO THE PROGRAM ADMINISTRATOR.

__________________________________________  ________________________________
Signature                                           Date

__________________________________________  __________________________________
Title                                               Company/Firm/Organization

Office Use Only

Project ID __________________
Received __________________  

www.TexasPACEAuthority.org  ★
PROPERTY ASSESSED CLEAN ENERGY PROGRAM
INDEPENDENT THIRD PARTY REVIEWER (ITPR)
PROJECT VERIFICATION CERTIFICATE

I, the undersigned Independent Third Party Reviewer (ITPR), hereby certify the following facts with respect to the project described in the attached Project Application No. ______________________ (the “Project”) under the ________________ Property Assessed Clean Energy Program:

1. I have the professional qualifications to be an ITPR specified by the PACE in a Box Technical Standards Manual, in that –

   I am a licensed Professional Engineer in the State of Texas, whose registration number and seal are shown below, and
   I have experience in energy or water efficiency, including one or more of the professional credentials listed below:

   - Building Energy Assessment Professional (BEAP) or Building Energy Modeling Professional by the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE);
   - Certified Energy Manager (CEM), Certified Measurement and Verification Professional (CMVP), or Certified Energy Auditor (CEA) by the Association of Energy Engineers;
   - Certified Commissioning Professional by the Building Commissioning Association;
   - Credentialed Quality Assurance Provider from the Investor Confidence Project

2. I do not have any conflicting financial interest in the Project, in that –

   Neither I nor any member of my family nor any company that I own or have a financial interest in has any ownership or financial interest in the Project, the engineer/contractor, the real property, or its owner; and
   Neither I nor any member of my family nor any company that I own or have a financial interest in has provided or will provide any products or services for the Project other than independent third party review.
3. I personally visited the site of the Project on _______________ and examined the energy/water assessment report compiling the baseline measurements of the property’s current energy or water consumption and the projected energy or water savings to result from the Project. I evaluated the energy/water assessment report and pro forma model to determine its compliance with generally accepted methods for data collection, measurement, and savings calculations, including as applicable the technical methodology described in the Investor Confidence Project (ICP) – Energy Performance Protocols (EPP) (http://www.eeperformance.org) and other widely used technical reference documents mentioned in the PACE in a Box Technical Standards Manual.

4. On the basis of the energy/water assessment report and my evaluation, and as long as the established baseline conditions remain materially the same, the projected reductions of water or energy consumption or demand to result from the Project are realistic and reasonable in accordance with generally accepted engineering practices to the best of my knowledge and that this knowledge is based on the on-site investigation of the facilities involved, and the period of the PACE contractual assessment does not exceed the useful life of the Project.

SIGNED: __________________, 20___. ____________________________________________________________________________
ITPR Signature

___________________________________________
Company/Firm

___________________________________________
Address

Texas Professional Engineer Registration No. ________________________________
City, State, Zip Code
PROPERTY ASSESSED CLEAN ENERGY PROGRAM
INDEPENDENT THIRD PARTY REVIEWER (ITPR)
STATEMENT OF COMPLIANCE

I, the undersigned Independent Third Party Reviewer (ITPR), hereby certify the following facts with respect to the project described in the attached Project Application No. _____________________ (the “Project”) under the ____________________ Property Assessed Clean Energy Program:

1. I have the professional qualifications to be an ITPR specified by the PACE in a Box Technical Standards Manual, in that –

   I am a licensed Professional Engineer in the State of Texas, whose registration number and seal are shown below, and
   I have experience in energy or water efficiency, including one or more of the professional credentials listed below:

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   - Certified Energy Manager (CEM), Certified Measurement and Verification Professional (CMVP), or Certified Energy Auditor (CEA) by the Association of Energy Engineers;
   - Certified Commissioning Professional by the Building Commissioning Association;
   - Credentialed Quality Assurance Provider from the Investor Confidence Project

2. I do not have any conflicting financial interest in the Project, in that –

   Neither I nor any member of my family nor any company that I own or have a financial interest in has any ownership or financial interest in the Project, the engineer/contractor, the real property, or its owner; and
   Neither I nor any member of my family nor any company that I own or have a financial interest in has provided or will provide any products or services for the Project other than independent third party review.
3. I personally visited the site of the Project on ________________ and observed, based on my inspection, review of construction and commissioning documents made available to me, and witnessing of operations, that the improvements described in the Project Application have been completed and are operating as intended.

4. The attached project documentation review letter provides details of my findings and conclusions.

SIGNED: __________________, 20___.

____________________________________
ITPR Signature

____________________________________
Company/Firm

____________________________________
Address

Texas Professional Engineer Registration No. ____________________________________

___________________________________
City, State, Zip Code