My name is Jennifer Smith and I am the Executive Director of Congregation Beth Israel in Austin. Congregation Beth Israel was the first recipient of the Property Assessed Clean Energy or PACE Project financing to purchase new HVAC equipment and improve our energy efficiency. This is our story.

I've been the executive director at Beth Israel for nine years. For every single one of those nine years, I have spent way too much of my time working with our HVAC company on repairs and energy efficiency issues. For many of the years, we were just applying band-aids that never really seemed to solve the underlying problems. We tweaked programming and did repairs that never really seemed to stop. One repair would just cause another leak or broken part and so on. In 2014, we tried a few different options to decrease the continuous repairs and improve energy efficiency in the Shirley Barish Learning Center. We went through a retrofitting process of our chillers and boilers, getting new pumps, doing some major repairs and upgrading our controls. The retrofit was supposed to be the magic bullet that would keep us from having to get new equipment and improve energy efficiency. While the major repairs occurred, the energy savings didn't happen in any significant way. In another bid to try to become more energy efficient, we put solar panels on the learning center building. While they do provide a benefit, we were never truly energy efficient enough for them to make a significant difference.

The spring and summer of 2015 signaled the end of our being able to continue with the band-aiding of our current systems. In the late winter, our boilers that were already limping along began the slow movement towards being unrepairable. The parts that were required to fix the boilers were in such limited supply that there were only 50 in the whole United States, but we needed 180 of these small pieces. We were down to only one boiler working and it had to run 24/7 in order for it to stay on. The igniter could not get enough energy to turn on every morning. So, we had one boiler with obsolete parts that was running all day and night to keep the building comfortable. But winters in Texas are pretty mild, so we were thinking we could get through the next few years with what we had. Then, the chillers started having issues. Well, issues that could no longer be band-aided, as hard as we tried. Major pieces of the chillers started failing.

Not only were these parts not repairable, but they were obsolete. The technology has improved significantly in the past 15 years. Our chillers were using old technology and refrigerant that could only be purchased as reclaimed refrigerant. It was no longer being made because it was not environmentally friendly. We managed to keep them running for much of the spring, but we had to run them 24/7 in order to do so. Only one part of each chiller was working and it was a struggle to keep the building comfortable for the students. We had a handful of days that there was no air conditioning in the building. We had students spending their mornings outside and their afternoons in the Sanctuary and Chapel that are run on their own systems. Many students just stayed home those days. It became clear that there was no repairing the chillers and we just had to get new ones.

The words "We need new chillers" are not words that any board wants to hear, especially with a price tag of almost a quarter of a million dollars to get them and no endowment fund that can just pay for them. We decided on the chillers we wanted and met with our HVAC company to discuss financing options. In that first meeting all I could think was this cannot go well for our budget, but I was pleasantly surprised. One of the attorneys for the company worked on the legislation that brought the PACE project to Texas. He explained that this program that was intended to help building owners make much needed repairs that would only improve energy efficiency. It's a unique program in that the financing goes with the property, not the building. For us, a congregation that is 140 years old and has been at our location since the 1950s, it is unlikely that a change of venue would happen. However, for a commercial building owner that sells his property, the liability would go to the new building owner. The goal of the program is to have building owners make repairs that they might not otherwise that would improve energy efficiency. For CBI and other non-profits or houses of worship, the benefit is the length of the loan. Most commercial loans are only 5 or 6 years, with PACE financing is 15 – 20 years. This is much easier on the bottom line of a non-profit. The other benefit to this program is that it could potentially be a cash positive proposition. The goal is that the repairs and/or new equipment would pay for themselves through energy and repair savings and capital avoidance.

After hearing about the program, we decided to move forward with procuring a PACE financed loan. Lessening our carbon footprint is something that our congregation has been striving for and hearing about the PACE project's goals had the wheels in my mind turning. What else could we include in the PACE project that would improve our energy efficiency, while solving our aging building issues?

The obvious first place to look was to add boilers to the project. While these only truly run for a few months, ours were definitely not efficient in any way and were on their last legs, so could still save energy.

We have a beautiful building with windows facing the sun on almost ½ the building and a skylight that opens into the building. The hallways in the learning center were always hot and for years we were struggling with finding the right tint to take away the heat. The children's classrooms on the sunny side had a tendency to be hot even when the HVAC was working properly. The fans in those classrooms worked double-time and the chillers struggled to keep up. The window tint company was the next one contacted. If we could remove the heat coming into the building from the sun, then just maybe we could be more efficient in those rooms. The company let us know that we would make a return on our investment in tinting those spaces in a very short amount of time.

While we were looking at energy issues, we had the lighting company come out. There were very few lights that had not already been switched out, so we would not see a return on investment in a significant way, so lighting was not included. We also tried to include the sanctuary, but with a building that was 60 years old, the structural changes made it cost prohibitive.

We ended up creating a project that included new chillers, new boilers, window tint, and updated controls for the chillers and boilers. This project was almost half a million dollars. This was an even harder pill to swallow. How can we afford a half a million dollar project? Considering what we were spending on repairs – almost $25,000 this year alone on the chillers – how could we not? Were we doing the right thing? Would we really save enough to cover the annual payments? It helped allay some of the board's concerns that every step of the way required third party inspections.

Once the project was defined, the savings needed to be quantified. The information from our HVAC Company was then studied by a third party engineer to make sure that the savings could really happen. They looked at our past energy bills, at the annual repair costs and the difference in efficiency between the new chillers and boilers and the existing ones. I have to admit, all of the numbers made my eyes a little blurry. Then there were site visits and a continuous parade of contractors to determine the best way to handle moving forward. Once the third party engineer signed off, we were finally ready to move forward.

Being the first PACE project to close in Texas, not only were we the group that everyone was watching, but we were also the guinea pigs for each step along the way. The board president and I spent a lot of time looking at all the different documents – contracts with the HVAC Company, loan documents with the finance company and agreements with the county. There were a lot of meetings and emails between all the groups making sure that the documents included all elements of the project and the correct information for the financing. It was such an interesting process. Before the actual PACE financing is put into place, there is a construction loan to pay for the equipment, initial costs and legal fees. This loan then rolls into the PACE financing once the installation has been signed off by the third party engineer as complete. Then every year, we pay Travis County a set amount that will go to pay off the financing.

In February, we closed on the construction loan. It felt like it had taken forever to get to that point and it had, but not for CBI. Once we started the process, it was just a few months to get to closing. For Travis County, the Texas PACE Authority, Petros Partners and the others involved it had actually been a four year process to get the program implemented after the legislation had passed. I went downtown to sign the documents to get the project started. Never having been to a commercial loan closing before, I thought it would just be me and the people signing. However, I found out really quickly that this closing was a big deal for all involved. I didn't realize the significance of being the first PACE project to actually close. Apparently, no one else wanted to be first. We did. We needed the new equipment, we were more than happy to be the guinea pigs. There were at least 15 people at the signing. There were four of us who signed the

documents, including Bruce Elfant, the Travis County Tax Assessor. Then there was champagne to celebrate the first PACE project in Texas. Following the official closing, there was a separate ceremonial closing at CBI a few weeks later, with the Travis County Commissioners and other speakers. While it felt great to be first, all I could think about was, when will we get the chillers? It's almost spring, can we get them in before the heat comes? The answer to that question was almost.

The first part of the project to be installed was the window tint. With a full building of students the ideal time for this was spring break. No students in the classrooms or hallways was the ideal time to install window film. The Child Development Center was the first space to get the tint. Spring break had a few really warm days. The office and baby room get direct sunlight in the afternoons. As soon as the tint was up, they noticed a difference. They no longer needed to keep the blinds down all day long to keep out the sun. It was the validation we needed to know we had done the right thing. The sky light and other classrooms were next. The difference was so noticeable in the hallway under the sky light that people are still commenting a month later on how much better the hallway feels.

Our plan was to have the chillers and boilers put in at the same time the first weekend in April. We had to close the school on the Friday of the weekend, because there would be no air conditioning in the building. We also had to make sure that there was nothing significant going on that weekend. Luckily, our Sanctuary is on a different system, so services could go on as scheduled, Sunday School was cancelled as well, because we had no idea when the AC would be back on. However, Mother Nature did not agree with getting everything done in one weekend. The boilers were unable to leave Dallas because of the thunderstorms and tornado warnings. Not a big deal. It was spring we didn't need the boilers anyway. The benefit to not having boilers installed on the same weekend was that the chillers were finished in less time and the AC was back on Saturday afternoon, even with the numerous delays because of morning thunderstorms here in Austin. The boilers were put in the last weekend of April and will be on line soon.

Even before we got the first bill with our new equipment last week, we could tell a difference right away. The chillers are quiet. They are smart and they are more efficient. It was obvious that the chillers were doing what they were supposed to. When the demand for the chillers was low, the temperature of the water rose. When demand was higher, the temperature lowered. It was nice to see actual evidence that things were working as they should in the controls system. It was even better to see that evidence in our electric bill. Compared to the month prior to new chillers and window tint, we used almost 9000 fewer KW. This is true even though the new chillers were running more this month than usual because of special events and programming tweaks. I am looking forward to seeing how much energy we will save as we learn the best way to program the new chillers.

CBI's Senior Rabbi, Steven Folberg, has a favorite quote from the Babylonian Talmud that says: "You're not required to complete the work, but neither are you free to abstain from it." It gives me great pleasure to be part of a congregation that is working hard to lessen our carbon footprint and that has finally seen some success in the area of energy efficiency. We could not have gotten to this point without the Texas Pace Authority and all the hard work that they did to make sure that this program succeeded.