

PACE

RESILIENCE IMPROVEMENTS IN HOUSTON

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PROPERTY ASSESSED CLEAN ENERGY

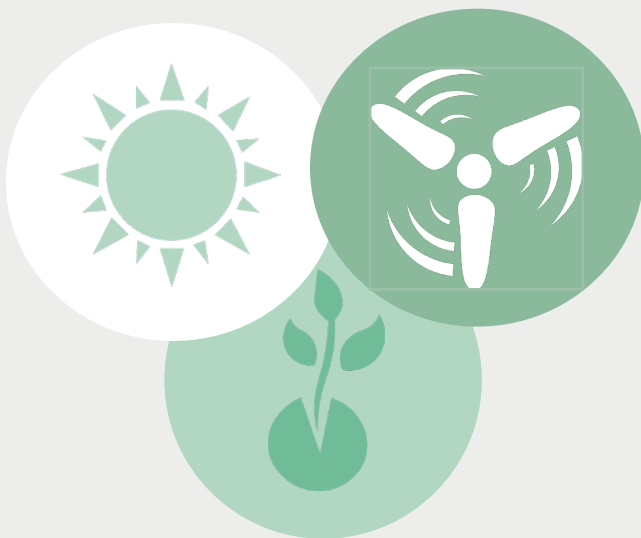
	Number of Projects	Investment (\$ MM)	Distributed Generation (KW)	Energy Savings (MMBtu)	Water Use Reduction (GAL)
2016	5	3.63	95,550	11,488.73	2,418
2017	7	29.815	175,968	63,597.32	15,856
2018	4	13.467	361,085	71,184.15	19,869
2019	2	2.851	1,486,160	73,818.23	21,228

What is PACE?

Property Assessed Clean Energy (PACE) financing allows the incremental cost of solar (and in some cases energy-efficient and hurricane-resilient reconstruction) to be covered through financing secured by a special incremental property tax assessment. PACE could help Texas communities rebuild a more resilient real estate market while providing a boost to the local job market at no up-front cost.

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In 2013, the State Legislature passed the Texas PACE Act authorizing municipalities and local government in Texas to work with private sector lender and property owners to finance qualified improvements. Property owners who want PACE financing can select contractors and lenders to fund up to 100% of the project costs. There is no cost to the local governments and they bear no liability for PACE projects, however, a county or municipality must establish a PACE program before it is available. Keeping PACE in Texas (KPT), a nonprofit business association, organized a broad-based coalition of over 130 stakeholders called the Texas PACE Coalition which consisted of capital providers, property owners, contractors, trade associations, and local governments.





PACE in a Box

The Coalition developed the 'PACE in a Box' toolkit for local governments to use in their Texas PACE (TX-PACE) districts.

The toolkit contains best practices, design elements, documents, and implementation steps necessary for establishing an easily adoptable and economical PACE program. Texas PACE Authority, a nonprofit, administers the PACE in a Box toolkit in several local jurisdictions in Texas.

Eligible Projects

To qualify for PACE financing, the proposed project must be permanently fixed to the real property, have demonstrated capacity to decrease water and energy consumption and demand, and have a useful life that exceeds the term of the PACE financing agreement. Energy consumption and 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. The toolkit also recommends that a project have a projected savings-to-investment ratio (SIR) greater than one.

The PACE Act allows project expenses including: the cost of materials and labor necessary for the installation or modification of a qualified improvement, permit fees, inspection fees, lender's fees, program application and administrative fees, project development and engineering fees, third-party review fees, and any other fees and costs that a property owner may incur of the improvements.

Eligible properties in the Texas PACE Act are privately owned commercial, industrial, nonprofit (e.g. private schools, medical facilities, churches, etc.), and multifamily properties with five or more dwelling units. There is no prescriptive list of eligible projects which gives a lot of flexibility in terms of what can be funded. Owners of eligible properties can access financing for upgrades such as HVAC modification or replacement, light fixture modifications, renewables and energy storage (including solar, wind, geothermal), high-efficiency windows or doors, automated energy control systems, insulation, caulking, weather-stripping or air sealing, water use efficiency improvements, energy- or water-efficient manufacturing processes and/or equipment, solar hot water, irrigation systems, gray water reuse, rainwater collection system, etc.



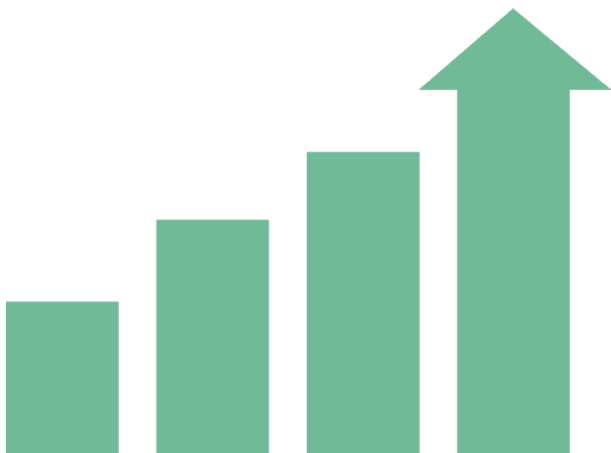
PACE in Houston

Houston adopted a citywide PACE program in November 2015 and formally launched the program in August 2016. Like other PACE programs throughout the state, PACE in Houston is open market where property owners may use the lender or contractor of their choice. There are fourteen PACE capital providers who meet the 'PACE in a Box' recommendations and are interested to finance PACE projects in Houston. In 2016, during the launching of PACE in Houston, Mayor Sylvester Turner stated that by providing PACE financing to just 3.5% of the commercial building sector in Harris county alone would resolve in more than \$650 million in energy efficiency upgrades. According to the Texas PACE Authority, since the launching of PACE in Houston, four projects have been financed with a total project cost of \$25.4 million. All projects have completed, and the upgraded measures in the properties were HVAC, BAS controls, LED lighting, solar panels, plumbing fixtures, and smart glass.

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In 2016, the City of Houston Mayor's Office announced that there were already \$100 million worth of PACE projects in Houston and the potential would increase in coming years. However, the investments are mostly focused on improving energy efficiency. There is a great opportunity for rainwater harvesting in Houston, but this has been overlooked in the PACE program. The average annual rainfall in Houston is 52.69 inches, which is 35% more than the national average and 48% more than the average rainfall in Texas. The average monthly water bill for Houston is comparatively higher than other cities in Texas. A 2016 study on the reliability analysis of urban rainwater harvesting for three Texas cities Dallas, San Antonio, and Houston showed that a tank size of 5678 liters would collect 8550 liters of rainwater in Houston compared to 6954 L and 4732 L in Dallas and San Antonio respectively. Additionally, in Houston the monthly savings were higher and there was a lower payback period. Nevertheless, rainwater collection systems have not been funded through PACE in Houston so far and there is not an active advocacy for this kind of PACE upgrade in Houston.





Statewide Progress

According to the Texas PACE Authority, the total investment in PACE improvements in the state till date is \$79.4 million. TX-PACE Energy and Emissions Tracker created by the Houston Advanced Research Council (HARC) shows the highest number of projects were funded in 2017. In 2019, 2 PACE projects have completed in the state so far.

PACE for Resilient Infrastructure Post Harvey

There has been a push to rebuild infrastructure with improved designs after Hurricane Harvey so that communities are more resilient to future disasters. However, there is not enough public funding to do so. This is where the PACE program might present an opportunity for resilient reconstruction in Houston and other affected regions. In Florida, PACE program has funded hurricane protection projects worth more than \$275 million between 2013 and 2018. Currently, resilience upgrades in TX-PACE is only limited to solar, wind, energy storage, fuel switching, and combined heat and power (CHP) upgrades in commercial properties.

In August 2018, voters passed \$2.5 million bond to aid in post Harvey rebuilding and recovery. Additionally, FEMA and the Texas legislature are likely to grant \$1 billion each. The same month, with a \$1.8 million sponsorship from Shell, the City of Houston joined the 100 Resilient Cities network launched by The Rockefeller Foundation through which the city will create and implement a comprehensive resilience strategy. There is still a long way to go and a lot of money is still needed to cover billions in damage. It is imperative that the city looks for alternative funding options to rebuild. In a Green Paper Report published in January 2019, HARC highlighted innovative funding options for resilient infrastructure which include environmental impact bonds (EIB), green bonds, and resilience bonds but there is no mention of PACE.

Since TX-PACE is enabled through state legislation, Houston cannot include storm and flood protection projects on its own. In order to extend the program to flood resilience, states must either amend their current PACE statutes or pass new ones. In Texas, changes to the statutes are enacted in a regular session every odd-numbered years. In 2019, the first legislative session after Harvey, Senate Bill 1281 did not amend the PACE Act to incorporate storm, hurricane, or flood resilience improvements. The next regular session will be convened in January 2021 and there is still an opportunity to extend the program and include resilience improvements in the TX-PACE statutes.

