"INCORPORATING TARGETS INTO RENEWABLE ENERGY OPERATIONS: PINELLAS COUNTY"

Case Studies

The following document covers three case studies of two cities within the State of Florida and one within the State of Nevada that are incorporating targets into renewable energy options. These case studies are intended to inform the Pinellas County government's policy and regulatory decisions in response to the 2021-adopted HB919 which, in brief, eliminates local governments' ability to impose restrictions on energy sources on utility providers. Specifically, the following case studies explore alternative modes of meeting local renewable energy (RE) targets without imposing restrictions on utility providers in the cities of Orlando (FL), Tallahassee (FL), and Reno (NV). Each case study provides basic information about the subject municipality, describes relevant renewable energy intervention(s) employed, and discusses the merits and drawbacks of each approach.

City of Orlando, FL

The City of Orlando, located within Orange County, FL, has gained a national reputation for innovative sustainability policies and actions. In 2018, the City adopted its latest Green Works Community Action Plan—an extension of the 2007 Green Works Orlando initiative and subsequent sustainability-related planning documents. The goal of the Community Action Plan is to help guide Orlando's ascent to one of the "most sustainable U.S. cities" by 2040.[i] Focus areas for the latest plan are water, green buildings, local food, livability, solid waste, transportation, and foremost, clean energy. The primary goals of the plan are:

- Reduce 25% of overall energy consumption,
- Reduce greenhouse gas (GHG) emissions by 90% from 2007 levels by 2040, and
- Obtain 100% of electricity from clean, renewable sources citywide by 2050.

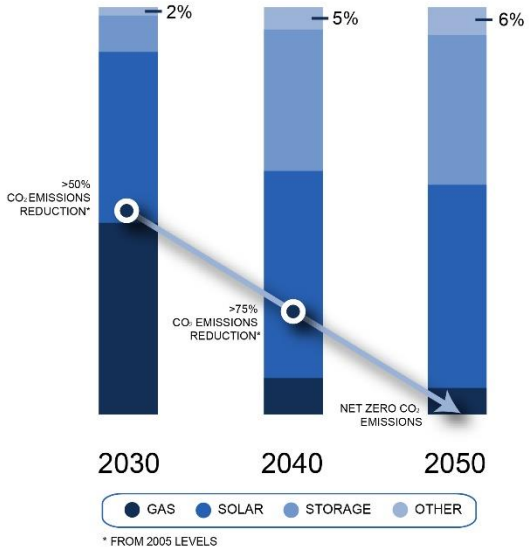

Figure 1.- From 2021 VLR, OUC Management Clean Energy Roadmap Recommendation

According to the city's 2021 Voluntary Local Review (VLR) of progress toward the Sustainable Development Goals (SDGs), Orlando has made significant strides in increasing transition to solar energy citywide.[ii] The VLR also states that as of 2020, the city has installed 1 megawatt (MW) of solar on government rooftops, and was slated to increase this to 2.24 MW of installed capacity by the end of the year. In the same year, the city also penned an agreement with the local utility

provider to meet 12.7% of energy demand through solar power. Furthermore, the city launched numerous education and incentive programs to lower up-front costs to transition to solar for households, businesses, and institutions and partnered with the local utility commission and the University of Central Florida to develop a 100% Renewable Energy Study to provide detailed guidance on a path toward energy transition targets. For its efforts, Orlando has attained a SolSmart GOLD Certified City designation.

The city of Orlando's solar program is enabled by ongoing cooperation between local utilities. For example, the Orlando Utilities Commission's (OUC) renewable energy targets mirror the city's (see **Figure 1**). Specifically, OUC has made a commitment to net zero carbon by 2050 with "science-based" CO_2 reduction targets and the early retirement of the last coal-fired powerplants in the city by no later than 2027. By 2030, OUC's 2020 strategic plan contemplated a 50% reduction in CO_2 by 2030.[iii] Key staff from OUC are also cited as contributors in the city's Green Works Community Action Plan and 2021 VLR. Agreements between the city and OUC have translated into 20 MW of solar PV capacity, a 13 MW community solar farm, and the addition of 33 buildings to community solar subscriptions to cover the city's neighborhood centers, senior centers, and main parks.

Another notable collaboration between Orlando and its utilities toward the RE transition is the Florida Municipal Solar Project headed by the Florida Municipal Power Agency (FMPA)—a wholesale power agency owned by municipal electric utilities in Florida with the goal of, "providing low-cost, reliable, and clean power, plus value-added services for FMPA's customers that benefit their communities and customers."[iv] The Florida Municipal Solar Project is a joint project of 16 municipal electric utilities which contemplates installation of 1.5 million solar panels across five sites. The project will consist of five solar farms that will generate nearly 375 MW of energy for residential and commercial customers. The first two solar sites, one, located within the City of Orlando and developed by NextEra Energy, came online in June 2020, providing power to six of the participating cities. The three other solar sites are scheduled to come online by the end of 2023.

Merits and Drawbacks of Approach

According to the U.S. Department of Energy (DOE), numerous academics and public interest groups, coordinated action with local power authorities is a highly effective means of achieving renewable energy targets (U.S. Department of Energy, 2011). The merits of this approach include larger scale and widespread reductions in energy consumption, guaranteed access to distribution infrastructure, and more clear and realistic pathways to definition and successful realization of energy transition targets.

Potential drawbacks of relying heavily on utility providers include mission priority conflicts, lack of short-term economic incentives to transition to renewable energy, limited control over installation timelines, limited service areas and capacity, and long-term availability of the energy source.

Additional Resources

- **Solar Powering Your Community: A Guide for Local Governments**
- **Local Government Renewables Action Tracker**
- **Orlando Utilities Commission Ten-Year Site Plan**

Reno, NV

The State of Nevada, like the State of Florida, operates within a regulated energy market. In contrast with competitive ("deregulated") energy markets, utilities within regulated energy markets, "own or control the total flow of electricity from generation to meter."[v] Unlike Florida however, the State of Nevada imposed an aggressive Renewable Portfolio Standard (RPS) in 2019 which incentivized utilities to expand solar capacity within municipalities statewide. Therefore, even though the city of Reno, like many other Nevada municipalities, falls within the service area of NV Energy—the primary utility provider within the state. it receives a greater share of its energy from renewable sources than most Florida municipalities.

The city of Reno has also undertaken independent measures to hasten its transition to 100% RE. In fact, the city recently launched a public portal with 24/7 carbon emissions tracking and adopted a Sustainability and Climate Action Plan in 2017.[vi] The Sustainability and Climate Action Plan specifically set forth a time horizon of 2019-2025 for implementation. The goals of the Sustainability and Climate Action Plan are to help the City of Reno meet its commitments to the Paris Climate Agreement, the Global Covenant of Mayors on Climate and Energy, and America's Pledge, and put the city and community on track to meet the following global emission reduction targets:

- 28% emissions reduction by 2025,
- 40% emissions reduction by 2030, and
- 80% emissions reduction by 2050.

Priorities defined in this plan are first, to lead by example through sustainable city operations, and second, to transition to clean, renewable energy. Pertinent renewable energy targets from the plan are outlined as follows:

- Meet 50% of electricity needs for city facilities, infrastructure, and streetlights from renewable energy by 2020 and 100% by 2025 (2.1)
- Increase distributed renewable energy generation 15% by 2025 and encourage energy storage (2.3)
- Expand solar, energy storage, and electric vehicle (EV) charging infrastructure (2.4)

Renewable energy production was quantified in 2020 through a baseline study performed by the University of Nevada in partnership with the city of Reno.[vii] As of 2020, the study concluded that the city has successfully reduced its carbon footprint by using power purchase agreements (PPAs), net metering, and various energy saving initiatives. Among the actions taken by the City of Reno to lower carbon emissions independent of local utilities, was the launch of the city's Commercial Property-Assessed Clean Energy Finance (C-PACE) program. C-PACE is defined by the DOE as a, "tool that can finance energy efficiency and renewable energy improvements on commercial property…[using] borrowed capital to pay for the upfront costs associated with energy efficiency or renewable energy improvements."[viii] The C-PACE program in Reno was only approved in 2019, with the state having passed PACE-enabling legislation in 2016. The City of Reno's C-PACE program is unique because it is administered in partnership with the City of Las Vegas and the Nevada Governor's Office of Energy. National C-PACE program investment from 2009 to 2020 is summarized in **Figure 2** below.

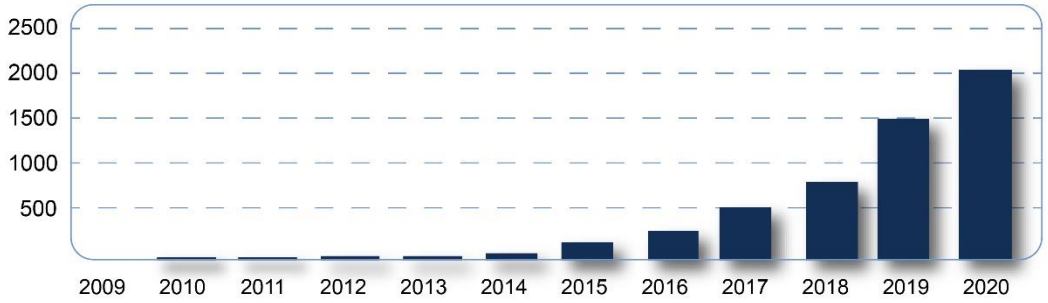

Figure 2.- Cumulative C-PACE Investment, MM (2009-2020); Source: PACENation

Merits and Drawbacks of Approach

States with regulated energy markets can are still able to pass PACE enabling legislation that permits municipalities to launch their own PACE programs. The State of Florida authorized PACE in 2010 through Florida Statute (FS) Section 163.08, and Pinellas County in particular executed an interlocal agreement with the PACE Financing Agency in 2019.[ix] Having additional oversight of PACE programming by state and local governments helps mitigate conflicts between the interests of state agencies and local governments in program implementation. While uptake of PACE within Florida is lower compared to other states such as California and Ohio (both deregulated states), many municipalities throughout Florida—including Orlando and Tallahassee—have already joined PACE districts.

PACE programs, particularly residential PACE programs, have drawn criticism due to risk exposure to homeowners precipitated by unethical lending practices. One Orlando Sentinel article notes that "there are no statewide laws requiring PACE providers to explain the costs of the improvements, check if the people who sign up can actually afford to pay back the money or understand the terms."[x] Hillsborough County has recently terminated its residential PACE program due to such concerns.[xi] Within the State of Florida, there is also a concern about limited interconnectivity between solar installations since utilities are not required to create connectivity between units leading to waste due to insufficient storage.

Additional Resources

- **Florida Bar Journal Article with Review of PACE Policy in Florida and United States (2016)**
- **Additional PACE Examples - PACENation**

Tallahassee, FL

The City of Tallahassee, located within Leon County, FL, has approached achievement of sustainability goals primarily from a climate adaptation and hazard mitigation angle. Unlike other municipalities discussed in this report that adopted general sustainability plans, the city of Tallahassee has embedded its plans for renewable energy transition in its Community Resilience Plan. Adopted in July of 2019, the Tallahassee Community Resilience Plan sets forth four Goals:

1. Public Safety and Preparedness – Empower households and organizations to be safe, secure, and self-sufficient
2. Hazard Mitigation and Climate Adaptation – Protect people and our environment while also adapting to the future
3. Equity and Social Cohesion – Connect people with each other and with opportunities to thrive
4. Planning and Integration – Make resilience ideals part of our everyday business and our long-term strategy

Each goal of the plan is supported by six strategies. Pertinent strategies are outlined in **Table 1**.

Table 1.- Summary of Renewable Energy Strategies and Actions

STRATEGY	RELEVANT ACTIONS
Strategy 2.3 – Upgrade public assets to minimize service disruptions during acute shocks	• Assess the impact of renewable energy integration on mutual aid agreements, particularly during storm recovery
Strategy 2.4 – Strengthen the utility network through strategic undergrounding, smart technology, and distributed systems **Strategy 2.6 –** Reduce energy use and achieve net zero local greenhouse gas emissions	• Reduce energy consumption at city operated facilities • Achieve 50% reduction in energy use intensity by 2024 • Incentivize and promote energy efficiency for private customers through loans, grants and free audits • Develop a Clean Energy Plan to transition energy utilities to 100% net renewable sources by 2050 • Transition 100% of City owned light duty vehicles and bus transit fleet to clean fuels by 2035 • Invest in public infrastructure that supports community adoption of clean fuels and incentivizes lower energy use

While there is some question about means of accomplishing a 100% transition to renewable energy sources by 2050 given the stipulations imposed on local governments by HB919, it is worth noting that the city contemplates an incentive-based approach to its RE transition, and among the proposed measures to reduce emissions of interest is expansion of distributed systems including microgrids. At present, the city of Tallahassee operates two solar facilities, Solar Farm 1 (20 MW) and Solar Farm 2 (40 MW) and a "Tallahassee Solar" program that allows utility customers to opt into a special solar rate option. An additional 2 MW of capacity has been deployed on City and customer rooftops. In addition to building out its own capacity through larger-scale solar operations, the City's utility authority offers financing for energy efficiency improvements including solar panel purchase and installation alongside free net metering to both residential and commercial customers who install solar that is compatible with the existing grid system.

Merits and Drawbacks of Approach

As the City of Tallahassee continues to build out its distributed generation capacity to comply with commitments under the Community Resilience Plan, additional programs are established and

performance is evaluated from year to year. Among the advantages of approaching the renewable energy transition in terms of a hazard mitigation/disaster recovery in local policy is access to recent allocations of hazard mitigation funding from the state and federal grants. As microgrid and smart grid technologies advance and proliferate globally, it will also become increasingly easy to implement and expand similar programs.

While Tallahassee's approach is appealing it presents some drawbacks including the up-front administrative cost of building capacity for distributed generation. For example, Tallahassee's utility service must ensure installations meet specific requirements to be incorporated into the existing grid and must coordinate numerous programs that support installation of solar facilities and continued funding for maintenance and distribution. Both creating and administering these programs are tasks that can grow in complexity with the programs themselves.

Additional Resources

- **City of Tallahassee Interactive Solar Map**
- **More About the Net Metering Program**
- **U.S. Office of Energy Efficiency and Renewable Energy Case Studies (see Bronzeville, IL and Santa Fe, NM)**

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[i] City of Orlando. 2018. "2018 Community Action Plan." Municipal Climate Action Plan, Orlando. https://www.orlando.gov/files/sharedassets/public/departments/sustainability/2018_orlando_communityactionplan.pdf.

[ii] City of Orlando. 2021. "Orlando and the Sustainable Development Goals: A Voluntary Local Review (VLR) of Progress." Voluntary Local Review, Orlando. https://online.fliphtml5.com/gydm/xanw/#p=1

[iii] Orlando Utilities Commission. 2020. "OUC Announces New Strategic Plan including Net-Zero Carbon Emissions by 2050 50% Reduction in CO2 by 2030." https://www.ouc.com/about-ouc/news/2020/02/21/ouc-announces-new-strategic-plan-including-net-zero-carbon-emissions-by-2050-50-reduction-in-co2-by-2030

[iv] Florida Municipal Power Agency . n.d. About. Accessed April 8, 2022. https://fmpa.com/about/.

[v] U.S. Environmental Protection Agency. n.d. *Understanding Electricity Market Frameworks & Policies.* Accessed April 8, 2022. https://www.epa.gov/repowertoolbox/understanding-electricity-market-frameworks-policies.

[vi] City of Reno. 2017. "Sustainability and Climate Action Plan." Government Plan, Reno. https://www.reno.gov/home/showdocument?id=82214.

[vii] City of Reno. 2020. "City of Reno Municipal Renewable Energy Expansion Study to be Published." *City of Reno.* August 28. https://aroundthearch.com/blog/2020/08/28/city-of-reno-municipal-renewable-energy-expansion-study-to-be-published/.

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[ix] Deady, Erin. 2016. "Property Assessed Clean Energy: Is there finally a clear path to success?" (Florida Bar Journal) 90 (6): 114. https://www.floridabar.org/the-florida-bar-journal/property-assessed-clean-energy-is-there-finally-a-clear-path-to-success/.

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[xi] Bowen, C.T. 2021. "Hillsborough affirms opposition to PACE home improvement program." *Tampa Bay Times*, August 4. https://www.tampabay.com/news/hillsborough/2021/08/04/hillsborough-affirms-opposition-to-pace-home-improvement-program/.