

# INCORPORATING TARGETS INTO RENEWABLE ENERGY OPERATIONS

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## Pinellas County – Technical Guidance Report

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## Acknowledgements

[TO BE PROVIDED BY CLIENT]

## Summary

Since the passage of HB 919, “*Preemption Over Restriction of Utility Services*,” the feasibility of meeting renewable energy (RE) targets set by local governments throughout the State of Florida (“the State”) has been called into question. The purpose of this report is to provide guidance to the Pinellas County Government (“the County”) on ways to incorporate RE targets into their processes and operations. This technical report is divided into four sections. **Section I** provides an introduction to the global, federal, state, and local trends and events that influenced the recommendations contained within this report. The introduction also discusses, in brief, implications of HB 919 for Pinellas County (**Section I.1**). **Section II** of the report outlines existing infrastructure (**Section II.1**), plans, and policies (**Section II.2**) concerning RE within the County. **Section III** sets forth short (**Section III.1**) and long-term (**Section III.2**) recommendations for the government of Pinellas County in addition to potential funding sources for actions requiring public or private investment. Finally, **Section IV** concludes the technical report noting that there are still many avenues available to the County to achieve its RE targets.

## List of Abbreviations

C-PACE	Commercial Property Assessed Clean Energy Program
COP	Conference of the Parties
DOE	United States Department of Energy
EDA	U.S. Economic Development Administration
EIA	U.S. Energy Information Administration
EV	Electric Vehicle
FDACS	Florida Department of Agriculture
FEMA	Federal Emergency Management Agency
FS	Florida Statute
GHG	Greenhouse gas
HUD	U.S. Department of Housing and Urban Development
IPCC	Intergovernmental Panel on Climate Change
MW	Megawatt
PPA	Power Purchase Agreement
RE	Renewable energy
R-PACE	Residential Property Assessed Clean Energy Program
RPS	Renewable Portfolio Standard
SDG	Sustainable Development Goal
SRAP	Sustainability and Resiliency Action Plan
VLR	Voluntary Local Review
PACE	Property Assessed Clean Energy Program (see C-PACE and R-PACE)
PSC	Florida Public Service Commission

## I. Introduction

The Intergovernmental Panel on Climate Change (IPCC) released the WGII Sixth Assessment Report in February of 2022. This report assesses the impacts of climate change and reviews vulnerabilities and the capacities and limits of the natural world and human societies to adapt to climate change on a global scale and includes general insights on impacts from the latest projections with regard to climate change. Chapter 14 of the report, centered on North America, notes that there is high confidence that climate change is increasing the demand for electric power for cooling and threatens existing power supply. The report states that electricity demand in the US is projected to increase by 5.3% per degree Celsius rise in temperature. Furthermore, key urban infrastructure systems such as services in buildings and energy distribution are, “interdependent and susceptible to cascading impacts.” For example, extreme heat events cause an increased demand for space cooling in buildings particularly during peak demand periods and heat waves.<sup>i</sup> Because of this, North American communities must consider climate change impacts in addition to the typical mix of social and economic factors when planning energy infrastructure.

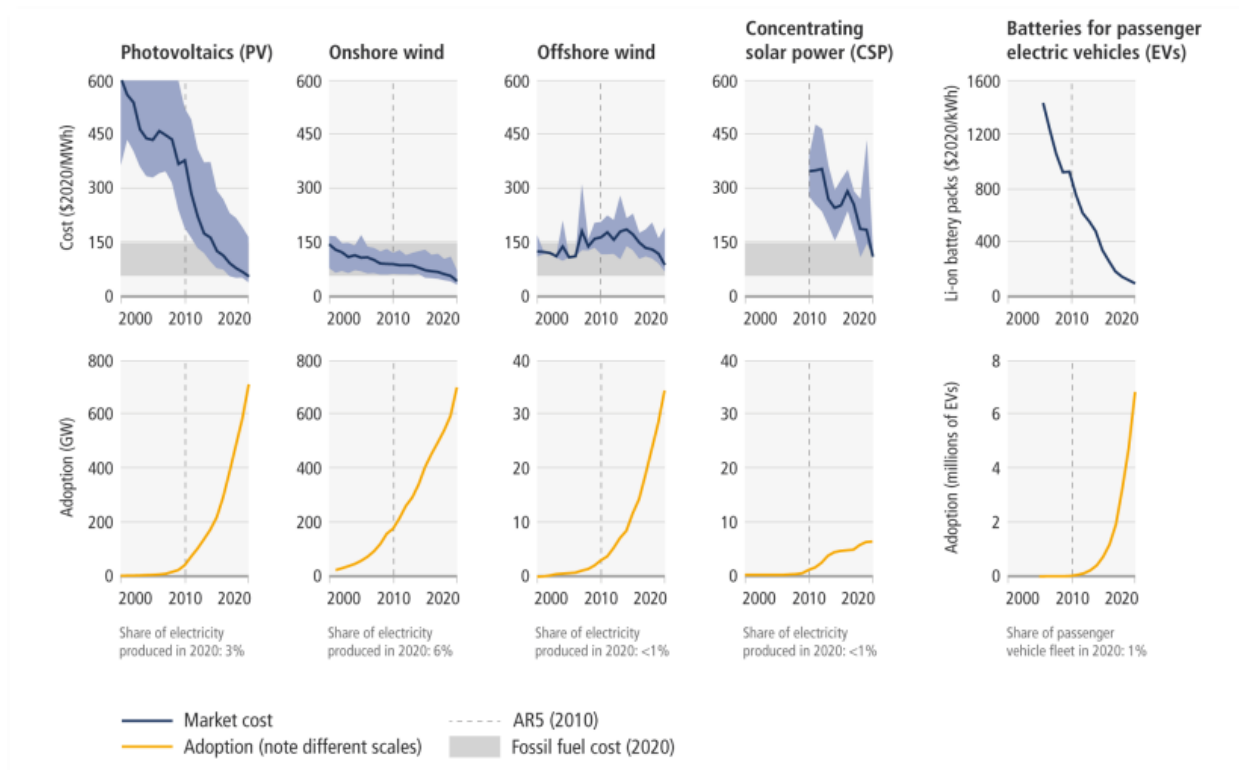


Figure 1.- IPCC WGIII renewable unit cost decline

The 2015 Paris Climate Agreement, which aims to limit the rise of global average temperatures to well below 2°C and ideally below 1.5°C above pre-industrial levels, sets forth the prevailing standard by which communities and businesses measure their greenhouse gas (GHG) emissions. In the six years since the 26<sup>th</sup> Conference of the Parties (COP)—the meeting at which the Paris

Climate Accord was drafted and executed—many U.S. communities have symbolically adopted the agreement and committed to corresponding emissions reduction targets. Even though global commitments as of COP26 currently cap global temperature rise above 1.5°C at 1.8 - 1.9°C, U.S. communities (and communities worldwide) are presently experiencing an unprecedented shift in the relative affordability of RE.

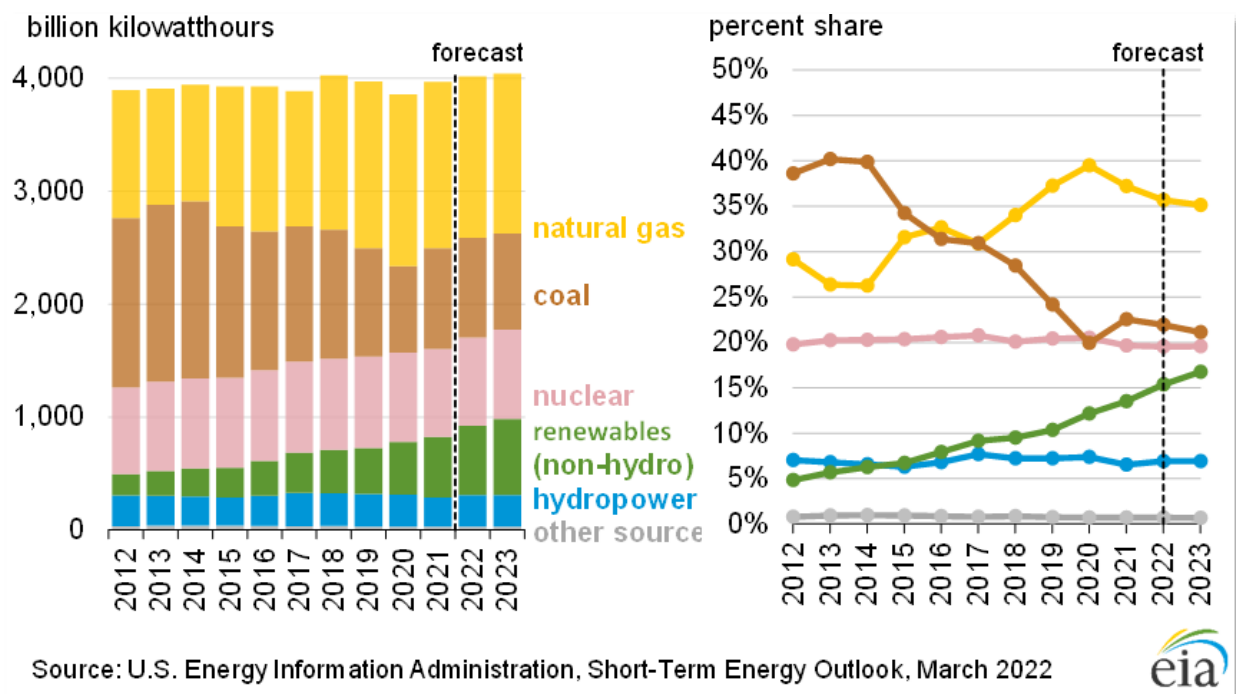


Figure 2.- U.S electricity generation by source, all sectors (billion KWH)

The subsequent IPCC WGIII Sixth Assessment Report, published in April of 2022, notes that unit costs of some forms of RE have fallen and their use continues to rise (see **Figure 1**).<sup>ii</sup> The U.S. Energy Information Administration (EIA) corroborates this finding domestically in its **Short-Term Energy Outlook** (see also **Figure 2**). While the outlook for building capacity for RE generation in the U.S. is positive, states and local governments must still take aggressive actions to realize international commitments to emissions reductions, meet growing demand for energy, and guard against climate change impacts.

According to the EIA, renewable resources fueled about 5% of Florida's in-state electricity net generation in 2020 with most coming from solar energy from large-scale (>1 MW) facilities, and the remainder coming from biomass. Florida also offers state and local incentives, tax credits, and loan programs for certain RE technologies, and has adopted net metering and interconnection rules for qualifying customer-sited RE generating facilities. Utilities within the State of Florida operate within a regulated energy market wherein they, "own or control the total flow of electricity from generation to meter."<sup>iii</sup> Florida utilities are regulated by the Florida Public Service Commission (PSC) which exercises regulatory authority over utilities through rate base/economic regulation, competitive market oversight, and monitoring of safety, reliability, and service.<sup>iv</sup>

## I.1.- Implications of HB 919 for Pinellas County

In the absence of statewide Renewable Portfolio Standards (RPS) like those seen in states including California, Nevada, Virginia, and Massachusetts, municipalities throughout the State of Florida have each taken different approaches to setting and meeting their RE targets. Pinellas County has voluntarily adopted countywide RE targets in recognition of environmental, health, economic, budgetary, and resiliency benefits of transition, namely:

- Transition to 100% clean, renewable energy for the entire community by 2050, and
- Transition to 100% clean, renewable energy for county operations by 2040

Like other local governments throughout the State, there remains a question of how to meet these targets since HB 919 prevents local governments from enacting or enforcing any policy that restricts or prohibits the types of fuel sources used by utilities.<sup>v</sup> Proponents of the legislation argued that it HB 919 would secure energy options and independence, preventing similar incidents as what occurred in Houston earlier in 2021. Recognizing the impact of this legislation, Broward County noted in its 2021 Legislative Session Overview that HB 919 would, “prohibit ‘all-electric’ local ordinances.”<sup>vi</sup> The House staff analysis for HB 919 also notes the following with regard to restrictions:

*“The bill provides that it does not prohibit the board of a municipality or government entity from adopting rules, regulations, and policies governing an electric or natural gas utility that it owns or operates and directly controls. The bill also provides that it does not expand or alter the jurisdiction of the Public Service Commission.”*

As such, municipalities that own or operate and directly control an electric or natural gas utility may still adopt policies to guide their utilities toward net zero or similar carbon reduction targets.<sup>vii</sup>

## **II. Survey of Existing Conditions**

Understanding the current landscape of energy infrastructure, planning, and policy within Pinellas County is paramount to identifying viable avenues for Pinellas County’s transition to 100% clean and RE in the wake of HB 919. The following section describes existing utility infrastructure serving the County and reviews local plans and policies concerning the RE transition.

### II.1.- Overview of Utility Infrastructure and Service Offerings

There are four (4) energy generating facilities within Pinellas County. Their features are described in detail in **Figure 3**. It should be noted that a majority of the MWs generated locally come from fossil fuels including natural gas and petroleum. Additionally, most of these plants are owned and operated by Duke Energy—one of the major electricity providers in the southeast United States.

### **Bayboro (#627)**

Owner - Duke Energy  
Location - St. Petersburg  
Sector - Electric Utility  
Technology - Petroleum Liquids (petroleum)  
Total Nameplate Capacity - 226.8 MW  
Total Net Summer Capacity - 171 MW

### **Lockheed Martin Solar System (#59867)**

Owner - Lockheed Martin Solar System  
Location - Oldsmar  
Sector - IPP Non-CHP  
Technology - Solar Photovoltaic  
Total Nameplate Capacity - 1.9 MW  
Total Net Summer Capacity - 1.9 MW

### **P L Bartow (#634)**

Owner - Duke Energy  
Location - St. Petersburg  
Sector - Electric Utility  
Technology - Natural Gas Fired Combined Cycle; Natural Gas Fired Combustion Turbine; Petroleum Liquids  
Total Nameplate Capacity - 1,475.6 MW  
Total Net Summer Capacity - 1,280 MW  
(Natural Gas: 1198 MW, Petroleum: 82 MW)

#### **Additional:**

**Downtown Central Energy Plant** – generates and delivers chilled water through underground distribution piping network to provide energy efficient air conditioning to several county buildings throughout downtown Clearwater; uses rooftop solar

### **Pinellas County Resource Recovery (#50884)**

Owner - Covanta  
Location - St. Petersburg  
Sector - IPP Non-CHP  
Technology - Municipal Solid Waste (biomass)  
Total Nameplate Capacity - 76.5 MW  
Total Net Summer Capacity - 58.1 MW

*Figure 3.- Pinellas County power generating facilities; source: US Energy Information Administration, Pinellas County*

There are several additional programs supporting RE infrastructure available to Pinellas County property owners administered by local grassroots organizations, federal and state government, the County, and Duke Energy, including C-PACE Financing, the Solar Investment Tax Credit (ITC), various solar co-op programs, the Solar and Energy Loan Fund, and the Duke Energy Clean Energy Connection Program.<sup>viii</sup>

## **II.2.- Existing RE Plans and Policies**

As of the date of this report, Pinellas County has adopted limited laws and policies supporting RE transition compared to other Florida municipalities—including several within the County's jurisdictional bounds. For example, the cities of St. Petersburg (see **St, Petersburg ISAP**) and Clearwater (see **Clearwater Greenprint**) have both adopted climate action plans that provide some guidance on a specific approach to increasing RE capacity and ultimately meeting net zero emissions targets. The County nonetheless has taken actions to improve community sustainability and resilience broadly, as evidenced by its completion of a vulnerability assessment of critical infrastructure, coordination on the Tampa Bay Regional Resilience Action Plan, and ongoing leadership in regional collaborative efforts such as the Pinellas Sustainability & Resilience Network (an informal partnership of local government officials and municipalities that are implementing sustainability and resiliency programs).

In November of 2021, the County unanimously passed its “Ready for 100” resolution (#21-121) setting the aforementioned targets for 100% clean, renewable energy for the entire community by 2050 and 100% clean, renewable energy for county operations by 2040, with interim target of

50% of energy consumed by county operations being clean energy by 2030.<sup>ix</sup> Pinellas County is also in the process of completing its first Sustainability and Resiliency Action Plan (SRAP). This is a six-phase project slated to be completed in summer of 2022. “Phase 1” kicks off the project and includes an initial information and data review of County programs, policies, and project information. “Phase 2” of the program involves completion of the County’s first GHG inventory for municipal facilities as well as for communities throughout the unincorporated county area, “Phase 3” entails preparation for assessment of internal programs and processes through formation of a plan for stakeholder engagement, “Phase 4” calls for execution of the stakeholder engagement strategy, “Phase 5” consists of plan development through synthesis of findings from previous Phases, and “Phase 6” concludes the project with delivery of the SRAP.<sup>x</sup> The final plan will include milestones, budget estimates, equity metrics, and financing mechanisms.

### III. Recommendations

Accomplishing Pinellas County’s goal of transitioning to “renewable, zero-emission, clean energy” countywide by 2050 will require coordinated action on the part of county staff, regional authorities, utilities, property owners, and state and federal agencies. The following section outlines action steps and funding sources to guide the County’s RE transition by accelerating the steady decline of opportunity cost for renewable energy in the State of Florida’s regulated market with newly-established state preemption of restrictions on fuel type for utility providers. It is worth noting that most of the recommendations contained within this section are focused on expansion of solar PV capacity as opposed to other RE sources because there is existing supporting infrastructure and GHG emissions are not a byproduct of the energy production process.

#### III.1.- Preliminary Actions

*Short-term (< 1 year)*

A 2022 report by the DOE, “Solar Power in Your Community,” states that “local governments are uniquely positioned to remove many of the barriers to widespread solar adoption.” The same report identifies actions that can be taken by community leaders; the first and second of which are to take the time to organize and develop a strategic approach to solar development.<sup>xi</sup> Bearing this in mind, it is recommended that the government of Pinellas County complete Phases 1-4 of its SRAP before establishing more detailed targets for accomplishing its renewable energy goals, proposing new policies, or revising or launching RE programs. This strategic approach should consider and engage local solar market participants. Additionally, in light of anticipated climate change impacts and known vulnerabilities to extreme weather, rising temperatures, and flooding, Pinellas County’s strategic approach should consider features that address energy sector resilience concerns through measures such as energy storage, energy efficiency, microgrids, and smart grids.

#### III.2.- Subsequent Actions

*Long-term (>1 year)*

Over the span of just two decades, many mechanisms for implementing renewable energy generation in communities have been developed. Today, local governments have a wide range of tools at their disposal including adopting solar processes and policies, installing solar on local land and buildings, developing local workforce training and education programs, and educating and empowering prospective market participants using inclusive strategies. This report recommends three subsequent actions following completion of preliminary actions described in the previous section.

U.S. Department of Energy (DOE), academics, and public interest groups agree that coordinated action with local power authorities is a highly effective means of achieving renewable energy targets. 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 to accelerate the County's RE transition. Namely, tying RE transition policies and programs to resilience-building and hazard mitigation measures, coordination with local utilities, and lowering individual barriers to entry into RE energy markets.

### **III.2.a.- Renewable Energy and Resilience**

Resilience of the energy grid is top priority in Florida, a state frequently impacted by extreme weather during the annual hurricane season. Recent loss of life and property caused by extreme weather in recent years has driven home the importance of service continuity and resilient energy infrastructure in Florida's communities. As the frequency and intensity of extreme weather events increases over time, there is a growing imperative for municipalities like Pinellas County to plan for the build-out of such infrastructure in the coming years with the assistance state and federal funding for community resilience. For example, in April of 2020, the Florida Department of Agriculture (FDACS) received a grant from the DOE to develop the Florida Alternative Fuel Resiliency Plan in partnership with the Tampa Bay Clean Cities Coalition and the National Renewable Energy Laboratory with completion date of September 30, 2022.<sup>xii</sup>

Pinellas County should quickly mobilize resources to pursue federal grant funding for energy sector resilience since federal spending on resilience has increased in recent years in response to dire need for resilient infrastructure in American communities. Even though local facilities within Pinellas County presently generate only a few MWs of solar energy, there is greater capacity and infrastructure for solar in neighboring counties that also fall within Duke Energy's service areas, and therefore opportunities to continue to collaborate and expand on a regional scale. Finally, federal agencies including the Federal Emergency Management Agency (FEMA), the U.S. Department of Housing and Urban Development (HUD), and DOE all offer mitigation and resilience funding opportunities—some of which permit local governments to apply for direct awards.

### **III.2.b.- Local Utility Coordination**

Recognizing the critical role of utility providers in meeting the County's renewable energy targets, the County should establish a close relationship with local utility provider, Duke Energy as they



stand to make a significant impact on total emissions reductions throughout the region. Though Duke committed to doubling its renewable energy capacity by 2030 and phasing out coal by 2035, the County should advocate for local siting of RE facilities and support the utility provider where appropriate in the development process.<sup>xiii</sup> Pinellas County may also consider emulating other Florida municipalities such as the City of Orlando, and seek opportunities to execute power purchase agreements in lieu of passage of compulsory regulations, in addition to identifying opportunities to create interconnectivity between distributed energy systems and Duke’s own transmission infrastructure for more efficient service—especially during peak hours and periods of extreme heat. Furthermore, the County may also consider formation of its own utilities commission for large-scale solar arrays on underutilized, publicly owned land (e.g., Lake Worth Beach community solar).<sup>xiv</sup>

### III.2.c.- Renewable Energy Access

In the absence of broad authority to regulate the type of fuel from which energy supplied to municipalities is derived from, municipalities can still encourage residents to voluntarily participate in programs that increase the share of energy generated from renewables. This can be accomplished by lowering the up-front cost of participating in renewable energy systems. For solar, Pinellas County can offer expediting permitting and a flexible review process to property owners interested in installing rooftop or ground mounted solar systems, offer grants or loans to prospective market participants who would most benefit from cost savings from renewables (e.g., multifamily or low-income customers) and seek out federal grants for commercial scale solar installations on public land. In addition to financial assistance with RE transition, public education about the administrative process for, and benefits of renewables energy can also help drive uptake and inspire grassroots efforts to expand capacity.

### III.3.- Opportunities and Funding Sources

The following matrix summarizes various federal opportunities and funding sources available to Pinellas County for financing RE projects within its jurisdictional bounds. Future opportunities to obtain funding via the State may also arise in the coming months from Federal grants.

**Table 1.- Opportunities and Funding Sources**

Agency	Funding Type	Programs
<b>U.S. Economic Development Administration (EDA; Various)</b>	Grant; Technical Assistance; Cooperative Agreement	Economic Development Disaster Supplemental Funding, Investment for Public Works and Economic Development Facilities, Economic Adjustment Assistance (EAA) Program, Economic Development Planning Assistance Program
<b>Federal Emergency Management Agency (FEMA; Various)</b>	Loan; Grant; Technical Assistance	Community Disaster Loan Program, Building Resilient Infrastructure and Communities (BRIC), Hazard Mitigation Grant Program (HMGP)

<b>Department of Housing and Urban Development (HUD; Various)</b>	Grant; Technical Assistance	CDBG-Disaster Recovery Program (CDBG-DR), CDBG-Mitigation (CDBG-Mit), Community Development Block Grant (CDBG) State Program, Emergency Coastal Resilience Fund (ECRF)
<b>National Oceanic and Atmospheric Administration (NOAA; Various)</b>	Grant	Emergency Coastal Resilience Fund (ECRF), National Coastal Resilience Fund (NCRF)
<b>U.S. Department of Agriculture (USDA)</b>	Grant	Rural Energy for America Program (REAP) Energy Audit & Renewable Energy Development Assistance

## IV. Conclusion

Meeting Pinellas County's ambitious goals for municipal and countywide renewable energy will be a challenge, but with the breadth of solutions and funding resources available alongside the help of a well-informed strategic approach to transition, it may still be possible to meet these targets through action with key stakeholders as opposed to direct regulation of utilities. More specifically, goals can be accomplished by taking necessary action to build resilience (e.g., projects for energy storage, energy efficiency, microgrids, and smart grids), building and leveraging relationships with utilities, and supporting adoption of RE by local property owners. While many of the recommendations and insights contained in this technical report are contingent on the findings and detailed targets to be defined in the County's SRAP in 2022, the existence and contents of the SRAP will also play a role in the County's ability to obtain necessary funding.

<sup>i</sup> Intergovernmental Panel on Climate Change. (2022, February 28). *IPCC WGII Sixth Assessment Report: Impacts, Adaptation and Vulnerability*. Retrieved 4 8, 2022, from [https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC\\_AR6\\_WGII\\_FinalDraft\\_Chapter14.pdf](https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FinalDraft_Chapter14.pdf)

<sup>ii</sup> Intergovernmental Panel on Climate Change. (2022, April 4). *IPCC WGIII Sixth Assessment Report: Mitigation of Climate Change Summary for Policymakers*. Retrieved 4 8, 2022, from [https://report.ipcc.ch/ar6wg3/pdf/IPCC\\_AR6\\_WGIII\\_SummaryForPolicymakers.pdf](https://report.ipcc.ch/ar6wg3/pdf/IPCC_AR6_WGIII_SummaryForPolicymakers.pdf)

<sup>iii</sup> 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>.

<sup>iv</sup> Florida Public Service Commission. (n.d.). *Homepage*. Retrieved from <http://www.psc.state.fl.us/>

<sup>v</sup> Florida House of Representatives. (n.d.). HB919. Retrieved from <https://www.flsenate.gov/Session/Bill/2021/919/BillText/er/PDF>

<sup>vi</sup> Broward County. (2021). *2021 Legislative Session Overview Slides from the Environmental Protection and Growth Management Department for the Climate Change Task Force*. Retrieved from Broward.org: [https://www.broward.org/Climate/Documents/LiechtyLegislativeOverview\\_May2021.pdf](https://www.broward.org/Climate/Documents/LiechtyLegislativeOverview_May2021.pdf)

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- <sup>xi</sup> U.S. Department of Energy. (2022). *An Introduction to Solar Power in Your Community*. Office of Energy Efficiency & Renewable Energy. Retrieved from <https://www.energy.gov/sites/default/files/2022-01/Solar%20Power%20in%20Your%20Community%20Executive%20Summary.pdf>
- <sup>xii</sup> Florida Department of Agriculture. (n.d.). *Florida Alternative Fuel Resiliency Plan*. Retrieved April 8, 2022, from <https://www.fdacs.gov/Energy/Florida-Alternative-Fuel-Resiliency-Plan>
- <sup>xiii</sup> Engel, J. (2022, February 14). *Duke Energy aims to double renewable energy capacity by 2030, phase out coal by 2035*. Retrieved from <https://www.power-eng.com/coal/duke-energy-aims-to-double-renewable-energy-capacity-by-2030/#:~:text=Policy%20%26%20Regulation-,Duke%20Energy%20aims%20to%20double%20renewable%20energy%20capacity%20by,phase%20out%20coal%20by%202035&text=Duke%20Energy%20sai>
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