

**The Florida Senate**  
**BILL ANALYSIS AND FISCAL IMPACT STATEMENT**

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

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Prepared By: The Professional Staff of the Appropriations Subcommittee on Agriculture, Environment, and General Government

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BILL: SB 1562

INTRODUCER: Senator Ausley

SUBJECT: Solar Photovoltaic Facility Development

DATE: February 21, 2022

REVISED: \_\_\_\_\_

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	<u>Collazo</u>	<u>Rogers</u>	<u>EN</u>	<b>Favorable</b>
2.	<u>Reagan</u>	<u>Betta</u>	<u>AEG</u>	<b>Pre-meeting</b>
3.	_____	_____	<u>AP</u>	_____

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**I. Summary:**

SB 1562, entitled the “Brownfields to Brightfields Act”, directs the Department of Environmental Protection (DEP), in coordination with the Office of Energy within the Department of Agriculture and Consumer Services, to conduct a study of brownfield sites, as defined in state law, and closed landfill sites, to determine viable sites for redevelopment as solar photovoltaic (PV) facilities.

The study must include, at a minimum:

- A list of brownfield sites and closed landfill sites with potential for redevelopment as solar PV facilities, divided into high, medium, and low potential.
- An assessment of the potential and logistics for solar energy generation from a diverse subset of high to medium potential sites for redevelopment, including a cost-benefit analysis.
- An analysis of the potential costs and benefits of installing solar PV facilities to adjacent communities.
- A list of recommended local and state policy changes to facilitate the redevelopment of brownfield and landfill sites into solar PV facilities.

The bill directs the DEP to submit a report on the findings and recommendations of the study to the Governor, the Legislature, the Florida Public Service Commission, and the chairs of each regional planning council by August 1, 2023.

The Department of Environmental Protection and the Office of Energy of the Department of Agriculture and Consumer Services will likely incur costs associated with preparing the required study.

## II. Present Situation:

### The Brownfields Redevelopment Act

Florida's Brownfields Redevelopment Act (act) was adopted in 1997 to provide incentives for local governments and individuals to voluntarily clean up and redevelop brownfield sites.<sup>1</sup> A "brownfield site" is defined as real property, the expansion, redevelopment, or reuse of which may be complicated by actual or perceived environmental contamination.<sup>2</sup> The primary goals of the act are to reduce public health and environmental hazards on existing commercial and industrial sites that are abandoned or underused due to these hazards; create financial and regulatory incentives to encourage voluntary cleanup and redevelopment of sites; derive cleanup target levels and a process for obtaining a "no further action" letter using risk-based corrective action principles; and provide the opportunity for environmental equity and justice.<sup>3</sup> The act authorizes the Department of Environmental Protection's (DEP) Brownfields Redevelopment Program. Participation in the program results in environmental cleanup, protection of public health, reuse of infrastructure, and job creation.<sup>4</sup>

For a property to participate in the program, a local government must first designate the site as a brownfield area by resolution.<sup>5</sup> The local government may then identify a "person responsible for brownfield site rehabilitation," which simply entitles the identified person to voluntarily execute a "brownfield site rehabilitation agreement" with the DEP or an approved local program.<sup>6</sup> If actual contamination exists at the site, the person must enter into such an agreement.<sup>7</sup> Pursuant to the act, a brownfield site rehabilitation agreement must contain several elements, including a brownfield site rehabilitation schedule; a commitment to conduct site rehabilitation activities in accordance with applicable cleanup criteria; a commitment to implement reasonable pollution

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<sup>1</sup> Chapter 97-277, Laws of Fla; ss. 376.77-376.85, F.S.; Department of Environmental Protection (DEP), *Florida Brownfields Redevelopment Program, Annual Report: August 2021* (2021), 3, available at [https://floridadep.gov/sites/default/files/Florida\\_Brownfields\\_Redevelopment\\_Program\\_Annual\\_Report\\_August2021.pdf](https://floridadep.gov/sites/default/files/Florida_Brownfields_Redevelopment_Program_Annual_Report_August2021.pdf) (last visited Jan. 24, 2022).

<sup>2</sup> Section 376.79(4), F.S.

<sup>3</sup> DEP, *Brownfields Program*, <https://floridadep.gov/waste/waste-cleanup/content/brownfields-program> (last visited Jan. 24, 2022).

<sup>4</sup> DEP, *Florida Brownfields Redevelopment Program, Annual Report: August 2021* (2021), 3, available at [https://floridadep.gov/sites/default/files/Florida\\_Brownfields\\_Redevelopment\\_Program\\_Annual\\_Report\\_August2021.pdf](https://floridadep.gov/sites/default/files/Florida_Brownfields_Redevelopment_Program_Annual_Report_August2021.pdf) (last visited Jan. 24, 2022).

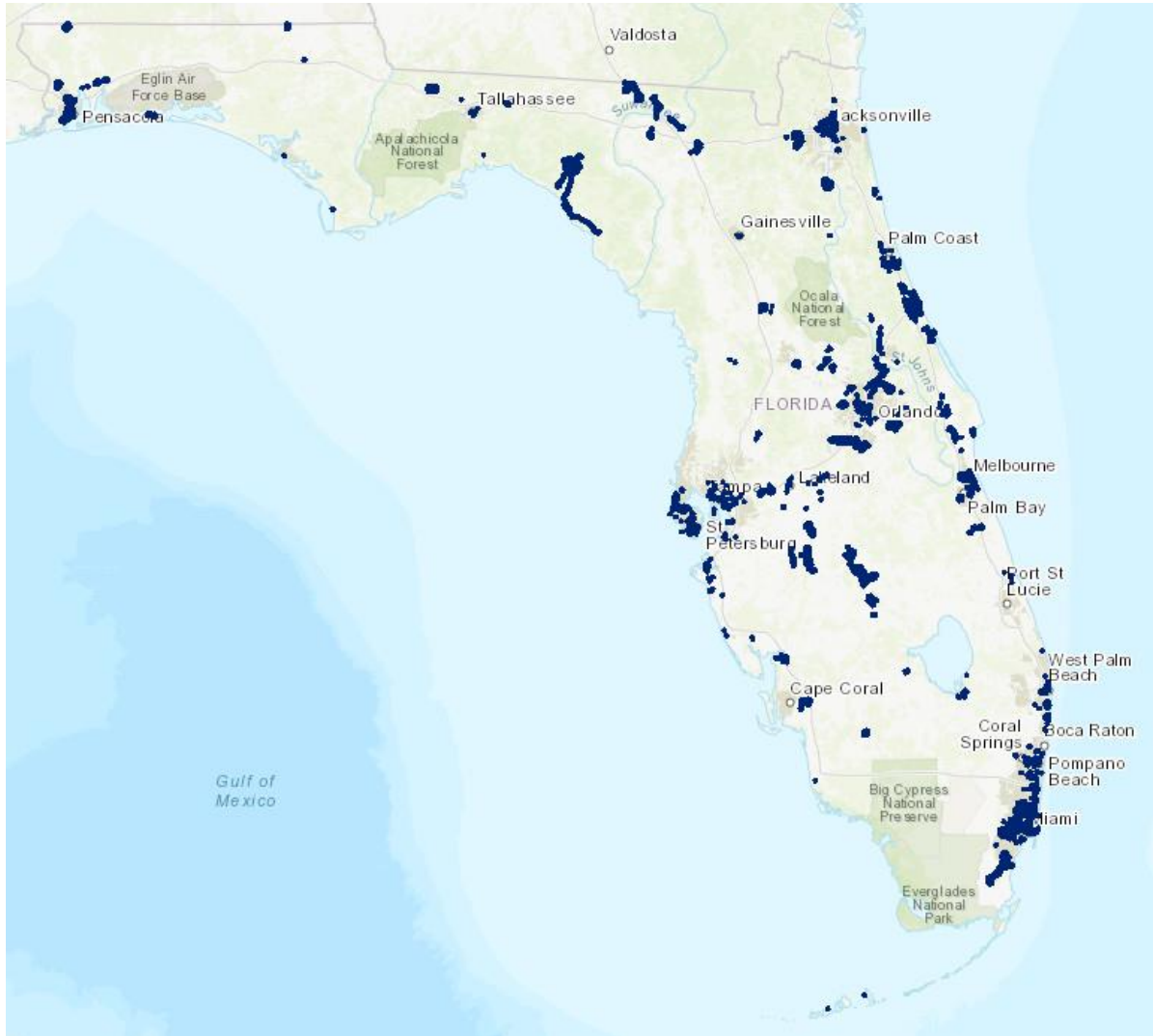
<sup>5</sup> Section 376.80, F.S.; *see also* s. 376.79(5), F.S., (defining a "brownfield area" as a contiguous area of one or more brownfield sites, some of which may not be contaminated, and which has been designated by a local government by resolution).

<sup>6</sup> Section 376.80(2)(d), F.S.; *see also* s. 376.79(15), F.S., (defining the "person responsible for brownfield site rehabilitation" as "the individual or entity that is designated by the local government to enter into the brownfield site rehabilitation agreement with the [DEP] or an approved local pollution control program and enters into an agreement with the local government for redevelopment of the site"); *see also* DEP, *Florida Brownfields Redevelopment Program, Annual Report: August 2021* (2021), 9, available at [https://floridadep.gov/sites/default/files/Florida\\_Brownfields\\_Redevelopment\\_Program\\_Annual\\_Report\\_August2021.pdf](https://floridadep.gov/sites/default/files/Florida_Brownfields_Redevelopment_Program_Annual_Report_August2021.pdf) (last visited Jan. 24, 2022) (providing that the DEP has delegated authority to administer the program to three county governments: Broward, Hillsborough, and Miami-Dade counties).

<sup>7</sup> Section 376.80(5), F.S.

prevention measures; and certification that the local government approves of the proposed redevelopment.<sup>8</sup>

Since 1997, Florida has amassed 533 locally designated brownfield areas encompassing approximately 291,679 acres, and 178 site rehabilitation completion orders have been issued.<sup>9</sup>



(Map of Brownfield Areas in Florida)<sup>10</sup>

<sup>8</sup> Section 376.80(5), F.S.; see Fla. Admin. Code Ch. 62-780 (containing cleanup criteria requirements that apply to site rehabilitation governed by a brownfield site rehabilitation agreement).

<sup>9</sup> DEP, *Florida Brownfields Redevelopment Program, Annual Report: August 2021* (2021), 4-5, available at [https://floridadep.gov/sites/default/files/Florida\\_Brownfields\\_Redevelopment\\_Program\\_Annual\\_Report\\_August2021.pdf](https://floridadep.gov/sites/default/files/Florida_Brownfields_Redevelopment_Program_Annual_Report_August2021.pdf) (last visited Jan. 24, 2022).

<sup>10</sup> DEP, *DEP Brownfields GeoViewer*, <https://floridadep.gov/waste/waste-cleanup/content/dep-brownfields-geoviewer> and <https://ca.dep.state.fl.us/mapdirect/?focus=brnfls> (last visited Jan. 26, 2022).

## Solid Waste Disposal Facilities

The DEP is responsible for implementing and enforcing Florida's solid waste management laws in ch. 403, F.S.<sup>11</sup> These statutes provide the authority for Florida Administrative Code Ch. 62-701, which are the DEP's current rules for solid waste management facilities.<sup>12</sup> The rules define solid waste management facilities as any solid waste disposal area, transfer station, materials recovery facility, or other facility (including landfills), the purpose of which is resource recovery or the disposal, recycling, processing, or storage of solid waste.<sup>13</sup> No person may store, process, or dispose of solid waste except as authorized at a permitted solid waste management facility.<sup>14</sup> A permit from the DEP is required for the construction, operation, or closure of a solid waste management facility.<sup>15</sup>

The DEP's rules for landfills require compliance with water quality and air quality standards, and they establish minimum requirements for water quality monitoring.<sup>16</sup> Landfills that close must comply with the DEP's requirements for closure permitting and long-term care.<sup>17</sup> Consultation with the DEP is required prior to conducting any activities at closed landfill areas.<sup>18</sup> The DEP provides guidance on requirements and recommendations for disturbing or using old, closed landfills or disposal areas.<sup>19</sup> These areas include old waste disposal areas that were operated and closed without permits and which may have had few or no records available of their operations.<sup>20</sup> In these old waste disposal areas, the DEP prefers uses such as recreational facilities instead of residential housing, and discourages some construction due to issues such as landfill gas and settlement problems.<sup>21</sup>

## Photovoltaic Technology and Facilities

Photovoltaic (PV) materials and devices convert sunlight into electrical energy.<sup>22</sup> A single PV device is known as a cell. An individual PV cell is usually small, typically producing about one or two watts of power. These cells are made of different semiconductor materials and are often less than the thickness of four human hairs. In order to withstand the outdoors for many years, cells are enclosed between protective materials in a combination of glass and plastics.<sup>23</sup>

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<sup>11</sup> Section 403.704, F.S.; see DEP, *Solid Waste Section*, <https://floridadep.gov/waste/permitting-compliance-assistance/content/solid-waste-section> (last visited Jan. 24, 2022).

<sup>12</sup> Fla. Admin. Code Ch. 62-701.

<sup>13</sup> Fla. Admin. Code R. 62-701.200(112).

<sup>14</sup> Fla. Admin. Code R. 62-701.300.

<sup>15</sup> Section 403.707, F.S.; Fla. Admin. Code R. 62-701.320. The rule specifies certain exemptions.

<sup>16</sup> Fla. Admin. Code Rules 62-701.340 and 62-701.510.

<sup>17</sup> Fla. Admin. Code Rules 62-701.600 and 62-701.620.

<sup>18</sup> Fla. Admin. Code R. 62-701.610(1).

<sup>19</sup> DEP, *Guidance For Disturbance and Use of Old Closed Landfills or Waste Disposal Areas in Florida, Version 2.3* (Apr. 2, 2019), 1, available at [https://floridadep.gov/sites/default/files/Old\\_Dump\\_Guidance-02Apr2019.pdf](https://floridadep.gov/sites/default/files/Old_Dump_Guidance-02Apr2019.pdf) (last visited Jan. 24, 2022).

<sup>20</sup> *Id.* at 2.

<sup>21</sup> *Id.* at 16-18.

<sup>22</sup> U.S. Department of Energy, Office of Energy Efficiency & Renewable Energy (DOE), *Solar Photovoltaic Technology Basics*, <https://www.energy.gov/eere/solar/solar-photovoltaic-technology-basics> (last visited Jan. 21, 2022).

<sup>23</sup> *Id.*

To boost the power output of PV cells, they are connected together in chains to form larger units known as modules or panels.<sup>24</sup> Modules can be used individually, or several can be connected to form arrays. One or more arrays is then connected to the electrical grid as part of a complete PV system. Because of this modular structure, PV systems can be built to meet almost any electric power need, small or large.<sup>25</sup>

PV modules and arrays are just one part of a PV system.<sup>26</sup> Systems also include mounting structures that point panels toward the sun, along with the components that take the direct-current electricity produced by modules and convert it to the alternating-current electricity used to power all of the appliances in the typical home.<sup>27</sup>



(Image of Photovoltaic Panels)<sup>28</sup>

PV cells and modules will produce the largest amount of electricity when they are directly facing the sun.<sup>29</sup> PV modules and arrays can use tracking systems that move the modules to constantly face the sun, but these systems are expensive. Most PV systems have modules in a fixed position with the modules facing directly south (in the northern hemisphere—directly north in the southern hemisphere) and at an angle that optimizes the physical and economic performance of the system.<sup>30</sup>

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<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> *Id.*

<sup>28</sup> Nancy W. Stauffer, *Researchers find benefits of solar photovoltaics outweigh costs*, MIT NEWS (June 23, 2020), available at <https://news.mit.edu/2020/researchers-find-solar-photovoltaics-benefits-outweigh-costs-0623> (last visited Jan. 26, 2022).

<sup>29</sup> U.S. Energy Information Administration (EIA), *Solar Explained: Photovoltaics and Electricity*, <https://www.eia.gov/energyexplained/solar/photovoltaics-and-electricity.php> (last visited Jan. 21, 2022).

<sup>30</sup> *Id.*

The smallest photovoltaic systems power calculators and wristwatches.<sup>31</sup> Larger systems can provide electricity to pump water, to power communications equipment, to supply electricity for a single home or business, or to form large arrays that supply electricity to thousands of electricity consumers.<sup>32</sup>

Batteries allow for the storage of solar PV energy, which makes it possible to use PV energy to power homes at night or when weather elements keep sunlight from reaching PV panels.<sup>33</sup> Not only can batteries be used in homes, but they are playing an increasingly important role for utilities. As customers feed solar energy back into the grid, batteries can store it so it can be returned to customers at a later time.<sup>34</sup>

### *Advantages and Disadvantages*

Some advantages of PV systems are:

- They can be designed for a variety of applications and operational requirements<sup>35</sup> (e.g., they can supply electricity in locations where electricity distribution systems (power lines) do not exist).<sup>36</sup>
- They can be used for either centralized or distributed power generation.<sup>37</sup>
- Quick installation.
- Energy independence.
- Environmental compatibility.
- Fuel (sunlight) is free.
- No noise or pollution.
- Minimal maintenance.
- No moving parts.
- Modular.
- Expandable.
- Transportable.
- Long service lifetimes.<sup>38</sup>

Some disadvantages of PV systems are:

- The high cost of PV modules and equipment (as compared to conventional energy sources).<sup>39</sup>

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<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> DOE, *Solar Photovoltaic System Design Basics*, <https://www.energy.gov/eere/solar/solar-photovoltaic-system-design-basics> (last visited Jan. 21, 2022).

<sup>34</sup> *Id.*

<sup>35</sup> University of Central Florida, The Florida Solar Energy Center (UCF FSEC), *Pros & Cons of PV*, [http://www.fsec.ucf.edu/en/consumer/solar\\_electricity/basics/pros\\_cons.htm](http://www.fsec.ucf.edu/en/consumer/solar_electricity/basics/pros_cons.htm) (last visited Jan. 21, 2022).

<sup>36</sup> EIA, *Solar Explained: Photovoltaics and Electricity*, <https://www.eia.gov/energyexplained/solar/photovoltaics-and-electricity.php> (last visited Jan. 21, 2022).

<sup>37</sup> UCF FSEC, *Pros & Cons of PV*, [http://www.fsec.ucf.edu/en/consumer/solar\\_electricity/basics/pros\\_cons.htm](http://www.fsec.ucf.edu/en/consumer/solar_electricity/basics/pros_cons.htm) (last visited Jan. 21, 2022).

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

- Surface area requirements for PV arrays.<sup>40</sup>

### ***Solar Electricity Generation from PV Power Plants***

The United States Energy Information Administration (EIA)<sup>41</sup> estimates that solar electricity generation at utility-scale PV power plants increased from 76 million kilowatt-hours (kWh) in 2008 to about 88 billion kWh in 2020.<sup>42</sup> It also estimates that about 42 billion kWh were generated by small-scale grid-connected PV systems in 2020, up from 11 billion kWh in 2014. Utility-scale power plants have at least 1,000 kilowatts (or one megawatt (MW)) of electricity generation capacity and small-scale systems have less than one MW generation capacity. Most small-scale PV systems are located on buildings and are sometimes called rooftop PV systems.<sup>43</sup>

### **The National Environmental Justice Advisory Council and the White House Environmental Justice Advisory Council**

The National Environmental Justice Advisory Council (NEJAC) is a federal advisory committee to the United States Environmental Protection Agency (EPA).<sup>44</sup> Established in 1993, the NEJAC provides independent advice and recommendations to the EPA Administrator regarding a broad range of strategic, scientific, technological, regulatory, community engagement, and economic issues related to environmental justice.<sup>45</sup>

The White House Environmental Justice Advisory Council (WHEJAC), established in 2021 pursuant to Executive Order 14008 (entitled “Tackling the Climate Crisis at Home and Abroad”), advises the Chair of the Council of Environmental Quality and the newly established White House Environmental Justice Interagency Council to increase the federal government’s efforts to address environmental justice.<sup>46</sup>

On May 13, 2021, the WHEJAC released an interim final report<sup>47</sup> setting forth recommendations regarding President Biden’s administration’s environmental justice agenda, and it finalized those

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<sup>40</sup> *Id.* Due to the diffuse nature of sunlight and the existing sunlight to electrical energy conversion efficiencies of photovoltaic (PV) devices, surface area requirements for PV array installations are on the order of 8 to 12 m<sup>2</sup> (86 to 129 ft<sup>2</sup>) per kilowatt of installed peak array capacity. *Id.*

<sup>41</sup> See 42 U.S.C. s. 7135, (establishing the EIA as a “central, comprehensive, and unified energy data and information program which will collect, evaluate, assemble, analyze, and disseminate data and information which is relevant to energy resource reserves, energy production, demand, and technology, and related economic and statistical information, or which is relevant to the adequacy of energy resources to meet demands in the near and longer term future for the Nation’s economic and social needs”). The EIA collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment. EIA, *About EIA*, <https://www.eia.gov/about/> (last visited Jan. 24, 2022).

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> U.S. Environmental Protection Agency (EPA), *National Environmental Justice Advisory Council*, <https://www.epa.gov/environmentaljustice/national-environmental-justice-advisory-council> (last visited Jan. 25, 2022).

<sup>45</sup> *Id.*

<sup>46</sup> EPA, *White House Environmental Justice Advisory Council*, <https://www.epa.gov/environmentaljustice/white-house-environmental-justice-advisory-council> (last visited Jan. 26, 2022).

<sup>47</sup> White House Environmental Justice Advisory Council (WHEJAC), *Justice40 Climate and Economic Justice Screening Tool and Executive Order 12898 Revisions, Interim Final Recommendations* (May 13, 2021), [https://www.epa.gov/sites/default/files/2021-05/documents/whejac\\_interim\\_final\\_recommendations\\_0.pdf](https://www.epa.gov/sites/default/files/2021-05/documents/whejac_interim_final_recommendations_0.pdf) (last visited Jan. 26, 2021).

recommendations on May 21, 2021.<sup>48</sup> The WHEJAC’s recommendations focus on how the administration may pursue its Justice40 Initiative, which is a “whole-of-government” effort to ensure that federal agencies work with state and local communities to deliver at least 40 percent of the overall benefits from federal investments in climate and clean energy to disadvantaged communities.<sup>49</sup> The WHEJAC’s recommendations regarding Justice40 include the following:

- The administration should establish a single unit or office to oversee President Biden’s Justice40 Initiative.<sup>50</sup>
- Support for clean energy projects, clean energy jobs training, lead water pipe replacement, public transportation, and community and green housing. Those projects include recommendations for solar grants for communities with an energy cost burden of 12.5 percent or greater and the expansion of United States Department of Agriculture Rural Energy for America Program to tax-exempt entities, such as nonprofits and government agencies, with increased program funding to \$100 million per year.<sup>51</sup>
- Opposition to investments in activities that would extend the life span or capacity of fossil fuel-fired generation, carbon capture and storage, nuclear power, and the establishment or advancement of carbon markets.<sup>52</sup>
- Expansion of tools to help communities impacted by the transition away from coal, including increased funding for the Partnerships for Opportunity and Workforce and Economic Revitalization and Assistance to Coal Communities programs, subsidized broadband construction in coal-impacted communities, and incentives for hiring remote workers in those communities by extending the Work Opportunity Tax Credit.<sup>53</sup>

### III. Effect of Proposed Changes:

**Section 1** entitles the bill the “Brownfields to Brightfields Act” (act).

The bill directs the Department of Environmental Protection (DEP), in coordination with the Office of Energy within the Department of Agriculture and Consumer Services, to conduct a study of brownfield sites, as defined in state law, and closed landfill sites, to determine viable sites for redevelopment as solar photovoltaic (PV) facilities.

The study must include, at a minimum:

- A list of brownfield sites and closed landfill sites with potential for redevelopment as solar PV facilities, divided into high, medium, and low potential. The list must be based on:
  - Site characteristics including physical, legal, and zoning barriers to redevelopment;
  - Proximity to existing energy generation and transmission infrastructure;
  - Proximity to current and projected population centers; and

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<sup>48</sup> WHEJAC, *Final Recommendations: Justice40 Climate and Economic Justice Screening Tool and Executive Order 12898 Revisions* (May 21, 2021), available at <https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf> (last visited Jan. 26, 2022).

<sup>49</sup> The White House, *The Path to Achieving Justice40*, <https://www.whitehouse.gov/omb/briefing-room/2021/07/20/the-path-to-achieving-justice40/> (last visited Jan. 26, 2022).

<sup>50</sup> WHEJAC, *Final Recommendations: Justice40 Climate and Economic Justice Screening Tool and Executive Order 12898 Revisions* (May 21, 2021), 15, available at <https://www.epa.gov/sites/default/files/2021-05/documents/whiteh2.pdf> (last visited Jan. 26, 2022).

<sup>51</sup> *Id.* at 16-18, 58.

<sup>52</sup> *Id.* at 59.

<sup>53</sup> *Id.* at 25-26.



- Environmental justice considerations, including, but not limited to, the interim final recommendations of the National Environmental Justice Advisory Council dated May 13, 2021.
- An assessment of the potential and logistics for solar energy generation from a diverse subset of high to medium potential sites for redevelopment, including a cost-benefit analysis. Potential sites must vary in lot size, geographic proximity to current and projected population centers, and geographic region.
- An analysis of the potential costs and benefits of installing solar PV facilities to adjacent communities.
- A list of recommended local and state policy changes to facilitate the redevelopment of brownfield and landfill sites into solar PV facilities.

The bill also directs the DEP to submit a report on the findings and recommendations of the study to the Governor, the President of the Senate, the Speaker of the House of Representatives, the Florida Public Service Commission, and the chairs of each regional planning council by August 1, 2023.

**Section 2** provides that the bill takes effect July 1, 2022.

#### **IV. Constitutional Issues:**

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

E. Other Constitutional Issues:

None.

#### **V. Fiscal Impact Statement:**

A. Tax/Fee Issues:

None.

**B. Private Sector Impact:**

None.

**C. Government Sector Impact:**

The Department of Environmental Protection and the Office of Energy of the Department of Agriculture and Consumer Services will likely incur costs associated with preparing the required study.

**VI. Technical Deficiencies:**

The bill references, “the interim final recommendations of the National Environmental Justice Advisory Council [(NEJAC)] dated May 13, 2021.” However, the White House Environmental Justice Advisory Council (WHEJAC), a different entity, issued interim final recommendations on May 13, 2021, and final recommendations on May 21, 2021. Amending the bill to reference WHEJAC’s final recommendations instead of NEJAC’s interim final recommendations would address this issue.

**VII. Related Issues:**

None.

**VIII. Statutes Affected:**

None.

**IX. Additional Information:****A. Committee Substitute – Statement of Changes:**

(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

**B. Amendments:**

None.