



## The Next Green Investment Bank: Comparing Australia's Clean Energy Finance Corporation with the United States' Greenhouse Gas Reduction Fund [Note]

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|---------------|---|
| Item Type     | Article; text   |
| Authors       | Brookes, Alexander  |
| Citation      | 40 Ariz. J. Int'l & Comp. L. 484 (2023)   |
| Publisher     | The University of Arizona James E. Rogers College of Law (Tucson, AZ)                               |
| Journal       | Arizona Journal of International and Comparative Law  |
| Rights        | Copyright © The Author(s)   |
| Download date | 19/03/2024 22:36:56   |
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| Link to Item  | <a href="http://hdl.handle.net/10150/671332">http://hdl.handle.net/10150/671332</a>                 |

**THE NEXT GREEN INVESTMENT BANK: COMPARING AUSTRALIA’S  
CLEAN ENERGY FINANCE CORPORATION WITH THE UNITED  
STATES’ GREENHOUSE GAS REDUCTION FUND**

Alexander Brookes\*

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\* J.D. Candidate 2024, University of Arizona James E. Rogers College of Law. Special thanks to my faculty advisor, William K. Sjostrom, and my AJICL editors, who continuously went above and beyond in helping me polish my ideas. I would also like to thank my family and friends for their support and encouragement throughout this process.

## ABSTRACT

*The United States needs massive investments in green energy and infrastructure. As part of that investment, the Inflation Reduction Act of 2022 established the Greenhouse Gas Reduction Fund, a type of green investment bank. In 2012, Australia passed legislation that established the Clean Energy Finance Corporation, also a green investment bank. This Note explores the organization and efficiency of Australia's Clean Energy Finance Corporation and compares it to the possible investment models the United States could use in distributing the Greenhouse Gas Reduction Fund.*

## I. INTRODUCTION

On August 7, 2022, the U.S. Senate passed the Inflation Reduction Act (IRA) of 2022 budget reconciliation bill.<sup>1</sup> Five days later, on August 12, the U.S. House of Representatives passed the IRA before President Biden signed it into law on August 16.<sup>2</sup> The IRA is “the single largest investment in climate and energy in American history.”<sup>3</sup> Part of the IRA created the Greenhouse Gas Reduction Fund, a \$27 billion green investment bank to be administered by the Environmental Protection Agency (EPA).<sup>4</sup>

Though the U.S. government is brand new to the world of green investment banks, many other countries, states, and municipalities have created green investment banks of their own.<sup>5</sup> These public entities have created their green investment banks to combat a series of barriers that green investment faces, such as project risk, inefficiencies of scale, first-in-kind transactions, marginal economics, customer credit score or homeownership status, and customer knowledge.<sup>6</sup> Green investment banks can counter these barriers to green investment through credit

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<sup>1</sup> *Senate Passes “Inflation Reduction Act” Reconciliation Bill*, PWC 1, 1 (Aug. 8, 2022) <https://www.pwc.com/us/en/tax-services/publications/insights/assets/pwc-senate-passes-inflation-reduction-act-reconciliation-bill.pdf>.

<sup>2</sup> *Press Release, S. Comm. on Energy & Nat. Res., House Passes Manchin’s Inflation Reduction Act*, (Aug. 12, 2022) <https://www.energy.senate.gov/2022/8/house-passes-manchin-s-inflation-reduction-act>; Remarks on Signing Legislation To Combat Inflation, Promote Clean Energy Production, and Reduce Prescription Drug Costs, 2022 DAILY COMP. PRES. DOC. 712 (Aug. 16, 2022), [hereinafter Remarks by President Biden at Signing of H.R. 5376], <https://www.govinfo.gov/content/pkg/DCPD-202200712/html/DCPD-202200712.htm>.

<sup>3</sup> *Inflation Reduction Act of 2022*, U.S. DEP’T OF ENERGY: LOAN PROGRAMS OFF., <https://www.energy.gov/lpo/inflation-reduction-act-2022> (last visited Sept. 22, 2023).

<sup>4</sup> Inflation Reduction Act of 2022, H.R. 5376 § 60103, 117th Cong. (2022).

<sup>5</sup> *See generally What is a Green Bank?*, GREEN BANK NETWORK, <https://greenbanknetwork.org/members/https://greenbanknetwork.org/what-is-a-green-bank-2/> (last visited Oct. 22, 2022).

<sup>6</sup> *Green Bank Techniques*, COAL. FOR GREEN CAP., <https://coalitionforgreencapital.com/what-is-a-green-bank/green-bank-techniques/> (last visited Oct. 23, 2022).

enhancement, aggregation, and warehousing; technical assistance; co-investment, on-bill financing; and information sharing and coordination.<sup>7</sup> Depending on a public entity's situation and goals, it may choose to use some or all of these techniques with its green investment bank.<sup>8</sup>

Two of the most common methods for achieving these goals are the public grant method and the investment method. Under the public grant method, the green investment bank acts more like a subsidy program, deploying capital through grants that are rarely repaid.<sup>9</sup> This method typically prioritizes deploying capital as quickly as possible and may have other motivations for the use of its capital beyond the most efficient green investment.<sup>10</sup> The Greenhouse Gas Reduction Fund is set up under the grant method.<sup>11</sup>

Another commonly used method is the investment method. Under the investment method, the green investment bank acts like a traditional investment bank, identifying green investments that the bank believes will generate a return.<sup>12</sup> Green investment banks using the investment method are often set up as separate organizations with semi-autonomous boards to insulate themselves from politics and attract outside expertise.<sup>13</sup> This method typically prioritizes efficient uses of government resources and sustained investment over a longer period of time. Australia's green investment bank, the Clean Energy Finance Corporation, is set up under the investment method.<sup>14</sup>

As the U.S. government begins to implement their green investment bank, the Greenhouse Gas Reduction Fund, it is worth looking at how the government

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<sup>7</sup> *Green Bank Techniques*, *supra* note 6 (credit enhancement can help de-risk investments through financing structures such as loan loss reserves or loan guarantees; aggregation and warehousing involves the green investment bank underwriting smaller or geographically dispersed projects before bundling them all together to sell to private investors, thereby combating the inefficiencies of the small scale investments; technical assistance can help reduce the cost of first-in-kind transactions that do not have the traditional standardization, and are therefore less predictable, of loans for things such as homes and cars; co-investment can help bridge the funding gap for projects with marginal economics; on-bill financing is a system where the loan is repaid through a customer's utility bill which helps to incentivize investment even when customer credit score or homeownership status is an issue; information sharing and coordination can help improve customer knowledge by making information easier to find and access).

<sup>8</sup> *See generally Our Impact*, COAL. FOR GREEN CAP., <https://coalitionforgreencapital.com/our-impact/> (last visited Oct. 23, 2022).

<sup>9</sup> *See generally About Us*, MALAY. GREEN TECH. & CLIMATE CHANGE CORP., <https://www.mgtc.gov.my/who-we-are/about-us/> (last visited Oct. 23, 2022); H.R. 5376 § 134.

<sup>10</sup> *See About Us*, *supra* note 9 (in addition to reducing greenhouse gas emissions, Malaysia's green investment bank's goals include "increasing the rate GDP from green technology . . . and the generation of 230,000 green jobs.").

<sup>11</sup> H.R. 5376 § 60103.

<sup>12</sup> *See, e.g., Clean Energy Finance Corporation Act 2012* (Cth) pt 6 (Austl.).

<sup>13</sup> *See, e.g., Governance*, CONN. GREEN BANK, <https://www.ctgreenbank.com/about-us/governance/> (last visited Oct. 23, 2022); *Our Team*, N.Z. GREEN INV. FIN., <https://nzgif.co.nz/about-us/our-team/> (last visited Oct. 23, 2022).

<sup>14</sup> *See generally Clean Energy Finance Corporation Act 2012* (Cth) (Austl.).

plans to organize it—and comparing it to other countries’ successful green investment funds, such as Australia’s Clean Energy Finance Corporation, to determine whether that is the most efficient model. The Greenhouse Gas Reduction Fund allows its grantees to use one of two models: a grant model, in which the federal government gives grants to states, Tribal governments, local municipalities, and other eligible recipients to help spur green investment; or an investment model, in which the grantee acts as a bank attempting to make a return on investments while investing in green technologies and infrastructure.<sup>15</sup> The Greenhouse Gas Reduction Fund is set up under the EPA and is to be wholly run by the U.S. government, which will distribute the fund to states, municipalities, tribal governments, and qualified nonprofit groups.<sup>16</sup> On the other hand, Australia’s Clean Energy Finance Corporation uses an investment method which focuses on the portfolio’s risk and rate of return.<sup>17</sup> The Clean Energy Finance Corporation is run by an independent board of directors overseen by the members of the executive branch of the Australian government.<sup>18</sup>

Both the grant model and the investment model have advantages and disadvantages. The grant model allows for more direct government control, a quicker distribution of funds, and the ability to take a more holistic approach to fund distribution by not focusing on rates of return. The investment model allows for a more economically efficient distribution of public funds and compounding benefits from original public funds through the reinvestment of returned capital. Considering the grave threat the world faces from climate change, governments would ideally use both methods to attempt to combat the problem. However, because of limited public funds and political will, many entities can only use one model. This Note argues that the better model for increasing green investments and stimulating private investing—thereby working to reduce global climate change and its effects—is the investment model due to its ability to make the most efficient use of limited government funds.

## II. BACKGROUND

### **A. The Central Principles Behind Green Investment Banks**

The Organization for Economic Co-Operation and Development (OECD) defines the green investment bank as “a public entity established specifically to facilitate private investment into domestic low-carbon, climate-resilient (LCR) infrastructure.”<sup>19</sup> In essence, green investment banks are government-funded

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<sup>15</sup> H.R. 5376 § 60103.

<sup>16</sup> *Id.*

<sup>17</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 6 div 2 (Austl.).

<sup>18</sup> *Id.* at pt 3 div 2.

<sup>19</sup> *Green Investment Banks*, OECD, <https://www.oecd.org/environment/green-investment-banks.htm> (last visited Oct. 22, 2022).

entities designed to lessen the financing gap for green investments and reduce the cost of capital for those investments.<sup>20</sup>

By using public funding, green investment banks aim to de-risk investments in clean energy, thereby attracting private investment.<sup>21</sup> While there are different methods that governments can use to accomplish this de-risking, the end goal is always to facilitate private investment in green technology and infrastructure.<sup>22</sup> The goal of green investment banks is to lay the groundwork for green technologies while bringing in private investments<sup>23</sup>—similar to how government investment in computing technologies in the 1950s, 1960s, and 1970s helped spur the development of private computing technology and investment.<sup>24</sup> These private investments are vital because even the \$27 billion in the Greenhouse Gas Reduction Fund, the largest green investment bank ever created, is dwarfed by U.S. gross private domestic investment.<sup>25</sup>

## **B. A General History of Green Investment Banks**

Green investment bank is a relatively new concept.<sup>26</sup> The Connecticut General Assembly created the first green investment bank in the United States in

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<sup>20</sup> See *What is a Green Bank*, supra note 5.

<sup>21</sup> See Michael B. Gerrard et al., *Green Finance: Leveraging Investment for Environmental Protection*, 48 ENV'T L. REP. NEWS & ANALYSIS 10367, 10369–70 (2018).

<sup>22</sup> See generally *Green Investment Banks: Scaling up Private Investment in Low-Carbon, Climate-Resilient Infrastructure*, GREEN FIN. & INV., OECD (2016) [https://read.oecd-ilibrary.org/finance-and-investment/green-investment-banks\\_9789264245129-en#page4](https://read.oecd-ilibrary.org/finance-and-investment/green-investment-banks_9789264245129-en#page4).

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

<sup>24</sup> See generally NAT'L RSCH. COUNCIL, *FUNDING A REVOLUTION: GOVERNMENT SUPPORT FOR COMPUTING RESEARCH* (1999).

<sup>25</sup> Angela Whitney et al., *State of Green Banks 2020*, Rocky Mountain Institute (2020) <https://rmi.org/insight/state-of-green-banks-2020/> (Australia is the world's largest green bank); *Australia's 'Green Bank' Marks \$10 billion in Lifetime Investment Commitments in Pursuit of Net Zero Emissions*, CLEAN ENERGY FIN. CORP. (Mar. 18, 2022) <https://www.cefc.com.au/media/media-release/australia-s-green-bank-marks-10-billion-in-lifetime-investment-commitments-in-pursuit-of-net-zero-emissions/>; *Gross Private Domestic Investment*, FRED, FED. RSRV. BANK OF ST. LOUIS, <https://fred.stlouisfed.org/series/GPDI> (last visited Oct. 22, 2022) (there was over \$4.5 trillion in gross private domestic investment in the first quarter of 2022).

<sup>26</sup> See generally *About CGC: Who We Are and What We Do*, COAL. FOR GREEN CAP., <http://www.coalitionforgreencapital.com/about-cgc.html> [<https://web.archive.org/web/20160407043416/http://www.coalitionforgreencapital.com/about-cgc.html>] (last visited Nov. 21, 2022); Dieter Helm et al., *Delivering a 21st Century Infrastructure for Britain*, POL'Y EXCHANGE (2009), <https://policyexchange.org.uk/wp-content/uploads/2016/09/delivering-a-21st-century-infrastructure-for-britain-sep-09.pdf>.

2011.<sup>27</sup> Australia created its green investment bank in 2012.<sup>28</sup> Other countries, states, and municipalities have created green investment banks in the last decade-and-a-half including the United Kingdom (2012),<sup>29</sup> Japan (2013),<sup>30</sup> Malaysia (2010),<sup>31</sup> New Zealand (2019),<sup>32</sup> Hawaii (2014),<sup>33</sup> New Jersey (2019),<sup>34</sup> New York (2014),<sup>35</sup> Rhode Island (2015),<sup>36</sup> Montgomery County, Maryland (2016),<sup>37</sup> and Washington, D.C. (2018).<sup>38</sup> While all were created and funded by public entities to facilitate investment into green technologies and infrastructure, these green investment banks have a wide range of funding arrangements, goals, and methods of stimulating private investment.<sup>39</sup>

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<sup>27</sup> *About Us: The Connecticut Green Bank is the Nation's First Green Bank*, CONN. GREEN BANK, <https://www.ctgreenbank.com/about-us/> (last visited Oct. 22, 2022).

<sup>28</sup> *Clean Energy Finance Corporation*, AUSTL. GOV'T – DEP'T OF FIN., <https://www.finance.gov.au/government/australian-government-investment-funds/clean-energy-finance-corporation> (last visited Oct. 22, 2022).

<sup>29</sup> *Who We Are – Our Mission*, GREEN INV. GRP., <https://www.greeninvestmentgroup.com/en/who-we-are/our-mission.html> (last visited Oct. 22, 2022).

<sup>30</sup> *Japan Green Fund (Japan Green Finance Organisation)*, GREEN FIN. PLATFORM (2013) <https://www.greenfinanceplatform.org/policies-and-regulations/japan-green-fund-japan-green-finance-organisation>.

<sup>31</sup> Priyanka Bhunia, *Malaysian Government's Green Technology Financing Scheme Extended Till 2022 With 5 Billion Allocated for Second Round*, OPEN GOV. ASIA (Oct. 28, 2017) <https://opengovasia.com/malaysian-governments-green-technology-financing-scheme-extended-till-2022-with-myr-5-billion-allocated-for-second-round/>.

<sup>32</sup> *Who We Are*, N.Z. GREEN INV. FIN., <https://nzgif.co.nz/about-us/who-we-are/> (last visited Oct. 22, 2022).

<sup>33</sup> *Hawaii Green Infrastructure Authority (HGIA)*, BETTER BLDG. – U.S. DEP'T OF ENERGY, <https://betterbuildingssolutioncenter.energy.gov/partners/hawaii-green-infrastructure-authority-hgia> (last visited Oct. 22, 2022).

<sup>34</sup> *Regional Greenhouse Gas Initiative Strategic Funding Plan*, N.J. ECON. DEV. AUTH. 44, (2019), <https://www.state.nj.us/rggi/docs/rggi-strategic-funding-plan.pdf>.

<sup>35</sup> *About NY Green Bank*, N.Y. GREEN BANK – A DIVISION OF NYSEERDA <https://greenbank.ny.gov/About/About> (last visited Feb. 19, 2024).

<sup>36</sup> *Who We Are*, R.I. INFRASTRUCTURE BANK, <https://riib.org/about/who-we-are/> (last visited Oct. 22, 2022).

<sup>37</sup> Josh Kurtz, *It's Not That Easy Being a Green Bank in Maryland – But It's Getting Easier*, MD. MATTERS (May 27, 2022), <https://www.marylandmatters.org/2022/05/27/its-not-that-easy-being-a-green-bank-in-maryland-but-its-getting-easier/>.

<sup>38</sup> *We Are DC Green Bank – Financing an Inclusive Clean Energy Future*, DC GREEN BANK, <https://dcgreenbank.com/about/> (last visited Oct. 22, 2022); see generally *Green Investment Banks: Scaling up Private Investment in Low-Carbon, Climate-Resilient Infrastructure*, *supra* note 22.

<sup>39</sup> See *Green Investment Banks: Scaling up Private Investment in Low-Carbon, Climate-Resilient Infrastructure*, *supra* note 22; *About Us: The Connecticut Green Bank is the Nation's First Green Bank*, *supra* note 27; *Clean Energy Finance Corporation*, *supra* note 28; *Who We Are – Our Mission*, *supra* note 29; *Japan Green Fund (Japan Green Finance Organisation)*, *supra* note 30; Bhunia, *supra* note 31; *Who We Are*, *supra* note 32; *Hawaii Green Infrastructure Authority (HGIA)*, *supra* note 33; *Regional Greenhouse Gas*

### **C. The Necessity of Green Investment Banks**

It has become harder to ignore the adverse impacts of global climate change over the last few decades.<sup>40</sup> Already, the latest Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) has “high confidence” that global climate change has caused, among other things “the rise in weather and climate extremes [that] has led to some irreversible impacts . . . substantial damages, and increasingly irreversible losses, in terrestrial, freshwater and coastal and open ocean marine ecosystems [and] reduced food and water security.”<sup>41</sup> This is only the start of the observed adverse effects of global climate change, as the IPCC has noted changes in ecosystem structure, species ranges, and species phenology across much of the globe.<sup>42</sup> In addition, the IPCC has found that global climate change negatively impacts water scarcity and food production while increasing the rate of infectious diseases, malnutrition, negative mental health, housing displacement, damage to infrastructure, and damage to key economic sectors across much of the globe.<sup>43</sup> In short, “[c]limate change is a threat to human well-being and planetary health.”<sup>44</sup>

The U.S. Department of Defense also understands the dire damages and risks associated with global climate change.<sup>45</sup> In a 2014 report, the Department of Defense warned of increased “food and water shortages, pandemic disease, disputes over refugees and resources, and destruction by natural disasters” as well as “more frequent and more intense natural disasters.”<sup>46</sup> By 2021, the Department of Defense was incorporating the changing climate into their “strategy planning[] and processes” while acknowledging that “[t]he unprecedented scale of wildfires, floods, droughts, typhoons, and other extreme weather events of recent months and years have damaged our installations and bases, constrained force readiness and

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*Initiative Strategic Funding Plan, supra note 34; About NY Green Bank, supra note 35; Who We Are, R.I. INFRASTRUCTURE BANK, supra note 36; Kurtz, supra note 37; We Are DC Green Bank – Financing an Inclusive Clean Energy Future, supra note 38.*

<sup>40</sup> See generally *Wildfire Statistics*, CONG. RSCH. SERV. (Oct. 3, 2022), <https://sgp.fas.org/crs/misc/IF10244.pdf>; *Hurricanes and Climate Change*, CTR. FOR CLIMATE AND ENERGY SOLS., <https://www.c2es.org/content/hurricanes-and-climate-change/> (last visited Oct. 22, 2022); *Droughts and Climate Change*, U.S. GEOLOGICAL SURV., <https://www.usgs.gov/science/science-explorer/climate/droughts-and-climate-change> (last visited Oct. 22, 2022); Elena Shao, *How is Climate Change Affecting Floods?*, N.Y. TIMES (Aug. 30, 2022).

<sup>41</sup> See generally HANS-O. PÖRTNER ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS 9 (2022).

<sup>42</sup> *Id.* at 10.

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

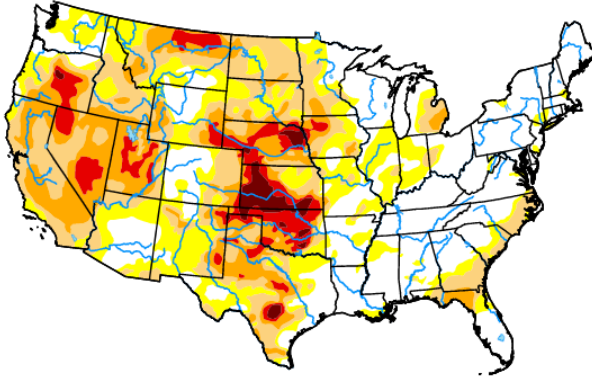
<sup>44</sup> *Id.* at 33.

<sup>45</sup> See generally *2014 Climate Change Adaptation Roadmap*, U.S. DEP’T OF DEF. (2014) [https://www.acq.osd.mil/eie/downloads/CCARprint\\_wForward\\_e.pdf](https://www.acq.osd.mil/eie/downloads/CCARprint_wForward_e.pdf); DEP’T OF DEF., OFFICE OF THE UNDERSECRETARY FOR POLICY (STRATEGY, PLANS, AND CAPABILITIES), CLIMATE RISK ANALYSIS (Oct. 2021).

<sup>46</sup> See Chuck Hagel, U.S. DEP’T OF DEF., *Foreword to 2014 CLIMATE CHANGE ADAPTATION ROADMAP* (2014).

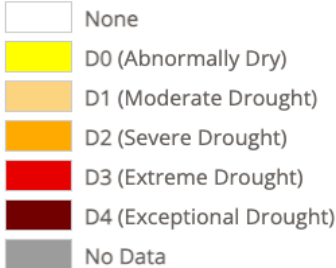


operations, and contributed to instability around the world.”<sup>47</sup>



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### Intensity



Significant portions of the United States are currently in severe drought conditions or worse.<sup>49</sup> The fast-growing Southwest is particularly low on water, with some regions cutting off or limiting water usage.<sup>50</sup>

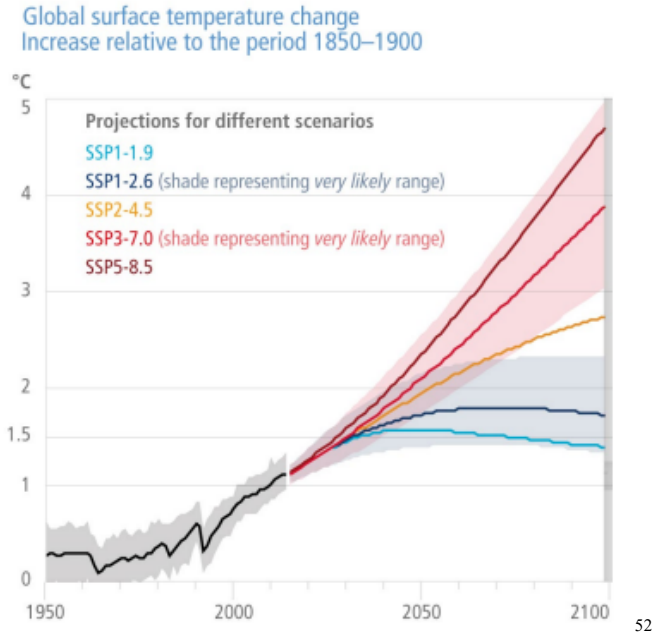
<sup>47</sup> Lloyd J. Austin III, *Foreword* to DEPARTMENT OF DEFENSE CLIMATE RISK ANALYSIS 4 (2021).

<sup>48</sup> Deborah Bathke, *Contiguous U.S.*, U.S. DROUGHT MONITOR (Jan. 17, 2023), <https://droughtmonitor.unl.edu/CurrentMap/StateDroughtMonitor.aspx?conus>.

<sup>49</sup> *Id.*

<sup>50</sup> Jack Healy, *Skipped Shower, Paper Plate: An Arizona Suburb’s Water is Cut Off*, N.Y. TIMES (Jan. 16, 2023), <https://www.nytimes.com/2023/01/16/us/arizona-water-rio-verde-scottsdale.html>; *Statewide Emergency Water Conservation Regulations (2022)*, STATE OF CAL. – CAL. DROUGHT ACTION (2022), <https://drought.ca.gov/state-drought-response/statewide-emergency-water-conservation-regulations/> [<https://web.archive.org/web/20221123142758/> <https://drought.ca.gov/state-drought-response/statewide-emergency-water-conservation-regulations/>]; Ben Winslow, ‘*To Protect and Conserve:*’ *Las Vegas Has Strict Outdoor Watering Restrictions. Should Utah Do the Same?*, SALT LAKE TRIB. (Nov. 15, 2022), <https://www.sltrib.com/news/2022/11/14/protect-conserve-las-vegas-has/>.

The world's population is already facing the grave effects of global climate change. Unfortunately, even the best-case scenario projects global temperatures increasing and the effects of global climate change continuing to worsen over the next 20 years, and possibly beyond.<sup>51</sup>



Some of the worst-case scenarios would involve global temperature increases of over 1° Celsius in the next 20 years, resulting in untold devastation to humanity and the globe.<sup>53</sup> While the effects of climate change have so far been concentrated in poorer populations and countries that contribute the least to global climate change, wealthier countries and populations will start to experience these consequences as global temperatures continue to rise.<sup>54</sup>

To attain the best-case scenarios and eventually start reducing the effects of global climate change, drastic action is needed on numerous fronts.<sup>55</sup> The global

<sup>51</sup> Hans-O. Pörtner et al., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE INTRODUCTION TO WFII AR6 FACT SHEETS 3 (2022).

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

<sup>53</sup> *Id.*

<sup>54</sup> See Achim Steiner et al., *Climate Change is a Threat to Rich and Poor Alike*, U.N. CLIMATE CHANGE (Oct. 13, 2017), <https://unfccc.int/news/climate-change-is-a-threat-to-rich-and-poor-alike>.

<sup>55</sup> See generally LAUREN STUART ET AL., WORLD METEOROLOGICAL ORG., UNITED IN SCIENCE 2022 (2022); Nuran Erkul Kaya, *Drastic Action Needed to Avoid Climate Change Costs*, AA ENERGY (Mar. 30, 2021), <https://www.aa.com.tr/en/energy/coal/drastic-action->

community must make an aggressive and immediate shift towards renewable and low-carbon energy sources while decreasing energy demand. This will require investing heavily in carbon-free and energy-efficient technologies to both increase sustainable energy generation and decrease overall energy consumption.

The United States, Europe, and Australia must shift their electricity sources towards less carbon-emitting sources.<sup>56</sup> The United States' use of coal for electricity generation peaked in 2007 and has fallen by over half in the years since.<sup>57</sup> While the United States' use of natural gas has increased substantially in the same time period, natural gas is relatively clean compared to coal.<sup>58</sup> In addition, the combined use of natural gas and coal has decreased since 2007 as they are replaced by renewable energy sources.<sup>59</sup> The European Union and Australia have also cut the percentage of their electricity generation from oil, gas, and coal since 2007.<sup>60</sup> However, global sources of electricity generation have remained relatively steady, with the percentage of electricity from gas increasing slightly and the percentage from coal slowly decreasing.<sup>61</sup>

The United States has started on the path of reducing energy consumption: electricity usage has remained relatively steady since 2007 despite significant increases in gross domestic product (GDP).<sup>62</sup>

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needed-to-avoid-climate-change-costs/32297; *Climate Change: Drastic and Immediate Action Needed to Save the Planet*, BRUSSELS TIMES (Aug. 10, 2021), <https://www.brusselstimes.com/news-contents/world/180726/climate-change-not-too-late-to-save-the-planet-if-emissions-are-reduced-now-towards-climate-neutrality>.

<sup>56</sup> *Electricity Explained*, U.S. ENERGY INFO. ADMIN. (April 20, 2023), <https://www.eia.gov/energyexplained/electricity/use-of-electricity.php>; *Electricity Production from Oil, Gas and Coal Sources (% of total) – European Union*, WORLD BANK, <https://data.worldbank.org/indicator/EG.ELC.FOSL.ZS?locations=EU> (last visited Oct. 23, 2022); *Australian Electricity Generation – Fuel Mix*, AUSTRAL. GOV'T DEP'T CLIMATE CHANGE, ENERGY, ENV'T & WATER, <https://www.energy.gov.au/data/Australian-electricity-generation-fuel-mix> (last visited Oct. 23, 2022).

<sup>57</sup> See *Electricity Explained*, *supra* note 56.

<sup>58</sup> *Natural Gas Explained*, U.S. ENERGY INFO. ADMIN. (May 3, 2022), <https://www.eia.gov/energyexplained/natural-gas/natural-gas-and-the-environment.php>.

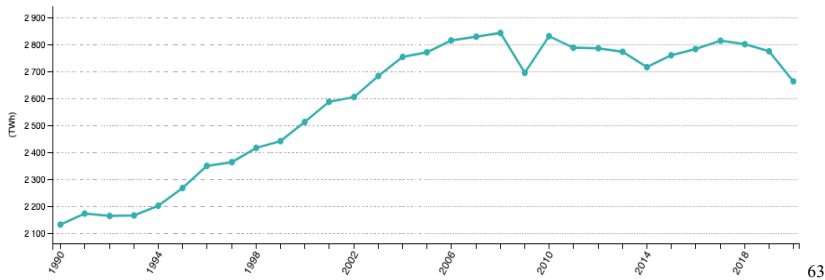
<sup>59</sup> *Electricity Explained*, *supra* note 56.

<sup>60</sup> *Electricity Production from Oil, Gas and Coal Sources (% of total) – European Union*, *supra* note 56; *Australian Electricity Generation – Fuel Mix*, *supra* note 56.

<sup>61</sup> See generally Hannah Richie & Max Roser, *Electricity Mix*, OUR WORLD IN DATA (2020), <https://ourworldindata.org/electricity-mix#citation>.

<sup>62</sup> *Electricity Explained*, *supra* note 56; *Gross Domestic Product*, FED. RSRV. ECON. DATA, <https://fred.stlouisfed.org/series/GDP> (last visited Oct. 23, 2022).

Net electricity generation, EU, 1990-2020



Europe is even further along: the European Union's electricity usage peaked in 2008, and in 2020 had its lowest electricity usage since 2002.<sup>64</sup> Despite this decrease in energy consumption, the European Union has had net GDP growth in the period despite two global financial crises outside the European Union's control.<sup>65</sup> Prior to these shifts, energy usage and GDP had moved in lockstep for centuries.<sup>66</sup> However, despite the successes of some of the world's most developed economies, global electricity consumption has continued to climb as even more developed countries such as Australia struggle to curb energy consumption.<sup>67</sup>

To make the enormous changes necessary to prevent the worst effects of global climate change, the most developed countries must rapidly increase their generation of clean energy while rapidly decreasing their overall energy consumption.<sup>68</sup> This will require massive investments in technology and infrastructure, which is where green investment banks play an important role. Green investment banks can aid in scaling existing green energy generation such as solar, hydro, wind, and geothermal; incentivize investments in energy conservation with upgrades such as heat pumps, energy efficient windows, and energy efficient appliances; and help to get new technologies such as tidal energy generation and carbon capture off the ground.

<sup>63</sup> *Electricity Production, Consumption and Market Overview*, EUROSTAT (May 2022) [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity\\_production,\\_consumption\\_and\\_market\\_overview](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_production,_consumption_and_market_overview).

<sup>64</sup> *Id.*

<sup>65</sup> *GDP Growth (Annual %) – European Union*, WORLD BANK, <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?end=2021&locations=EU&start=2008> (last visited Oct. 23, 2022).

<sup>66</sup> See generally Namit Sharma et al., *The Decoupling of GDP and Energy Growth: A CEO Guide*, MCKINSEY (Apr. 24, 2019), <https://www.mckinsey.com/industries/electric-power-and-natural-gas/our-insights/the-decoupling-of-gdp-and-energy-growth-a-ceo-guide>.

<sup>67</sup> *Electricity Consumption*, INT'L ENERGY AGENCY, <https://www.iea.org/reports/electricity-information-overview/electricity-consumption> (last visited Oct. 23, 2022); *Australian Electricity Generation – Fuel Mix*, *supra* note 56.

<sup>68</sup> See generally STUART ET AL., *supra* note 55; PÖRTNER ET AL., *supra* note 41, at 33.

### III. AUSTRALIA

#### A. History

Australia's green investment banking legislation was introduced in May 2012.<sup>69</sup> One month later, both Houses passed the Clean Energy Finance Corporation Act of 2012 and presented it to the Governor-General for assent to become law.<sup>70</sup> The 2012 Act created the Clean Energy Finance Corporation (CEFC) and the Clean Energy Finance Corporation Board (the Board), which were both established on August 3, 2012.<sup>71</sup>

In addition to establishing the CEFC and the Board, the 2012 Act required an investment mandate of AU\$2 billion per year from July 1, 2013 to July 1, 2017, and a list of complying investments and restrictions on investments.<sup>72</sup>

Tony Abbott was a member of the center-right Liberal Party and was Prime Minister of Australia from September 2013 to September 2015.<sup>73</sup> As Prime Minister, Abbott first attempted to abolish the CEFC through his Treasurer Joe Hockey.<sup>74</sup> Hockey directed the CEFC to cease operations, but the CEFC refused and threatened to sue.<sup>75</sup> Abbott responded by twice attempting to abolish the CEFC through Parliament, first in December 2013, then again in June 2014.<sup>76</sup> However, both votes failed in the Senate.<sup>77</sup> The second vote was a double dissolution trigger that allowed Abbott to dissolve both houses of Parliament and call a federal election.<sup>78</sup> However, Abbott declined to do so because renewable energy and spending on green technologies was incredibly popular in Australia, with some

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<sup>69</sup> See *Clean Energy Finance Corporation Bill 2012*, PARLIAMENT OF AUSTRALIA, [https://www.aph.gov.au/Parliamentary\\_Business/Bills\\_Legislation/Bills\\_Search\\_Results/Result?bId=r4814](https://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r4814) (last visited Feb. 25, 2023).

<sup>70</sup> *Id.*

<sup>71</sup> *Clean Energy Finance Corporation*, *supra* note 28.

<sup>72</sup> *Id.* Between 2013 and 2022 the AUD has been worth between \$0.58USD and \$1.06USD. *Australian– US Dollar Exchange Rate (AUD USD)– Historical Chart*, MACROTRENDS, <https://www.macrotrends.net/2551/australian-us-dollar-exchange-rate-historical-chart> (last visited Feb. 25, 2023).

<sup>73</sup> *Hon Tony Abbott AC*, PARLIAMENT OF AUSTRALIA, [https://www.aph.gov.au/Senators\\_and\\_Members/Parliamentarian?MPID=EZ5](https://www.aph.gov.au/Senators_and_Members/Parliamentarian?MPID=EZ5) (last visited Nov. 21, 2022).

<sup>74</sup> Lenore Taylor, *Clean Energy Finance Corporation Could Sue Over Coalition Shutdown*, GUARDIAN (Sept. 18, 2013), <https://www.theguardian.com/world/2013/sep/19/clean-energy-finance-corp-could-sue>.

<sup>75</sup> *Id.*

<sup>76</sup> Latika Bourke, *Government Given Double Dissolution Trigger as Clean Energy Finance Corporation Abolition Bill Voted Down*, AUSTRALIAN BROADCASTING CORPORATION NEWS (June 17, 2014), <https://www.abc.net.au/news/2014-06-18/abbott-government-given-first-double-dissolution-trigger/5532358>.

<sup>77</sup> *Id.*

<sup>78</sup> *Double Dissolution*, PARLIAMENTARY EDUC. OFF., <https://peo.gov.au/understand-our-parliament/having-your-say/elections-and-voting/double-dissolution/> (last visited Nov. 21, 2022).

polls showing support as high as 72%.<sup>79</sup>

As a result of Abbott's failure to dissolve the CEFC and decision not to use the double dissolution to call an election, the CEFC survived and still exists today.<sup>80</sup> However, uncertainty, unfavorable treatment, and lack of prioritization during the time Abbott served as Prime Minister likely set the CEFC back and restricted its ability to increase public investment.<sup>81</sup>

More recently, Scott Morrison, who served as Australia's Prime Minister from August 2018 to May 2022 and is also a member of the Liberal Party, attempted to modify the CEFC's Investment Mandate to allow it to invest in fossil fuel projects.<sup>82</sup> However, the effort failed and the 2022 election resulted in a "greenslide" as voters consistently turned out for candidates and parties in favor of stronger government action on climate change.<sup>83</sup> The center-left Labor Party came to power while the environmental-focused Green Party had their best election ever.<sup>84</sup> The election focused on environmental concerns such as recent environmental disasters in Australia, and voters overwhelmingly favored Australia's reducing emissions, investing in green technologies, and becoming "a renewable energy powerhouse."<sup>85</sup>

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<sup>79</sup> Alexander White, *Abbott Completely Isolated by Palmer's "Inconvenient Senate"*, GUARDIAN (June 25, 2014), <https://www.theguardian.com/environment/southern-crossroads/2014/jun/25/clive-palmer-al-gore-climate-change-renewable-energy-carbon-price>.

<sup>80</sup> See *Main Page*, CLEAN ENERGY FIN. CORP., <https://www.cefc.com.au/> (last visited Nov. 22, 2022).

<sup>81</sup> See generally Giles Parkinson, *Is This the Death of Australia's Renewable Energy Industry?*, RENEW ECON. CLEAN ENERGY NEWS & ANALYSIS (Oct. 6, 2014), <https://reneweconomy.com.au/is-this-the-death-of-australias-renewable-energy-industry-83477/>; Lenore Taylor, *Renewable Energy Target Review Backs Closure of Scheme to New Entrants*, GUARDIAN (Aug. 28, 2014), <https://www.theguardian.com/environment/2014/aug/28/renewable-energy-target-review-calls-scheme-closed-new-entrants>; White, *supra* note 79.

<sup>82</sup> *Hon Scott Morrison MP*, PARLIAMENT OF AUSTR., [https://www.aph.gov.au/Senators\\_and\\_Members/Parliamentarian?MPID=E3L](https://www.aph.gov.au/Senators_and_Members/Parliamentarian?MPID=E3L) (last visited Nov. 22, 2022); see Adam Morton, *Green Bank Shouldn't Fund Gas-Fired Power, Ex-Officials Tell Federal MPs*, GUARDIAN (Nov. 9, 2020), <https://www.theguardian.com/environment/2020/nov/10/green-bank-shouldnt-fund-gas-fired-power-ex-officials-tell-federal-mps>; Henry Belot, *Federal Government Renews Plans to Overhaul Clean Energy Fund to Allow it to Invest in Carbon Capture and Storage*, AUSTR. BROAD. CORP. (Nov. 9, 2021), <https://www.abc.net.au/news/2021-11-09/cefc-fund-investment-scott-morrison-carbon-capture-storage/100607070>.

<sup>83</sup> Alice Klein, *Australia Votes for Stronger Climate Action in 'Greenslide' Election*, NEW SCIENTIST (May 23, 2022), <https://www.newscientist.com/article/2321434-australia-votes-for-stronger-climate-action-in-greenslide-election/>.

<sup>84</sup> *Id.*

<sup>85</sup> Klein, *supra* note 83.

## **B. Organization**

The Board oversees the CEFC.<sup>86</sup> The Board consists of a Chair and between four and six other members.<sup>87</sup> The Chair and other board members are appointed by the responsible Ministers on a part-time basis.<sup>88</sup> The Treasurer and Finance Ministers are the responsible Ministers for the CEFC.<sup>89</sup> When appointing a board member, the responsible Minister must choose a person with “substantial experience or expertise” and “professional credibility and significant standing” in at least one of the listed relevant fields.<sup>90</sup>

In addition, the board member must not be an employee of the Australian Commonwealth or hold a full-time office under a law of the Commonwealth.<sup>91</sup> The current board includes a Vice Chairman of Deutsche Bank AG; a founder, managing director, and CEO of a solar company; a former CEO of the largest aluminum smelter in the Asia Pacific region; a director of an investment fund; a founder, former managing director, and CEO of an investment fund; the Pro Vice Chancellor of the University of Western Australia; and a non-executive director at an investment fund.<sup>92</sup>

While the Board is appointed by the responsible Ministers and its members can be fired under certain conditions, it still operates semi-independently of the Australian government: members have a set term of employment, their pay is determined by an independent agency, and they can only be terminated for cause.<sup>93</sup> The responsible Minister can appoint board members for up to five years.<sup>94</sup> While the responsible Minister does not have to appoint board members to a full five-year term, all seven current board members are serving five-year terms and most have been reappointed.<sup>95</sup>

Another source of independence from government interference for the Board is their pay.<sup>96</sup> Board members’ pay is determined by the Remuneration Tribunal and governed by the Remuneration Tribunal Act of 1973.<sup>97</sup> The Remuneration Tribunal Act of 1973 established the Remuneration Tribunal “as an independent statutory authority responsible for reporting on and determining the

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<sup>86</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 3 div 1 (Austl.).

<sup>87</sup> *Id.* at pt 3 div 2.

<sup>88</sup> *Id.*

<sup>89</sup> *Id.* at pt 1.

<sup>90</sup> *Id.* at pt 3 div 2. (these fields are the following: banking and finance; venture capital, private equity or investment by way of lending or provision of credit; economics; engineering; energy technologies; government funding programs or bodies; the environmental sector; financial accounting; and law).

<sup>91</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 3 div 2 (Austl.).

<sup>92</sup> *Our Board*, CLEAN ENERGY FIN. CORP., <https://www.cefc.com.au/who-we-are/about-us/our-board/> (last visited Oct. 3, 2023).

<sup>93</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 3 div 2 (Austl.).

<sup>94</sup> *Id.*

<sup>95</sup> *Our Board*, *supra* note 92.

<sup>96</sup> *See Clean Energy Finance Corporation Act 2012* (Cth) pt 3 div 2 (Austl.).

<sup>97</sup> *Id.*

remuneration.”<sup>98</sup> The Remuneration Tribunal puts a barrier between the Board and the Australian government so that political actors cannot influence the Board’s actions through manipulating their pay.<sup>99</sup>

Finally, while the board members for the CEFC can be terminated by the responsible Ministers, the Ministers can only do so for cause.<sup>100</sup> The possible reasons for termination are laid out in the text of the 2012 Act and at least one of the reasons must be met for the Ministers to terminate a board member.<sup>101</sup> While these reasons are fairly broad, they still protect board members from being terminated without cause.<sup>102</sup>

The Board has three functions: “(a) to decide strategies and policies to be followed by the Corporation; and (b) to ensure the proper, efficient and effective performance of the Corporation’s functions; and (c) any other functions conferred on the Board by this Act.”<sup>103</sup>

In short, the Board oversees the overall direction of the CEFC just as a board of directors would oversee a traditional public company.<sup>104</sup>

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<sup>98</sup> Explanatory Memorandum, Remuneration Tribunal (Judicial and Related Offices – Remuneration and Allowances) Determination 2021 (Austl.), <https://www.remtribunal.gov.au/sites/default/files/2021-06/RT%20JRO%20Determination%202021%20-%20Explanatory%20Statement%20zero%20per%20cent.pdf>; see *Remuneration Tribunal Act 1973* (Cth) (Austl.).

<sup>99</sup> See *Remuneration Tribunal Act 1973*, (Cth) pt 2 div 2 (Austl.).

<sup>100</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 3 div 2 (Austl.).

<sup>101</sup> *Id.* The possible reasons are:

(a) for misbehavior; or (b) if the member is unable to perform the duties of his or her office because of physical or mental incapacity; or (c) if the member: (i) becomes bankrupt; or (ii) applies to take the benefit of any law for the relief of bankrupt or insolvent debtors; or (iii) compounds with his or her creditors; or (iv) makes an assignment of his or her remuneration for the benefit of his or her creditors; or (d) if the member is absent, except on leave of absence, from 3 consecutive meetings of the Board; or (e) if the member fails, without reasonable excuse, to comply with an obligation imposed on him or her by section 27F or 27J of the Commonwealth Authorities and Companies Act 27 1997; or (f) if the responsible Ministers are satisfied that the performance 29 of the Board member has been unsatisfactory for a significant period.

*Id.*

<sup>102</sup> See *id.*

<sup>103</sup> *Id.* at pt 3 div 1.

<sup>104</sup> See *id.*; see also *Get on Board: Understanding the Role of Corporate Directors*, FINRA, [https://www.finra.org/investors/insights/get-board-understanding-role-corporate-directors#:~:text=Chosen%20by%20shareholders%2C%20the%20primary,corporate%20activities%20and%20assessing%20performance,\(last visited Oct. 3, 2023\)](https://www.finra.org/investors/insights/get-board-understanding-role-corporate-directors#:~:text=Chosen%20by%20shareholders%2C%20the%20primary,corporate%20activities%20and%20assessing%20performance,(last visited Oct. 3, 2023)).



The Board is responsible for ensuring that the CEFC adheres to the Investment Mandate by the responsible Ministers.<sup>105</sup> The Investment Mandate set by the responsible Ministers must take into account the objectives of the 2012 Act but can include any other matters the Ministers consider relevant.<sup>106</sup>

### **C. Funding**

The CEFC is funded by the Clean Energy Finance Corporation Special Account (Special Account).<sup>107</sup> The Australian government created the Special Account as part of the 2012 Act.<sup>108</sup> It was initially granted AU\$2 billion every July 1, from 2013 to 2017, for a total of AU\$10 billion.<sup>109</sup> The CEFC may, in writing, request funds from the Special Account in order to meet liabilities or expenses that are due or “expected to become due during the period specified in the request” or “so that the total balance of the [CEFC’s] bank account or accounts is at least the operating balance.”<sup>110</sup> The CEFC cannot request payment from the Special Account that would exceed the uncommitted amount in the account.<sup>111</sup> If all these conditions are met, the responsible Minister must give written authorization of the requested payment.<sup>112</sup>

In addition to money from the Special Account, any profit the CEFC earns as a bank becomes its money.<sup>113</sup> The CEFC’s money can be used to perform its investment functions, pay general costs and expenses incurred in the performance of its functions, pay any remuneration or allowance to a person allowed under the 2012 Act, or make payments to the Australian Commonwealth.<sup>114</sup> The CEFC would make payments to the Australian Commonwealth when the surplus money exceeds AU\$0.02 billion and the responsible Ministers direct it to do so.<sup>115</sup> When the CEFC disburses funds to the Australian Commonwealth from its surplus, these funds are allocated to the Special Account, which may subsequently be accessed by the CEFC.<sup>116</sup>

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<sup>105</sup> *Clean Energy Finance Corporation Act* (Cth) pt 6 div 2 (Austl.).

<sup>106</sup> *Id.*

<sup>107</sup> *Clean Energy Finance Corporation Act* (Cth) pt 5 div 1 (Austl.).

<sup>108</sup> *Id.*

<sup>109</sup> *Id.*

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 5 div 1 (Austl.).

<sup>113</sup> *Id.* at pt 5 div 2.

<sup>114</sup> *Id.*

<sup>115</sup> *Id.*

<sup>116</sup> *Id.* at pt 5 divs 1, 2.

## **D. Investments**

The CEFC has a wide range of green investments that it divides into three sections: backing the clean energy system of the future; investing across the economic landscape; and tapping into new investment models and opportunities.<sup>117</sup>

### **1. Backing the clean energy system of the future**

Backing the clean energy system of the future is further divided into four subsections: renewable energy, grid infrastructure, energy storage, and waste and bioenergy.<sup>118</sup> The renewable energy subsection consists of the CEFC's investments in large-scale wind and solar generation.<sup>119</sup> The Australian electricity grid is still largely reliant on fossil fuels to generate its electricity.<sup>120</sup> In addition, electricity demand in Australia is projected to double by 2050 as transportation, homes, and businesses are electrified.<sup>121</sup> The Australian Energy Market Operator projects Australia will need to increase its renewable energy capacity from 16 GW to 141 GW by 2050.<sup>122</sup> To support this massive shift while reducing their reliance on fossil fuels, Australia needs significant investments in renewable energy.<sup>123</sup> The CEFC has committed a total of AU\$2.65 billion to investments in the renewable energy subsection.<sup>124</sup>

The grid infrastructure subsection is comprised of the CEFC's investments in the energy grid, including connecting clean energy projects to the grid and grid balancing technologies like transmission interconnectors.<sup>125</sup> The Australian Energy Market Operator projects that Australia will need over 10,000 kilometers of new transmission by 2050 and the Australian government has proposed an AU\$20 billion policy that would start to address this need.<sup>126</sup> The CEFC has committed a total of AU\$0.58 billion to investments in the grid infrastructure subsection.<sup>127</sup>

The energy storage subsection includes the CEFC's investments in energy storage.<sup>128</sup> As electricity generation in Australia shifts to more renewable sources, the Australian Energy Market Operator projects Australia's storage capacity will

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<sup>117</sup> See CLEAN ENERGY FIN. CORP., ANNUAL REPORT 2021–22, 38–78 (Sept. 2022) [hereinafter CEFC REPORT].

<sup>118</sup> See CEFC REPORT, *supra* note 117, at 38–47.

<sup>119</sup> See *id.* at 40.

<sup>120</sup> *Australian Electricity Generation – Fuel Mix*, *supra* note 56.

<sup>121</sup> CEFC REPORT, *supra* note 117, at 40.

<sup>122</sup> *Id.*

<sup>123</sup> See *id.*

<sup>124</sup> *Id.*

<sup>125</sup> *Id.* at 42.

<sup>126</sup> See CEFC REPORT, *supra* note 117, at 42.

<sup>127</sup> *Id.*

<sup>128</sup> *Id.* at 44.

need to rise from the current 2 GW to 61 GW by 2050.<sup>129</sup> The CEFC has committed a total of AU\$0.209 billion to investments in the energy storage subsection.<sup>130</sup>

Finally, the waste and bioenergy subsection represents the CEFC's investments in waste and landfill management, recycling and resource recovery, and biofuel production.<sup>131</sup> The CEFC has committed a total of AU\$0.43 billion to investments in the energy storage subsection.<sup>132</sup>

## 2. Investing across the economic landscape

Investing across the economic landscape is also subdivided into four subsections: property, infrastructure, natural capital, and industry and resources.<sup>133</sup> The property subsection includes the CEFC's investments in properties ranging from commercial office space to student housing to retirement homes.<sup>134</sup> Construction in Australia contributes to more than 50% of electricity consumption and up to 25% of greenhouse gas emissions.<sup>135</sup> The CEFC is working to reduce emissions from construction by 2030 by up to 73% (from 2020 levels), while shifting buildings to full electrification by 2040.<sup>136</sup> The CEFC has committed a total of AU\$1.92 billion to investments in the property subsection.<sup>137</sup>

The infrastructure subsection is comprised of the CEFC's investments in infrastructure key to Australia's economy such as airports, seaports, bus fleets and terminals, railcars and railways, and data centers.<sup>138</sup> Infrastructure accounts for approximately 70% of Australia's greenhouse gas emissions.<sup>139</sup> The CEFC has committed a total of AU\$1.15 billion to investments in the infrastructure subsection.<sup>140</sup>

The natural capital subsection represents the CEFC's investments in Australia's agriculture sector as well as "measures to regenerate and improve land, water, and biodiversity."<sup>141</sup> The CEFC has committed a total of AU\$0.27 billion to investments in the natural capital subsection.<sup>142</sup>

Finally, the industry and resources subsection consists of the CEFC's investments in Australia's manufacturing and mining industries.<sup>143</sup> The CEFC has

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<sup>129</sup> See CEFC REPORT, *supra* note 117, at 44.

<sup>130</sup> *Id.*

<sup>131</sup> *Id.* at 46.

<sup>132</sup> *Id.*

<sup>133</sup> *Id.* at 48.

<sup>134</sup> See CEFC REPORT, *supra* note 117, at 50.

<sup>135</sup> *Id.*

<sup>136</sup> See *id.*

<sup>137</sup> *Id.*

<sup>138</sup> *Id.* 52.

<sup>139</sup> See CEFC REPORT, *supra* note 117, at 52.

<sup>140</sup> *Id.*

<sup>141</sup> *Id.* at 54.

<sup>142</sup> *Id.*

<sup>143</sup> *Id.* at 56.

committed a total of AU\$0.266 billion to investments in the industry and resources subsection.<sup>144</sup>

### 3. Tapping into new investment models

Finally, tapping into new investment models is further divided into four subsections: debt markets, alternatives, hydrogen, and cleantech innovation.<sup>145</sup> The debt markets subsection represents the CEFC's use of debt markets to encourage green investment, such as increasing electric car purchases or helping small-scale businesses shift to more sustainable practices.<sup>146</sup> The CEFC has committed a total of AU\$2.66 billion to investments in the debt markets subsection.<sup>147</sup>

The alternatives subsection includes the CEFC's use of alternative investment products, ranging from large-scale institutional funds to smaller, sector-specific funds to private equity, to increase decarbonization ambition through active investing.<sup>148</sup> This subsection also includes the CEFC's investments in developing Australia's carbon market for companies or individuals to pay to offset their carbon usage.<sup>149</sup> The CEFC has committed a total of AU\$0.353 billion to investments in the alternatives subsection.<sup>150</sup>

The hydrogen subsection consists of the CEFC's investments in renewable hydrogen.<sup>151</sup> Some aspects of the economy are more difficult to decarbonize, such as heavy transportation, aviation, shipping, and manufacturing.<sup>152</sup> For these industries, hydrogen can be a useful bridge energy source to make the, more sustainable.<sup>153</sup> While not yet financially viable for institutional investors, the CEFC can encourage investors' interest by proving up risks much like it did in Australia's renewable energy and battery storage markets.<sup>154</sup> The CEFC has committed a total of \$AU0.02325 billion to investments in the hydrogen subsection.<sup>155</sup>

Finally, the cleantech innovation subsection is comprised of the CEFC's Clean Energy Innovation Fund.<sup>156</sup> The Clean Energy Innovation Fund is Australia's largest cleantech venture capital investor that invests in "innovative businesses focused on reaching net zero emissions."<sup>157</sup> The CEFC's investments through the Clean Energy Innovation Fund have catalyzed an additional AU\$3.17 in private

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<sup>144</sup> See CEFC REPORT, *supra* note 117.

<sup>145</sup> *Id.* at 60.

<sup>146</sup> *Id.* at 62–63.

<sup>147</sup> *Id.* at 62.

<sup>148</sup> *See id.* at 66.

<sup>149</sup> See CEFC REPORT, *supra* note 117, at 76.

<sup>150</sup> *Id.* at 66.

<sup>151</sup> *Id.* at 68.

<sup>152</sup> *Id.*

<sup>153</sup> *Id.*

<sup>154</sup> See CEFC REPORT, *supra* note 117, at 68.

<sup>155</sup> *Id.*

<sup>156</sup> *Id.* at 70.

<sup>157</sup> *Id.*

sector investment for every AU\$1 invested.<sup>158</sup> The CEFC has committed a total of AU\$0.163 billion to investments in the cleantech innovation subsection.<sup>159</sup>

## **E. Results**

The CEFC's most recent annual report is from September 27, 2022.<sup>160</sup> All results are current up to June 30, 2022.<sup>161</sup> The Clean Energy Finance Corporation Act was passed in June of 2012, making this report the ten-year anniversary of the CEFC's inception.<sup>162</sup> The CEFC has committed a total of AU\$10.7 billion with a transaction value of AU\$37.15 billion.<sup>163</sup> It has had returns and repayments of AU\$3.32 billion, including AU\$0.837 billion in the past year alone, allowing it to invest beyond its initial AU\$10 billion fund from the Australian government.<sup>164</sup> Despite already committing more than the initial funding from the Australian government, the CEFC still has AU\$4.57 billion in available capital,<sup>165</sup> largely due to returns and repayments from past investments.<sup>166</sup>

Since its inception, the CEFC has had a private sector leverage of 1:2.42, meaning that for every AU\$1 invested by the CEFC, the private sector invests another AU\$2.42.<sup>167</sup> That number is even higher for the past five years, at 1:2.54, showing that the CEFC is becoming more effective at driving private investment.<sup>168</sup>

Since its inception, the CEFC's portfolio has had a combined annualized rate of return of 4.48%.<sup>169</sup> Over the last five years, the portfolio's combined annualized rate of return was 4.49%.<sup>170</sup>

The CEFC's investments have abated an estimated 200 million metric tons of carbon dioxide emissions and brought to the market 3.6GW of renewable energy capacity.<sup>171</sup> At AU\$10.7 billion committed, that means the CEFC has abated approximately 0.019 metric tons of carbon dioxide for every AU\$1 invested.<sup>172</sup>

In fiscal year 2022, the CEFC had AU\$0.22 billion from adjusted operations, an operating surplus of AU\$0.190 billion, and AU\$0.90 billion in free cashflow, while 86% of new investment commitments had at least two positive

<sup>158</sup> See CEFC REPORT, *supra* note 117, at 71.

<sup>159</sup> *Id.* at 70.

<sup>160</sup> See Steve Skala, CLEAN ENERGY FIN. CORP., *Introductory Letter to ANNUAL REPORT 2021–22* (Sept. 27, 2022).

<sup>161</sup> See generally CEFC REPORT, *supra* note 117.

<sup>162</sup> *Clean Energy Finance Corporation Bill 2012*, *supra* note 69.

<sup>163</sup> See CEFC REPORT, *supra* note 117, at 8.

<sup>164</sup> See *id.* at 8–9, 32.

<sup>165</sup> See *id.* at 8–9.

<sup>166</sup> See *id.* at 9.

<sup>167</sup> See *id.*

<sup>168</sup> See CEFC REPORT, *supra* note 117, at 12.

<sup>169</sup> *Id.* at 13.

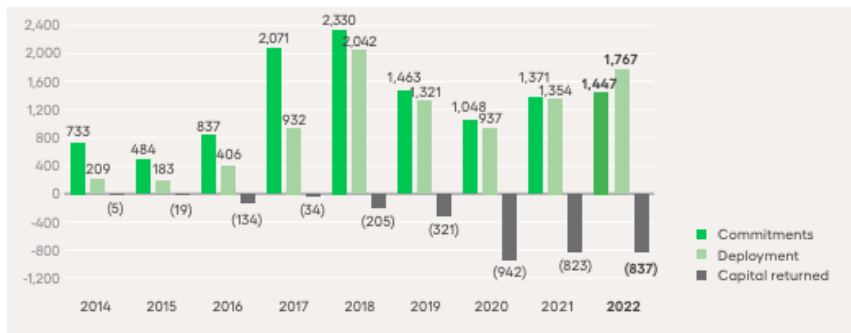
<sup>170</sup> *Id.*

<sup>171</sup> See *id.* at 8.

<sup>172</sup> See *id.*

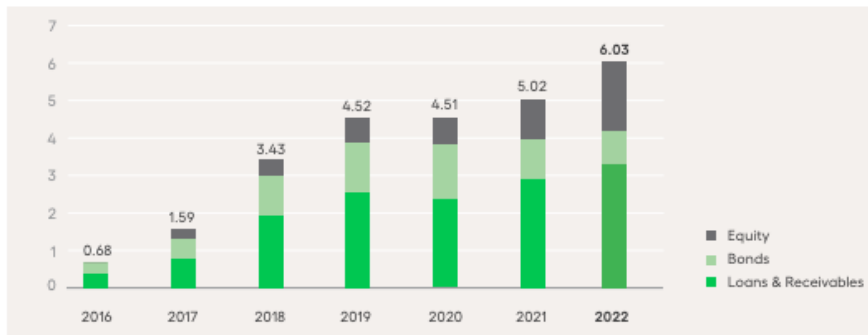
Environmental, Social, and Governance factors and are projected to reduce carbon dioxide emissions by 1.4 metric tons per year.<sup>173</sup>

**Figure 11: New commitments, deployment and capital returned (\$m)**



174

**Figure 12: Deployed portfolio balance at 30 June (\$m)**



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As the above figures show, the CEFC has started to see a return on its investments over the past few years.<sup>176</sup> Those returns have led to an increase in equity in the CEFC's investments, as well as an increase in capital returned.<sup>177</sup> As

<sup>173</sup> See CEFC REPORT, *supra* note 117, at 28–32. The nine positive ESG factors are decarbonization; industry engagement and collaboration; climate risk disclosure; resource efficiency and circular economy; reef catchment; local job creation and socioeconomic impacts; and First Nations peoples and social engagement; community connection; and ESG performance. See *id.* at 84–88.

<sup>174</sup> See CEFC REPORT, *supra* note 117, at 126 (showing capital committed, deployed, and returned by year. Starting in 2020, the capital returned started to generate significant revenue for CEFC to help fund further commitments and deployments).

<sup>175</sup> See *id.* (showing CEFC portfolio balance in equities, bonds, and loans and receivables by year. The equity in the portfolio has been growing, with a significant jump in 2022).

<sup>176</sup> See *id.* at 126.

<sup>177</sup> See *id.*

the CEFC's assets continue to grow and mature those returns are only projected to increase.<sup>178</sup>

#### IV. UNITED STATES

##### A. History

President Biden signed the Inflation Reduction Act (IRA) into law on August 16, 2022.<sup>179</sup> The IRA created the Greenhouse Gas Reduction Fund, a \$27 billion green investment bank to be administered by the EPA.<sup>180</sup> Although the federal government in the United States is new to the world of green investment banks, states and municipalities in the United States were some of the first adopters.<sup>181</sup>

The green investment bank model was first proposed by Reed Hundt and Ken Berlin while they were working on the Obama-Biden Transition Team.<sup>182</sup> In collaboration with Congressman Chris Van Hollen, then-representative for Maryland's 8th Congressional District, Hundt and Berlin helped to introduce the Green Bank Act of 2009.<sup>183</sup> The Green Bank Act of 2009 would have created a green investment bank similar to Australia's model.<sup>184</sup> The bank was to be allocated \$7.5 billion in startup capital and would have been a tax-exempt, independent corporation wholly owned by the United States.<sup>185</sup> The Green Bank Act of 2009 passed the House of Representatives as part of the American Clean Energy and Security Act of 2009,<sup>186</sup> but died amid legislative gridlock in the Senate as part of the Clean Energy Jobs and American Power Act.<sup>187</sup>

Frustrated with the gridlock in the federal system, Hundt, Berlin, and others shifted their attention to the states.<sup>188</sup> Their efforts contributed to the creation of many of the state-sponsored green investment banks in the United States today,

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<sup>178</sup> See CEFC REPORT, *supra* note 117, at 126.

<sup>179</sup> *Remarks by President Biden at Signing of H.R. 5376*, *supra* note 2.

<sup>180</sup> See H.R. 5376 § 60103.

<sup>181</sup> See generally *About Us: The Connecticut Green Bank is the Nation's First Green Bank*, *supra* note 27.

<sup>182</sup> *About CGC: Who We Are and What We Do*, *supra* note 26.

<sup>183</sup> *About Chris*, CHRIS VAN HOLLEN U.S. SENATOR FOR MD., <https://www.vanhollen.senate.gov/about> (last visited Feb. 25, 2023); *About CGC: Who We Are and What We Do*, *supra* note 26; Green Bank Act of 2009, H.R. 1698, 111th Cong. (2009).

<sup>184</sup> Compare H.R. 1698, with CEFC REPORT, *supra* note 117.

<sup>185</sup> H.R. 1698.

<sup>186</sup> American Clean Energy and Security Act of 2009, H.R. 2454, 111th Cong. § 1 (2009).

<sup>187</sup> Clean Energy Jobs and American Power Act, S. 1733, 111th Cong. § 2 (2009).

<sup>188</sup> *About CGC: Who We Are and What We Do*, *supra* note 26; Ken Berlin et al., *State Clean Energy Finance Banks: New Investment Facilities for Clean Energy Deployment*, BROOKINGS INST. (Sept. 12, 2012), <https://www.brookings.edu/research/state-clean-energy-finance-banks-new-investment-facilities-for-clean-energy-deployment/>.

such as Connecticut,<sup>189</sup> Hawaii,<sup>190</sup> New Jersey,<sup>191</sup> New York,<sup>192</sup> and Rhode Island.<sup>193</sup> These state-sponsored green investment banks have the advantage of an easier start-up because they avoid the paralysis of the federal government.<sup>194</sup> However, the fight for a federal green investment bank continued because of the significant value it could provide compared to the smaller state green investment banks.<sup>195</sup> Even the largest state budget would pale in comparison to a federal green investment bank, and a state's reach is more limited geographically.<sup>196</sup>

## **B. Organization**

The \$27 billion Greenhouse Gas Reduction Fund is administered by the EPA.<sup>197</sup> The fund is separated into two programs: the Zero Emission Technologies Grant Program, to which \$7 billion is designated, and the General Assistance and Low-Income and Disadvantaged Communities Grant Program, which receives the remaining \$20 billion.<sup>198</sup>

The EPA Administrator is a cabinet-level political appointee who is nominated by the President and confirmed by the Senate.<sup>199</sup> For both the Zero Emission Technologies Grant Program and the General Assistance and Low-Income and Disadvantaged Communities Grant Program, the EPA Administrator has control over who receives the grants.<sup>200</sup>

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<sup>189</sup> *About Us: The Connecticut Green Bank is the Nation's First Green Bank*, *supra* note 27.

<sup>190</sup> *Hawaii Green Infrastructure Authority (HGIA)*, *supra* note 33.

<sup>191</sup> *Regional Greenhouse Gas Initiative Strategic Funding Plan*, *supra* note 34.

<sup>192</sup> *About NY Green Bank*, *supra* note 35.

<sup>193</sup> *Who We Are*, *supra* note 36.

<sup>194</sup> *About CGC: Who We Are and What We Do*, *supra* note 26.

<sup>195</sup> *Id.*

<sup>196</sup> *Compare Federal Budget Receipts and Outlays*, AM. PRESIDENCY PROJECT, <https://www.presidency.ucsb.edu/statistics/data/federal-budget-receipts-and-outlays> (last visited Nov. 21, 2022), with *Historical Data - State of California Expenditures, 1984-85 to 2022-23*, LEGIS. ANALYST'S OFF. CAL. LEG. NONPARTISAN FISCAL & POL'Y ADVISOR, <https://lao.ca.gov/policyareas/state-budget/historical-data> (last visited Nov. 21, 2022).

<sup>197</sup> H.R. 5376 § 60103 (amending the Clean Air act giving control of appropriated funds to the Administrator).

<sup>198</sup> See *EPA Announces Initial Program Design of Greenhouse Gas Reduction Fund*, U.S. ENV'T PROT. AGENCY (Feb. 14, 2023), <https://www.epa.gov/newsreleases/epa-announces-initial-program-design-greenhouse-gas-reduction-fund>; *Greenhouse Gas Reduction Fund: Section 134(a)(1) – Zero Emission Technologies Grant Program*, U.S. ENV'T PROT. AGENCY, <https://sam.gov/fal/cffd228dd8a34254b68d497672a5235e/view> (last visited Feb. 25, 2023); *Greenhouse Gas Reduction Fund: Section 134(a)(2) & Section 134(a)(3) – General Assistance & Low-Income & Disadvantaged Communities Grant Program*, U.S. ENV'T PROT. AGENCY, <https://sam.gov/fal/66e5da03968848f4a844f01598dd01d3/view> (last visited Feb. 25, 2023).

<sup>199</sup> *EPA's Administrators*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/history/epas-administrators> (last visited Feb. 25, 2023).

<sup>200</sup> H.R. 5376 § 60103.



Recipients of a grant must use the money as either a direct or indirect investment.<sup>201</sup> The direct investment option requires the eligible recipient of the grant to:

(A) provide financial assistance to qualified projects at the national, regional, State, and local levels; (B) prioritize investment in qualified projects that would otherwise lack access to financing; and (C) retain, manage, recycle, and monetize all repayments and other revenue received from fees, interest, repaid loans, and all other types of financial assistance provided using grant funds under this section to ensure continued operability.<sup>202</sup>

This requirement is similar to that of an investment model green investment bank, albeit with the intermediary of an eligible recipient creating the green investment bank for the government.<sup>203</sup> The indirect investment option, however, requires only that the eligible recipient “provide funding and technical assistance” to entities “that provide financial assistance to qualified projects.”<sup>204</sup> This standard is incredibly broad and it is not yet clear what type of projects the EPA will favor when distributing the grant money.<sup>205</sup>

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<sup>201</sup> H.R. 5376 § 60103.

<sup>202</sup> *Id.*

<sup>203</sup> *Id.* An eligible recipient is a nonprofit organization that:

(A) is designed to provide capital, leverage private capital, and provide other forms of financial assistance for the rapid deployment of low and zero-emission products, technologies, and services; (B) does not take deposits other than deposits from repayments and other revenue received from financial assistance provided using grant funds under this section; (C) is funded by public or charitable contributions; and (D) invests in or finances projects alone or in conjunction with other investors.

*Id.*

<sup>204</sup> *Id.* A Qualified Project is any:

“[P]roject, activity, or technology that (A) reduces or avoids greenhouse gas emissions and other forms of air pollution in partnership with, and by leveraging investment from, the private sector; or (B) assists communities in the efforts of those communities to reduce or avoid greenhouse gas emissions and other forms of air pollution.”

*Id.*

<sup>205</sup> See EPA Announces Initial Program Design of Greenhouse Gas Reduction Fund, *supra* note 198.

### **C. Funding**

The Greenhouse Gas Reduction Fund was given budgetary authority to distribute \$27 billion in grants under Section 60103 of the IRA.<sup>206</sup> Of that \$27 billion, \$7 billion is allocated to “[s]tates, municipalities, Tribal governments, and eligible recipients”; \$11.97 billion to general grants; \$8 billion to “disadvantaged communities”; and \$0.03 billion towards administrative costs.<sup>207</sup> All of the funds except those designated for administrative costs must be obligated prior to September 30, 2024.<sup>208</sup> The funding for administrative costs will be available until September 30, 2031.<sup>209</sup>

### **D. Investments**

The EPA began seeking applications for grants under the Greenhouse Gas Reduction Fund in the summer of 2023.<sup>210</sup> There are three competitions: the \$7 billion Solar for All competition, the \$14 billion National Clean Investment Fund, and the \$6 billion Clean Communities Investment Accelerator.<sup>211</sup>

The Solar for All competition will award up to 60 grants to states, territories, Tribal governments, municipalities, and eligible nonprofits.<sup>212</sup> These grants will allow the groups to expand access to residential solar for low-income households.<sup>213</sup> The deadline for applications was September 26, 2023, and the EPA plans to start making awards in July 2024.<sup>214</sup>

The Clean Communities Investment Accelerator will award grants to between two and seven nonprofit groups.<sup>215</sup> These groups will focus on delivering funding and technical assistance to lenders in disadvantaged communities to help

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<sup>206</sup> H.R. 5376 § 60103.

<sup>207</sup> *Id.*

<sup>208</sup> *Id.*

<sup>209</sup> *Id.*

<sup>210</sup> *Biden-Harris Administration Launches Historic \$20 Billion in Grant Competitions to Create National Clean Financing Network as Part of Investing in America Agenda*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/newsreleases/biden-harris-administration-launches-historic-20-billion-grant-competitions-create> (last visited Feb. 7, 2024) (June 28, 2023 for Solar for All and July 14, 2023 for the National Clean Investment Fund and the Clean Communities Investment Accelerator).

<sup>211</sup> *Id.*

<sup>212</sup> *Frequent Questions about Solar for All*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/greenhouse-gas-reduction-fund/frequent-questions-about-solar-all> (last visited Feb. 7, 2024).

<sup>213</sup> *Id.*

<sup>214</sup> *Id.*

<sup>215</sup> *Frequent Questions about the Clean Communities Investment Accelerator*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/greenhouse-gas-reduction-fund/frequent-questions-about-clean-communities-investment-accelerator> (last visited Feb. 7, 2024).

finance clean technology projects.<sup>216</sup> The deadline for applications was October 12, 2023, and the EPA plans to make selections in March 2024 with funding starting in July 2024.<sup>217</sup>

The National Clean Investment Fund will award grants to between two and three nonprofit financial institutions.<sup>218</sup> These institutions will provide financing for “families, small businesses, communities and many others” to install clean technology projects.<sup>219</sup> The deadline for applications was October 12, 2023, and the EPA plans to make selections in March 2024 with funding starting in July 2024.<sup>220</sup>

## V. COMPARING THE COUNTRIES

### A. Organization

Both Australia and the United States established green investment banks through acts of their legislatures.<sup>221</sup> Both countries also vest oversight powers with high-ranking members of the executive branch.<sup>222</sup> Beyond these similarities, however, the organization of each country’s respective green investment banks diverges.

Australia has maintained its green investment bank as a governmental entity by organizing it as a semi-autonomous corporation subject to governmental oversight.<sup>223</sup> On the other hand, the United States vested the discretion of Greenhouse Gas Reduction Fund grant distribution in the EPA.<sup>224</sup> The EPA will not serve as a green investment bank, as all funds in the Greenhouse Gas Reduction Fund must be obligated by September 30, 2024.<sup>225</sup> Instead, grant recipients will function as the green investment banks.<sup>226</sup> These states, municipalities, Tribal governments, and other eligible recipients may use either the grant model from the indirect investment option in the IRA or the investment model from the direct investment option.<sup>227</sup>

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<sup>216</sup> *Frequent Questions about the Clean Communities Investment Accelerator*, *supra* note 215.

<sup>217</sup> *Id.*

<sup>218</sup> *Frequent Questions about the National Clean Investment Fund*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/greenhouse-gas-reduction-fund/frequent-questions-about-national-clean-investment-fund> (last visited Feb. 7, 2024).

<sup>219</sup> *Id.*

<sup>220</sup> *Id.*

<sup>221</sup> *See Clean Energy Finance Corporation Act 2012* (Cth) pt 3 div 2 (Austl.); H.R. 5376.

<sup>222</sup> In the United States, this is the Administrator of the EPA. *See* H.R. 5376. In Australia, this is the Treasurer and Finance Ministers. *See Clean Energy Finance Corporation Act 2012* (Cth) pt 1 (Austl.).

<sup>223</sup> *See generally Clean Energy Finance Corporation Act 2012* (Cth) (Austl.).

<sup>224</sup> *See* H.R. 5376 § 60103.

<sup>225</sup> *Id.*

<sup>226</sup> *Id.*

<sup>227</sup> *Id.*

While the EPA Administrator will have control over the selection of grant recipients, once funds are distributed the Administrator—and by extension the United States government—will have no oversight over grant recipients.<sup>228</sup> In contrast, Australia maintains control over its green investment bank through its Treasurer and Finance Ministers responsible for oversight of the bank.<sup>229</sup>

Keeping the green investment bank as part of the government in one fund, as Australia has done, has both advantages and disadvantages. On the positive side, it allows for greater efficiency through economies of scale, greater control over the distribution of government funds, and more transparency in spending.<sup>230</sup>

By keeping the green investment bank in one fund, Australia can take advantage of economies of scale.<sup>231</sup> Since all funds are centralized in one green investment bank, Australia can take advantage of greater corporate efficiencies and have a larger impact on the market relative to the same amount of funding dispersed in multiple green investment banks.<sup>232</sup>

Keeping the green investment bank as part of the government also allows Australia greater control over how the CEFC distributes its funds relative to the United States, which has little control over how funding recipients utilize grant money once the EPA has distributed the Greenhouse Gas Reduction Fund.<sup>233</sup> Australia controls the CEFC through its Treasurer and Finance Ministers.<sup>234</sup> The responsible Ministers appoint the members of the Clean Energy Finance Corporation Board (the Board), set the Investment Mandate, and may fire board members for cause.<sup>235</sup> While these authorities do not provide the Australian government with much control over the CEFC, it is significantly more control than the United States government will have once it has distributed the Greenhouse Gas Reduction Fund.<sup>236</sup>

Finally, keeping the CEFC as part of the Australian government allows for greater transparency in how funds are used relative to the Greenhouse Gas Reduction Fund in the United States.<sup>237</sup> The CEFC is required to publish a report on its investments within one month of the end of each quarter, as well as a more comprehensive annual report.<sup>238</sup> The Board must also publish its written investment

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<sup>228</sup> H.R. 5376 § 60103.

<sup>229</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 1 (Austl.).

<sup>230</sup> See generally Will Kenton, *Economies of Scale: What Are They and How Are They Used?*, INVESTOPEDIA, <https://www.investopedia.com/terms/e/economiesofscale.asp> (last visited Mar. 3, 2023); *Clean Energy Finance Corporation Act 2012* (Cth) pts 1, 3 divs 2, 6 (Austl.).

<sup>231</sup> *Id.*

<sup>232</sup> *Id.*

<sup>233</sup> See *Clean Energy Finance Corporation Act 2012* (Cth) pt 2 (Austl.); H.R. 5376.

<sup>234</sup> *Id.* at pt 1.

<sup>235</sup> *Id.* at pts 3 div 2, 6 div 2.

<sup>236</sup> See H.R. 5376 § 60103.

<sup>237</sup> See *Clean Energy Finance Corporation Act 2012* (Cth) pts 6 divs 2, 7 ss 72, 74 (Austl.).

<sup>238</sup> *Id.* at pt 7 ss 72, 74.

policies on its website, which is available to the public.<sup>239</sup> In contrast, the United States government does not currently have any policies on disclosure regarding how funds from the Greenhouse Gas Reduction Fund are used by recipients.<sup>240</sup>

On the negative side, keeping the green investment bank as part of the government in one fund could lead to a lack of diversity in thought that stifles innovation, whiplash policy changes after elections, and potential elimination of the green investment bank due to decreased political popularity.<sup>241</sup>

The CEFC houses all of Australia's green investment bank funds and is run by its seven-member Board.<sup>242</sup> The Board also has a low turnover rate, with its members typically reappointed at the end their five-year terms.<sup>243</sup> Concentration of funds within a small group of people with a low turnover rate could lead to a lack of innovative thinking and a hesitancy to try bold or innovative new strategies. In contrast to the structure of the CEFC, the United States' Greenhouse Gas Reduction Fund will distribute funds to up to 60 different entities through the Zero-Emissions Technology Fund Competition, and to another 2 to 15 entities through the General and Low-Income Assistance Competition.<sup>244</sup> Diversity in distribution of funds from the Greenhouse Gas Reduction Fund could lead to more innovative uses of the grants than concentrating funds in a single green investment bank such as the CEFC.

Maintaining government control over the CEFC leaves it vulnerable to policy changes with changes in political offices. Such changes almost happened when Prime Minister Scott Morrison attempted to modify the CEFC's Investment Mandate to allow it to invest in fossil fuel projects.<sup>245</sup> In contrast, by requiring the Greenhouse Gas Reduction Fund to obligate all of its funds by September 30, 2024, the drafters of the IRA ensured that funding recipients will not be subjected to interference by incoming officials following any changes in U.S. political leadership in the 2024 election or beyond.<sup>246</sup>

The obligation deadline also prevents another threat posed by keeping the green investment bank within the government: the abolition of the green investment bank,<sup>247</sup> a threat that the CEFC narrowly avoided under Prime Minister Tony Abbott.<sup>248</sup> Due to the pendulum-like nature of national politics in the United States, it seems likely that Republicans will gain control of the federal government at some point. Given that zero Republicans voted for the IRA, it also seems likely that once

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<sup>239</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 6 div 2; CLEAN ENERGY FIN. CORP., CEFC INVESTMENT POLICIES (Apr. 2021).

<sup>240</sup> See H.R. 5376; *Greenhouse Gas Reduction Fund*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/greenhouse-gas-reduction-fund> (last updated on Sept. 26, 2023).

<sup>241</sup> See *infra* notes 242–50 and accompanying text.

<sup>242</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 3 div 2 (Austl.).

<sup>243</sup> *Our Board*, *supra* note 92.

<sup>244</sup> *EPA Announces Initial Program Design of Greenhouse Gas Reduction Fund*, *supra* note 198198.

<sup>245</sup> See Morton, *supra* note 82; Belot, *supra* note 82.

<sup>246</sup> See H.R. 5376 § 60103.

<sup>247</sup> *Id.*

<sup>248</sup> See *supra* notes 73–79 and accompanying text.

in power they would attempt to abolish the Greenhouse Gas Reduction Fund.<sup>249</sup> By quickly obligating the money in the Greenhouse Gas Reduction Fund and separating it from the government, the drafters of the IRA prevented this potential problem altogether.<sup>250</sup>

## **B. Funding**

Although both Australia and the United States funded their green investment banks through acts of their respective legislatures,<sup>251</sup> they differ in the timeframe of distribution funding, the size of that distribution, and how returns on the investments made with the funding are utilized.<sup>252</sup>

Australia took five years to fully fund the CEFC, dividing up the AU\$10 billion into five equal payments of AU\$2 billion.<sup>253</sup> In addition, due in part to the Investment Mandate, it has taken time for the CEFC to invest the available funds. In over ten years since the CEFC's creation, it has committed AU\$10.76 billion in investments, of which AU\$1.45 billion was committed in the last fiscal year.<sup>254</sup> On the other hand, the United States' Greenhouse Gas Reduction Fund was fully funded by the IRA and all \$27 billion must be completely obligated by September 30, 2024, just over two years after the IRA was signed into law.<sup>255</sup> Because climate change, which green investment banks aim to combat, is such an immediate threat, the ability to quickly commit funds is an advantage of the Greenhouse Gas Reduction Fund.

While the \$27 billion in the Greenhouse Gas Reduction Fund is more than the AU\$10 billion in the CEFC, due to differences in the size of each government's budget, Australia committed a larger percentage of its overall budget to its green investment bank than the United States.<sup>256</sup> Australia committed AU\$2 billion per year from 2013-2017 to the CEFC, a total of AU\$10 billion.<sup>257</sup> Australia's average annual budget during this time period was AU\$433.71 billion (AU\$413.845 billion, AU\$417.898 billion, AU\$428.691 billion, AU\$447.807 billion, and AU\$460.282 billion per respective year).<sup>258</sup> The AU\$10 billion that Australia committed to the

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<sup>249</sup> See U.S. S., *Roll Call Vote 117th Congress – 2nd Session* (Aug. 7, 2022), [https://www.senate.gov/legislative/LIS/roll\\_call\\_votes/vote1172/vote\\_117\\_2\\_00325.htm](https://www.senate.gov/legislative/LIS/roll_call_votes/vote1172/vote_117_2_00325.htm); U.S. H.R., *Roll Call 420 – Bill Number: H. R. 5376* (Aug. 12, 2022), <https://clerk.house.gov/Votes/2022420>.

<sup>250</sup> See H.R. 5376 § 60103.

<sup>251</sup> See *Clean Energy Finance Corporation Act 2012* (Cth) (Austl.); H.R. 5376.

<sup>252</sup> See *infra* notes 253–64 and accompanying text.

<sup>253</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 5 div 1 (Austl.).

<sup>254</sup> See CEFC REPORT, *supra* note 117, at 8, 18.

<sup>255</sup> See H.R. 5376 § 60103.

<sup>256</sup> See *infra* notes 257–59.

<sup>257</sup> *Clean Energy Finance Corporation Act 2012* (Cth) pt 5 div 1 (Austl.).

<sup>258</sup> COMMONWEALTH OF AUSTL., FINAL BUDGET OUTCOME 2013-2014 12 (Sept. 2014); COMMONWEALTH OF AUSTL., FINAL BUDGET OUTCOME 2014-2015 11 (Sept. 2015);

CEFC is approximately 2.31% of Australia's average budget during the period it was funded. The United States' budget in 2022 was \$6.27 trillion; the \$27 billion in the Greenhouse Gas Reduction Fund is approximately 0.43% of the United States' budget.<sup>259</sup>

The greatest difference between the United States' Greenhouse Gas Reduction Fund and Australia's CEFC is what happens to the government's money once it is spent. In Australia, the CEFC acts as an investment bank attempting to earn a return on its investments in green technology and infrastructure.<sup>260</sup> It can then take the returns it generates and reinvest them, allowing for investment of an amount higher than what was initially granted to it by the government.<sup>261</sup> As of the end of the 2022 fiscal year, the CEFC had AU\$3.32 billion in capital returned.<sup>262</sup> In the United States, however, the Greenhouse Gas Reduction Fund will not see any capital returns once it has distributed its \$27 billion.<sup>263</sup> While it is possible that some grant recipients will use funds to create or operate a green investment bank, the federal government will not see any direct returns from its investment.<sup>264</sup>

### C. Investments

Since the Greenhouse Gas Reduction Fund has not yet begun to distribute funds, it is difficult to compare its future investments with what the CEFC has invested in.<sup>265</sup> However, the EPA has announced some guidance on how it plans to distribute the Greenhouse Gas Reduction Fund.<sup>266</sup> The \$7 billion Solar for All Competition will focus on solar power, with investments in rooftop solar, community solar, and electrical storage for the new solar energy being generated.<sup>267</sup> The Clean Communities Investment Accelerator and the National Clean Investment Fund will focus on increasing access to financing for clean technology investments in low income communities.<sup>268</sup>

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COMMONWEALTH OF AUSTL., FINAL BUDGET OUTCOME 2015-2016 10 (Sept. 2015); COMMONWEALTH OF AUSTL., FINAL BUDGET OUTCOME 2016-2017 10 (Sept. 2017); COMMONWEALTH OF AUSTL., FINAL BUDGET OUTCOME 2017-2018 10 (Sept. 2018).

<sup>259</sup> *How Much Has the U.S. Government Spent This Year?*, U.S. DEP'T OF TREASURY: FISCAL DATA, <https://fiscaldata.treasury.gov/americas-finance-guide/federal-spending/> (last visited Mar. 5, 2023).

<sup>260</sup> *See Clean Energy Finance Corporation Act 2012* (Cth) pt 6 div 1 (Austl.).

<sup>261</sup> *Id.* at pt 5 (directing that returns from CERC investments go back to the CEFC to reinvest).

<sup>262</sup> *See* CEFC REPORT, *supra* note 117, at 9.

<sup>263</sup> *See* H.R. 5376 § 60103.

<sup>264</sup> *See EPA Announces Initial Program Design of Greenhouse Gas Reduction Fund*, *supra* note 198.

<sup>265</sup> *Id.*

<sup>266</sup> *Id.*

<sup>267</sup> *Id.*

<sup>268</sup> *See Frequent Questions about the Clean Communities Investment Accelerator*, *supra* note 215; *Frequent Questions about the National Clean Investment Fund*, *supra* note 218.

There are advantages and disadvantages to putting all \$7 billion of the Solar for All fund into a single sector like solar, as opposed to distributing available resources across multiple sectors as Australia has.<sup>269</sup> Investing heavily in a single sector can help boost that sector, leading to rapid advances in technology and cost-effectiveness.<sup>270</sup> However, putting all investment assets in a single sector has some downsides. A sudden influx of money in a smaller market such as solar power could create a bubble and lead to rapid cost inflation.<sup>271</sup> The entire United States residential solar market was estimated at \$7.45 billion in 2023<sup>272</sup>; a sudden influx of \$7 billion could drastically alter that market. In addition, concentrating all investment assets in a single market could be inefficient if that market is not the most efficient vector for reducing the United States' greenhouse gas emissions.

#### **D. Results**

Since the Greenhouse Gas Reduction Fund has yet to distribute its funds, there are no results available to compare it to the CEFC.<sup>273</sup> However, because of the structure of the Greenhouse Gas Reduction Fund, it will not make a direct return on its investments.<sup>274</sup> Funds from the Greenhouse Gas Reduction Fund could boost the United States' economy, thereby increasing tax revenue and providing a public good; but unlike the CEFC it will not generate any capital returns for the government.<sup>275</sup> Though the Greenhouse Gas Reduction Fund will likely stimulate private sector investing, it remains to be seen how much investment it will generate from the private sector.

### **V. CONCLUSION**

As the EPA begins to obligate funds out of the Greenhouse Gas Reduction Fund, it should prioritize states, municipalities, tribal governments, and eligible recipients that use the investment model.

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<sup>269</sup> See *infra* notes 270–72 and accompanying text.

<sup>270</sup> See, e.g., *About DARPA*, DEF. ADVANCED RSCH. PROJECTS AGENCY, <https://www.darpa.mil/about-us/about-darpa> (last visited Mar. 5, 2023).

<sup>271</sup> See, e.g., Adam Hayes, *Tulipmania: About the Dutch Tulip Bulb Market Bubble*, INVESTOPEDIA (Nov. 22, 2022), [https://www.investopedia.com/terms/d/dutch\\_tulip\\_bulb\\_market\\_bubble.asp](https://www.investopedia.com/terms/d/dutch_tulip_bulb_market_bubble.asp).

<sup>272</sup> *U.S. Residential Solar PV Market Size, Share & Trends Analysis Report by Construction (Retrofit, New Construction), By State, And Segment Forecasts 2024-2030*, GRAND VIEW RSCH., <https://www.grandviewresearch.com/industry-analysis/us-residential-solar-pv-market-report> (last visited Feb. 7, 2024).

<sup>273</sup> See *EPA Announces Initial Program Design of Greenhouse Gas Reduction Fund*, *supra* note 198.

<sup>274</sup> See H.R. 5376 § 60103.

<sup>275</sup> *Id.*; *Clean Energy Finance Corporation Act 2012* (Cth) pt 5 (Austl.).



While the investment model has its disadvantages compared with the grant model, it is a more efficient use of limited government funds overall. The grant model does allow for more direct government control, quicker distribution of funds, and the ability to take a more holistic approach to fund distribution by eliminating the focus of the investment model on generating returns. Still, the investment model is the better option because it allows for a more economically efficient distribution of public funds and the compounding of benefits from original public funds through the reinvestment of returned capital. The best model for increasing green investments and stimulating private investing—thereby working to reduce global climate change and its effects—is the investment model.