

# GBN

## Green Bank Network



## GBN Bulletin- November 2017

### ***Greetings!***

Green Bank momentum continues around the globe, with more transactions in new sectors, growing interest in the Green Bank model in new countries, and several high-level events featuring Green Bank case studies and opportunities around the world.

Green Bank Network (GBN) members continue to push forward transformative deals. This includes CEFC's investment in Australia's [first combined wind, solar and battery project](#), Green Investment Groups [first investments outside the UK](#), and new [solar PPA deals under CT Green Bank's C-PACE framework](#). In addition, NY Green Bank announced a [plan to raise an additional \\$1 billion in private sector funds](#) to clean energy projects in new parts of the U.S. through Green Bank partners. See details on recent member transactions [below](#).

Internationally, [South Africa's DBSA also announced their plans to create a Green Bank program](#).

The GBN hosted its annual Green Bank Congress in September during Climate Week NYC and announced that members have [mobilized over \\$29 billion low-carbon projects](#). The event included panels exploring new frontiers for private sector investment, and featured speakers from China, Chile, India, Mexico and South Africa discussing interest in and approaches to Green Bank and Green Bank-like programs. The event had over 170 attendees from more than 15 countries. See [presentations](#) from the event, as well as [press coverage](#).



The [OECD's Centre on Green Finance and Investment](#) hosted its annual forum in October in Paris, featuring speakers from Green Investment Group and a plenary session on Green Banks, featuring speakers from Colombia, India, South Africa and CT Green Bank.

At COP23, several Green Bank events and roundtables were held including a [Green Bank event in collaboration with OECD, Rocky Mountain Institute \(RMI\) and Coalition for Green Capital \(CGC\)](#). COP23 also included a [Green Bank event sponsored by the Turkish Government and the World Banks' Partnership for Market Readiness](#) featuring CGC, OECD, Escarus, Switzerland Technology Fund and Japan's Green

Finance Organisation (GFO). Green Investment Group spoke on [renewable energy infrastructure and the investment opportunity for pension funds](#).

Looking ahead, CGC and the Energy Foundation will host an event in Washington DC on 12 December on state-level Green Banks opportunities around the US.

In addition, new papers covering the Green Bank models and programs were published. The IEA wrote a [new report covering Green Bank energy efficiency investments](#) from GBN members. And the Asian Development Bank published a [new report calling for Green Bank-like institutions](#) in South East Asia. Also on the horizon is a new report on green impact reporting at Green Banks, authored by the Natural Resources Defense Council (NRDC).

Finally, the GBN is hosting an upcoming webinar mini-series on Green Banks in the municipal space in the US. The first webinar on [13 December will feature the Rhode Island Infrastructure Bank's \(RIIB\) Efficient Building Fund](#), and financing challenges and opportunities in municipal buildings. On 17 January there will be a webinar on "[Financing Clean Energy in Your City: an Introduction to Urban Green Banks](#)" featuring the Institute for Sustainable Communities (ISC) and the Coalition for Green Capital (CGC).

Happy reading,

GBN Team (NRDC and CGC)



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# Recent GBN Member Transactions

## **Clean Energy Finance Corporation**

The CEFC has released its latest annual report covering the 2016-2017 fiscal year. See the full report [here](#) and watch video highlighting a [bumper year for clean energy investments](#).

In November, the CEFC announced finance for a project that includes [Australia's first unsubsidised large-scale grid-connected battery](#) to be built alongside a greenfield wind development. The CEFC has committed A\$150 million in debt finance to stage one of the Lincoln Gap wind farm, in South Australia's Port Augusta region. The CEFC facility includes finance towards a 10MW battery energy storage system, capable of producing up to 10MWh of fast response storage capacity. The 212MW Lincoln Gap project, being developed by Nexif Energy Australia, will produce enough electricity to power around 155,000 homes. Stage One of the project is a A\$300 million, 126MW development. "This project demonstrates how we can move to the next phase of the clean energy transition, delivering a cleaner, reliable and affordable energy supply, by incorporating the latest technology at the greenfield development stage to create a

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In October, CEFC announced it will [invest A\\$94 million in Australia's first fully integrated wind, solar and battery project](#), at the central north Queensland Kennedy Energy Park. The project is being developed by Windlab and Eurus Energy. The A\$160 million (capex only) 60MW hybrid renewable energy project will connect to the local grid, providing electricity to communities from Julia Creek to Charters Towers, more than 500 kilometres away. It will generate enough power for more than 30,000 average homes each year. "This is a landmark project for Queensland and Australia, creating a new model for renewable energy that brings together the benefits of wind, solar and battery storage to overcome intermittency and improve reliability." CEFC Wind Sector Lead Andrew Gardner said.

Also in October, Clean Energy Innovation Fund (which uses finance from the CEFC to invest in innovative clean energy companies and projects) and Right Click Capital [announced an investment of US\\$7 million \(approx. A\\$8.99 million\) into Australian renewable energy start-up Redback Technologies](#), as part of its Series A-2 capital raising round. The equity investment supports Redback's development and integration of innovative smart software and hardware technologies and machine learning to optimise the generation, storage and management of solar energy for households and businesses. Redback's software also enables systems to be aggregated to form a virtual power plant, to provide grid services and support increased integration of renewables into the grid.

Separately, CEFC [announced a A\\$750,000 equity investment from the Clean Energy Innovation Fund in Relectrify](#) which is launching its ground-breaking new technology to repurpose used lithium-ion batteries from electric vehicles for extended use, including in behind-the-meter household energy storage. The investment is part of Relectrify's A\$1.5 million pre-Series A equity raising. Relectrify has developed advanced battery control technology that reduces the cost of repurposing batteries, while boosting performance and lifetime. The technology combines both power electronics hardware and battery optimisation software.

CEFC [announced A\\$98 million in debt financing for Victoria's largest solar farm](#), which will help bring stability and diversity to the state's energy supply, demonstrating solar's increasing cost competitiveness, while supporting a low emissions transport future. CEFC invested as the sole debt financier to accelerate the project which, due to the rapidly falling cost of constructing solar in Australia, is being developed without any grant support. Construction is about to begin on the 88 MW (AC) 110MW (DC) Bannerton Solar Park, at Almas Almonds in Victoria's Sunraysia district, following confirmation that the CEFC is committing approximately debt finance towards the project. Ian Learmonth, CEO of CEFC commented "what's more, through the recent agreement struck with the Victorian Government, Bannerton Solar Park will effectively help power Melbourne's iconic tram network, reducing the city's public transport emissions, making an important contribution to decarbonisation of the economy." Equity investment in the project will be provided by the UK-listed Foresight Solar Fund Limited (FSFL), Korean government-owned Korean Infrastructure Asset Management Company KIAMCO (each of whom are taking a 48.5 per cent stake) and Korea's Hanwha Energy (3 per cent).

Together with Maquarie Leasing, CEFC [announced a push to accelerate the use of electric vehicles](#) in Australia through a new A\$100 million asset finance program. The program offers a 0.7 per cent discount on finance for electric vehicles, as well as plug-in hybrid electric vehicles, and a range of eligible energy efficient and renewable energy equipment. Customers who choose eligible lower emissions passenger vehicles can also benefit from the program, with a 0.5 per cent finance discount.

In August, CEFC [announced an A\\$90 million corporate loan to Australian waste management company Cleanaway Waste Management Ltd](#) to accelerate its best practice sustainable waste management activities with an array of projects, to reduce the amount of waste going to landfill, as well as generating renewable energy and avoiding carbon emissions. In its first confirmed project to draw on the CEFC finance, Cleanaway will develop a best-in-class resource recovery centre at Erskine Park in NSW that will be capable of diverting approximately 40 per cent of waste volume from landfill.

CEFC also [committed up to A\\$10 million to help scale up a new Internet of Things \(IoT\) network](#) focused on cutting energy use. Australian company Thinxtra is deploying the world-leading Sigfox Low Powered Wide Area Network (LPWAN) technology which is part of a global network connecting billions of devices to the Internet while consuming as little energy as possible, as simply as possible. The CEFC's \$10 million commitment, through the Clean Energy Innovation Fund, is part of Thinxtra's A\$20 million Series B capital raising.

CEFC [announced it is investing A\\$2 million in clean-tech company Wattwatchers](#) to help expand production of its award-winning measurement device that helps consumers to better control their energy use and costs. CEFC CEO Ian Learmonth said that high energy prices and rooftop solar's high domestic uptake provide the perfect opportunity to work smarter with energy. "We're supporting the development of an innovative electricity market that hands Australian households and businesses the opportunity to get more control over the way that they consume and produce energy," Mr Learmonth said. The CEFC's A\$2 million investment, through the Clean Energy Innovation Fund, is part of Wattwatchers' A\$4 million 2017 Series A capital raising.

Victoria-based manufacturer SEA Electric [will ramp up its conversion of medium-duty trucks and commercial vans to electric vehicles, using A\\$5 million in CEFC finance through the Clean Energy Innovation Fund](#). SEA Electric has developed three electric drive systems models that can be fitted to commercial vehicles to allow them to be converted to a 100 per cent electric operation. The technology can be applied to businesses performing express freight, general delivery, and waste collection duties around Australia.

CEFC also [announced its first major property investment in Adelaide](#), to drive the development of innovative new student accommodation. The project will set a new benchmark for energy efficiency design and demonstrate the benefits of market-leading building standards. The CEFC has committed debt finance of A\$32 million to the 428-bed student accommodation project in Waymouth Street, Adelaide. CEFC Property Sector Lead Chris Wade said student accommodation developers have so far had a limited focus on energy efficiency, tending to build to minimum standards under the National Construction Code, which is typically the lowest cost option. "We're demonstrating to property developers, owners and managers that constructing the next generation of energy efficient student accommodation can be rewarded with long-term operational savings and an improved amenity, which makes a strong business case for the additional upfront investment."

See all latest transactions and media releases on [CEFC website](#).

## Connecticut Green Bank

The Connecticut Green Bank continues its commitment to growing clean energy investment, with a focus on solar, energy efficiency, hydro and other technologies.

In September, the Connecticut Green Bank [announced the Green Bank Solar PPA](#) (power purchase agreement) with Onyx Renewable Partners L.P., a joint program that will provide funding for 15-20+ megawatts of commercial-scale solar projects in Connecticut. Onyx was selected by the CT Green Bank through a competitive process, which demonstrated Onyx's ability to provide the flexibility and cost of capital necessary to fund a growing portfolio of commercial-scale projects within Connecticut. Under this partnership, Onyx will leverage its existing fund structure and relationships with Credit Suisse and future tax equity partners to capitalize and own solar photovoltaic projects originated by the CT Green Bank and local solar developers. The new Green Bank Solar PPA fund will provide power purchase agreements to a broad range of property owners by making use of Connecticut's Commercial Property Assessed Clean Energy (C-PACE) Program to allow unrated solar customers, including commercial, industrial, and non-profit property owners, to access financing alongside state agencies, housing authorities, municipalities, schools, and rated corporations.

CT Green Bank also announced that it has [partnered with Connecticut State Colleges & Universities \(CSCU\), Current \(powered by GE\) and SunLight Solar Energy](#) to install solar energy systems at three campuses in order to reduce energy consumption and decrease operating expenses. Construction is scheduled to begin at Manchester and Middlesex Community Colleges as well as Southern CT State University in late fall with the goal of extending to other campuses including Central, Housatonic, Asnuntuck, Quinebaug, Tunxis and Western in the next two years. The solar energy initiative is funded entirely with private capital sourced by Connecticut Green Bank and once fully implemented is estimated to save CSCU more than \$10 million within the first 20 years.

The Connecticut Green Bank also continues to facilitate residential energy investments via its [Smart-E Loan](#) and Solar for All program (with [PosiGen](#)) and its [multifamily housing loans](#), and to support commercial energy efficiency and on-site renewables via its [C-PACE](#) program, among other initiatives. See the descriptions of Connecticut Green Bank's products and programs [here](#) to learn more.

## Green Finance Organisation (Japan)

The Green Finance Organisation of Japan continues its commitment to growing local clean energy investment and revitalizing local communities, with investments covering on and offshore renewables including wind, biomass and other technologies.

In addition to recent transactions such as [investment in and offshore wind energy power generation project](#) in Aomori Prefecture, Green Finance Organisation is planning several new project investments in the near term.

## Green Tech Malaysia

The [Green Technology Financing Scheme \(GTFS\)](#) was expected to continue for another 5 years with an increase in financing target of MYR5 billion (over 1.1 billion USD). Prime Minister Datuk Seri Najib Tun Razak, when tabling the 2018 Budget in Parliament on October 27, 2017, announced the extension of the Green Technology Financing Scheme to another 5 years with an allocation of RM5 billion to promote investments in green technology industry. The loan guarantee scheme which was launched in 2010 with an initial allocation of MYR3.5 billion (841 million USD) had attracted 28 participating financial institutions to approved loans worth MYR3.4 billion (818 million USD) thus far. More than 80% of the investments goes to the renewable energy and energy sector while about 17% goes to the waste management sector.

Notable recently certified GTFS companies and projects include: Increased production efficiency on steel manufacturing process (MASTEEL (KL) BERHAD), addition of biogas plant into existing effluent treatment plant installation (Classic Palm Oil Mill SDN), Manufacturing of Biodegradable Disposable Food Packaging (TerraPack (M) SDN BHD), 1MW Animal Waste Biogas Power Plant, Kg.Valdor, Penang (Clean Green Kg Valdor SDN BHD), Cahaya Serijaya 1MWp Solar PV System (Cahaya Serijaya SDN BHD) and more.

See the full list of projects [here](#).

## NY Green Bank

NY Green Bank continues its commitment to growing clean energy investment, with transactions on solar, energy efficiency, wind and other technologies. In the third quarter of 2017, NYGB announced that as of 30 September, NYGB's investments [support clean energy projects with a total project cost of between \\$1.31 and \\$1.59 billion in aggregate](#), based on overall investments to date of \$440.9 million. The active pipeline of potential investments proceeding to close is \$519.0 million.

In September, as part of the US Climate Alliance, New York [announced plans to accelerate progress and](#)

on the success of its \$440+ million in commitments and robust pipeline of deals, NY Green Bank is committing to work with the private sector to raise new funds, assist other states in the establishment of new Green Bank offices, and provide capacity to those new Green Banks for back-end services including due diligence, underwriting and general technical support. Register for the 30 November webinar [here](#) to learn about NYGB's latest developments as relates to its expansion efforts, along with an overview of its quarterly metrics.

In August, NY Green Bank announced a new deal providing a [12-month senior secured bridge loan facility of up to \\$12 million to Cypress Creek Renewables \(CCR\)](#), a California-based integrated utility-scale solar provider. Bridge Loan proceeds will finance project interconnection advance payments to utilities across New York State for up to 72 community distributed generation solar projects. Under the New York State Public Service Commission Standardized Interconnection Requirements and Application Process, developers seeking interconnections for their projects are required to pay a certain portion of the interconnection upgrade estimates up front. The financing from NY Green Bank demonstrates a successful replication of an earlier bridge loan structure which NYGB entered into with Distributed Sun, LLC. This transaction is estimated to support the deployment of as much as 168 MW of solar assets in New York State which will: (i) provide commercial and residential project subscribers access to reliable, clean, low-cost energy; and (ii) reduce up to 104,400 metric tons of GHG emissions annually or up to 2,610,000 metric tons of GHG emissions over a 25-year project life. As there is an increasingly strong demand for Community DG throughout NYS, capital providers are, and will continue to be, expected to provide financing to enable the deployment of these projects, including through covering the up-front interconnection payments, and products like NY Green Bank's Bridge Loan are expected to ultimately be offered by private capital providers in future.

In July, building on a \$25 million term loan facility to Plug Power from last year, NY Green Bank [upsized its financing with an additional \\$20 million](#) to finance Plug Power's continued deployment growth, which surpassed initial expectations. Plug Power will use the financing to continue to finance the deployment of fuel cell systems powering forklifts in distribution centers across NYS. The overall \$45 million financing facility allows Plug Power immediate access to capital that is currently held as cash collateral in restricted accounts, rather than waiting for it to be released over time as payments are made through sale-leasebacks arrangements with tax equity providers. NY Green Bank's participation in the Facility is significant because it enables Plug Power to deploy more systems and convert more forklift fleets in a shorter amount of time than would otherwise be possible.

For a full list and descriptions, of NY Green Bank's transactions, click [here](#).

## **Green Investment Group**

The Green Investment Group (GIG) [joined forces with Macquarie Group](#), the world largest infrastructure investor, and together, will continue to operate as specialists in green energy principal investment, project development and delivery, and portfolio management and advisory services.

GIG has also announced several new transactions, continuing its global leadership in green investment and dedication to supporting the growth of the global green economy.

In November, GIG [announced that it has partnered with GE to deliver and operate 650 MW of onshore wind](#) in Northern Sweden. The project will be the largest single site onshore wind farm in Europe, increasing Sweden's installed wind generation by more than 12.5 percent. The equity partners raised approximately €800M in financing. The transaction is GIG's first equity investment following its acquisition by Macquarie and its first investment outside of the United Kingdom. For GE, it represents GE Capital's strategy to invest in and structure financing solutions in support of GE in key global growth markets. The project was financed on a non-recourse project financing basis with close to €500M in debt financing secured from European Investment Bank Export Credit Guarantees of the Federal Republic of Germany



and Green Investment Group originated and structured a 19-year fixed volume PPA with a subsidiary of Norsk Hydro, one of the largest aluminum producers in the world. The PPA enables Norsk Hydro to fix the price of a significant portion of the electricity demand for their Norwegian aluminum manufacturing facilities. NEAS Energy (part of Centrica plc) will provide an innovative structure for the sale of Elcerts (renewable energy certificates), balancing and hedging services for the project. The PPA is understood to be the largest corporate wind energy PPA in the world.

In October, GIG [announced that Lightsource Renewable Energy and UK Climate Investments, part of the GIG within Macquarie Infrastructure and Real Assets, have entered in a partnership platform](#) to fund the development, acquisition and ownership of large-scale solar power generation assets in India. The deal will jointly target the greenfield development and acquisition of operational utility scale solar assets in India with the shared ambition of seeding a platform that can create high-quality de-risked investment opportunities in one of the world's fastest growing solar markets. It will mobilise the large scale deployment of institutional capital through Lightsource. The seed asset for the partnership will be Lightsource's 60MWp project in the Indian state of Maharashtra. While UK Climate Investments will provide 49% of the equity for the construction of the first project, it has earmarked up to GBP30m in aggregate for this project and for a broader partnership with Lightsource to develop and construct up to a total of 300MW of PV projects. Third party funding and commercial project finance debt will support the initial and subsequent projects. This equity investment is the first by the joint venture, which uses official development assistance from the International Climate Fund to leverage private investment into low carbon projects in India and Africa.

In September, GIG [announced the arranging of a £38 million financing for Wheelabrator Technologies](#), to be used for the construction of Ferrybridge Multifuel 2 (FM2) – a new, large-scale merchant energy-from-waste facility near Knottingley in West Yorkshire, United Kingdom. The £38 million commitment is part of a £207 million senior debt facility from a syndicate of lenders including MUFG, Crédit Agricole Corporate & Investment Bank, Investec Bank plc and Banco de Sabadell S.A. that will fund Wheelabrator Technologies' stake in FM2. Once operational, the ~70 MW facility will generate electricity for UK homes and businesses. It is also expected to reduce greenhouse emissions and prevent waste going to landfill.

See the full list of GIG investments [here](#).

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## Green Bank Growth

In October, the Development Bank of Southern Africa (DBSA), [announced plans to create a new "Green Bank" program](#). This new "Climate Finance Facility" (CFF), will be composed of a dedicated debt fund within the DBSA. The CFF Green Bank will have a mandate to crowd in private investment in low-carbon projects, through targeted risk mitigation such as subordinated debt, small project aggregation, tenor extension and more. The investment criteria are currently being designed, and target markets will include low-carbon infrastructure that is commercial with high potential, but that currently suffers from lack of track record and low levels of private investment. The initial focus of the CFF will be South Africa and the Southern Africa Development Community (SADC). Capital raising for the debt fund is targeting a variety of sources including the DBSA, South Africa's Green Fund, the Green Climate Fund and several European Development Finance Institutions (DFIs). For deal flow, the CFF will rely on commercial banks in South Africa as well as Requests for Proposals (RFPs) and the DBSA's dedicated Project Preparation Unit (PPU) which works to bring projects from feasibility to bankability. The CFF will also work closely with Climate Policy Initiative's new "Climate Lab" in Africa to be



products. The CFF will also support a broader effort to green the DBSA. The [Coalition for Green Capital \(CGC\)](#) is working with the DBSA to design and implement the Green Bank program.

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## Recent and Upcoming Events

### Green Bank Congress

The GBN hosted its annual Green Bank Congress on 17 September, co-hosted by NY Green Bank and CT Green Bank during [ClimateWeek NYC](#). The GBN announced that members have [mobilized over \\$29 billion low-carbon projects](#). The Green Bank Congress included panels exploring new frontiers for private sector investment, and featured speakers from China, Chile, India, Mexico, Canada, Japan, UK, South Africa and more discussing interest in and approaches to Green Bank and Green Bank-like programs. The event was keynoted by Howard Bamsey of Green Climate Fund and enjoyed over 170 attendees from more than 15 countries. See photos and [presentations](#) from the event, as well as [press coverage](#).



### OECD Centre on Green Finance and Investment Forum

The [OECD's Centre on Green Finance and Investment](#) hosted its annual forum in October 24-25 at the OECD headquarters in Paris. The forum covered topics such as investment-grade domestic policy frameworks, green bonds and blended finance. The forum featured speakers from Green Investment Group and a plenary session on Green Banks, featuring speakers from India, South Africa, Colombia, CT Green Bank, CGC, NRDC and OECD. [South Africa's DBSA also announced their intention to create a Green Bank program](#). See [videos](#) and [panel overviews](#) on the OECD's website.



### Green Banks at COP23

At COP23 in Bonn, Germany, several Green Bank events and roundtables were held including a [Green Bank event in collaboration with OECD, Rocky Mountain Institute \(RMI\) and Coalition for Green Capital \(CGC\)](#). COP23 also included a [Green Bank event sponsored by the Turkish Government and the World Banks' Partnership for Market Readiness](#) featuring CGC, OECD, Escarus, Switzerland Technology Fund and Japan's Green Finance Organisation (GFO). Green Investment Group spoke on [renewable energy infrastructure and the investment opportunity for pension funds](#).



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## Upcoming Events

### Asia LEDS Forum

On 5-6 December, the Asia Low Emission Development Strategies (LEDS) Partnership will host its annual [Asia LEDS Forum](#), the premier annual gathering of policymakers, donors, practitioners, and other experts involved in enabling low-



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share tools, models, approaches, and best practices; and increase capacity and readiness of practitioners to lead and implement LEDS and green growth initiatives. The Coalition for Green Capital will be speaking about Green Banks and dedicated local green finance capacity to meet NDCs in ASEAN.

### Green Banks Roundtable

On 12 December, the Coalition for Green Capital (CGC), in partnership with the Energy Foundation, will host a roundtable event in Washington DC. The event will include attendees from state-level Green Banks, and leaders from US states interested in increasing green investment in their jurisdictions. The roundtable discussion will cover ways to more effectively link Green Bank efforts around the country. And the event program will cover how states can interact with the Green Bank Consortium, a commercial platform to facilitate standardization, capitalization and pooling of Green Bank resources.

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### Green Bank Network Webinar Series

The GBN the GBN is hosting an upcoming webinar mini-series on Green Banks in the municipal space in the US.

The first [webinar on 13 December will feature the Rhode Island Infrastructure Bank's \(RIIB\) Efficient Building Fund](#), and financing challenges and opportunities in municipal buildings.

On 17 January there will be a webinar on "[Financing Clean Energy in Your City: an Introduction to Urban Green Banks](#)" featuring the Institute for Sustainable Communities (ISC) and the Coalition for Green Capital (CGC).

Watch previous webinars online on the [Webinars and Videos page](#) on the Green Bank Network website.



**GREEN BANK NETWORK**  
**WEBINAR SERIES**



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### Member Events

#### Clean Energy Finance Corporation

On 28 November, Ian Learmonth CEO, CEFC will speak at the Bloomberg New Energy Finance (BNEF) [Future of Energy Summit](#) in Shanghai. The Future of Energy Summit features a unique convergence of the old and the new – traditional players and advanced-energy leaders. The summit continues to create an environment for making new connections, and serves as a forum to discuss the critical energy issues of today and the next decade.

On 25 October, 2017 CEFC Chief Executive, Ian Learmonth provided an update on the industry and the status and current focus of CEFC to the Clean Energy Council.

On 11 October, Mr Learmonth spoke at the All-Energy Exhibition and Conference in Melbourne. Mr Learmonth discussed clean energy investment in Australia, along with Catherine Way, Business Development Manager, DP Energy

On 9-10 October, the Australian Financial Review hosted its National Energy Summit, bringing together hundreds of business, regulatory and political leaders to discuss the energy sector. The Summit covered issues of energy, trade and climate change. Mr Learmonth took part in a panel discussion about how

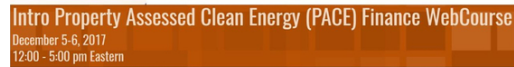
Bloomberg  
New Energy Finance

## **The Future of Energy** **Summit**

During the quarter, the CEFC presented at a number of industry-leading conferences and seminars on a broad range of clean energy matters, including the InfraAsia/AVCL Infrastructure Investors Forum; the Investor Group on Climate Change; the Australian Smart Lighting Summit; the Energy Efficiency Expo and the Power Grid Resilience and Pumped Hydro Storage conferences.

### Connecticut Green Bank

On 5-6 December, Brian Farnen, General Counsel & Chief Legal Officer of the CT Green Bank will act as course advisor for CDFA's "[Intro Property Assessed Clean Energy \(PACE\) Finance WebCourse](#)" which will explore the process of creating, operating and maintaining a community based PACE program. This two day course will feature a comprehensive overview of PACE including program design, capital markets analysis, investor attraction, legal and regulatory considerations, market potential, operations and more.



On 12 October 2017, Bryan Garcia, president and CEO of the Connecticut Green Bank spoke at an [event on Green Banks in New England at Harvard](#) Kennedy School in Boston, Massachusetts. The panel also featured Jeff Schub, Executive Director of the Coalition for Green Capital (CGC) and Massachusetts State Representative Paul W. Mark. Representative Mark said green banks have the potential to introduce clean energy into a new market profitably: "I think that'll be the takeaway: that it can work, it's been shown to work, and it's worth the investment."

Bryan Garcia of CT Green Bank, Alfred Griffin of NY Green Bank and Jeff Schub of CGC also spoke at the first annual [Rhode Island Infrastructure Summit](#) on 29 September hosted by the Rhode Island Infrastructure Bank (RIIB). Jeff Diehl, CEO of RIIB said: "The Summit provided an excellent forum to foster an open dialogue and cultivate relationships between experts representing all facets of infrastructure from policy to investment. We are thrilled with the response to this event and look forward to working with our partners to continue strengthening Rhode Island's infrastructure and economy."

At the invitation of UNEP, Bert Hunter participated in the International Renewable Energy Conference Mexico 2017 (MEXIREC), the most representative global event of its class organized by Mexico's Secretariat of Energy (SENER) and REN21 during 11 -13 of September, 2017 in Expo Santa Fe in Mexico City. The panel concerned "Financing Distributed Solar Generation Towards Zero-Emissions Economies".

Bert Hunter participated on a panel on Commercial PACE at the Intersolar Conference in San Francisco on 10 July 2017. The panel discussed "Commercial PACE and Green Banks: New, High-leverage Elements in the Solar Finance Stack."

### NY Green Bank

NY Green Bank will be hosting a webinar on 30 November, which will be an opportunity to learn about NYGB's latest developments – including its nationwide expansion, third party capital raise efforts and quarterly metrics. Register for the 30 November webinar [here](#) to learn about NYGB's latest developments as relates to its expansion efforts, along with an overview of its quarterly metrics.



NY Green Bank Quarterly Report Review

### Green Investment Group

On 15 November, Gavin Templeton of Green Investment Group spoke at an [official side event at COP23](#), hosted by the UK Pavilion. The event focused on renewable energy infrastructure and the investment opportunity for pension



**Green  
Investment  
Group**

report, the identified and demystified investments opportunities in infrastructure as an asset class. Sharing lessons from the UK experience in developing policies to support low carbon investment- and what governments can do to attract pension fund capital to deliver NDCs.

On November 1-2, in Edinburgh and London, GIG hosted two stakeholder events, bringing in stakeholders from government, project developers, investors, NGOs and more.

On October 25, Gavin Templeton, head of Sustainable Finance at GIG, spoke in Paris at the [OECD's Centre on Green Finance and Investment 2017 Forum](#). The panel covered the challenges and opportunities of building green infrastructure project pipeline, and what action is needed now to build pipelines of bankable projects to support the Paris Agreement.

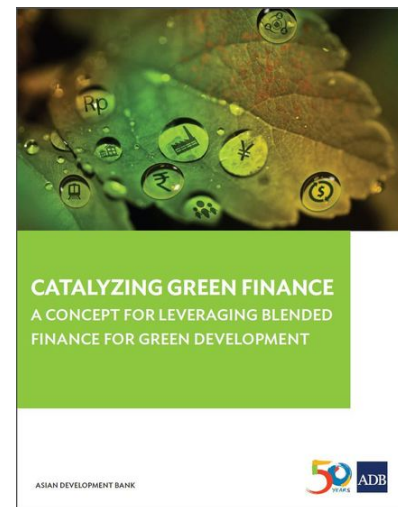
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## Reports and Whitepapers

### Catalyzing Green Finance: A Concept for Leveraging Blended Finance for Green Development

The Asian Development Bank has published a [new report describing an innovative financing solution](#) for countries to enhance both financially bankable as well as environmentally sustainable infrastructure projects.

A large financing need challenges climate-adjusted infrastructure in developing Asia, estimated at \$26 trillion till 2030. This necessitates crowding-in private sources to meet financing, efficiency, and technology gaps. However, a lack of bankable projects is a major hurdle. This publication suggests one possible innovative financing approach. The Green Finance Catalyzing Facility (GFCF) proposes a blended finance framework for governments and development entities to better leverage development funds for risk mitigation, generate a pipeline of bankable green infrastructure projects, and directly catalyze private finance. The GFCF provides useful inputs for the current debate on mainstreaming green finance into country financial systems.

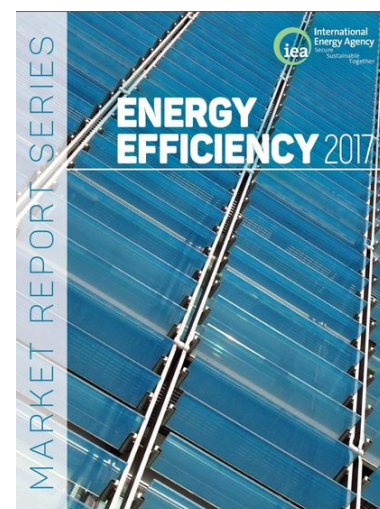


### Market Report Series: Energy Efficiency 2017

The International Energy Agency has published a [new report on Energy Efficiency in 2017](#), globally tracking trends, indicators, impacts and drivers of energy efficiency progress. The report notes that "Green banks are playing an increasingly important role in funding energy efficiency and clean energy projects."

The questions addressed in this year's report include:

- How quickly is the world becoming more energy efficient? Which countries are making most progress
- What are the impacts of energy efficiency on the global economy and energy system?
- How does energy efficiency affect global, regional and national energy security?
- How has policy, a key driver of energy efficiency, progressed globally? How does policy vary between countries, economic sectors and end-use appliances?
- How has energy efficiency affected household energy expenditure? What technology changes might



- How is efficiency evolving in the major end-use sectors of industry, buildings and transport
- What happened to energy efficiency investment in 2016? What business models and sources of finance are driving greater investment
- How has the market for energy services changed? In which markets is energy efficiency being commoditised?

This year's report also includes a special country focus on Indonesia, the largest energy consumer in Southeast Asia.

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## Spotlight on a Green Banker

**Caroline Angoorly** *Chief Operating Officer, NY Green Bank*

### 1. What is your role at NYGB in a nutshell?

I am the COO and at NY Green Bank, that means responsibility for strategy, finance and all operational matters related to both our investment portfolio and our business as a whole. My team supports the investment process from soup-to-nuts, runs financial planning and analysis for NY Green Bank, addresses all internal and public reporting matters – including cracking the code on most effectively tracking and reporting on all financial and non-financial metrics, takes the lead on external affairs, and manages mid and back office functions: in short, a very interesting and varied scope of responsibilities!



### 2. What are some recent successes or milestones that NYGB has reached?

One recent success we're very pleased about is that, on a cumulative basis, as of June 30, 2017 NY Green Bank had generated \$17.8 million in revenues – including nearly \$5 million in revenues from this year's second quarter alone. We are required to be a self-sustaining organization and expected that NY Green Bank would reach this threshold by 2018 – so the fact that we generated positive net income a year ahead of schedule was a strong indication that what we're doing here is working.

### 3. What are you most excited about for the future?

A couple of things:

Taking NY Green Bank to the next level by raising third capital and expanding the reach and operations of the organization nationally, as recently announced by Governor Cuomo. In so doing, we aim to increase benefits for New York ratepayers through facilitating even greater clean energy scale as well as encouraging green and sustainable financing across the US Climate Alliance States and beyond.

Secondly, given all the resources New York State has committed to advancing large scale renewables (both onshore and offshore), we are looking forward to playing a larger role on the financing side there.

Over the years I've spent quite a bit of time focused on the development and financing of larger-scale projects and these types of transactions are squarely within our scope. We hope to hear from market participants seeking NY Green Bank investment for larger-scale clean energy efforts.

### 4. What do you enjoy most about your job?

Being involved in building and evolving NY Green Bank from Governor Cuomo's initial vision described in the State-of-the-State address in 2013 to a fully-fledged, successful and growing sustainable infrastructure

to do that alongside bright, engaged, committed people – at NY Green Bank, and also within NYSERDA, other NY State Agencies and at our clients and counterparties - is really a privilege.

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