EXPANDING CREDIT ACCESS IN CLEAN ENERGY PROCUREMENT

BARRIERS AND SOLUTIONS

CEBI
Clean Energy Buyers Institute

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ABOUT THIS PRIMER

This primer explains the credit barriers — and potential solutions — for non-investment-grade offtakers looking to pursue clean energy transactions. It ends with a set of next steps for those interested in implementing these solutions and a brief overview of more fundamental structural changes that may make the market friendlier to these offtakers. The appendix contains an overview of some foundational concepts for those who are newer to procurement and a glossary of important terms.

INTENDED AUDIENCE

U.S. clean energy customers, along with project developers, financiers, and other transaction stakeholders, may benefit from this primer. It is likely best suited to those who are familiar with PPA procurement and are looking to better understand credit.

HOW YOU SHOULD USE THIS PRIMER

This primer serves as an introduction to credit barriers and solutions for energy customers exploring new PPA deals (before going to market). It will be useful in helping sustainability and transaction teams hone their procurement strategies and have more nuanced conversations with consultants. It may also serve to help developers and financiers gain comfort with emerging credit support mechanisms. This resource should not be interpreted as a fully comprehensive dive into credit solutions. Rather, it should be seen as a guide for further conversation.

INTRODUCTION

WHY CREDIT BARRIERS ARE A PROBLEM

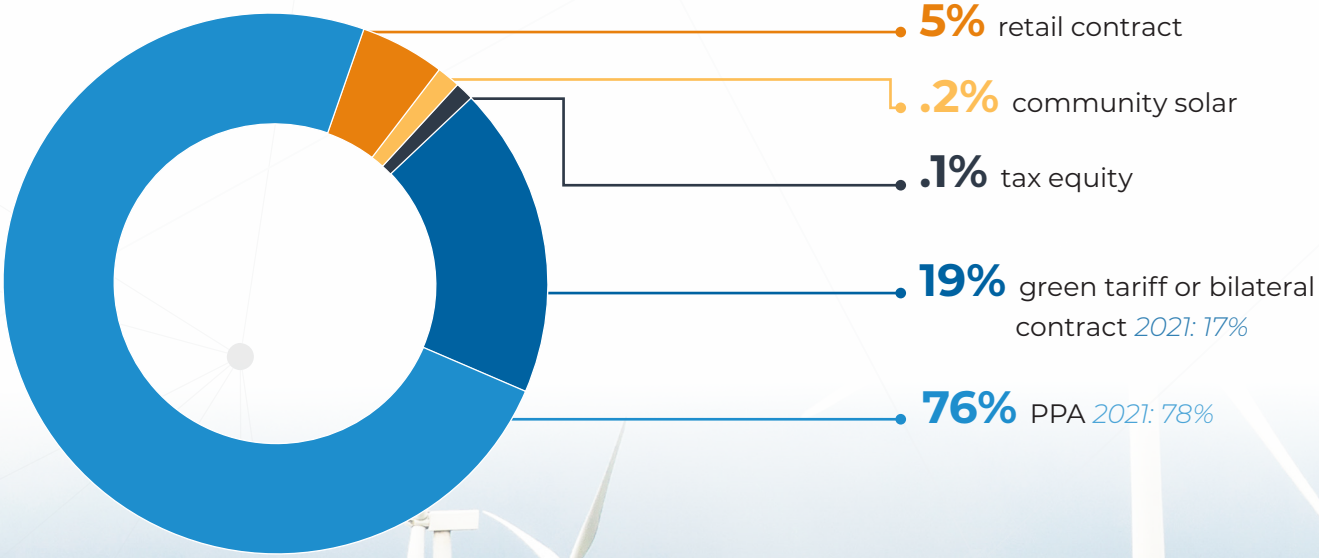
Corporates are facing increasing pressure to take action on climate change by cutting their emissions. There is already public — and sometimes internal — pressure to set individual **Scope 2** reduction targets. In addition, the recent focus on **Scope 3** emissions means that supply chain companies are increasingly feeling pressure to engage in clean energy procurement.

Voluntary clean energy procurement is a powerful tool to address a company's Scope 2 emissions. Clean energy procurement comes in many forms, but the most common off-site method is the **Power Purchase Agreement (PPA)**. By signing a PPA, large energy customers, or **offtakers**, provide guaranteed revenue to an energy project, which enables developers to secure project financing. According to the Clean Energy Buyers Association's (CEBA) Deal Tracker, PPAs accounted for 76% of corporate clean energy procurement capacity contracted for in 2022 (see Figure 1).

CEBA TIP

Don't know what PPA means? Click here to see a glossary of bolded terms.

FIGURE 1. 2022 procurement mechanisms by capacity



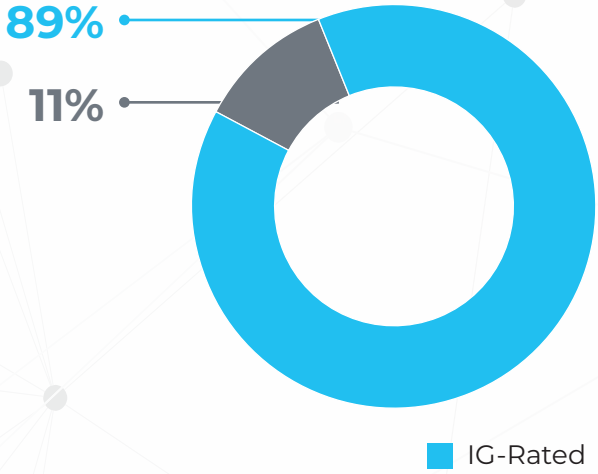
Source: CEBA State of the Market, 2022

However, PPAs are not equally accessible to all potential energy customers. Project financiers need assurance that their investments will be repaid and typically require that the offtaker have investment-grade credit. This serves as an indicator of the offtaker's ability to continue paying its bills and provide project revenues. The preference for investment-grade (IG-rated) offtakers is widely held: CEBA's Deal Tracker indicates that 89% of the offtakers for PPAs in 2022 had investment-grade credit. At the same time, data provided by Energetic Capital reveals that of the nearly 80,000 U.S. companies tracked by S&P, fewer than 5% are investment-grade. ***Credit barriers make PPAs largely inaccessible to almost the entire U.S. market.***

CEBA TIP

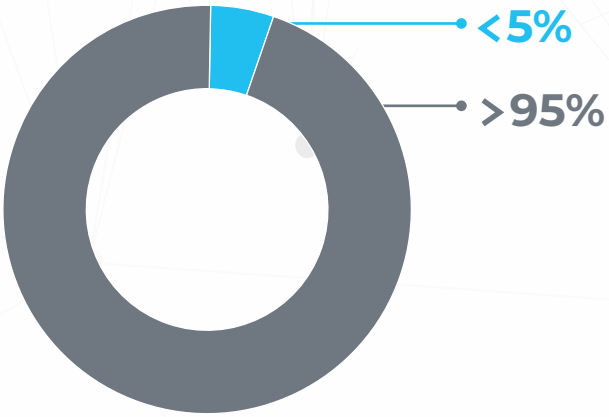
For an overview of PPA project finance and how it is affected by credit, see the Appendix.

FIGURE 2. 2022 credit status of PPA offtakers



Source: CEBA Deal Tracker, 2023

FIGURE 3. Proportion of investment-grade companies in the U.S.



Source: Energetic Capital

Note: This statistic was developed using 2023 data from S&P along with U.S. Census data from 2019

While lack of an official investment-grade rating alone can make it very difficult for an offtaker to transact, the issue is compounded by the constraints of the current "seller's market." The U.S. procurement market has recently been governed by a limited clean energy project pipeline caused, in part, by bottlenecks in permitting and transmission reform. The demand from large, investment-grade offtakers currently exceeds the capacity of viable projects, so developers and financiers hold significant leverage and have little incentive to find pathways to engage lower-rated energy customers.

However, this is changing. As more large, investment-grade companies and developers set ambitious climate targets, they are looking for pathways to help their non-investment-grade partners transact. Experts also note that market dynamics may soon change, and if they do, developers will eventually exhaust their limited investment-grade options.

Building opportunities for non-investment-grade offtakers can help ensure developers will continue to have new energy customers and ultimately future-proof the transaction market.

Fortunately, a set of options is emerging to help non-investment-grade offtakers pursue clean energy transactions: **shadow ratings**, **credit enhancement mechanisms**, and **offtaker aggregation**. While the use of these options is currently limited, partly because of a lack of market awareness, they each have the potential to vastly widen the procurement customer base.

No single solution explained in this primer is a panacea for credit problems, and not every solution will fit every company's needs. All of these options must be tailored to fit the priorities of each energy customer and the specifics of each transaction. However, understanding what is available in the market can help internal teams along their procurement journeys, and can ultimately help break open procurement access to a wider range of currently underserved customers.

THE ROLE OF CREDIT RATINGS

Not every PPA is equally secure. This is caused, in part, by variations in offtaker credit. PPAs typically last between 10 and 25 years[1] to reduce the burden of short-term price volatility. To feel confident investing in a clean energy project, financiers look for assurance that generated energy will be purchased for that entire time period. Therefore, they look for end customers with the lowest risk of long-term payment default. While no metric is entirely accurate and exhaustive, the market usually views financial **credit ratings** as a proxy for company default risk.

Credit ratings are provided by a **Nationally Recognized Statistical Ratings Organization (NRSRO)** like S&P, Moody's, and Fitch and are primarily used to determine whether a company issuing financial instruments — usually bonds — is likely to meet its obligations. **Investment-grade companies** are those with the most secure ratings. Project developers and financiers rely primarily on investment-grade offtakers because they provide the strongest guarantee of future revenue.

While there is a litany of reasons a company may lack investment-grade credit, those reasons fit into a set of overarching categories:

RATING REQUIREMENTS: To receive an official rating, companies submit multiple years' worth of audited financial statements to a rating agency for review. The cost of review can range from a few hundred thousand dollars to millions of dollars. Most U.S. companies do not issue bonds and do not need a public credit rating for their core business activities, so getting rated solely to transact in the clean energy space would result in a significant increase to the PPA's per MWh price. In most cases, companies decide this is not a pragmatic use of resources.

COMPANY RELATIONSHIP TO PARENT: Subsidiary companies may not have robust enough records of financial success to qualify for their own credit rating. In some cases, their parent company may provide a parent guarantee, but the parent company may choose not to because they do not want to be held liable for a subsidiary, especially if they are not the sole owner of the brand.

COMPANY SECTOR: Credit ratings are partially determined by an analysis of sector health and industrywide risk, meaning that companies in volatile sectors (like commodity manufacturing) may be plagued by sub-investment-grade credit regardless of their individual business performance.

DEMONSTRATED RELIABILITY: Perhaps the hardest barrier to overcome, companies that cannot speak to their reliability may not be able to secure an investment-grade rating. For example, companies that have previously defaulted on loans or have otherwise shown poor business performance are likely to be viewed as unreliable and, therefore, unable to receive an investment-grade rating. This barrier also affects small and young companies, like startups, which often simply lack the financial track record to prove their reliability.

This primer uses "**non-investment-grade companies**" to encompass all companies that do not have an investment-grade rating. However, a key nuance is that while all **sub-investment-grade companies** are non-investment grade, the reverse is not true. In other words, a non-investment-grade company is not necessarily sub-investment grade. Moreover, while all non-investment-grade companies are likely to face credit barriers, the ways they experience these barriers and the solutions best suited to them may be informed by the reasons for their lack of an investment-grade rating.

1 Better Buildings. (n.d.). *What is a Power Purchase Agreement?* U.S. Department of Energy. https://betterbuildingssolutioncenter.energy.gov/financing-navigator/option/power-purchase-agreement

CREDIT SOLUTIONS

Credit barriers are a difficult, but not impossible, problem to overcome. There are solutions in the market that have already helped non-investment-grade offtakers successfully pursue transactions, each with its own unique benefits: shadow ratings, credit enhancement mechanisms, and offtaker aggregation. **Shadow ratings** are unofficial credit ratings and are best used by high-performing companies that do not have an official credit rating from an NRSRO. Credit enhancement mechanisms are financial products taken out by offtakers and developers that pass offtaker default risk to an investment-grade financial institution for a fee. Available enhancement mechanisms — **letters of credit** (LCs), **surety bonds**, and **credit insurance** — differ in how they address offtaker default risk, which can influence costs to the offtaker. Lastly, **offtaker aggregation** is an alternative deal structure that allows non-investment-grade and investment-grade energy customers to negotiate a PPA together, which enables smaller energy customers to transact and can yield more accessible credit postings and deal terms.

Each of these solutions differs in ease of implementation and the credit barriers they are most equipped to overcome. While these solutions can be pursued individually, subject matter experts note that packaging them together can yield maximum benefits. For example, credit insurance can be used to lower the credit posting on a surety bond, and aggregate deals may yield lower credit posting requirements for non-investment-grade offtakers. The most effective solutions for a company will, however, depend on company specifics.

While these solutions can be pursued individually, subject matter experts note that packaging them together can yield maximum benefits.

Each of the solutions mentioned is explored in detail below.

SHADOW RATINGS

Official credit ratings may not be accessible or financially pragmatic for many companies. Receiving a rating from an NRSRO is a complex and lengthy process because these ratings are public facing and allow a company to receive capital from a much broader market. Consequently, in addition to requiring audited financial statements, NRSROs have hefty fees that increase depending on the size of the company being assessed, along with fees for maintaining the rating. All of this may be necessary for large companies that need to access capital through the bond market, but this is not the case for all companies. Smaller and younger companies typically look to secure capital through other methods, such as through commercial lenders or venture capital firms. Unlike their investment-grade counterparts, these companies are unlikely to need an official credit rating to support their core business functions and are not financially beholden to such a wide market of shareholders. Therefore, not only are they unlikely to receive a high public rating due to lack of demonstrated reliability, they simply may not need an official rating.

Shadow ratings, on the other hand, are unofficial, less comprehensive ratings that can be obtained from an NRSRO or internally by a developer or PPA financial stakeholder. Because these ratings are being given for a more contained purpose — for example, to transact in the clean energy market — the requirements are slightly more flexible and the process is significantly more affordable. **Shadow ratings typically cost in the tens of thousands of dollars if created by a credit rating agency and can even be developed at no cost to the offtaker if done in-house by a deal chain stakeholder.**

Shadow ratings are best for companies that are performing well but do not have an official rating. For the purposes of entering into a PPA, a shadow rating can be seen as a sufficient replacement for an official rating. However, it is best for the company to go to market with an explicit explanation that it intends to use a shadow rating. While deal chain stakeholders may do their own analysis to corroborate, remember that public companies have their ratings readily accessible at the start of their processes. Having a shadow rating announced as early as possible can help provide a competitive advantage.

CREDIT ENHANCEMENT MECHANISMS

LCs, surety bonds, and credit insurance are all financial products that place the burden of default risk onto a different investment-grade entity. This provides assurance to the project developer and financier that they will be paid in case of offtaker default.

All non-investment-grade offtakers will be expected to provide some form of credit support. Therefore, it is important to align internally on which options are best suited to company priorities and announce that when going to market.

RFPs that address up front a company's credit rating and which credit enhancement mechanisms the company is willing to pursue can yield more efficient PPA negotiations with developers and financiers who are familiar with these products.

A display of each credit enhancement mechanism's key attributes can be seen below in Table 1. A detailed description of each mechanism follows.

TABLE 1: Credit enhancement mechanisms

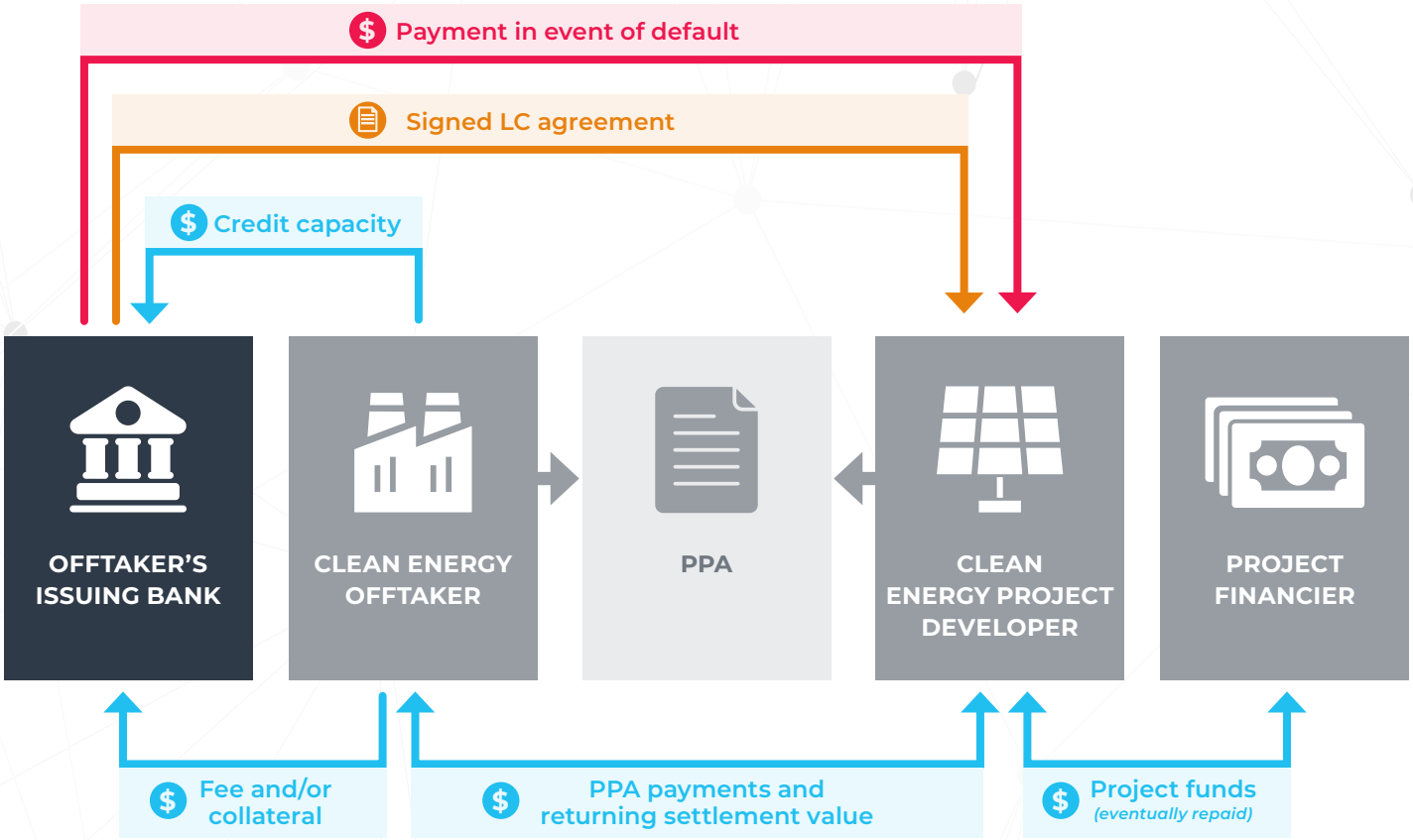
	LETTER OF CREDIT	MODIFIED SURETY BOND	CREDIT INSURANCE
CONTRACTING PARTY	Offtaker	Offtaker	Developer
RISK OWNER	Offtaker's issuing bank	Surety company	Credit insurance company
RELATIVE COST	$$-$$$	$$-$$$	$-$$
OFFTAKER CREDIT IMPACT	Yes	No	No
SPEED TO CURE DEFAULT	Immediate	Immediate (modifaction provides for immediate call by project owner)	Not immediate
HIGHEST VALUE FOR	Mid-rated companies	Mid-rated companies	Low-to-mid rated companies
LEVEL OF MARKET ADOPTION	Standard practice in market; readily used by financiers	Not widely used in renewables, but used in other industries, particularly construction	Not widely used in renewables, but common in many other industries

Letters of Credit

LCs are written assurances provided by an offtaker's commercial lender that financial obligations will be met. If an offtaker defaults, the developer is authorized to draw on a certain sum of money from the offtaker's commercial lender. This sum is negotiated for the LC but is typically one to two years of project revenue and is meant to cover lost revenue while the developer finds a replacement offtaker. This process is shown in Figure 4.

While this is a common option in PPA negotiations for non-investment-grade offtakers, it comes with some drawbacks. LCs typically require a hefty cash collateral and draw on a company's line of credit, which often needs to be preserved for core business functions. In addition, LCs are written to be immediately callable, meaning that issuing banks usually have only about 48 hours to pay a developer in the event of a claim of offtaker default. In light of these drawbacks, stakeholders are increasingly searching for alternatives.

FIGURE 4. LC process flow

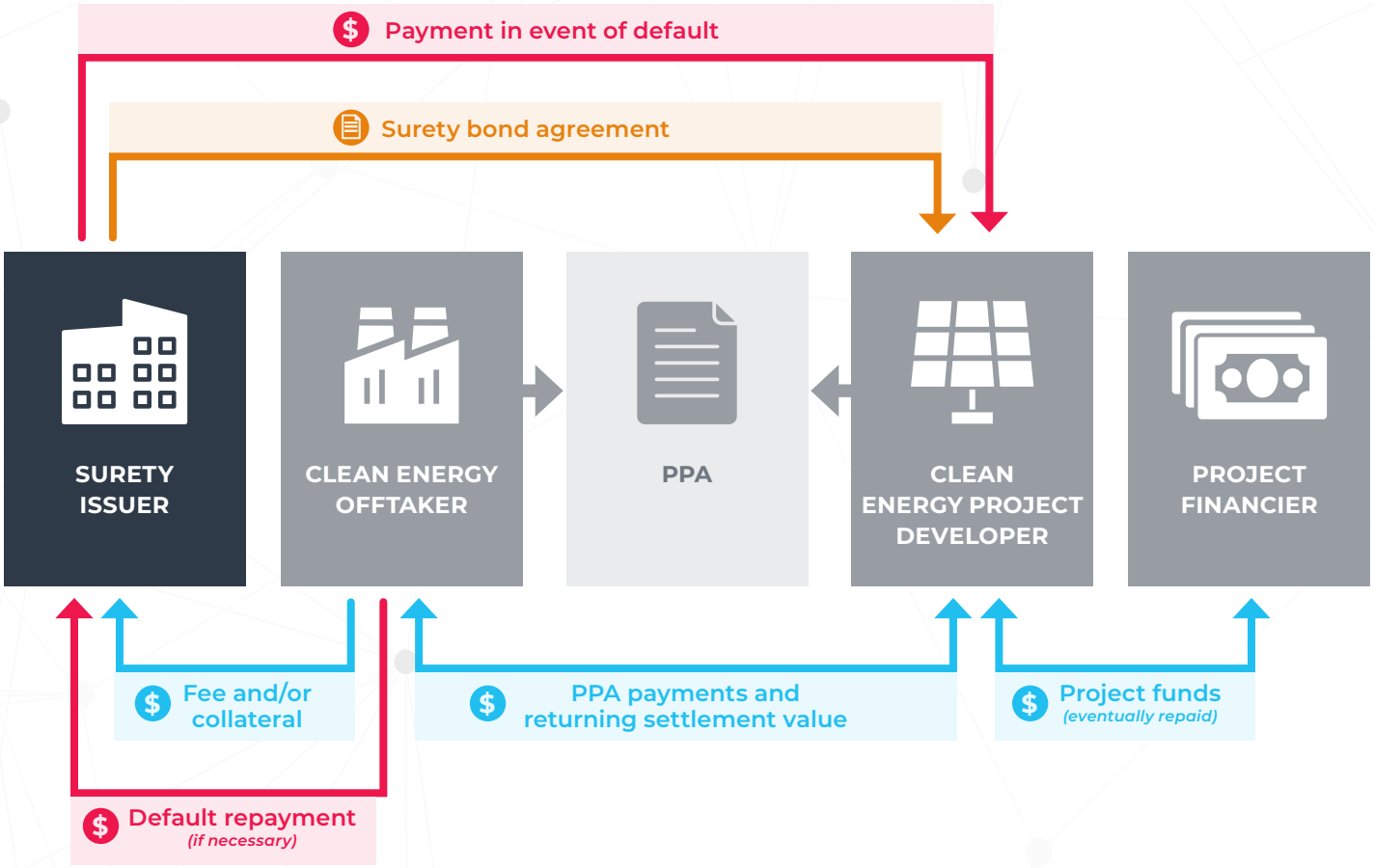


Surety Bonds

Unlike LCs, PPA **surety bonds** pass the risk of offtaker default onto a new party: an investment-grade surety company. In this scenario, the offtaker pays a premium to the surety company, which, in turn, is responsible to pay the developer in case of default. If the offtaker defaults, the surety will pay the developer the agreed-on sum (similar to an LC) and then either look to the offtaker for reimbursement or attempt to find a replacement offtaker. **This allows the offtaker to secure credit support without drawing on its line of credit**. This is shown in Figure 5.

Unlike LCs, traditional surety bonds are not immediately callable. While this has historically been an impediment to the use of surety bonds in the clean energy space, recent offtakers have found success by offering "on-demand surety bonds," which are amended to closely mirror the callability of an LC. Those that have done this suggest amending the bond form to keep the callability within 30 days.

FIGURE 5. Surety bond process flow



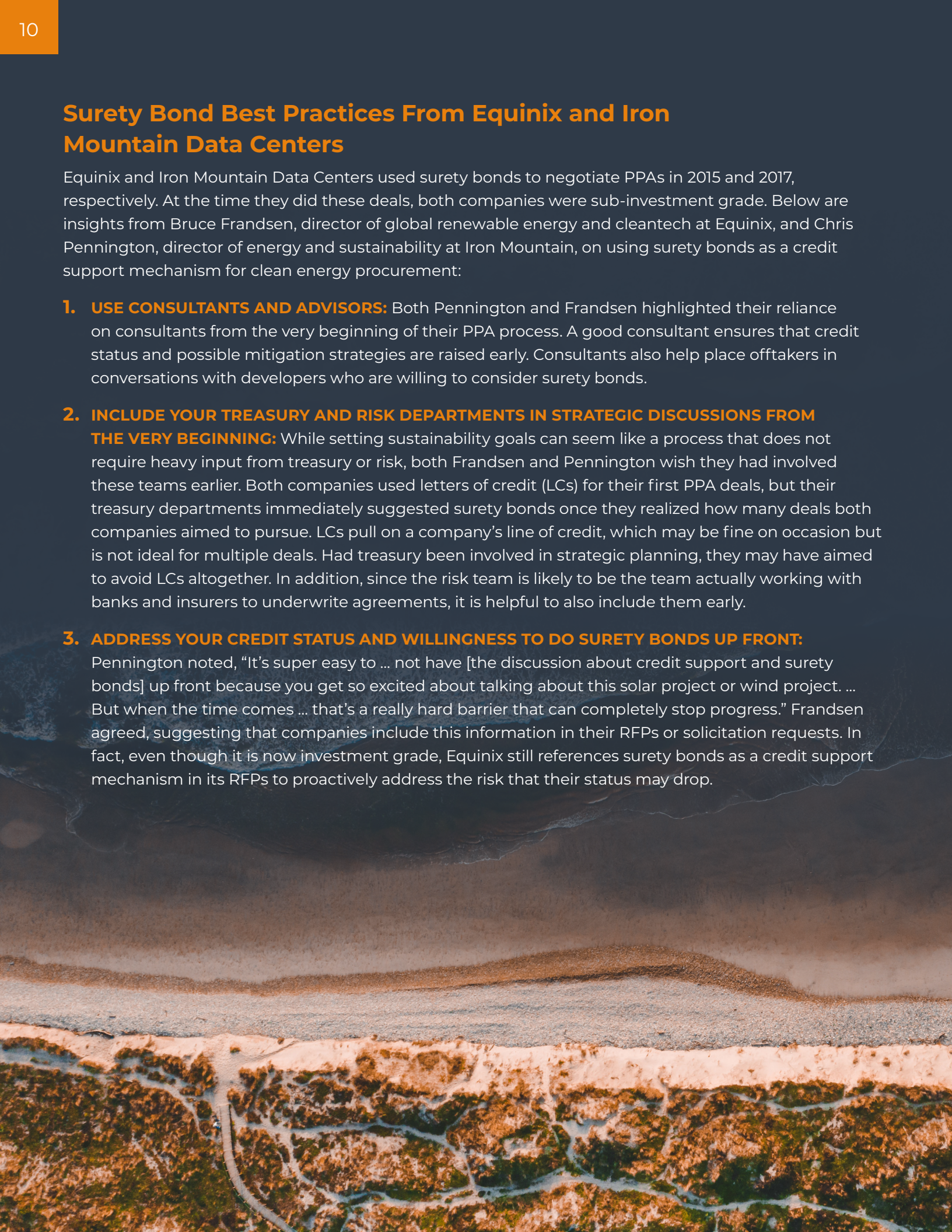
Surety Bond Best Practices From Equinix and Iron Mountain Data Centers

Equinix and Iron Mountain Data Centers used surety bonds to negotiate PPAs in 2015 and 2017, respectively. At the time they did these deals, both companies were sub-investment grade. Below are insights from Bruce Frandsen, director of global renewable energy and cleantech at Equinix, and Chris Pennington, director of energy and sustainability at Iron Mountain, on using surety bonds as a credit support mechanism for clean energy procurement:

1. **USE CONSULTANTS AND ADVISORS:** Both Pennington and Frandsen highlighted their reliance on consultants from the very beginning of their PPA process. A good consultant ensures that credit status and possible mitigation strategies are raised early. Consultants also help place offtakers in conversations with developers who are willing to consider surety bonds.

2. **INCLUDE YOUR TREASURY AND RISK DEPARTMENTS IN STRATEGIC DISCUSSIONS FROM THE VERY BEGINNING:** While setting sustainability goals can seem like a process that does not require heavy input from treasury or risk, both Frandsen and Pennington wish they had involved these teams earlier. Both companies used letters of credit (LCs) for their first PPA deals, but their treasury departments immediately suggested surety bonds once they realized how many deals both companies aimed to pursue. LCs pull on a company's line of credit, which may be fine on occasion but is not ideal for multiple deals. Had treasury been involved in strategic planning, they may have aimed to avoid LCs altogether. In addition, since the risk team is likely to be the team actually working with banks and insurers to underwrite agreements, it is helpful to also include them early.

3. **ADDRESS YOUR CREDIT STATUS AND WILLINGNESS TO DO SURETY BONDS UP FRONT:** Pennington noted, "It's super easy to … not have [the discussion about credit support and surety bonds] up front because you get so excited about talking about this solar project or wind project. … But when the time comes … that's a really hard barrier that can completely stop progress." Frandsen agreed, suggesting that companies include this information in their RFPs or solicitation requests. In fact, even though it is now investment grade, Equinix still references surety bonds as a credit support mechanism in its RFPs to proactively address the risk that their status may drop.



4. **PROVIDE A SURETY BOND UP FRONT THAT MIRRORS AN LC'S CALLABILITY:** Offtakers might prefer surety bonds because they don't impact their lines of credit. However, other deal chain stakeholders often prefer LCs because they are "immediately callable." While surety bonds traditionally are not written that way, both Frandsen and Pennington recommend writing your agreement to mirror this functionality. Frandsen stated "that [lack of immediate draw capability] seems to be the main component that scares the financial institutions away from looking at this as a viable option." Pennington recommends having the actual bond form ready during the terms sheet phase of PPA negotiation. Negotiating the bond form can take anywhere from a few weeks to a few months, so it is critical to ensure that all parties — financiers, developers, and offtakers — are comfortable with this as soon as possible.

5. **BE WILLING TO ACCEPT SURETY BONDS IN RETURN:** Developers have stated that a barrier for their acceptance of surety bonds is that, while offtakers ask to use it for themselves, they are not often willing to accept them from developers in return. Especially in a more constrained seller's market, being willing to accept similar terms from a developer may be key.

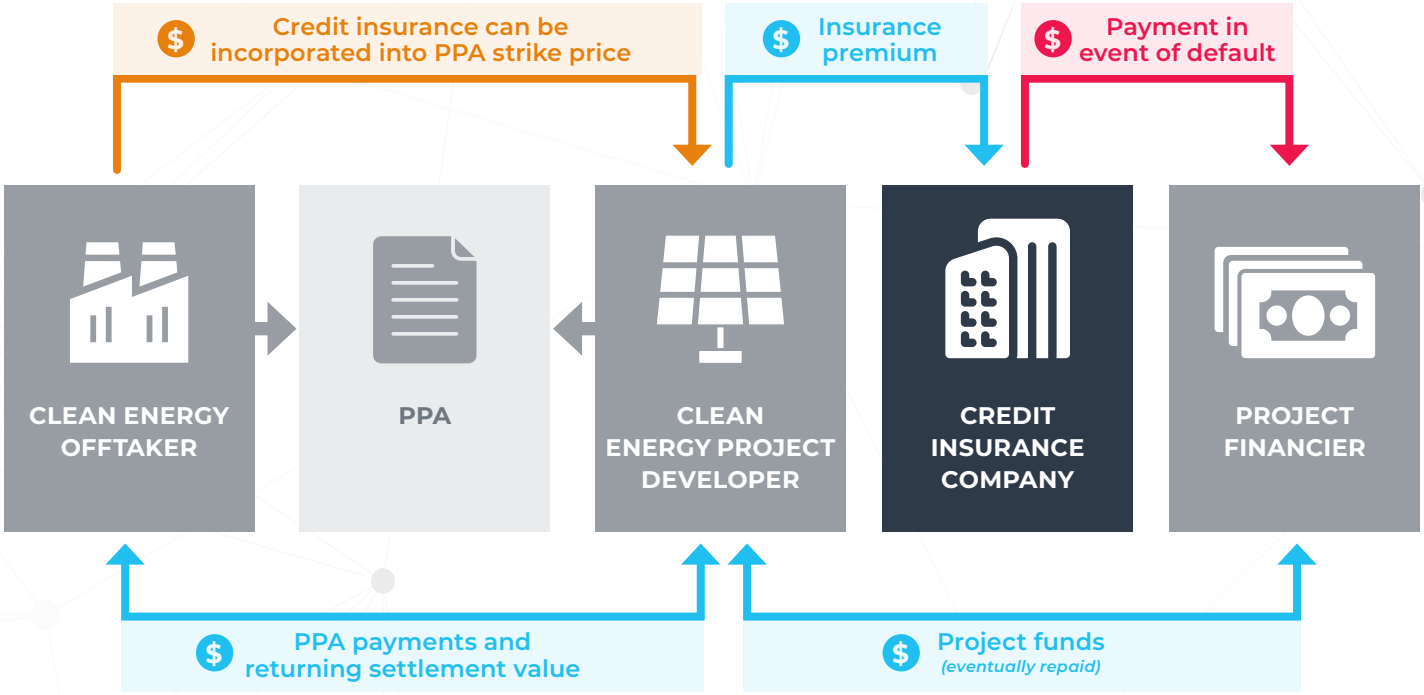
6. **BE WILLING TO ACCEPT AN LC AS A PLAN B:** While both companies were able to use surety bonds successfully, Frandsen and Pennington agree that the first attempts can involve trial and error. Be committed enough to the PPA negotiation that you are willing to consider other options if conditions change. In fact, Pennington mentioned that Iron Mountain once switched from a surety bond to an LC at the last minute because, while all parties had informally agreed on a surety bond, the project's financier was unable to get comfortable with it after seeing the bond form. Pennington noted, "There has to be a strong enough commitment to what this contract achieves in the first place. … It can't entirely hinge on whether or not you have a surety bond in place."

Credit Insurance

Credit insurance is a form of nonpayment insurance taken out by a developer against the risk of offtaker default. Here, the risk of default gets passed to an A-rated insurance company, instead of resting with the non-investment-grade offtaker or developer. While the developer does pay a premium for the insurance, it can recuperate this expense through PPA pricing or even seek out more favorable terms from the project lender. This may end up being of no cost to the offtaker. This can be seen in Figure 6.

Credit insurance lacks the "payment on-demand" quality that is commonly seen in LCs and modified surety bonds. Instead, credit insurance operates more like traditional insurance, where a claim is investigated before payment. All these qualities mean that credit insurance is often more affordable than other enhancement mechanisms and has the benefit of being an off-balance-sheet solution. While credit insurance can be used by all non-investment-grade offtakers, it may be most helpful to poorly rated companies that may struggle with the higher costs of LCs and surety bonds.

FIGURE 6. Credit insurance process flow



Best Practices for Using Credit Insurance

Clean Energy Buyers Institute (CEBI) spoke with credit insurance providers to compile some best practices for offtakers and developers interested in using it for their deals. Here are some key insights from those conversations:

1. **FIND AN INSURANCE PROVIDER WITH CLEAN ENERGY TRANSACTION EXPERIENCE:** While credit insurance has been around since the 1800s to indemnify sellers against a client's default and is particularly common in international trade, its use in clean energy transactions is somewhat new, especially in North America. To date, there are only about 15–20 North American companies that offer Virtual Power Purchase Agreement (VPPA) credit insurance, and most of these have European foundations. Therefore, make sure to confirm that your provider understands how clean energy deals work. It may be helpful to seek out a broker or consultant, who can connect you to experienced providers.

2. **COMPLETE GROUNDWORK:** Since credit insurance in clean energy transactions is not common practice yet and is something developers have to purchase, offtakers may have to take a more active role in convincing developers to use it. Completing some initial steps and answering early-stage questions can help make developers more willing to take on this extra assignment. Experts note that some energy customers have gone as far as to seek out preliminary quotes from insurance agencies to include in their RFPs. Additionally, while offtakers should not be involved in negotiations between a developer and insurance company, they can introduce both parties to jump-start negotiations.

3. **RELY ON YOUR TREASURY TEAMS:** PPA negotiations are difficult, especially when newer enhancement mechanisms are part of the discussion. Engaging the treasury teams on both the offtaker and seller sides may be key in achieving the best deal. Experts highlight that allowing the treasury representatives on both ends to negotiate directly with each other has often had a pronounced effect on reducing the perceived risk and, therefore the costs borne by the offtaker.

4. **THINK ABOUT PACKAGING DIFFERENT ENHANCEMENT MECHANISMS:** Credit insurance is just one credit support mechanism. Others, including LCs and surety bonds, are available, and experts have often recommended looking at them as a package. Many sub-investment-grade offtakers may still be asked to post an LC or surety bond even if their developer secures credit insurance. However, credit insurance can help make LCs and surety bonds cheaper.

OFFTAKER AGGREGATION

While credit enhancement mechanisms are financial products that can help offtakers address non-investment-grade status, there are also alternative deal structures that can help lessen the burden of credit. Non-investment-grade companies and companies with small energy loads often face trouble accessing cost-effective procurement mechanisms. However, **offtaker aggregation** of small energy loads is a multi-offtaker deal structure that holds the potential to overcome these challenges and allow more nontraditional offtakers to transact.

While traditional PPAs are negotiated with one offtaker, in aggregate deals, a group of offtakers — often with different credit profiles — negotiates together.

This structure spreads the default risk across multiple offtakers and allows each one to purchase energy at a smaller scale while still contributing to the development of a sizable clean energy project. The group typically agrees to share the same legal counsel and energy consultants to streamline the negotiation process. Developers will analyze each offtaker and provide the group a common credit rating (some have used a weighted average) that is used to settle on uniform PPA price and deal terms. However, at the end of negotiations, each offtaker signs its own PPA contract and posts its own credit commensurate with its credit rating.

In the strongest aggregate deals, non-investment-grade offtakers may join forces with an investment-grade partner that acts as an **anchor tenant**. If a large enough portion of the offtake (experts suggest around 50%) is assigned to an investment-grade company, the credit rating of the customer(s) for the remaining offtake may be less important to the financier. Anchor tenants in an aggregation usually face slightly higher PPA and credit support pricing than if they had negotiated for the entire volume individually, but a large credit-rated company may be incentivized to do this if they have business relationships with the other offtakers or have goals for increasing market access more generally. In addition, for non-investment-grade offtakers who are newer to the procurement market, partnering with experienced investment-grade companies may allow them to gain insights into the deal process and smooth negotiations.

One of the biggest strengths of the aggregated structure is that it allows companies to contract for smaller loads. PPA economics often mean that an offtaker has to contract for a substantial amount of energy — around the 100,000 MWh range — for the offtake to be of interest and benefit to the developer. Small-to-medium-sized businesses often have smaller annual energy loads and are therefore likely looking to contract for significantly less than that volume. For developers, engaging with these smaller companies means spending extra time and money to negotiate more deals per project. In the current seller's market, developers have little incentive to do this when there is an abundance of larger offtakers willing to contract for the project output. However, the aggregation structure means that a developer is effectively negotiating with one group, dealing with one legal team instead of many. Reducing the logistical complexity faced by the developer lowers the transaction costs of collaborating with multiple offtakers, which puts developers more at ease. **This can enable smaller individual contracts for non-investment-grade offtakers. In addition, poorly rated companies may see slightly better credit-posting requirements when pursuing aggregation with an investment-grade anchor tenant.**

Aggregate deals have thus far been uncommon. According to CEBA's Deal Tracker, only about 9% of customer contracts have been signed as part of an aggregate deal since 2018. However, this may change as more developers set sustainability goals, more large investment-grade companies broaden their sustainability goals to include their supply chains, and streamlined legal and logistical best practices emerge. Experts highlight the importance of using shared legal counsel and relying on consultants to make an aggregation work. Consulting agencies often have deep partnerships with developers and a roster of available offtakers. This allows them to more easily facilitate these deals and secure replacements in the case of offtaker attrition. Best practices in coordinating aggregations also include ensuring that all customers' internal teams are well educated on the potential risks and benefits of VPPAs and are ready to act quickly when a project is presented. This may include obtaining contingency approval of a sample project from decision-makers and having preauthorization from each company's treasury team to post a specified amount or type of credit support. It likely also requires pre-alignment on contract terms that would kill a deal. For more details on aggregate deals and real-world examples, see CEBA's Aggregation Case Study and Aggregation Primer.

Supply Chain Aggregation

Aggregation can include any combination of offtakers, but one promising form has been **supply chain aggregation**. In a supply chain aggregate deal, a large corporation acts as the anchor tenant for a subset of its suppliers during PPA negotiations. Large corporates are often experienced clean energy customers, and their legal teams can lead in negotiations. This saves their suppliers time and money and can yield more favorable deal terms. The anchor's participation may also convince developers and investors to consider smaller — often riskier — supply chain offtakers for the remainder of the generation.

While the number of supply chain deals in the market is limited, the potential for this approach is increasing as U.S. corporates are facing growing pressure to reduce their Scope 3 emissions, or the emissions that come from their supply chains. To remain competitive, supplier companies are increasingly seeking to reduce their own emissions through voluntary clean energy procurement. While suppliers often lack sufficient credit, energy load size, experience, and employee resources to use common mechanisms like the VPPA, their participation may be more viable if they are supported by larger customer partners.

Accordingly, large-scale companies are beginning to invest time and resources in helping their suppliers set and meet emission reduction targets. Walmart's Project Gigaton, for example, was created to help Walmart's suppliers set targets and engage in climate action aligned with the Paris Climate Agreement.

Supply chain aggregation provides an opportunity for investment-grade corporates to join with their suppliers and help them through the process of executing a transaction. Engaging common legal counsel and consulting agencies allows suppliers to participate in a transaction without having to build in-house teams, and downstream corporates can be better positioned to meet their targets.

While this is not yet a common deal structure, there have been successful supply chain deals. For example, in late 2022, McDonald's announced that it had joined a PPA with five of its domestic logistics supply chain partners to purchase clean energy from Enel Green Power's Blue Jay solar project in Texas. This enabled the electricity load of all of McDonald's U.S. restaurants' logistics supply chain to be supported by clean energy.[2]

However, supply chain aggregation faces challenges. Along with the logistical difficulties facing general aggregation — like offtaker attrition and market dynamics that heavily favor investment-grade companies — this application is made more complicated because supplier/corporate partnerships are not permanent. PPAs often last between 10 and 25 years, and corporate partners may hesitate to enter into deals that are motivated by supply chain relationships. Still, many of these barriers may be solved as more deals are attempted and more best practices develop.

2 McDonald's. (2022, December 15). *McDonald's & U.S. logistics partners tackle supply chain emissions in new Enel solar energy deal* [Press release]. https://corporate.mcdonalds.com/corpmcd/our-stories/article/new-enel-solar-energy-deal.html

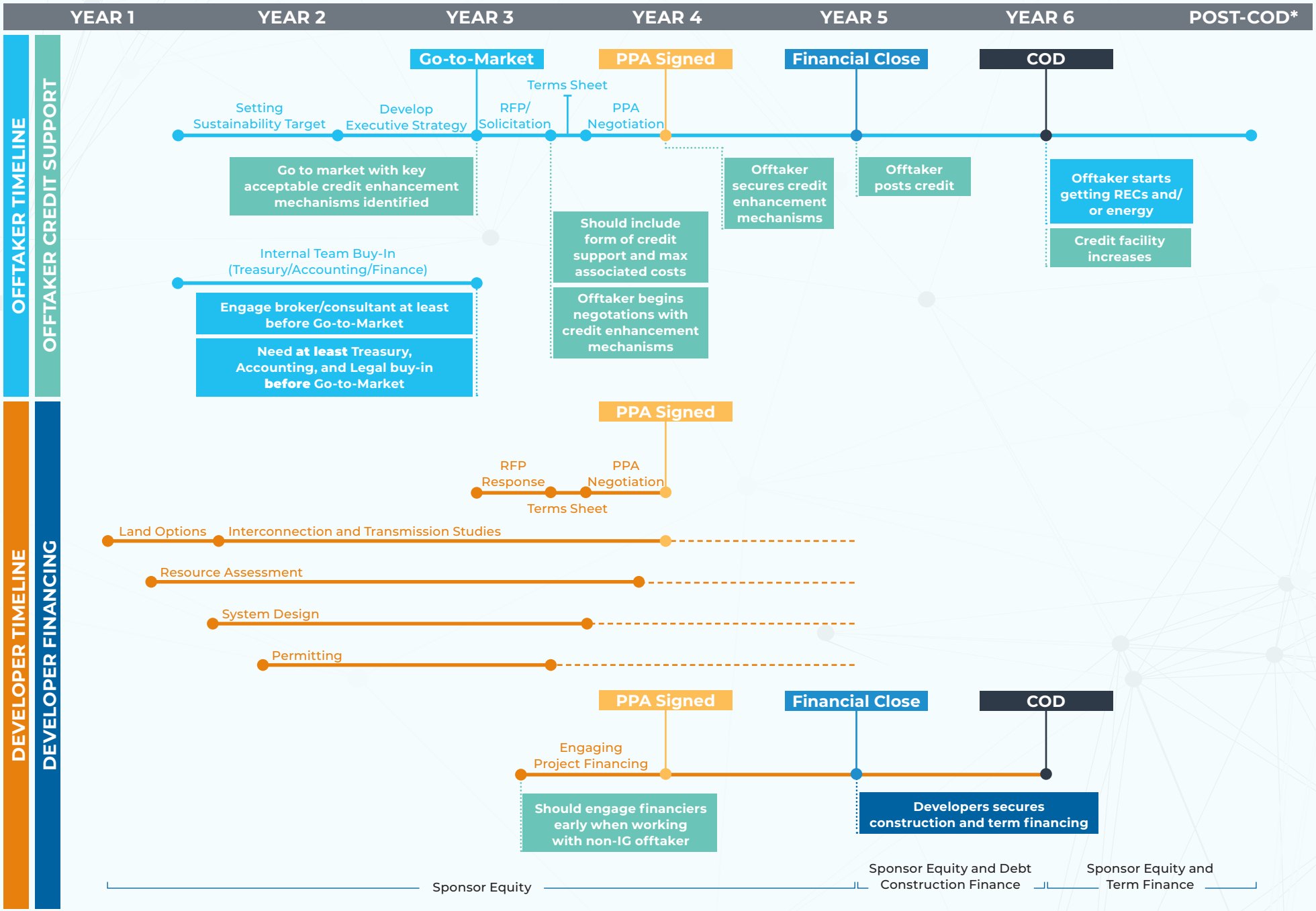
NEXT STEPS FOR PROCUREMENT TEAMS

Credit considerations often make an already complex procurement process more complicated. Those interested in pursuing any of these solutions should seek out experienced brokers and buyers' consultants before developing a procurement strategy. PPA negotiations can fall apart midway if offtakers do not pursue the right form of credit support or if financier willingness to accept a specific solution is not confirmed early enough. Consultants and brokers often have deep connections with developers, which means they may already have some idea of who would be amenable to offtaker credit support and may be able to lean on others to consider it. In addition, consultants who have already worked on PPAs with non-investment-grade offtakers may have connections to companies that provide enhancement mechanisms.

Along with engaging a consultant, it is important to gather the right *internal* team members. Engaging finance, treasury, and risk teams along with the chief financial officer can help ensure that a transaction is aligned with company priorities. For more information on thinking through internal and external engagement on clean energy, visit the Helpful Resources section of the Small and Medium Business Accelerator website.

The PPA process flow in Figure 7 highlights in green the points at which a non-investment grade offtaker should be taking particular action. For a generic PPA process flow without regard to offtaker credit concerns, see Figure 8 in the Appendix.

FIGURE 7. PPA process flow with non-investment-grade offtakers



*COD commercial operation date

Note: The PPA process flow shown here highlights in green the points at which a non-investment grade offtaker should be taking particular action.

NEXT STEPS FOR THE MARKET

Shadow ratings, credit enhancement mechanisms, and aggregation are all possible solutions given current PPA financing pathways and market structures. However, experts are having early conversations about how to adjust structures to reduce credit barriers in the first place. These still-developing solutions will likely require significant cross-stakeholder industry cooperation to build and successfully implement.

- ✓ **RISK ALLOCATION:** Experts and practitioners indicate that while spreading awareness of existing solutions is helpful, risk and collateral pricing are still often prohibitively high. Some stakeholders across the deal chain believe this is because the costs borne by offtakers for credit support are built around offtaker credit risk instead of project risk. Adjusting when and how risk is evaluated may be the key to reducing the cost of credit support across the board.
- ✓ **LOAN BACKSTOPS:** Historically, clean energy project financing in the U.S. has come from private institutions that impose stringent offtaker requirements. It may be possible to look outside of private financing to help provide a backstop against offtaker default. For example, public institutions like the Department of Energy's Loan Program Office could alleviate some of this financial burden by providing loans for projects with nontraditional offtakers. Alternatively, large companies with more capacity to absorb risk could provide assurance of payment for transactions — or volunteer to step in as a contingency offtaker should a nontraditional partner default.
- ✓ **USING ENVIRONMENTAL EQUITY:** While the current seller's market makes working with non-investment-grade offtakers largely uninteresting for developers, there are exceptions. Developers have highlighted that the increasing focus on social justice and related provisions in the Inflation Reduction Act may motivate them to work with non-investment-grade offtakers that are able to meet certain diversity, equity, inclusion, and justice qualifications. Work must be done to further understand the scope of this opportunity and develop a plan to help companies build pitches for their participation.

APPENDIX

INTRODUCTION TO PPA FINANCING

A **PPA** is a contract in which a clean energy customer, usually called an **offtaker**, commits to purchasing the output of a clean energy project at a specified price for a period of time (10–25 years[3]). In clean energy development, this offtaker commitment allows the project developer to secure project financing by pointing to guaranteed revenues during project operation.

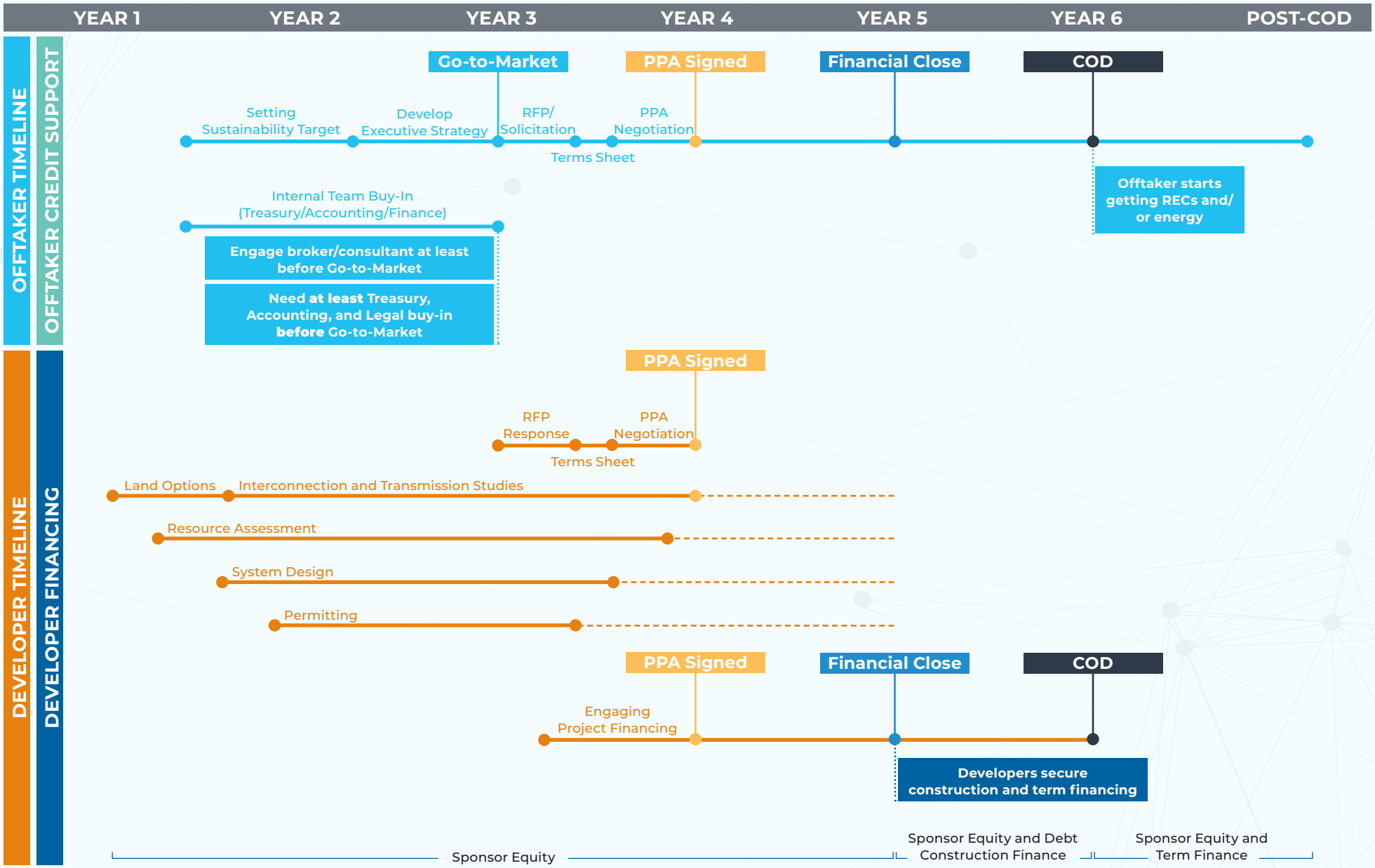
Building a new clean energy facility is an expensive, multiyear endeavor. Project developers typically establish a subsidiary, known as a special purpose vehicle or SPV, to hold all project contracts as a means to limit liability to the parent developer company.

After the initial stage of project development, the developer must secure financing for construction and long-term operations of the project. Debt-funded financing through a short-term loan, often called a bridge loan, is used to fund construction. Term financing is then introduced after a project reaches its **commercial operation date (COD)** to repay the higher-cost construction finance and provide long-term capital during operations. Term financing historically comes from large investment and specialist tax equity firms that take advantage of clean energy tax credits offered by the U.S. federal government.

As is the case with all investments, financiers need to feel confident that their investment will be repaid. A signed PPA with a highly credit-rated offtaker is one of the best tools in a developer's toolkit to show a financier that they have a strong counterparty supporting the promise of future revenue. An overview of the overlapping timelines for negotiating a PPA can be seen in Figure 8.

3 Better Buildings. (n.d.). *What is a Power Purchase Agreement?* U.S. Department of Energy. https://betterbuildingssolutioncenter.energy.gov/financing-navigator/option/power-purchase-agreement

FIGURE 8. PPA process flow



GLOSSARY

Anchor tenant: a customer of a clean energy project that contracts for a large share (usually at least 50%) of generated energy.

Commercial operations date: the date on which a seller notifies a buyer that a generating facility is operating and can produce and deliver energy and any associated environmental attributes to the buyer under the terms of a commercial contract (e.g., PPA). This allows buyers to set their expectations for when a project will begin delivering energy and environmental attributes. It also holds the seller responsible for managing those expectations and staying on schedule during the development and construction of a clean energy project. Often, if a contracted project is not operational by the commercial operation date, the buyer will be eligible to collect damages from the seller.[4]

Credit enhancement mechanism: a financial product that can improve the credit risk profile of a business, often by passing offtaker default risk to an investment-grade third party.

Credit insurance: a form of nonpayment insurance taken out by a developer against the risk of offtaker default.

Credit rating: a forward-looking opinion on the relative ability of an entity or obligation to meet financial commitments.[5]

Investment-grade company: a company that has a low to moderate risk of not meeting its financial commitments, as determined by a Nationally Recognized Statistical Ratings Organization. Usually, ratings of "AAA," "AA," and "BBB" are considered investment grade.[6]

Letter of credit: a document from a bank or other financial institution guaranteeing that a specific payment will be made in a business transaction. The issuing bank affirms that a purchaser (in this case, a client or a customer) will pay for goods or services on time and for the exact amount due. If the purchaser doesn't pay on time and in full, the issuing bank underlying the letter of credit guarantees to cover the remainder of the overdue balance up to and including the full amount of the purchase.[7]

Nationally Recognized Statistical Ratings Organization: a credit rating agency that provides an assessment of the creditworthiness of a firm or financial instrument(s) that is registered and approved by the Securities and Exchange Commission.[8]

4 LevelTen Energy. (2019, March 8). *Glossary of renewable energy terms.* https://www.leveltenenergy.com/post/power-purchase-agreement-glossary

5 Fitch Ratings. (n.d.). *Rating definitions.* https://www.fitchratings.com/products/rating-definitions

6 Fitch Ratings. (n.d.). *Rating definitions.* https://www.fitchratings.com/products/rating-definitions

7 Secker, A. (2021, November 23). *What is a letter of credit and how does it work?* First Republic. https://www.firstrepublic.com/insights-education/what-is-a-letter-of-credit-and-how-does-it-work

8 U.S. Securities and Exchange Commission. (2023, February 24). *Oversight of nationally recognized statistical rating organizations: A small entity compliance guide.* https://www.sec.gov/about/divisions-offices/office-credit-ratings/oversight-nrsros-small-entity-compliance-guide

Non-investment-grade company: a company that lacks an investment-grade rating from a Nationally Recognized Statistical Ratings Organization.

Offtaker: an entity that buys power from a project developer at a negotiated rate for a specified term without taking ownership of the system; often called an "energy customer."[9]

Offtaker aggregation: a structure that allows multiple offtakers to join together and negotiate a clean energy deal, which can allow them to increase the scale of the renewable project they are supporting.

Power Purchase Agreement: an arrangement in which a third-party developer installs, owns, and operates an energy system on a customer's property. The customer then purchases the system's electric output for a predetermined period. A PPA allows the customer to receive stable and often low-cost electricity with no upfront cost, while also enabling the energy system's owner to take advantage of tax credits and receive income from the sale of electricity. Though most commonly used for clean energy systems, PPAs can also be applied to other energy technologies, such as combined heat and power.[10]

Scope 2 emissions: indirect greenhouse gas emissions associated with the purchase of electricity, steam, heat, or cooling.[11]

Scope 3 emissions: emissions that result from activities or assets not owned or controlled by the reporting organization, but that the organization indirectly affects in its value chain. Scope 3 emissions include all sources not within an organization's Scope 1 and 2 boundary.[12]

Shadow rating: a non-public, unofficial credit rating given to a company. This can be done by a credit agency or internally by transaction stakeholders.

Sub-investment-grade-company: a company with a credit rating below investment grade, officially or unofficially.

Supply chain aggregation: a structure in which an energy customer joins with its supplier(s) to negotiate an offtake transaction.

Surety bond: a form of guarantee in which a third party (the surety) becomes liable upon the default of the principal (offtaker).[13]

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9 National Renewable Energy Laboratory. (2016, January). *Using Power Purchase Agreements for solar deployment at universities.* https://www.nrel.gov/docs/gen/fy16/65567.pdf

10 Better Buildings. (n.d.). *What is a Power Purchase Agreement?* U.S. Department of Energy. https://betterbuildingssolutioncenter.energy.gov/financing-navigator/option/power-purchase-agreement

11 United States Environmental Protection Agency. (2024, March 8). *Scope 1 and Scope 2 inventory guidance.* https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance#:~:text=Scope%202%20emissions%20are%20indirect,of%20the%20organization's%20energy%20use

12 United States Environmental Protection Agency. (2024, March 8). *Scope 3 inventory guidance.* https://www.epa.gov/climateleadership/scope-3-inventory-guidance#:~:text=Scope%203%20emissions%20are%20the,scope%201%20and%202%20boundary

13 Weber, P., Gao, C., & Marsh R. (2020, August 19). *Surety bonds compared to LCs.* https://www.projectfinance.law/publications/2020/august/surety-bonds-compared-to-lcs

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