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MUNICIPAL POWER PURCHASE AGREEMENT GUIDELINE

ENABLING MUNICIPAL ENERGY PROCUREMENT
Guideline on power purchase agreements

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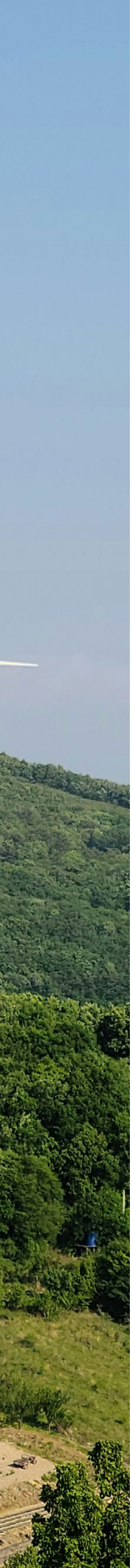

GLOSSARY & ACRONYMS

Abbreviation	Description
COD	Commercial Operation Date
Grid Code	The national codes in respect of electricity generation, dispatch, scheduling, communications, distribution or transmission as published by NERSA from time to time
kWh	Kilowatt-hour
IPP	Independent power producer (also referred to as the “seller”)
Municipal IPP Manual	The Municipal IPP Project Preparation Manual
MWh	Megawatt-hour
PPA	Power Purchase Agreement
South Africa	The Republic of South Africa

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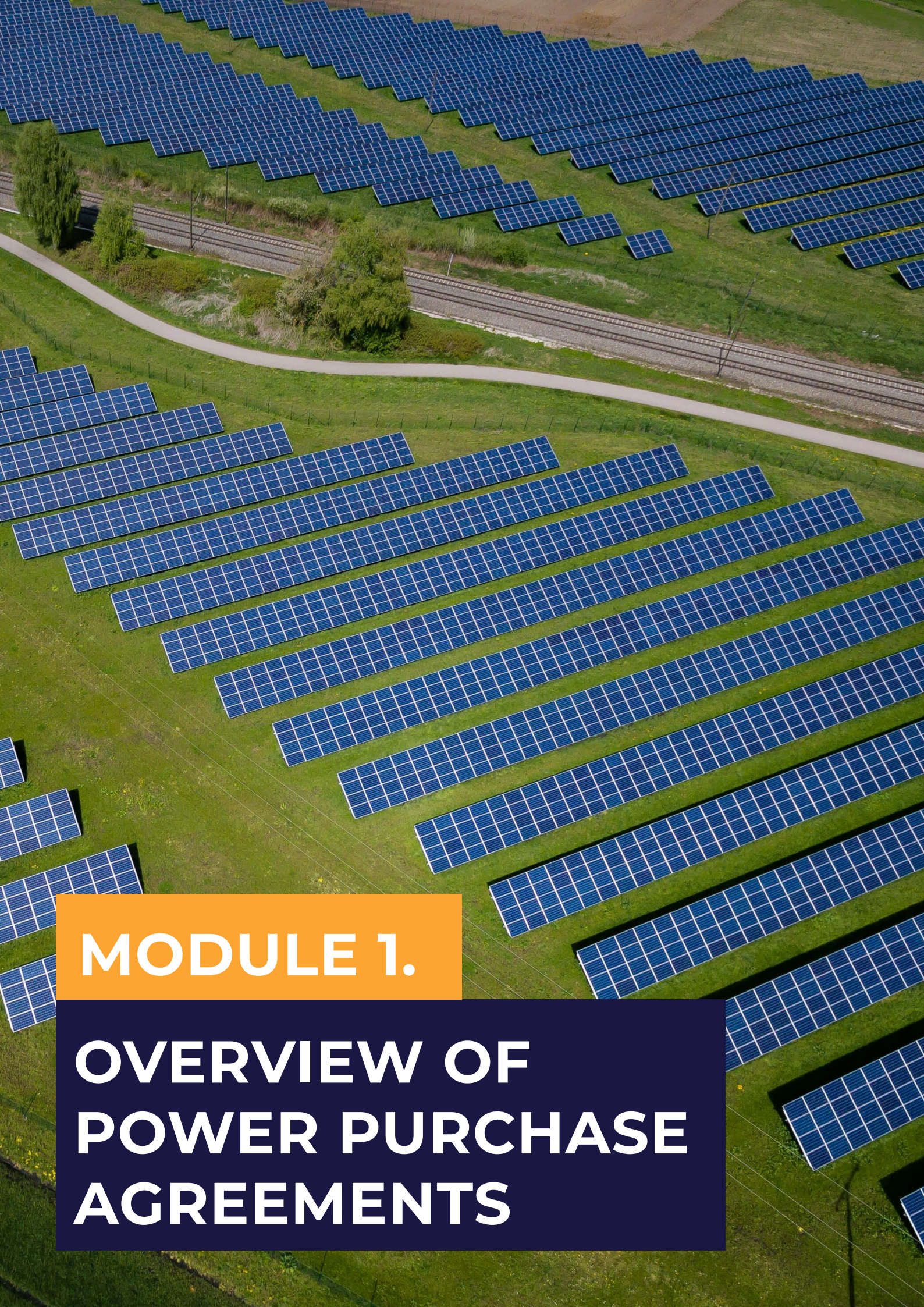

MODULE 1.

OVERVIEW OF POWER PURCHASE AGREEMENTS

1. INTRODUCTION

As part of the development of the Municipal IPP Manual, this Guideline aims to provide municipalities with a clear and comprehensive framework for understanding, negotiating, and managing PPAs. It outlines the essential components, processes, and best practices to ensure that municipalities can effectively engage in PPAs to meet their energy needs and sustainability goals.

Key objectives of this Guideline include:

- The contractual framework of a PPA,
- The considerations involved in securing financing for an IPP project,
- The tariff structure, purchase obligations and other key financial provisions of a PPA,
- Credit support and security considerations for both the seller and buyer under the PPA
- The risks associated with a project and how such risks are typically allocated and mitigated under the PPA, and
- Other key provisions in the PPA, with a particular focus on provisions related to default and termination.

This Guideline should be read together with the Municipal IPP Manual.

2. FOUNDATIONAL CONSIDERATIONS

The elements of municipal power procurement readiness and the stages of planning, pre-feasibility and feasibility are discussed in detail in the Municipal IPP Manual. The outcome of these steps will determine the contractual provisions as well as the risk allocation and the provisions of the PPA and the technical schedules.

Below are the foundational considerations to be decided before the PPA is drafted and to be borne in mind when drafting and negotiating the PPA:

- **Technology:** The applicable technology (wind, solar, hydroelectric, biomass, landfill gas, thermal power, battery storage) will impact various provisions of the PPA. Each technology has a different implication on the structure of the PPA, technical schedules, risk allocation and pricing. Whilst many of the issues discussed in this Guideline will apply to the generation of electricity from all forms of energy (excluding nuclear energy), it must be borne in mind that there are notable differences that will require expert input at the time of drafting the PPA.
- **Volume and Term:** Determining the amount of electricity to be purchased and the duration of the contract are crucial as they affect the overall cost and commitment.
- **Pricing Structure:** It is important to determine whether the pricing is structured as a fixed-price, index-based, or hybrid pricing model. Each approach has its benefits and risks, such as price stability versus market volatility.
- **Creditworthiness:** The financial stability of both parties is critical to ensure that on the one hand, the buyer needs to fulfil its payment obligations, and on the other hand the seller must be able to deliver the agreed-upon electricity over the contract term and pay any underperformance penalties levied on it pursuant to the PPA (if any).
- **Legal and Regulatory Compliance:** The parties to the PPA and the provisions of the PPA must comply with local laws and regulations.
- **Project Development and Risk:** The PPA should address the development stage of a project including: technology, location, and potential risks such as delays or changes in laws.
- **Expiry or Termination:** The PPA must include provisions for expiry and early termination and the consequences and obligations of the parties.

By carefully considering the above factors, municipalities can ensure that the PPA meets the municipalities energy needs within required budgets.

3. WHAT IS A PPA

A PPA is a long-term contract between an electricity producer (the seller) and a buyer that outlines the terms for the sale and purchase of electricity. The PPA includes the amount of electricity to be supplied, the price, the duration of the contract, and the responsibilities of each party. The benefit of a PPA is that it provides predictable electricity costs over a long term which can be beneficial from a financial perspective for the buyer. It also enables the seller to raise financing to cover the costs of developing, constructing and operating the generation facility. The risks of the parties are allocated to ensure bankability and contractual certainty.

There are different types of PPAs and below are the three types that would currently be applicable to municipal procurement:

- **Onsite PPA:** The generation facility is installed on the buyers' property, and the electricity is consumed on-site. In the municipal context this would be where the facility will be behind the meter but interconnected with the municipality's distribution network.
- **Offsite PPA:** The electricity is generated at a remote location and delivered to the buyer through the grid. In the municipal context this would be where the facility connects to the distribution network owned by the municipality and energy is delivered onto the municipal owned distribution network.
- **Virtual PPA (wheeling):** The electricity is generated at a remote location and delivered to the buyer through a financial reconciliation (e.g. wheeling). In the municipal context this would be where the facility connects to either a distribution network or transmission network not owned by the municipality and electricity is wheeled to the municipality.

The above types of PPAs each have their advantages and challenges, and the choice between them depends on factors like available space, energy needs, energy resource availability, and financial considerations all of which are considered during the Feasibility Study Technical Solution Options Analysis, as explored in the Municipal IPP Manual. As part of the procurement process, the municipality should prescribe the level of negotiation that will be entertained in relation to the PPA after the award of preferred bidder status, considering procurement limitations. Best practice in the municipal context would be to minimise negotiation. To the extent possible, prior to issuing the PPA with the tender documents, a market and lender benchmark exercise should be conducted in order to minimise the potential for negotiation post award of preferred bidder.

The key components of a PPA are:

- **Parties:** The buyer is the party purchasing the electricity and the seller is the energy producer selling the electricity, usually an IPP (Independent Power Producer).
- **Duration:** PPAs are typically long-term agreements, ranging from 10 to 25 years. The duration is crucial as it impacts the financial viability and stability of the project.
- **Energy Volume:** The PPA specifies the amount of electricity to be supplied, often measured in megawatt-hours (MWh). It also outlines the delivery schedule, and any conditions related to the supply of electricity.
- **Pricing:** The tariff can be structured as a price per unit of electricity that is fixed (as escalated) for the term on a take or pay basis, which would be typical for a renewable energy project where the tariff is based on the energy delivered and on deemed energy where it could not be delivered due to circumstances where the facility would otherwise have been available. Alternatively, the tariff can be structured as a capacity-based payment for capacity made available. The tariff may also include variable and fixed components, and where the tariff includes an input energy (in respect of a fuel used to generate, such a gas) the price per unit of electricity may fluctuate based on indices or market conditions. The structure of the tariff will depend on the technology and whether or not the facility is dispatchable.
- **Project Development:** Details about the renewable energy project, including location, technology, and development timeline. It also covers milestones and deadlines for project completion.
- **Risk Allocation:** The PPA outlines how various risks (e.g., site, construction delays, regulatory changes, and operational issues) are allocated between the buyer and seller.
- **Regulatory and Legal Compliance:** Ensures that the project complies with all relevant laws and regulations. It is critical to the enforceability of the PPA that it establishes that all such approvals and consents have been obtained.
- **Performance Guarantees:** Guarantees related to the performance and availability of the energy project, such as minimum energy output levels or availability guarantees. These guarantees protect the buyer from underperformance.
- **Termination Clauses:** Conditions under which the PPA can be terminated by either party, including penalties for early termination and procedures for dispute resolution.

It is advisable for both parties to engage knowledgeable legal counsel, and if funds are available, to also engage with engineers and financial consultants. Both parties will benefit from the advice of these consultants in determining which risks and obligations are properly allocated to each party. The procuring municipality will also benefit from the appointment of transaction advisors during the procurement phase.

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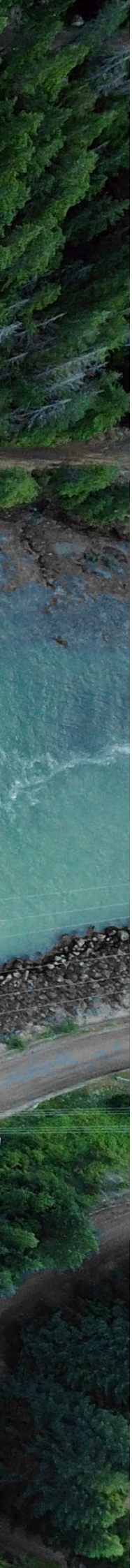
MODULE 2.

PROJECT DEVELOPMENT & CONSTRUCTION



4. PROJECT DEVELOPMENT & CONSTRUCTION

The development and construction phases of an energy project are critical periods that involve significant risks. These risks can impact the timeline, cost, and overall success of the project. By understanding and addressing the risks associated with development and construction, stakeholders can enhance the likelihood of project success and ensure the timely and cost-effective delivery of IPP projects.

Development risks arise during the initial stages of a project, from site selection to securing permits and financing.

Key development risks include:

- **Site Selection and Assessment:** Choosing an appropriate site is crucial. The risks include: environmental constraints, land acquisition issues, and inadequate resource assessment (e.g., wind speed or solar irradiance).
- **Permitting and Regulatory Approvals:** Navigating the process of obtaining necessary permits and regulatory approvals can be both time-consuming and uncertain. Delays or denials can significantly affect project timelines and increase costs.
- **Financing:** Securing financing is crucial for project development. Risks include fluctuation in market conditions, interest rates, and the availability of capital. Financial instability can delay or halt project progress.
- **Stakeholder Engagement:** Engaging with local communities, governments, and other stakeholders is vital. Poor stakeholder management can result in opposition, legal challenges, and delays.

4.1. PROJECT SITE

The seller will typically bear general responsibility for procuring the land on which the generation facility will be developed and operated on and as such, will assume the risk of the land on which the generation facility will be developed and operated, as well as security of tenure. To the extent that the buyer, procures or owns the land, and is making such land available to the seller, then the responsibility for certain site conditions may sit more appropriately with the buyer from a bankability perspective. Municipalities should also be aware that to the extent that the municipality is the lessor, any lease event of default occasioned by the municipality would be treated as a buyer event of default under the PPA. It is in the interest to both the buyer and the seller to ensure that the right to occupy the project site is secured for the entire term of the PPA. If the term of the PPA can be renewed, then the right to occupy the project site should be secured for the extension period.

4.2. CONSENTS, PERMITS AND LICENCES

The generation facility must be built and operated in accordance with the consents required by the applicable law. The seller is typically responsible for obtaining the necessary consents to build, own and operate the generation facility. The term “consents” generally includes any registration, declaration, filing, consent, license, right, approval, authorisation, or permit. In certain instances, the parties may agree that the responsibility to obtain specific consents from higher levels of government is a joint responsibility.

Where a government authority fails to grant or renew a consent upon due application of the project company, this will be treated in the same way as a change in law.

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4.3. CONSTRUCTION, MILESTONES AND TIMELINES

The Seller will generally be responsible to design, engineer, procure, construct, commission and test the generation facility (in accordance with all applicable laws, consents and the standards of a reasonable and prudent operator) and undertake all related work concerning the construction of the generation facility, bearing the associated risk and responsibilities accordingly.

To this end a PPA may impose certain time-bound obligations on the seller:

- **Failure to commence construction** – The buyer will look for reassurance that the construction of the generation facility will commence timeously after the effective date to enable the seller to achieve the target commercial operation date ("COD"). The seller must commence construction within a particular period after the effective date of the PPA, failing which the buyer will have the right to terminate the PPA. In broad terms this obligation typically entails: (i) the seller has concluded a contract for the construction of the generation facility, and that contractor has commenced significant works, or the seller has incurred significant expenses (over an agreed-upon threshold) related to the construction of the generation facility; (ii) exclusions of "lighter" types of work that do not meet the definition / obligation; and (iii) a requirement that the construction works must be ongoing and should not be abandoned.
- **Abandonment** – Following commencement of construction, the buyer will seek to ensure that construction is proceeding and has not been abandoned. Abandonment could take the form of a permanent, voluntary cessation in construction (or operation) by the seller (i.e. the cessation is not caused by certain agreed-upon events that are beyond the seller's reasonable control) or could occur via constructive abandonment, where construction (or operation) has ceased for a protracted period. In either case, abandonment of the project will constitute an event of default by the seller, entitling the buyer to terminate the PPA. After the project is operational, the concept of abandonment and the time periods will be project-dependent but would similarly be treated as an event of default by the seller, entitling the buyer to terminate the PPA.
- **Delays in achieving Commercial Operation** – It is a material obligation in a PPA, that a seller must achieve commercial operation by the predetermined target COD and failure to do so will, in the absence of other relief events such as force majeure (as discussed in more detail in Module 7 (Risk Management)), entitle the buyer to either claim delay liquidated damages or a reduction in the term of the PPA. Imposing delay liquidated damages may have a cost implication on the seller that will ultimately be passed through to the buyer.
- **Construction Longstop Date** – If the seller fails to achieve COD by a longstop date, the buyer should be entitled to terminate the PPA for a seller event of default.

4.4. COMMISSIONING AND TESTING

Testing and commissioning are required for the seller to reach the COD. Commissioning and testing of the generation facility comprises (in broad terms) a range of tests and procedures aimed at energising the generation facility in a manner that complies with the relevant requirements of the regulatory framework (particularly the Grid Code and any government authorisations or consents), the distribution agreement or transmission agreement (as the case may be) and engineering market standards. The obligation to carry out testing and commissioning of the generation facility lies with the seller under the PPA, who must ensure that independent experts are satisfied with the outcome.

Commissioning and testing relies on the availability of the interconnection line which could either be owned by the procuring municipality or another municipality or Eskom/NTCSA. If the network is not available, the seller should be entitled to appropriate relief from the consequence of a delay to achieving the COD. If the network is owned by the buyer, the seller will seek to claim damages in the form of deemed energy payments from the buyer for delays to the achievement of COD. The buyer should therefore carefully consider its capacity to undertake its obligations to meet the requirements of the testing and commissioning of the generation facility.

In relation to certain risk events (usually political force majeure events, curtailment and network events) parties may agree that the buyer will pay the seller for energy that was not generated due to the fact that the generation facility was unavailable as a result of such event occurring. This is generally a bankability requirement of lenders. This mechanism is typically referred to as Deemed Energy / Deemed Energy Payments. Deemed Energy Payments are payments for energy that was not generated but would have been had the generation facility otherwise have been available, but for a particular event or circumstance. In practical (and simplified) terms, the seller determines / quantifies how much generation was prevented by a particular event (Deemed Energy) and invoices the buyer for that Deemed Energy. Deemed Energy Payments are not a feature of all PPA's. It is a common but negotiated mechanism considering bankability requirements.

4.5. FAILURE TO ACHIEVE CONTRACTED CAPACITY

The contracting parties will agree what the contracted capacity of the generation facility will be. To reach the COD, the facility must be tested and certified as having met a percentage of the contracted capacity, generally referred to as a minimum capacity requirement. Testing and commissioning of the facility may reveal an achieved capacity lower than the contracted capacity and other issues. The test will generally be certified by an independent engineer appointed by both parties. If the tests demonstrate that the seller has achieved at least the minimum contracted capacity but not the full contracted capacity, the seller may need to rectify the facility to meet acceptable performance outputs, which may result in delays in achieving COD.

If there is no possibility for improving the performance of the generation facility by the construction longstop date, there are generally two options available to the buyer:

- To accept the resulting output of the generation facility, potentially coupled with financial penalties for not achieving the guaranteed contracted output in the form of a contracted capacity buydown or an adjustment to the tariff.
- To reject the facility and terminate the PPA.

4.6. EARLY OPERATING PERIOD

A generation facility may be capable of delivering electricity to the delivery point before the COD is achieved – for example, during commissioning of the generation facility, or if the generation facility will be commissioned in phases or comprises discrete units that are commissioned sequentially until the COD is achieved. The PPA could make provision for the early energy to be sold at a discount or for only energy that is generated after a particular unit is completed to be taken into account (as opposed to energy generated while commissioning).

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5. FINANCIAL PROVISIONS

5.1. TARIFF STRUCTURE

The tariff structure is one of the most critical aspects of the PPA. The buyer pays the seller a tariff for the electricity generated by the generation facility, and/or for deemed energy and/or for capacity made available. The technology of the generation facility will determine the tariff structure to be included in the PPA.

Different tariff structures are used for dispatchable and non-dispatchable technologies.

- Dispatchable technology refers to technology that can be dispatched by the buyer as the buyer can issue instructions to the seller that directs them to generate a specific quantity of electricity during a specified period of time. Examples include fossil fuel and gas-based generation technologies, and batteries also constitute dispatchable technology.
- Non-dispatchable technology refers to technology that cannot be dispatched by the buyer. Examples include generation facilities that use renewable energy resources that are available when and to the extent that the resource is available e.g. wind and solar.

Dispatchable technologies: Will generally have capacity and variable energy-based payments to protect the seller against demand variability and customers against that need to pay for energy that is not needed and as such not generated through the variable tariff component. The tariffs should be structured to be cost reflective and balance the interests of investors and consumers. The tariffs provide that the buyer will pay to the seller each month a capacity charge for the capacity of a generation facility that is made available to the buyer, regardless of whether the buyer actually dispatches the generation facility, and a "tariff per MWh (or per kWh)" energy charge for energy that is dispatched by, and delivered to, the delivery point. The capacity charge is sized to ensure that the investors are able to earn a rate of return, repay debt and pay for fixed operational costs. The energy charge is sized to enable the seller to earn sufficient revenues under the PPA to allow recovery of the cost of any fuel used to generate the energy dispatched by, and delivered to, the buyer; as well as to pay for any variable operation and maintenance costs that vary depending on the quantity of energy produced by the generation facility.

PPAs for non-dispatchable technologies (primarily renewables): Typically require that the seller deliver and sell to the buyer all of the energy generated by the generation facility. The tariff is stated in simple terms such as cents (or other currency unit) per kWh per MWh generated and delivered i.e. an energy charge. The tariff structure also recognises that there are instances where the seller should be compensated for energy not generated due to circumstances outside the seller's control (i.e. curtailment or unavailability of the network). Provision is made for deemed energy payments, which are payments due to the seller for energy that would otherwise have been generated (provided the generation facility is otherwise available) but for the relevant event.

It is critical that the methodology for calculation of the tariff is clear and fixed for the term of the PPA. Any change to the tariff must be made in accordance with adjustment mechanisms that are agreed up front in the PPA. The tariff structure should also detail the basis of annual indexation.

5.2. CREDIT SUPPORT

5.2.1. Credit Support for buyers' obligations

This is an important issue should there be any concern about the ability of the buyer to meet its payment obligations over the term of the PPA. If the buyer is not considered to be sufficiently creditworthy, it will not be possible for the seller to raise financing without some form of credit support.

The credit support that could be procured by municipalities for purposes of municipal PPAs could include a liquidity guarantee, a municipal guarantee, political risk insurance, partial risk guarantees or a form of government support / implementation agreement between the IPP and a government guarantor – these possibilities are discussed in detail in the Municipal IPP Manual.

5.2.2. Credit Support for sellers' obligations

Typical credit support provided by a seller would be a performance bond in the form of a letter of credit or bank guarantee. The seller's primary initial obligation under the PPA is to complete the generation facility in accordance with operating specifications by the target COD and any such need to obtain credit support for the seller is often limited to the construction phase of the project. Failure by the seller to achieve COD by the target COD may (depending on the structure of the PPA) result in delay liquidated damages being payable to the buyer. However, if there are no delay liquidated damages payable to the buyer under the PPA, the need for obtaining credit support from the seller is limited.

5.3. REFINANCING

It is good practice to include a provision in the PPA addressing refinancing in the event the seller wished to undertake a refinancing during the term of the PPA. The buyer may require that its consent be obtained before any refinancing is undertaken and may wish to provide that any benefit derived from the refinancing be shared between the seller and buyer at a predetermined proportion, unless agreed otherwise by the buyer at the time.

5.4. INVOICING AND PAYMENT

The Seller will invoice the buyer for the energy delivered, deemed energy, capacity payments and/or any other payments as applicable per billing period. The billing period is generally on a monthly basis but may be longer considering the billing cycles. The invoice must clearly indicate any amounts owing by the buyer to the seller, supported with the requisite metering data. If the buyer disputes any aspect of the invoice, only the non-dispute amount should be payable, and the dispute can be referred to an expert for determination within a specified period. Any late payments will accrue interest at a predefined interest rate.

5.5. DELIVERY POINT AND METERING

In PPAs, the delivery point and metering are critical components that ensure the accurate measurement and transfer of electricity from the seller to the buyer. These elements are essential for transparent billing, accountability, and dispute resolution.

5.5.1. Delivery Point

The delivery point is the specific location on the electrical grid where the electricity generated by the project is transferred to the buyer. This point is pre-defined in the PPA and can vary depending on the agreement's structure.

5.5.2. Metering Point

Accurate metering is crucial for determining the quantity of electricity delivered and ensuring fair billing. The metering system must comply with industry standards and be regularly maintained. The seller is typically responsible for typically responsible for installing and maintaining the metering equipment. This includes regular inspections and repairs to ensure accuracy. The metering system should provide real-time data on electricity generation and delivery. This data is essential for monitoring performance and resolving any discrepancies. The parties will agree on the meters (a main meter and a back-up meter) to be used for measurements, and the delivery points for those measurements.

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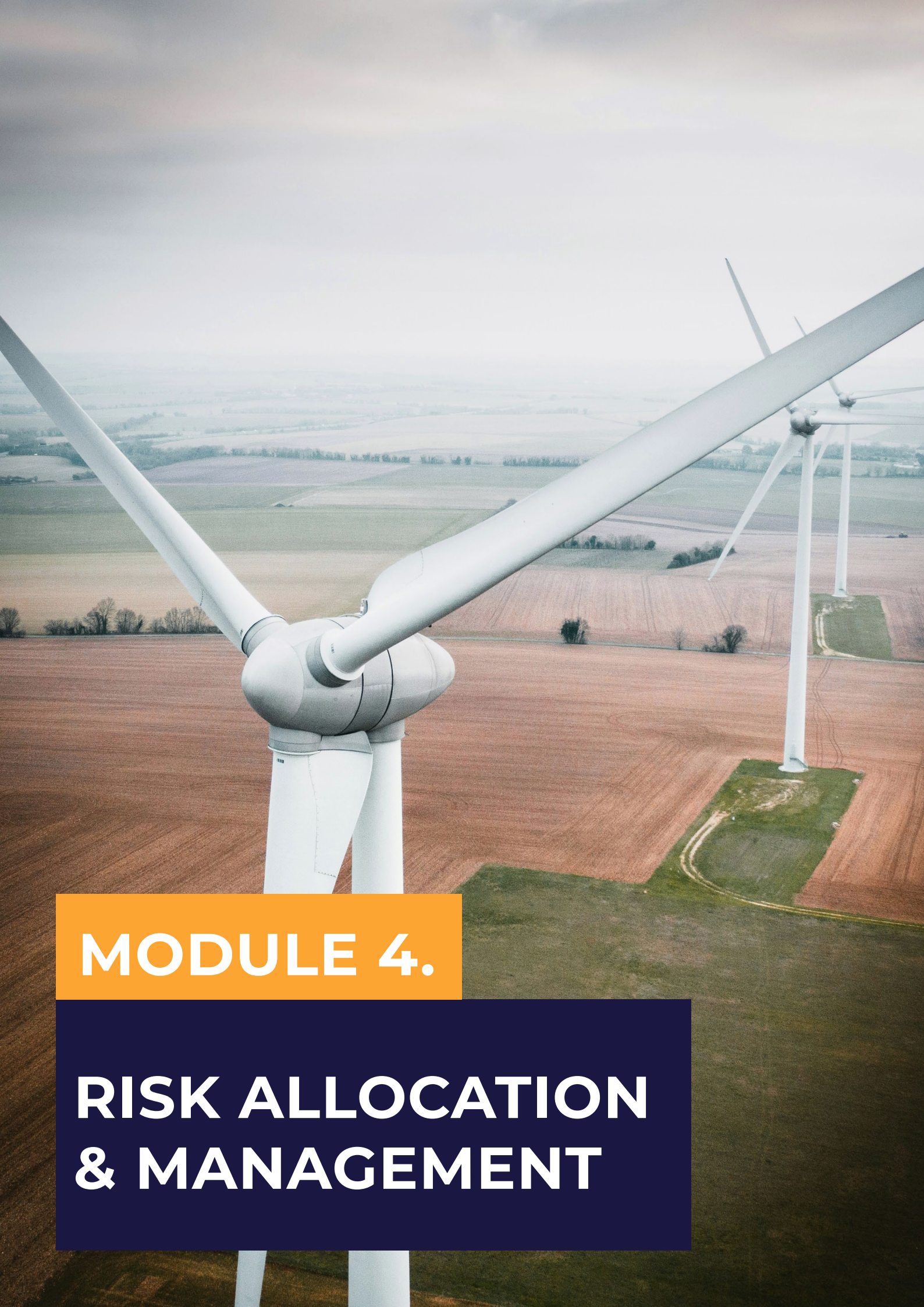

MODULE 4.

RISK ALLOCATION & MANAGEMENT

6. OPERATIONAL PHASE

6.1. TERM

The term of a PPA defines the duration for which the agreement is valid and enforceable. This period is crucial as it impacts the financial viability and risk profile of the project.

Key aspects include:

- **Initial Term:** The initial term typically ranges from 10 to 25 years measured from the COD, depending on the type of project and the requirements of the parties involved. This period should be long enough to ensure the recovery of the seller's equity investment and to provide a stable revenue stream for debt repayment leaving a sufficient tail post repayment of debt.
- **Renewal Options:** Many PPAs include provisions for renewal or extension of the term. These options can be automatic or require mutual agreement, and they provide flexibility for both parties to continue the relationship beyond the initial term. To the extent that any such extension to the term is subject to mutual agreement (and not automatic at the election of a party), further regulatory approvals will be required from a procurement perspective given that the proposed extension was not envisaged as at the time of conclusion of the PPA.

6.2. OPERATION AND MAINTENANCE

An important aspect of the seller's obligations under a PPA relate to the seller's operation and ongoing maintenance obligations. The seller will be obligated to operate and maintain the generation facility for the term of the PPA, doing so at its sole cost and risk, and in compliance with the requirements of applicable laws; the Grid Code; authorisations and consents; the provisions of the agreement generally; the terms and conditions of the connection agreements (as applicable); the standards of a reasonable and prudent operator; and relevant manufacturers' guidelines and instructions. The seller bears the risk of the generation facility's performance throughout the term of the PPA.

6.3. FACILITY PERFORMANCE STANDARDS

The PPA will stipulate technical performance standards and/or guarantees to be achieved by the generation facility during the term of the PPA. These standards and/or guarantees (if met) represent the buyers' assurance that its objectives in concluding the PPA will be met. The technology used (dispatchable versus non-dispatchable and renewable versus non-renewable) will determine what the appropriate guarantee(s) is.

Particularly in PPAs where the tariff comprises both a capacity charge and an energy charge, because the buyer is being required to pay for capacity of the generation facility, the PPA will include provisions to ensure that the capacity is available for use in the form of minimum availability requirements. Availability requirements are dependent on numerous factors, including on project site conditions such as ambient conditions, the particular technical makeup of the power plant and other efficiency criteria provided for in the PPA. Availability (as a performance metric) is typically measured over an agreed period of performance (generally over an operating year). The tests for capacity (another performance metric) conducted at COD will also be performed annually to ensure that the capacity charge is reflective of accurate actual capacity so that the buyer is not required to pay for capacity that is not made available to it.

It is important to note that where the input resource is variable (wind/solar), the seller should not be held accountable for the intermittent availability.

The PPA will provide a remedy to the buyer for a failure by the seller to meet the minimum availability threshold or other performance guarantees, which may include the payment of performance liquidated damages by the seller, penalties in the form of a deduction from the tariff and/or termination by the buyer.

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MODULE 4.

OPERATIONAL PHASE

7. RISK ALLOCATION & MANAGEMENT

A PPA should achieve an equitable balance and allocation of risks between the buyer and the seller, according to the principle that risks should be allocated to the party best able to manage them. The risks outlined in this Guideline are not exhaustive and risks and methods for their mitigation may also vary from project to project, depending on the buyer (private entity versus government owned entity), the regulatory framework, and the applicable generation technology, amongst other considerations.

The risks inherent in a PPA can usefully be thought of as falling into one of three categories: construction risk, operational risk and general risk (present throughout the project).

Module 4 addresses pre-construction (development), construction, site and interconnection risks and operational risks have also been addressed in Module 5. This Module 7 deals with general risks that are present during both construction and operational phases.

7.1. CHANGE IN LAW

7.1.1. Understanding Change in law

Change in law provisions are essential in PPAs, designed to address the risks associated with unforeseen legislative or regulatory changes that can impact the financial and operational aspects of energy projects. This section explores the definition, implications, and typical provisions related to Change in law in PPAs.

Subject to appropriate exclusions (including inter alia pertaining to reasonably foreseeable changes in law and changes in non-discriminatory tax laws), if any change in law occurs after the signature date of the PPA, the seller should be entitled to relief. Change in law may occur through new legislation, new regulations under existing legislation, new interpretation of existing laws, or adverse court findings. Change in law can also include any adverse action by a government entity that affects the seller.

Whether relief is available for changes in law that occur between the date of submission of proposals and the effective date of the PPA is subject to the specific PPA provisions. Often the change in law date will be set as at the signature date of the PPA, but if there is a significant time lapse between the date of submission of the proposal and the signature of the PPA, it may be more appropriate to set the date as the date of submission of the proposal by the seller.

By including robust change in law provisions, PPAs can provide a framework for managing the uncertainties associated with long-term energy projects, ensuring that both parties are protected and can adapt to evolving legal and regulatory environments.

7.1.2. Impact of a Change in Law

A change in law may impact the seller in several ways:

- Adversely affecting the ability of the seller to perform its obligations under the PPA;
- Adversely affecting the revenue stream of the seller (commonly referred to as revenue loss);
- Increasing capital or operational expenditures of the seller; or
- Reducing the sellers forecasted capital or operational expenditure.

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Subject to appropriate thresholds, the general principle is that the party paying for the services should take the risk of discriminatory changes in law. This is particularly the case if the buyer is a government entity, as it is in a better position to quantify and understand the risk. If the change in law is of a more general application (and not industry specific), there is less consensus as to how this risk should be managed and it will be contractually determined by the parties.

The seller is typically excused from liability for an inability to perform its obligations under the PPA due to a change in law and time limits will generally be extended.

In addition, to the extent that the seller incurs an increase in costs or decrease in revenues because of a change in law, this will entitle the seller to receive either (i) direct compensation to pay for or reimburse the seller for such cost or revenue shortfall, or (ii) an appropriate tariff increase. Conversely, if the seller benefits from a change in law, then an appropriate downward adjustment in the tariff will typically apply.

To the extent that a change in law renders performance under the PPA impossible, the seller will be entitled to terminate the PPA. Compensation for termination due to a change in law will typically be assessed in the same manner as a force majeure event to the extent that the buyer is a government entity.

7.2. FORCE MAJEURE

7.2.1. Understanding Force Majeure Events

Force majeure events are unforeseen circumstances that prevent a party from fulfilling its contractual obligations. In the context of a PPA, these events can have significant implications for both the seller and the buyer. The PPA will have provisions dealing with force majeure events and will set out the meaning and consequences of force majeure.

In general, force majeure tends to have the following defining features:

- The event has material adverse impact on a party's ability to discharge contractual obligations.
- The event is not the fault of the party seeking relief and is beyond the reasonable control of the party.
- The event could not have been reasonably foreseen by the party, and reasonable measures could not have been implemented by a diligent party to avoid it or mitigate its impact.

The PPA should also clearly describe what is not covered within the scope of force majeure.

Force majeure under a PPA can be placed in different categories, namely: natural force majeure events and political force majeure events. A natural force majeure event covers events that are 'acts of god' such as flooding, fire, adverse weather condition – these have a material adverse effect on a party's ability to meet its obligations under the PPA. A political force majeure event are those events that are caused by the government or could be best managed and mitigated against by government, for example: war, national strikes or riots. Where the force majeure affects the seller, the impact on capacity or energy payments may depend on the specific type of force majeure.

7.2.2. Typical Force Majeure Provisions

PPAs typically include detailed force majeure clauses that outline the rights and responsibilities of the parties in the event of such occurrences.

Key elements of these provisions include:

- **Notification Requirements:** The affected party must promptly notify the other party of the force majeure event, providing details of the nature, expected duration, and impact on their obligations.
- **Mitigation Efforts:** The affected party is usually required to take reasonable steps to mitigate the effects of the force majeure event and resume performance as soon as possible.
- **Documentation and Evidence:** The affected party may need to provide evidence of the force majeure event and its impact, such as government declarations or weather reports.
- **Force Majeure Relief:** The clause will specify the relief available to the affected party, such as suspension of obligations, extensions of time, or termination rights.

7.2.3. Relief from Obligations

When a force majeure event occurs, it can disrupt the generation, transmission, or consumption of electricity.

The specific impacts on PPAs can include:

- **Suspension of Obligations:** The affected party may be temporarily excused from performing their obligations under the PPA without facing penalties or liabilities.

- **Extension of Deadlines:** Project timelines, including construction and commissioning dates, may be extended to account for delays caused by the force majeure event.
- **Termination Rights:** If the force majeure event persists for an extended period, either party may have the right to terminate the agreement without incurring penalties.

Generally, a party affected by a force majeure event will be excused from liability for a failure to perform its obligations under the PPA.

If the force majeure occurs prior to the COD, the seller is entitled to an extension of the target COD. If the PPA is for capacity and energy payments and a political force majeure event occurred, the seller would expect to be compensated through the commencement of capacity payments notwithstanding the force majeure.

If a force majeure event occurs after the COD, the seller is entitled to an extension of the term to recover lost revenue over an extended period. In a PPA that has capacity and energy payments, upon the occurrence of a political force majeure event after the COD, the buyer would generally continue payment of capacity payments during the period of force majeure rather than being granted an extension to the term. This enables the seller to pay off its debt and earn a return on its investment.

If the force majeure event is prolonged for a period, either party is typically entitled to terminate the PPA. Upon termination, it is important to distinguish between natural force majeure events for which no liability should be incurred, and political force majeure events where the seller may expect to be compensated for the loss suffered.

7.2.4. Mitigation Strategies

By including comprehensive force majeure provisions in PPAs, parties can better manage the risks associated with unforeseen events and ensure that their contractual relationships remain resilient.

7.3. CURTAILMENT AND NETWORK EVENTS

In the context of a PPA, curtailment and network events are critical considerations that can significantly impact the financial and operational aspects of renewable energy projects.

7.3.1. Understanding Curtailment

Curtailment refers to the reduction in the output of a renewable energy project, typically wind or solar, due to limitations in the transmission network or other grid constraints.

This can occur for several reasons:

- **Transmission Congestion:** When the transmission lines are unable to carry the generated electricity due to capacity constraints, network operators may instruct generators to reduce their output.
- **Grid Stability:** To maintain the stability and reliability of the grid, network operators might curtail renewable generation during periods of low demand or high supply.
- **Market Conditions:** Economic factors, such as negative pricing in electricity markets, can also lead to curtailment decisions.

Curtailment poses a significant challenge as it leads to the loss of potential revenue for the seller and can affect the overall economics of a renewable energy project.

7.3.2. Network Events

Network events encompass a range of incidents that can disrupt the normal operation of the electricity grid.

These include:

- **Transmission Failures:** Breakdowns or maintenance activities on transmission lines can lead to temporary reductions in the ability to transport electricity.
- **System Overloads:** High demand periods can strain the grid, necessitating measures to prevent overloads, including curtailment.
- **Natural Disasters:** Events such as storms, earthquakes, or floods can damage infrastructure and lead to significant network disruptions.

7.3.3. Relief

PPAs often include clauses that provide financial compensation to the seller for any energy that is curtailed due to network constraints or other grid-related issues. This compensation can be calculated based on the amount of revenue the seller would have earned if the energy had been delivered based on an estimate of the energy that would have been generated under normal conditions, often based on weather data and historical performance.

During network events or curtailment, the obligations of the parties under the PPA may be adjusted to reflect the reduced capacity to generate or deliver electricity. Project timelines, such as construction or commissioning dates, may be extended to account for delays caused by network events. The minimum amount of energy that the seller is required to supply may be temporarily reduced.

Network events and curtailment can sometimes be classified as force majeure events, depending on their nature and severity.

7.3.4. Mitigation Strategies

To address the challenges posed by curtailment and network events, several strategies can be employed:

- **Grid Enhancements:** Investing in the expansion and modernisation of transmission infrastructure can alleviate congestion and improve the grid's capacity to handle renewable energy.
- **Energy Storage:** Deploying battery storage systems can help absorb excess generation during periods of low demand and release it when needed, thus reducing curtailment.
- **Flexible Demand:** Implementing demand response programs can shift consumption patterns to better align with renewable generation, enhancing grid stability.
- **Compensation Mechanisms:** PPAs can include clauses that provide financial compensation to generators for curtailed energy, ensuring that project economics remain viable despite curtailment events.

By understanding and addressing the factors that lead to curtailment and network events, stakeholders can better navigate the complexities of renewable energy integration and ensure the successful operation of their projects.

7.4. INSURANCE

Insurance is an important risk mitigation measure that the seller can take in respect of certain risks, and to extent that the seller is able to insure a risk, it should do so, and such insurance cover should be taken into account, where appropriate, in risk allocation under the PPA and provisions dealing with the consequences of risks materialising. The PPA should require that the seller obtain and maintain in effect at its expense such insurance coverage as is required by any laws and the standards of a Reasonable and Prudent Operator.

7.5. CHANGE IN CONTROL

Both the lenders and the buyer will undertake an assessment of the seller itself, and the parties in control of the seller, to ensure that the they have the necessary reputation, experience and track record, to meet obligations under the PPA. It is therefore important to both the buyer and the lenders that the seller's shareholders be restricted from unilaterally changing the control of the seller without consent. PPAs normally contain explicit provisions on the meaning of control and what constitutes a change in control of the seller. The PPA could provide that a change in control of the seller cannot occur without buyer consent. Alternatively, the buyer may permit a change in control after a specified period has elapsed.

The seller may also have an interest in changes in control of the buyer, particularly in jurisdictions such as South Africa that are undergoing an unbundling of the electricity supply industry and the restructuring of a monopoly utility buyer, and the buyer may be similarly restricted from undergoing a change in control without the seller's consent. Restrictions similar to change in control restrictions may also link to the social obligations discussed in Module 10 below.

7.6. POLITICAL RISK

There is always a risk that government may decide to interfere in the functioning of the generation facility, directly or indirectly, with the result that the seller no longer being able to generate electricity and earn revenues. This will jeopardise the seller's ability to service its debt, as well as the shareholders' return on equity. Such interference is typically provided for either under local political force majeure or a separate provision dealing with political force majeure event or the government risk events for which the seller is entitled to compensation. To the extent that the government risk event is expropriation that renders the ability of the seller to perform under the PPA impossible, this would typically be treated as a termination event for which the seller is entitled to compensation.

7.7. INDEMNITIES

Indemnification is an important risk-allocation mechanism in a PPA. Where the seller indemnifies a buyer in respect of a particular risk, this constitutes an obligation on one party to compensate the other in respect of claims, damages, losses or expenses. Indemnities are particularly appropriate where, due to default by the indemnifying party, the indemnified party might suffer damages, losses or expenses. A good example of this is the risk of causing harm to the environment in breach of obligations under environmental law, and compliance with environmental law more generally, as well as the risk of breach of laws pertaining to corruption or sanctions. In these cases, due to the nature of how liability is attributed under the regulatory frameworks dealing with environmental protection and corruption (with liability potentially extending broadly beyond the most immediate "transgressor"), a contractual indemnity will provide comfort to the indemnified party that it will be financially covered by the indemnifying party should, for example, claims be brought against the said indemnified party as a result of conduct of the indemnifying party. Indemnities will nevertheless, however, be subject to the provisions of the PPA dealing with the limits of liability (discussed below).

One common indemnity is a mutual indemnity by each party in favour of the other against all claims which relate to any death, injury or loss or damage to property suffered by a third party, resulting from any negligent act or omission by the other party.

7.8. LIMITATION OF LIABILITY

The PPA will contain appropriate provisions that limit the aggregate liability of the parties arising from the PPA, as well as provisions that exclude certain categories of liability, specifically excluding indirect/consequential liability (subject to appropriate exceptions). The PPA should also limit the Parties' liability to one another to the liabilities that are expressly provided for in the PPA and should exclude claims for general damages (such that the only recourse is the specific compensation expressly provided for in the PPA).

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MODULE 5.

EVENTS OF DEFAULT & TERMINATION

8. EVENTS OF DEFAULT & TERMINATION

8.1. INTRODUCTION

This module explores the key aspects of default and termination within PPAs, providing a comprehensive understanding of the responsibilities and consequences for both parties. Understanding these aspects of default and termination in PPAs is essential for managing risks and ensuring the successful execution of energy projects.

8.2. BUYER DEFAULT

Typical buyer events of default which may lead to the right for the seller to terminate the PPA are set out below. The applicability of any of these events to a project largely depends on the type of PPA contracting structure.

Buyer default occurs when the buyer fails to meet their contractual obligations under the PPA.

Common instances of buyer default include:

- **Non-payment:** Failure to pay any amount due to the seller within a prescribed cure period after receipt of notice that such payment is overdue.
- **Credit Support:** Failure to maintain required credit support or guarantees.
- **Operational Failures:** Inability to accept the contracted power due to operational issues.
- **Material Breaches:** Any other material breach by the buyer following notice and failure to cure within 30 days of notice (or commence curing within 30 days and cure within for example 90 – 180 days).
- **Adverse Government Action:** Any adverse action by the Government that renders performance under the PPA by the seller impossible, such as expropriation of the asset.
- **Insolvency:** Committing an act of insolvency (being unable to pay creditors when due), being placed in business rescue or winding up.

In the event of a buyer default, the seller typically has the right to terminate the agreement and seek damages. The PPA may also include provisions for curing the default within a specified period before termination rights are exercised.

Damages will need to sufficiently cover equity investors and lenders for their exposure in the project.

If there is an obligation in the PPA that the seller must either decommission the generation facility upon termination of the PPA due to a buyer default or transfer ownership of the generation facility to the buyer, the termination payments due to a buyer default would have to cover both equity and debt repayments. However, if the seller is permitted to retain ownership of the generation facility and capable of selling energy to third parties via wheeling, damages will likely be less as the loss suffered by the seller is capable of mitigation.

Under an onsite PPA, termination payments would have to cover the full debt and equity, and against such payment the buyer may require an option in its favour in terms of which it has the right to take ownership of the generation facility or to require the seller to decommission the generation facility.

8.3. SELLER DEFAULT

Typical seller events of default which may lead to the right by the buyer to terminate the PPA are set out below. The cure periods are merely illustrative and usually negotiated between the contracting parties. The applicability of any of these events to a project largely depends on the type of PPA contracting structure.

A seller default occurs when the seller fails to perform its obligations under the PPA. Common instances of seller default include:

- **Non-performance:** Failure to supply the agreed amount of electricity or failure to achieve minimum levels of availability, sometimes combined with a failure to propose and implement a remedial plan that is designed to return the levels of availability to the minimum levels of availability within an agreed period of time.

- **Failure to commence construction:** Failure to issue the notice to proceed to the EPC contractor within eg 10-15 days of financial close.
- **Failure to achieve the target COD:** Failure to achieve COD within eg 180 days of the target COD for reasons not attributable to force majeure or the default of the buyer / failure to reach COD by the long stop COD.
- **Operational Failures:** Inability to maintain the power generation facility in good working order.
- **Regulatory Non-compliance:** Failure to comply with relevant laws and regulations.
- **Insolvency:** Committing an act of insolvency (being unable to pay creditors when due), being placed in business rescue or winding up.
- **Change in Control:** Change in control of the seller without buyer consent.
- **Material breach:** Any other material breach by seller following notice and failure to cure within eg 30 days of notice (or commence curing within 30 days and cure within eg 90 – 180 days).

In the event of a seller default, the buyer may terminate the agreement and seek direct damages. Similar to buyer default, the PPA often includes a cure period during which the seller can rectify the default. The buyer may require a call option in its favour in the PPA in terms of which it has the right to purchase and take ownership of the generation facility for a heavily discounted price, sufficient to cover debt repayments but punitive on equity.

8.4. LENDER RIGHTS

Lenders financing the project often have specific rights under a "direct agreement" concluded between the seller, the buyer and the lenders (facility agent) to protect their investment.

These rights may include:

- The right to step into the shoes of the seller in the event of default.
- The right to receive notice of defaults and an opportunity to cure them before termination.
- The ability to take control of the project to ensure continued operation and repayment of the loan.

Lender rights are crucial for securing project financing and ensuring the project's financial stability.

9. DISPUTE RESOLUTION

When a dispute does happen, it is in the interests of all parties to resolve these disputes as quickly and efficiently as possible.

9.1. INFORMATION DISPUTE RESOLUTION

When a dispute first arises, the ideal outcome is for it to be resolved expeditiously through informal engagement. Provision should be made in the PPA to cater for a scenario where that fails, through an informal process based on engagements in good faith. An effective model for such a process is for two tiers of senior officials of both parties to resolve the dispute amicably, commencing with engagements between the first tier and then moving on to a second tier if the dispute is not resolved at the first tier. A time limit should be placed on these engagements (which would be subject to extension by the parties by agreement).

9.2. EXPERT DETERMINATION

Certain types of issues can be referred to an expert for determination to ensure that a decision is reached on a fast-tracked basis. The PPA should make express provision for pre-identified disputes which can be referred to this process.

The expert is selected by agreement and must be independent and impartial. If the parties are unable to reach agreement on an expert within a stipulated period, then the parties must request the expert to be appointed by:

- The then Chairperson of the Legal Practice Council (for disputes involving legal matters or interpretation);
- The then President of the Engineering Council of South Africa (for disputes involving construction or engineering issues); or
- The then President of the South African Institute of Chartered Accountants (for disputes involving financial, economic or accounting issues in which case the person must have sufficient commercial, financial or economic experience).

To the extent that the Parties cannot agree on the nature of the dispute, provision could be made in the agreement

for the dispute could be deemed to be a particular type of dispute. All matters concerning the process and result of the determination by the expert are kept confidential among the Parties and the expert.

The PPA should provide that the expert acts as an expert and not as an arbitrator and that the legislation relating to commercial arbitration does not apply to such proceedings.

Provision should be made for the decision of the expert to be final (i.e. not subject to appeal) and binding.

The PPA should regulate how the fees, costs and expenses for the expert, the costs of preparing materials to be provided or presented to the expert, and of making representations to the expert, will be borne. Provision should be made for the expert to make rulings as to liability for the costs of the determination.

9.3. ARBITRATION

Arbitration is the process used in PPAs to resolve the disputes that cannot be resolved through informal or fast-track resolution mechanisms. Unless the PPA includes provisions requiring the parties to use arbitration, the dispute would be submitted to the courts that have jurisdiction over the parties and issues. There are various options for pre-established procedural rules for arbitration including the Arbitration Foundation of South Africa (AFSA), the International Chamber of Commerce (ICC), the United Nations Commission on International Trade Law (UNCITRAL), or the London Court of International Arbitration (LCIA). Each of these procedural rules include provisions for issues such as: the qualifications of the arbitrators, the number of arbitrators, the method of appointing arbitrators, the confidentiality of the proceedings, the powers of the arbitrator, fees and costs of the arbitrators, and the force of the awards. One advantage of arbitration proceedings is that the parties to the dispute maintain some flexibility to structure the proceedings in a way that fits best for the issue in dispute.

9.4. GOVERNING LAW

The governing law clause specifies which jurisdiction's laws will apply to interpret and enforce the terms of the contract. This is crucial as it provides clarity and predictability for both parties. Typically, the governing law is chosen based on the location of the project, the domicile of the parties, or a mutually agreed neutral jurisdiction. This clause helps mitigate legal risks and promotes certainty.

The PPA should be governed by the laws of South Africa.

10. SOCIAL CONSIDERATIONS

10.1. SOCIAL IMPACT AND COMMUNITY ENGAGEMENT

Conclusion of a PPA by a municipality is a form of public procurement in the context of a public procurement regulatory framework in South Africa in which social (or "economic development") considerations, including in relation to communities local to the site (in the same local or district municipality) play a role during the procurement stage in evaluating bids submitted and determining which bidder should be awarded the contract with the municipality. This is addressed in detail throughout the Municipal IPP Manual under the rubric of "economic development" criteria and obligations. Economic development criteria provided for in the procurement phase should flow through into the contractual obligations that will eventually apply to the IPP that is awarded the contract.

10.2. LOCAL CONTENT

South Africa has developed laws and policies requiring local content. These laws and policies can be found as stand-alone documents, sector specific documents, or within national procurement laws. Sometimes they may feature as regulatory or licence requirements by the electricity regulator in the country. The general aim of these laws and policies is to increase economic linkages between foreign investment and domestic markets. Local content can take many forms such as: ownership, local manufacturing, local labour, services, materials and equipment, technology transfer, and training of nationals. When local content provisions are applicable, the parties need to understand the implications for their project. This is because local content provisions may have an impact on the tariff and financing options and may conflict with international investment treaties entered into by the host government.

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MODULE 6.

MONITORING & COMPLIANCE

11. MONITORING & COMPLIANCE

11.1. PERFORMANCE MONITORING

Performance monitoring is a critical aspect of PPAs to ensure that both parties meet their contractual obligations and that the project operates efficiently. Effective performance monitoring involves several key components:

- **Operational Data:** Regular collection of data on electricity generation, plant availability, and operational efficiency is essential. This includes monitoring the output of renewable energy sources like wind turbines or solar panels.
- **Financial Data:** Tracking financial performance, including revenue generated, costs incurred, and any penalties or bonuses related to performance metrics.
- **Energy Production:** Monitoring the actual energy produced against the expected output as per the PPA. This helps in identifying any discrepancies and taking corrective actions.
- **Availability and Reliability:** Ensuring that the energy generation equipment is available and reliable, minimising downtime and maximising efficiency.
- **Environmental Impact:** Tracking the environmental benefits, such as the reduction in carbon emissions, and ensuring compliance with environmental regulations.
- **Regular Reports:** Generating regular performance reports that provide insights into the operational and financial status of the project. These reports should be shared with all stakeholders to maintain transparency.
- **Regulatory Compliance:** Ensuring that the project complies with all relevant local and regional regulations, including renewable energy mandates and emissions caps.
- **Independent Audits:** Engaging third-party auditors to verify the accuracy of performance data and compliance with the PPA terms.
- **Benchmarking:** Comparing the project's performance against industry benchmarks to identify areas for improvement.

The parties involved in a PPA can ensure that the project remains on track, meets its goals, and delivers the expected benefits by implementing robust performance monitoring practices. This not only enhances the project's financial viability, but also contributes to broader sustainability objectives.

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11.2. REPORTING AND RECORD KEEPING

The buyer has an interest in having accurate and current information on the performance of the generation facility, and also facilitates record-keeping and performance monitoring. A PPA should also include additional and broad reporting obligations that give the buyer insight (in almost real-time terms) into under-performance by the generation facility. These obligations can require the seller also to report on any events that underperformance is attributable to.

Such reporting obligations need to be accompanied by obligations on the seller to maintain complete and accurate data and records as required to facilitate the proper administration of the PPA, including an accurate and up-to-date log of operations, updated daily, and including without limitation the following information:

- For each ten (10) minute period in each day, the energy output;
- Changes in operating status during the day;
- The number of outages in the day, the duration of each outage and the reason for each outage;
- All solar and other climatic data recorded at the site;
- All estimates and other data required for generation forecasting;
- All data required for purposes of deemed energy payments;
- Any information required to be recorded and/or reported in terms of the consents; and
- Any unusual conditions found during maintenance inspections.

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