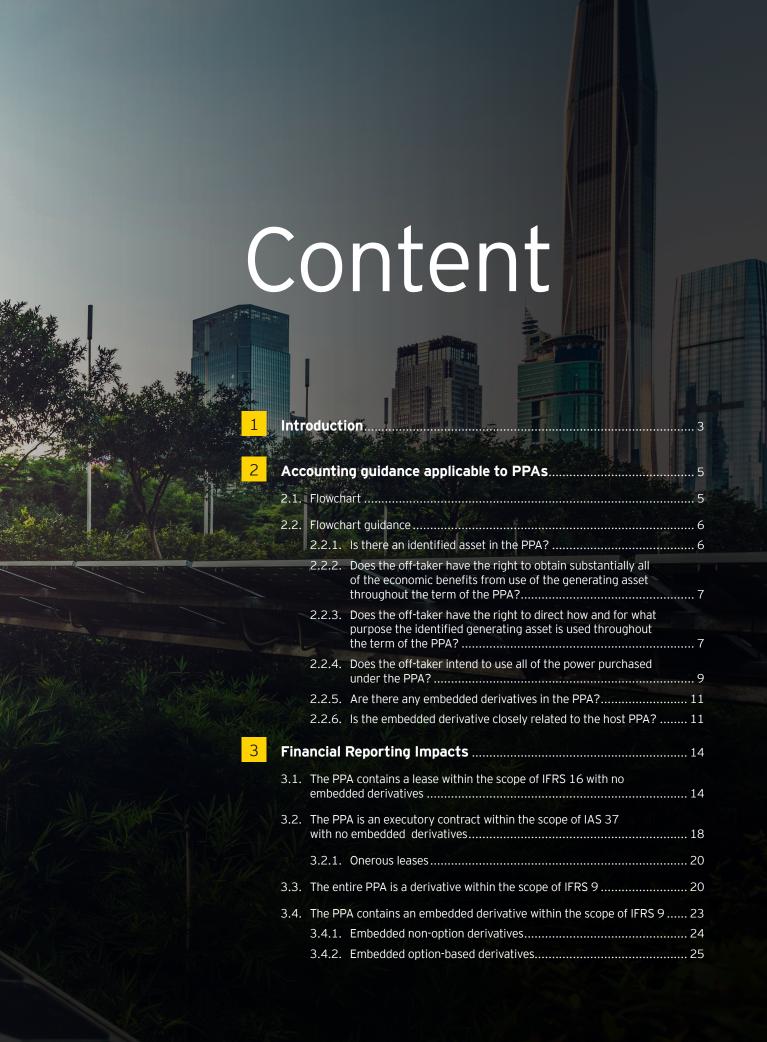




the BRC in furthering its goal of growing a modern marketplace for renewable energy PPAs and accelerating large-scale

renewable procurement across Canada.





This IFRS accounting primer for renewable energy power purchase agreements (PPAs) was produced by EY in collaboration with the Business Renewables Centre (BRC) Canada. It is intended to assist accounting professionals in off-taker organizations to understand and assess the potential accounting implications of renewable energy PPAs and explain such implications to internal stakeholders.

Context

According to Natural Resources Canada, renewable energy sources currently provide about 17% of Canada's total primary energy supply, with wind and solar energy being the fastest-growing sources of electricity in Canada.1

However, from a power generation perspective, a significant proportion of Canada's power is already generated from non-emitting sources due to the predominance of hydroelectricity. Nevertheless, in provinces where there is no access to hydroelectricity, pressure is mounting to move away from carbon-intensive power generation, thus increasing the demand for access to renewable energy such as wind and solar. As a result, Canadian and international corporations and institutions will be competing to purchase renewable energy, with the most common format for such arrangements likely to be the PPA.

PPAs come in multiple forms, but most can be categorized as either physical or virtual. In a physical PPA, the supplier sells its power into the same power pricing hub as the one where the off-taker takes its power. As a result, there is direct physical delivery of the power. In many situations, the supplier will not be in the same area as the off-taker unless they are located on or near the off-taker's property (referred to as an onsite PPA). With respect to offsite PPAs (often referred to as sleeved PPAs), the supplier delivers the power to the off-taker through the relevant public grid, which necessitates the involvement of an intermediary (e.g., the Alberta Electric Systems Operator).

¹ https://www.nrcan.gc.ca/science-data/data-analysis/energy-data-analysis/energy-facts/renewable-energy-facts/20069

Virtual PPAs (also referred to as synthetic or financial PPAs) are a way for suppliers and off-takers transacting at different pricing hubs to transact with each other. In these arrangements, the power is not physically delivered to the off-taker. One of the increasingly common forms virtual PPAs take in the market today is a contract for differences (CfD), which we discuss in section 4.3 of this primer. In most cases, the off-taker would normally also negotiate to receive the renewable attributes such as carbon credits or renewable energy certificates (RECs). (We do not address the accounting for renewable attributes such as RECs and carbon trading arrangements in this primer, but we will cover it in a future publication.)

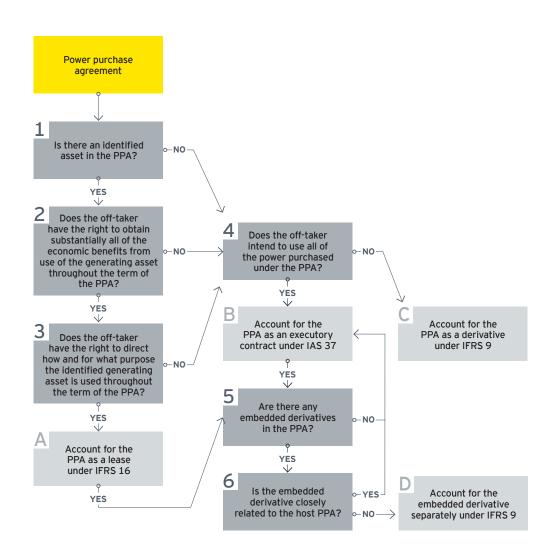
Executing a PPA can be a challenging and time-consuming process for off-takers, with one of the most difficult aspects being gaining an understanding of the financial reporting impact and explaining those impacts to internal stakeholders. This publication is intended to assist accounting professionals in off-taker organizations to understand and assess the potential accounting implications of renewable energy PPAs and explain such implications to internal stakeholders. We highly recommend that accounting professionals be involved as early in the PPA negotiation process as possible to avoid unexpected or onerous financial reporting consequences. Note that if separate vehicles such as corporations, trusts, partnerships or joint ventures are used to enter into or hold the PPA, or if there is a syndicate of off-takers involved, there may also be additional or different accounting implications aside from accounting for the PPA itself. Such considerations are outside the scope of this publication and we encourage you to consult with your accounting advisors with respect to such structures.

In addition, when considering the implications of these issues from the perspective of United States Generally Accepted Accounting Principles (US GAAP) or Accounting Standards for Private Enterprises (ASPE), while the IFRS, ASPE and US GAAP standards may be aligned in some respects, there are significant differences in many of the areas discussed in this primer. Given this, it cannot be assumed the issues identified in this publication and the analysis that would be required to determine the accounting under IFRS would be the same under ASPE or US GAAP, and we encourage consultation with your accounting advisors with respect to any such analysis.



2.1. Flowchart

The following flowchart depicts the decision-making process for for PPAs. This flowchart should be used in conjunction with the additional guidance provided in sections 2.2 and 3 of this publication.



2.2. Flowchart guidance

Questions 1-3 relate to determining whether the PPA contains a lease as defined in IFRS 16, Leases. Physical PPAs are more likely to contain leases than virtual PPAs.

A PPA is a lease or contains a lease if it conveys the right to control the use of an identified asset for a period of time in exchange for consideration (i.e., the legal form of the arrangement is not relevant to the assessment). There are essentially three components to the assessment, and if any one of them is not met, there would be no lease present. However, if all three criteria are met, the arrangement would be deemed to contain a lease. The three criteria are discussed further below.

2.2.1. Is there an identified asset in the PPA?

An arrangement only contains a lease if there is an identified asset. Under IFRS 16, an identified asset can be either implicitly (e.g., the supplier has no other facility that could be used to fulfill the PPA obligations) or explicitly (e.g., the PPA specifies the wind farm or solar farm that will be used) specified in a contract.

A capacity portion of an asset is an identified asset if it is physically distinct (e.g., a floor of a building). A capacity or other portion of an asset that is not physically distinct (e.g., a percentage of the output of a wind farm) is not an identified asset unless it represents substantially all of the capacity of the asset and thereby provides the customer with the right to obtain substantially all of the economic benefits from use of the asset. Note that the term "substantially all" is not defined in IFRS 16. However, in practice, entities generally consider the term similarly to how it was used in IAS 17, Leases, in the context of lease classification.

Even if an asset is specified, a customer does not have the right to use an identified asset if, at inception of the contract, a supplier has the substantive right to substitute the asset throughout the period of use (i.e., the total period of time that an asset is used to fulfill a contract with a customer, including the sum of any non-consecutive periods of time).

A supplier's right to substitute an asset is substantive when both of the following conditions are met:

 The supplier has the practical ability to substitute alternative assets throughout the period of use (e.g., the customer cannot prevent the supplier from substituting an asset and alternative assets are readily available to the supplier or could be sourced by the supplier within a reasonable period of time).

► The supplier would benefit economically from the exercise of its right to substitute the asset (i.e., the economic benefits associated with substituting the asset are expected to exceed the costs associated with substituting the asset).

Substantive substitution rights are unlikely to exist with respect to physical PPAs because the off-taker is normally physically connected to the relevant generating asset, so alternative generating assets are either not available or the supplier would not benefit economically from using them due to the need to incur additional costs to connect the off-taker to the alternative assets.

2.2.2. Does the off-taker have the right to obtain substantially all of the economic benefits from use of the generating asset throughout the term of the PPA?

To control the use of an identified asset, a customer is required to have the right to obtain substantially all of the economic benefits from use of the identified asset throughout the period of use (e.g., by having exclusive use of the asset throughout that period). Refer to section 2.2.1 above with respect to interpreting the meaning of substantially all.

Economic benefits include the asset's primary outputs (e.g., power) and any byproducts (e.g., RECs that are generated through the use of the asset), including potential cash flows derived from these items. In arrangements where the off-taker is taking all of the power produced by the generating asset and the renewable attributes during the term of the PPA, it is clear the off-taker has the right to obtain substantially all of the economic benefits and this criterion will be met. However, in situations where less than the full capacity of the asset is being taken or when some of the outputs and/or renewable attributes are not being delivered to the off-taker under the terms of the PPA, further analysis will be required.

2.2.3. Does the off-taker have the right to direct how and for what purpose the identified generating asset is used throughout the term of the PPA?

This is the criterion that normally requires the most management judgment to assess and, more often than not, requires input not only from finance but also operations.

A customer has the right to direct the use of an identified asset throughout the period of use when either:

- ► The customer has the right to direct how and for what purpose the asset is used throughout the period of use.
- The relevant decisions about how and for what purpose an asset is used are predetermined and the customer either: (1) has the right to operate the asset, or to direct others to operate the asset in a manner that it determines, throughout the period of use, without the supplier having the right to change those operating instructions; or (2) designed the asset, or specific aspects of the asset, in a way that predetermines how and for what purpose the asset will be used throughout the period of use.

When evaluating whether a customer has the right to change how and for what purpose the asset is used throughout the period of use, the focus should be on whether the customer has the decision-making rights that will most affect the economic benefits that will be derived from the use of the asset. The decision-making rights that are most relevant are likely to depend on the nature of the asset and the terms and conditions of the contract.

IFRS 16 provides the following examples of decision-making rights that grant the right to change how and for what purpose an asset is used:

- The right to change the type of output that is produced by the asset (e.g., deciding whether to use a shipping container to transport goods or for storage; with respect to generating assets, this item is normally predetermined by the nature of the asset, as it is designed to produce electricity and renewable attributes, where relevant)
- The right to change when the output is produced (e.g., deciding when to produce power from a generating asset)
- The right to change where the output is produced (e.g., deciding where a piece of equipment is used or deployed; this item is normally also predetermined by where the generating asset is constructed; however, the off-taker may have the right to change the delivery point in a direct PPA)

► The right to change whether the output is produced and the quantity of that output (e.g., deciding whether to produce energy from a generating asset and how much energy to produce from that generating asset)

IFRS 16 also provides the following examples of decisionmaking rights that do not grant the right to change how and for what purpose an asset is used:

- Maintaining the asset
- Operating the asset

Although the decisions about maintaining and operating the asset are often essential to the efficient use of that asset, the right to make those decisions, in and of itself, does not result in the right to change how and for what purpose the asset is used throughout the period of use (i.e., the off-taker may be able to direct the use of a generating asset that is operated by the supplier's personnel). However, as discussed below, the right to operate an asset will often give the customer the right to direct the use of the asset if the relevant decisions about how and for what purpose the asset is used are predetermined.



In some cases, it will not be clear whether the customer has the right to direct the use of the identified asset. This could be the case when the most relevant decisions about how and for what purpose an asset is used are predetermined by contractual restrictions on the use of the asset (e.g., the decisions about the use of the asset are agreed to by the off-taker and the supplier in negotiating the PPA, and those decisions cannot be changed). This could also be the case when the most relevant decisions about how and for what purpose an asset is used are, in effect, predetermined by the design of the asset.

The IASB indicated in the Basis for Conclusions (BC121) to IFRS 16 that it would expect decisions about how and for what purpose an asset is used to be predetermined in few cases; however, for wind and solar farms, the design of the asset often predetermines many of the relevant decisions about how and for what purpose an asset is used because design predetermines what the outputs are, where the outputs are produced and the nameplate capacity of the facility.

Design does not necessarily determine how much power is produced given the many variables that impact renewable power production, but it does predetermine maximum capacity. In addition, design does not predetermine when power is produced, although that could be predetermined by the PPA terms, but again would be subject to influence from many variables that neither party has control over.

In situations where all of the relevant decisions about how and for what purposes an identified asset is used are predetermined by the contract and/or the design of the asset, a customer has the right to direct the use of an identified asset throughout the period of use when the customer either:

- Has the right to operate the asset, or direct others to operate the asset in a manner it determines, throughout the period of use without the supplier having the right to change those operating instructions; or
- Designed the asset (or specific aspects of the asset) in a way that predetermines how and for what purpose the asset will be used throughout the period of use.

See Example 9 in IFRS 16 Leases Illustrative Examples for an example of the evaluation of whether a customer designed the asset in a way that predetermines how and for what purpose the asset will be used throughout the period of use. This includes the example of a solar farm where the customer's involvement in design and engineering is deemed to predetermine the decisions about whether, when and how much electricity will be produced because the design of the asset has predetermined those decisions. Similar considerations would apply to wind farms.



2.2.4. Does the off-taker intend to use all of the power purchased under the PPA?

Next, assuming the arrangement is not a lease, question 4 in the flowchart is related to the derivative assessment in question 5. IFRS 9, Financial Instruments, addresses the accounting for financial instruments, including derivatives. IFRS 9 is also normally applied to those contracts to buy or sell non-financial items (e.g., power) that can be settled either a) net in cash, b) by another financial instrument, c) by exchanging financial instruments, or d) is readily convertible to cash, effectively as if the contracts were financial instruments. However, there is one exception for what are commonly termed "normal" purchases and sales or "ownuse" contracts.

The purchase of electricity by an off-taker under a physical PPA would be considered an "own-use" contract, and therefore not within the scope of IFRS 9, if the PPA was entered into and continues to be held for the purpose of the receipt of the non-financial items (i.e., the power and/ or renewable attributes) in accordance with the off-taker's expected purchase or usage requirements (i.e., the amount of power taken does not exceed the amount of power the offtaker can use in the ordinary course of its operations so there is no excess remaining for the off-taker to resell).

It should be noted that this is a two-part test (i.e., in order to qualify as own-use, the PPA needs to both (a) have been entered into, and (b) continue to be held, for that purpose). Consequently, a reclassification of an instrument can be only one way.

For example, if a PPA that was originally entered into for the purpose of taking physical delivery of the electricity for internal usage ceases to be held for that purpose at a later date, it should subsequently be accounted for as a financial instrument under IFRS 9 subject to some exceptions for unexpected events.

Note that the IASB views the practice of settling net or taking delivery of the underlying asset (e.g., electricity) and selling it within a short period after delivery as an indication that the contracts are not normal purchases or sales. Therefore, a contract where the ability to net settle is not explicit in its terms, but where the entity has a practice of settling similar contracts net (whether with the counterparty, by entering

into offsetting contracts or by selling the contract before its exercise or lapse), cannot be classified as own-use contracts. Similarly, a contract where the entity has a practice of taking delivery of the underlying asset (e.g., electricity) and selling it within a short period after delivery, for the purpose of generating a profit from short-term fluctuations in price or dealer's margin, also cannot be classified as an own-use contract.

Own-use contracts are accounted for as executory contracts, with the idea that any fair value change of the contract is not relevant, given that the contract is used for the entity's own use. However, participants in several industries often enter into similar contracts both for own use and for trading purposes and manage all the contracts together with derivatives on a fair value basis (so as to manage the fair value risk to close to nil). In such a situation, own-use accounting leads to an accounting mismatch, as the fair value change of the derivatives and the trading positions cannot be offset against fair value changes of the own-use contracts.

To eliminate the accounting mismatch, an entity could apply hedge accounting by designating own-use contracts as hedged items in a fair value hedge relationship or apply the fair value option as discussed below. However, hedge accounting in these circumstances is administratively burdensome and often produces less-meaningful results than fair value accounting. Furthermore, entities enter into large volumes of commodity contracts and, within the large volume of contracts, some positions may naturally offset each other. An entity would therefore typically hedge on a net basis [IFRS 9.BCZ2.24].

Alternatively, IFRS 9 provides a "fair value option" for own-use contracts. At inception of a contract, an entity may make an irrevocable designation to measure an own-use contract at fair value through profit or loss, in spite of it being entered into for the purpose of the receipt or delivery of a non-financial item in accordance with the entity's expected purchase, sale or usage requirement. However, such designation is only allowed if it eliminates or significantly reduces an accounting mismatch that would otherwise arise from not recognizing that contract because it is excluded from the scope of IFRS 9 [IFRS 9.2.5].

2.2.5. Are there any embedded derivatives in the PPA?

Under IFRS 9, the concept of embedded derivatives applies to only financial liabilities and non-financial items, including leases. PPAs classified as own-use contracts can also contain embedded derivatives. This is an important difference from US GAAP, under which a contract for the sale or purchase of a non-financial item that can be settled net cannot be treated as a normal sale or purchase at all if it contains an embedded pricing feature, that is not clearly and closely related to the host contract; instead, the whole contract would be accounted for as a derivative.

An embedded derivative is a component of a hybrid or combined instrument that also includes a non-derivative host contract (e.g., a PPA); it has the effect that some of the cash flows of the combined instrument vary in a similar way to a standalone derivative. In other words, it causes some or all of the cash flows, that otherwise would be required by the contract to be modified according to a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other underlying variable (provided in the case of a non-financial variable that the variable is not specific to a party to the contract) [IFRS 9.4.3.1].

In the basis for conclusions to IFRS 9, the IASB asserts that, in principle, all embedded derivatives that are not measured at fair value with gains and losses recognized in profit or loss ought to be accounted for separately, but explains that, as a practical expedient, they should not be where they are regarded as "closely related" to their host contracts. In those cases, it is believed that the derivative was less likely to have been embedded to achieve a desired accounting result [IFRS 9.BCZ4.92].

Accordingly, only where all of the following conditions are met should an embedded derivative (see section 3.3 for the definition of a derivative) be separated from the host contract and accounted for separately:

- a) The economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host contract.
- b) A separate instrument with the same terms as the embedded derivative would meet the definition of a derivative.
- c) The hybrid (combined) instrument is not measured at fair value with changes in fair value recognized in profit or loss [IFRS 9.4.3.3].

2.2.6. Is the embedded derivative closely related to the host PPA?

As noted above, an embedded derivative does not require separation if it is closely related to the host contract. IFRS 9 does not define what is meant by "closely related." Instead, it illustrates what was intended by providing a series of situations where the embedded derivative is, or is not, regarded as closely related to the host. We will consider some of the issues raised by the examples below.

The first issue to consider is whether there are any embedded foreign currency components to the PPA. An embedded foreign currency derivative in a contract that is not a financial instrument is closely related to the host contract, provided it is not leveraged, does not contain an option feature and requires payments denominated in one of the following currencies:

- i. The functional currency of any substantial party to the contract
- ii. The currency in which the price of the related good or service that is acquired or delivered is routinely denominated in commercial transactions around the world (such as the US dollar for crude oil transactions)
- iii. A currency that is commonly used in contracts to purchase or sell non-financial items in the economic environment in which the transaction takes place (e.g., a relatively stable and liquid currency that is commonly used in local business transactions or external trade).

Therefore, in such cases, the embedded foreign currency derivative is not accounted for separately from the host contract [IFRS 9.B4.3.8(d)].

Illustrative example 1: Foreign currency components

Canadian company A agrees to sell renewable energy under a PPA to Canadian company B. The PPA is denominated in US dollars, although PPAs in Canada are routinely denominated in Canadian dollars. Neither company carries out any significant activities in US dollars and both have Canadian dollar functional currencies for financial reporting purposes.

Canadian company A should regard the PPA as a host contract with an embedded foreign currency forward to purchase US dollars. Canadian company B should regard it as a host contract with an embedded foreign currency forward to sell US dollars.

The currency in the above example should be chosen so that the PPA host does not contain an embedded derivative requiring separation. In theory, therefore, it should be Canadian dollars (the functional currencies of the parties to the contract and the currency that power is routinely denominated in Canada).

If we assume the same facts as example 1 above, except that Canadian company B does have significant activities in the United States and has determined that its functional currency is US dollars, we get a different outcome because the PPA is denominated in US dollars, which is the functional currency of one of the parties to the PPA (i.e., Canadian company B). In that case, the foreign currency embedded derivative would be deemed to be closely related to the host PPA, and therefore would not require bifurcation and separate accounting.

The next issue to consider is any PPA pricing components related to inputs, ingredients, substitutes and other proxy pricing mechanisms. It is common for the pricing of contracts for the supply of goods, services or other non-financial items to be determined by reference to the price of inputs to, ingredients used to generate, or substitutes for the non-financial item, especially where the non-financial item is not itself guoted in an active market. However, in Canada, there is normally an active market for power.

Furthermore, the inputs used to produce renewable energy, such as wind and solar, do not have a market price like other forms of generation such as gas and coal-fired power. Therefore, it would be relatively rare to see a proxy pricing mechanism of this nature used in a Canadian renewable PPA, and any such mechanism would be viewed as a strong indication that the off-taker has entered into an arrangement with an embedded derivative, as we would not normally consider such features to be closely related to the host PPA.

PPAs may also contain pricing linked to an inflation index such as the Canadian Consumer Price Index. Normally these are viewed as closely related to the host PPA, as long as the index is appropriate for the economic environment. For example, a US or European inflation index would not be considered closely related for a Canadian PPA where the power is being generated in Canada.

Some PPAs may link the price to be paid for power to a quoted market price but establish a cap and/or a floor on that price (often referred to as an economic curtailment clause, which are most common in virtual PPAs as they reduce the off-taker's exposure to unexpectedly low market prices). These are considered closely related to the host PPA if both the cap and floor were out-of-the-money at inception (i.e., the cap is at or above the market price of power, and the floor is at or below the market price of power when the PPA is executed) and are not leveraged [IFRS 9.B4.3.8(b)].







3.1. The PPA contains a lease within the scope of IFRS 16 with no embedded derivatives

Under IFRS 16, leases are accounted for based on a "right of use model." The model reflects that, at the commencement date, the off-taker has a financial obligation to make lease payments to the supplier for its right to use the underlying generating assets during the PPA term. The supplier conveys that right to use the underlying generating assets at PPA commencement, which is the time when it makes the underlying generating asset available for use by the off-taker.

IFRS 16 requires off-takers to recognize a liability to make lease payments and an asset representing the right to use the underlying generating assets (i.e., the right-of-use asset) during the PPA term for all leases, except for short-term leases (i.e., PPAs with a lease term of 12 months or less).

An off-taker initially measures the right-of-use asset at cost, which consists of all of the following:

- ► The amount of the initial measurement of the lease liability
- Any lease payments made to the supplier at or before the commencement date, less any lease incentives received from the supplier (these are relatively rare in PPAs so will not be further discussed in this primer)
- Any initial direct costs incurred by the off-taker (i.e., incremental costs of entering into the PPA such as legal fees)
- An estimate of the costs to be incurred by the off-taker in dismantling and removing the underlying asset, restoring the site on which the underlying asset is located or restoring the underlying asset to the condition required by the terms and conditions of the lease, unless those costs are incurred to produce inventories (renewable energy PPAs rarely contain such obligations for the off-taker unless they have a direct or indirect investment in the generating assets, which is outside the scope of this primer)

At the commencement date, the off-taker initially measures the lease liability at the present value of the lease payments to be made over the lease term. However, the "lease payments" as defined in IFRS 16 are rarely equivalent to the entire stated consideration, and much of it may also be variable in nature. At the commencement date, the lease payments included in the measurement of the lease liability comprise the following payments for the right to use the underlying generating assets during the lease term that are not paid at the commencement date:

- a) Fixed payments (including in-substance fixed payments), less any lease incentives receivable (lease incentives are rare in PPAs so these will not be further discussed)
- b) Variable payments that depend on an index or a rate, initially measured using the index or rate as at the commencement date
- c) Amounts expected to be payable by the off-taker under residual value guarantees (this is normally not applicable in PPAs so will not be further discussed)
- d) The exercise price of a purchase option if the off-taker is reasonably certain they will exercise that option (these are normally rare in routine PPAs so will not be further discussed)
- e) Payments of penalties for terminating the PPA, if the lease term reflects the off-taker exercising an option to terminate the PPA

Variable lease payments that do not depend on an index or rate and are not, in substance, fixed, such as those based on output of the underlying generating asset (e.g., MWh), are not included as lease payments. Instead, they are recognized in profit or loss (unless they are included in the carrying amount of another asset in accordance with other IFRS) in the period in which the event that triggers the payment occurs.

Some PPAs include payments that are described as variable, or may appear to contain variability, but are in-substance fixed payments because the PPA terms ensure that the payment of a fixed amount is unavoidable. Such payments are included in the lease payments at lease commencement and thus used to measure off-takers' lease assets and lease liabilities.

In a typical PPA that meets the definition of a lease, there will be a fixed payment per MWh for the lesser of the delivered energy and the installed capacity of the generating asset, escalating either at a fixed annual percentage or linked to an inflation index such as CPI. Renewable energy is not always predictable, so normally even the "fixed" component of the payments is variable by virtue of the MWh delivered being variable.

Delivered energy is often net of power used for providing auxiliary services and line losses too. As a result, although there is a fixed rate per MWh, there is no fixed volume of power to be delivered, making the entire consideration variable.

In addition, it is possible for environmental and operating conditions to lead to generation of energy beyond the volume the asset was designed to produce. Therefore, setting the price at the lesser of delivered energy and installed capacity protects the off-taker from exposure to weather and operating events beyond their control, but it does not create a minimum payment.

These payments are also regularly indexed to CPI or a fixed percentage expected to reflect future inflation in operating costs, which as explained in section 2.2.6 of this primer, is considered closely related so would not be viewed as an embedded derivative requiring separation. Furthermore, the variability in the payments does not arise purely from their dependence on an index or a rate, but also from the actual output of the asset (i.e., the delivered energy) as noted above. Therefore, these payments would generally be considered entirely variable.

Note that if the PPA pricing refers to charging a fixed rate per MWh for the higher of delivered energy and the installed capacity (or any fixed volume), there would always be a minimum payment, thereby creating an in-substance fixed payment that must be included in the measurement of the lease liability. Absent absolute fixed payments or such in-substance fixed payments, PPA consideration can be entirely variable, resulting in recognition of the costs as incurred rather than as part of the initial measurement of the lease liability.

If there are any fixed payments resulting in the recognition of a lease liability, the off-taker will need to consider options to extend the PPA in their assessment of the lease term as well as determine the rate implicit in the lease, which will rarely be reliably measurable for an off-taker, or their incremental borrowing rate.

Depreciation and impairment, if any, of the right-of-use asset is subsequently recognized in a manner consistent with existing standards for property, plant and equipment. The lease liability is accreted using an amount that produces a constant periodic discount rate on the remaining balance of the liability (i.e., the discount rate determined at commencement, as long as a reassessment requiring a change in the discount rate has not been triggered). Lease payments reduce the lease liability when paid.

Off-takers recognize the following items in expense for leases:

- Depreciation of the right-of-use asset
- Interest on the lease liability
- Variable lease payments that are not included in the lease liability (e.g., variable lease payments based on usage)
- ► Impairment of the right-of-use asset

The following example reflects the above requirements.

Illustrative example 2: The PPA contains a lease

Greener Co. (off-taker) enters into a three-year physical PPA with Wind Co. (supplier) related to a specified wind farm. The PPA provides Greener Co. with the right to the entire nameplate capacity, resulting power and any renewable attributes produced by the specified wind farm during the three-year term. There are no substitution rights, as Wind Co. only has one wind farm capable of fulfilling its obligations to Greener Co. The PPA requires an annual escalating fixed payment for the capacity and a variable rate of \$0.03 per MWh for power delivered, including associated environmental attributes.

Wind Co. designed and constructed the wind farm before entering into the PPA; Greener Co. had no involvement in the design and construction. In addition, Wind Co. operates the wind farm on Greener Co.'s behalf. However, Greener Co. retains all production rights and provides monthly forecasts of its power needs, which Wind Co. must use its best efforts to meet, subject to weather patterns and following good industry operating practice. Greener Co. must also approve all maintenance plans and/or modifications to the wind farm and retains a first right of refusal on any additional capacity resulting from future modifications during the term.

The following minimum annual capacity payments are due at the end of each year: \$10,000 in year one, \$12,000 in year two and \$14,000 in year three. For simplicity, there are no other elements to the lease payments aside from the variable usage charge of \$0.03 MWh (e.g., no purchase options, lease incentives from the lessor or initial direct costs).

The wind farm is a specified asset to which Greener Co. has the right to the majority of economic benefits during the three-year PPA term. Furthermore, even though the nameplate capacity and nature of the output were predetermined by the design of the asset, which Greener Co. was not involved in, and where Wind Co. operates and maintains the asset, Greener Co. retains production rights and approval rights for maintenance and modification plans. As a result, Greener Co. is deemed to have the right to direct the use of the specified wind farm during the three-year PPA term. For these reasons, Greener Co. concludes that the PPA contains a lease within the scope of IFRS 16.

The initial measurement of the right-of-use asset and lease liability is \$33,000 (present value of lease payments using a discount rate of approximately 4.235%). Greener Co. uses its incremental borrowing rate because the interest rate implicit in the lease cannot be readily determined. Greener Co. depreciates the right-of-use asset on a straight-line basis over the lease term and expenses the variable payments for power delivered as incurred.

ANALYSIS

At lease commencement, Greener Co. would recognize the lease-related asset and liability:

	DR.	CR.
Right-of-use asset	\$33,000	
Lease liability		\$33,000

To initially recognize the lease-related asset and liability

The following journal entries would be recorded in the first year:

	DR.	CR.
Interest expense	\$1,398	
Lease liability		\$1,398

To record interest expense and accrete the lease liability using the interest method (\$33,000 x 4.235%)

	DR.	CR.
Depreciation expense	\$11,000	
Right-of-use asset		\$11,000

To record depreciation expense on the right-of-use asset $($33,000 \div 3 \text{ years})$

	DR.	CR.
Lease liability	\$10,000	
Cash		\$10,000

To record lease payment

A summary of the PPA lease accounting (assuming no changes due to reassessment):

	Initial	Year 1	Year 2	Year 3
Cash lease payments		\$10,000	\$12,000	\$14,000
Lease expense re	ecognized:			
- Interest		\$1,398	\$1,033	\$569
- Depreciation		11,000	11,000	11,000
 Total periodic expense 		\$12,398	\$12,033	\$11,569
Balance sheet:				
Right-of-use asset	\$33,000	\$22,000	\$11,000	-
– Lease liability	\$(33,000)	\$(24,398)	\$(13,431)	-

In addition to the above, the actual variable usage charges of \$0.03 MWh would be expensed as incurred.

Note that a lessee applies IAS 36, Impairment of Assets, to determine whether the right-of-use asset is impaired and to account for any impairment loss identified. However, IAS 37 applies to any lease that becomes onerous before the commencement date of the lease, as defined in IFRS 16. IAS 37 also applies to onerous short-term leases and onerous leases of low-value assets that are accounted for under paragraph 6 of IFRS 16 [IAS 37.5(c)]. Onerous leases are discussed in section 3.2.1 below.

For more information on accounting for leases, refer to EY's Applying IFRS: A closer look at IFRS 16 Leases.

3.2. The PPA is an executory contract within the scope of IAS 37 with no embedded derivatives

This outcome has the least-complex accounting implications and applies to PPAs classified as own-use contracts as discussed in section 2.2.4 above. IAS 37 must be applied in accounting for provisions, contingent liabilities and contingent assets, except those arising from executory contracts (unless the contract is onerous) and those covered by another standard [IAS 37.1].

The standard uses the term "executory contracts" to mean "contracts under which neither party has performed any of its obligations, or both parties have partially performed their obligations to an equal extent" [IAS 37.3]. This definition means that contracts such as supplier purchase contracts and capital commitments, which would otherwise fall within the scope of the standard, are exempt.

This exemption prevents the statement of financial position from being grossed up for all manner of commitments an entity has entered into. However, with respect to this exemption, it is debatable whether (or at what point) such contracts give rise to items that meet the definition of a liability or an asset. In particular, the need for this exemption arises because the liability framework on which this standard is based includes the concept of a constructive obligation which, when applied to executory contracts, would otherwise give rise to an inordinate number of contingent promises requiring recognition or disclosure.

IFRS 9 also provides a fair value option for own-use contracts, which allows that at the inception of a contract an entity may make an irrevocable designation to measure an own-use contract at fair value through profit or loss (the fair value option), even if it was entered into for the purpose of the receipt or delivery of a non-financial item in accordance with the entity's expected purchase, sale or usage requirement. This method of accounting is effectively derivative accounting as discussed in section 3.3 below.

However, such designation is only allowed if it eliminates or significantly reduces an accounting mismatch that would otherwise arise from not recognizing that contract because it is excluded from the scope of IFRS 9 [IFRS 9.2.5].

The costs associated with executory contracts are normally expensed as incurred using accrual accounting, rather than requiring recognition of any liabilities or assets aside from prepayments and routine accounts payable. However, an executory contract will still require recognition as a provision if the contract becomes onerous [IAS 37.3].

IAS 37 defines an "onerous contract" as "a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it" [IAS 37.10]. This definition requires that the PPA is onerous to the point of being directly loss-making, not simply uneconomic by reference to current power prices. For example, if the off-taker was using the power in its production or manufacturing process, it would need to be making a loss on sale of the production outputs to conclude that the PPA is directly loss-making.

IAS 37 considers that "the unavoidable costs under a contract reflect the least net cost of exiting from the contract, which is the lower of the cost of fulfilling it and any compensation or penalties arising from failure to fulfill it" [IAS 37.68]. This evaluation does not require an intention by the off-taker to fulfill or to exit the PPA. It does not even require that there be specific terms in the PPA that apply in the event of its termination or breach (although there generally are). Its purpose is to recognize only the unavoidable costs to the off-taker.

There is a subtle yet important distinction between making a provision with respect to the unavoidable costs under a PPA (reflecting the least net cost of what the off-taker must do) compared to making an estimate of the cost of what the off-taker intends to do. The first is an obligation, which merits the recognition as a provision, whereas the second is a choice of the off-taker, which fails the recognition criteria because it does not exist independently of the off-taker's future actions [IAS 37.19], and is therefore akin to a future operating loss.

3.2.1. Onerous leases

IAS 37 specifically applies to leases only in limited circumstances. IAS 37 specifically applies only to:

- Leases that become onerous before the commencement date of the lease
- Short-term leases (as defined in IFRS 16) and leases for which the underlying asset is of low value that are accounted for in accordance with IFRS 16.6 and that have become onerous [IAS 37.5(c)].

The International Accounting Standards Board (IASB) noted in IFRS 16.BC72 that it "... decided not to specify any particular requirements in IFRS 16 for onerous contracts. The IASB made this decision because ...(a) for leases that have already commenced, no requirements are necessary. After the commencement date, an entity will appropriately reflect an onerous lease contract by applying the requirements of IFRS 16. For example, a lessee will determine and recognize any impairment of right-of-use assets applying IAS 36, Impairment of Assets."

However, this raises the question as to how an entity should account for onerous variable lease payments that do not depend on an index or a rate and are not included in the measurement of right-of-use assets or lease liabilities under IFRS 16 (e.g., variable payments for power used). It is not immediately obvious whether such onerous variable lease payments fall within the scope of IFRS 16 or IAS 37.

Contractual variable lease payments that are not included in the lease liability (such as those that are not based on an index or rate) should be reflected in cash flow forecasts used for value-in-use calculations for impairment testing purposes. Once the right-of-use is fully impaired, off-takers may need to use their judgment to determine whether any further onerous lease provisions should be recognized under the requirements of IAS 37. If an off-taker exercises significant judgment in determining the most appropriate approach, consideration should be given to the disclosure requirements of IAS 1.122.



3.3. The entire PPA is a derivative within the scope of IFRS 9

Both physical and virtual PPAs may or may not meet the definition of a derivative, which is defined as a financial instrument or other contract within the scope of IFRS 9 with all of the following characteristics:

- a) Its value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, or other variable, provided in the case of a non-financial variable that the variable is not specific to a party to the contract (sometimes called the "underlying").
- b) It requires no initial net investment, or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors.
- c) It is settled at a future date [IFRS 9 Appendix A].

Notably absent from the above definition is the requirement for a notional amount, which is included in the definition of a derivative under US GAAP. Often PPAs for renewable energy can be structured in such a way that there is no reliably determinable notional amount, which enables normal purchase (own-use) type accounting under US GAAP but not necessarily under IFRS. In the absence of the requirement for a notional amount, PPAs can very easily contain the three characteristics above because (a) PPA pricing normally

results in the fair value of the PPA being linked to the market price of power; (b) the off-taker is not usually required to make any upfront payment; and (c) it is settled in the future, as the power and/or environmental attributes are delivered and the off-taker pays the consideration. However, while a physical PPA may still be able to avoid derivative accounting via the own-use scope exception discussed in 2.2.4 above, a virtual PPA will not qualify for this scope exception because it does not result in physical delivery (i.e., it is net cash settled).

Virtual PPAs are often in the form of contracts for differences (CfDs), which will generally meet the definition of a derivative necessitating ongoing fair value measurement.

A CfD is a financial arrangement whereby the seller agrees to pay the off-taker the difference between the current market power price (e.g., the Alberta pool price) and its value as defined in the PPA (and vice versa). It is effectively a type of hedge because, if market prices increase relative to the PPA price, the off-taker pays the lower PPA price. But if market prices decrease, it would be paying the higher PPA price. The seller can be a generator or a financial intermediary such as a financial institution.

The following example illustrates the assessment for a virtual PPA.

Illustrative example 3: the PPA is a derivative

Assume the following facts for this PPA:

- ► The off-taker is allocated 60% of the nameplate capacity of a specified wind farm.
- The off-taker agrees to a CfD, based on the hourly AESO price, associated with the off-taker's share of capacity.
- For each hour of the term of the PPA, the off-taker receives or pays the difference between:
 - The product of the off-taker's share of capacity multiplied by the actual power produced by the project multiplied by the market price for the relevant hour
 - The product of the off-taker's share of capacity multiplied by the actual power produced by the project multiplied by a specified fixed price for the relevant hour.
- If the above is negative, the off-taker will have to pay the supplier the difference (subject to the floor price discussed below); if it's positive, the supplier will have to pay the off-taker.
- The PPA contains a floor price to mitigate the off-taker's exposure to market price fluctuations, whereby if the market price falls below a specified floor price, the above formula for the payment will not apply and, instead, the off-taker will pay the supplier an amount determined as the difference between the floor price and the specified fixed price multiplied by the off-taker's share of production for the relevant hour.
- The supplier warrants that the wind farm will have a mechanical availability of no less than 90% during each year of the PPA term.
- If mechanical availability in any contract year is less than the sum of all the hours the wind farm should have been available to produce energy in that contract year, the supplier must pay the off-taker liquidated damages determined by reference to the average market prices for the off-taker's share of the difference.

In the above scenario, the off-taker is only contracting for 60% of the capacity of the wind farm, so there is no lease as, among other things, there is no identified asset.

Aside from its predetermined nameplate capacity, neither the supplier nor the off-taker has control over if, when and how much power is produced by the project because it is subject to weather patterns. However, the CfD component of the contract is net cash settled and therefore does not qualify for classification as own-use. In addition, the fair value of the PPA will change in response to changes in market power prices, there is no up-front payment (i.e., no initial net investment), and it will be settled in the future as the power is generated and delivered to the grid. As a result, this PPA meets the definition of a derivative.

CfDs accounted for as derivatives can also be designated as a hedging instrument in a hedging relationship. Hedge accounting, which is outside of the scope of this primer, can be challenging and complex. Similarly, determination of the fair value of PPAs accounted for as derivatives can be extremely complex, especially when the forward market is illiquid. Therefore, we strongly encourage consultation with professional advisors in relation to such matters.

In addition, off-takers need to be aware of the possible impact of default or penalty provisions in physical PPAs that allow the off-taker not to take their minimum committed quantity of power, and instead pay a penalty under the PPA that is tied to the market price of the power. In those situations, if the off-taker cannot show that the PPA was entered into and continues to be held for the purpose of the receipt of the power and/or renewable attributes in accordance with their expected usage requirements (i.e., an own-use contract), then physical delivery of the entire committed amount of power is not probable, possibly resulting in a derivative measured by reference to the amount of the penalty payable. Changes in power prices will affect the penalty's carrying value until the penalty is paid, with such changes being recognized in profit or loss.

3.4. The PPA contains an embedded derivative within the scope of IFRS 9

The accounting treatment for a separated embedded derivative is the same as for a standalone derivative. Such an instrument (in this case, a component of an instrument) will normally be recorded in the statement of financial position at fair value with all changes in value being recognized in profit or loss, although there are some exceptions (e.g., embedded derivatives may be designated as a hedging instrument in an effective hedge relationship in the same way as standalone derivatives).

A derivative that is attached to a financial instrument but is contractually transferable independently of that instrument, or has a different counterparty from that instrument, is not an embedded derivative, but a separate financial instrument [IFRS 9.4.3.1].

Where the embedded derivative's fair value cannot be determined reliably based on its terms and conditions, it may be determined indirectly as the difference between the hybrid (combined) instrument and the host instrument, if their fair values can be determined [IFRS 9.4.3.7]. If an entity is unable to measure an embedded derivative that is required to be separated from its host, either on acquisition or subsequently, the entire contract is designated at fair value through profit or loss [IFRS 9.4.3.6].

The IASB has provided only limited guidance on determining the terms of a separated embedded derivative and host contract. Accordingly, off-takers may find this aspect of the embedded derivative requirements particularly difficult to implement.

3.4.1. Embedded non-option derivatives

IFRS 9 does not define the term "non-option derivative," but suggests that it includes forwards, swaps and similar contracts. An embedded derivative of this type should be separated from its host contract based on its stated or implied substantive terms, so as to result in it having a fair value of zero at initial recognition [IFRS 9.B4.3.3].

The IASB has provided implementation guidance on separating non-option derivatives in the situation where the host is a debt instrument. It is explained that, in the absence of implied or stated terms, judgment will be necessary to identify the terms of the host (e.g., whether it should be a fixed rate, variable rate or zero-coupon instrument) and the embedded derivative. However, an embedded derivative that is not already clearly present in the hybrid should not be separated (i.e., a cash flow that does not exist cannot be created) [IFRS 9.IG C.1].

Further, as noted above, the terms of the embedded derivative should be determined so that it has a fair value of zero on inception of the hybrid instrument. It is explained that if an embedded non-option derivative could be separated on other terms, a single hybrid instrument

could be decomposed into an infinite variety of combinations of host debt instruments and embedded derivatives. This might be achieved, for example, by separating embedded derivatives with terms that create leverage, asymmetry or some other risk exposure not already present in the hybrid instrument [IFRS 9.IG C.1].

Finally, it is explained that the terms of the embedded derivative should be identified based on the conditions existing when the financial instrument was issued [IFRS 9.IG C.1] or when a contract is required to be reassessed.

The following example illustrates how a foreign currency derivative embedded in a (hybrid) PPA lease contract that is not closely related could be separated.

3.4.2. Embedded option-based derivatives

As for non-option derivatives, IFRS 9 does not define the term "option-based derivative" but suggests that it includes puts, calls, caps, floors and swaptions. An embedded derivative of this type should be separated from its host contract based on the stated terms of the option feature [IFRS 9.B4.3.3].

Illustrative example 4: Separation of embedded derivative from a PPA classified as a lease

Company X has Canadian dollars (CAD) as its functional currency. On January 1, 2020, Company X entered into a nine-month PPA over a wind farm, which meets the definition of a lease. The PPA required payments of US\$100,000 on March 31, 2020, June 30, 2020 and September 30, 2020. The functional currency of the supplier is not US dollars; the price of such PPAs is not routinely denominated in US dollars and US dollars is not a currency that is commonly used in the economic environment in which the PPA took place. Accordingly, the embedded foreign currency derivative is not closely related to the lease.

On January 1, 2020, the spot exchange rate was 1.40 and the forward exchange rates for settlement on March 31, 2020, June 30, 2020 and September 30, 2020 were 1.39, 1.37 and 1.35, respectively. The terms of the embedded derivative could be determined as follows:

	Pay	Receive
March 31, 2020	US\$100,000	CAD\$139,000
June 20, 2020	US\$100,000	CAD\$137,000
September 30, 2020	US\$100,000	CAD\$135,000

Given the terms of the embedded derivative above, the host contract will be a nine-month lease over the wind farm as per the hybrid lease contract, commencing January 1, 2020 and with scheduled payments of CAD\$139,000, CAD\$137,000 and CAD\$135,000 on March 31, 2020, June 30, 2020 and September 30, 2020. It can be seen that this host, after separation of the foreign currency derivative, a CAD-denominated lease, does not itself contain an embedded derivative requiring separation and the combined terms of the two components sum to the terms of the hybrid contract.

The implementation guidance explains that the economic nature of an option-based derivative is fundamentally different from a non-option derivative, and depends critically on the strike price (or strike rate) specified for the option feature in the hybrid instrument. Therefore, the separation of such a derivative should be based on the stated terms of the option feature documented in the hybrid instrument. Consequently, in contrast to the position for non-option derivatives above, an embedded option-based derivative would not normally have a fair value of zero [IFRS 9.IG C.2].

CfDs are option-based derivatives, as are price floors and caps, which are often included in PPAs. Note that, as explained in section 2.2.6 above, price floors and caps will be considered closely related to the host PPA as long as they are not in the money at inception of the contract, which is illustrated in the following example.

Illustrative example 5: The PPA contains an embedded derivative

Assume the following facts for a PPA:

- ► The off-taker agrees to purchase 10,000 MWh per annum from a specified wind farm for the next four years based on the hourly AESO price on the delivery date, subject to a floor price of \$30 MWh and a cap of \$50 MWh.
- The arrangement does not meet the definition of a lease or a derivative in its entirety, and is not designated as at fair value through profit or loss.
- ► The off-taker makes no initial net investment.

Scenario 1: The AESO market price of power at inception of the arrangement is \$40 MWh

In scenario one, both the floor and the cap are derivatives because their fair values depend on the AESO market price. There is no initial net investment and the options are settled in the future when the power is delivered. However, as the market price is both higher than the floor price and lower than the cap price, neither of these options are in-the-money at contract inception. Therefore, the floor and cap would both be considered closely related to the host PPA and would not require separate accounting.

Scenario 2: The market price of power at inception of the arrangement is \$52 MWh

In scenario two, as for scenario one, both the floor and the cap are derivatives because their fair values depend on the AESO market price. There is no initial net investment and the options are settled in the future when the power is delivered. However, even though the market price is higher than the floor price, it is not lower than the cap price, meaning the cap is in-the-money at contract inception. Therefore, consistent with scenario one, the floor would be deemed to be closely related and would not require separate accounting. But unlike scenario one, the cap is in the money at inception, and would thus require bifurcation and separate accounting from the host PPA as an embedded derivative. .

The above example may also raise the question of what happens if the cap or floor moves in and out of the money during the term of the PPA. IFRS 9 confirms that off-takers should assess whether an embedded derivative is required to be separated from the host PPA contract and accounted for as a derivative when the off-taker first becomes a party to the PPA. Subsequent reassessment is prohibited unless there is a change in the terms of the PPA that significantly modifies the cash flows that otherwise would be required under the PPA, in which case an assessment is required. The off-taker determines whether a modification to cash flows is significant by considering the extent to which the expected future cash flows associated with the embedded derivative, the host PPA contract or both have changed, and whether the change is significant relative to the previously expected cash flows on the PPA contract [IFRS 9.B4.3.11]

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