In depth

Accounting for Contracts Referencing Nature-dependent Electricity

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Key Points

- It is increasingly common for entities to enter into nature-dependent power purchase arrangements with a goal of reducing the carbon footprint from their energy usage. The types of arrangement and their contractual terms, as well as the market structure and laws and regulations, differ between jurisdictions.
- An entity needs a thorough understanding of the contractual terms, the market and the regulatory landscape, as well as the requirements in IFRS® Accounting Standards, to determine the proper accounting treatment for these arrangements.
- This In depth is a roadmap to navigate this challenging area of accounting.

The guidance in this In depth applies to entities that have adopted 'Contracts Referencing Nature-dependent Electricity – Amendments to IFRS 9 and IFRS 7'. These amendments are effective for annual reporting periods beginning on or after 1 January 2026. Earlier application is permitted (subject to any endorsement processes). It should be noted that this In depth is dated 17 February and therefore only represent the latest status as of this date. This In depth therefore does not reflect any supposed changes after this date.

For guidance to accounting for renewable electricity contracts to which the amendments have not been applied (including hedge relationships that have not been re-designated applying the transition requirements of the amendments), see our In depth 'Accounting for renewable power purchase agreements'.

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1. Introduction

1.1 Background

As entities plan to reduce their carbon footprint, they are often seeking to use 'green' or 'sustainable' electricity; that is, electricity generated from nature-dependent sources. Electricity is a unique product, because it is not economically storable at scale, and often entities are connected to the electricity 'grid' rather than being directly connected to generators. The connection to a grid means that electricity generated from nature-dependent sources is mixed with conventional electricity, and the resulting electricity itself does not have distinguishable characteristics based on its source.

There are several ways in which an entity can demonstrate that it has 'used' nature-dependent electricity:

1. Purchase of renewable energy certificates ('RECs') on a stand-alone basis in the market. RECs are created for each megawatt hour of electricity that is generated from a nature-dependent energy resource, and they can be purchased by an entity in the market and then 'used' (that is, cancelled or retired) by the entity to offset energy usage from non-nature-dependent sources.

2. Physical power purchase agreements (physical 'PPAs') for nature-dependent electricity. The entity takes physical delivery of electricity (that is, title) under the contract from a particular generation facility at some point after the generation process. This is often at the interconnection point between the generation facility and the grid or transmission system. The entity also purchases RECs based on the electricity produced by the generation facility that can be 'used' (that is, cancelled or retired) to offset energy usage from non-nature-dependent sources.

3. Financial settlement of nature-dependent electricity through a virtual power purchase agreement ('VPPA') and purchase of RECs from a generator. In this type of arrangement, an entity obtains RECs and notionally purchases electricity through the VPPA. VPPAs are sometimes called a 'financial power purchase agreement' or 'contract for differences' ('CFD'). The RECs received can then be 'used' (that is, cancelled or retired) to offset energy usage from non-renewable source**s.**

Theoretically, all of the nature-dependent electricity generated in a particular market can be earmarked to be used by entities under these arrangements. The electricity consumed by entities that do not have RECs is sometimes called 'grey electricity, because it might or might not have been generated by a nature-dependent source, and so it is often presumed to be conventional electricity.

As noted above, RECs can be bought and sold together with (or separately from) the related electricity, but only the entity that retires (that is, cancels) RECs is considered to have actually consumed the nature-dependent electricity. In other words, RECs can change hands between various market participants, but taking RECs out of the market is fundamentally the 'consumption' of the nature-dependent electricity. RECs are colloquially referred to as being obtained 'physically' although, in reality, they are generally intangible in nature, and they can be transmitted electronically rather than on a physical piece of paper.

1.2 Contracts referencing nature-dependent electricity

IFRS 9 and IFRS 7 have specific requirements for contracts referencing nature-dependent electricity.

Those are contracts for which the source of electricity generation is dependent on natural conditions that are not controllable (for example, the weather), resulting in an entity being exposed to variability in the underlying amount of electricity. Such contracts are either physical PPAs or virtual PPAs (see section 2).

The guidance in this In depth applies only to physical PPAs and VPPAs that meet this definition. These requirements cannot be used by analogy to any other contracts, items or transactions.

2. Considering the type of arrangement

2.1 Types of arrangement – physical power purchase agreements (physical PPAs) versus virtual power purchase agreements (VPPAs)

Because of the unique nature of the electricity market, and the lack of economic storage options, sometimes it is difficult to determine whether a contract is for the physical purchase of electricity or whether it is for the virtual purchase of electricity. It is important to understand the nature of the contractual agreement, because the ultimate accounting might often depend on whether the arrangement is a physical PPA or a VPPA.

2.2 The meaning of 'delivery'

The structure of electricity markets varies from country to country, and sometimes within a country there can be differences in markets between provinces or states and even between cities. Accordingly, it is important to have a good understanding of the local electricity market and the related rules and regulations to determine how 'physical electricity' is transacted.

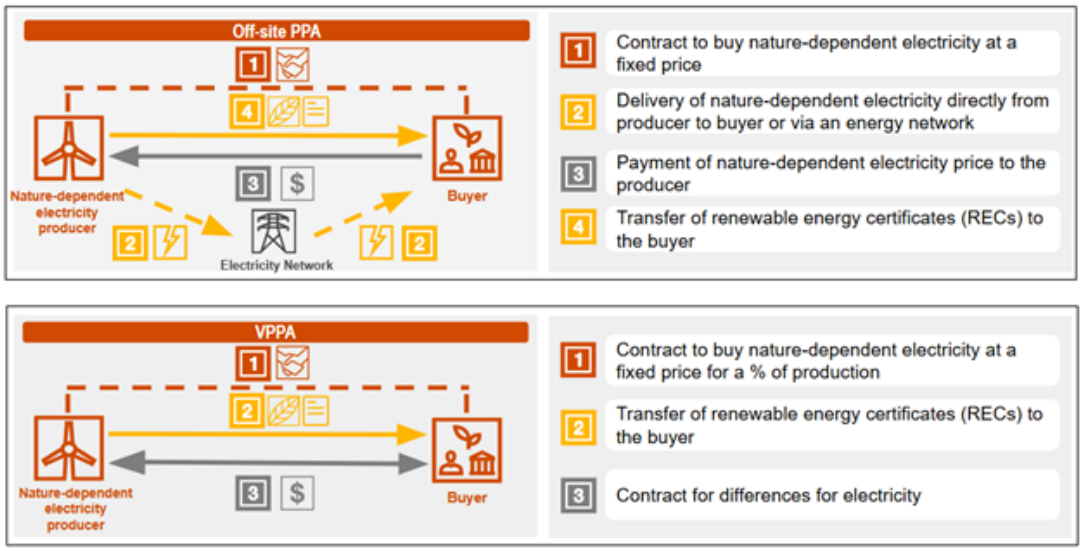
Often, electricity is bought and sold through an electricity grid – that is, all electricity producers contribute electricity into a grid, and all consumers purchase the electricity through that grid. In many cases, the grid operator arranges to buy and sell all electricity at a 'spot' price.

In such markets, there are various ways in which physical electricity purchases could be arranged. For example:

- A customer might contractually purchase the electricity at the point of generation (that is, at an interconnection point to a grid or transmission system) and sell the electricity into the grid at that point at a spot price and instantaneously re-purchase at least the same quantity of electricity at the site where it requires electricity at the spot price. Where the customer is obligated under the contract to instantaneously re-purchase at least the same quantity of electricity from the grid in which the electricity was contributed, this would be considered physical delivery through an intermediary.
- A generator might arrange to have the electricity delivered to the customer's account on the grid. Effectively, the customer is considered by the grid to have physically contributed electricity to the grid and does not have to pay the grid operator for that quantity of electricity consumed. This would also be considered physical delivery.

On the other hand, a contract might 'net settle' the difference between a fixed electricity price specified in the agreement and the spot price for the sale of electricity. In these cases, the generator sells the electricity into the electricity grid as a principal, and the physical electricity is not 'delivered' to the customer. The customer might consider that they are notionally purchasing electricity but, because it is not 'delivered' to the customer, it would be considered a financial contract.

The difference between a physical (off-site) PPA and a VPPA is illustrated below:



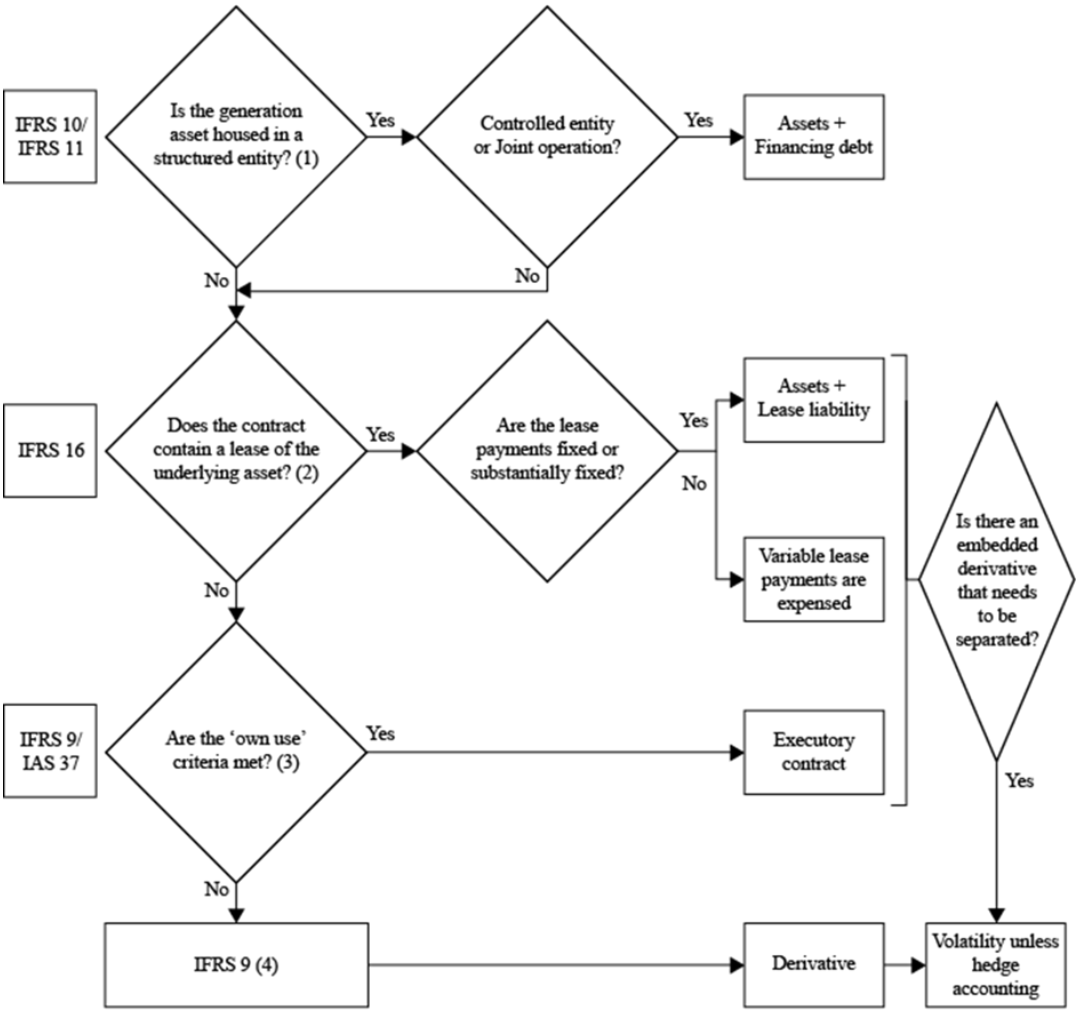
Refer to FAQ 40.79.2 – How does an entity determine if a contract to buy or sell non-financial items is a physically or financially settled contract? for further guidance on this topic.

3. Overall accounting considerations for PPAs from the buyer's perspective

3.1 Scoping considerations

An entity should consider if the physical PPA provides for control (IFRS 10), joint control (IFRS 11) or significant influence (IAS 28) over the electricity supplier and, if it does not, if the contract is or contains a lease (IFRS 16). If either of these definitions is met, the requirements in the particular standard must be followed. The next step for an entity is to consider the requirements of IFRS 9.

The flowchart below summarises the scoping questions to be considered and the accounting considerations:



(1) Consolidation / associate / joint arrangement / service concession arrangement considerations

A customer entering into a contract for the purchase of nature-dependent electricity should consider whether the counterparty is a special purpose vehicle (SPV) that it controls, or that it has significant influence or joint control over. Often, the generator puts each electricity project (for example, a single windfarm) into a separate legal entity. If a customer is exposed, or has rights, to the variable returns from that legal entity, the customer's relationship with the entity must also be carefully assessed, to determine whether the customer has power over the relevant activities. In most cases, customers are not exposed, and do not have rights, to variable returns of the entity and do not have power over the relevant activities of the entity. However, if the customer were to determine that it should consolidate the SPV, this would mean that the generation assets of the generating entity and the related debt would be recorded on the statement of financial position of the customer. If the entity represented an associate or joint venture, it would be accounted for as such under the relevant standards. If a contract is granted by a governmental body, an entity also needs to consider whether the arrangement is in scope of IFRIC 12, 'Service concession arrangements'. However, facts and circumstances relevant to such arrangements often mean that they are not within the scope of IFRIC 12. For further information on consolidation, associates, joint arrangements and service concession arrangements, refer to Manual of accounting chapters 26, 32 and 34.

(2) Leasing considerations

Considerations for physical PPAs

A customer should consider whether a contract to purchase electricity is a lease, or contains a lease, to be accounted for under IFRS 16. A lease is defined by IFRS 16 as a "contract or part of a contract that conveys the right to use an asset for a period of time in exchange for consideration".

The contract is unlikely to constitute a lease if a customer is not physically purchasing substantially all of the output from an identified asset. In practice, customers often purchase only a percentage of the output of electricity produced (for example, 30%). However, a careful assessment of all contractual terms is required for a customer physically purchasing substantially all of the economic output of the asset during the contract period (for example, where the aggregate fair value of electricity and the renewable energy certificates (RECs) being purchased during that period constitute substantially all of the fair value output of the facility). This is to determine whether the contract needs to be accounted for as a lease under IFRS 16. For further guidance on applying the lease definition to a solar farm/power plant, refer to EX 15.26.5.

Considerations for VPPAs

A VPPA does not result in delivery of electricity [2] . Even though the customer receives RECs, usually, the customer is not 'purchasing' substantially all of the output from an identified asset. In 2021, the IFRS IC considered this issue in its agenda decision, 'Economic Benefits from Use of a Windfarm'.

The issue considered by the IFRS IC was an agreement whereby the customer settles with the generator the difference between the fixed price and the spot prices per MW of electricity that the generator supplies to the grid, based on 100% of the volume of power electricity by a specified windfarm over a 20-year period. Under the agreement, the customer has neither the right nor the obligation to purchase an equivalent amount of electricity from the grid.

Since the customer had neither the right nor the obligation to take delivery of the electricity (see section 2 'Considering the type of arrangement' above), the customer did not have the right to obtain substantially all of the economic benefits from the use of the windfarm. Accordingly, the IFRIC concluded that the agreement did not contain a lease.

(3) Own use considerations

See sections 3.2.1 - 3.2.2 below.

(4) IFRS 9 considerations

See sections 3.2.3, 3.2.4 and 3.3 below.

[IFRS 16 App. A]. [IFRS 10 App. A].

3.2 IFRS 9 considerations for physical PPAs

If it is determined that a physical PPA does not give rise to consolidation, joint operation or leasing issues, the guidance under IFRS 9 must be further considered; refer to FAQ 40.83.1 – How is the scope of IFRS 9 evaluated for financial and non-financial contracts? for an overview of IFRS 9 scoping considerations.

A contract to buy or sell a non-financial item that can be settled net in cash or another financial instrument, or by exchanging financial instruments, falls within the scope of the financial instruments standards and would be accounted for at FVTPL unless the contract meets the 'own use' exception (see 3.2.2).

[IFRS 9 para 2.4].

3.2.1 Net settlement considerations under IFRS 9 for physical PPAs

There are various ways in which a contract to buy or sell a non-financial item can be settled net in cash ('a net settleable contract'), including:

a. Where the terms of the contract permit either party to settle net in cash or another financial instrument or by exchanging financial instruments. Net settlement means that the entity will pay or receive cash (or an equivalent value in other financial assets), to and from the counterparty, equal to the net gain or loss on the contract on exercise or settlement.
b. Where the ability to settle the contract net is not explicitly stated in the contract, but the entity has a practice of settling similar contracts net in cash (whether with the counterparty, by entering into offsetting contracts, or by selling the contract before its exercise or lapse). For example, a futures exchange permits an entity to enter into offsetting contracts that relieve the entity of its obligation to make or receive delivery of the non-financial item.
c. Where, for similar contracts, the entity has a practice of taking delivery of the underlying and selling it, within a short period after delivery, to generate a profit from short-term fluctuations in price or dealer's margin. An example is an exchange that offers a ready opportunity to sell the contract.
d. Where the non-financial item that is the subject of the contract is readily convertible into cash.

[IFRS 9 para 2.6].

In many cases, the electricity in a physical PPA will be delivered at a point where the underlying electricity is readily convertible to cash. For example, electricity delivered at a grid interconnection point or to a customer's grid account can often be readily converted to cash by selling immediately in the spot market. For further guidance, refer to EX 40.83.2 – The meaning of 'readily convertible to cash'. Where a PPA requires physical delivery at a site where the electricity is not readily convertible to cash (such as a remote customer site), the other conditions for net settlement would still need to be considered.

Net settleable physical PPAs that have a fixed-price component (that is, they are not solely priced at spot when electricity is delivered) will generally meet the definition of a derivative in IFRS 9. That is because their value changes in response to an underlying (that is, electricity prices), the contract requires an initial investment smaller than would otherwise be required (that is, they are not fully prepaid) and they would be settled at a future date.

The definition of a derivative excludes contracts that vary in value in response to a non-financial variable specific to a party to a contract. However, a contract that contains both a financial variable and a non-financial variable would not meet this exception. For example, consider a contract that requires the purchase of 30% of the output for a windfarm. The volume of electricity to be delivered will be a non-financial variable specific to a party to a contract. However, the value of the contract will be driven both by the volume (a non-financial variable specific to a party) and a financial variable (the forward price of electricity). Accordingly, the non-financial variable exception cannot be used (for further details, see FAQ 40.34.2).

3.2.2 'Own use' considerations for physical PPAs

The first step is to consider whether the contract is entered into, and continues to be held, for the purpose of the receipt or delivery of the electricity for the entity's expected purchase, sale or usage requirements.

[IFRS 9 para 2.4]

A contract might be disqualified from the 'own use' exception by way of an entity's previous behaviour in relation to similar contracts. Refer to FAQ 40.84.8 – What constitutes a 'practice'?.

[IFRS 9 para 2.6]

To assess whether a contract to buy and take delivery of nature-dependent electricity (see section 1.2) should be accounted for as an own use contract, an entity should apply the specific application guidance in IFRS 9 for such contracts if:

a. the contract obliges the entity to buy and take delivery of the electricity when it is generated; as a result, the entity is exposed to the risk of being required to buy electricity that it cannot use during a delivery interval in which the electricity is delivered; and
b. the design and operation of the market in which the entity receives electricity under the contract require the entity to sell any amounts of unused electricity within a specified time; as a result, the entity has no practical ability to avoid selling any unused electricity (see FAQ 40.84.2.4 - What does it mean to have 'no practical ability to avoid selling any unused electricity'?).

When these conditions are met, sales of unused electricity are not necessarily inconsistent with the entity's expected usage requirements. The contract continues to meet the own use exception if the entity has been, and expects to be, a net purchaser of electricity for the contract period (see FAQ 40.84.4.1 - What does it mean to be a 'net purchaser'?).

For more guidance, see Manual of accounting chapter 40 paragraphs 84.1 to 84.4.

[IFRS 9 para 2.8]. [IFRS 9 para B2.8].

For transition requirements, see Manual of accounting chapter 40 paragraphs 84.5 to 84.6.

3.2.3 Fair value option

If a net settleable physical PPA does meet the 'own use' criteria, there is an option to designate such a contract at inception as FVTPL if the entity can demonstrate that doing so would mitigate an accounting mismatch. For further guidance, refer to Manual of accounting chapter 46 paras 155 to 156.

[IFRS 9 para 2.5].

3.2.4 Hedge accounting considerations for failed 'own use' contract

Where a physical PPA fails to meet the 'own use' criteria, it would be accounted for at FVTPL unless it qualifies in an effective hedging relationship. A special type of hedge designation called 'all-in-one' hedging might be applicable in such cases. For more information, see Manual of accounting chapter 46 paragraphs 83.1 to 83.4 and EX 46.83.3.2 - Hedging forecast physical purchases of nature-dependent electricity in an all-in-one hedge.

3.3 IFRS 9 accounting considerations for VPPAs

Many VPPAs are more properly considered 'mixed PPAs', because the entity purchases 'physical' RECs (that is, it obtains the actual certificates that it can resell or retire/cancel) and it financially settles the 'electricity'. A VPPA should still be evaluated to determine if it qualifies for consolidation, associate or joint arrangement accounting or for lease accounting, but generally the conditions to qualify for such accounting will not be met.

VPPAs require careful determination of the host contract and assessment of embedded derivatives. For further guidance, refer to EX 41.60.1 – IFRS 9 accounting considerations for virtual power purchase agreements and EX 41.62.5 – Buyer's accounting for a virtual power purchase agreement containing an embedded derivative.

3.3.1 Hedging considerations for VPPAs

An embedded derivative that is separated from a contract might qualify as an eligible hedging instrument. Therefore, where the embedded electricity swap is separated from the 'own use' (or non-net settleable) host contract for RECs, the embedded derivative could be designated in a cash flow hedging relationship.

Where a contract referencing nature-dependent electricity (see chapter 1.2) is designated as a hedging instrument in a cash flow hedge relationship of forecast electricity purchases, an entity is permitted to designate the hedged item as a variable nominal amount of forecast electricity transactions. That variable amount should be aligned with the variable amount of nature-dependent electricity expected to be delivered by the generation facility as referenced in the hedging instrument.

For more information, see EX 46.83.3.3 - Hedging forecast purchases of electricity using a virtual contract referencing nature-dependent electricity as hedging instrument.

[IFRS 9 para 6.10.1].

Except from this above specific requirement relating to designation, the other hedge accounting requirements in chapter 46 of Manual of accounting should be applied unchanged.

[IFRS 9 para 6.10.1].

For transition requirements, see Manual of accounting chapter 46 paragraph 83.4.

3.4 Accounting for purchased RECs

'Physically purchased RECs' on hand are intangible assets under IAS 38, although they fall within the scope of IAS 2 where the definition of 'inventory' is met. Where the RECs are held for resale or consumed in the process of production of inventories (for example, an input cost in the manufacturing of a product), they are more likely to meet the definition of 'inventory'.

RECs accounted for under IAS 2 or IAS 38 will be recorded at cost on initial recognition. In a physical PPA, the purchase price being paid will need to be allocated between electricity and RECs. In a VPPA where the host contract for RECs is accounted for as 'own use', the initial cost will be determined based on the host contract.

[IAS 2 para 9]. [IAS 38 para 24].[IFRS 9 para B4.3.3].

When the RECs are used by the entity (for example, cancelled), they are derecognised and recognised as a cost of purchased electricity – or another appropriate line item, depending on the policies adopted for the entity's income statement presentation in accordance with IAS 1/IFRS 18.

[IAS 1 para 85]. [IFRS 18 paras 75 – 84].

3.5 Disclosure considerations

Accounting for PPAs might require use of significant judgement – for example, to determine if the contract is a physical PPA or a VPPA. Another critical area is determining if a physical PPA meets the 'own use' exception criteria. In those cases, an entity would need to disclose information in the notes about the judgements made.

[IAS 1 para 122]. [IAS 8 para 27G]

3.5.1 PPAs within the scope of IFRS 9

When the PPA is accounted for under IFRS 9 (that is, if the contract is a VPPA or a physical PPA that does not meet the 'own use' exception), it will be within the scope of IFRS 7 for disclosure purposes. For contracts referencing nature-dependent electricity designated as hedging instruments, an entity should disaggregate the information about terms and conditions of hedging instruments required by IFRS 7 (see Manual of accounting chapter 47 para 78) so that this information is presented separately for contracts referencing nature-dependent electricity.

[IFRS 7 para 5C]. [IFRS 7 para 30B]

3.5.2 Contracts to buy and take delivery of nature-dependent electricity

Specific disclosures are required for contracts to buy and take delivery of nature-dependent electricity accounted for as 'own use' contracts applying the requirements in chapter 3.2.2.

For these contracts, the key requirements are for an entity to disclose information about;

- the contractual features that expose the entity to variability in the underlying amount of electricity and the risk of being required to buy electricity it cannot use during a delivery interval in which the electricity is delivered;
- the unrecognised contractual commitments at the reporting date, including the expected remaining cash flows from buying electricity under the contracts; and
- the contracts' effects on the entity's financial performance for the reporting period. This should include information about;
    - costs arising from purchasing electricity under these contracts, separately showing how much of which was unused;
    - proceeds from sales of unused electricity; and
    - costs from purchases of electricity to offset the sales of unused electricity.

For more guidance, see Manual of accounting chapter 47 paragraphs 85.1 to 85.7.

[IFRS 7 para 5B]. [IFRS 7 para 30A].

4. Overall accounting considerations for PPAs from the seller's perspective

Many of the considerations applicable to the buyer are also relevant to the seller. Some key considerations are listed below.

4.1 'Own use' exception for delivery of electricity

Due to its uniqueness, electricity must be delivered into the transmission system/grid as it is produced. From the seller's perspective, all of its output will therefore be constantly delivered to the grid. When considering the 'own use' exception (refer to section 3.2), the seller must assess if the 'contract' is entered into for the purpose of delivery in accordance with its expected sales requirements. Therefore, to meet the 'own use' exception, the seller must fulfil its delivery obligations under the contract (that is, to deliver its output to the counterparty). Consequently, consideration of what constitutes 'delivery' is equally relevant for the seller as it is for the buyer (that is, whether a physical or virtual PPA).

[IFRS 9 para 2.4].

4.2 PPAs as part of the seller's ordinary activities

If the seller enters into physical PPAs or VPPAs as part of its ordinary activities, the seller should consider the IFRS 15 requirements in accounting for these contracts.

Because IFRS 15 is a 'residual' standard, the seller should assess first if the contract is within the scope (or partially within the scope) of another standard before accounting for it under IFRS 15. Therefore, the seller assesses first whether the arrangement contains an embedded derivative that should be accounted for under IFRS 9, applying the separation and measurement guidance in IFRS 9.

[IFRS 15 para 7(a)].

In a VPPA with physical delivery of RECs, since the contract will typically contain an embedded derivative (for the same reason as discussed in relation to VPPAs for the buyer), the entity might alternatively elect the fair value option in paragraph 4.3.5 of IFRS 9. This will cause additional volatility from revaluing RECs that does not exist in the scenario where a fixed-price REC host contract is separated from the contract. Refer to EX 41.62.6 – Seller's accounting for a virtual power purchase agreement containing an embedded derivative for further guidance.

4.3 Hedge accounting considerations for VPPAs

An embedded electricity swap separated from a VPPA that references an amount of nature-dependent electricity generated by the seller's own production facilities could be designated as hedging instrument in a cash flow hedge of the forecast sales of that same amount of nature-dependent electricity. An entity could then apply the requirements in section 3.3.2 for designating the hedged item.

In such a hedge relationship, because the cash flows of the hedging instrument are conditional on a designated forecast transaction occurring, that forecast transaction is presumed to be highly probable.

For more information, see EX 46.83.3.1 - Hedging forecast sales of electricity using a virtual contract referencing nature-dependent electricity as hedging instrument.

Except from these above specific requirements relating to designation and the highly probable assessment, the other hedge accounting requirements in chapter 46 of Manual of accounting should be applied unchanged.

[IFRS 9 para 6.10.1]. [IFRS 9 para 6.10.2].

The disclosure requirement in section 3.5 for contracts referencing nature-dependent electricity designated as hedging instruments applies.

[IFRS 7 para 30B]

Further insights and guidance will be published on Viewpoint as the project progresses. For more information, please contact Anna Ledermüller or Ulf Kuehle.

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