

Accounting for the Development of Carbon Credits by a Renewable Energy Generator

Extract, IFRS® Discussion Group Report on the Meeting – September 19, 2023

Background

At its [May 2023 meeting](#), the IFRS Accounting Standards Discussion Group discussed the accounting for the development of carbon credits that will ultimately be sold. The Group discussed one example of a voluntary scheme and a specific activity that generates carbon credits in that scheme. The Group noted that carbon credits can be generated in many ways and recommended that this topic be brought back for further discussion.

Accordingly, the Group discussed the accounting for renewable energy certificates/credits (RECs) by an entity that owns and operates a solar energy facility. The discussion focused on the recognition and measurement of the RECs when there is a time lag between the generation of electricity and the transfer (or use) of RECs.

Fact Pattern 1

Company S (“the Company”) has a solar energy facility that generates electricity. When the electricity is generated, the Company sells it into the spot energy market.

The Company has a virtual power purchase agreement (VPPA) for the next 10 years, which includes the sale of the associated RECs. For purposes of this discussion, a REC refers to the environmental attributes of the generation of one megawatt hour (MWh) of energy produced by the solar energy facility.

The RECs are transferred to the customer not at the time of electricity generation, but rather up to one year after the electricity is generated and sold. The RECs must first be verified and certified by the government so they can be used by the customer in provincial emission regulatory schemes.

The RECs are a separate unit of account from the electricity, and they meet the definition of an asset.

The Company classifies the RECs as inventory.

The fair value of the RECs is material.

The Company has determined that the REC component of the VPPA meets the own-use exemption in [IFRS 9 Financial Instruments](#).¹ That is, it would be scoped out of IFRS 9 based on the

¹ Material that links to the CPA Canada Handbook is available to subscribers only. However, all information needed to understand the content is provided in this document.

guidance in [paragraph 2.4](#). It is accounted for as an executory sales contract of RECs with a separable embedded derivative (electricity price swap).

The sale of the RECs is part of the Company's ordinary activities and is determined to be a performance obligation under [IFRS 15 Revenue from Contracts with Customers](#). Revenue for the sale of RECs is recognized when control of each REC is transferred to the customer after verification and certification.

Fact Pattern 2

In contrast to [Fact Pattern 1](#):

The Company does not have a VPPA. Rather, it holds the RECs for its own use to settle compliance obligations arising from emission regulations.

There may be a difference in the classification of the RECs because entities that hold the RECs to satisfy an obligation may classify them as either inventory² or intangible assets.³

Similar to [Fact Pattern 1](#):

The RECs are a separate unit of account from the electricity, and they meet the definition of an asset.

The fair value of the RECs is material.

Issue 1: Can the RECs be considered an output, or are they a government grant?

Analysis

RECs may arise as a result of the power generation process. RECs are also often a construct of government programs. Therefore, a key question arises: Are RECs effectively an output of the energy facility or a transfer of value from the government to an entity? These views may result in differences in the initial measurement of the RECs.

View 1A – RECs are ONLY an output

Proponents of this view think that the RECs are an output of the solar energy facility because the RECs are created and are dependent on the operation of the asset. They think that the Company may classify the RECs as inventory because the RECs are outputs that are part of the Company's ordinary activities. They think this view may also apply to [Fact Pattern 2](#) when the Company classifies the RECs as intangible assets. Although it may seem unusual to think about intangible

² The RECs could be classified as inventory if they are determined to be materials or supplies consumed in the production process or in the rendering of services ([paragraph 6\(c\)](#) of IAS 2 *Inventories*).

³ For the purposes of the discussion, assume all criteria for recognizing an intangible asset are met, including the ability to measure the cost of the asset reliably.

assets as “outputs,” this does occur in other industries such as software, media, and pharmaceuticals.

View 1B – RECs are ONLY a government grant

Proponents of this view think that the RECs are a government grant because they represent a transfer of an economic benefit from the government. This is because the Company receives verified and certified RECs for complying with conditions of the government program, being the production of renewable electricity.

Proponents of this view think that the RECs would be accounted for as a non-monetary asset under [IAS 20 Accounting for Government Grants and Disclosure of Government Assistance](#). Applying [paragraph 23](#) of IAS 20, the Company could measure the RECs at their fair value or at a nominal amount.

View 1C – RECs can be an output OR a government grant

Proponents of this view think that both [View 1A](#) and [View 1B](#) are supportable, and hence that it may not be possible to rule out either. Therefore, they think the Company should determine an accounting policy in [Fact Patterns 1](#) and [2](#) that is applied consistently to similar transactions.

The Group’s Discussion

The Group agreed with the analysis of factors an entity might consider when determining whether the RECs would be an output or a government grant. Group members discussed that an important factor for consideration is whether the RECs have value as soon as the related electricity is generated, or only after the RECs are certified. They noted that this could depend on the government’s role and the nature of the market for the RECs (e.g., voluntary or compliance market). A Group member explained that an entity may purchase RECs in a voluntary market to meet its own emissions targets. In contrast, an entity may purchase RECs in a compliance market to meet compliance obligations arising from emission regulations.

Several Group members supported [View 1A](#) in the case of a voluntary market in which the government is not creating a requirement to offset emissions with RECs. However, they supported [View 1C](#) in the case of a compliance market as discussed further below.

Other Group members who supported [View 1A](#) discussed why they did not support [View 1B](#). For example, two Group members commented that in [Fact Patterns 1](#) and [2](#), the government appears to be simply performing an administrative service. They noted that this is similar to how an engineer performs a final inspection before a building can be used or occupied. Another Group member noted that government grants are generally not transferrable to other parties, whereas RECs are transferable. Two Group members commented that the sole fact that the government is involved in a given situation does not automatically imply that there is a government grant (or conversely, a tax).

One Group member commented that they typically see scenarios where the government initiates a transaction because it wants a certain outcome. To achieve that outcome, the government may

transfer some form of economic benefit to an entity. The Group member noted that in [Fact Patterns 1](#) and [2](#), the government does not appear to be seeking a certain outcome. Thus, they thought the RECs would not be a government grant and would instead be an output.

In contrast, some Group members agreed with [View 1C](#) or otherwise thought that [Views 1A](#) and [1B](#) could each be supported in different scenarios. Several Group members noted that there is not always a clear answer in practice given the variety of fact patterns and the complexity of regimes. Many Group members thought the answer would depend on the facts and circumstances. For example, they thought the RECs could be a government grant if the government is considered to be transferring an economic benefit to the Company, particularly in a compliance market. One Group member noted that in a compliance market, the government may effectively create a need for RECs through emissions regulations. Two Group members remarked that if the Company has compliance obligations arising from emission regulations, the government may transfer an economic benefit to the Company either by certifying RECs that would settle the obligation or by giving up the right to charge penalties for noncompliance.

Some Group members suggested that the RECs may have value by virtue of the government's process of verifying and certifying the RECs. One Group member noted that this may not be the case if the government's process is mostly administrative, which they think it would be in [Fact Patterns 1](#) and [2](#). They commented that the RECs may alternatively have value because a market exists for them, which could suggest that the RECs are an output. The Group member thought it would also be important to consider government policy risks that could impact whether such a market would continue to exist in the future.

One Group member considered whether the RECs exist because they are a by-product of generating the electricity, or because the government created a program tied to sustainability-related objectives. They commented that by-products are generally secondary products generated through the production or processing of a primary product. For example, they noted that the production of butter results in the creation of skim milk as a by-product. They think it is debatable whether the RECs are truly a by-product of the electricity as the electricity is generated irrespective of the RECs.

The Group discussed some clarifications regarding [Fact Patterns 1](#) and [2](#), and how facts and circumstances could differ. Importantly, it was clarified that in [Fact Patterns 1](#) and [2](#), there is no question as to whether the government will verify or certify the RECs; rather, it is only a matter of time. In addition, revenue from the sale of the RECs is not recognized until after the RECs are verified and certified. Group members noted that revenue recognition may occur earlier depending on the particular facts and circumstances, such as the specifics of the contract and the certification process. For example, when certification is considered administrative or perfunctory in nature, control of the RECs might transfer to the customer before the RECs are certified. Group members commented that this is an evolving space and government involvement varies by jurisdiction.

It was also clarified that RECs often transfer to the customer at the same time the electricity is sold into the grid. However, in this example and others there is a timing difference between when the

electricity is sold and the RECs transfer. This timing difference creates accounting implications, which were the focus of the Group's discussions.

Some Group members further noted that renewable energy generators that produce RECs may not have compliance obligations under emissions regulations. However, other entities that have compliance obligations may purchase RECs to help meet those obligations. It was also noted that a conglomerate could own a renewable energy facility in one part of the business and have compliance obligations in other parts of the business.

Issue 2: If the RECs are accounted for as an output ([View 1A](#) or [View 1C](#)), how should the RECs be measured initially?

Analysis

If the RECs are accounted for as an output and classified as inventory, it appears that [IAS 2 Inventories](#) would apply and a portion of the costs to generate the output should be allocated to the RECs.⁴ Note that any costs allocated to the RECs before they are verified and certified may be classified as "work in progress" inventory.

If the Company classifies the RECs as intangible assets under [Fact Pattern 2](#), the views under this issue may also be relevant by analogy in determining the directly attributable costs ([paragraphs 65-67](#) of IAS 38 *Intangible Assets*) of the RECs. This is because only a portion of the directly attributable costs related to the production of electricity should be attributed to the RECs.

The following additional facts are considered in analyzing each view:

The only outputs of the solar energy facility are electricity and RECs.

The total cost of generating the electricity and RECs is \$125.

The selling price of the electricity is \$150.

The selling price of RECs generated is \$50.

View 2A – Based on the "relative sales value" of each product ([paragraph 14](#) of IAS 2)

Proponents of this view think that costs would be allocated based on the guidance in [paragraph 14](#) of IAS 2 for by-products. This would be based on the "relative sales value" for each product, which can be interpreted as the stand-alone selling price or fair value of each product.

Proponents of this view think that the total cost of \$125 would be allocated as follows:

RECs: $(\$125 \times \$50/\$200) = \31

Electricity: $(\$125 \times \$150/\$200) = \94

⁴ The question of cost allocation may be less relevant if the RECs are transferred to the customer at the same time as the electricity is generated.

View 2B – Based on the net realizable value (NRV), if the RECs are the by-product and immaterial (paragraph 14 of IAS 2)

This view assumes that:

RECs generated are incidental to providing the main service — the electricity; and
the NRV of the RECs is the same as their selling price.

Proponents of this view think that the total cost of \$125 would be allocated as follows:

RECs: \$50 (NRV)

Electricity: \$125 – \$50 = \$75 (total cost less NRV of RECs)

View 2C – Measured at zero (or a nominal amount)

Proponents of this view think that the RECs would be measured at a cost of zero or a nominal amount. There appears to be little support for this view under [IAS 2](#) unless the RECs are truly immaterial in value.

However, proponents of this view think that it may be required in [Fact Pattern 2](#) if the Company classifies the RECs as intangible assets. This is because [paragraph 65](#) of IAS 38 does not permit costs to be allocated to an internally generated intangible asset before it first meets the recognition criteria. The RECs may not meet the intangible asset recognition criteria until the verified and certified RECs are received, which is up to one year after the electricity is generated.

The Group’s Discussion

The Group agreed with the analysis of factors an entity might consider when initially measuring the RECs.

Under [Fact Pattern 1](#), many Group members thought it would be difficult to support [View 2C](#), which assumes that the value of the RECs is immaterial, especially given the growing market for RECs purchased to meet climate-related targets. Nevertheless, they acknowledged that there might be other fact patterns in which the value of the RECs could be immaterial.

Many Group members commented that the decision between [Views 2A](#) and [2B](#) would depend on the facts and circumstances and what is considered qualitatively and quantitatively material. One Group member noted that this could also depend on corporate strategy, which would determine whether the RECs are truly by-products or perhaps “co-products” of the electricity. They noted that by-products are often unavoidably created as a result of producing a primary product, whereas co-products may be purposely created as part of a strategic initiative. They thought a product could also be a co-product if it happens to be of such value that it provides a material revenue stream. The Group member added that these scenarios are not mutually exclusive, and they re-emphasized the importance of understanding the facts and circumstances.

Several Group members agreed with [View 2A](#), often commenting that they thought the value of the RECs would not be immaterial in [Fact Pattern 1](#). A few Group members thought that allocating

costs based on relative sales values would best reflect the economics of the transaction, as the RECs and electricity are created together through the same process. One Group member added that, in some cases, the facility or entity may not be as viable or profitable without the RECs revenue stream. A few Group members suggested that under [View 2C](#), the Company's gross margin may be inconsistent from period to period and might not reflect the fact that the electricity and RECs are both significant revenue streams (potentially co-products). They explained that this is because all the costs associated with generating RECs would be recognized in gross margin in the first year when the electricity is sold, while the revenue from the RECs would be recognized the following year (after the RECs are verified/certified) without any related costs.

A Group member raised a related issue about comparability of margins across entities. They questioned how an entity that produces RECs could be compared to an entity that does not produce RECs. Under [Views 2A](#) and [2B](#), an entity that produces RECs would report lower costs to produce electricity compared to an entity that does not produce RECs. This is because the first entity's production costs would be split between electricity and RECs, whereas the second entity's production costs would all be allocated to electricity. Another Group member commented that this is still an emerging area, so it may be too soon to see comparable information across jurisdictions.

A few Group members highlighted that there may be significant judgment involved in deciding between [Views 2A](#) and [2B](#) as well as in applying the selected View, which could lead to very different results. For example, one Group member noted that determining the relative sales value under View 2A could be particularly challenging in a voluntary market scenario where RECs are not actively traded. Another Group member added that some judgment may also be involved in determining what sales value to use for the electricity (e.g., spot price or VPPA price, and potential differences in price if the power purchase agreement were physical rather than virtual). One Group member noted that there could also be judgment in determining if/when the RECs would ultimately be certified, and how that would impact the presentation of margins under View 2A if the RECs are not certified when expected. Given the level of judgment involved, they stressed the importance of providing clear disclosures to enable financial statement users to compare entities and to understand the measurement approach and any risks around not obtaining certification in a timely manner.

Some Group members who agreed with [View 2A](#) noted that they would consider [View 2B](#) if the value of the RECs were immaterial. Two Group members thought that the RECs could be considered by-products under either View 2A or 2B, but that View 2B would apply when the value of the RECs is immaterial. A Group member commented that View 2A focuses on the first part of [paragraph 14](#) of IAS 2, whereas View 2B focuses on the second part of that paragraph, which states that most by-products are immaterial by their nature.

One Group member questioned the assumption in [View 2B](#) that the NRV and selling price of the RECs would be equal. It was clarified that this was a simplifying assumption for the purposes of the discussion, but that an entity would consider any costs necessary to sell the RECs in line with the [IFRS Interpretations Committee's June 2021 agenda decision, Costs Necessary to Sell Inventories—IAS 2](#).

Under [Fact Pattern 2](#), a few Group members questioned [View 2C](#) if the Company were to classify the RECs as intangible assets. They thought the Company may be able to start capitalizing costs related to the RECs before the RECs are verified and certified because verification/certification is reasonably assured in this fact pattern. This is similar to the Group's discussions on the timing of revenue recognition as summarized under [Issue 1](#).

Issue 3: How should RECs that are classified as inventory be measured subsequently?

View 3A – At the lower of cost and the NRV ([paragraph 28](#) of IAS 2)

[IAS 2](#) generally requires inventory to be measured at the lower of cost (determined in [Issue 2](#)) and the NRV. [Paragraph 5](#) of IAS 2 provides an exception to this for commodity broker-traders. Proponents of this view think that as a producer of RECs, the Company cannot meet the definition of a commodity broker-trader. Thus, they think this exception would not apply.

View 3B – At fair value less costs to sell since the RECs may be considered to be a commodity

Proponents of this view think that the RECs can be viewed as a commodity, and thus that the Company can apply the measurement exception in [paragraph 5](#) of IAS 2.

The Group's Discussion

The Group agreed with the analysis and generally supported [View 3A](#). A few Group members commented that a generator business model is unlikely to qualify as a commodity broker-trader business model. One Group member clarified that this does not mean an entity cannot engage in both types of activities.

Two Group members noted that the terms "commodity" and "broker-trader" are not defined in [IAS 2](#). However, [paragraph 5](#) of IAS 2 states, "Broker-traders are those who buy or sell commodities for others or on their own account." Group members discussed that regardless of whether RECs could be considered commodities, the Company in this fact pattern does not buy RECs but rather produces them. Hence, they thought the Company would not qualify as a broker-trader.

Overall, the Group's discussion raised awareness of how a renewable energy generator accounts for the development of RECs. This is a rapidly emerging area and views are still developing. The Group may discuss similar issues in the future as other fact patterns emerge. The Group recommended that the AcSB consider the need for educational material in this area as part of its research activities.