Description and Background on Carbon Offsets and Renewable Energy Certificates

A carbon credit (often called a carbon offset) within the Alberta context is a provincially regulated financial instrument that provides verified proof that a tonne of carbon dioxide or equivalent has been removed from the atmosphere from an emissions reduction project. Carbon offsets are quantified, verified, registered, purchased and retired through a rigorous process to prevent multiple sales for the same credits. All carbon offset projects must also be able to prove the concept of additionality (e.g., that an emissions reduction project is above and beyond business as usual for the proponent). As carbon offsets have mainly served as a regulatory compliance tool for large greenhouse gas emitters to meet mandated greenhouse gas targets, their availability has been very limited.

Different from a carbon credit, a renewable energy certificate is proof that one megawatt hour (MWh) of renewable energy has been supplied to the market. Purchasing renewable energy certificates helps develop the renewable energy supply by subsidizing the higher cost of renewable energy. In doing so, it is understood that the introduction of new and greater amounts of renewable energy serves to avoid and/or replace high carbon sources of energy. They are typically a lower cost and managed with less rigour than a carbon offset. Out of all available options to mitigate greenhouse gas emissions from electricity usage, renewable energy certificates are often the easiest and lowest cost method. Also, renewable energy certificates purchase do not impact the City's existing utility contract as the purchase does not effect on site energy usage. The renewable energy certificates systems in Canada are voluntary and therefore potentially less rigorous. However, such risks can be mitigated with chain of custody auditing and purchase of renewable energy certificates via reputable green energy certification programs.

The following table summarizes the City's renewable energy certificate purchases from 2013 to 2015.

Historical Summary of Renewable Energy Certificate Purchases

REC Details	2013	2014	2015
Source:	Three purchases from: an Alberta biomass facility, an Alberta Hydro facility and an Alberta wind facility	One purchase from an Alberta biomass facility	No purchases.* Funding carried over to 2016
Reduction of carbon dioxide equivalent tonnes	31,152	20,500	Not applicable
Expenditure	$300,250	$212,500	Not applicable
Cost/tonne	$9.64	$10.37	Not applicable

*CES had applied for a Climate Change Emissions Management Corporation grant for Collaborative Procurement of Solar with surrounding municipalities, for which the funding could have been put towards. CES was unsuccessful in getting the grant.

Uncertainty exists regarding the availability and price of Alberta carbon offsets and renewable energy certificates due to uncertain implications of the provincial Climate Leadership Plan (e.g., carbon levy, renewable energy procurement program, etc.) It is foreseeable that the ceiling market price of these two instruments could be as high as $30 per carbon dioxide equivalent tonne by 2018 - the same as the carbon levy. The rationale is that if the price was any higher, larger regulated industries that must lower their greenhouse gas emissions would simply pay the carbon levy rather than buy carbon offsets.