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# Should one trade tCERs or lCERs?

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This discussion paper identifies issues that land use, land use-change and forestry (LULUCF) project developers and their credit purchasers under the Clean Development Mechanism (CDM) may want to consider when deciding whether to trade temporary certified emission reductions (tCERs) or long term certified emission reductions (lCERs).

The choice of type of CERs depends on the stream of credits generated by the project, the market for each type of CER and the project's financial needs. To begin let's review the differences between tCERs and lCERs.

- **tCERs** – temporary certified emission reductions are the total amount of carbon sequestered (net baseline) since the project began. TCERs are issued periodically and expire at the end of the commitment period subsequent to the period in which they were issued. They can be used in the commitment period for which they were issued. TCERs must be replaced in the commitment period that follows the one in which they were used they must be replaced.
- **lCERs** – long-term certified emission reductions are the amount of carbon sequestered (net baseline) since the last issuance of an lCER. They can be used in the commitment period for which they were issued and expire at the end of the crediting period (20, 30, 40 or 60 years) for which they were issued. They cannot be carried over to subsequent periods. If carbon is lost, lCERs must be replaced. When expired regularly, they need to be replaced by credit types other than lCERs or tCERs.

## *Credit Stream Considerations*

### Case 1 – monotonically increasing carbon stocks

If the net sequestration is monotonically increasing then there are always credits being generated and there is no operational advantage in selling tCERs or lCERs. The difference between tCERs and lCERs is displayed in Figure 1. The amounts issued at each point and the periods of time for which they are usable differ as per the definitions of each. Of course, the value of each will be different too.

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**Figure 1: Increasing net sequestration**

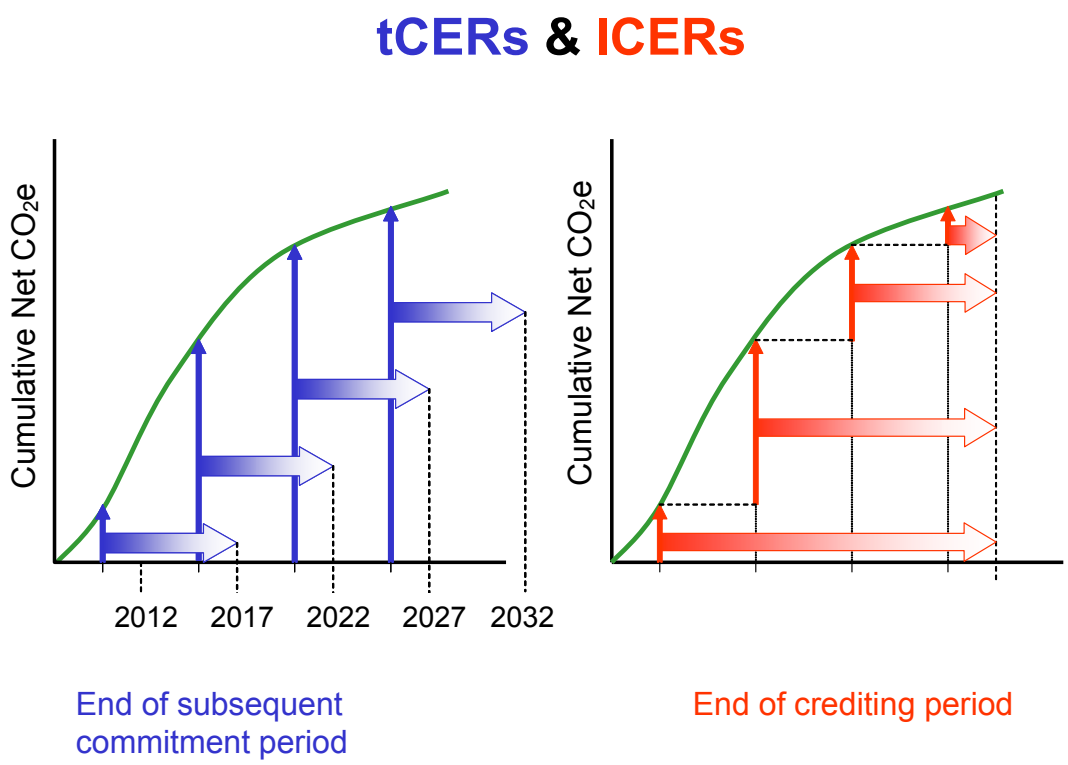



Image courtesy of L. Pedroni & A. Vallejo, CATIE

## Case 2 – fluctuating carbon stocks

On the other hand if there is a period of loss of biomass, then there is the potential for reversal of ICERs. The project proponent may decide to sell all ICERs issued, but depending on the contract with the buyer, the seller may be required to replace reversed ICERs (Figure 2).

**Figure 2: Fluctuating net sequestration with reversal**

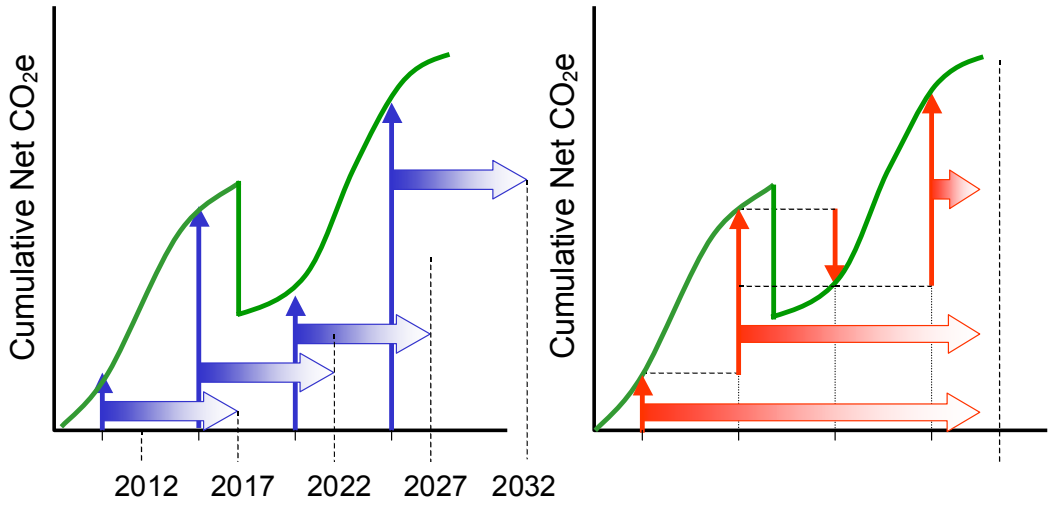
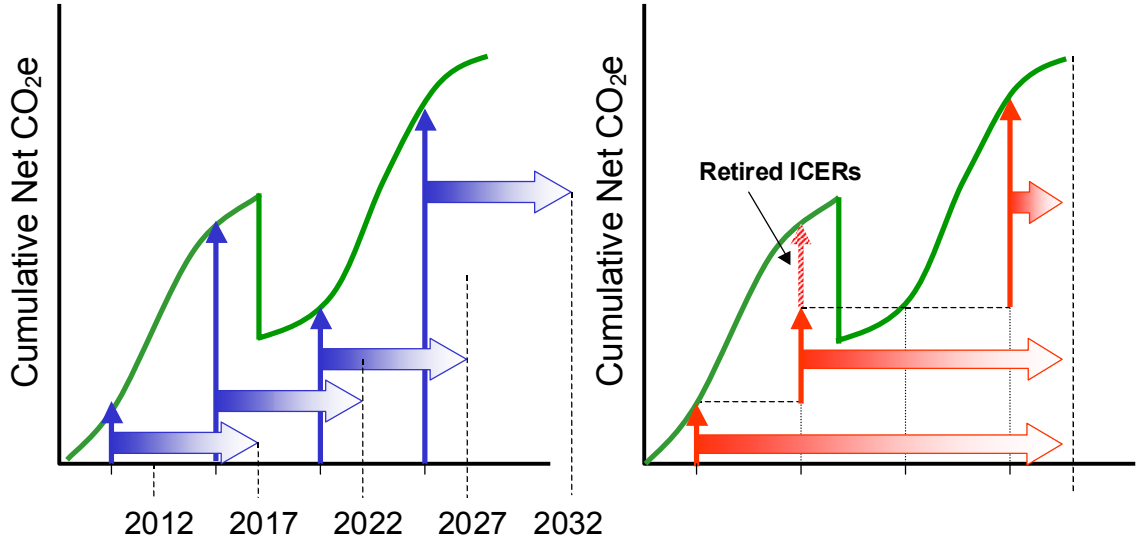



Image courtesy of L. Pedroni & A. Vallejo, CATIE

Alternatively, the project proponent may choose to retire (or not sell) the lCERs that would be reversed in the next period (Figure 3). This would mean that they would not need to be replaced.

On the other hand, all tCERs can be sold regardless of the potential loss of biomass.

**Figure 3: Fluctuating net sequestration with retirement**




## *Market Price and Transaction Costs*

Another concern is the market price of tCERs and lCERs. Various authors have suggested a range of prices for tCERs and lCERs.

Point Carbon notes that the markets for tCERs and lCERs may be very different. Depending on demand the price of tCERs may peak at the end of a commitment period to meet short-term contracts and emission requirements.

Remembering that both types of CERs must be replaced by permanent emission reductions sometime in the future[1], the price of tCERs or lCERs plus the net present value of the replacement cost must be less than the current price of CERs.

$$T + C\frac{(1+i)^N}{(1+d)^N} < C$$

Where $T$ = price of temporary credits whether tCERs or lCERs, $C$ = the price of permanent credits, $N$ = the number of years of credits' validity, $i$ = the annual rate of price increase of permanent credits, and $d$ = the discount rate.

[1] Theoretically, tCERs can indefinitely be replaced by other tCERs, which is however irrelevant to our analysis.

As a first order approximation:

$$T < CN(d - i)$$

If the difference between the discount rate and the inflation rate is 2% and the tCERs are valid for five years, then their price will be approximately 10% of the current market value for CERs. On the other hand lCERs that last 30 years should fetch 60% of the current market price for CERs. Of course, another tCER will be issued in the next 5-year period, so that the total value of the stream of tCERs is the same as for an lCER, not considering transaction costs. As well, one must recognize that lCERs generated late in the project will be valid for a shorter period of time.

Finally, there may be higher transaction costs on tCERs than lCERS. If one tCERs is sold to more than one buyer, over its lifetime, then there will be legal fees associated with each transaction. Of course, this can be minimized selling the entire project stream of tCERs to a single buyer. However, in terms of transaction costs the lCERs might still be the superior option as ownership is defined only once

As well, there may be a cascading of fees such as the CDM tax and CER registration costs on the entire amount of tCERs sold each time. This does not occur with lCERs since only the incremental portion is sold on each issuance.

## *Discussion*

### Circumstances in which lCERs may be preferable

One must decide whether the project needs the full CER value at the beginning of the project or not. If this is the case, then probably lCERs are the best choice since they will provide more income earlier in the project.

In the case of tCERs there is the risk of the project host defaulting, and the project thus creating no more tCERs, whereas the lCERs will already have been created.

LCERs may also be better compatible with national or regional emissions trading schemes such as the European Emissions Trading scheme. For example, an lCER is seen to be more “compatible” with an EUA (EU Allowance) or any other permanent credit, than a tCER. (ref Schlamadinger and Dutschke, BEA Newsletter).

### Circumstances in which tCERs may be preferable

An interesting feature of tCERs (but not lCERs) is that they provide a lot of flexibility if the investor wants to replace them with permanent credits. Example: assume a tCER is created and used in the first commitment period. Assume further that carbon prices reach very low levels at some point in time during the second commitment period, such as during the “true up” in early 2013. The investor could issue a limit order and buy permanent credits at very low cost and use them to replace the tCERs right away, as they expire in that commitment period. In this case, the project owner could sell the tCERs certified in the second commitment period to another buyer, while the remaining validity period of lCERs would be lost.

Deferring commitments over a short period of only five years however, competes with financial derivates like carbon futures.

## *Conclusion*

The choice of tCERs or lCERs depends on the stream of credits generated, the value of the credits and financial need. One real advantage of tCERs over lCERs is that they can be re-certified and sold to other buyers for compliance, if on expiry the buyer decides to replace them with permanent credits. On the other hand, tCERs will most likely have higher transaction costs over time, and they will compete with short-term financial carbon derivates. For replacement of carbon lost, they offer more flexibility in the sense that replacement may come from another project. This can be done by lCERs as well, in which case they simply would not be revalidated.

## *References and Further Reading*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