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FLEXIBILITY MECHANISMS: BANKING, BORROWING AND CIRCUIT BREAKER/ACCELERATOR

The Carbon Allocation Task Force has discussed several mechanisms to provide load-serving entities (LSE) flexibility in meeting their carbon caps. These mechanisms include auctions of allowances, trading of allowances, adjusting or updating baselines, and setting multiple-year compliance periods. In the future, the Task Force will consider offsets as another mechanism. This paper discusses three additional flexibility mechanisms: banking, borrowing, and a “circuit breaker/accelerator.”

Banking Allowances

Banking would permit an LSE to keep allowances that were in excess of what it needed during one compliance period for use in a future compliance period. The compliance period could be annual or cover multiple years. For example, staff used a 3-year compliance period in its straw proposal.

In the Northwest, which is dependent to a large degree on hydropower, the flexibility of banking could smooth out variations in the availability of hydropower. It could also smooth out variations in load growth. Banking from one period could provide a hedge against future high growth that was unanticipated. The use of multiple year compliance periods provides similar flexibility, and these are not exclusive mechanisms. They could reinforce each other.

With a declining cap, the increasing scarcity of allowances could make banked allowances more valuable. Banking could hedge higher future compliance costs for LSEs that reduce their emissions early. In that way, an LSE that was ahead of the reduction curve relative to other LSEs would benefit from its foresight.

Banking raises the issue of whether there should be a life-span for an allowance. If there were no life-span for an allowance and banking were allowed, then an allowance could come back into the system at anytime in the future. One argument for setting some life-span for an allowance is the possibility that standards may change over time. What may have been acceptable as an allowance in the past may not meet future criteria for accounting. The standard for allocations may change as we gain experience over time.

Six years might be a reasonable life-span. If there were a multiple-year compliance period, e.g. three years, then the effect of allowing allowances to be carried over for six years would be to clear out the allowances from a prior period, while not restricting the amount of newer allowances that could feasibly be carried over into the next period. For example, an LSE could carry over its banked allowances from Period 1 and use those to cover its emissions for Period 2. If there were still extra allowances once it covered its Period 2 emissions, the LSE could bank the extra Period 2 allowances for use in Period 3. Therefore, reasonable limits on the life-span of allowances would have almost no impact on an LSE’s ability to bank allowances. Yet, a 6-year shelf-life would clear out old allowances from the system, allowing the system to be refined over time.

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Another alternative would be to use a “first in-first out” mechanism. Under this approach, an LSE could bank an unlimited number of allowances. Then, when it needed to surrender its banked allowances, it would have to surrender the oldest banked allowances first. In most instances this would have the same effect as having permitting banked allowances to be carried over only to the next compliance period. In both cases, an LSE will most likely have to surrender allowances, and because of the cascading effect described above, any banked allowances would in effect be from the most recent compliance period.

While any banking encourages early action, the strength of such encouragement could differ. The effect of the two approaches would differ if an LSE reduced its emissions to the point that it did not have any emissions during a compliance period. That could conceivably occur if a COU bought into a renewable resource that met all of its load and it ceased to be a BPA requirements customer. It would still receive allowances based on its historical emissions rate. With first in-first out, it could bank those allowances against later having to go back onto BPA or obtaining energy from fossil-fueled source.

Another incidence in which the effect would differ between a limited life-span and first in-first out would be if a party other than an LSE bought allowances and held them for trading back into the system sometime in the future. In that case, first in-first out allowances of any age could re-enter the system.

A second alternative to setting a life-span for allowances could be to limit the total amount of allowances that an LSE could bank. Such a limit could be expressed as a percentage of the allowances that an LSE is distributed during a compliance period. A percentage limit could also provide an incentive to release allowances into the market after a certain time.

Banking could also work with trading. An LSE could bank allowances from one compliance period, then trade them in a future compliance period. If there were a limit on how long allowances could be banked, such a limit could provide some liquidity to the market because it might encourage LSEs to sell old allowances rather than lose them.

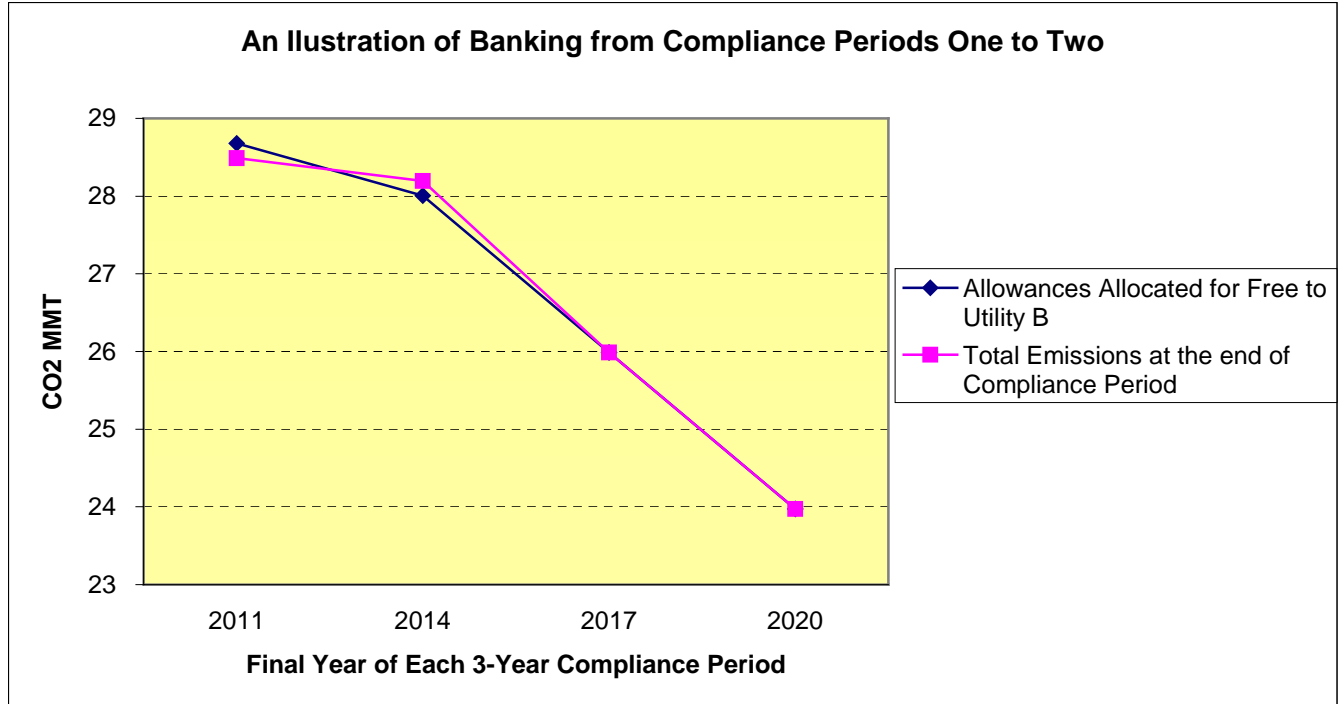
Figure 1 illustrates a very simple hypothetical example of how banking could work. The illustration assumes that allowances are issued entirely based on historical emissions and that there is no auction. The data point for each compliance period represents three years of emissions or allowances. The figure assumes the cap starts in 2009 and that the compliance periods end in 2011, 2014, 2017, and 2020.

In this case, hypothetical “Utility B” has emissions at the end of the first compliance period that are about 200,000 tons lower than the free allowances it received. It therefore banks 200,000 allowances for use in Compliance Period 2. At the end of Period 2, Utility B has emitted 200,000 tons in excess of the free allowances it received for that period. It then surrenders all of its free allowances for that period and the

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200,000 allowances it banked from Period 1. It therefore meets its cap, because it had enough allowances to cover its emissions.

Figure 1



In this simple example, Utility B reduces its emissions in Periods 3 and 4 so that it can cover them with its allocation of free allowances. Because it used banked allowances in Period 2, the slope of the decline between Periods 2 and 3 is steeper than it would have been if the utility had kept its emissions in Period 2 equal to the amount of allowances issued during that period.

Butraw *et al.*¹ have noted that banking serves primarily economic and political roles. The economic role is as a hedge against volatile compliance costs, either from variations in supply or growth. The political role complements the economic role because banked allowances represent a financial asset for an LSE. As they note, the value of that asset is wrapped up in the solvency and longevity of the program. Therefore, banking can contribute to the long-term political stability of the program because continuation of the program is the only way that LSEs will realize the value of the banked allowances.

Banking could also interact with the manner in which allocations are distributed. The example above assumes all allocations are based on emissions during some historical baseline. If allocations are made based on load as well as emissions, some LSEs will receive more allocations than they would likely need at least in the near term and others may receive fewer allowances than they would have received based on their emissions-only baseline.

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If the allocation formula included load as well as emissions and banking were used, LSEs with “extra” allowances might choose to bank them rather than trade them on the market, especially if they took a conservative approach to future needs. On the other hand, the other LSEs would have received proportionally fewer allowances than their emissions. In that case, the LSEs in aggregate would have to reduce their emissions below the cap because some allowances would be kept off the market. This might artificially drive the price of allowance up to the \$40 per tonne alternative compliance payment. In such a case, the flexibility offered by banking could result in a tighter cap than the intended cap. Without banking, LSEs with extra allowances would either sell them at the end of each compliance period or lose them.

Borrowing Allowances

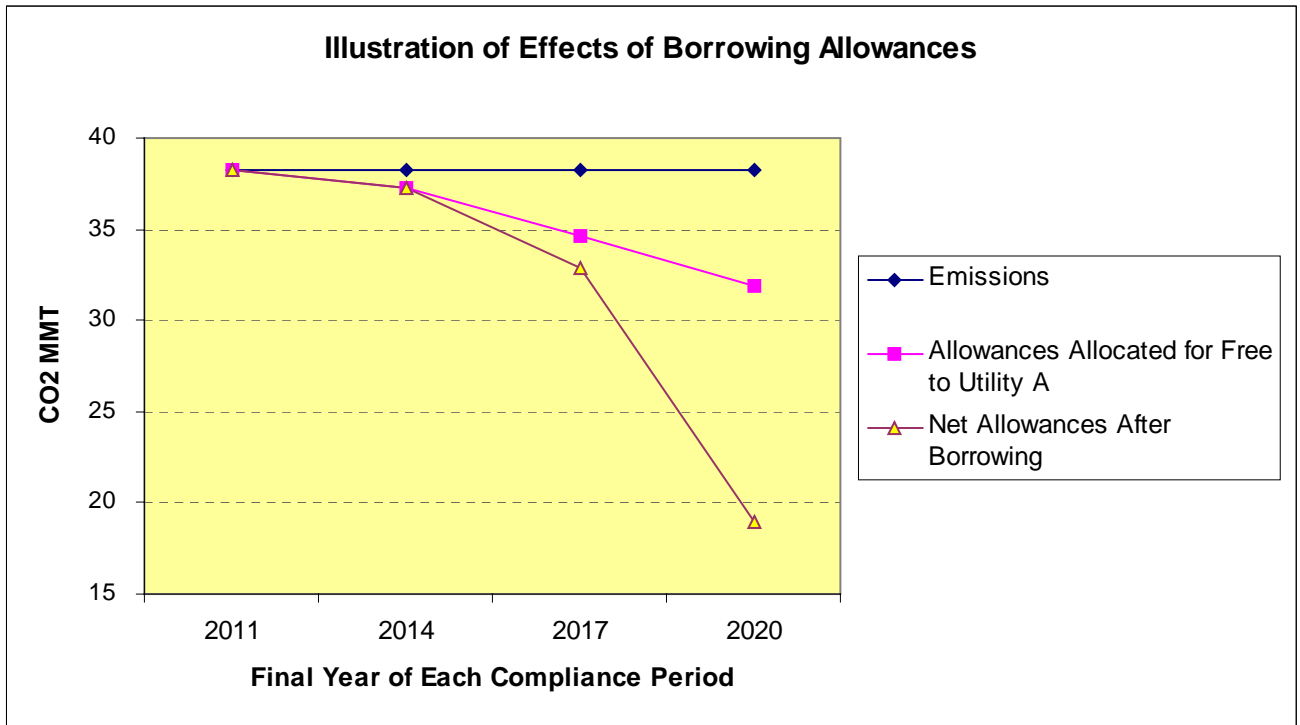
Borrowing would permit an LSE to use allowances that it expects to receive during a future compliance period to meet the cap of a current compliance period. While this could provide flexibility, it also could lead to serious problems for an LSE and the system.

If borrowing were allowed without interest, it would simply represent a permanent increase in available allowances. Even if there were a limit on borrowed allowances, the permanent use of these borrowed allowances up to that limit would allow emissions to exceed the caps. If there were an “interest” charged, then the LSE would be decreasing its future supply of allowances while the number of future also allowances decreased under a cap. The LSE would be digging a hole twice as fast as it could repair it. As Butraw² also points out, borrowing delays diffusion of technologies that could help meet the cap because it delays the LSEs having to find new ways to take actions to reduce their emissions.

Figure 2 illustrated the problems that can arise from borrowing. As with Figure 1, the illustration is based on the simplifying assumption that the program starts in 2009 and all allocations are based on historical emissions. There is no auction. The data point for each compliance period represents three years of emissions or allowances. It assumes that the cap remains for 2020.

Figure 2 assumes that “Utility A” holds its emissions constant, but borrows from future allocations to meet its cap. For Compliance Period 1, it assumes that the emissions and the allocations are equal. For Compliance Period 2, during which the allocations start to decline, the utility borrows 900,000 allowances from the allocation for Period 3. Then, to provide enough allowances to cover its emissions for Period 3, it borrows 5,340,000 allowances from Period 4. By the time it must cover its emissions for Period 4, it is more than 19,000,000 allowances short. If it finally bought allowances at the \$40 per tonne alternative compliance payment rate in 2020, it would pay \$770 million.

Figure 2



LSEs that created difficult compliance problems for themselves would create political pressures for breaking the cap through relief of debt borrowed against the cap. Borrowing would create a vested interest in the demise of the program while undermining its effectiveness.

Finally, because borrowing could undermine the integrity of the overall program, it could affect the ability of LSEs to trade allowances outside the system, if such trading were allowed. Borrowing would in effect burst the cap, so other regulatory entities might not consider Oregon allowances fungible with theirs and prohibit their regulated entities from buying any Oregon allowances. While an LSE that held borrowed allowances might be prohibited from selling allowances, the taint of borrowed allowances could affect the credibility of the whole system.

“Circuit Breaker/Accelerator”

In the straw proposal, staff proposed that if an LSE failed to surrender sufficient allowances (and offsets) to meet its requirements, there would be an “alternative compliance payment” to the state of \$40 per tonne of CO₂ in excess. These funds would be used to reduce Oregon emissions in the same ways as the funds from the auctioned allowances. Under the staff’s straw proposal, if the excess aggregate emissions of all LSEs exceeded (a) the total state CO₂ emissions issued during the compliance period plus (b) all banked or (borrowed) allowances carried into the period, by more than 10 percent in any one compliance period, the state could suspend the decline in allocations for the

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next 3-year compliance period. The total amount of allowances issued could be the same for the next three years as it was for the last three years.

The straw proposal accounted for banked allowances when determining the threshold that would trigger the circuit breaker. The concept behind the circuit breaker is that there should be a relief from the decline in the cap when there are not sufficient allowances available for less than \$40 per tonne. If trading prices were approaching \$40 tonne and an LSE were holding banked allowances, it might hold them off the market to trigger the circuit breaker. Counting banked allowances in the circuit breaker prevents such potential gaming.

If borrowing were allowed, borrowed allowances should also be netted out of total emissions for the determination of the circuit breaker. Otherwise, an LSE could manipulate the system by borrowing and then driving up the price of traded allowances when it “paid-off” its borrowed allowances.

This point also brings up the effect of borrowing on other participants, especially if there were an auction involved. By delaying emission reductions, an LSE could drive up the price of allowances for all participants in the auction. It could also exhaust the pool of auctioned allowances at much higher prices than others would have had to pay if all LSEs reduced their emissions in a timely manner to stay under the cap.

As a simple example, one could look at how a circuit breaker might work during Compliance Period 3, which ends in 2017. By that time, the cap would have declined from an annual average of 22.9 million tonnes to 20.7 million tonnes of CO₂. If all LSEs in aggregate exceeded the cap for the 3-year compliance period by 10 percent and triggered the circuit breaker, that would represent 6.2 million tonnes for which they would need to make alternative compliance payments of \$40 per tonne. The cost would be almost \$249 million.

The trigger to stop the decline in the cap and to hold firm the total number of allowances issued is called a “circuit breaker.” In the alternative, if the price of allowances fell below a certain threshold, that could be a signal to accelerate the decline in the cap. Staff does not have a specific proposal for the trigger or the amount of acceleration, but it offers the concept to the Task Force for its consideration.

ENDNOTES

¹ Butraw, Dallas, Alexander Farrell, Lawrence Goulder, and Carla Peterman, “Chapter 5: Lessons for a cap-and-trade program” in *Managing Greenhouse Gas Emissions in California*, The California Climate Change Center at UC Berkeley, Project Directors W. Michael Hanemann and Alexander Farrell, January 2006.

² *Op. cit.*