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September 12, 2013

California Air Resources Board
1001 I Street
Sacramento, CA 95812

[Submitted electronically via capandtrade13 http://www.arb.ca.gov/lispub/comm/bclist.php]

Subject: Comments for Initial Statement of Reason and Appendix C: Product-based Benchmark Development – Specific To The Tissue Product Benchmark

Members of the Board:

Kimberly-Clark Corporation is submitting the enclosed comments on the proposed changes to the benchmark for tissue manufacturing, which impacts our facility located in Fullerton.

If you have any further questions, please contact me at (770) 587-7118 or dell.majure@kcc.com.

Sincerely,

Dell Majure
Air Program Leader

Comments On Proposed Benchmark Changes For Tissue

Table of Contents

Summary

There are two tissue manufacturing facilities in California. Each facility utilizes a different technology for manufacturing tissue. One facility utilizes light-dried crepe/conventional technology (LDC/CTEC) and the other utilizes creped through-air-dried (CTAD). The CTAD technology is much more greenhouse gas emission intensive per air-dried ton of tissue product. Therefore, the number of free allowances yielded from the originally proposed benchmark is far lower for the facility utilizing the CTAD technology, thereby requiring this facility to purchase more allowances to cover their obligation. This facility commented on the originally proposed benchmark that their product is unique and that CARB should assign a unique product benchmark for that facility.

CARB's new proposal is to normalize the tissue benchmark for the functionality of the tissue product in order to account for the differences in product quality that result from the two technologies used to manufacture tissue. CARB believes the functionality of the product from the two technologies is the same, which is to absorb water. CARB is proposing to adjust the originally proposed benchmark by adjusting for water absorbency. The result of adjusting for water absorbency is that the number of free allowances per air-dried ton of tissue product will be higher for a more absorbent tissue.

The normalization of the benchmark to account for differences in product quality by selecting one technical parameter (i.e. water absorbency) to account for all quality parameters is fundamentally flawed because it is an oversimplification. The comment from the facility that utilizes CTAD technology on the originally proposed benchmark lists the following quality parameters: appearance, absorbency, strength, resilience and texture. In fact, there are many more quality parameters for tissue. An example of why the selection of a single technical parameter such as water absorbency is flawed can be seen by examining a tissue designed to remove nasal discharge from a person with a common cold. The tissue needs to be soft to minimize nasal irritation. Tissue for this purpose is often coated with non-water absorbing materials that significantly improve softness but still absorbs enough of the nasal discharge to function satisfactorily. Another example is paper towel which often has higher water absorbency than toilet tissue. If the sole technical parameter for selecting which tissue product to use were water absorbency then why manufacture toilet tissue when the paper towel is often better. The wet strength

of paper towels (another quality parameter) makes it unsuitable for use as toilet paper. The wet strength quality parameter prevents the paper towel from readily breaking down thereby preventing treatment in a municipal waste water treatment plant. Toilet tissue does not contain wet strength which allows it to break down. Finally, even if one were to presume water absorbency as the most representative parameter, water absorbency is at best an insufficient parameter of the product functionality. For example, nasal discharge has substantially different properties from water. This is true as well for paper towels which may be wiping up peanut butter and jelly. One cannot single out water absorbency as the parameter that defines the usefulness of tissue.

The normalization of the benchmark for water absorbency is not consistent with CARB's benchmark development guidance that embraces the one product one benchmark principle. This principle does not allow for differentiation in technology utilized to manufacture a product. The rationale for the one product one benchmark is to ensure that the California greenhouse gas cap-and-trade program provides an incentive for manufacturers to reduce their greenhouse gas emissions intensity of which the most impactful way is to switch to the lowest greenhouse gas emission intensive manufacturing technology. The two technologies for manufacturing tissue, LDC/CTEC and CTAD directly control the amount of water absorbency of the tissue as explained in the water absorbency section below. Therefore, the proposal to normalize the product benchmark using water absorbency is allowing for differentiation of technology utilized in manufacturing a product under the guise of accounting for product quality. This is not consistent with the one product one benchmark principle.

Another inconsistency is that CARB's guidance is to use: (1) 90 % of the weighted average emissions from the industrial sector to determine emissions or (2) best-in-class. The product benchmark of 1.14 allowances per air-dried ton of tissue product is currently derived from 90 % of greenhouse gas emissions intensity from the facility that utilizes the LDC/CTEC technology that is best-in-class but does not include greenhouse emissions intensity data from CTAD technology. Therefore, the value of 1.14 allowances per air-dried ton of tissue product is neither 90 % of the weighted average emissions from the industrial sector nor best-in-class.

In conclusion, CARB should not normalize the product benchmark for water absorbency and should instead elect to utilize one of the following options:

(1) Set the product benchmark at 90 % of the weighted average emissions from the industrial sector that includes both LDC/CTEC and CTAD technology. This option would be consistent with the approach of having one product one benchmark for this industrial sector that does not differentiate by technology.
(2) Set the product benchmark at 1.27 allowances per air dried ton of tissue. 1.27 is determined by taking 1.14 divided by 90 % to back out the greenhouse gas emission intensity of the best performing facility upon which the product benchmark of 1.14 was derived. This option would be consistent with the best-in-class approach, which is the emissions intensity of the most greenhouse gas-efficient California facility.

Tissue Technology, Greenhouse Gas Emissions, and Water Absorbency Characteristics

There are two technologies for producing tissue that have significant differences in the required energy for manufacturing tissue and resulting greenhouse gas emission intensity, and the water absorbency characteristics for each technology.

Energy Required and Greenhouse Gas Emission Intensity

The amount of energy required for each technology centers on how the pulp fiber used to form the tissue product is dried. The most energy efficient technology is LDC/CTEC, where the pulp fiber is mechanically dried by wet pressing and thermally dried using indirect heat from steam injected into the Yankee Cylinder and the natural gas fired burners inside the hood as shown in Figure 1. The second technology is CTAD, which utilizes a suction section to remove water from the pulp fiber, followed by thermal drying with natural gas fired burners that heat air that passes through the tissue fiber, and indirect heat from steam injected into the Yankee Cylinder and the natural gas fired burners inside the hood as shown in Figure 2. By comparison, LDC/CTEC requires approximately two times less energy per air-dried ton of tissue product, hence its greenhouse gas emissions are two times lower per ton of tissue product. One primary contributing factor to this is that the LDC/CTEC technology evaporates approximately two times less water (1.46 lb water/lb fiber for LDC/CTEC and 3.35 lb water/ lb fiber for CTAD) because it removes a significant amount of water mechanically through wet pressing.

Figure 1 – LDC/CTEC Process Diagram

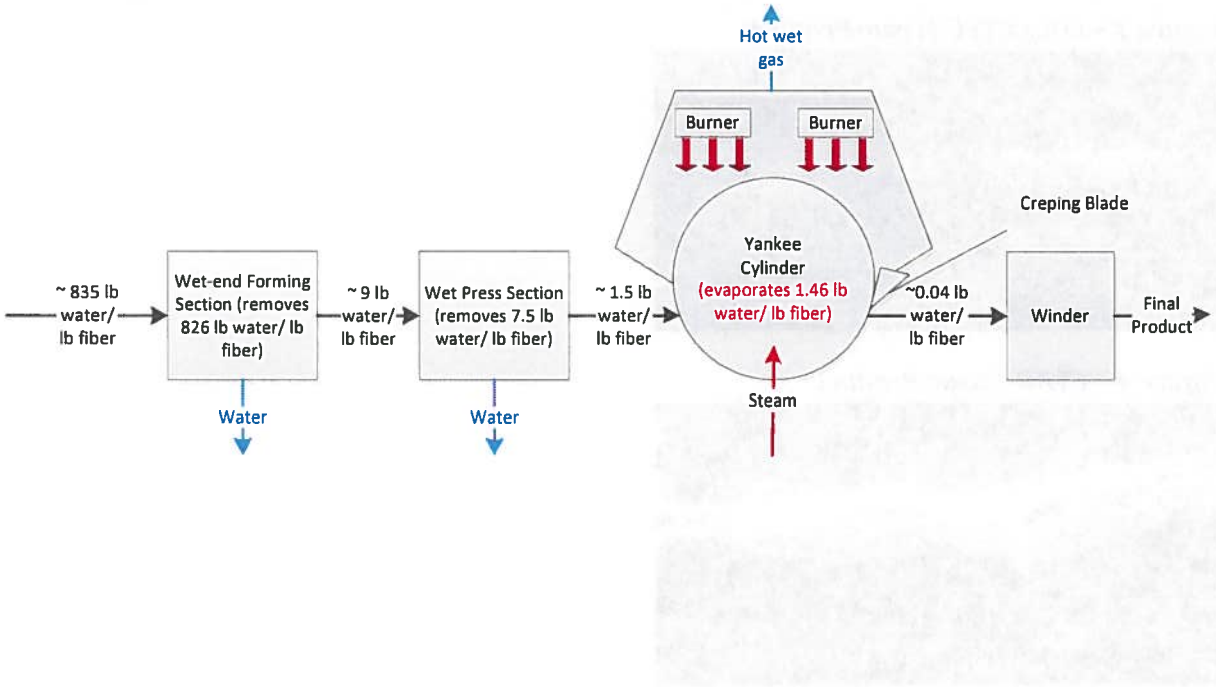
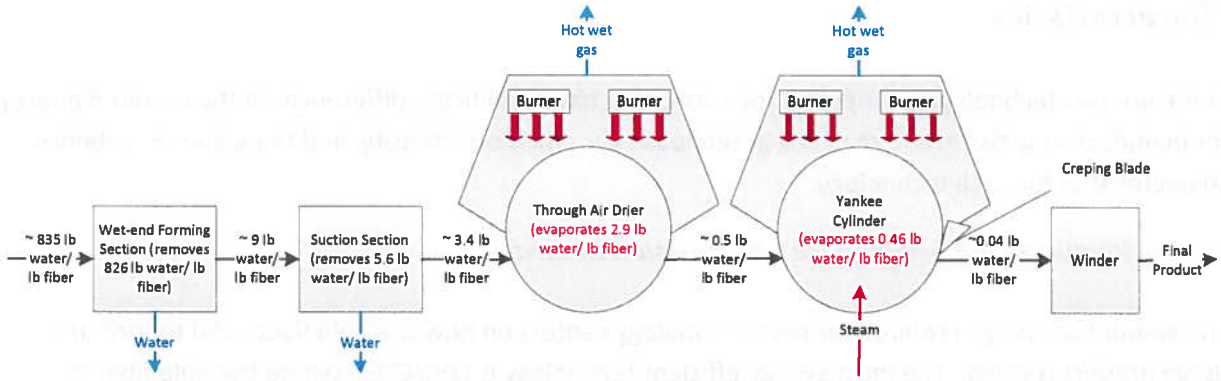


Figure 2 – CTAD Process Diagram



Water Absorbency

The two technologies produce a tissue product where the CTAD is lighter, fluffier and more absorbent as can be seen from Figures 3 and 4. This is because the CTAD tissue fibers are not pressed while in a wet state like the LDC/CTEC, which utilizes wet presses for dewatering. Hence it is less dense than tissue which has been pressed while wet (i.e. the wet pressing densifies the tissue). As such, there is more void volume between the fibers and hence more volume to absorb water. Testing for water absorbency on tissue produced from LDC/CTEC technology will yield a result of 6 – 10 gram water absorbed per gram of fiber. By contrast tissue produced from CTAD technology will yield a result of 12 – 17 gram water absorbed per gram of fiber. In general, LDC/CTEC technology is used for facial applications and CTAD technology is used for bath and towel applications.

Figure 3 – LDC/ CTEC Tissue Product

Figure 4 – CTAD Tissue Product

Setting Product Benchmark

CARB's guidance is to calculate the greenhouse gas emission intensity by taking greenhouse gas emissions for the industrial sector divided by the unit of output per equation J-1[1]. For the tissue sector, CARB selected the output unit to be air-dried ton of tissue[2] prior to the new proposal to adjust the output for water absorbency.

CARB collected greenhouse gas emission intensity production data for the tissue sector. CARB elected only to use the data from a facility utilizing the LDC/CTEC technology, which the best-in-class (i.e. the emissions intensity of the most GHG-efficient California facility)[3]. This data shows a greenhouse gas emission intensity of 1.27 allowances per air-dried ton of tissue. CARB then proposed the product benchmark to be 90 % of 1.27 allowances per air-dried ton of tissue, which is 1.14 allowances per air-dried ton of tissue.

The facility utilizing CTAD technology for manufacturing tissue commented on the proposed benchmark of 1.14 allowances per air-dried ton of tissue that their product is unique and that CARB should assign a unique product benchmark for that facility[4].

CARB's new proposal is to normalize the tissue benchmark for the functionality of the tissue product in order to account for the differences in product quality that result from the two technologies used to manufacture tissue. CARB believes the functionality of the product from the two technologies is the same, which is to absorb water[5]. CARB is proposing to adjust the originally proposed benchmark using a water absorbency factor as shown in the equation below.

> *Tissue produced adjusted by water absorption capacity = tissue produced (air dried short ton) x weighted grams of water absorbed by weighted gram of tissue product*

The result of adjusting for water absorbency is that the number of free allowances per air-dried ton of tissue product will be higher for a more absorbent tissue.

The normalization of the benchmark to account for differences in product quality by selecting one technical parameter (i.e. water absorbency) to account for all quality parameters is fundamentally flawed because it is an oversimplification. The comment from the facility that utilizes CTAD technology on the originally proposed benchmark lists the following quality parameters: appearance, absorbency, strength, resilience and texture. In fact, there are many more quality parameters for tissue. An example of why the selection of a single technical parameter such as water absorbency is flawed can be seen by examining a tissue designed to remove nasal discharge from a person with a common cold. The tissue

[1] Appendix J – Allowance Allocation – pg. J-36
[2] Appendix J – Allowance Allocation – pg. J-46
[3] Appendix B - Development of Product Benchmarks for Allowance Allocation, pg. 2
[4] http://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=capandtrade10 – pg. 3 - Comment # 82
[5] Appendix C: Product-based Benchmark Development – pg . 10 – September 4, 2013

needs to be soft to minimize nasal irritation. Tissue for this purpose is often coated with non-water absorbing materials that significantly improve softness but still absorbs enough of the nasal discharge to function satisfactorily. Another example is paper towel which often has higher water absorbency than toilet tissue. If the sole technical parameter for selecting which tissue product to use were water absorbency then why manufacture toilet tissue when the paper towel is often better. The wet strength of paper towels (another quality parameter) makes it unsuitable for use as toilet paper. The wet strength quality parameter prevents the paper towel from readily breaking down thereby preventing treatment in a municipal waste water treatment plant. Toilet tissue does not contain wet strength which allows it to break down. Finally, even if one were to presume water absorbency as the most representative parameter, water absorbency is at best an insufficient parameter of the product functionality. For example, nasal discharge has substantially different properties from water. This is true as well for paper towels which may be wiping up peanut butter and jelly. One cannot single out water absorbency as the parameter that defines the usefulness of tissue.

This normalization of the product benchmark for water absorbency is not consistent with CARB's product benchmark development guidance that embraces the one product one benchmark principle[6]. This principle does not allow for differentiation in technology utilized to manufacture a product. The rationale for the one product one benchmark is to ensure that the California greenhouse gas cap-and-trade program provides an incentive for manufacturers to reduce their greenhouse gas emissions intensity of which the most impactful way is to switch to the lowest greenhouse gas emission intensive technology. The two technologies for manufacturing tissue, LDC/CTEC and CTAD directly control the amount of water absorbency of the tissue as explained in the water absorbency section above. Therefore, the proposal to normalize the product benchmark using water absorbency is allowing for differentiation of technology utilized in manufacturing a product under the guise of accounting for product quality. This is not consistent with the one product one benchmark principle.

Another inconsistency is that CARB's guidance is to use 90 % of the weighted average emissions from the industrial sector to determine emissions or best-in-class[7]. The product benchmark of 1.14 allowances per air-dried ton of tissue product is currently determined from 90 % of greenhouse gas emissions intensity from a facility that utilizes the LDC/CTEC technology that is best-in-class but does not include greenhouse emissions intensity data from CTAD technology. Therefore, the value of 1.14 allowances per air-dried ton of tissue product is neither 90 % of the weighted average emissions from the industrial sector nor best-in-class.

CARB should not normalize the product benchmark for water absorbency and should elect to utilize one of following options:

(1) Set the product benchmark at 90 % of the weighted average emissions from the industrial sector that includes both LDC/CTEC and CTAD technology. This option would be consistent with the

[6] Appendix B - Development of Product Benchmarks for Allowance Allocation, pg. 2
[7] Appendix B – Development of Product Benchmarks for Allowance Allocation, pg. 3

approach of having one product one benchmark for this industrial sector that does not differentiate by technology.

(2) Set the product benchmark at 1.27 allowances per air dried ton of tissue. 1.27 is determined by taking 1.14 divided by 90 % to back out the greenhouse gas emission intensity of the best performing facility upon which the product benchmark of 1.14 was derived. This option would be consistent with the best-in-class approach, which is the emissions intensity of the most greenhouse gas-efficient California facility.