Issue Paper: Approach to volume reconciliation

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What is the Issue?

Textile Exchange’s Content Claim Standard (CCS) relies on batch-level segregation of certified products, for both 100% certified content and blended products. Batches are required to either be segregated or control blended, depending on the standard and intended final product claim. This requirement presented a barrier to certification to entities using continuous production, specifically to chemical recycling technologies.

In a white paper entitled, Enabling a Circular Economy For Chemicals With the Mass Balance Approach, the Ellen MacArthur Foundation and their contributors proposed that standards and certifications consider mass balance as an option to allow for greater confidence and upscaling of chemically recycled content.

The goal of the Recycled Claim Standard and the Global Recycled Standard are to increase the share of recycled content in final products. Many chemical recyclers use continuous production in their process. If this barrier of batch-level segregation could be overcome, there would be potential to increase the volume of certified recycled content being used. Under the direction of the Content Claim Standard International Working Group, Textile Exchange undertook a pilot of an alternative volume reconciliation method for site-level mass balance for three organizations involved in chemical recycling using continuous production, across synthetic and man-made cellulosic fibers.

Which Section of CCS Does this Pertain to?

Content Claim Standard 2.0 – Section B3, Managing CCS Product During Production

Content Claim Standard 3.0 – Section D3, Material Handling and Processing and Section D4, Blending and Mixing

What are the Risks in Alternative Volume Reconciliation?

To address the barrier for continuous production entities, site-level mass balance was piloted by the participants. In a site-level mass balance approach, sites may generate credits based on the volume of claimed input materials which may be assigned to outputs physically connected to the production. In this model, the site is responsible for reconciling the volume of input to output over
a set period of time, rather than with each batch. During the pilot and in consultation with the Content Claim Standard International Working Group and other stakeholders, these primary risks were identified.

**Ensuring valid product claims**

When site-level mass balance calculation is used, the exact percentage of recycled content of any given product is lost, since the calculation is done based on a period of time rather than a batch of products. In fact, there may be some products which do not contain any recycled content. In this instance, product claims of “100% recycled content” are misleading since there is no verification of the content of products.

**Establishing conversion rates**

Textile Exchange’s Content Claim Standard requires batch-level calculation based on the conversion rate between input and output materials. Conversion rates are calculated using the known loss rates that are correlated with production processes, such as the loss rate of combing cotton. These conversion rates have been evaluated and collected over time within a reasonable margin of error and are used by Textile Exchange in reporting on fiber and material usage in the industry. Certification bodies use these conversion rates in verifying the volume reconciliation for the CCS certification.

Due to the wide variation in processes used under the term “chemical recycling” as it pertains to synthetic and man-made cellulosic fibers, the conversion rates differ significantly within the category. Particularly with chemical recycling of synthetic fibers which breaks plastic into the basic molecular building blocks through depolymerization, a detailed review of all the co-products would be required to establish the conversion rate. Due to the nascency of the technology, this work will require more research by Textile Exchange. This area represents a much higher risk than using more established conversion rates at a batch-level. The margin of error in estimating the conversion rate is higher and combining this with the scale of site-level calculations increases the margin of error even more and could lead to huge overestimation of claims on the output materials.

**What is Textile Exchange's Proposal to Address this Issue?**

Textile Exchange has released a *DRAFT CCS-105-V1.1 Alternative Volume Reconciliation (VR2)* to begin allowing site-level mass balance calculation as an alternative to batch-level segregation and controlled blending. The main qualifications for eligibility include:

- Sites seeking certification to the Recycled Claim Standard or Global Recycled Standard.
- Products must be intended for the textile sector.
- Recycling methods are limited to depolymerization through glycolysis, methanolysis, and hydrolysis. Excluded is gasification and pyrolysis depolymerization.
Even though these methods are currently excluded, Textile Exchange is continuing to evaluate how we may provide criteria and sufficient guidance to permit this in the future.

- The claimed input materials are physically connected to the output material. It is not permitted to claim the input materials on outputs not connected to the production step.
- Outsourcing activities may not be included within the scope of certification under the alternative volume reconciliation method.

Other limitations of the VR2 include:

- The volume reconciliation period may be no longer than three months.
- A minimum of 5% recycled input materials is required before transaction certificates may be issued. This is 5% of the quantity of inputs needed to produce the products listed on the scope certificate (including non-claimed equivalent products).
  - This currently represents a significant barrier for many of the chemical recyclers, but most have goals or targets that should be met in the coming years. Scope certificates may still be issued, but transaction certificates will not be issued until the 5% minimum is met.

- Transaction certificates will list VR2 certified material separately from material certified under the standard requirements of the CCS.
- No RCS or GRS product claims may be made on the VR2 material.
  - This will continue to be evaluated as Textile Exchange evolves our standards system.
References

