



Response to Comments

Revisions to the Standard for Sanitary Paper Products (GS-1)

January 8, 2019

In November 2017, Green Seal proposed changes to our Sanitary Paper Products Standard and solicited feedback. This document presents the comments that were formally submitted by stakeholders during that time and provides Green Seal's responses.

By issuing a new version of this standard, Edition 6.2, Green Seal has removed unintentional barriers to certification, allowed for a wider application of this standard in the market by providing more pathways to compliance — *while maintaining the same level of stringency*. Through this new edition, we have also improved the readability of the standard.

The standard is now a more effective tool for product designers seeking a sustainable product framework and a more comprehensive framework for manufacturers undergoing the product certification process.

The following organizations participated in the Public Comment Period and played a vital role in this revision.

Participating Organizations and Companies:

American Forest and Paper Association
Conserve A Tree
Dogwood Alliance
Environmental Paper Network
Essity
Forest and Paper
GECA
Georgia Pacific, LLC
Greenpeace

Leonard Academy
Kimberly-Clark Corporation
Marcal, A Soundview Paper Company
Natural Resources Defense Council (NRDC)
Nimbus Eco
Responsible Purchasing Network (RPN)
Waxie Sanitary Supply
WWF US

Note on Comments Regarding Rapidly Renewable Fibers

Stakeholder comments regarding rapidly renewably fibers can be found in [Appendix A](#). As a response to these comments, Green Seal published the Interim Update in April 2018, which entailed the justification for withdrawing the proposed scope expansion for products made from rapidly renewable fibers.

Response to Comments, Document Guide

Use the hyperlinks (blue text) below to jump to a specific section in this document.

General Comments

- Requests for a longer Public Comment Period.
- [View comments](#).

Product-Specific Performance Requirements

- Suggested updates to the performance requirements.
- [View comments](#).

Product-Specific Sustainability Requirements

- Suggesting consistency with the EPA's Comprehensive Procurement Guidelines (Sections 3.1).
- Suggesting a wider range of blends of fibers (Section 3.1).
- Suggested updates to prohibition on chlorine in papermaking process (Section 3.5.1).
- Suggestion to prohibit certain categories of pigments (Section 3.5.5).
- Suggestion to prohibit alkyl phenol ethoxylates (Section 3.5.7).
- [View comments](#).

Manufacturing Sustainability Requirements

- Water and Energy Use limitations (Section 4.3).
- [View comments](#).

Certification and Labeling Requirements

- Statement of Basis for Certification (Section 6.4).
- [View comments](#).

Rapidly Renewable Fibers

- This document does not provide responses to stakeholder comments regarding rapidly renewably fibers.
- Green Seal's proposal to expand the fiber source requirements to include rapidly renewable fibers was withdrawn in April 2018; the justification for that withdrawal can be found in the [GS-1 Interim Update \[PDF\]](#).
- View Comments: [Appendix A](#)

GS-1, Criterion 2.0: Product-Specific Performance Requirements

Comment: Unclear what environmental or quality benefit that can be attributed to these parameters or to these changes in parameters. Recommend deleting Section 2.3 entirely.

Comment: GS proposed revision should be revised as the following: As an exception, products may be beyond the lower and upper ranges for product performance attributes in section 2.1 and product specifications in section 2.3 provided the manufacturer demonstrates that the manufacturer's specifications meet the manufacturer's market expectations for usability based on their customer complaint data. Rationale: The product performance attributes are not directly relative to sustainability and product safety that GS-1 standard strives for. The manufacturers have the best knowledges on how their products perform to meet the market expectations. Their product attributes should not be limited to this GS standard. They should meet the market expectations for usability.

Response: Green Seal appreciates your feedback and proposals.

One of Green Seal's guiding principles is that a truly sustainable product must function effectively. By validating the performance of a product, Green Seal demonstrates that green product design was not achieved by sacrificing product quality.

However, Green Seal agrees that benchmark performance can be verified through multiple pathways. Since 2010, for cases that fall outside of Green Seal's established parameters, GS-1 has included an alternative compliance path defined in Criterion 2.2, Alternative Product Performance.

In our November 2017 Revision Proposal, we proposed to clarify an exception to the requirements in Section 2.1, Product Performance, specifically in cases where products exceed the upper ranges of the Tensile Strength and Stretch requirements. We received no comments that specifically argued against this exception and the proposed language; therefore, we have updated the GS-1 Standard accordingly.

Decision: No modifications were made based on this feedback.

GS-1, Criterion 3.0: Product Specific-Sustainability Requirements

Comment: The proposed revision to the GS 1 standard is (continues to be) out of step with the federal environmentally preferable purchasing guidelines, which directs federal employees to purchase paper towels and bathroom tissue products that meet the US EPA's Comprehensive Procurement Guidelines. The CPG requires at least 40% post-consumer recycled content (PCRC) in paper towels and at least 20% PCRC in bathroom tissue. Accordingly, Green Seal should require all GS 1-certified products to be CPG-compliant, not just those with recovered paper.

Comment: The calculation should be just based on recovered material as other materials are not post-consumer and should not be included to calculate the percentages of post-consumer. Post consumer material x yield recovered material x yield.

Comment: Paper recycling reuses a renewable resource that sequesters carbon and helps reduce greenhouse gas emissions. Greenhouse gas reductions result from avoided methane emissions. In addition, recovering paper extends the fiber supply. Standard should be revised to require 100% recycled content for all GS-1 products. This is the history of Green Seal and what the market values. There are more than a "Substantial minority" of products able to meet the current standard. Recent changes in policies by China have reduced the quantity of material exported from the USA. This has increased the available supply of waste paper to USA producers, and reduced the costs of these supplies as well. The Standard should eliminate the Post-Consumer Material Requirements. The distinction between pre- and post-consumer content is not meaningful and should not be used.

Response: Green Seal appreciates these comments.

Since 2010, the GS-1 Standard has recognized agricultural residue as an acceptable fiber source for sanitary paper products in order to incentivize the use of this waste material, to support innovation and emerging markets in this industry, and to provide a wider range of choices for sustainable purchasing programs. The allowance of agricultural waste is in line with Green Seal's principles of avoiding the use of virgin fibers for single-use, disposable products when technically and economically feasible.

Green Seal strongly supports the mission of EPA's Comprehensive Procurement Guidelines (CPG): "to promote the use of materials recovered from municipal solid waste (MSW)." Agricultural residues do not typically enter the municipal solid waste stream; they are a pre-consumer waste material, however, they are an environmentally-preferable fiber source for sanitary paper products. The incorporation of agricultural waste into sanitary paper products results in the conservation of virgin resources.

For purchasers seeking to only buy products that meet the CPG requirements, due to procurement guidelines or preferences for products that specifically incorporate post-consumer material, we recommend reviewing the "Basis for Certification Statement" which is required to be on the label of each Green Seal certified product. For sanitary paper products, the Basis for Certification Statement on that product label must clearly state the fiber types and percentages of post-consumer content, and also list the other key environmental and health aspects that were validated during the certification process. Therefore, the Basis for Certification Statement is the recommended tool for purchasers seeking sanitary paper products that comply with the EPA's CPG requirements.

Decision: No modifications were made based on this feedback.

GS-1, Criterion 3.5: Material Processing

Comment: There is not a compelling scientific reason to require TCF bleaching for virgin pulp. ECF and TCF have similar environmental impacts (water quality, dioxin, furan, chlorinated compounds, and the ability to run partially closed water systems and recycle alkaline filtrates). ECF has higher wood yields than TCF, resulting in greater land efficiency. Industry has invested in O2 delignification, pressurized EOP second stage bleaching, and lower brightness targets, which all lower ClO₂. See analyses by AF&PA and NCASI. <http://www.afandpa.org/docs/default-source/default-document-library/facts-about-the-use-of-bleaching-agents-final.pdf?sfvrsn=2>
http://www.paperenvironment.org/PDF/chcompounds/CC_Full_Text.pdf

Comment: It's suggested this to be revised as the following: 3.5.1 Processed Chlorine Free (PCF)Chlorine Free. The papermaking process used to produce the products shall be Processed Chlorine Free (PCF) for any recovered material use and Elemental Chlorine Free (ECF) for any rapidly renewable fiber, agricultural residue use or virgin fiber. Rationale: Scientific studies have reported TCF has no more quantitative environmental benefits than ECF.

Comment: Use of ECF bleaching should be allowed. 3.5.1 should be changed to Elemental Chlorine Free and "shall be Processed Chlorine Free (PCF) for any recovered material use, Totally Chlorine Free (TCF) for any agricultural residue or rapidly renewable non-wood fiber and Elemental Chlorine Free (ECF) for any rapidly renewable wood fiber."

Response: Green Seal acknowledges these comments and appreciates the data that was supplied. As described in the April 2018 Interim Announcement, Green Seal is no longer considering products made from virgin wood fiber as eligible for GS-1 certification; therefore, the use of the term "TCF" versus "ECF" for virgin wood fiber is no longer an issue.

Processed Chlorine Free (PCF) is a designation for a product made from recovered fiber (e.g., discarded paper products like magazines, copy paper, and packaging materials). Those original products may have been bleached with chlorine or its compounds. The PCF designation signifies that residual amounts of chlorine may be measurable in these products because of the incorporation of recovered materials, but that the new product underwent a chlorine-free bleaching process.

Totally Chlorine Free (TCF) is a designation that applies to products made from virgin (not recovered) fibers, and therefore, no trace of chlorine in those products is expected. In this case, we are requiring TCF as a verification specifically for products made from agricultural residues (e.g., waste from the harvesting of sugar cane bagasse and bamboo).

Decision: No modifications were made based on the submitted comments. However, additional modifications have been made to Criterion 3.5.1 in order to align Green Seal's use of the term "Processed Chlorine Free" with the standard use of the term in the paper industry (i.e., as a description of only one step in the papermaking process: bleaching). The criterion now provides a more accurate description of Green Seal's compliance review as it has been historically carried out.

Comment: In addition, in section 3.5.5, Green Seal should prohibit colorants such as "azo", "phthalocyanine" and "diarylide" pigments that have been linked to contamination with polychlorinated biphenyls (PCBs), a class of highly persistent, bioaccumulative and toxic (PBT) chemicals that can cause cancer. An article in Environmental Health Perspectives title "Nonlegacy PCBs: Pigment Manufacturing By-Products Get a Second Look," reported that Further analysis indicated that certain PCBs were prevalent in what are called azo, diarylide, and phthalocyanine pigments, which are commonly used to color inks, dyes, paint, paper, textiles, plastics, leather, cosmetics, and foods, among other materials and products. Azo and diarylide pigments are used primarily to make yellows but also some reds and oranges, while phthalocyanine pigments are used primarily to make blues and greens."

Comment: Additional Prohibited Ingredients Needed. RPN encourages Green Seal to prohibit the following substances in section 3.5.7: Nonylphenol ethoxylate (NPE) and other alkyl phenol ethoxylates (APEs), which are

potent endocrine disruptors that have been found in fish and clams in Morro Bay, California and linked in part to toilet paper. In addition, the San Francisco Bay Regional Quality Control Board petitioned the US EPA in 2015 to not exempt toilet paper from its proposed Significant New Use Rule (SNUR) for nonylphenol and nonylphenol ethoxylate arguing that toilet paper “has the potential to be a major source of pollution for aquatic resources receiving treated or untreated wastewater discharges.”

Long- and short-chain fluorinated compounds, which add water or grease resistance to some paper-based consumer products. Antimicrobials added to janitorial paper product that enable the manufacturer to make a claim that the tissue or other janitorial paper product kills germs.

Response: Green Seal thanks you for this information. These sections of the standard were not opened for substantive changes, only editorial clarifications. Therefore, we will consider these comments in potential future revisions of GS-1.

Decision: No modifications were made based on this feedback.

GS-1, Criterion 4.0, Manufacturing Sustainability Requirements

Comment: The mechanics prescribed by the new language appears unclear. It may be clearer to state: "It is the responsibility of the "manufacturer of record" to aggregate energy and water data for all "in-scope" process and suppliers. Manufacturers of record comply with both energy and water intensity use using data that is "aggregated supply chain data". If it is the intent of Green Seal to allow for separate processes to enjoy looser performance requirements - we do not support this intent, and do not believe it comports with the stated purpose of the standard.

Response: Thank you for your feedback on the water and energy use requirements.

The clarifying sentence for market de-inked pulp (MDIP) was indeed added to track this data separately. Evaluating MDIP production separately may give MDIP users an advantage over non-users by requiring the same water and energy targets, while avoiding the need to include deinking or re-pulping processes; however, that is not the intent. When Green Seal set these requirements in the 2010 revision, they were based on market data surveys that did not include MDIP.

Therefore, Green Seal intends to gather the data separately, analyze it, and potentially propose adjustments to the energy use requirements as needed. Therefore, the text of this criterion was not revised beyond the original proposal.

Decision: No modifications were made based on this feedback.

Comment: The use of weight (tons) as the "common denominator" for substrates with widely varying basis weights appears flawed. Energy (or water) intensity stated on a per square foot (or million square feet) better normalizes performance across grades of paper. We have deep knowledge on the issue of Energy and Water consumption at all kinds of paper mills. There is very strong data to support this recommendation.

Response: Green Seal thanks you for your comment. Consideration of the units of measure for the denominator used in the water and energy use requirements was not part of this revision. These units were included in the original GS-1 revision (2008 – 2010) and went through significant stakeholder review. Therefore, the text of this criterion was not revised beyond the original proposal.

Decision: No modifications were made based on this feedback.

GS-1, Criterion 6.0: Certification and Labeling Requirements

Comment: We are against this addition as this will create additional unnecessary packaging artwork updates as Federal Comprehensive Procurement Guideline Program may change in the future. The manufacturers may have separate marketing collaterals on Federal Comprehensive Procurement Guideline Program. Including this program into Green Seal products may create confusion in the market.

Response: Green Seal appreciates your comment.

The proposed update to the Basis for Certification Statement represents a new option within this criterion. Current package language on GS-1 certified products will not be required to change.

This type of language is already in use in the marketing materials of Green Seal-certified sanitary paper products because it accurately reflects the composition of the products. This update is to formally acknowledge that this language is acceptable.

Decision: No modifications were made based on this feedback.

GENERAL COMMENTS

Comment: RPN is requesting more time to fully evaluate this proposed revision to Green Seal's janitorial paper standard. Over the past week, our outreach to other environmental non-profit organizations with deep expertise on forest conservation and sustainable paper manufacturing revealed that very few were aware of this proposed revision. We would like to have the opportunity for them to become engaged in this process. The Responsible Purchasing Network appreciates the opportunity to comment on the proposed revisions to this standard. We'd be happy to answer any questions about our comments and look forward to continuing to be engaged in this process.

Comment: Postpone deadline because of insufficient outreach to environmental paper and forestry experts. We have only learned about this proposed major revision to Green Seal's GS-1 standard in the past few days and have not had time to sufficiently evaluate and comment on it. I am surprised by this because, in the past, Green Seal has made sure to contact us for input because of our deep expertise in environmental papers, specialized technical expertise in recycled papers, founding of the Environmental Paper Network (EPN), and connections to ENGOs with expertise in paper, forestry, nonwood fibers, and clean production. While we might have been missed in Green Seal's outreach campaign, I have also checked with the environmental groups affiliated with the EPN and I have not yet found any other groups that were aware of this proposed revision, either, including paper and production experts at EPN, RAN, WWF, NRDC, and other major ENGOs. The scope of the proposed revisions, and the background of attempts to promote "rapidly renewable fiber" in other situations in the recent past, are of great concern and are especially questionable when not reviewed by so many with particularly appropriate environmental expertise.

Response: Thank you for these comments. Green Seal extended the comment period by two weeks to accommodate these requests.

Comment: Detailed comments will be provided in each section, but it is also appropriate and necessary to present concerns with the process utilized in preparing the proposed revisions. The ISO 14024 standard for "Environmental Labels and Declarations" has well established criteria for the development of "Type I Environmental Labelling". We have listed one of the criteria below along with questions that we request Green Seal provide detailed responses that provide all stakeholders confidence that the current process and proposed revisions meet or exceed the requirements of ISO 14024. ISO 14024 Guiding Principles: Clause 5.9 The ISO 14024 standard requires that a process of formal open participation among interested parties be established at the OUTSET for the purpose of selecting and reviewing product categories, product environmental criteria and product function characteristics. Questions: What formal or informal process - including steps and timeline - did Green Seal utilize to engage industry and stakeholders BEFORE publishing DRAFT revisions? For transparency, how many and who did Green Seal engage with BEFORE publishing DRAFT revisions?

Comment: Development of a standard in a consensus process requires transparency and the opportunity for meaningful participation by all groups that will be affected. A true consensus process also has procedures to ensure balance, consideration of dissenting views, and appeals procedures. The American National Standards Institute (ANSI) is the coordinator of the U.S. standards process and provides strict objective requirements for accreditation of those processes. A credible standard must be developed using a process that embodies the elements of consensus as defined by ANSI. The Green Seal standard has failed in this regard, and in fact it does not appear that anyone from the paper industry – other than a niche manufacturer -- participated in developing the revision to this Green Seal document. Even in developing so-called "leader" standards (those that are intended to recognize outstanding performers in a specific category), there must be transparent and open development process. Submitted by: American Forest & Paper Association

Response: Green Seal appreciates this feedback.

To implement the Revision of the Standard for Sanitary Paper Products, Green Seal followed our established process, which can be reviewed on our website. Our Standard Development principles and policies adhere those set out in ISO 14024. For example, during the development of the standard revision proposal, Green Seal engaged with numerous entities in the sanitary paper products industry, including manufacturers and life-cycle impact experts in academic institutions. Upon publishing the

proposal and announcing a 60-day public comment period, we then engaged with a diverse group of stakeholders, most of whom ultimately submitted detailed feedback. At the request of several stakeholders, we extended the public comment period, and then maintained active engagement with individual stakeholders to ensure that we fully understood various perspectives. Between the close of the public comment period, and our withdrawal of the scope expansion portion of the revision proposal, we conducted thorough analysis and took into account all submitted information.

However, Green Seal works within a continuous improvement framework. To better align with best practices in standard development, we are presently implementing a wide assessment of our procedures, to consider overall improvements to our processes, and to set the stage for a more efficient consensus process that will result in more accurate and relevant sustainability benchmarks. In 2019, following the program assessment and re-structuring phases, we will publish an updated standard development framework.

APPENDIX 1: COMMENTS RELATED TO RAPIDLY RENEWABLE FIBER

Note to Commenters: In April 2018, Green Seal published a single response to the below comments, titled the [Interim Update](#). In this response, we withdrew the sections of the proposal that set requirements for products made from Rapidly Renewable Fibers.

Comment: We strongly feel allowing virgin pulp and/or non-recycled materials of any kind, especially trees like eucalyptus, to be acceptable content for GS products significantly impacts the integrity of the Green Seal. Allowing anything other than 100% recycled content for Green Seal paper verification and product certification radically reduces its value to the manufacturers which produce true recycled products, as well as its meaningfulness to consumers.

Comment: We support the incorporation of rapidly renewable fiber. In our last revision for paper products (2014) requirements for non-wood fibers were introduced (bamboo, hemp etc.). Based on feedback and as (at the time) newly introduced criterion, bamboo was set to apply only if more than >20% of fiber is bamboo. It was pointed out (at that time – circumstances may have changed since then) that tracing exactly where the bamboo comes from can be difficult if for example part of the fiber used is mixed fiber pulp that the manufacturer buys from somewhere meaning that the origin of each material contained in the pulp may have to be traced back through a few levels of the supply chain. Our concerns at the time was that bamboo (and other renewable fibers) may be punished over wood fiber by requiring certifications or documents tracing origin for 100% of bamboo fiber (and other RRF) as certifications (FSC etc.) were not well established at that time. Have you received any feedback regarding the requirements and required documentation for RRF? Is it achievable in the current market given that this may require going back a few steps in the supply chain? It would be great to see that it can be achieved that manufacturers can prove that no fiber materials used in sanitary paper come from unsustainably located or managed sources. Also, due to quality reasons we did remove requirements to contain a certain amount of recycled fiber. As the standard has strict requirements for manufacturing (including air, water emissions, GHG emissions etc.), virgin fibre is allowed that is coming from sustainably managed sources. The justification not to include virgin fiber (apart from RRF) as fiber source because tissue paper (and other sanitary paper products) is a disposable product that is used just once and discarded (and hence is not returned to the recycling stream), however, is plausible. Have you had the experience that products that contain no virgin material usually meet the quality requirements?

Comment: Categorically preferring paper made from materials that do not originate from trees is not supported by the Georgia Institute of Technology literature review commissioned by Green Seal to defend the development of this revised proposed standard. In fact, the study concludes that: “We are not convinced that any alternative fiber type has a definitive environmental advantage over every type of wood fiber in general.” Other examples of where the Georgia Tech analysis questions the preference for alternative fiber sanitary papers include: “Our interpretation of these results is that, with the exception of hemp, there are few clear differences between most of the fiber types, in terms of greenhouse gas emissions.” And: “We are not convinced that any type of alternative fiber reviewed here has inherently low environmental impact compared to moderate to low impact standard wood fibers.” Clearly, there is at best tepid support for developing this alternative-fiber standard. Furthermore, the determination whether non-tree-based fiber as the basis for paper is preferable from an environmental perspective requires analysis through the use of Life Cycle Assessments and Analysis that includes the manufacturing processes -- a “cradle to gate” LCA. Examples of issues that must be evaluated include how the fiber is generated, the comparison of GHG sequestration of trees versus other crops, identification of the chemicals used in production and how are they managed (for example, are they recycled?). Additionally, what are the effects if demand for tree-based fibers were diminished? Would the acreage used for tree growth remain as timber or would it be sold for development or other uses which reduce its carbon sequestration potential? AF&PA believes that when compared, tree-based paper will be environmentally superior in many, if not most, cases. In addition, non-wood-based fiber cannot be recycled with tree-based fiber. So the effects on downstream recycling need to be considered. Similarly, when examining “rapidly renewable fiber” there needs to be an understanding of the benefits of demand for tree based fiber, as well as the inputs and impacts of stimulating additional demand for “rapidly renewable” materials in developing countries. In the U.S., forestland can easily pass back and forth among cropland, rangeland, and forests. Removing the market for pulp can hurt the ability for private landowners to keep their forests as forests, leading to development and additional annual row crops on that land. Submitted by: American Forest & Paper Association

Comment: The discussion about forest degradation seems a bit flippant, ending with the statement that Green Seal does not believe that encouraging the use of alternative fibers will lessen the demand for forests: “Given this and other reasons, it is doubtful in the foreseeable future that the amount of alternative fibers likely to be used in the emerging market of tissue papers will seriously diminish demand for tree fibers.” If that is the case, then it seems incongruous for Green Seal to revise its procurement standard to push the use of alternative fibers. Why not let the market develop more as a way to determine whether these alternative fibers can actually meet the variety of market demands (cost, functionality, as well as environmental attributes). Submitted by: American Forest & Paper Association

Comment: We have not seen any evidence that the Sustainable Agriculture Network (SAN) Standard is a consensus based standard or developed with input from the broad fiber-producing industry. In addition, it is unclear as to whether any forest products, including eucalyptus, fall within the scope of SAN standard. It is much more appropriate to reference well-established and recognized standards that explicitly cover forestry, including PEFC and FSC. The Green Seal standard should not muddy the water in terms of appropriate standards to apply. Submitted by: American Forest & Paper Association

Comment: Categorically preferring paper made from materials that do not originate from trees is not supported by the Georgia Institute of Technology literature review commissioned by GreenSeal to defend the development of this revised proposed standard. In fact, the study concludes that: “We are not convinced that any alternative fiber type has a definitive environmental advantage over every type of wood fiber in general.” Other examples of where the Georgia Tech analysis questions the preference for alternative fiber sanitary papers include: “Our interpretation of these results is that, with the exception of hemp, there are few clear differences between most of the fiber types, in terms of greenhouse gas emissions.” And: “We are not convinced that any type of alternative fiber reviewed here has inherently low environmental impact compared to moderate to low impact standard wood fibers.” Clearly, there is at best tepid support for developing this alternative-fiber standard. Furthermore, the determination whether non-tree-based fiber as the basis for paper is preferable from an environmental perspective requires analysis through the use of Life Cycle Assessments and Analysis that includes the manufacturing processes -- a “cradle to gate” LCA. Examples of issues that must be evaluated include how the fiber is generated, the comparison of GHG sequestration of trees versus other crops, identification of the chemicals used in production and how are they managed (for example, are they recycled?). Additionally, what are the effects if demand for tree-based fibers were diminished? Would the acreage used for tree growth remain as timber or would it be sold for development or other uses which reduce its carbon sequestration potential? AF&PA believes that when compared, tree-based paper will be environmentally superior in many, if not most, cases. In addition, non-wood-based fiber cannot be recycled with tree-based fiber. So the effects on downstream recycling need to be considered. Similarly, when examining “rapidly renewable fiber” there needs to be an understanding of the benefits of demand for tree based fiber, as well as the inputs and impacts of stimulating additional demand for “rapidly renewable” materials in developing countries. In the U.S., forestland can easily pass back and forth among cropland, rangeland, and forests. Removing the market for pulp can hurt the ability for private landowners to keep their forests as forests, leading to development and additional annual row crops on that land. Submitted by: American Forest & Paper Association

Comment: Green Seal failed to present evidence to support the proposed changes. All proposed changes to Sections "3.0 and 3.1 " should be rejected for the following reasons: i) Green Seal failed to present evidence to support the proposed changes; a. The Georgia Tech study contains important language throughout the document that UNDERMINE the rationale and the proposed changes to the GS-1 Standard. (see pp 25 – Section 5.3.3) “We are not convinced that any type of alternative fiber reviewed here has inherently low environmental impact compared to moderate to low impact standard wood fibers.” (see pp 3 – Executive Summary) Alternative fibers may have somewhat different pulping impacts from each other and from traditional fibers, although there is no evidence that any of these differences are large contributors to the overall life cycle impacts. (see pp 3 – Executive Summary) There may be substantial climate impacts from harvesting of trees, particularly ...trees grown in peatlands. (See pp 25 (Figure 8)) The graph clearly depicts “Integrated Recycled Fiber” as the best choice to minimize environmental impacts. This appears to contradict the proposed revisions to the GS-1 standard that RRF and recycled fiber be treated equally. b. The Georgia Tech study presented as the justification for changes to Section 3.0 does not claim - nor does it qualify to be - a valid scientific study. It is a literature review only. It is inappropriate to use this study as scientific evidence. c. The Georgia Tech study discloses (see pp 24 – Sec 5.3.2 Hot spots) the significant risks of making comparisons across widely divergent LCA studies. (see pp 26 – Section 5.3.4) “There is substantial uncertainty associated with comparing

across these studies. It is a misstep for Green Seal to use a study with substantial uncertainty as a basis for altering a science based standard. d. The Georgia Tech study erroneously compares the environmental impacts from dissimilar LCAs. Rigorous (ISO compliant) scientific studies avoid comparing dissimilar LCAs due to risk of error. One example of this error within the Georgia Tech Study involves the comparison of environmental impacts of Miscanthus in a biofuels study to the environmental impacts of other alternative fibers in paper production. e. The Georgia Tech study does not discuss the gaps in the meta-analysis performed and how these gaps may distort the comparison of LCA findings. f. The appendix of the Georgia Tech study only outlined the research contributions for the alternative fibers, but not of the other fibers discussed in the study. It would be beneficial to include how those other reference documents played a role in the review. g. The authors took significant steps to allocate or parse (manipulate) information from each of the reference sources to facilitate comparisons, yet the authors provide no disclosure of the methodology utilized to perform these manipulations, or the error risks. There are error bars on the graphs in the review, but there is no explanation how that margin of error was calculated. h. The authors erroneously ignore MAJOR classes of materials (e.g. US sawmill residuals). US sawmill residuals are but one example of well-established alternatives to the fibers discussed, with valid sustainability claims supported by strong scientific evidence (i.e. reviewed and published LCA studies). ii) The term “Rapidly Renewable Fiber” is not appropriate term for use in the GS-1 because it is an arbitrary claim promoted by a single company: a. Rapidly Renewable Fiber and RRF are not a broadly used term that carries scientific meaning important to the sustainability of disposable paper products, but rather the primary marketing lingo of a single company (SOLARIS). See Solaris logo below containing the words Rapidly Renewable Fiber and RRF. b. “Rapidly Renewable” is an arbitrary claim that holds no direct relevance to sustainable forestry or as a meaningful basis for comparing the sustainability of various tree species. i. In 2016, the United Nations published “GLOBAL FOREST RESOURCES ASSESSMENT 2015: How are the world’s forests changing?” <http://www.fao.org/3/a-i4793e.pdf> The rate of growth of specific species is not listed as a relevant or important metric anywhere this report. ii. FSC publishes international generic indicators of sustainable forestry, and nothing related to "rapidly renewable" is not listed anywhere as an important indicator of sustainability <http://igi.fsc.org/approved-documents.60.htm> iii. SFI recently updated its sustainability criteria, and it does not list anything related to "rapidly renewable" as a sustainability criteria. <http://www.sfi-program.org/files/pdf/sfi-2015-2019-standards-and-rules-at-a-glance> c. “Rapidly Renewable Fiber” is frequently connected to countries with the highest losses in forested area and at the greatest risk for continued deforestation. In 2016, the United Nations published “GLOBAL FOREST RESOURCES ASSESSMENT 2015: How are the world’s forests changing?” <http://www.fao.org/3/a-i4793e.pdf>

Please read the entire report, and also look specifically at page 17 - TABLE 3 which shows the top 10 countries reporting the greatest loss of forest area between 2010-2015. page 17 - TABLE 3 shows that Brazil and Indonesia ranked #1 and #2 in net annual losses of forest area (2010 ii. TFT is an organization focused on transparency in supply chains, including pulp and paper from countries dominated by “Rapidly Renewable Fiber” plantations, as well as pulp and paper manufacturers. TFT recently published a report (December 2015) titled “Pulp & Paper Sourcing Country Profile: Indonesia”. <http://www.tft-transparency.org/app/uploads/2016/02/Indonesia-Pulp-Paper-Country-profile.pdf> In this report, please see page 5. "GENERAL OVERVIEW" Indonesia is rich in forest resources and is a dominant player in the pulp and paper industry with some of the largest producers in the world. However, this dominance has often come at the expense of Indonesia’s natural forest which have seen a significant and steady decline. This is also associated with confusion about land tenure that deprive indigenous communities of their customary rights and also the drainage of peat which reduce water resources and precipitate forest fires in the region.

In addition to this General Overview, on page 6, TFT characterizes the risks for Indonesian Pulp and Paper across all legal, social, and environmental key indicators as "RED" or “High Priority”.

Additional points in the TFT report that undermine the “sustainability claims” of "rapidly renewable fiber" proponents include: i) The 2014 Transparency International CPI score for Indonesia was 34. This is lower than 50 and indicates a high concern for governance and corruption in Indonesia and the forest sector in general. Illegal logging in the country has been prevalent in recent years. ii) The Global Forest Registry states that Indonesia has unspecified risk based on its forest governance and law enforcement related to logging and trade. iii) Plantations are not yet able to supply sufficient volume of fiber required and some mills rely upon fiber sourced from natural forest clearance in the process of developing their plantation resource. These large-scale mono-culture plantations replace some of the most biodiverse forests on the planet and adversely affect the ecosystem through drainage and can precipitate forest fires. v) Concessions (for plantations) are typically granted by the government in natural forest areas ...and as such further promote forest degradation and clearance. iii. The World Wildlife Fund (WWF) identifies tropical forests as the

highest risk for deforestation over the next decade. (Review the “CAUSES” section on webpage: <https://www.worldwildlife.org/threats/deforestation>) The United Nations (<http://www.fao.org/3/a-i4793e.pdf>) also highlights the significant loss of forest area in tropical climates that produce Rapidly Renewable Fibers.

Comment: The Georgia Tech study contains important language throughout the document that UNDERMINE the rationale and the proposed changes to the GS-1 Standard. (see pp 25 – Section 5.3.3). “We are not convinced that any type of alternative fiber reviewed here has inherently low environmental impact compared to moderate to low impact standard wood fibers.” (see pp 3 – Executive Summary). Alternative fibers may have somewhat different pulping impacts from each other and from traditional fibers, although there is no evidence that any of these differences are large contributors to the overall life cycle impacts. (see pp 3 – Executive Summary). There may be substantial climate impacts from harvesting of trees, particularly ...trees grown in peatlands. (See pp 25 (Figure 8)) The graph clearly depicts “Integrated Recycled Fiber” as the best choice to minimize environmental impacts. This appears to contradict the proposed revisions to the GS-1 standard that RRF and recycled fiber be treated equally.

Comment: The Georgia Tech study presented as the justification for changes to Section 3.0 does not claim - nor does it qualify to be - a valid scientific study. It is a literature review only. It is inappropriate to use this study as scientific evidence. All proposed changes to Sections "3.0 and 3.1 " of GS-1 should be rejected

Comment: The Georgia Tech study erroneously compares the environmental impacts from dissimilar LCAs. Rigorous (ISO compliant) scientific studies avoid comparing dissimilar LCAs due to risk of error. One example of this error within the Georgia Tech Study involves the comparison of environmental impacts of Miscanthus in a biofuels study to the environmental impacts of other alternative fibers in paper production.

Comment: The Georgia Tech study discloses (see pp 24 – Sec 5.3.2 Hot spots) the significant risks of making comparisons across widely divergent LCA studies. (see pp 26 – Section 5.3.4) “There is substantial uncertainty associated with comparing across these studies. It is a misstep for Green Seal to use a study with substantial uncertainty as a basis for altering a science based standard.

Comment: The Georgia Tech study presented as the justification for changes to Section 3.0 does not claim - nor does it qualify to be - a valid scientific study. It is a literature review only. It is inappropriate to use this study as scientific evidence.

Comment: Rapidly Renewable Fiber and RRF are not a broadly used terms that carries scientific meanings important to the sustainability of disposable paper products, but rather the primary marketing lingo of a single company (SOLARIS). See Solaris logo below containing the words Rapidly Renewable Fiber and RRF.
https://www.google.com/search?safe=active&rlz=1C1GGRV_enUS751US751&biw=1366&bih=637&tbm=isch&sa=1&ei=7XBvWp3OA4ekzwLs8ZS4CA&q=Solaris+RRF+logo&oq=Solaris+RRF+logo&gs_l=psy-ab.3...3234.4141.0.4406.8.7.0.0.0.128.128.0j1.1.0....0...1c.1.64.psy-ab..7.1.127...0i13k1.0.ITufZSkiuyQ

Comment: “Rapidly Renewable” is an arbitrary claim that holds no direct relevance to sustainable forestry or as a meaningful basis for comparing the sustainability of various tree species. In 2016, the United Nations published “GLOBAL FOREST RESOURCES ASSESSMENT 2015: How are the world’s forests changing?” <http://www.fao.org/3/a-i4793e.pdf> The rate of growth of specific species is not listed as a relevant important metric anywhere in this report. FSC publishes international generic indicators of sustainable forestry, and rapidly renewable is not listed anywhere as an important indicator of sustainability <http://igi.fsc.org/approved-documents.60.htm> SFI recently updated its sustainability criteria, and it does not list rapidly renewable as a sustainability criteria. <http://www.sfiprogram.org/files/pdf/sfi-2015-2019-standards-and-rules-at-a-glance/>

Comment: “Rapidly Renewable Fiber” is frequently connected to countries with the highest losses in forested area and at the greatest risk for continued deforestation. In 2016, the United Nations published “GLOBAL FOREST RESOURCES ASSESSMENT 2015: How are the world’s forests changing?” <http://www.fao.org/3/a-i4793e.pdf> TABLE 3 shows the top 10 countries reporting the greatest loss of forest area between 2010-2015. Brazil and Indonesia ranked #1 and #2 in net annual losses of forest area (2010-2015). TFT is an organization focused on transparency in supply chains, including pulp and paper from countries dominated by the use of “Rapidly Renewable Fibers”. TFT published a report in December 2015 titled “Pulp & Paper Sourcing Country Profile: Indonesia”.

<http://www.tft-transparency.org/app/uploads/2016/02/Indonesia-Pulp-Paper-Country-profile.pdf> TFT characterizes the risks for Indonesian Pulp and Paper across all legal, social, and environmental key indicators as red or “High Priority” Additional points in the TFT report that undermine the “sustainability claims” of rapidly renewable fiber include: i) The 2014 Transparency International CPI score for Indonesia was 34. This is lower than 50 and indicates a high concern for governance and corruption in Indonesia and the forest sector in general. Illegal logging in the country has been prevalent in recent years ii) The Global Forest Registry states that Indonesia has unspecified risk based on its forest governance and law enforcement related to logging and trade. iii) Plantations are not yet able to supply sufficient volume of fibre required and some mills rely upon fibre sourced from natural forest clearance in the process of developing their plantation resource. These large-scale monoculture plantations replace some of the most biodiverse forests on the planet and adversely affect the ecosystem through drainage and can precipitate forest fires. v) Concessions are typically granted by the government in natural forest areas ...and as such further promote forest degradation and clearance. 2. The World Wildlife Fund (WWF) identifies tropical forests as the highest risk for deforestation over the next decade. (Review the “CAUSES” section on webpage: <https://www.worldwildlife.org/threats/deforestation>) The United Nations (<http://www.fao.org/3/a-i4793e.pdf>) also highlights the significant loss of forest area in tropical climates that produce Rapidly Renewable Fibers.

Comment: Untested and Unproved that SAN will provide sufficient protections from significant risks of sourcing. It is more appropriate to reference well-established and recognized standards that explicitly cover forestry, including PEFC and FSC.

Comment: History is not a scientific basis for excluding materials. Request inclusion of these materials or science based justification for the exclusion of these materials.

Comment: The Georgia Tech study is not sufficient for technical substantiation of proposed changes. The Georgia Tech study is not a life cycle analysis. Rather, it is a literature review of many disparate reports on different potential paper fibers, with useful information but great variability and no definitive sustainability comparisons.

Comment: The Rationale relies heavily on the Georgia Tech report, which it says was commissioned by Green Seal with funding from the Solaris Paper Company. Solaris is an affiliate of the Sinar Mas Group's Asia Pulp & Paper (APP), which unfortunately has had a long history of deforestation and habitat destruction in Indonesia. A statement from WWF indicates that, while in recent years APP has made commitments to remedy some of this damage, the ENGOs that are monitoring APP's progress still continue to recommend that companies and finance institutions avoid collaborating with APP or its affiliates until there is a truly independent verification, such as by the Forest Stewardship Council (FSC), that establishes significant progress towards meeting these commitments. See http://d2ouvy59p0dg6k.cloudfront.net/downloads/wwf_id__19dec17__advisory_to_buyers_and_investors_of_smgapp_final_1.pdf The funding from Solaris/APP creates a serious conflict of interest in the rationale for Green Seal's proposed dramatic and damaging change in its GS-1 tissue standard.

Comment: The term "Rapidly Renewable Fiber" has long been denounced by many ENGOs as greenwashing and it should not be used at all. Several groups, including Conservatree and the Responsible Purchasing Network, have contacted USGBC over the past several years to educate them about the inappropriateness of its inclusion in their LEED standards, and at one time I was told they would remove it, but it still remains. That does not make it acceptable for Green Seal to incorporate and attempt to legitimize this term. We have found that even purchasers well-educated in sustainability issues often misinterpret this term to mean that the product has recycled content, which we are concerned may be part of the attraction to some paper companies in using it in their product descriptions. Even the FTC Green Guides indicate that purchasers "may interpret renewable materials claims differently than marketers may intend" and "reasonable consumers likely interpret this claim to mean . . . made with recycled, recyclable, and biodegradable." I have seen RRF promoted by the paper industry to possibly mean ANY wood fiber, since they generally refer to all trees as "renewable," and Asia Pulp & Paper and its affiliates specifically refer to many of their products as made from rapidly renewable fiber. This seems to be particularly associated with fiber from their acacia plantations in Indonesia which, as noted in a separate comment, need to be rigorously, reliably and independently certified before being acceptable.

Comment: This definition, as Green Seal describes it, includes both nonwood and wood fiber sources. First, as described elsewhere, we believe that the "rapidly renewable fiber" term should not be used at all because it is vague, misleading, and results in greenwashing. Second, we consider wood fiber to be totally inappropriate to include in this category, particularly because elsewhere Green Seal states that it intends to regard these wood fibers as "crops." They are not crops, they are tree plantations and should be evaluated under rigorous forest certification criteria for plantations, such as FSC's. Proposing to move these wood fiber sources from forest certifications to agricultural certifications may allow some companies to side-step significant and necessary forest certification requirements, which would not be consistent with Green Seal's reputation as upholding the best sustainability attributes.

Comment: Throughout much of Green Seal's documentation for this change, there is only mention of "acacia and eucalyptus." However, the "Rapidly Renewable Fiber" definition refers to "wood . . . fiber sources" without listing any specifically. And then the definition for "Wood Fiber" lists "fiber from softwood or hardwood trees . . . including, but not limited to: aspen, birch, eucalyptus, acacia, fir, or pine." These are trees, not farm crops, and must not be included in the same evaluation criteria as nonwood fibers. In particular, they are covered under FSC certification standards, which are regarded by knowledgeable ENGOs as the most comprehensive, robust and reliable wood fiber certification standards, and they should all continue to be certified to those standards, not agricultural standards, even when they are grown on plantations.

Comment: Well-regarded studies indicate that the common assumption that short-rotation tree fiber is environmentally preferable is unfounded. In fact, older trees continue to accelerate their growth and are capable of absorbing far more greenhouse gases than small trees. In addition, short-rotation trees seem to often be modified to include GMO characteristics. We also have concerns about the condition of the land after several short rotations, as well as its potential increasing need for fertilizers and herbicides/pesticides. See <https://www.theguardian.com/environment/2014/jan/15/trees-grow-more-older-carbon>

Comment: I was impressed when Green Seal released your GS-1 standard several years ago and have enthusiastically advised many, many major purchasers nationwide, through workshops, webinars, and individual specifications recommendations, to use it and rely on it for tissue products. I have considered the GS-1 standard to be one of the bright spots for sustainable paper markets because of how it stimulated competition among tissue manufacturers to get their products certified to its meaningful requirements. But if this proposed standard is adopted, I am afraid I would have to tell these purchasers that the Green Seal standard is no longer reliable. I consider Green Seal to be one of the best certifiers in the country and certainly hope that this will not change. Please take more time to thoroughly investigate and understand the complicated issues involved in evaluating the sustainability of paper and tissue attributes, so that we may continue to rely on Green Seal as a leader in reliable certifications.

Comment: RPN strongly opposes the proposal to add "rapidly renewable" virgin fiber to the GS-1 standard's list of fiber options that count toward Green Seal certification for janitorial paper products as there are likely to be significant unintended consequences of this action, which we have detailed below. The proposed change will reduce market demand for post-consumer recycled content (PCRC) and other types recovered material. Putting virgin fiber on equal footing with recycled content will reduce demand for certified janitorial paper products with recycled content. It is particularly troubling that products with rapidly renewable virgin content would not be required to contain any post-consumer recycled content since that requirement applies only to products that contain recovered material. Consequently, the proposal is likely to result in more paper, tree and agricultural waste going to landfills and incinerators. It is a huge leap – not a logical progression – to go from allowing agricultural waste to be counted to allowing virgin fiber to be considered as a sustainable fiber. The proposed change will have negative climate impacts. Recent studies have found that smaller trees are less effective at capturing carbon dioxide (CO₂) and converting it into oxygen. A March 2014 article, "Rate of tree carbon accumulation increases continuously with tree size, in the journal *Nature*, reported "a global analysis of 403 tropical and temperate tree species, showing that for most species mass growth rate increases continuously with tree size. Thus, large, old trees do not act simply as senescent carbon reservoirs but actively fix large amounts of carbon compared to smaller trees..." This appears to contradict the basic premise of the proposed change that smaller trees are more rapidly renewable than larger trees. (<https://www.nature.com/articles/nature12914>). Consequently, this proposal, which encourages the planting, harvesting and replanting of smaller trees – rather than planting and maintaining larger trees – will have a negative impact on CO₂ levels in the atmosphere. The climate impacts will be particularly severe if the plantation replaces a mature forest that

effectively sequesters carbon in leaves and ground cover (such as peat). The proposed change will negatively impact biodiversity by encouraging the development of tree plantations instead of forest. Instead, this proposal encourages janitorial paper manufacturers to grow trees in a plantation, which are typically less biodiverse than forests. Green Seal should be encouraging (through its certification program) paper manufacturers to plant and maintain forests that are certified as sustainable by the Forest Stewardship Council (FSC). According to the US Green Building Council, bamboo plantations do not support the same amount of wildlife as a native forest. See <https://oecotextiles.wordpress.com/tag/u-s-green-building-council/> for more information. The proposal sets a bad precedent by allowing eucalyptus and other species of trees to be defined as “sustainable” under a standard other than FSC. The Rainforest Alliance standard was designed to evaluate agricultural crops – not trees. Trees typically use less water and chemical inputs than agricultural crops; therefore, most trees would easily pass the Rainforest Alliance standard. According to buildinggreen.com, “Most agriculture involves considerable fertilizer and pesticide use, topsoil erosion, chemical runoff, significant water use, and high energy inputs. From a life-cycle standpoint, even good agricultural practices carry greater environmental burdens than standard forestry.” Compared to forests, tree plantations (which, under this proposal would be considered an agricultural crop) require larger amounts of water, pesticides and fertilizers to support the trees’ rapid growth cycle. Therefore, what would be considered environmentally preferable for an agricultural crop, may not be the considered “best practice” for a forest product. Trees should not be defined as sustainable because they meet a weaker standard that was designed to compare agricultural crops to each other. Moreover, applying this inapplicable and arguably weaker standard to “tree farms” undermines the FSC certification, which ensures that sustainably certified trees are grown and harvested in a way that protects biodiversity and reduces other environmental impacts. The reason FSC rarely certifies tree plantations is because they are less environmentally beneficial than mature forests. Therefore, to call tree plantations that meet (some of) the Rainforest Alliance criteria sustainable, reduces the pressure for tree farmers to get their trees certified by FSC, which independently verifies compliance with a much more robust standard. While we don’t encourage the use of virgin fiber in janitorial paper products, requiring FSC would be preferable to Green Seal verifying compliance with some or all of proposed Rainforest Alliance standard, which was designed to apply to agricultural crops. This is realistic since there are some bamboo forests that are certified by FSC; see, for example, <http://www.ecoplanetbamboo.com/fsc-certification>. The argument that the US Green Business Council gives credit to products that are “rapidly renewable” is weak since that proposal was strongly opposed by environmental organizations such as the Environmental Paper Network and Conservatree. The proposed Green Seal revision to GS 1 has an unacceptably vague definition of “rapidly renewable” that would allow ANY species of tree or crop to qualify – no matter how rapidly it grows in 10 years. The definition in the proposed revision to the standard is the following: “Virgin material produced using wood or nonwood fiber sources that are harvested in cycles of less than ten years.” The standard contains no approved list of “rapidly renewable” trees or other nonwood species nor any criteria defining whether a species of trees or nonwood fiber renews relatively rapidly or not. The vagueness of the definition opens the door to greenwashing. “Rapidly renewable” is generally not well defined and this claim has been considered “greenwashing” by the Federal Trade Commission because it is vague. In order for the claim to be legitimate, the “renewable” material must verify that it grows at the same rate – or at a faster rate – than it is used. Otherwise, it is considered greenwashing. Rapidly renewable should be held to an even higher standard – and the standard that defines “rapidly” renewable should be more clearly defined and substantiated. The US Green Building Council (US GBC) has a less vague definition of “rapidly renewable” that does not allow all types of trees and agricultural fibers to qualify. According to The USGBC defines “rapidly renewable” as a material that’s able to regenerate itself in 10 years or less. That includes bio-based products made from plants harvested on a 10-year (or shorter) cycle. The goal of using rapidly renewable content is to reduce the number and quantity of products made from fossil-fuel derivatives. Not all species of trees and nonwood plants are considered rapidly renewable. Rapidly renewable materials typically include linseed, straw, cotton, wheat, sunflowers, natural rubber, bamboo, and cork. Green Seal should clarify whether all types of trees and plants that are less than 10-years old would qualify. The Georgia Institute of Technology (GIT) study describes rapidly renewable fibers as alternatives to wood pulp and include alternative fibers such as bamboo, kenaf, hemp, flax, Miscanthus, etc.

The Georgia Tech study that was cited to support the proposal is not sufficient for technical substantiation of the proposed changes because it is not a life-cycle assessment. Instead, it is simply a literature review with conclusions that are suspect because it was paid for by a manufacturer, Solaris, a company that manufactures paper made of eucalyptus and acacia, and therefore has a direct financial interest in the report’s findings and recommendations. The report does not state that eucalyptus, acacia and other wood fibers are more productive when they are less than 10 years old (only that they are more productive overall). In addition, it does not define trees as rapidly renewable resources. Instead, it

conflates rapidly renewable resources with alternative fibers such as bamboo, kenaf, hemp and flax, which can replace trees in pulp- and paper-making. It also admits that there is “growing interest in the pulping of agricultural residues globally.” Until these sources of agricultural waste are maximized, Green Seal should not be considering less environmentally preferable sources such as virgin wood or alternative fibers since they would be a compete in the marketplace against paper made from agricultural waste or recycled paper. Just because manufacturers are now offering products with virgin eucalyptus, bamboo and other types of fibers, does not mean these products are environmentally preferable.

Comment: Eucalyptus pulp from Brasil meets the rapidly renewable fiber requirement (typical 6 years to harvest) but US softwood and northern wood would not meet this requirement. It seems it plays a favorite to non-USA virgin wood or nonwood fibers. It's suggested to include the following:

Virgin wood fibers that the manufacturer should document the original source of the material or if not possible to do so the minimum requirement is the region of source and they shall originate from sources that meet the approved third-party certification program as sources are managed and harvested in adherence with principles and practices of sustainability. A certification by an accredited certification body demonstrating conformance to SFI, FSC or equivalent and acceptable certifications by Green Seal and the tissue industry is required. The percentages of virgin wood fibers are to the same as proposed by Green Seal for rapidly renewable fiber in fiber requirements.

Comment: Recommended change to section 3.1. “When using agricultural residue or rapidly renewable fiber, the manufacturer shall document the original source of the material. For any agricultural residue or rapidly renewable fiber the manufacturer shall document the original source of the material or if not possible to do so the minimum requirement is the region of source and they shall originate from sources that meet the approved third-party certification program as sources are managed and harvested in adherence with principles and practices of sustainability. A certification by an accredited certification body demonstrating conformance to SFI, FSC or equivalent and acceptable certifications by Green Seal and the tissue industry is required.” The suggested revision would have the same requirements for rapidly renewable fiber and virgin wood fiber.

Comment: In fact, we believe that 100% rapidly renewable fibers from trees and in silvicultural operations should be third-party certified to ensure responsible forestry practices through recognized sustainable forest certification standards (FSC or PEFC). Submitted by AF&PA

Comment: Sources of residue or rapidly renewable fiber are not required to be certified as sustainable under a third-party certification program. Proposed change: require certification and provide several certification program options. Section 9, in second text box. After first sentence change to read: "Agricultural residue or rapidly renewable fiber shall originate from sources that are certified as sustainable under the Sustainable Agriculture Network's 2017 SAN Standard (4) or under the American National Standard for Sustainable Agriculture: ANSI/LEO-4000(5). Footnotes: (4) <http://sanstandard2017.ag> (5) <http://www.leonardoacademy.org/services/standards/agstandard.html>

Comment: Use of plantation fiber such as acacia has been linked to forest degradation and deforestation. K-C agrees that RRF can be seen as an environmentally preferable source if it meets a number of sustainability requirements specific to agricultural production, however, K-C disagrees that acacia plantations relieve pressure on natural forests. In fact, the development of acacia plantations has led to deforestation in Indonesia and has been criticized by numerous environmental non-governmental organizations for the destructive conversion of virgin tropical forests into monocultural acacia plantations.

Comment: This is a mischaracterization of the Georgia Tech study as it applies to acacia and eucalyptus wood fibers. Georgia Tech clearly states that the study goal was to provide a life cycle review of the major alternative fibers for the production of paper. These include virgin fibers from rapidly renewable sources, including hemp, flax, Arundo donax, bamboo, kenaf, elephant grass, and also agricultural residues, including wheat straw and bagasse. The study highlights the major environmental impacts of alternative fibers that have been identified in previous studies. Comparison is made with conventional wood fibers, including northern and southern softwood, eucalyptus and acacia, and with recycled fiber. In no case was there a direct comparison of the various environmental and health impacts of the rapidly renewable wood fibers acacia or eucalyptus to the longer rotation wood fibers such as northern or southern softwood.

Furthermore, it should be noted that both acacia and eucalyptus are short fiber hardwoods and cannot directly substitute for long fiber northern or southern softwoods in tissue products.

Comment: Clearing of tropical forests to grow RRF such as acacia should not be considered sustainable. This is a mischaracterization of the Georgia Tech study as it applies to acacia and eucalyptus wood fibers. Georgia Tech clearly states that the study goal was to provide a life cycle review of the major alternative fibers for the production of paper. These include virgin fibers from rapidly renewable sources, including hemp, flax, *Arundo donax*, bamboo, kenaf, elephant grass, and also agricultural residues, including wheat straw and bagasse. The study highlights the major environmental impacts of alternative fibers that have been identified in previous studies. Comparison is made with conventional wood fibers, including northern and southern softwood, eucalyptus and acacia, and with recycled fiber. In no case was there a direct comparison of the various environmental and health impacts of the rapidly renewable wood fibers acacia or eucalyptus to the longer rotation wood fibers such as northern or southern softwood. Furthermore, it should be noted that both acacia and eucalyptus are short fiber hardwoods and cannot directly substitute for long fiber northern or southern softwoods in tissue products.

Comment: Clearing of tropical rainforest to grow plantation NFF such as acacia should not be considered sustainable. The sustainability of acacia wood fiber continues to be questioned by numerous environmental non-governmental groups (ENGOS). As noted previously, the conversion of tropical forests into acacia plantations has led to deforestation in Indonesia and has been criticized by environmental non-governmental organizations. As recently as December 19, 2017, WWF-Indonesia continued its focus on the non-sustainable forestry practices of one major acacia fiber supplier, Asia Pulp & Paper “and its pulpwood suppliers have had a 30-year history of deforestation, wildlife habitat destruction, peat drainage and conflict with local communities related to acquisition of land for wood harvesting and pulpwood plantation development in Sumatra and Kalimantan, Indonesia.”

Comment: NFF such as acacia and eucalyptus should be considered planted forests and should be subject to internationally accepted forest certification schemes. Forest Products Companies engaged in the growth and production of acacia and eucalyptus wood fiber as planted forests and not as agricultural crops. All of the global suppliers of eucalyptus and acacia pulp are working towards certifying their planted forests under the Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification (PEFC) Schemes. Major ENGOS consider FSC certification as the best way to get independent and objective verification of a company’s performance on environmentally responsible, socially beneficial and economically viable management of forests. The majority of the world’s supply of eucalyptus pulp is FSC-certified and certified planted forests can be found in Brazil, Chile, Portugal, South Africa and Spain. Conversely, very little of the world’s supply of acacia fiber is FSC-certified or PEFC-certified for that matter. There are two main reasons for this. First, two of the major acacia pulp suppliers in Indonesia have been disassociated from FSC because of their past non-sustainable forestry practices. Second, plantations converted from natural forests after 1994 do not qualify for FSC certification. Similarly, PEFC does not allow the conversion of natural forests into plantations after 2010.

With the availability of two recognized global forest certification systems in place to certify acacia and eucalyptus planted forests, there is no need to apply a third standard for agricultural crops to short rotation wood fibers. In addition, SAN allows for the certification of agricultural crop lands that were converted from natural forests as recently as 2014 or 20 years later than FSC certification requirements.

Comment: There is limited market availability of TCF Kraft acacia or eucalyptus pulps. It should be noted that over 95% of the world’s Kraft pulp, including acacia and eucalyptus, is bleached using the Elemental Chlorine Free process and most wood fiber RRF would not meet the processing requirements of GS-1.

Comment: revise 3.1 e) to read Agricultural residue or rapidly renewable non-wood fiber shall originate from sources that are certified to Sustainable Agriculture Network’s 2017 SAN Standard. Rapidly renewable wood fiber shall originate from sources that are certified to the Forest Stewardship Council or Programme for the Endorsement of Forest Certification Schemes Standards.

Comment: NRDC wishes to echo the comment of Susan Kinsella of Conservatree, who expressed deep concerns about the sources of funding for the study Green Seal has relied on to justify several of the key changes in the proposed

GS-1 standard. Given changes contained in the GS-1 standard and the (positive) impact these changes would have on Solaris Paper Company's business or the business of its affiliates, there appears to be a serious conflict of interest in the outcome of the GS-1 revision.

Comment: As proposed, the definition of "rapidly renewable fiber" in the GS-1 standard is greenwashing. If adopted, the concept undermines any reliance that consumers can meaningfully place in the Green Seal label as a means for determining a sanitary product's sustainability. This is evident in the structure of the definition itself. "Rapidly renewable fiber" includes "virgin material produced using woods or nonwood fiber sources" harvested in 10 year or shorter cycles. If this definition alone controlled, many problems identified with intensive plantation management, especially in tropical forests, provide reason enough to drop the concept from the standard. However, it is the addition of a "wood fiber" definition that makes the inclusion of "rapidly renewable fiber" so problematic here. In that definition, "wood fiber" is an expansive term and includes wood of essentially any species (and by extension, any age). Read together, the two terms suggest that the 10-year harvest rotation caveat is either: 1) meaningless, or 2) encourages increased reliance on high-impact, environmentally damaging species like eucalyptus and acacia and leads to the exclusion of most, if not all, of the other species listed in the "wood fiber" definition. Because of the lack of clarity around how "rapidly renewable fiber" is intended to be defined, NRDC recommends, at the very least, a revision and recirculation for further comment. However, as other commenters have raised, the inclusion of the concept is in itself troubling and would, because of the signal it sends regarding harmful management practices prevalent in the tropics, decrease the sustainability of products certified with the Green Seal label.

Comment: Finally, NRDC again wishes to echo the comment of Susan Kinsella of Conservatree on this point, which is related to our comment above. We quote and endorse her comment verbatim: "[W]e consider wood fiber to be totally inappropriate to include in [the "rapidly renewable fiber"] category, particularly because elsewhere Green Seal states that it intends to regard these wood fibers as "crops." They are not crops, they are tree plantations and should be evaluated under rigorous forest certification criteria for plantations, such as FSC's. Proposing to move these wood fiber sources from forest certifications to agricultural certifications [could allow] companies to side-step significant and necessary forest certification requirements, which would not be consistent with Green Seal's reputation as upholding the best sustainability attributes [of other certification systems]."

Comment: You should simply remove the Rapidly Renewable Fiber standard. Rapidly renewable fiber will open the way for a destructive increase in conversion of natural forests, peatland, and valuable ecosystems around the world to fiber plantations. Despite the so-called carbon neutrality of such fiber, this does not take into account what is being lost from where this fiber will be grown. I am sure you have heard a number of critiques as it relates to this and Indonesia, which isn't it strange that the study was funded by an APP subsidiary? That aside, I have concerns over this from my own region, the Southern US, which already has more fiber plantations than anywhere else in the world per area. Under these new standards you could open the door for further conversion to things such as acacia and we already have ArborGen which is trying to crack the eucalyptus genome to make them cold-tolerant and thus able to survive in the Southern US. This is a disaster waiting to happen, and not one that should be encouraged by Green Seals standard. We should stick to the business of certifying paper made from paper, we need to recover more fiber and turn that into the next generation of paper, that is what is best for the climate and our communities. To learn more about why our forests should be left standing and not converted to fast growing tree plantations or logged for paper, please check out: <https://www.dogwoodalliance.org/wp-content/uploads/2017/03/The-Great-American-Stand-Report.pdf>

Comment: Greenpeace has significant concerns with this rationale: "Green Seal and others consider RRF to be an environmentally preferable fiber source if it meets similar pulp and paper production requirements as recovered material, plus additional sustainability requirements specific to agricultural production[7]. The thinking is that while these are "virgin" sources that will be used just once, they are quickly regenerated with low impact and can contribute to relieving pressure on natural forests" RRF wood fiber is NOT environmentally preferable, they are not low impact and contrary to your statement, have actually been known to INCREASE pressure on natural forests. Trying to use agricultural standards for acacia plantations for example is not anywhere near adequate and could allow controversial fiber to be endorsed with the Green Seal. These tree plantations are NOT crops and should be thus subject to the more rigorous forest certification criteria, such as the Forest Stewardship Council. Allowing these tree plantations to only undergo agricultural certifications could allow controversial fiber that does not live up to Green Seal's reputation to bear your seal. As others have also mentioned, the study Green Seal has relied on to justify several of the key changes

in the proposed GS-1 is not adequate. Solaris Paper Company and its affiliate stand to gain tremendously from the inclusion of RRF wood fiber for example, this raises serious conflict of interest concerns and calls into questions many of the conclusions of this study.

Comment: Thank you for the opportunity to comment on the proposed revision of the GS-1 Sanitary Paper Standard. We appreciate the important role that Green Seal has played in driving innovation and product leadership in sustainability, and appreciate the chance to contribute comments on the proposed changes that move the marketplace toward our shared goals. The Environmental Paper Network has discussed several material concerns with the proposed standard. A primary focus of our concern is the use of the Rapidly Renewable Fiber definition and its definition as it is applied to trees. The USGBC has adopted credit for RRF however it was widely opposed by conservation non-profits. The EPA use of RRF for forest products has likewise not been embraced by the conservation community. In general, it is too blunt an instrument to be using for assessing the environmental leadership of a raw material, supplier or product. A blanket acceptance of RRF opens up tremendous risks for negative impacts on the environment, on recycled and agricultural residue paper markets, and on the reputation of the important Green Seal logo. For example, conservation organizations just recently issued marketplace advisories and joint statements providing reasons why one supplier of a high volume of fast growing acacia and eucalyptus fiber remains too high risk for companies concerned about their corporate social responsibility profile and their on the ground impacts. See: <http://environmentalpaper.org/2018/02/ngos-release-statement-on-5-year-anniversary-of-asia-pulp-and-paper-forest-conservation-policy/> and: https://www.ran.org/marketplace_advisory_on_asia_pulp_paper It is likely that they proposed change would increase CO2 emissions. Much of the fast-growing plantations have been established on peat soils that have been drained and degraded in order to be suitable for acacia crops. This has resulted in massive carbon emissions and increased fires. These operations continue to result in massive emissions, and this is quantified and discussed in a report found here: <http://environmentalpaper.org/wp-content/uploads/2017/09/Too-much-hot-air-20170426.pdf> Another example is where the paper industry is expanding in Mozambique, and land is being acquired for establishment of eucalyptus plantations, leading to reports of land grabbing, deceit and exploitation of local people documented in our recent discussion paper: <http://environmentalpaper.org/wp-content/uploads/2017/11/171117-Discussion-Document-Portucel-Report-2017-English.pdf> The Green Seal logo has a valued reputation as something to be earned, and a sign of product leadership. Has Green Seal assessed what the change in the percentage of the marketplace that would be earning the label with this change, and does it still achieve its intended goal? While the proposed standard includes additional requirements for the RRF to meet certain criteria consistent with the SAN standard, it is unclear that Green Seal would ever be able to independently verify the self-reported claims of companies who are providing assurance they meet the complicated safeguards of the SAN standard. Will Green Seal create a new department to manage this? Will Green Seal do random, surprise testing? For fiber that will be coming from regions full of controversy, including land rights and deforestation challenges, is this a risk that Green Seal can afford? It appears to be a degree of complexity that may not be feasible, and was designed to make the RRF acceptable in theory. The assumption that there is not a certification for tree plantations is false. The Forest Stewardship Council certifies extensive plantation operations worldwide. It does not award its certification based on the rate of growth of the tree, but rather on the overall performance of the forestry operation and its ability to meet rigorous criteria. The proposed standard is out of step with the US EPA's comprehensive procurement guidelines which mandate minimum post-consumer recycled content. Allowing additional opportunities for exclusively virgin fiber products to earn the Green Seal logo further reduces demand for recycled products. Green Seal has the opportunity to create additional market value for products that offer solutions and that need market development to grow to scale, so continued benefits can be realized. This is absolutely not the case for fast growing tree plantation fiber from Indonesia. A detailed life cycle assessment by an independent party would be needed to properly evaluate this change and the assertions in regards to the environmental performance of rapidly renewable tree plantations. The study accompanying the report is informative but limited, and it cannot provide sufficient scientific justification to support the rationale for the change. The Environmental Paper Network is concerned about the conflict of interest for Solaris, which is supplied by fiber from Asia Pulp and Paper in Indonesia, which relies heavily on fast-growing non-native trees species planted on converted lands, often carbon rich peat, and has a clear market interest in gaining acceptance to the Green Seal logo. Solaris's affiliations are publicly known and are documented at our forest products database at <http://ind.environmentalpaper.org> and their own website. This unfortunately casts doubt on the process for other stakeholders, which is exacerbated when combined with the universal surprise of leading NGOs and the US forest products industry association to learn of the changes and how significant they were. Thank you for the opportunity to submit comments.

Comment: Do not include tree fiber merely defined as "rapidly renewable" in the standard, and especially not without adequate capacity at Green Seal to independently verify any corporate claims of compliance with the SAN standards as outlined in the proposed changes.

Comment: In general, the inclusion of rapidly renewable fiber could be a potential benefit - however there could be concerns with the added transportation and ecological impacts related to sourcing rapidly renewable fiber from Asia to replace current sourcing of virgin and recycled content from North America.

Comment: It is possible that there may be concern in the broader industry that funding for the report which supports this proposal has come from Solaris Paper. To explore the various environmental and health impacts of RRF and agricultural residue in sanitary paper products, Green Seal commissioned a life-cycle review of the major RRFs used to produce paper, as conducted by the Georgia Institute of Technology (Georgia Tech) and funded by a grant to Green Seal by the Solaris Paper Company. The report from Georgia Tech is included among the background documents for this proposal.

Comment: While it is understood that not all transportation impacts can be pinned down and calculated for every case, it does stand to reason that there is a lower transportation impact for products manufactured in North America versus Asia. And although recycled fiber is often transported "long distances at times", the materials from Asia are transported across regions of Asia, then transported across the Pacific Ocean, and then transported "long distances at times" across North America. Perhaps there is additional analysis which provides more detail, but my reaction when reading this is that transportation impacts have been minimized in the document to the point where it seems like they aren't even been considered at all.

Comment: Rapidly renewable does not equal sustainable, and can even further threaten and undermine more sustainable practices by incentivizing rapidly renewable plantation trees plantations without appropriate, longer-term forest management considerations. Having a category to allow fiber based solely on it being '100% rapidly renewable' is a potentially harmful inclusion and should be removed. A quick harvest cycle does not mean that fiber is produced responsibly. For example, the demand to produce such fiber can result in damaging land use changes and, in absence of the appropriate certification that is already captured in other schemes, can negatively impact the ecological integrity of surrounding areas, local biodiversity, increase GHG emissions, reduce ecosystem service benefits, and lead to harmful production practices that are more reminiscent of agriculture than forestry and put workers and local communities at risk. Production context matters and renewability is not a replacement for this context. In fact, due to the intensification of production compared to other forestry practices, renewability can make the assurance of other social and environmental factors even more important. SAN is not sufficient as a safeguard forest products, like the acacia and eucalyptus products that would be rewarded by the "rapidly renewable" inclusion. Any virgin material should FSC certified if this were to be included. The language around SAN in this section also implies that only some criteria of SAN would be expected for compliance - this raises questions of how the material would be verified if only some of the standard is applied. SAN also allows for a 5-year rolling cut-off for converted land then becoming certified. Because conversion for plantations is still occurring, this further opens the GreenSeal label up to greenwashing risk. Lastly, because SAN focuses on agriculture, the actual requirements are less stringent than what we expect to see in forest or plantation management.

Comment: Need to add an additional iteration of blended tissue. I think it would be prudent to add an additional clause that states - The product shall be made from any combination of 100% post-consumer material and 100% rapidly renewable fiber. I say this because there are quite a few suppliers that are offering these types of bamboo/recycled blends and both of these individual sources are certifiable under the old gs-1 and the new revisions.