November 30, 2012

AASHE

Re: Comments on the STARS 2.0 Draft for Public Comment

To Whom It May Concern:

Please find attached comments from the Sustainable Purchasing Council on the STARS 2.0 Draft for Public Comment.

The mission of the Sustainable Purchasing Council is to support and recognize leadership in strategic institutional purchasing that shifts industry supply chains toward a prosperous and sustainable future. We recognize AASHE as a strong advocate for complementary objectives, and we have been very pleased to collaborate with AASHE on an ongoing pilot project to develop an outline recognition program for leadership in higher education institutional purchasing. Our comments here are informed by that pilot project.

We commend AASHE, the STARS Steering Committee, and the STARS Technical Advisors on their remarkable work on STARS 2.0, and we provide these comments in the hopes that they will support the ongoing success of STARS as a program.

We have focused our comments on those credits that address the supply chain impacts of purchased goods and services, and specifically environmental impacts, since this has been the area of our most significant focus to date. As we develop more sophisticated methods for understanding supply chain social impacts of purchased goods and services, we may offer updated comments to future versions of STARS.

If we can provide clarification, please do not hesitate to contact Jason Pearson at (202) 642-2336 or jason@purchasingcouncil.org.

Sincerely,

Jason Pearson
Interim Executive Director

Anastasia O’Rourke
Co-Chair, Steering Committee

Yalmez Siddiqui
Co-Chair, Steering Committee
# Comments on STARS 2.0 Draft for Public Comment

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General Comments

We commend the focus on impact over difficulty. This is exactly the right approach, and our comments are based on an alignment with this principle.

We endorse setting an ambitious level of achievement to earn full credits. In particular, we appreciate those credits where full points are only available for 100% achievement. This ensures that STARS will remain a leadership standard without the need for future revisions.

We support the use of innovation credits to recognize new and path-breaking practices.

We commend the adaptability of the credit system to institution type through the use of applicable points as the denominator for calculation of a final score.

We commend the inclusion of a ‘Credit Rationale’ for each credit, since this provides a basis for understanding and also offers a firm foundation for any future conversations about possible modifications of the system.

Throughout our comments, we advocate for performance-based (‘benchmark’) credits over process-based (‘baseline’) credits. We recognize that this has been a subject of lengthy conversation by the Committee, and we understand the desire to offer some credit for incremental improvement, but we propose limiting the number of points available per process-based credit to a maximum of 2 points.

The SPC supports and recognizes leadership in purchasing across all categories of goods and services, including purchases of electricity and fuel, and we have therefore provided input on a range of credits that we have identified as being purchase-related, even though they are not in the ‘Purchasing’ category. In fact, we suggest restructuring the current categories, since the use of a ‘Purchasing’ category may be counterproductive when it only covers a very narrow area of purchasing, because it reinforces the mistaken notion that purchasing’s most significant life cycle impacts are in products such as paper, electronics and cleaning supplies.
Weighting

Our mission is to support and recognize leadership in strategic institutional purchasing that shifts industry supply chains toward a prosperous and sustainable future. As a pilot project, we have undertaken to develop a draft recognition program for leadership in higher education institutional purchasing, and our comments here are informed by that pilot project.

As part of the pilot, we used Department of Commerce data reflecting the overall purchasing profile of the higher education sector, combined with Economic Input Output Life Cycle Assessment (EIOLCA) data from the OpenIO project hosted by the University of Arkansas, to assess the estimated environmental impacts of different categories of purchasing. For our purposes, we normalized these results across environmental impact categories using the normalization scheme developed in coordination with NIST for the BEES software and also used by the USGBC LEED 2009 program to assign weights to different impact categories.

A visual summary of the results of this preliminary analysis is provided in Table 1 below. As shown, purchases of Electricity are estimated to contribute, by far, the most significant upstream environmental impacts, followed by purchases in the areas of food and dining services, construction and maintenance, and fuel. This analysis provides the primary basis for our comments on the purchasing-related credits included in STARS.

Please note that the following limitations are reflected in the EIOLCA analytical methodology:

- The data does not accurately reflect upstream impacts of imported goods and services. In general, however, we would not expect the integration of the impacts of overseas production to significantly alter the results of the analysis.
- The data does not accurately reflect the relative inherent toxicity of substances in purchased products, because the emphasis in the assessment methodology is on toxic emissions from industrial processes, but not on potentially toxic emissions that might occur during use or disposal. This might be particularly relevant for categories such as cleaning products, flame retardants in furnishings, electronics, and other products that contain potentially toxic materials.
- Not all impacts associated with use and end-of-life disposal of products are reflected. Where use and end-of-life impacts are associated with institutional purchases from other industry sectors, they will generally be reflected in the analysis, but where they are associated with non-industrial activity, they may not be reflected in the analysis. For example, the GHG emissions associated with electricity used to power on-campus computers would be well reflected, since the institution’s purchases of electricity from the power industry is part of the analysis. But GHG emissions from burning gasoline in private vehicles would not necessarily be reflected, since these emissions result from private activity (individuals driving cars), and is not reported in the industry dataset.
- The data and methodologies may include relatively high levels of uncertainty. The following factors affect these uncertainty levels:
  - Gross sector spend data does not necessarily reflect variation in types of institutions.
  - The grouping of activities by commodity type (e.g., electricity; ag, food, and dining; sanitation & waste, etc.) is provisional and could be further refined, as specifically noted in the Waste section.
  - The OpenIO dataset is based on 2002 data, which may not reflect ongoing changes in the shape of the economy, most notably the continuing growth of the IT sector, shifts of some industries overseas, and shifts in the overall mix of fuel energy sources.
We therefore submit these recommendations with the understanding that future research and analysis may suggest slightly different conclusions, but we do believe that the overall direction of our comments are well supported by the best available quantitative data and methods.

Further, we suggest that our proposed methodology for weighting of points, based on a quantitative analysis using best available data to understand per-category impacts, reflects the most appropriate method for allocation of points across the range of purchasing-related credits. Therefore, while there may be weaknesses in the data itself, we hope that the overall approach will be embraced as a framework for weighting as STARS continues to evolve.

Table 1. Analysis of Relative Contribution of Higher Education Purchasing Categories to Upstream Impacts

This table shows the relative estimated upstream environmental impacts of the major categories of goods and services purchased by the higher education sector in the United States. For each purchasing category, impacts are shown for human health, ecosystem quality, climate change, resource depletion, and water consumption. The different impact categories are normalized based on values developed by NIST for the BEES software. As shown, purchases of electricity by institutions of higher education generate by far the most significant upstream impacts, followed by purchases of food and agricultural products.

In Table 2 and Table 3, on the following page, we use the above analysis to propose a reallocation of points across the purchasing-related credits in STARS 2.0, in order to more accurately reflect the relative contribution of different types of purchases to overall environmental impacts as shown in Table 1. To the extent possible, the relative allocation of points to each purchasing category (in Tables 2 and 3) aligns with its impact intensity relative to other purchasing categories (in Table 1).
<table>
<thead>
<tr>
<th>Group</th>
<th>Credit</th>
<th>Current</th>
<th>Proposed</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air and Atmosphere</td>
<td>OP 1 Greenhouse Gas Emissions</td>
<td>14</td>
<td>12</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>OP 2 Scope 3 Greenhouse Gas Emissions</td>
<td>2</td>
<td>4</td>
<td>+2</td>
</tr>
<tr>
<td>Buildings</td>
<td>OP 4 Building Operations and Maintenance</td>
<td>7</td>
<td>8</td>
<td>+1</td>
</tr>
<tr>
<td>Energy</td>
<td>OP 7 Energy Consumption</td>
<td>10</td>
<td>6</td>
<td>-4</td>
</tr>
<tr>
<td></td>
<td>OP 8 Clean and Renewable Energy</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>OP 9 Energy Metering and Management</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Food</td>
<td>OP 10 Food and Beverage Purchasing</td>
<td>4</td>
<td>2</td>
<td>-2</td>
</tr>
<tr>
<td></td>
<td>OP 11 Vegan Dining Animal-Derived Foods</td>
<td>1</td>
<td>10</td>
<td>+9</td>
</tr>
<tr>
<td>Purchasing</td>
<td>OP 15 Computer Purchasing</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>OP 16 Cleaning Product Purchasing</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>OP 17 Office Paper Purchasing</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Transportation</td>
<td>OP 19 Campus Fleet (change to Vehicle Fuels?)</td>
<td>2</td>
<td>1</td>
<td>-1</td>
</tr>
<tr>
<td>Water</td>
<td>OP 27 Water Use</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total purchasing-related credits</strong></td>
<td></td>
<td>59</td>
<td>59</td>
<td>0</td>
</tr>
</tbody>
</table>

**Table 2. Proposed Reallocation of Points Among Purchasing-Related Credits**

This table shows the proposed reallocation of points among purchasing-related credits, with credits grouped according to the categories used in STARS 2.0. Allocation of points is based on the relative contributions of different impact categories as shown in Table 3. For each credit, the change in the number of points, comparing between the current draft and the proposed allocation, is shown in the far right column. The total number of points allocated to these purchasing-related credits has been maintained at fifty-nine (59) points.

<table>
<thead>
<tr>
<th>Purchasing Category (from EIO LCA)</th>
<th>Credit</th>
<th>Current</th>
<th>Proposed</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>OP 1 Greenhouse Gas Emissions</td>
<td>14</td>
<td>12</td>
<td>34</td>
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<tr>
<td></td>
<td>OP 7 Energy Consumption</td>
<td>10</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>OP 9 Energy Metering and Management</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ag, Food, &amp; Dining</td>
<td>OP 10 Food and Beverage Purchasing</td>
<td>4</td>
<td>2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>OP 11 Vegan Dining Animal-Derived Foods</td>
<td>1</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Construction &amp; Maintenance</td>
<td>OP 4 Building Operations and Maintenance</td>
<td>7</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Fuels</td>
<td>OP 8 Clean and Renewable Energy</td>
<td>6</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Transportation</td>
<td>OP 2 Scope 3 Greenhouse Gas Emissions</td>
<td>2</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>OP 19 Campus Fleet / Vehicle Fuels</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>OP 15 Computer Purchasing</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OP 16 Cleaning Product Purchasing</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OP 17 Office Paper Purchasing</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OP 27 Water Use</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Proposed New Credits</td>
<td>OP XX Spending Inventory</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OP XX Total Cost of Ownership (TCO)</td>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OP XX Food Waste</td>
<td>0</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

**Table 3. Rationale for Allocation of Points Based on EIO LCA Analysis**

This table shows the rationale for allocation of points based on the purchasing category EIO LCA analysis summarized in Table 1. The purchasing-related STARS credits shown in Table 2 are grouped, to the extent possible, by the purchasing categories used in the EIO LCA analysis. For each purchasing category, the percentage of total points allocated to that category is shown in the right column as a percentage of the fifty-nine (59) points presumed to relate to the impacts identified in the EIO LCA analysis. To the extent possible, points have been allocated so that these percentages match the relative percentage importance of each purchasing category as shown in Table 1. Additional proposed credits are shown in red, and these would require additional adjustments to the overall allocation of points. For instance, as noted in the text below, inclusion of a Food Waste credit presumes reduction of the number of proposed points allocated to OP 11 Animal-Derived Foods from 10 points to 5 points.
Summary of Proposed Revisions

The following principles are evident in our comments on most credits:

- Where reliable performance-based (benchmark) measurements are available, we recommend using these measurements exclusively, and eliminate process-based (baseline) measurements.
- Where reliable performance-based benchmarks are not readily available, we encourage STARS to make every effort to develop such benchmarks using all available data, not just that submitted through STARS. The Sustainable Purchasing Council would welcome an opportunity to collaborate with AASHE to develop more reliable performance-based benchmarks.
- We recommend reducing prescriptive, process-based credits to a maximum of two (2) points, a second point available only in cases where there is sufficient quantitative evidence that the prescribed process (e.g. using a specific technology or specifying a specific certification) is linked to achieving the stated desired outcome. In cases where quantitative evidence linking the prescribed process with achievement is lacking, we recommend assigning a maximum of one (1) point or reallocate these points to credits whose calculation is based on measurable changes in the stated desired outcome.

The following are the most significant revisions that we propose to the credits themselves:

- Combine OP 1 (Scope 1 and 2 GHG Emissions) and OP 2 (Scope 3 GHG Emissions), and eliminate the distinction between local and remote offsets.
- Restructure OP 7 (Energy Consumption) and OP 8 (Clean and Renewable Energy), potentially eliminating OP 8 entirely, to create credits that separately target electricity-related impacts and impacts of the fuel supply chain.
- If OP 8 is retained, provide full credit for REC’s, but eliminate any credit for cogeneration.
- Significantly increase the weight of OP 10 (Food and Beverage Purchasing) to more accurately reflect the fact that food purchases may generate over 20% of an institution’s upstream environmental impacts.
- Restructure OP 11 (Vegan Dining) as an Animal-Derived Foods credit to recognize quantitative reductions in animal-derived food purchases, based on the high per-calorie environmental impact intensity of animal-derived foods.
- Introduce new credits for Spending Inventory and use of Total Cost of Ownership.
- Reduce the relative weight of OP 15 (Computer Purchasing), OP 16 (Cleaning Products Purchasing), OP 17 (Office Paper Purchasing), and OP 19 (Campus Fleet) to more accurately reflect the estimated relative contribution of the targeted purchasing categories to overall impacts.
- Introduce a new credit for Food Waste reductions, recognizing the reductions in food waste are one of the most effective methods for reducing the overall volume of food purchases, and thereby reducing upstream impacts associated with those purchases.
- Refine OP 27 (Water Use) in future versions of STARS.

On the following pages, we provide specific comments on individual credits and credit categories.
Air and Atmosphere

We recommend combining OP 1 and OP 2 into a single Greenhouse Gas Emissions credit worth 16 points, with all points allocated using the performance-based (benchmark) method of point allocation described in Parts 3 and 4 of OP 1.

Further, we recommend eliminating the distinction between local, institution-catalyzed offsets (currently allowed as an offset in OP 1) and purchased third-party-verified offsets (currently allowed as an offset in OP 2). While we support the allowance of both types of offsets, we do not think that the distinction between local and purchased offsets is useful. GHG emissions are a global problem, and the focus should be on overall reduction or offset of overall emission for which an institution is responsible. If there are non-GHG-related reasons to promote local actions, these should be either: 1) explicitly identified in the credit rationale; 2) included in a separate credit addressing these other factors directly.

If it is impractical to combine the credits at this time, then we recommend the following changes to the existing credits.

**OP1 Greenhouse Gas Emissions (Scope 1 and 2)**

**Weighting**

As noted above, if OP 1 is combined with OP 2, they should have a combined weight of 16. If OP 1 remains independent, then decrease the relative weight of the credit from 14 to 12 points, in recognition that it is partially duplicated by OP 7 Energy Consumption.

**Comments**

If it is not combined with OP 2, rename the credit as ‘Greenhouse Gas Emissions (Scope 1 and 2)’ to make clear that it refers to those emissions closest to the institution’s control.

Eliminate (or reduce the weight) of Part 1 and Part 2. Part 1 and Part 2 offer process-based (baseline) rather than performance-based (benchmark) points. Under the current draft, even if an institution’s per-student or per-square-foot GHG emissions are quite high relative to its peers, points can still be earned for reductions in these emission levels. While such reductions in per-user and per-square-foot performance are certainly a step in the right direction, points should be awarded on a strictly performance basis. If points are being offered for Part 1 and 2 as a way to encourage participation, a maximum of one (1) point should be available for each.

We recognize that the current benchmark calculation methods do not take into account difference among schools that are a result of external factors outside the institution’s control (such as climate region, fuel mix of regional energy grid, rural vs urban setting), and we would be open to the introduction of such weighting in future versions of STARS. But we would also suggest that it is appropriate for institutions to take responsibility for these location-based factors themselves, as proposed, even if it means that they may have a steeper challenge to overcome, relative to peers not subject to these external factors, in achieving full credit for OP 1.

**OP2 Scope 3 Greenhouse Gas Emissions (Scope 3)**

**Weighting**

If OP 2 is combined with OP 1, as proposed, then they should have a combined weight of 16 points, as noted above. If OP 2 remains independent, however, then the weight of Scope 3
credits should be proportional to the relative amount of GHG emissions generated by Scope 3 activities, as compared to Scope 1 and Scope 2 activities. Based on the ACUPCC Reporting System (http://rs.acupcc.org/stats/ghg-source-stats/), Scope 3 emissions represent 23~55% of all higher education emissions, depending on institution type. Therefore, we recommend increasing the number of points allocated to OP2, relative to OP1, from 2 to 4. Note that, in Table 3, we consider emissions reductions associated with OP 2 as most significantly addressing transportation-related impacts.

Comments

If it is not combined with OP 1, rename the credit as ‘Greenhouse Gas Emission (Scope 3)’ in order to more clearly communicate the intent of the credit relative to OP 1.

Part 1 and Part 2 should be converted from ‘process’ to ‘performance’ credits by setting an appropriate benchmark based on the relative performance of peer institutions. The calculation method for the credits could be modeled on the current Part 3 and Part 4 of OP 1.
Buildings

OP4 Building Operations and Maintenance

Weighting
We propose increasing the number of points from 7 to 8, to reflect the relative importance of building construction, operations, and maintenance in the overall context of purchasing-related impacts. As shown in Table 1, construction and maintenance-related purchasing is estimated to generate 14% of total upstream purchasing impacts.

Comments
Use of LEED as a reference standard is currently appropriate as a proxy for upstream impacts of purchased construction materials. As the Sustainable Purchasing Council develops specific guidance for certain building product categories, we may offer more specific guidance on construction- and maintenance-related purchasing, for inclusion in future versions of STARS.
Energy

OP 7 Energy Consumption

Weighting

Reduction in energy consumption is certainly a laudable goal, both for the associated reductions in upstream environmental impacts associated with reduction in energy production and for the economic benefits that accrue to an institution from greater energy efficiency. That said, while reductions in energy consumption may serve as a relatively good proxy for environmental impact reductions in an economy primarily fueled by fossil fuels, it is still a relatively crude measure. Not all energy production produces the same level of environmental impacts per MMBtu, and the relative environmental benefits of reductions in energy consumption decrease as institutions shift to renewable energy sources (something that will presumably be happening at institutions using STARS).

In other words, not all BTU’s are the same. Since the credit does not acknowledge this complexity by providing differential weighting for energy consumption reduction of different energy types, we suggest the weight of this credit be reduced from 10 to 6. This acknowledges the fact that reductions in energy consumption remain a reasonable proxy for environmental impact reductions, while also lending more weight to measures such as OP 1 Greenhouse Gas Emissions, which more closely tie the number of points to the level of environmental damage. (Also see Comments on OP 8.)

Comments

Part 1 and Part 2 should be eliminated, since these are process-based, not performance-based measures.

OP 8 Clean and Renewable Energy

Weighting

If the primary purpose of this credit is to address air emissions and GHG emissions associated with non-renewable energy, then this credit is entirely redundant with OP 1, 2, 3, and 7, and we would be inclined to recommend completely eliminating the credit. As an alternative, if the credit is classified as a method for reducing the upstream impacts associated with fuel purchases, then the weighting for this credit could be considered appropriate for the moment. While the credit as written is an imperfect proxy for such reductions, it is sufficient for the current version of STARS. Future versions might better address the issue by restructuring existing credits and adding new credits, as explained in the Comments below.

Comments

This credit promotes a prescriptive strategy (renewable energy sourcing) rather than the desired outcome (reductions in damaging emissions and impacts). As such, it should be prioritized for revision in the future. Ideally, in future versions of STARS, the energy-related objectives of this credit and OP 7 could be more appropriately met by restructuring the credits to focus on the impacts associated with energy production and use, recognizing the different impact intensities associated with different forms of energy, as follows:
**OP 7 Electricity-Related Impacts**
This credit would focus on upstream impacts of purchased electricity production by assigning points based on the total amount of electricity purchased from different source types, with each type weighted based on its relative environmental impacts per MMBtu.

**OP 8 Fuel Supply Chain**
This credit would focus on upstream impacts of purchased fuels by assigning points based on the total presumed impacts likely to be generated by the combustion of the different types and volumes of fuels purchased.

For both of the above credits, Life Cycle Analysis (LCA) data about the relative impacts associated with the generation of electricity by different source types and with the combustion of different types of fuels could be obtained from public literature or from the Ecoinvent database, which contains information about the per-unit impacts of over 4,000 industrial processes, including all major forms of electricity generation and fuel combustion.

Onsite emissions from fuel combustion would continue to be addressed by OP 3 Air Emissions. Restructured in this way, OP 3, OP 7, and OP 8, taken together, would provide full incentive to make those operational changes in energy production and use that would be most likely to reduce overall environmental impacts, creating a suite of fully performance-based credits.

If these changes are impractical for the current version of STARS, however, then we strongly encourage AASHE to make the following two changes:

1. **Increase the Point Value for Option 4 (RECs) from 1.5 to 6:**

<table>
<thead>
<tr>
<th>Renewable Energy Option (See Criteria)</th>
<th>Point Value per Option</th>
<th>Multiply</th>
<th>Energy Generated or Purchased that Meets Criteria (MMBtu)</th>
<th>Divide</th>
<th>Total Energy Consumption (MMBtu)</th>
<th>Equals</th>
<th>Points Earned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 4</td>
<td>6</td>
<td>×</td>
<td>_____</td>
<td>+</td>
<td>_____</td>
<td>÷</td>
<td>_____</td>
</tr>
</tbody>
</table>

   We see no reason why purchases of RECs should not be considered just as valid an option for supporting the development and use of clean and renewable energy sources. At the scale of the United States market as a whole, generating 1 kW of electricity onsite using clean and renewable energy has exactly the same environmental effect as purchasing the environmental attributes of 1 kW of electricity generated offsite using clean and renewable energy. While we acknowledge the argument that only ‘additional’ benefits should be recognized, and while we recognize that REC’s do not ensure additionality of the environmental attributes purchased, we still suggest that a 100% credit for REC’s sends an appropriate signal, namely: clean and renewable energy, whether generated on-site or off-site, whether ‘additional’ or ‘business as usual’ is far preferable to non-renewable energy.

2. **Remove Option 5.**

   While cogeneration is an appropriate method for enhancing energy efficiency, its environmental benefits will already be captured in other credits such as OP 1, OP 3, and OP 7. Its inclusion here therefore represents a duplication of credit. Further, it is misleading to characterize cogeneration as clean and renewable, since many, if not most, cogeneration facilities are powered by non-renewable fuels. While the increased energy efficiency of these facilities may reduce emissions per BTU, this is not the same as generating clean, renewable energy.
OP 9 Energy Metering and Management

Weighting
The weighting of this credit is appropriate for a ‘process’ credit.

Comments
We support this credit, since energy metering and management is likely to provide more accurate data and information to support energy-related performance-based credits, such as OP1 and OP2.
Food

Based on our preliminary EIO LCA analysis of the upstream impacts of food production, purchases of food are responsible for over 20% of the upstream environmental impacts of higher education purchases, second only to electricity purchases. This credit should therefore be weighted much more heavily. In fact, food purchases likely represent even more than 20% of the environmental footprint of higher education purchases, since food production is a significant pressure on forests in many parts of the world, but these impacts are not fully reflected in our analysis.

With respect to the relative weighting of OP 10 and OP 11, our EIO LCA analysis and the expert literature both suggest that, by far, the most significant contributor to upstream impacts of food purchases are purchases of animal-based products, whether in the form of meat or dairy, and this is also consistent with other research suggesting that animal-derived products have a much higher per-calorie environmental intensity than non-animal-derived products. Therefore, until more precise outcome-based measures can be developed, we suggest that the weighting of the two purchasing-related food credits should be inverted, with the largest number of points being awarded for shifting the overall balance of calories away from animal-derived products.

OP 10 Food and Beverage Purchasing

Weighting

The number of points allocated to this credit should be reduced until more substantive research has been conducted to demonstrate the relative environmental benefits of the various criteria on which the credit is based. Until that time, a more appropriate measure of the relative upstream environmental impact of food and beverage purchasing would be the proportion of calories derived from animal products, as measured by the revised OP 11 (see above).

Comments

In keeping with the ambition to award full points only to full performance, full points should only be awarded for achievement of 100% sustainable food purchases. Therefore the multiplying ‘Factor’ used to calculate points should be: total points available ÷ 100. For example, if the total number of points available is reduced to 2, as suggested, then the Factor should be reduced from 0.08 to 0.02.

Given the absence of adequate data to calculate an outcome- or performance-based measure of the upstream impacts associated with food purchases, the proposed process-based method for allocating points is appropriate, at least for the moment. In future years the Sustainable Purchasing Council will be working to refine the criteria which may be used to assess the relative sustainability of different food and beverage options on a genuine performance basis. In the interim, assigning more weight to this category within the overall scheme will help to drive market interest which can be harnessed to enhance certification and differentiation methods.

OP 11 Vegan Dining Animal-Derived Foods

Weighting

In light of the importance of food relative to other purchasing categories, and particularly in light of the relatively high environmental intensity of animal-derived foods, this credit could be increased to ten (10) points.
NOTE: If a new food waste credit is added, as suggested below (see Waste section), then OP 11 credit should be increased to 5 points rather than 10 points.

Comments

As indicated above, we suggest renaming this credit to ‘Animal-Derived Foods’ and redesigning the credit to measure reductions in animal-derived foods on an actual performance basis. While we commend the desire to promote reductions in animal-derived food consumption, we question whether the availability of a vegan dining option is an accurate measure of such reductions. A more appropriate, performance-oriented measure would be a credit based on measured reduction in meat and animal-derived products per weighted user. Therefore, we propose the following alternative credit formula:

\[
\text{Factor} \times \text{Percentage of Food and Beverage Purchases on Animal-Derived Foods (per weighted user)} = \text{Total Points Earned}
\]

We would be happy to work with AASHE and the Committee to develop guidelines for defining ‘animal-derived foods’ in a way that is accurate to the relative upstream impacts of these foods and appropriate for the information management systems currently available to higher education institutions for tracking this information.

For instance, it may be worth exploring whether sufficiently accurate data can be collected to identify a percentage of food and beverage calories (as opposed to expenditures) on animal-derived foods, and whether these calories can be categories based on the relative impact intensity of different types of animal-derived foods (e.g. meat vs. dairy). While this could be more difficult data to obtain, it would be a more appropriate metric, and it might ultimately lead to even more refined points system based on other food calorie intensities.

If data is not available for a calorie-based measure, then a weight-based measure would be preferable to an expenditure-based measure, since any expenditure-based measure might tend to create perverse incentives by penalizing institutions for purchasing (typically more expensive) organic, grass-fed, animal-welfare-certified animal product.

Alternatively, we recommend that STARS work with its technical advisors to review the kind of calorie/quantity data that eateries collect to find the most appropriate measure for this credit. If all else fails, however, the percentage of animal-derived purchases per weighted user may be an acceptable temporary metric for Version 2.0 until data can be collected to support a more sophisticated metric.
Purchasing

In addition to our comments on the existing credits, we recommend adding two new credits to recognize institutional efforts to understand the full life cycle impacts of their overall spending. We provide an initial description of this proposed credits, and we would be happy to collaborate with AASHE to refine the credits for integration into STARS.

**OP XX Spending Inventory**

**Weighting**

As an exclusively process-based credit, this credit should be worth a maximum of two (2) points.

**Comments**

A complete spending inventory is essential for accurately assessing the full life cycle impacts of an institution’s purchased goods and services, and for measuring and managing resource efficiency over time. For this reason, institutions should complete a spending inventory that includes all purchased goods and services, grouped into different categories, since different categories of purchasing generate very different types and scales of life cycle impacts. The spending inventory can then be used as the basis for effective spend management to achieve sustainable purchasing objectives based on guidance provided by the Sustainable Purchasing Council and others.

In order to receive this credit, institutions would be required to submit an electronic spending inventory, by purchasing category, at a minimum resolution equivalent to United Nations Standard Products and Services Code (UNSPSC) 4-digit Families, in the following format:

<table>
<thead>
<tr>
<th>Product or Service Code</th>
<th>Product or Service Description</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>44103103</td>
<td>Photocopy toner</td>
<td>$13,018</td>
</tr>
</tbody>
</table>

The inventory should include all purchased goods and services and should provide a total cost of all goods and services. With explanation, up to 5% of all purchased goods and services may be included in an ‘Other’ category that is not classified by product or service code.

Institutions that submit this information at a resolution of UNSPSC 4-digit Families for their entire spend would receive 1 point. Institutions that submit this information at a resolution of UNSPSC 6-digit Class (or equivalent) or UNSPSC 8-digit Commodity (or equivalent) would receive 2 points.

The Sustainable Purchasing Council would welcome an opportunity to collaborate with AASHE to refine this credit in future versions of STARS. In particular, we propose to explore the relative value of soliciting information, for each purchasing category, about total units purchased or total cost per category. Or both (assuming that reporting systems could be developed to overcome limitations on sharing per-unit purchase prices).

**OP XX Total Cost of Ownership (TCO)**

**Weighting**

As an exclusively process-based credit, this credit should be worth a maximum of two (2) points, since the use of TCO has been quantitatively linked to greater resource efficiency and lower impacts, particularly as for energy-consuming products and systems.
Comments
Total cost of ownership (TCO) estimates the total life cycle direct and indirect costs of an asset in a single dollar figure. Life Cycle Cost Analysis (LCCA) is the process used to estimate an asset's TCO. In addition to purchase price, LCCA incorporates future costs such as maintenance, replacement of parts, energy use and disposal, and evaluates them on the basis of Net Present Value. It can also be used to incorporate environmental and social life cycle costs, such as the cost of purchasing pollution offsets or monitoring labor practices. The systematic use of LCCA in purchasing decisions reduces an institution's risk of incurring avoidable use-phase and disposal-phase liabilities, encourages an institution’s investment in higher quality and more durable goods, and establishes whole systems thinking as a cultural norm in institutional resource planning.

We recommend that AASHE add a credit that recognizes institutions that, as a matter of policy and practice, employ LCCA when evaluating energy and water using products and systems, preferably by structuring RFPs so that vendors compete on the basis of lowest TCO rather than lowest purchase price. We recognize that at this time many public institutions cannot legally award contracts on the basis of lowest TCO, but we believe STARS can help that change by providing incentive for legislative action on this front.

A number of tools exist for calculating TCO. ICLEI Europe has developed a free LCCA tool that institutions may elect to use for evaluating water and energy using assets. [http://www.iclei-europe.org/deep](http://www.iclei-europe.org/deep)

OP 15 Computer Purchasing

Weighting
This credit should be reduced from 2 points to 1 point. If, as stated, the purpose of this credit is to build a market for environmentally preferable computers, then one (1) point should be sufficient. Given that the EIO LCA analysis does not suggest that computer purchases are overly significant relative to other categories, points would be better allocated to more relatively impacteful categories. Further, those areas of the life cycle impact of electronics which might not be well reflected in the EIO LCA—such as energy use and disposal—should be adequately addressed on a performance basis by other credits within STARS (e.g., OP 1, OP 23, OP 26).

Comments
In future versions of STARS, a credit might be developed to address the upstream impacts of purchased IT and communication services, including, for example, leasing of server space from third party vendors, the impacts of which may not be adequately accounted in other credits.

OP 16 Cleaning Products Purchasing

Weighting
This credit should be reduced from 2 points to 1 point. At the scale of the entire industrial system, cleaning products themselves generate a relatively small proportion of overall environmental impacts, including toxicological impacts (compared to, say, agricultural fertilizer runoff). But they do represent an important area of innovation for alternative formulation of chemically intensive products, and as such, they are an appropriate area of focus for credits.
OP 17 Office Paper Purchasing

Weighting

The weight of this credit should be reduced from 2 points to 1 point. Contrary to the stated rationale, office paper is probably not a significant driver of water, energy, and deforestation impacts (relative to, say, agriculture). That said, office paper has been an effective touch point and education platform for forestry issues, and the credit is likely justifiable on that basis.

Comments

To make this credit more robust, one or more forest products certification schemes should be included as an optional path, in addition to recycled content, as an attribute of preferable office paper, since the most robust chain-of-custody certification schemes provide a more reliable measure of upstream forestry impacts than the proxy of recycled content.
Transportation

OP 19 Campus Fleet

Weighting

The weighting of this credit should be reduced to 1. This is a prescriptive, process-based credit whose relative contribution to overall environmental impacts is unclear. Presumably, the primary purpose of shifting to alternative vehicles is to reduce fuel-related emissions impacts. These impacts are already well addressed by OP 1, and most of the apparent purpose of this credit can be achieved by increasing the weight of OP 1, as proposed. Further, campus fleets are not estimated to be a significant contributor to overall campus vehicle emissions, which are better addressed by OP 20, OP 21, and OP 22.
Waste

Source reduction, waste management, and sustainable materials management represent important strategies, but we do not have specific comments on the existing credits in the context of sustainable purchasing. While the EIO LCA analysis shows Sanitary and Waste purchasing as a significant impact area, we do not currently have sufficient insight into these impacts to use them as a basis for assessing the current STARS credits for Waste. For instance, a significant portion of these impacts may be associated with the operation of heating plants and waste processing facilities. While these impacts should certainly be addressed, they may already be covered by the existing STARS credits, whether in the Waste category or elsewhere.

We do recommend that AASHE consider adding a new credit specifically oriented toward food waste, as explained below.

**OP XX Food Waste**

**Weighting**

If the new credit is created, it should offer 5 points for achievement of 100% elimination of food waste, and OP 11 should be assigned 5 points (rather than the otherwise recommended 10 points).

**Comments**

Recent research compiled by NRDC has estimated that up to 40% of all food produced for consumption in the United States goes to waste, more than half of that waste occurs in the consumption phase. If, as our EIO LCA analysis suggests, almost 20% of all upstream environmental impacts of higher education purchasing are associated with food purchases, and if the higher education sector’s level of waste is comparable to the national average, then up to 20% of the upstream impacts of higher education food purchases (4% of total upstream impacts of higher education purchasing) could be directly addressed by eliminating food waste.

Accordingly, we suggest that AASHE consider creating a new credit, modeled on Part 2, OP 23 Waste Generation, that specifically credits food waste reductions in the same way that existing credits recognize reductions in electronics waste or construction and demolition waste.

If possible, the credit should be entirely performance- and threshold-based, as is the case with OP 23, Part 2. If this is impractical based on lack of data, then the first version of the credit should be based on percentage reductions in waste, with the second version based on thresholds established from data provided collected from implementation of the first version.
Water

OP 27 Water Use

Weighting

The weighting appears appropriate, though potentially might vary in importance regionally. If the method for allocating points were refined, even more points could be allocated to this credit.

Comments

While the credit currently provides a rough understanding of reduction in water purchases and usage, the connection between water usage and negative impacts could be refined in future versions. For instance, the credit currently does not distinguish between water consumption (use of the water in ways that makes it no longer available for other uses in the watershed) versus water withdrawal (use of water which may result in the water being returned to the watershed for use by others).

The current weighting accurately reflects that water purchases and usage should be an important area of attention, and future versions might appropriately increase the number of points associated with this credit, but the method of point allocation within the credit should be refined prior to any such increase.