

**NATIONAL ELECTRONICS PRODUCT STEWARDSHIP INITIATIVE  
DRAFT MEETING NOTES OF THE INFRASTRUCTURE SUBGROUP**

January 24-25, 2002

Tampa, FL

The NEPSI Infrastructure Subgroup met for several hours during the morning and afternoon of January 24<sup>th</sup> as part of the NEPSI stakeholder meetings in Tampa. This document summarizes the major topics covered during the subgroup's discussions, and highlights any agreements that were reached.

**Attendees:**

Reggie Caudill, NJIT

Butch Teglas, Philips

David White, Nokia

Ed Nevins, JVC

Sheila Davis, Materials for the Future

Mark Kennedy, CIWMB

Kevin McCarthy, Waste Management

Frank Coolick, NJ DEP

Merry Rankin, Iowa DNR

Lynn Rubinstein, NERC

Patty Dillon, Tufts University

Chris Beling, EPA Reg. 1

Julie Rhodes, ReDO

Julie Rosenbach, USEPA OSW

David Flora, USEPA-Kansas City

Wayne Rifer, WEPSI (facilitator)

Ben Carlisle, ERG (note-taker)

***Overview of Work Done to Date on Matrix Tool***

Reggie Caudill gave an overview of the matrix tool and described the work done on it to date.

Reggie said that the matrix belongs to the category of "systems requirements analysis" tools that have traditionally been used by engineers to identify the key characteristics they want in a product based on their idea of what consumers want. The matrix tool will analyze the requirements for a NEPSI system by looking at key features of electronics stewardship models in light of the NEPSI desired attributes. The tool evaluates how well each key feature achieves the desired attributes.

Reggie described the layout of the matrix. The list of NEPSI desired attributes runs down the vertical axis; a list of key features runs across the horizontal axis. The key features in this list were derived primarily from three existing models (SWICO, Best Buy, Massachusetts) that were written up by subgroup members (Chris Beling, Ed Nevins, and Patty Dillon, respectively). As more and more existing and proposed models are written up by subgroup members, the key features of these models will be added to the matrix.

Next to the list of desired attributes is an "Importance Rating" column, which is used to weight the attributes (on a scale of 1 to 5) in terms of their relative importance. Up until now, Reggie said, all attributes have been weighted equally, but one of the goals of these discussions is to decide on consensus weightings.

Reggie said that the model writers (Chris, Ed, and Patty) had each gone through the matrix and assigned values (from 1 to 9) indicating the relative correlation between the

key features of their models and the desired attributes. The matrix tool had then generated graphs and tables, depicting the results. Reggie said that the results indicate that no one model achieves all of the attributes well. But the results also show that different models do achieve certain attributes well—and the matrix allows the subgroup to identify the key features that are most successful at achieving the attributes.

If the subgroup agrees that the matrix tool is valuable, Reggie said, then the group will need to go back and reach consensus on the correlations entered into the matrix to date.

### ***Clarifying the Desired Attributes***

Wayne said that, in doing the correlations, the model writers had found some of the desired attributes confusing and hard to evaluate. So he suggested that the subgroup look over the attributes and try to clarify their meaning. The following table lists short phrases and definitions that the subgroup members came up with as they brainstormed the meaning of each attribute:

<b>Desired Attribute</b>	<b>Meaning</b>
1. Flexibility	<ul style="list-style-type: none"> <li>• The system should provide baseline services but with many options for implementation.</li> <li>• The system should be scaleable, able to change over time.</li> <li>• The system should allow for differences between regions and localities; also urban/rural differences.</li> <li>• <i>This attribute is similar to attribute #4.</i></li> </ul>
2. Convenient to consumers	<ul style="list-style-type: none"> <li>• Convenience can be defined both in temporal terms (e.g., frequency of collection events or takeback opportunities) and in geographic terms (e.g., distance to drop-off site).</li> <li>• Convenience should be defined/measured by a threshold of participation (this should be a metric for success).</li> <li>• Convenience is relative.</li> </ul>
3. Educational component that allows for enlightened consumer decision-making	<ul style="list-style-type: none"> <li>• The term “enlightened” should be applied to decisions made at both the purchase and disposal point.</li> <li>• This attribute should be measured in terms of the availability of educational information.</li> <li>• Educational information should be provided in electronics user’s manuals and through advertising.</li> </ul>
4. National in scope, but respects regional differences	<ul style="list-style-type: none"> <li>• The system should provide a nationally consistent base level of service but with regional flexibility.</li> <li>• <i>This attribute is similar to attribute #1.</i></li> </ul>
5. Shared responsibility	<ul style="list-style-type: none"> <li>• Responsibility should be shared among OEMs, retailers, consumers, recyclers, governments, and NGOs.</li> <li>• Responsibility should be in proportion to the ability to act to reduce the environmental impact of products.</li> <li>• Shared responsibility is not equated with shared cost.</li> </ul>
6. Emphasize source reduction / reuse / recycling hierarchy	<ul style="list-style-type: none"> <li>• The system should use a reasonable decision-making process for applying the hierarchy.</li> </ul>
7. Appropriate levels of recycling given life-cycle impacts	<ul style="list-style-type: none"> <li>• The system should consider life-cycle impacts of products when making hierarchy decisions.</li> <li>• The system should promote appropriate use of recycling technology.</li> <li>• <i>This attribute is fairly confusing.</i></li> </ul>

<b>Desired Attribute</b>	<b>Meaning</b>
8. System to receive all brands and products in scope	<ul style="list-style-type: none"> <li>The system should be able to handle the full scope of qualified products that was defined earlier in NEPSI process.</li> </ul>
9. Realistic goals for collection, reuse, and recycling over time with monitoring and reporting	<ul style="list-style-type: none"> <li>The system should have an entity to track and monitor rates of collection, reuse, and recycling.</li> <li>Goals can mean numbers, percentages, or pounds.</li> </ul>
10. Terms should be clearly defined	<ul style="list-style-type: none"> <li><i>The subgroup recommends throwing out this as an attribute.</i></li> </ul>
11. Recognize historical and orphan waste in appropriate fashion	<ul style="list-style-type: none"> <li><i>This attribute overlaps with attribute #8. They could be combined.</i></li> <li>Even if the NEPSI system handles all products and brands in its scope, it might not treat all equipment similarly.</li> </ul>
12. Incentives for continuous improvement, including DfE	<ul style="list-style-type: none"> <li>The system should provide incentives for improvement to both product design and the collection/reuse/recycling process.</li> <li>This attribute could be partly achieved by including a mechanism for feedback from recyclers to OEMs and product designers.</li> </ul>
13. Environmentally safe and appropriate solutions	<ul style="list-style-type: none"> <li>The system should conduct the collection/reuse/recycling process and all marketing efforts in an environmentally preferable way.</li> <li>One issue here is how to judge a system that ships commodity materials overseas.</li> </ul>
14. Oversight, accountability	<ul style="list-style-type: none"> <li>This attribute is self-evident.</li> </ul>
15. Incorporate existing infrastructure where appropriate and build new infrastructure as needed	<ul style="list-style-type: none"> <li>The system shouldn't start over from scratch.</li> <li>The system should make use of existing product delivery and transport mechanisms.</li> </ul>
16. Minimize free riders	<ul style="list-style-type: none"> <li>The subgroup agreed that this attribute refers to free riders among producers (and not to free riders among communities or other groups who share in the responsibility for electronics stewardship).</li> </ul>
17. Environmental efficiency of overall system	<ul style="list-style-type: none"> <li>Collection, transportation, and processing should be designed to optimize environmental protection and the efficiency of the system as a whole.</li> </ul>
18. Economically efficient, economically sustainable, harnessing market forces	<ul style="list-style-type: none"> <li>Efficiency may refer to a collection or processing system that capitalizes on economies of scale (rather than giving all recyclers a piece of the pie).</li> <li>"Harnesses market forces" may imply that the system is voluntary, not driven by regulations.</li> <li><i>There seems to be some contradiction in this attribute.</i></li> </ul>

After brainstorming the meaning of each attribute, the subgroup members discussed whether they were free to revise and/or combine the attributes as they saw fit, or whether they should propose any changes to the larger Stakeholder Group. The subgroup agreed that they would wait to see the typed-up list of attribute meanings before making or proposing any changes, and they would discuss the matter during a future conference call. It was also agreed that subgroup members would send to Reggie any suggestions for revising, combining, or grouping the attributes.

The subgroup did identify one new desired attribute that they wanted to recommend immediately for the Stakeholder Group's consideration: that any NEPSI system should have a social objective and/or community development component.

### ***Weighting the Desired Attributes***

The subgroup decided to vote on weightings for the desired attributes. The vote was conducted by ballot. Each subgroup member assigned an Importance Rating between 1 and 5 to each attribute, and then the ratings were averaged to arrive at a consensus weighting for each attribute. These weightings, which are listed in the table below, will be entered into the Importance Rating column of the matrix.

<b>Desired Attribute</b>	<b>Importance Rating (1-5)</b>
1. Flexibility	4.1
2. Convenient to consumers	4.3
3. Educational component that allows for enlightened consumer decision-making	2.9
4. National in scope, but respects regional differences	3.8
5. Shared responsibility	4.4
6. Emphasize source reduction / reuse / recycling hierarchy	3.5
7. Appropriate levels of recycling given life-cycle impacts	3.5
8. System to receive all brands and products in scope	4.5
9. Realistic goals for collection, reuse, and recycling over time with monitoring and reporting	3.7
10. Terms should be clearly defined	[recommended for deletion]
11. Recognize historical and orphan waste in appropriate fashion	3.5
12. Incentives for continuous improvement, including DfE	2.4
13. Environmentally safe and appropriate solutions	4.0
14. Oversight, accountability	3.6
15. Incorporate existing infrastructure where appropriate and build new infrastructure as needed	3.3
16. Minimize free riders	2.3
17. Environmental efficiency of overall system	3.5
18. Economically efficient, economically sustainable, harnessing market forces	3.4

### ***Revising the Key Features***

The subgroup members spent a significant amount of time discussing revisions to the key features listed across the horizontal axis of the matrix. The revisions they agreed upon are captured in an updated version of the matrix that will be circulated independent of these meeting minutes.

### ***Scoring the Correlations Between Key Features and Desired Attributes***

The subgroup decided to form small teams to rate the correlations between key features and desired attributes for each model under consideration. Each team will work together to reach a consensus on the correlation ratings, and then send these consensus ratings to Reggie for entering into the matrix. The teams are:

*SWICO*—Butch Teglas, Chris Beling, and Julie Rhodes.

*Best Buy*—Ed Nevins, Kevin McCarthy, and Merry Rankin.

*Massachusetts*—Patty Dillon, Chris, and David White.

*Dutch (gray goods)*—Mark Kennedy, Butch, Julie Rosenbach, and Lynn Rubinstein.

*Japanese*—Sheila Davis, Julie Rosenbach, and Lynn.

*Taiwanese*—Lynn, Merry, and David White.

The subgroup agreed that the teams should complete their work and send their consensus correlation ratings to Reggie by February 15<sup>th</sup>. It was also agreed that, in the future, the whole subgroup would participate in the process of developing correlation ratings for proposed “ideal” models.

### ***Discussion of Proposed Infrastructure Model #1***

The subgroup discussed a proposed model developed by a sub-subgroup consisting of Chris Beling, Patty Dillon, Julie Rhodes, and Wayne Rifer. Their proposed system, referred to as infrastructure model #1, would be administered by a producer responsibility organization (PRO), with a multi-stakeholder board of directors. A key feature of the system would be regional Accumulation, Sort and Analysis (ASA) centers whose responsibilities would include paying collectors for collected product, sorting and analyzing product for reuse and recycling, and contracting for reuse/recycling services from certified reusers and recyclers. There would be multiple modes of collection, with regional flexibility, and local governments would be responsible for overseeing and assuring the adequacy and quality of service.

Wayne handed out a write-up and flow chart on the model and gave a quick overview of the system, which the subgroup had talked about during previous conference calls. He then asked for comments.

One participant noted that states are conspicuously absent from the system. Wayne said that this was an oversight, and he said that the term “government entity” could replace “municipality” in the flow chart.

Several participants said they were concerned that the model might be overly prescriptive. One participant questioned the idea of establishing the regional ASA centers, saying that they could drive up costs. He suggested, as an alternate plan, that states and municipalities could contract directly with transporters and recyclers and then be reimbursed by the PRO. Other participants agreed that it didn’t make sense to limit the role of states and municipalities, because they’re the ones with a base of applicable knowledge. Instead, local governments should play a central role in selecting preferred contractors.

The sub-subgroup that had proposed the model explained that the idea was not necessarily to create ASA centers from scratch. In many cases, a county or a large private

recycling company could act as the ASA center under a contract with the PRO. The point is that, in some areas, there is no existing infrastructure.

The subgroup turned to the question of whether the system would be more or less efficient if there was local autonomy in selecting contractors. One participant said that an ideal system would have states contracting with vendors, using their negotiating power to get a good rate. Then, if a municipality didn't want to use the state's contractor, it would be free to use its own.

The subgroup talked about how the proposed electronics PRO compares with the newly formed carpet PRO and the Rechargeable Battery Recycling Corporation. Both of these organizations are controlled entirely by manufacturers, one participant said. Another participant said that he didn't want to see an industry-run PRO for electronics, nor a third-party organization run by EPA. He said his concern was the huge expense involved with operating such an organization. He suggested that the nationwide system should be governed by a multi-stakeholder group that would involve manufacturers, retailers, governments, recyclers, and NGOs. All stakeholder groups should be involved in governing the system, so that all are responsible for its success—especially the successful administration of funds.

The subgroup approved of this suggestion, and it was agreed that a lean-and-mean third-party organization (TPO) (rather than a PRO) would administer the system described in model #1. The third-party organization would have multi-stakeholder governance and would administer the flow of funds, establish standards, and ensure accountability. At the same time, there would be local variability and decision-making about how product is collected and what recycler should be used. Wayne said that he would revise the write-up for model #1 to reflect these changes.

An issue was raised concerning what mechanisms the third-party organization would use to work with localities, and it was suggested that the subgroup should research mechanisms used under other models of governance.

### ***Discussion of Proposed Infrastructure Model #2***

The subgroup started to discuss proposed infrastructure model #2, which is based on an end-of-life fee. However, one of the participants suggested that the subgroup suspend any further discussions about models based on backend fees, since backend systems are already in use nationwide and don't produce true product stewardship for electronics. The subgroup agreed with this suggestion, and it was decided that discussions of backend systems would only resume if the Financing Subgroup recommended a nationwide system based on a backend fee.

### ***Polymer Alliance Zone Modeling Tool***

There was a brief discussion about the modeling tool currently being developed by the Polymer Alliance Zone and SAIC. This software tool will allow the user to run a simulation showing how product and money flow through a system. Wayne said that the subgroup could potentially use the tool to analyze the cost and required revenues for each proposed model.

Wayne said that PAZ and SAIC were revising the tool, and were willing to consider input received from NEPSI. He said that the subgroup might want to talk about the tool in an upcoming conference call, and it was suggested that an SAIC representative be invited to participate in the call and explain the tool.

The subgroup agreed to talk about the tool in an upcoming call, and Wayne said that he'd send out background information about the tool beforehand.

### ***Upcoming Conference Calls***

The subgroup members agreed to hold one-hour conference calls every Tuesday at 3:00 PM EST. Calls were scheduled for the following dates: 2/5, 2/12, 2/19 (at 2:00 instead of 3:00), 2/26, and 3/5.

Topics tentatively scheduled for upcoming calls include: the PAZ modeling tool (2/5), proposed model #1 (2/12), Reggie's matrix (2/19), and incorporating the proposed model(s) into the matrix (2/26).

**NOTE THAT THIS SCHEDULE HAS SUBSEQUENTLY BEEN REVISED:**

Base Service and Infrastructure Model #1 (2/5), Base Service (2/12), PAZ modeling tool (2/19), Reggie's matrix (2/26).

### ***Assignments***

- Reggie will revise the matrix according to new/edited features and including the importance ratings for the desired attributes. He will send the revised matrix out to the mini-groups.
- Mini-groups (see p.5) will fill in the matrix for the seven models and return them to Reggie.
- Someone (?) should research what mechanisms other TPOs use to work with localities, providing local variability and decision-making.