Imaging Equipment Scoping Meeting Notes
FOR INFORMATION ONLY - **NON- DECISIONAL**

Attendees:

Fern Abrams	IPC- The Association Connecting Electronics Industries
Robert Alleger	Oki Data Americas, Inc.
Joseph Andrews	Chemtura Corporation
Darren Arola	MBA Polymers, Inc.
Rion Austin	MBA Polymers, Inc.
Pamela Brody-Heine	Eco Stewardship Strategies
Joe Burquist	HP
John Butchart	Alameda County, General Services Agency
Scott Canonico	Hewlett-Packard Company
Scot Case	Terra Choice
Jessian Choy	San Francisco Dept. of the Environment
Alicia Culver	Green Purchasing Institute
Beth Eckl	EPE Consulting
Holly Evans	Strategic Counsel, LLC
Faridoon Ferhut	California Integrated Waste Management Board
Lena Ferris	Oregon State Procurement Office
Pam Fitch	California Dept. of General Services
Shawnee Flores	Alameda County, General Services Agency
Jack Geibig	University of Tennessee - Knoxville
Andrij (Andy) Harlan	Rochester Institute of Tech - Center for Integrated Manufacturing Studies
Christopher Hazen	WSP Environmental Strategies
Kousuke Ito	Ricoh Americas Corporation
Christopher Kent	US EPA – Energy Star
Michael Kirschner	Design Chain Associates, LLC
Susan Landry	Albemarle Corporation
Judy Levin	Center for Environmental Health
Erica Logan	Xerox Corporation
Munther Mahsoub	NCR Ltd.
Katsuhiro Matsufuji	Canon
Paul McGovern	Compliance and Risks
Jennifer Miyamoto	Xerox Corporation
Linda Morgan	Kaiser Permanente
Colleen Pickford	Information Technology Industry Council
Edwin Pinero	Rochester Institute of Technology - Golisano Institute of Sustainability
Wayne Rifer	Rifer Environmental
Lauren Roman	MaSeR Corporation
Laura Ruiz	Albemarle Corporation
Itaru Sato	Sharp Electronics Corporation
Tsuyoshi (Tee) Sato	Canon
Mark Schaffer	Supply Chain Consulting US, LLC
Steve Scherrer	Chemtura Corporation
Seth Socolow	Green Plug, Inc.
Paul Swoveland	Lexmark
Marisabel Torres	Specialty Graphic Imaging Association

Imaging Equipment Scoping Meeting Notes
FOR INFORMATION ONLY - **NON- DECISIONAL**

Lucian Turk	Dell Inc.
Todd Washburn	SABIC Innovative Plastics
Cat Wilt	University of Tennessee

Please note: this meeting was meant to gather input and ideas from all stakeholders on issues critical to the development of a new imaging equipment standard. **There was no effort to reach decisions on any particular issue, nor to find consensus among stakeholders.** These notes are presented as they were recorded, and reflect the collective thinking of all the participants. As a result, the notes contain conflicting statements and opinions. Any expressed consensus reflects decisions that individual groups may have reached on their own.

EPA will not be developing any future standards. Input from this meeting will be transmitted to the IEEE workgroup on Imaging Equipment once it is established. That group will make all decisions about the scope of products covered and environmental attributes in any future draft standard. The standard will be finalized through an ANSI-approved, open, balanced, and consensus-based process.

All documents distributed at the meeting and referenced below can be found at:
www.epa.gov/region09/waste/p2/elect-scope-meeting.html

1. Welcome and Introductions, Agenda Review and Goals of the Meeting

- Facilitator Marie Rainwater presented the ground rules for the meeting (see attached document *"Code of Conduct.doc"*
- Goals of the meeting:
    - Develop a broad outline or framework for scope of the new standard, including the scope of products covered.
    - Review other standards and labels, their implications for this new standard, and how future standards can maximize harmonization.
    - Develop list of key attributes and potential environmental performance criteria to be addressed in the new standard.
    - Identify key stakeholders who need to be involved in developing the standard.
    - Process goal: Form strong working relationship to carry forward into subsequent standard development meetings.
- Facilitator made clear that the meeting was designed to **gain input for upcoming standards development workgroup** - to identify stakeholder issues, not to resolve them. Therefore, there will be no attempt to reach consensus or to make any decisions at this point.

2. Presentation by Wayne Rifer on Development of EPEAT and IEEE 1680

See attached presentation: *Rifer - Epeat overview – Imaging Equip meeting.ppt*

3. Presentation by Holly Elwood, EPA on Next Steps and Standards Development

See attached presentation*: Elwood - Overview standards process.ppt*

Questions

- What is the time frame? The first two standards will likely get developed over the next 18 months.

- EPA's role? EPA is not developing standards – we are holding these meetings to gather input on future standards. This will be passed on to the workgroups once they are established.
- What is the relationship between this process and then managing the registry? Standards will be developed through the IEEE process – separate from the existing registry. Once the standard is complete, the EPEAT Board of Advisors must agree to include products registered to the standard in the current registry.
- How will balance be achieved – in balloting group, on workgroup? IEEE online services allow workgroup chairs to monitor and track participation from all the various stakeholder groups. The workgroup chairs will actively recruit new members for underrepresented groups, or may ask over-represented groups to select a representative.

4. Discussion on principles for developing new standard

A. Presentation on the principles underlying the development of IEEE 1680 – see attached document *EPEAT principles.doc.* Are there any suggested changes, adjustments that should be made to these for this process?

B. Discussion:

- Should include some reference to life cycle analysis
- Need more time to review
- How to get at production – maybe a proxy like carbon footprints?
- Can we address ancillary aspects – energy providers, etc.
- Maximize harmonization with other standards
- "institutional" – might be too narrow – may want to include consumer purchasers
- Add consumable products (i.e. toner)
- Keep focus on product not production

5. **Discussion on Environmental Performance Categories to consider**

A. Presentation on Environmental Performance Categories used in current IEEE 1680 – see document *EPEAT Environmental Performance Categories.doc*

B. Discussion Are there any suggested changes, adjustments that should be made to these for this process?

- Address use phase – maybe Design for Use, or Resource Conservation in Use
    - Should address default standardization – i.e. settings that are protective of environment. Doesn't fit in current categories
- Consider resource conservation – e.g. equipment size, or dematerialization
- Edit "Materials Selection" to remove "Selection"
- Reconsider "Corporate Performance" – it is not related to the product
- Include emissions under Environmentally Sensitive Materials
- Need to address services – e.g. leasing, rental, pay per page – and how that affects end-of-life. Maybe add to principles?
- Consider whether multifunctionality has impact on categories – should get credit for more functions?
- Indicate how the existing categories map to the life –cycle, i.e. which categories address "Design", which address "Use" and which address "End of life"

6. Scope of products to be covered by the new standard

A. Presentation

- Overview of Imaging Devices and their techologies. See attached document *Canon Imaging 101.ppt*

– scope covered by Energy Star Imaging Equipment Standard, which was proposed in the Standards Development Roadmap as the starting point for this standard. See attached document *Imaging Equipment Background – Scope Criteria.ppt*

- Equipment covered by other ecolabels – see attached document *Ecolabels Scope.doc*

B. Discussion: Is this scope a good starting point for this process? Are there any suggested changes, adjustments that should be made to the scope of products covered by this standard?

Large group provided the following comments on the proposed scope, followed by small groups discussing the question posed above.

- Should we distinguish between label and paper printing?
- Should the standard include wide format digital printing in manufacturing applications?
- Sailing machines or postage machines? ATMs, cash registers?
- Need to get marketing information and include regional differences

Then stakeholders broke into 6 small groups for further discussion.

Group 1

- Should include photo printers for security, identification, etc?
- Harmonize with Energy Star which covers a large number of products
- Consensus that fax/scanner should be included – focus though is on harmonization with Energy Star – if Energy Star drops a product, so should we
- Need market data to decide – which technologies are sinking, rising?
- Selection criteria for choosing:
    - Cost
    - # of products sold
    - Speed of imaging
    - Future usage – market going up or down
    - Intended usage
- Consumables (ink) should be included and designed to be reused
- Consumables inclusion should be an option.

Group 2

- Consider “picture makers” or photo kiosks?
- Make sure we include high and low volume machines – be inclusive to start
- What does a Category include: all technologies
- Information needed to decide:
    - Market share
    - Dying/dominant technology currently?
    - Emerging technologies and timeframe for these?
    - Net benefit of multifunction devices (MFDs)?
- Anything we don’t need to discuss?

  - Focus on all but open to deleting some categories if environmental criteria are not consistent
- Filters for selection of product types?
  - What has the largest design impact – institutional or consumer products?
  - Energy use
  - Low volume (i.e. small # of products sold that each large impact) vs. high volume (large # of products sold that each have small impact)
  - Speed
  - No filters?

Group 3

- Limit to Energy Star scope
- Institutional and consumer – no consensus, group had varying opinions on consumer
- Exclude products w/diminishing market share. Look at:
  - Volume of sales today
  - Growth potential
- Exclude products with low volume sales (e.g. large format specialty printers) for instance, fewer than 500 products bought per year
- Consider including products that have high environmental impact even if low volume
- Need market info on single function faxes and scanners, and to know if we should consider business and consumer markets
- Consumables must be included
  - Define consumables (e.g. consumer replaceables: toner, inks, and their delivery systems; batteries), and distinguish between consumables and replacement parts
  - List consumables
  - Include packaging for consumables
- Keep the scope clear

Group 4

- Group by application – who is buying the product, how is it used?
  - Industrial
  - Home
  - Office
- Prioritize by selected criteria
  - Volume in circulation
  - Volume sold trends – what is going up, what is going down
  - Environmental impact – perceived? known?
    - Consider impacts in the building phase (manufacturing) and in the use phase
  - Output (volume, energy per page)
- Overlapping technologies might be considered by same effort (if not, may need to be more selective – i.e. fewer product types – for standard to be effective)
- Consider service life as well

Group 5

- Energy Star list is "OK"
- Exclude non-office equipment, e.g. digital production presses, offset lithography

- Focus: institutional purchases of office equipment w/ a current Energy Star classification
  - Applies to products bought by institutions, but does not exclude consumers
- Need more evaluation on the following before deciding on scope
  - Specify requirements within the standard for consumer vs. institutional markets? e.g. take back requirements
  - Market advantage is driven by institutional buyers
  - Should we include ATMs, cash registers, etc?
  - Need to understand market demand over the next two years for office imaging equipment.
  - Should we limit EPEAT to printers, copiers, MFDs?
  - What's the incremental work associated with adding individual functions (or excluding functions) e.g. scanners, fax machines?
- Not a good idea to define criteria for products not covered by Energy Star

Group 6

- Criteria for choosing products to cover:
  - Need market data for unit sales vs. technology
  - Need data on environmental impact of various products
    - are we hitting the products with the greatest numbers and highest impact?
- Use Energy Star as the starting point and as upper limit on scope
- Look at uniformity of composition among products – keep those that are clearly similar
- Look at regulations – EMC definitions i.e. Class A and B (?)
- Leverage linkages – i.e. existing EPEAT criteria and scope

Poll of the group on key issues in the scope:
The facilitator asked all participants to rank their opinions on the following statement (on a scale of 1-10, where 1 = strongly disagree, 5 = neutral, 10 = strongly agree). **This was meant simply to gauge the general distribution of opinions/feelings on these topics, and was not meant as a "vote" to resolve any particular issue.**

"The scope of the standard should include consumables."

33 – Agree to Strongly Agree (scores ranged from 7-10, average 9.6)
9 – Strongly Disagree (scores ranged from 1-3, average 1.1)
3 – neutral (score of 5)

Action Items:

- Compile market data on use of various products – numbers sold, trends in sales
- Compile information on environmental impact of various products, if available
- Convene group to further refine the scope and provide suggestions/input to the workgroup

7. Stakeholders to Include in the Process: participants were asked to provide input on stakeholders who should be included in the standard development process, either groups or individuals:

- Toner remanufacturers, and their trade organization the International Imaging Technology Council
- Electronics recyclers

- Non-governmental organizations, and environmental advocacy organizations
- Leasing companies
- Resellers
- Consumers Union
- Academics and design experts

DAY 2 – FEBRUARY 21

8. Presentation and discussion on criteria to be considered in new standard
All participants were given a handout comparing the criteria included in seven single-attribute and multi-attribute ecolabels or declaration programs (Energy Star, Blue Angel, Nordic Swan, Terrachoice's Ecologo, the Computer Take Back Campaign, TCO, and Japan's Eco-mark). See attached document *imaging equipment ecolabel comparison – draft.doc*. The categories and general criteria headings were consistent with IEEE 1680. Certain criteria didn't fit in the current categories (e.g. duplexing capacity), so they were included where they seemed most relevant.

Participants also wanted to see information on the ECMA Eco-Declaration, and on the criteria in EPEAT. Those are attached as *ECMA-370.pdf* and *Summary of IEEE 1680.pdf*. John Katz of EPA provided a brief analysis of the similarities and differences among the different schemes – that can be seen in *Imaging Equipment Background – Scope Criteria.ppt.*

Questions and comments from the overview:
Q. How many products are certified to each label?
A. Terrachoice has over 1000 products registered to their old standard, Energy Star has 1538 products as of 11/07, TCO has 16 and Blue Angel has around 100. Could not find information on Eco-Mark.
- HP offered that they first look to get Energy Star certified, and then Eco-logo. They go for Blue Angel on business machines, and are very selective about other labels.
- Dell offered that they focus on Energy Star, Blue Angel, then look at specific models for specific markets (e.g. TCO for Sweden, South Korean EcoMark)

Comment: some ecolabels provide separate criteria or standards for toner cartridges and paper.

Criteria Discussion: the group was divided into six small groups, to gain input on the following questions:
1) Should criteria be developed for the environmental performance issues identified in column 1 of the spreadsheet?
2) Are there additional items that you think should be added to column one?
3) Any other thoughts or ideas regarding criteria?
4) Should the scope or the criteria specifically include, exclude, or be neutral on non-institutional users?
Note that the current EPEAT standard is specifically focused on institutional purchasers. The workgroup will need input on whether they should retain this limitation or consciously choose to address consumer products in the criteria. No consensus was sought on this issue, just input.

The goals of the discussions were to:

- Initiate discussion on these issues
- Explore possibilities and perspectives
- Cultivate relationships

There was no expectation for the groups to reach consensus or come to any decisions.

Group 1:

Question 1) Merge Corporate Performance and Packaging under common criteria for all product types

2) - Add criteria for consumables
  - Consumable criteria focus on what manufacturer can control relative to the equipment, e.g. ability to run recycled content paper, no prohibitions on remanufactured cartridges, offer duplexing

- Look at EUP effort to harmonize criteria being developed there

4) Design the standard for institutional purchaser but stay neutral on non-institutional use

Group 2:

Question 1)

- Category 1 – Environmentally Sensitive Materials
  - Headings generally OK, but don't agree on all the specific criteria
  - Consider changing category title to "plastics" – should look at more plastics than just "chlorinated plastics"
  - Include inks toners and other imaging substances
  - Are chemical emissions an environmental or human health issue? Where do we draw the line?
  - Is there a place for emissions reductions along the full life cycle?
  - Consider a more generic heading than "photoconductor drums"
  - Should we address nanotechnology - maybe have a declaration threshold?
- Category 2- Materials Selection
  - Are biobased materials really beneficial?
  - Focus on reduce, reuse, recycle – look at source reduction/dematerialization
- Category 3 – Design for End of Life
  - Look at external power supply reusability – raise issues of standardized connectors?
  - Identification of materials with special handling needs
  - Identification and easy removal of components containing hazardous substances (1680 should be the starting point)
  - Should we include push for designing reusable components?
- Category 4 – Longevity and Life Cycle Extension
  - Is modular design relevant for imaging equipment?
- Category 6 – End of Life Management
  - Are social standards for workers an environmental issue? Maybe include an "environmental justice" category including restrictions vs. bans, and not endangering people in developing countries
- Category 7 – Corporate Performance
  - Default – stay with 1680
  - Consider credit for supply chain environmental management

- Category 8 – Packaging
    - Use 1680 as a default
    - Consider ways to reduce size, quantity of packaging (dematerialization) – e.g. multi-packs, source reduction
    - Include biobased packaging?

Question 4)

- Straw poll of group: 3 said "focus on institutional purchasers", 1 said "be silent on consumer vs. institutional issue", 3 said "intentionally include consumer market with big market push"
- Question about how to determine institutional versus non-institutional buyers

Group 3

Question 1)

- Generally the 8 categories work, with some suggested changes
    - Add consumables as a category – include incentives for no consumables, and requirements for taking greener paper. Add air emissions (dust, VOCs, ozone, styrene)
    - Add "Efficiency of Use" e.g. duplexing, default settings, productivity

2) - Add VOC emissions as a criterion, e.g. Blue Angel – use existing standards, test methods, list ISO standard on imagine equipment emissions

- Add consumables and duplexing issues – maybe tweak Materials Selection category
- Consider requirement to provide high-yield toner cartridges
- Add education and information availability requirements, like Blue Angel – to cover take back, warranty, power management issues
- Power management – is Energy Star relevant for consumer equipment?
- External power supplies used on ink jet and other low-end models – include standards where feasible

3) Need more information on how leases work – manufacturers lose control when leases happen

4)

- Primary target is institutional – difficult to differentiate between institutional and consumer.
- Retailers may look to EPEAT, even if workgroup doesn't – they should be invited
- Need more information on willingness for consumers to pay for greener products

Group 4

Question 1) Generally the 8 categories acceptable

- Category 1 – Environmentally Sensitive Materials
    - Ways to promote inherent flame retardancy, without additives
        - Use science-based methods of selecting materials
        - Consider precautionary principle?
        - Need more information about alternatives – consider full life cycle, full range of products
        - What are the criteria for environmentally preferable alternatives?
    - Look at particulate emissions and other Indoor Air Quality issues

        - Look at Green Guard and other standards → can be costly for manufacturers to test
        - Consider formaldehyde, VOCs
- Category 2 – Materials Selection
    - Concerns about incentives for biobased materials
        - What are real benefits
        - Need life cycle information about economies, lifecycle impacts, recycling, carbon footprint
        - Compatibility with products – high voltage, high temperature?
- Category 3 – Design for End of Life
    - Is design for disassembly relevant? Need more information about processes, economics, and amount of products processed through shredding vs. disassembly
    - Coordinate with end of life management and take-back
    - Can manual disassembly recycling be profitable?
    - What is the potential for reuse of components?
    - Facilitate removal of Mercury bulbs, batteries
- Category 6 – End of Life Management
    - Need to incentive extended product responsibility in the standard
    - Recommend manufacturer provide instructions for disassembly, recovery of hazardous materials, reusable components
    - Consider occupational health issues for recyclers
    - Include qualifications, certifications for recyclers?
    - Incorporate dealers and leasing companies – to put requirements on customers
    - Export of hazardous waste allowed?
    - Provide incentives for recyclers?
    - Need to include recyclers in setting standard

3) - Impact of EPEAT on the supply chain – additives, flame retardants, etc. – how to incentivize upstream changes?

- Look at lifecycle impacts - carbon analysis, energy ,water, ozone
- Broaden "Materials Selection" to "Materials ", and address resource conservation issues. Include inputs of raw materials, water, energy
- Are battery considerations different than computers?

4) Institutional vs. Consumer

- What is incremental cost to manufacturers or consumers? Are there uniform engineering standards for suppliers for all products?
- Need to consider EPR/take back infrastructure differences
- Incentive without imposing additional costs on manufacturers
- Look at service agreements – environmentally preferable cleaners, routine maintenance

Group 5

Question 1) Include all categories, except maybe "Corporate Performance" – that should be in the 1680 umbrella standard. This should be a product-only standard

2) - Category 1 – Environmentally Sensitive Materials

- Some feel should have separate category for emissions

  - Suggest adding
    - Proposition 65 compliant
    - Discuss how to incorporate REACH instead of specific lists of chemicals
  - Take away photoconductor drums – nobody uses them
  - Emission control programs in production phase (e.g. for polymer additives). Is this a corporate performance issue?
  - Environmentally sound mercury dosing methods for LCD lamps
- Category 2 – Material selection
  - No exemption or extra credit for recycling of plastics with BFRs (disagreement about this idea)
  - Stated preference for biobased material should be dropped, or set criteria for environmentally preferable biobased material.
  - Does duplexing belong in "material selection" – may need to create a "resource conservation" category
- Category 3 – Design for End of Life
  - Need to have "easily recyclable materials" but criteria is very debatable
  - Consumables – standard should not dictate a business model – e.g. should not mandate that manufacturer provide remanufactured products. But should not prohibit use of remanufactured products.
- Category 4 – Lifecycle Extension and Product Longevity
  - Need to have different requirements for different products based on the cost – this may not apply to all equipment equally
- Category 5 – Energy Conservation
  - Disconnect between aggressive Energy Star requirements (focused on top 25% of markete) and EPEAT aim to be more inclusive
  - Purchaser concern that Energy Star is not aggressive enough
  - Need nutrition label for energy use – maybe a different metric?
  - Concern about getting Energy Star requirement for consumer models.
- Category 6 – End of life management
  - Should this be included in product standard or corporate requirements?
- Category 7 – Corporate Performance – should be in umbrella 1680 standard
- Category 8 – Packaging
  - Make recyclable material mandatory?

4) Most felt the standard should be neutral (silent) on consumer products, though some felt it should specifically exclude consumer products.

Group 6
Question 1)

- Category 1 – Environmentally Sensitive Materials
  - Flame retardants – a very broad classification - should discuss whether want to call these out specifically or include develop criteria on an individual chemical basis
  - Include chemical emissions, but consider including emissions across entire lifecycle, not just use.
  - Other chemicals – need to:
    - Develop criteria to define which are "bad"

        - List authoritative sources for decisions
        - Consider listing specific chemicals rather than classifications (e.g. "halogenated")
        - Be careful not to list chemicals that have no purpose or use
- Category 2 – Materials selection
    - Include duplexing
        - should be a standard default, and configurable
        - should meet Energy Star's requirements as a minimum
- Category 6 – End of Life Management
    - If require take back, should consider differences between purchasing vs. leasing

4) Need to clarify intent and name – what is meant by "institutional" and "imaging equipment"

8. Next Steps

- **Standards Development:** There soon will be an open invitation for stakeholders to volunteer for the Imaging Equipment Standard Development Workgroup through the IEEE Standards Association. Meeting participants were asked to sign up if they were interested. In addition, there will be an email invitation sent out in the coming weeks to a large list of interested parties, and that they should feel free to respond at that time or forward the invitation to others who should be involved.
- **Establish small working group to refine input on priniciples and categories:** there were several common themes expressed around modifying the proposed principles and environmental performance categories. EPA agreed to set up a conference call for a small group to further refine the input from this meeting to present to the workgroup once it is established. That group should check with the Green Electronics Council regarding which criteria are likely to be included in the umbrella standard currently undergoing revision.
- **Establish small working group to gather market data**: there was a common theme that participants needed a better understanding of the imaging equipment market in order to better understand and refine the product scope covered by the standard. EPA agreed to set up a conference call for participants that want to discuss how to gather collect more market data, including information on:
    - trends for unit sales for the different products, including information on institutional vs. consumer purchases
    - relative distribution of the different technologies (e.g. electrophotographic, ink jet, etc.),
    - size and details of leasing and other business models
    - consumer preferences for greener IT products
    - market share of products covered by other ecolabels

9. Action Items: the following action items were recorded throughout the two-day meeting

Item	**By Whom**	**By When**
1. Provide URL for workgroup policies document	EPA	See below
2. Provide URL for all docs from the workshop	EPA	See above
3. Make revisions and distribute principles, categories	small group of	Mid-April

	participants, EPA will provide conference line	
4. Compile Break out notes	EPA	Completed
5. Gather and disseminate market data	small group of participants, EPA will provide conference line	Mid-April