

**Department of Ecology – Solid Waste Advisory Subcommittee
Electronics Waste Meeting – March 19, 2005**

FINAL NOTES

The Solid Waste Advisory Subcommittee (SWAC) considering Electronics Waste (E-waste) met on Saturday, March 19, 2005 at SeaTac, Washington.

SWAC Subcommittee Members Present: Nancy Atwood, AeA; Vicki Austin, Washington Refuse and Recycling Association; Dennis Durbin, Stevens County; Jan Gee, Washington Retail Association; Tiffany Hatch, alternate to Eric Hulscher, Goodwill Industries; Sejo Jackson, Snohomish County; Craig Lorch, Total Reclaim; Suellen Mele, Washington Citizens for Resource Conservation; Grant Nelson, Association of Washington Business; Jay Shepard, Ecology; Bill Smith, City of Tacoma Solid Waste; Brandie Smith, Washington Toxics Coalition, alternate to Mo McBroom, WashPIRG; Frank Warnke, Advocates, Inc. Also present were members of the Agreement Dynamics facilitation team: Dee Endelman, facilitator and Ginny Ratliff, notetaker.

Attachment #1 to these notes is a list of all participants, including audience members, many of whom are members of the Technical Team.

Welcome and Introductions: After a round of introductions, the facilitator raised a procedural question to the group: Should position papers on various topics related to this issue be distributed to everyone via email or posted on the website? The Subcommittee agreed that they wanted the ability to e-mail papers and have them posted on the website. They also agreed that, if they e-mailed position papers or other materials for the 2488 group, it would be to all Subcommittee members.

Criteria for E-Waste Recycling Solutions: The facilitator walked the group through the agenda and desired outcomes (Attachment #2). Then the group reviewed and redrafted the criteria that will be used for evaluating options (Attachment #3, as edited). Points raised during this discussion were:

- The draft criteria are a good start, clear and concise.
- Add target audience—"for consumers"—to first bullet and "consumers" to fifth bullet.
- The system has to be viable for urban and rural consumers.
- Assuming that national legislation may occur in the future, figure out a short-term solution that doesn't preempt national initiatives. (Some intimated that national legislation was imminent, others felt it was at least 5-10 years away.)
- System should provide goals and accountability for meeting the goals.
- Ensure that Washington state's e-waste handling doesn't result in violation of international laws (add to fourth bullet).
- Consider human health impacts when developing solutions.
- Change bullet to ensure that options are "effective" throughout the state, not just available.

- Any solution should accommodate future changes in product technology (e.g., product redesign that doesn't use hazardous components).
- If the system isn't profitable for legitimate business enterprises, scam and sham recycling operations will flourish.
- The system should stand alone for the benefit of Washington and be able to transition to a national system.
- The system should not create a competitive disadvantage between brick and mortar retailers/manufacturers versus internet sales establishments.
- The system should address the problems.
- Consider cost.

Considerable discussion occurred around whether or not to include the concept of cost-benefit in the criteria. Some SWAC Subcommittee members suggested the benefit should be commensurate with the cost of the system. Others suggested wording changes like "economic efficiencies" or "cost effectiveness analyses" while still others pointed out how difficult it can be to quantify benefits and questioned how to quantify the costs associated with environmental harm. The point was raised that in a cost-benefit analysis mode, the assumption is that a system will pay for itself; however, an analogy was made with sewage system, which society pays for, but the benefits are not financial. It was suggested that what we needed to focus on was cost effective and efficient ways to accomplish the goals, which would accomplish more than trying to assess costs and benefits which can be elusive and controversial. Vicki and Grant will work on wording changes related to economics, which will be circulated to the group for approval.

There was also discussion about the difficulty of capturing solid waste or recycling fees from internet sales. A technical team member indicated that he had purchased an electronic product from Amazon.com and there was a notice in the box explaining that a fee had been collected for the California Electronics Waste Recycling Act. There was also discussion of the Supreme Court ruling that prohibits states from regulating and taxing internet sales.

Retail representatives expressed concern about the impacts of internet sales on traditional retailers and manufacturers and that any system should not put an unfair disadvantage on these establishments. Dell is paying the fee in California because they have a kiosk there. Manufacturers can get the fees back if they are willing to open their worldwide books to state auditors.

On the matter of changing technology and less toxic materials being developed over time, for a look at what the future might hold as far as new materials, the Materials Research Society, an association of scientists that develop new materials, has a website and electronic news letter. The news letter provides abstracts of new research on future materials.

As noted above, Attachment 3 contained the re-drafted criteria based on this discussion.

Draft Problem Statement for E-Waste Discussions: The Facilitator reviewed the group's purpose statement and a draft problem statement generated since the last meeting (Attachment #4). Jay Shepard asked Grant, Suellen, and Vicki to help him reshape the statement. The group discussed layout, formatting and content. In response to the question, "We are discussing this issue because..." participants suggested the following:

- E-waste is projected to grow.
- Proper handling is a cost/burden on charities.
- Cost to local government.
- Risks to human health and environment.
- Lack of adequate infrastructure to replace current systems.
- Costs of recycling and/or disposing of products are greater than materials value.
- Inadequate collection opportunities for the public.
- Recycling creates jobs—6:1 over land filling

There was considerable discussion around landfill disposal of e-waste. One subcommittee member noted that the SWANA Report says putting electronics waste in lined landfills is not a problem. Another member pointed out that SWANA has also released a position stating that regardless, electronics should be recycled and not simply disposed. Another member argued that precious metals extracted from the earth, like silver, gold, and copper are going into the landfill. Another said banning electronics waste from landfills was not a good policy if there's no market for recycling. Another member suggested that the Subcommittee needs to answer the potential legislator's question: "What's the problem with putting e-waste products in the landfills?" Other members discussed the cost of collection and the importance of having adequate collection infrastructure to ensure e-waste gets handled properly.

The group also discussed the job-creation benefits of the recycling industry yet noted that the cost of recycling products outweighs the current market value of materials reclaimed. The group pondered how to "incentive-ize" businesses to create products that are less toxic and more easily recycled.

Collection Programs: Jay Shepard provided an overview of the matrix produced by the Department of Ecology on various e-waste reuse and recycle programs that exist at the local, state, national, and international levels (Attachment #5). He and others thanked Ecology intern Ha Tran for the succinct, yet comprehensive nature of the matrix. Jay pointed out that they tried to avoid duplication of program type in developing the matrix. The group discussed the various programs contained in the matrix, including:

- Ha clarified that a "brown good" is a television; a "white good" is an appliance like a refrigerator or freezer; a "grey good" is a computer or other personal electronics.
- One member pointed out that the Waste Electrical and Electronic Equipment (WEEE) is a directive, not legislation, and that each country in the European Union can do different programs.

- Gateway Computer takes back their equipment through a trade-in credit toward the purchase of new equipment.
- In discussion of the new California advanced recovery fee law, one technical team member pointed out that due to low compliance by California retailers, the Integrated Waste Management Board is considering increasing the fees (only 10,000 retailers out of 800,000 possible have registered). The group discussed preliminary data that the start-up and administrative cost of the program exceeded the State and retailers' expectations. The expectation is that these costs will level off, and the program just began in January 2005.
- The group compared capture rates of e-waste between Kirkland's curbside collection and the Best Buy weekend event in 2001 (61,485 pounds in 10 months versus 29,137 pounds in two days). Theories were shared on why Best Buy's collected more pounds of waste, including the existence of pent-up need, a major media and website advertising campaign, no geographical restrictions for Best Buy, and size limitation of products on curbside pickup. It was also noted that Best Buy is spending \$1 million per year subsidizing this program. Best Buy collects a small fee on some items and pays some program costs. They sent their e-waste to Waste Management and NxtCycle.
- Some Subcommittee members marveled at the effectiveness of the weekend drop off and that consumers were willing to pay a fee for it. Others noted they had visited collection events and employees said some consumers refused to pay a fee and left with their e-waste.
- In a survey in King County, 55% of residents said they'd pay a \$20 fee to drop off their e-waste for recycling while 45% said they'd do something else (storage or landfill).
- Sego Jackson explained that the end-of-life fees charged in Snohomish County cover vendor costs for trailers on site, transport, and processing. It doesn't, however, cover the cost of collection staff and overhead.
- In response to a question about what is being recycled, Ha noted that manufacturers are not willing to release this information. Her information was extrapolated from Total Reclaim and NxtCycle. Most components that can be are recycled and sold as raw materials. The plastics are sent to the landfills.
- In response to a question about recycling capacity in the state, Craig Lorch noted that Total Reclaim will expand to meet capacity.
- A joint HP-Starbucks recycling event on Earth Day netted 125,000 pounds of e-waste at no charge to the consumer. This was a heavily advertised event throughout Starbucks stores in the Northwest.
- The group asked for success rates for free versus collection events where consumers pay a fee.
- The SWAC Subcommittee agreed that, for Washington State, a variety of collection systems will probably work best.
- Members expressed the need to focus on creating incentives for more e-waste recyclers (like Total Reclaim) in our State.
- Clark County's collection of e-waste is free if you're a County resident.

- The group asked Ha to add another row of information which is “Who pays for this?” and “What kind of outreach/marketing efforts were used for successful collections?”
- Members noted it may be difficult to get a definitive answer to “who pays for this” since funding may come from a variety of sources and there’s a lot of donated labor, etc.
- One member suggested that a criterion for cost-effectiveness would be for cost/ton for collection events. Another suggested that could drive recycling to developing countries.
- Members shared one and two-page print ads along with press coverage of large-scale collection events.

Financing Options: Jay Shepard shared a brief description of various financing options (Attachment #6), including:

- Cost Internalization – invisible fees – where manufacturers are financially or physically responsible for electronics at the end of life.
- Advanced recovery fee (ARF) – programs are financed by fees charged to consumers at the point of purchase. The fees are set and managed by administrative entities such as government agencies or private third party organizations.
- End of Life Fee (EOL) – Examples are collection events, mail-back services, and permanent drop-off sites where end users pay fees to cover the programs’ expenses.
- Subsidy – grants from government, manufacturers, and other organizations to pay for collection costs.
- Rebate and consumer incentive – manufacturer-sponsored, end-of-life programs where the end-users receive rebates or special offers for turning in electronics.
- Hybrid – There are many hybrid scenarios. One is a combination of advance recovery fees for products bought before a set date and cost internalization for electronics sold after a certain date. Some hybrids move sequentially from ARFs to cost internalization. Others use both concurrently.
- Curbside collection fee – incorporates electronics recycling into residential, curbside garbage or recycling pick up services as a separate stand-alone fee or incorporated into the rate charged all customers.
- One Subcommittee member pointed out that when the European RoHS standards come into effect, manufacturers will redesign for fewer toxics to compete in the international market.

The group asked for clarification on the cost of curbside service in Kirkland. One Subcommittee member noted that Kirkland curbside e-waste collection doesn’t include apartment buildings or small businesses and doesn’t collect products over a certain size (like larger televisions). The group further delineated financing options as follows:

- End of life fee¹
 - Visible
 - Invisible
 - Subsidized
 - Curbside
 - Rebate

- Hybrid (typically some combination of an advanced funding mechanism, cost internalization or end of life fee).
 - Sequential or concurrent options

- Advanced funding—can cover the full or partial cost of the system
 - Visible advanced recovery fee
 - Invisible advanced recovery fee
 - Cost internalization

Next the group engaged in a discussion of the “pros” and “cons” of the general concept of front end and end of life fees:

End of Life Fees

“Pros”	“Cons”
Simple	Doesn’t encourage proper handling
User pays	No incentive to change product design
Depending upon how it’s handled, can be shared responsibility for all parties	Depending upon how it is handled, can’t be shared responsibility on all parties
Typically, doesn’t require legislation	Doesn’t create a level playing field for charities
Direct relationship between product and cost	Cuts out certain collectors
Affects consumer behavior in terms of upgrading/storing, etc.	Older products tend to end up in the hands of those least likely to afford fee
Can recover cost from products that already exist (deals with the orphan problem)	Could encourage sham or scam recyclers
Good for capturing low-hanging fruit as an interim payment system until something else is put in place	Could increase illegal dumping
May be a more accurate fee	Encourages storing, land filling and discourages recycling (depends on EOL)
	If product is dumped on Goodwill after hours, Goodwill pays the fee
	Transaction costs can limit where collection happens and by whom
	If the fee is visible, it could discourage collection
	Encourages unwanted charity
	Could be difficult to reach high recovery rates
	Not shared responsibility
	Paying EOL fee doesn’t encourage recycling

The Subcommittee discussed if EOL programs stimulate competition and job growth. Some members noted that if there’s not an EOL fee—if the program is financed by front

¹ End of life fees are typically visible, but they can also be invisibly included in other end-of-life fees such as the fees for curbside collection programs. End of life fees can be subsidized.

end financing—there will be more recycling. When asked if EOL or ARF would have a greater affect on stimulating the secondary market, Subcommittee members noted that the approach that maximizes recycling will provide the greatest affect on stimulating the secondary market. One Subcommittee member encouraged the group not to focus on which fee they like better, but on which approach maximizes recycling.

The Subcommittee noted there were no national standards for recycling, but that they should discuss regulations for recycling and recommend standards to avoid sham recycling. The facilitator added that an agreement in principle for standards can be built into their recommendations to the legislature.

Advanced Recover Fees—Visible

“Pros”	“Cons”
Can be set up to deal with orphan and historic waste	Very costly system to set up and administer for retailers (and maybe for government--based on California model)
Consumer education that there’s a cost associated with this product	No guarantee that money collected will be used for its purpose and lead to recycling
Puts consumer at ease; they know where to go at the end of the computer’s life	Drives people to purchase out of state or on the internet to avoid the fee
Accommodates unfettered flexibility	Washington will not may not be able to capture the fee for out of state and internet sales
Increases recovery rates	Doesn’t give incentive for product innovation unless you allow different fees for different companies
No cost to end user—fee borne by those most able to pay	Less flexible to change fee
Increases recovery rates	Fewer products over time might support whole system (analogy made to Social Security)
More recycling and related job growth	Requires legislation to be passed
Even if people dump, “dumpee” won’t be holding the bag	

Then the group engaged in a pro/con discussion of the front-end, invisible financing system.

Advanced Recovery Fee—Invisible

“Pros”	“Cons”
Accommodates unfettered flexibility	No guarantee that money collected will be used for its purpose and lead to recycling
No cost to end user	Out-of-state sales won’t get fee to Washington coffers
Level playing field with out of state sales (if manufacturer has fee, they’ll likely spread fee over entire system)	Requires legislation being passed
Because it uses a variable fee approach, manufacturers will have more incentive for innovative product design. (It will cost less to recycle if the product is designed to be easily recycled.)	
No government funds to be raided; money stays available for intended purpose	
Significant flexibility for manufacturers to change	

fee depending on actual costs	
Even if people dump, dumpee isn't holding bag	
Under this system, the costs are borne by consumers	

Some Subcommittee members shared whether they considered advance fee collection, cost internalization, or end-of-life collection a more efficient system. One audience member pointed out that, in California, there will have to be fees collected on 644,000 units just to pay administratively for the fee collection system. The group also questioned in an ARF model, how the computer will get recycled if a computer is leased and leaser doesn't take computer back at the end of the lease. On the matter of retail sales, national manufacturers do not track where their products are sold, state by state. Some Subcommittee members noted their belief that an EOL fee is going to bring less e-waste into the system and therefore, result in less job creation and economic viability for the recycling industry. The Subcommittee noted that EOL and ARF programs would look very different if they were mandated versus non-mandated producer responsibility programs.

Next Steps: The group agreed to cancel their May 10 meeting, and schedule their next meetings for June 8, July 12, and September 14.

At the next meeting, the group will continue their discussion of funding and processing. Ecology and the facilitator will send an evaluative tool on specific programs for the group to work on to expedite the discussions at the June 8 meeting. Larry and David will help Jay refine the financing mechanisms to plug into the matrix.

One subcommittee member suggested that proponents of the various funding options conduct a "debate" at the next meeting. The facilitator noted that a discussion from different points of view could be very helpful and noted that the group had agreed to deal with the interests of all stakeholder groups. Another subcommittee member suggested that proponents of various options should talk about how this option could meet the criteria developed by the subcommittee based on their interests.

The meeting adjourned at 3:00 p.m.

ACTION ITEMS FROM THIS MEETING:

- Vicki and Grant will work on wording changes related to costs and benefits in the criteria.
- Jay, Grant, Suellen, and Vicki will reshape the problem statement for Subcommittee approval.
- Ha will add two rows of information to the collections method matrix which are "Who pays for this? and "What kind of outreach/marketing efforts were used for successful collections?"
- Ecology will get clarification on the rates for curbside collection in Kirkland.
- Jay, Larry and David will refine the financing mechanisms and plug them into a matrix for evaluation based on criteria.
- Ecology will research and provide information on the success rates between free and fee-based collection events.
- Facilitator should schedule time on an upcoming agenda to talk about recycling standards.
- Subcommittee members should review the re-drafted criteria.
- Subcommittee members will be asked to do an evaluation of financing options before the next meeting.

Appendix

- Attachment #1: Meeting Participants
- Attachment #2: Agenda
- Attachment #3: Criteria
- Attachment #4: Problem Statement
- Attachment #5: Collection Program Matrix
- Attachment #6: Finance Options
- Attachment #7: Compiled Meeting Evaluations

*In addition to handouts referenced in this report,
Subcommittee and Tech Team members shared the following (available on
Ecology's Website - <http://www.ecy.wa.gov/programs/swfa/ewaste/>):*

*Clean Production Action Paper on Producer Responsibility
HP's Product Recycling Solution
Snohomish County handouts on Use of End of Life Fees and
Alternative financing systems*

Attachment #1: Participants at March 19, 2005 Electronic Waste Discussions

SWAC Subcommittee Members:

1. Nancy Atwood, AeA
2. Vicki Austin, Washington Refuse and Recycling Association
3. Dennis Durbin, Stevens County
4. Jan Gee, Washington Retail Association
5. Tiffany Hatch, alternate to Eric Hulscher, Goodwill Industries
6. Sejo Jackson, Snohomish County
7. Craig Lorch, Total Reclaim
8. Suellen Mele, Washington Citizens for Resource Conservation
9. Grant Nelson, Association of Washington Businesses
10. Jay Shepard, Ecology
11. Bill Smith, City of Tacoma Solid Waste
12. Brandie Smith, Washington Toxics Coalition, alternate to Mo McBroom, WashPIRG
13. Frank Warnke, Advocates Inc.

Technical Team and Others:

Frank Dick, Sharp Electronics
Kim Ducote, CCA Rabanco
Dee Endelman, Facilitator, Agreement Dynamics
Larry King, HP
Ginny Ratliff, Note Taker, Agreement Dynamics
Dave Reich, Ecology
Jerry Smedes, Smedes & Associates
David Stitzhal, NWPSC
Dale Swanson, Matsushita Kotabuki Electronics
Butch Teglus, Philips
Ha Tran, Ecology
Sarah Westervelt, BAN
Paul Yount, Boeing

**Attachment #2: Agenda
Washington State Department of Ecology E-Waste Project
Meeting # 2: March 19, 2005**

Purpose: To talk about the problem statement and criteria and to begin analysis of programs

Desired Outcomes:

- Agreement on problem statement and criteria for solutions
- Agreement on completeness of programs covered
- Understanding and thoughts on collection system models
- Understanding of financing options
- Agreement on financing options and collection systems to be further analyzed

Time	Topic
8:30 a.m.	Informal Gathering Time—coffee and light refreshments available
9:00 a.m.	Welcome, Introductions and Agenda Review
9:15 a.m.	Problem Statement and Criteria <ul style="list-style-type: none"> • Review of problem statement as amended by subcommittee members in early March • Review of criteria based on stakeholder interests
9:45 a.m.	<ul style="list-style-type: none"> • Break
10:00 a.m.	Overview of Programs Studied <ul style="list-style-type: none"> • Ecology reviews scope of programs studied • Subcommittee questions and answers • Audience questions and answers • Subcommittee feedback on completeness of program type covered
11:00 a.m.	Collection System Models <ul style="list-style-type: none"> • Ecology reviews the range of collection systems contained in the programs studied • Subcommittee questions and answers • Audience questions and answers
11:45 a.m.	<ul style="list-style-type: none"> • Lunch
12:30 p.m.	Collection System Discussion <ul style="list-style-type: none"> • Subcommittee discussion of pros and cons of each system <ul style="list-style-type: none"> ○ How do the systems impact stakeholder interests? ○ Which system(s) best meet the criteria? ○ On which systems does the Subcommittee want to see further analysis? • Audience comments
1:30 p.m.	<ul style="list-style-type: none"> • Break
1:45 p.m.	Financing Options <ul style="list-style-type: none"> • Ecology reviews the range of financing systems contained in the programs studied • Subcommittee questions and answers • Audience questions and answers • Subcommittee feedback on financing options which should be further analyzed
2:45 p.m.	Next Steps <ul style="list-style-type: none"> • Technical Team • Actions to be taken before May Meeting • Summer meeting schedule • Meeting evaluation
3:00 p.m.	Adjourn

Attachment #3:
Washington State Department of Ecology E-Waste Project
Re-Draft of Criteria for E-Waste Recycling Solutions from 3/19/05 Meeting

Any solutions we come up with should:

- Promote convenient, effective, and responsible reuse and recycling for consumers throughout the state;
- Create long-term opportunities for Washington business;
- Result in a long-term system financing;
- Solve environmental issues here without creating them somewhere else or violating international law
- Enable shared responsibilities and shared opportunities for different sectors of the economy (business, government, charities, consumers) involved with electronics;
- Support a level playing field for businesses relative to one another and on the national level;
- Create regulatory certainty for businesses;
- Ensure environmentally sound end-of-life management of electronics;
- Encourage design for reuse and recycling and design for the environment;
- Support the conservation of natural resources;
- Take advantage of current infrastructure, where feasible;
- Be available and effective throughout the state as well as flexible for different parts of the state;
- Educate consumers regarding e-waste;
- Support protection of human health;
- Have goals, accountability for meeting the goals, and performance standards;
- Address the problems;
- Be stand alone for the state of Washington and be able to transition to a national system;
- Accommodate future changes in technology;
- Prevent/avoid sham recycling;
- Consider cost (to be worked on more by Grant and Vicki)

Attachment #4: DRAFT PROBLEM STATEMENT

The SWAC Subcommittee is discussing how to develop and implement an electronic products recycling system for the following reasons:

1. Electronic products have increased as a portion of the disposed solid waste stream in Washington State as they have throughout the nation and world. Electronic products are a complex combinations of materials; compounds that do not exist naturally in the environment. Some of those compounds contain hazardous substances that can pose risks to human health and the environment. Moreover, electronics have not typically been designed with reuse and recycling in mind. It is unknown what the long-term effects of some newly created compounds will be. With prices continuing to fall, and new electronic products introduced almost daily, the stream of electronic products reaching the end of their useful life is projected to only grow.
2. Production of electronic products requires significant amounts of natural resources. Extraction of raw materials has a greater cost to the economy and the environment than does materials reutilization. Therefore, it may be prudent to recover materials and products for remanufacturing and reutilization.
3. If developed with the marketplace in mind, collection, transportation and processing of materials for remanufacturing and reutilization could stimulate local economies by creating jobs and business opportunities. Moreover, reducing possible threats to health and environment may reduce business liability over the long haul.
4. The current infrastructure to collect and process recyclables was created for traditional wastes. It has not kept pace with the unique handling requirements needed to collect and process electronic products.
5. Consumers and other electronic waste generators desire convenient recycling opportunities. Many existing laws, rules, guidelines, plans and recommendations create a need for development of electronic recycling options for electronics for various sectors and generators.

Attachment #5: Collection Program Matrix

(Please visit Ecology's website for this handout:
<http://www.ecy.wa.gov/programs/swfa/ewaste/>)

Attachment #6: Finance Options

(Please visit Ecology's website for this handout:
<http://www.ecy.wa.gov/programs/swfa/ewaste/>)

Attachment #7:

Facilitation Feed back Form – Compiled Results from 3/19/05 E-Waste Meeting

Agreement Dynamics received 20 completed evaluations for the 3/19/05 meeting. The compiled evaluations are below.

	Strongly Disagree	Disagree	Somewhat Agree	Agree	Strongly Agree
Meeting productive			3	13 ²	3
Facilitator kept us on track			3	12	5
Facilitator was neutral			1	5	14
E-waste process clear, I understand where we are today and what the next steps will be			10	6	4
Subcommittee is making progress toward achieving project purpose			8 ³	7	4

Additional comments:

- Seems we spent 2/3's of this meeting rehashing information that most people know and didn't get into substantive discussing to narrow what we want for Washington state. Thank goodness we have a fifth meeting now.
- A little slow, but it is a different topic/issue. Suggest more work offline/ahead of time.

² One participant placed their rating between "Agree" and "Strongly Agree"

³ One participant placed their rating between "Disagree" and "Somewhat Agree"