

USED & END-OF-LIFE ELECTRONICS:

**Environmentally sound
management**

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FOCUS OF PRESENTATION

- **EPA RULES re CLASSIFICATION**
- **EPA “PLUG-IN” GUIDELINES**
 - VOLUNTARY GUIDELINES FOR ESM
- **ESM OPTIONS FOR FEDERAL AGENCIES**

EPA RULES

- **GENERALLY, MOST E-WASTE IN THE U.S. IS:**
 - **NON-HAZARDOUS (ESPEC. IF RECYCLED)**
 - **NON-WASTE**
- **SEVERAL HAZARDOUS WASTE EXEMPTIONS & EXCLUSIONS APPLY**
 - **TO ENCOURAGE REUSE & RECYCLING**

HAZARDOUS WASTE EXEMPTIONS/EXCLUSIONS

■ NON-HAZARDOUS WASTES

- HOUSEHOLD WASTES
- SCRAP METAL
- WHOLE CIRCUIT BOARDS
- PRECIOUS METALS

■ NON-WASTES

- MATERIALS FOR REUSE (incl. CRTs)
- PROCESSED SCRAP METAL
- SHREDDED CIRCUIT BOARDS

HAZARDOUS WASTES

- **IF ALL FOUR ELEMENTS APPLY:**
 - **GENERATED BY NON-HOUSEHOLDS**
 - **GENERATED AT MORE THAN 220 lbs/mo**
 - **HAVE A HAZ WASTE “CHARACTERISTIC,”**
e.g., **FAIL TCLP. EXAMPLES:**
 - **CRTs**
 - **SOME LAPTOPS, CELL PHONES, ETC.**
 - **SENT FOR DISPOSAL**

CRT RULE

■ PREAMBLE TO PROPOSED RULE (JUNE 2002):

- BECAUSE OBSOLETE ELECTRONICS ARE OFTEN CAPABLE OF REUSE, EXISTING EPA POLICY IS THAT THEY ARE NOT CONSIDERED WASTES UNTIL A DECISION IS MADE TO RECYCLE OR DISPOSE.

■ MANY COMMENTS RECEIVED ON EXPORT PROBLEMS

- MAY ADDRESS EXPORT OF CRTs IN FINAL RULE

HAZARDOUS WASTE CLASSIFICATION

■ REMEMBER:

– STATE RULES MAY BE MORE
STRINGENT THAN EPA

■ SOME STATES CLASSIFY E-WASTE AS
UNIVERSAL WASTE

■ SOME STATES CLASSIFY CRTs AS
HAZARDOUS WASTE

EPA PLUG-IN GUIDELINES

- **GUIDELINES FOR SAFE MANAGEMENT OF END-OF-LIFE ELECTRONICS**
- **SET EXPECTATIONS FOR PLUG-IN PARTNERS. ALSO USEFUL AS GUIDE FOR ANY E-WASTE RECYCLING**
- **BASED ON EFFORTS UNDER OECD, NEPSI, FEC & OTHERS**
- **EMPHASIZES DUE DILIGENCE**
- **ADDRESSES EXPORT**

PLUG-IN GUIDELINES REUSE & REFURBISHMENT

- **SHIPMENT MEETS REUSE OR REFURBISHMENT SPECIFICATIONS**
- **EQUIPMENT IS PACKAGED TO PROTECT VALUE FOR REUSE OR REFURBISHMENT**
- **PROPER BUSINESS RECORDS KEPT OF TRANSACTION, INCL PRICE PAID**

PLUG-IN GUIDELINES RECYCLING FACILITIES

- **APPROPRIATELY LICENSED**
- **HAVE AN EMS OR WRITTEN PLAN FOR RISK MANAGEMENT WITH REGULAR REEVALUATION**
- **MONITORING AND RECORDKEEPING**
- **CLOSURE PLAN, & IF NECESSARY, FINANCIAL GUARANTEE**

PLUG-IN GUIDELINES

RECYCLING FACILITIES

- **WORKER & ENVIRONMENTAL PROTECTIONS:**
 - **EH&S TRAINING OF PERSONNEL**
 - **WRITTEN HAZARDOUS MATERIALS PLAN THAT ADDRESSES SPECIFIC SUBSTANCES**
 - **SPECIAL CONSIDERATIONS WHERE SHREDDING OR HEATING USED**
 - **WRITTEN PLAN FOR POLLUTANT RELEASES & EMERGENCIES**
 - **LIABILITY INSURANCE**
 - **COMPLETION OF EH&S AUDIT, EVERY 1-3 YEARS**

PLUG-IN GUIDELINES EXPORT FOR RECYCLING

- **REMOVE, PRIOR TO EXPORT, UNLESS TO OECD COUNTRY:**
 - **BATTERIES**
 - **MERCURY- & PCB-CONTAINING COMPONENTS**
 - **CIRCUIT BOARDS, EXCEPT HANDHELD EQUIPMENT**
 - **CRTs & CRT GLASS & PROCESS PRIOR TO EXPORT**
- **COMPLY WITH ALL REQUIREMENTS OF IMPORTING & TRANSIT COUNTRIES**
- **NON-OECD COUNTRIES CANNOT LEGALLY ACCEPT HAZARDOUS WASTES w/o BILATERAL WITH U.S.**

REUSE & RECYCLING MARKETS

- **MOST REUSE MARKETS ARE EXPORT**
 - **LARGE FOR-PROFIT & NON-PROFIT MARKETS IN DEVELOPING COUNTRIES**
- **MANY RECYCLING MARKETS ARE EXPORT**
 - **STRONG FOREIGN DEMAND FOR RAW MATERIALS. MUCH MANUFACTURING OUTSIDE THE U.S.**
 - **U.S. HAS NO COPPER/PRECIOUS METAL SMELTERS FOR THIS MATERIAL**
 - **U.S. HAS ONLY ONE REMAINING CRT GLASS FURNACE**
 - **PLASTIC RECYCLING MARKETS ALMOST ALL OVERSEAS**

PLUG-IN GUIDELINES DISPOSAL

- **MINIMIZE DISPOSAL OF ALL COMPONENTS OF ELECTRONICS**
- **IF DISPOSAL NECESSARY, THEN ENERGY RECOVERY PREFERRED OVER LANDFILL**
- **DISPOSAL FACILITY IS FULLY LICENSED FOR THE WASTE**
- **DISPOSAL FACILITY HAS AN EMS**

RECYCLER CERTIFICATION

- EPA DOES NOT “CERTIFY” OR “APPROVE” RECYCLER CONFORMANCE WITH PLUG-IN OR OTHER GUIDELINES OR RULES
- HOWEVER, EPA WILL PURSUE USE OF THIRD-PARTY ORGANIZATION (TPO) TO PROVIDE RECYCLER CERTIFICATIONS
 - CERTIFICATIONS WOULD LIKELY REQUIRE EMS PLUS CONFORMANCE TO BMPs, SUCH AS PLUG-IN OR OTHER GUIDELINES

ESM OPTIONS FEDERAL AGENCIES

- **TWO OPTIONS THAT PROVIDE A HIGH LEVEL OF ASSURANCE OF ESM**
 - EPA's READ CONTRACT
 - UNICOR
- **CERTAINLY, THERE ARE OTHER EXCELLENT RECYCLERS, BUT USE OF READ OR UNICOR REDUCES BURDEN FOR FEDERAL AGENCIES TO CONDUCT THEIR OWN DUE DILIGENCE**

ESM: EPA's READ CONTRACT

- **7 PRIME CONTRACTORS**
- **EXTENSIVE CONSIDERATION OF ESM IN AWARDING THE CONTRACTS**
- **FOLLOW-UP SITE VISITS HAVE BEEN CONDUCTED**
 - **FOCUS ON EH&S & DUE DILIGENCE**
 - **FEC CHECKLISTS & PLUG-IN GUIDELINES USED IN VISITS**
- **EPA INTENDS TO DO PERIODIC FOLLOW-UP ASSESSMENT OF CONTRACTOR PRACTICES**

ESM: UNICOR

- **7 UNICOR RECYCLING FACILITIES NATIONWIDE – NO COST TO FEDs**
- **UNICOR ALSO A SUB FOR AT LEAST ONE READ CONTRACTOR**
- **UNICOR BID AS READ PRIME**
 - **WAS AMONG BEST re ESM**
 - **SELECTED AS PRIME CONTRACTOR BUT REVOKED: NOT A SMALL BUSINESS**

ESM: UNICOR

- **AMONG BEST RECYCLERS IN A NUMBER OF AREAS:**
 - **WORKER PROTECTION IN CRT GLASS BREAKING**
 - **HEALTH MONITORING OF WORKERS**
 - **WORKER EH&S TRAINING**
 - **MAXIMIZING REUSE**
 - **MAXIMIZING MATERIAL RECOVERY**
 - **ISO 9000 & IAER CERTIFICATIONS ARE COMPLETED OR IN PROCESS AT ALL 7 FACILITIES**