



PAS 141:2011

Reuse of WEEE & UEEE

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Areas to be covered

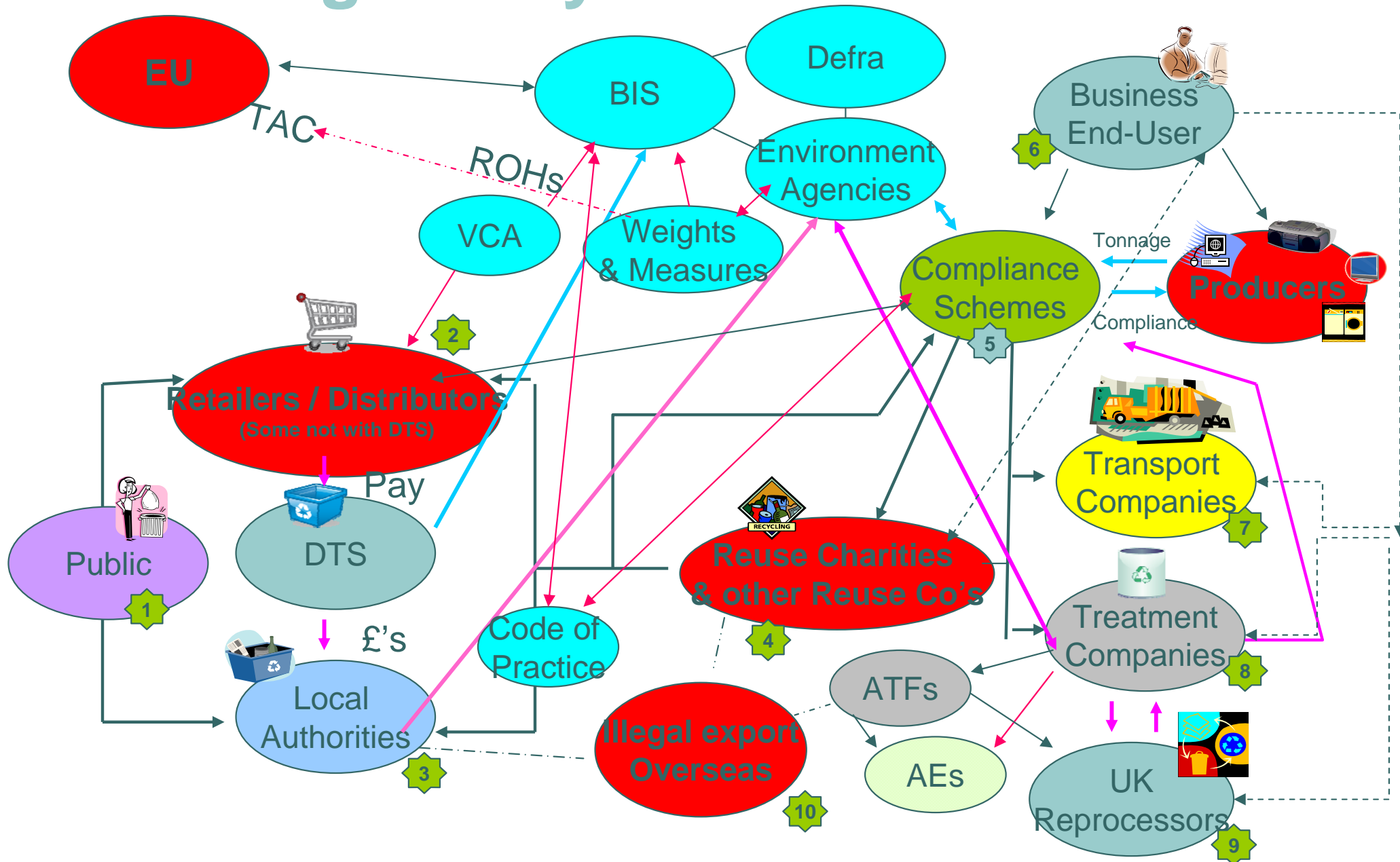
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- Regulatory Context: EU and UK.
 - Global E-waste growth.
 - Economic and Environmental Challenges arising.
 - EC Waste Hierarchy.
 - PAS 141- Position and focus.
 - Role in sustainable material management.
 - Role in tackling illegal exports of WEEE.
 - Where next for PAS 141?
 - Proverb.
 - Questions.

Regulatory Context - EU

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- UK one of 27 Member States within the EU.
- EU Directives lay down the end results that must be achieved.
- The implementing EU Directive was The Waste Electrical and Electronic Equipment Directive (WEEE Directive).



Regulatory Context - UK





Global E-waste growth

- 93.5 million tons in 2016 from 41.5 million tons in 2011.
- CAGR of 17.6% from 2011 to 2016.
- UK produces 1m tons per annum.
- Revenue from the e-waste management market is expected to grow from \$9.15 billion in 2011 to \$20.25 billion in 2016.



Full report: <http://www.reportlinker.com/p0611168/Global-E-Waste-Management-Market-.html>

Photo courtesy of BBC



And some examples....

	Units sold in 2006	Typical weight (kg) ³²	Typical life (years) ^{33*}	Estimated weight sold in 2006 (Metric Tonnes)	Estimated WEEE arising in 2010 (Metric Tonnes)	Estimated WEEE arising in 2016 (Metric Tonnes)
Computers	229.4 million ³⁴	25	7, (+/- 11%) ³⁵	5,735,000	4,193,382	7,843,364
Mobile phones	1 billion ³⁶	0.113 ³⁷	2 ³⁸ (+ 22%) ³⁹	113,000	168,189	554,571
TVs	45.5 million (2005/6) ⁴⁰	30	10 (- 3%) ^{41 42}	1,365,000	1,143,166	1,365,000
TOTAL	1,274.9million			7,259,000	5,504,737	9,762,935

Estimated global WEEE arising in 2010 and 2016 from PCs, mobile phones and TVs.



Economic and Environmental Challenges arising....

- Rare Earth Elements – scarcity.
- Supply Chain Risks.
- Illegal Exports of WEEE as EEE and UK case study.



Rare Earth Elements - Scarcity



- **Gadolinium** used to manufacture computer memory.
- **Terbium** makes electric lights 80% more efficient.
- **Dysprosium** makes electric motor magnets 90% lighter.



Supply Chain Risks

- Rare earth elements (metals) are strategic resources.
- Manufacture of everything from computers and electronics to farm machinery.
- Global demand in 2001 40,000 tonnes per annum, now 120,000 and predicted 200,000 by 2014.
- Supply chain risks (scarcity, lead times).
- Demand led price rises.

References:

Mike Adams, Editor Natural News. January 26th 2010.

Roger G.Eggert, Nature Chemistry 3 668-691(2011) published online 23rd August 2011



Illegal Exports of WEEE as EEE

- International black market for e-waste.
- 10 times cheaper to ship a CRT monitor to Ghana than recycle it in the USA.
- E-waste (WEEE) exported under the guise of reuse.
- Companies posing as recyclers are selling on e-waste with no regard to final destination.

References:

US Environmental Protection Agency (EPA)

Dr Margaret Bates, Centre for Sustainable Wastes Management Northampton University



Export of e-waste

Export of e-waste



Reference:

<http://www.bbc.co.uk/news/world-europe-10846395>

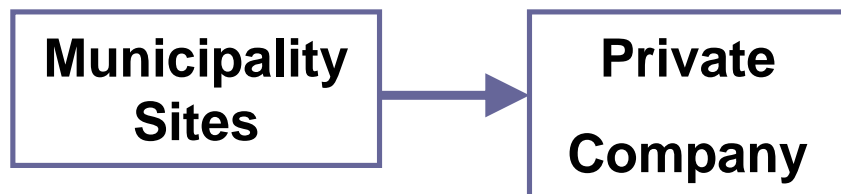


Actual Case Study - UK

Municipality Sites

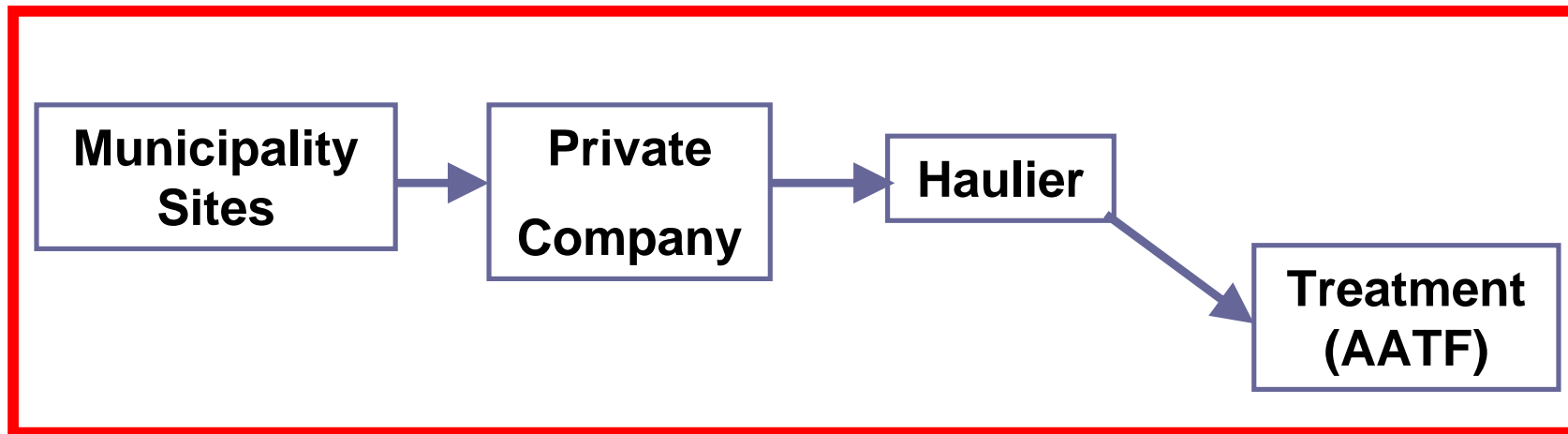
- Focus on 21 Municipality Sites.
- Intelligence led operation.
- EA Received information from Shipping lines, agents, and other operators.

● ● ● Actual Case Study - UK



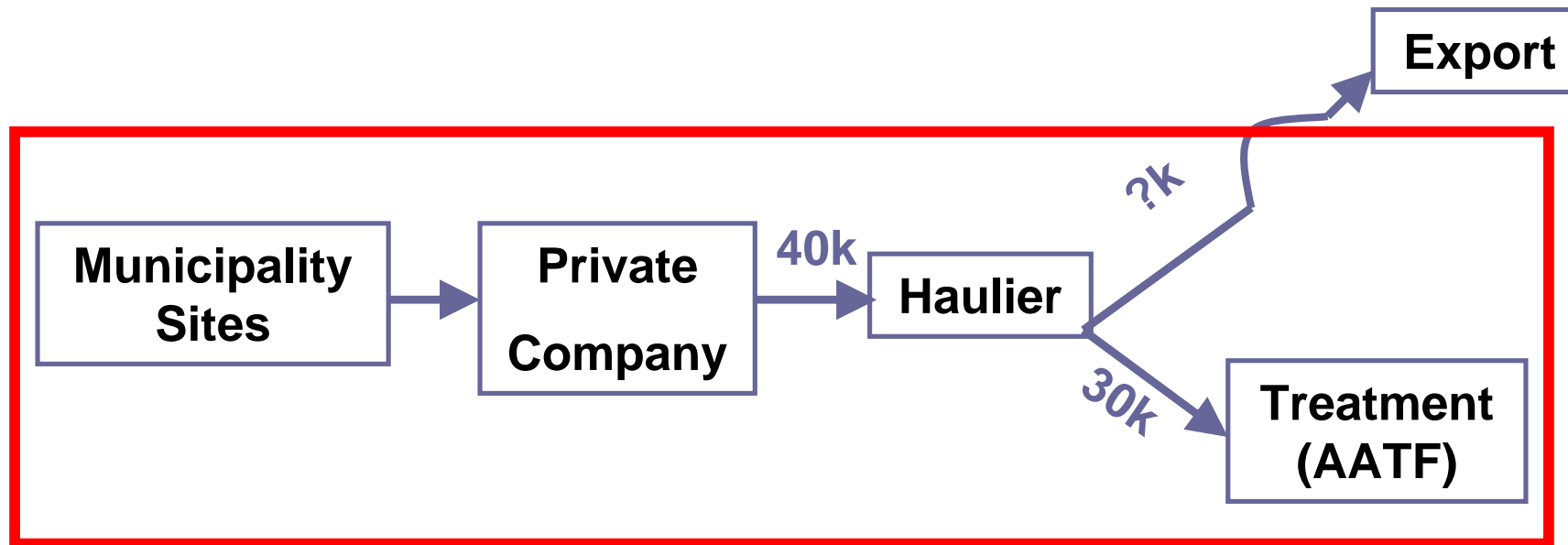
- Municipality sites operated by Private Company.
- All sites are authorised as designated facilities for WEEE from householders.

● ● ● Actual Case Study - UK



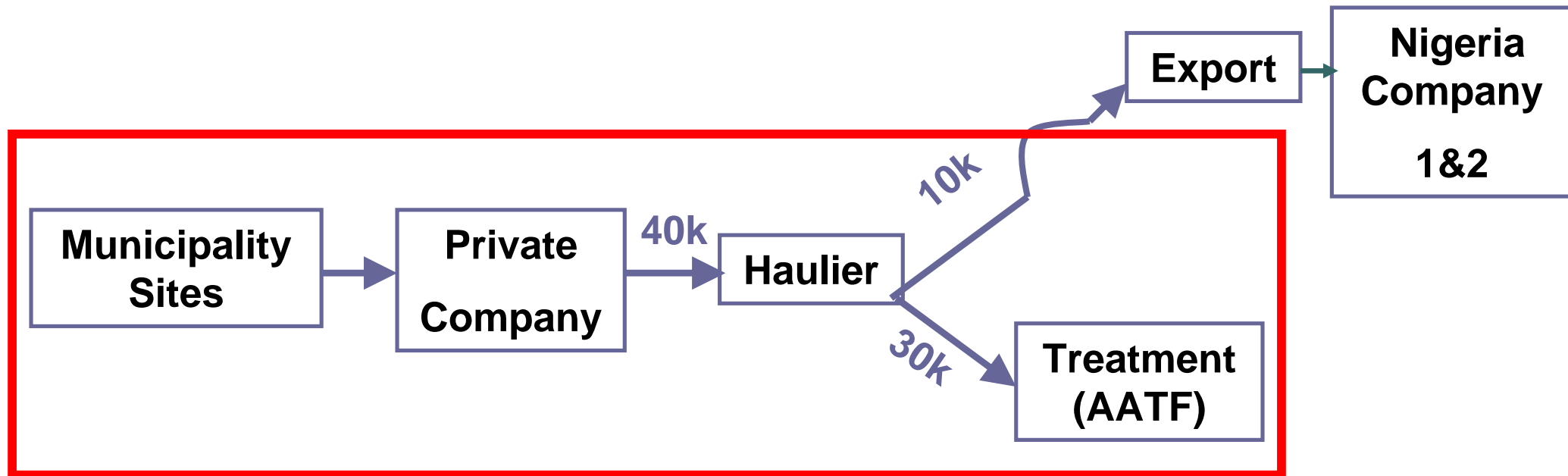
- Private Company contracts with the Haulier to remove all CRT monitors from the municipality sites and deliver them to Treatment AATF.
- Private Company pays for the removal and transport to the AATF. Reimbursed by compliance scheme.

Actual Case Study - UK



- Over 6 months approx 40K CRTs removed from municipality sites.
- Approx 30K delivered to Treatment AATF.
- Approx 10K CRTs were missing.
- Apparently diverted at intermediate bulking site for Export.

Actual Case Study - UK



- Examination of shipping documents suggests Export sent approx 10K CRT's to 2 Nigerian companies over 6 months.
- These were shipments of e-waste that had been deposited at municipality sites, not tested and sent under the guise of 'reuse'.



And the consequences....



References:

BBC news – Europe still exporting electronic waste

Photos courtesy of Google Images and the Guardian Newspaper



EC Waste Hierarchy



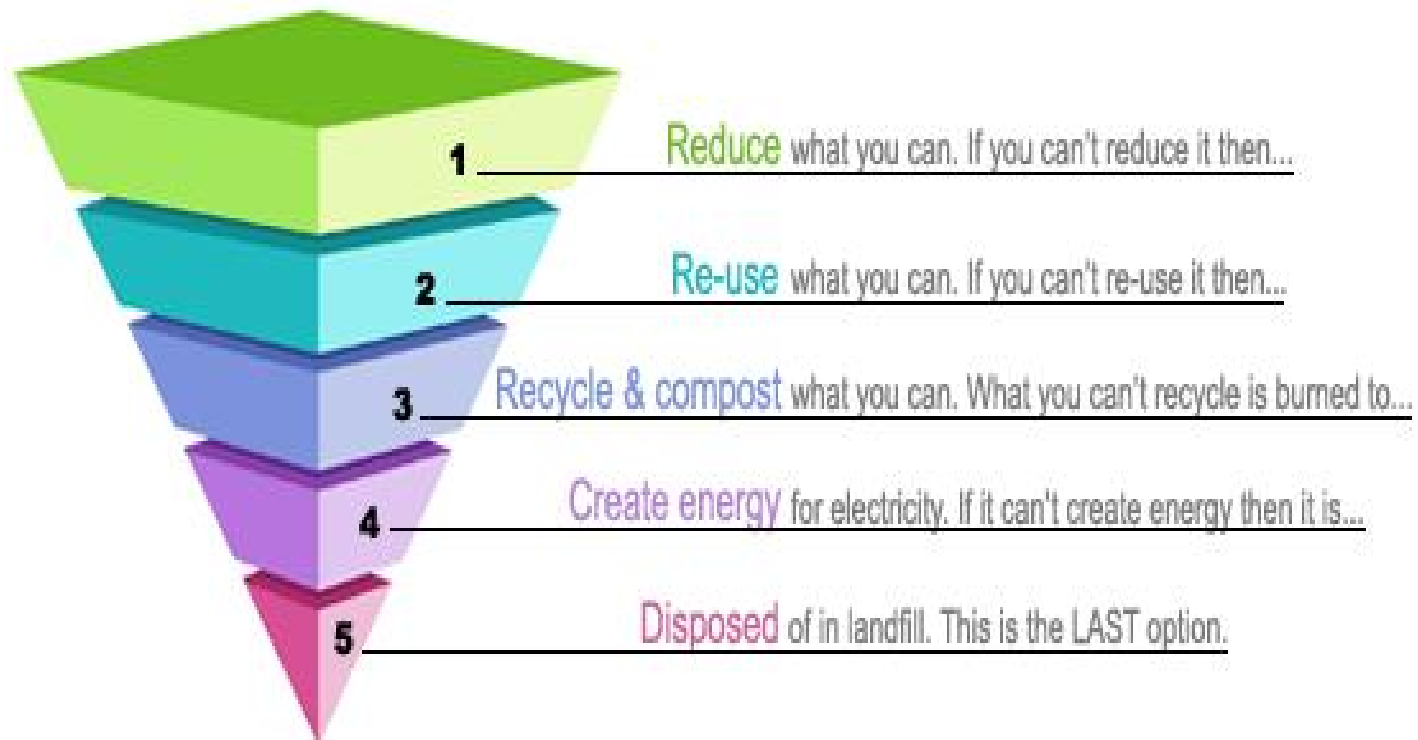
5% Reuse target
proposed in the EC
Recast WEEE Directive

Courtesy:

European Commission – Joint Research Centre



Which means....



Courtesy:

Hull City Council. UK



Why a reuse specification?

1. Increase reuse of WEEE in accordance with WEEE Directive & UK Regulations.
2. Assure end users reused EEE is safe after testing.
3. Build market confidence and create jobs in reuse.
4. Reduce WEEE disposed to landfill.
5. Reuse '20 times better than recycling' in carbon terms (*UNU*).
6. Tool to combat illegal WEEE exports.
7. Provides a solution to an international need.



PAS 141 Position and focus

- Aim to build market confidence and target sham reuse.
- PAS 141 originated by Reuse Task Group of the UK WEEE Advisory Body (WAB).
- WAB was an independent public body providing impartial advice to Government on matters relating to the WEEE Directive and the UK WEEE Regulations.
- WAB closed on 30th September 2010 as coalition government reduced number of NDPBs & returned responsibilities to Government Departments.
- WEEE Working Group continues PAS development & reports to Department for Business, Innovation & Skills (BIS).



Scope and definitions

- “**Reuse**” or ‘re-use’ means...any operation by which whole equipment or components that are not waste are used again for the same purpose for which they were conceived
- “**EEE**” Electrical and Electronic Equipment
- “**WEEE**” Waste EEE
- “**UEEE**” used EEE (not discarded as waste)
- “**REEE**” reuse EEE i.e. EEE, UEEE or WEEE prepared for reuse in accordance with this specification

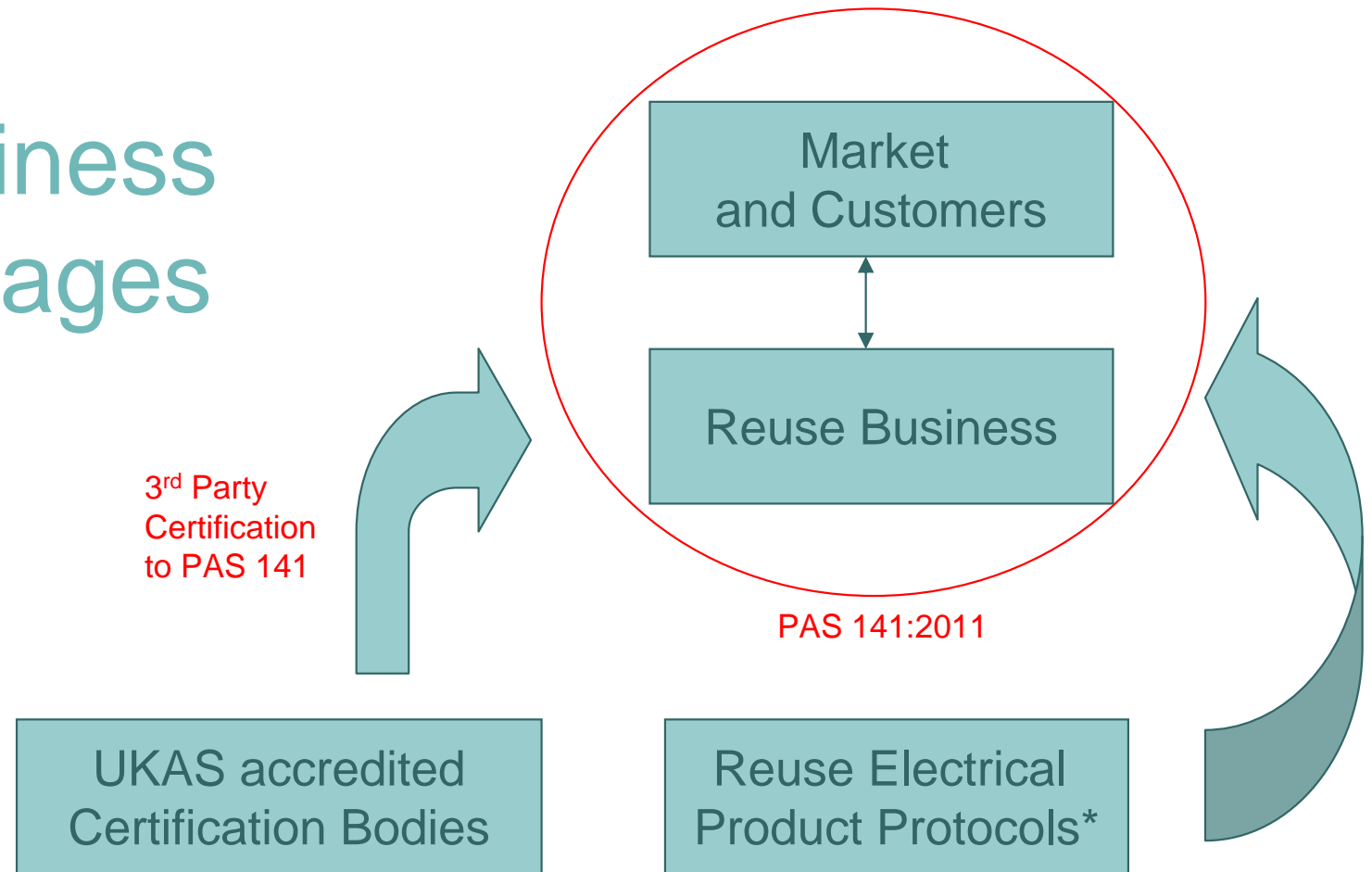


Who was involved

- Producers & Trade Associations (AMDEA, HP, Fujitsu, MTF, FRN, CRN, ICER).
- UK environmental regulators (EA, SEPA).
- Reuse businesses (CRS, Datec, RDC, Regenersis).
- Reuse third sector (FRN, CRN).
- ATFs / AATFs (Viridor, Environcom).
- Standards bodies (BSI, UKAS, WRAP).
- Academia – CRR, Strathclyde Uni, UNU (StEP).
- Government Departments (Defra, BIS, MoD, Cabinet Office, LARAC).
- WAB members & BIS officials.

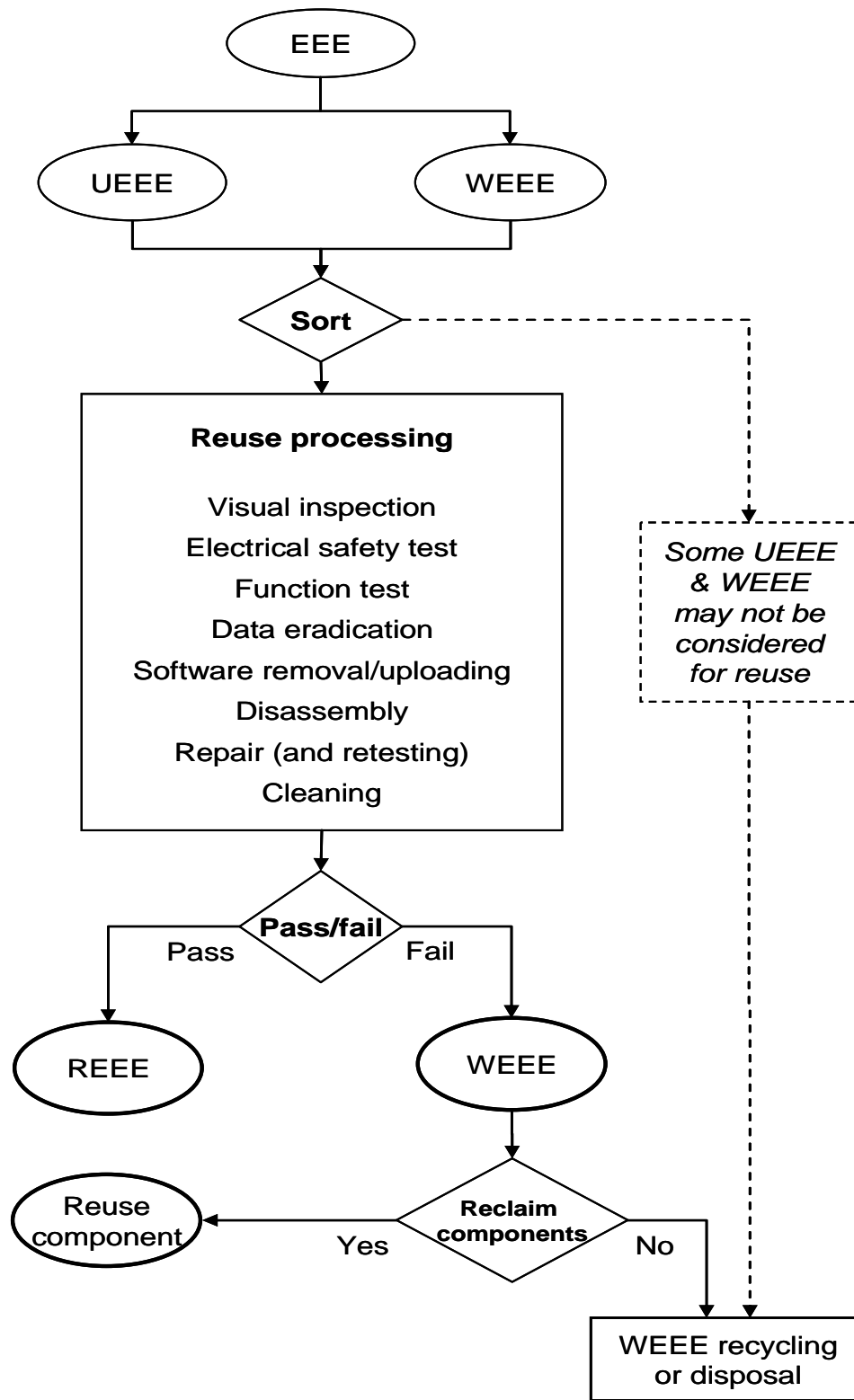


PAS 141 Market and Business Linkages





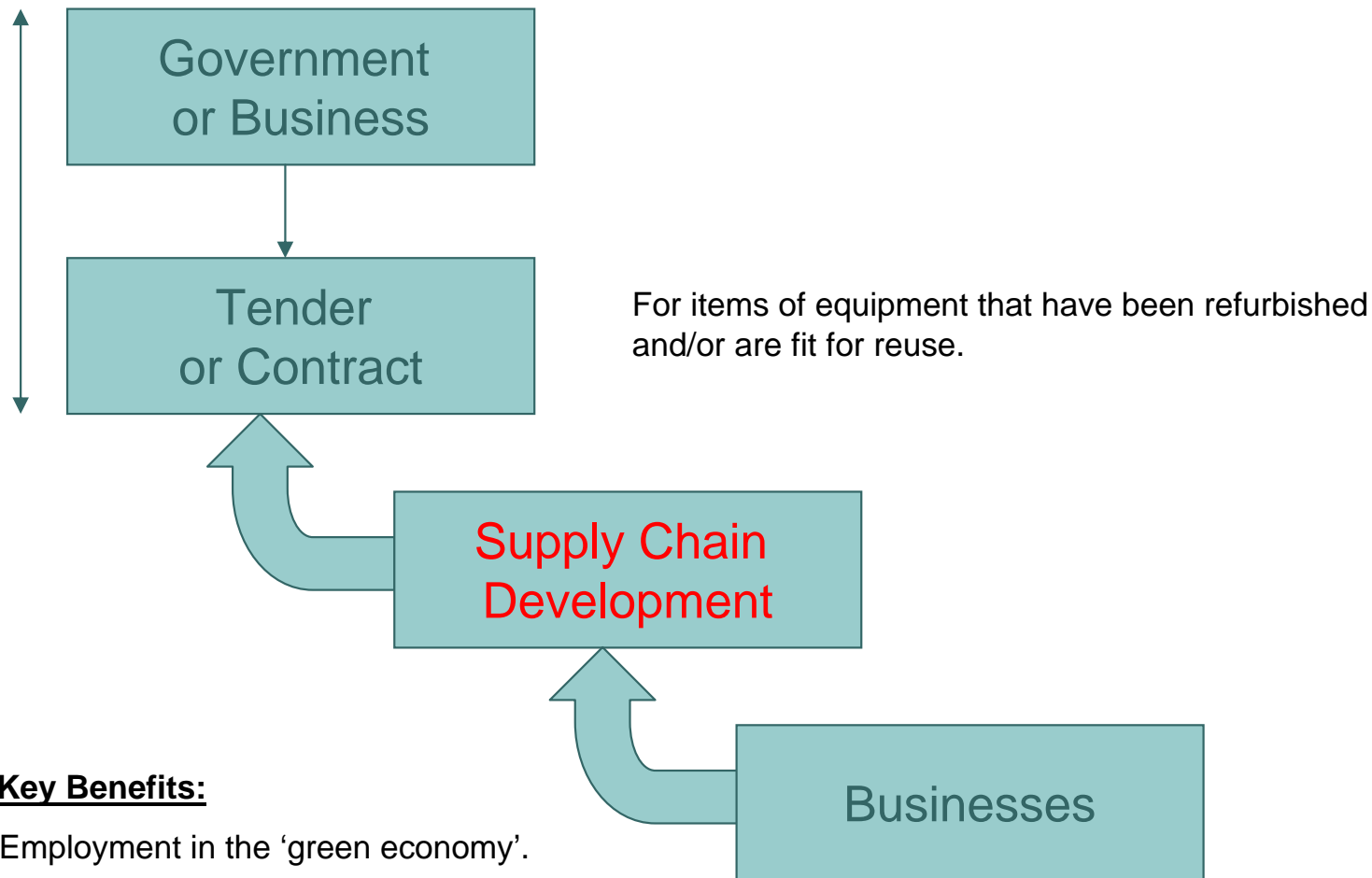
PAS 141 reuse process overview



Please refer to notes handout pages for greater detail

Role in sustainable material management

Demand Side



Key Benefits:

- Employment in the 'green economy'.
- Savings in energy & materials consumption.
- Reduced carbon impact.




Role in tackling illegal exports of WEEE

- The Environment Agency ('EA') takes a risk based approach to waste regulation.
- PAS 141 viewed as sensible practise by the EA. Ability to tie into 'Reuse exemption' permits.
- PAS 141 is not a direct regulatory issue but a commercial one.
- Commercial partners will be able to demonstrate conformity to PAS 141.
- Builds confidence amongst stakeholders.
- Isolates the 'sham operators' further.



Where Next with PAS 141?

-  PAS 141:2011 published on 31st March 2011
- Certification Guidelines developed via UKAS so Reuse organisations can be certified by independent accredited certification bodies
- UK Government bodies & regulators ready to use PAS 141 as guideline for reuse organisations
- UK WEEE Producer Compliance Schemes and others can require suppliers to become PAS141 certified
- WEEE Rapporteur & others in EU, UN & other countries interested.
- Development of an international standard.



Proverb

*For want of a nail the shoe was lost.
For want of a shoe the horse was lost.
For want of a horse the rider was lost.
For want of a rider the battle was lost.
For want of a battle the kingdom was lost.
And all for the want of a horseshoe nail.
- Old proverb*

● ● ● Any Questions?

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* PAS 141 is available for purchase as a PDF or a hard copy from BSOL or the BSI Shop for £65 at <http://shop.bsigroup.com/pas141>.