

# Portable Battery and Vape Recycling

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# Materials and Legislation

# Legislation

## Portable Battery Regulations 2008

<https://www.gov.uk/guidance/regulations-batteries-and-waste-batteries>

## WEEE Regulations 2013

<https://www.gov.uk/guidance/regulations-waste-electrical-and-electronic-equipment#overview>

# Small WEEE which work off either rechargeable or single use batteries

Includes items:

- Vaping devices
  - Vacuums
  - Tooth brushes
  - Remote controls
  - Bluetooth devices
  - Phones
  - Power tools
  - Toys
  - Torches
- 
- A lot of items from online retailers are supplied direct from outside the UK and therefore evade some of the safety rules and legal compliance requirements

# Types of Portable Batteries (<4 kilos)

Most portable batteries listed can be easily removed from the WEEE and be recycled but embedded batteries (rechargeable and single charge) such as used in disposable vapes cannot be easily removed

## Types of batteries

### Lithium-ion (li-ion) batteries

Mobile phones, laptops, hand-held electronics

### Alkaline and carbon zinc batteries

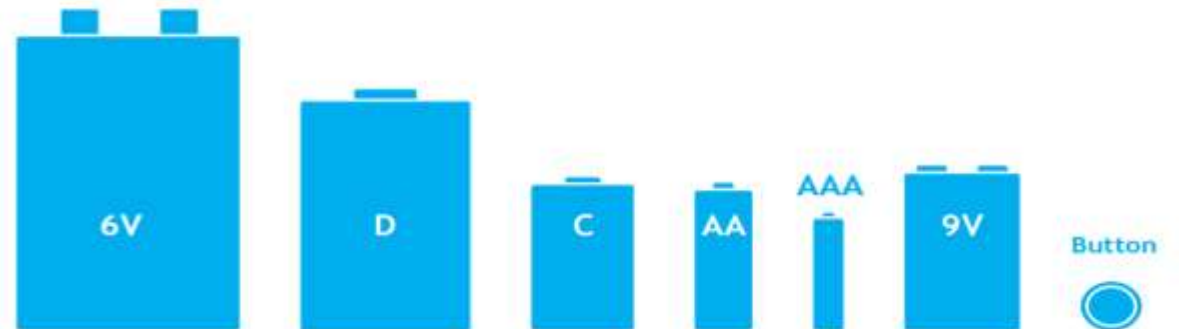
Cameras, toys, watches, hand-held electronics

### Lead acid gel batteries

Wheel chairs, portable tools, ride on electric toys

### Lithium (primary) batteries

Pacemakers, remote car locks, cameras



# Types of E-Cigarettes and Vapes

## EVOLUTION OF VAPING



CIG-A-LIKE  
(2003)

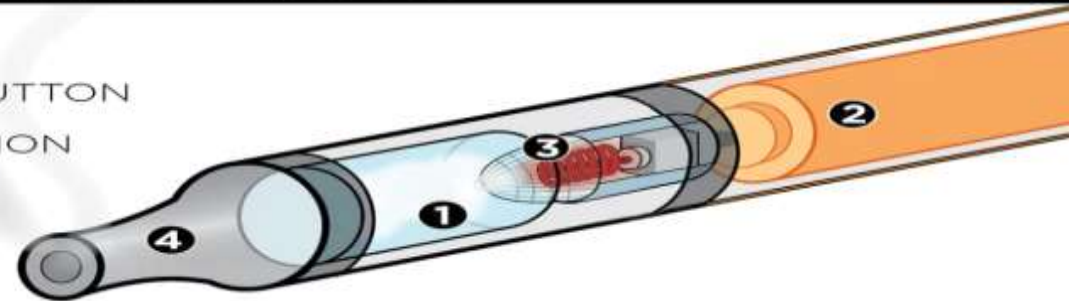
VAPE PEN  
(MID 2000'S)

MODS  
(EARLY 2010'S)

POD MODS  
(MID 2010'S)

**THREE MAIN COMPONENTS IN ALL VAPING DEVICES:  
BATTERY, ATOMIZER, E-LIQUID**

- (1) FILLING THE E-LIQUID
- (2) PRESSING THE FIRE BUTTON
- (3) THE ATOMIZER IN ACTION
- (4) VAPE CLOUDS



Images from ruthlessvapor.com

An advertisement for ELF BAR e-cigarettes. It features a row of ten colorful e-cigarettes in various colors (yellow, blue, brown, orange, light blue, pink, green, orange, white, red). The ELF BAR logo is at the top. Below the e-cigarettes, the text reads: "£3.99 EACH WITH MULTI-BUY!" and "SAME DAY DISPATCH".

ELF E-Cigs, Vapes & Mods for ...  
ebay.co.uk

 **Valpak**  
a Reconomy Group company

# Dismantled vape with lithium battery

- Lithium primary batteries are more volatile than lithium ion batteries and have a cost per tonne to dispose of – this type is available to buy from online sites with supply from China
- Other parts e.g. wick and foam are contaminants for WEEE reprocessors. This is WEEE but not currently recycled as it has to be sent for high temperature incineration
- Material Focus estimates 20 plus tonnes of lithium are thrown away each year in vapes that could be recycled but we think it could be more







# Issues

# Segregation from other waste streams



- Vapes and Portable batteries are frequently disposed of incorrectly
- Often in residual & recycling streams
- Lack of public awareness on risks/impacts
- More items being sold and designed which contain non-removeable batteries e.g. vapes
- Poor quality or counterfeit items being imported/sold online
- Image is contents of Valpak onsite vape collection container

# Vapes



ELF E-Cigs, Vapes & Mods for ...  
ebay.co.uk

- Largest growing retail sector in the UK, when disposed of they are classified as WEEE
- <https://www.materialfocus.org.uk/press-releases/one-million-single-use-vapes-thrown-away-every-week-contributing-to-the-growing-e-waste-challenge-in-the-uk/>
- Rechargeable units use lithium ion, disposable will use lithium primary (more volatile than lithium ion)
- New disposable units with integrated battery now most popular among younger - Marketed as disposable and this leads to potential mindset that they can be disposed of in the residual stream
- In Eunomia survey there was a greater tendency for this demographic to throw away WEEE and batteries in the incorrect bins
- <https://www.materialfocus.org.uk/report-and-research/encouraging-battery-recycling-reduce-fires/>

# Are disposable vapes legal?

The battery from disposable vapes cannot be removed by design. This seems to contradict the below legislation:

## **The Batteries and Accumulators (Placing on the Market) Regulations 2008**

Appliances into which batteries are or may be incorporated

7.—(1) No person shall place on the market an appliance into which a battery is or may be incorporated unless that appliance is—

(a) designed in such a way that a waste battery can be readily removed from that appliance;

# Vapes – challenges & opportunities

## Market flooded by unsafe vapes aimed at children

<https://www.bbc.co.uk/news/health-62052286>

- Current volumes collected for recycling are too low to allow effective investment
- Joined up strategy to address this inc Defra, recyclers, local government and producers
- Work with retailers organisations e.g. UK Vaping Industry Association  
<https://www.ukvia.co.uk/>
- As of 1<sup>st</sup> January 2021 retailers selling more than £100,000 electrical goods p/a (collectively as an organisation not in single store) must offer in store take back, therefore some vape shops should be offering this as part of the service
- Illegal and lower quality items imported via online stores

# Risk of fires

Material Focus report

[Encouraging battery recycling to reduce waste stream fires - Material Focus](#)

Handling of waste streams has been significantly affected

- Image is of a Gateshead recycling vehicle that needed to discharge its load in the street due to a battery fire
- Fires in recycling and residual materials reprocessing facilities – Campground
- WEEE Reprocessors have experienced fires in region inc GAP
- Increased complexity due to hand dismantling



# Collection methods



# Valpak's WEEE and Battery Strategy in the North East

- Multi-layered collection network
- Includes WEEE and Portable Batteries
- Working in partnership with regional councils
- Produced report for NEPO Councils
- Working with Material Focus
- Vape specific containers



Good Practice in WEEE and Battery  
Collections to Prevent Fires  
NEPO



# Vape Containers

- Provided across the region
- Vapes and e-cigarettes only
- Reprocessed by specialist company
- Battery reprocessors and sorters will not accept them



# HWRC Collections - Portable Batteries

- Large containers c/w lids
- Smaller containers next to WEEE skips for batteries
- Working with Material Focus
- Using uniform format signs
- Vape specific containers

Your waste electronic items and batteries now have the **power to do more!**

Here's how...

- 1 Place your small waste electronic items and batteries in the separate containers provided
- 2 Scan the code below and £1 will be donated to Changing Lives



**Scan to donate to charity**

SCAN ME

Thank you  
for recycling your portable batteries and electronic items.  
Please remove batteries from your items.

CHANGING LIVES

Gateshead Council, Sunderland City Council, South Tyneside Council

Valpak 03450 682 572 info@valpak.co.uk valpak.co.uk



**IMPORTANT**

Please remove all **BATTERIES** before depositing your item in the container



**RECYCLE BATTERIES SEPARATELY**  
Damaged batteries cause fires

Can you remove batteries from your electricals?

**YES:** Place them in the batteries bin **NO:** Place device in the electricals bin

Thank you for helping prevent battery fires

Gateshead Council, South Tyneside Council, Sunderland City Council

# Different types of batteries containers – retail outlets, schools, libraries and other locations



**RECYCLE BATTERIES SEPARATELY**  
Damaged batteries cause fires

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Gateshead Council    South Tyneside Council    Sunderland City Council

# Regional partnership activities



# STWWMP and Valpak Projects

- Long term partnership with STWWMP and Groundwork
- Education of school children and residents
- Reuse of WEEE
- Working extensively on funding from Material Focus, DTS and other
- Provided employment
- Multiple award nominations



**Recycle your batteries here!**

When using batteries, aim to use rechargeables wherever possible.

If you have waste batteries they can be taken to your local Household Waste and Recycling Centre or battery recycling points in shops, community centres or schools.

To find out more, check out your council's website



**Batteries don't belong in your household bin or caddy...**

Use collection boxes in shops and supermarkets or bring them to the Household Waste Recycling Centre.



# Durham County Council - small WEEE and Batteries

- 131 Collection Points across County Durham
- 13.2 Tonnes Collected for Recycling
- 0.5 Tonnes Reused through Monthly Repair Cafes
- Location Types include all manner of community buildings such as Schools, Libraries, Leisure Centres, Community Centres, Churches and Town halls
- Shortlisted for LARAC Awards in the category of 'Best New Idea' in 2021 & 2022
- Shortlisted for National Recycling Awards in the category of 'Local Authority Success' in 2021 & 2022 and in the category of 'Campaign of The Year' in 2022
- Highly Commended at the County Durham Environment Awards 2021



# North Tyneside, STWWMP and GAP



- Schools poster competition
- Winner's design was displayed on GAP Waste Management collection vehicles to raise awareness
- Both GAP and Valpak paid for the vehicle designs and prizes for the schools

**Batteries don't belong  
in your household  
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recycle  
for North Tyneside



[www.northtyneside.gov.uk](http://www.northtyneside.gov.uk)

Valpak  
a Recovery Group company

# Redcar & Cleveland

- Suffered six battery and WEEE incidents in residual and recycling streams in last 3 years
- Fires damaged RCVs leading to significant cost
- Education programme
- Small WEEE and Battery collection locations across the Borough
- Reused unwanted WEEE bins from NEPO region
- Kerbside collection service for small WEEE and batteries
- Local network to collect batteries from various locations
- Currently preparing schools poster competition
- Winners' designs will be displayed on RCVs to raise awareness
- Valpak is supporting this by paying for the vehicle designs and prizes for the schools





Competition!

Win  
**£250**  
 for your  
 school!

We want you to **design a poster** on A3 paper that we can display on the **side of a bin wagon** – the **competition winners will get a prize and £250 for your school**. We need your help to let residents know how to recycle their batteries and small electricals (WEEE) to stop bin fires and help the environment!



**75%** of electrical goods end up in landfill, where lead and other toxins contained in the electrical goods can **cause soil and water contamination**, and most can be recycled!



**600 million** household batteries are **thrown away** each year that could have been recycled. Batteries contain hazardous chemicals & can **breakdown and leak** if not recycled.





Putting **batteries and electronics (WEEE)** in bins caused **6 fires in 2 years** at Redcar & Cleveland Borough Council!!

Submit your entries to design the side of our bin wagon by **Friday 21st October**



To help prevent bin wagon fires, the Council installed **small WEEE collection containers** all around the area to recycle batteries and small electronics which were donated free of charge by Valpak.



Competition runs from 26th September – 21st October to be judged the following week. Maximum 3 entries per school on A3 paper; hard copies to be sent to the Environment Support team at Fairway House, Limerick Road, Redcar, TS10 5JU

this is Redcar & Cleveland





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