

Cost of a Deposit Return Reverse Vending Machine

I work for a technology company and have been installing Reverse Vending Machines throughout the Globe for over 30 years.

It is wonderful that Zero Waste Scotland have had the foresight to look at the rest of the world and see what “others” are doing.

The deposit system in Sweden is owned by the Brewers and the Government, so why cannot the UK Industry work with the Government?

Deposit Return Machines that work in deposit systems do not cost anywhere near £32,000 each as quoted by the newly formed Packaging Recycling Group Scotland (PRGS). Machines can be leased and are actually “cost neutral” in some instances, as current waste collection and recycling systems are so inefficient.

Technology increases and encourages recycling and reduces litter whilst reducing separation cost. It is now law that companies must separate recyclates from the waste stream.

The current system and “forecasted” return rates simply does not work. We should be re-using and recycling as much as possible, not sending to landfill or incineration.

The customer, recycler, receives their deposit back for returning used drink containers. The customer may also choose to donate the money to a charity of their choice.

I have a disabled close relative and I find it offensive and despicable to bring mobility into this discussion as the Packaging Recycling Group Scotland (PRGS) have done.

My relative enjoys going to the supermarket, shopping, recycling and living a full life.

This deposit system technology is used in Sweden and achieves a 90% recycling rate today, and has done so since 1984 video >> <https://youtu.be/87e3xEKMhZc> Similar systems are used throughout the world and are “disabled” friendly.

Fraud in the system is preventable by use of high tech recognition systems as used in Germany.

The reason that there are can banks and bottle banks at UK Supermarkets is that they have to provide recycling for their customers, why should this fall to the local Councils?

The producers of the cans and bottles must take responsibility for putting these items into the market and do all they can to recycle and re-use as much as possible.

The main issue here is that it is called "Producer Responsibility" the above have a vested interest in circumventing theirs, by using compliance schemes, Associations and scaremongers.

The childhood memories of returning bottles, was due to the fact that most bottles were made from glass and collected to be reused. Reverse Vending maximises material value and maintains material properties as drink containers are sorted by

material type. We have machines throughout the world that collect glass bottles for re-use. The only reason that this does not happen in the UK is the wide use of PET plastic bottles that can be easily thrown away to use new virgin material to create new bottles.

I travel the world installing wonderful technology and return to the UK to see litter everywhere, on beaches and at the side of the road. Instead of giving people a fine for littering or not recycling why not reward them and change behaviour? Once we have removed the used drink cans, plastic bottles and glass bottles from the current waste stream, the councils life will be easier, as they would be able to concentrate on the other items creating litter.

A deposit system would create jobs, be exciting and increase the value of the collected materials. The increase would allow the manufacturers to concentrate on trying to use more recycled materials in their new cans and bottles instead of using new virgin materials.

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A price of £32,000 for a Reverse Vending Machine has been quoted in numerous articles recently by the PRGS.

Example > <http://www.harpers.co.uk/news/drinks-groups-reject-scotlands-plans-for-deposit-return-scheme-on-drinks-bottles/520379.article>

This is nonsense, a non compaction deposit system machine is low cost at approx. £7,000 plus VAT.

Capital Purchase

Capital Purchase prices for reVend 800 Reverse Vending Recycling Machine would be:

1 machine = £7,000 + VAT

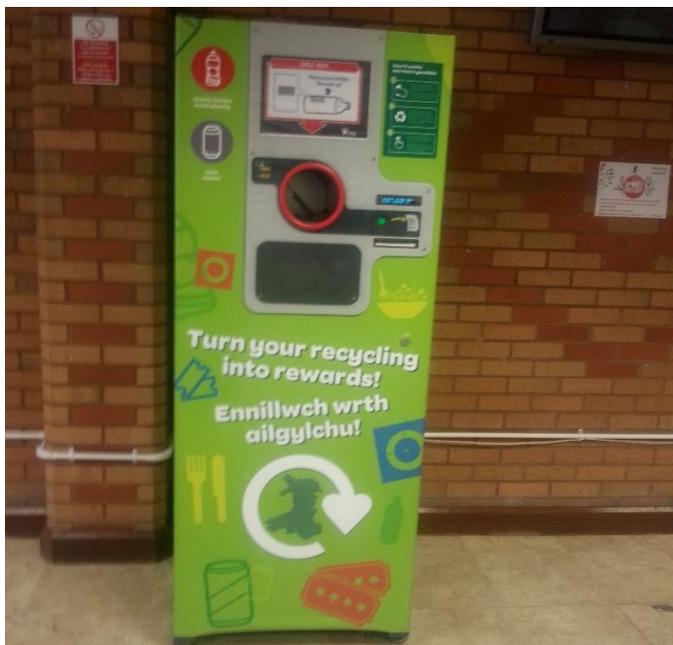
Leasing

Over a 5 year lease (through Siemens Financial Services) the cost for a reVend 800 Reverse Vending Recycling Machine would be £36.00 per week or £428.85 per quarter excluding VAT.

Here is an example of the same reVend Reverse Vending machine in Germany in a Supermarket in the Deposit system (cost £7,000).



We have similar machines already installed in the UK (image below)



Telemetry

The machines are connected online enabling huge savings with waste management logistics, the machines are only emptied when full.

The reVend Reverse Vending Machines participating in the “Recycle and Reward” project have never lost connection in over two years of constant use, as we use special M2M technology and industrial routers.

The machines can be monitored 24/7 from anywhere in the World.

The voucher details and participating container database is updated over the cloud without needing to visit each machine. Two thousand machines can be updated in one evening easily.

We currently update the voucher details and touch screen menu details of every IKEA light bulb machine in minutes each month (example below):



Recycle any Light Bulb at IKEA Gateshead in their Light Bulb Recycling Machine and get 1 FREE RAMSTA Minilamp, I minilamp for each Light Bulb Recycled in April 2015



Get 1 FREE RAMSTA Minilamp, for each Light Bulb Recycled in April 2015

Material recognition

Machines are able to recognise each participating used drink container and separate each material by type, this increases the value of the material collected.

Example of compacted and separated materials in the Glasgow “Recycle and Reward” machine:



The machines recognise each material and compact then separates the materials, enabling the materials to be “recycling” ready with no contaminants. The value of the collected materials is increased and the volume reduced, enabling reduced logistics costs.

Rewarding Recycling

We know from our experiences over thirty years and recently the last four years at IKEA UK Stores, that rewarding the recycler dramatically increases the recycling participation and activity.

recycle for Scotland

Turn your recycling into rewards

Recycle any IKEA bottles and cans then choose between the following options.

1. Donate your reward to one of these charities:

unicef | Save the Children | WOODLAND TRUST | WWF

OR

2. Collect vouchers to redeem these items:
(1 voucher per drink)

2 vouchers: **LJUSA** wind up torch

4 vouchers: **RATIONELL** waste bin, 14L

6 vouchers: **LEDARE** LED bulb E27, 400lm

Collect your chosen reward in the Market hall and take it to the store check-outs along with your vouchers to be redeemed.

www.recycleforscotland.com

IKEA

Reward Systems can work alongside kerbside collections and enable exciting rewards to be offered.

Most modern machines have touch screen menus allowing the user to receive a reward or donate the monies to charity.



A small returned Deposit anywhere from 10 pence to 20 pence is a huge driver to increase recycling.



Scotland's plastic bag usage down 80% since 5p charge introduced

A good example of charging a small fee for items is the huge success of the carrier bag charge in Scotland. Plastic bag usage in Scotland has plummeted following the introduction of a 5p charge.

Early figures from retailers show that single-use carrier bag usage has fallen by more than 80% since the charge was introduced on 20 October 2014.

Link >> <http://www.theguardian.com/environment/2015/apr/17/scotland-plastic-bag-usage-falls-after-5p-charge-introduced>

Fraud Prevention in a Deposit Return System

Statement by Reverse Vending Corporations security ink and security camera partners insensiv GmbH

Fraud Prevention in a Deposit Return System

As for the issue of preventing fraud, the system is easily established through the application of multiple security checks performed by RVMs. Basically it is a simple issue of how advanced the RVM is, i.e. what control function it can perform.

For instance, our machines do it as follows:

- Security cameras performing special lighting of the container (checking security ink)
- control of the shape of the container
- control of the barcode

These three basic control-procedures prevent fraud or attempted fraud and make any attempt of the fraud completely impossible.

Germany DRS

A good example at the efficiency of the anti-fraud system is the example of Germany with the annual number of 16 billion use drink containers having 25cent deposit this equates to (4 Billion. Euros) no significant examples of fraud are known at all.

Other markets

Any problems in California with fraud lacked the mentioned basic control-functions above

Shalva Dzebisashvil

Project-Manager



insensiv GmbH

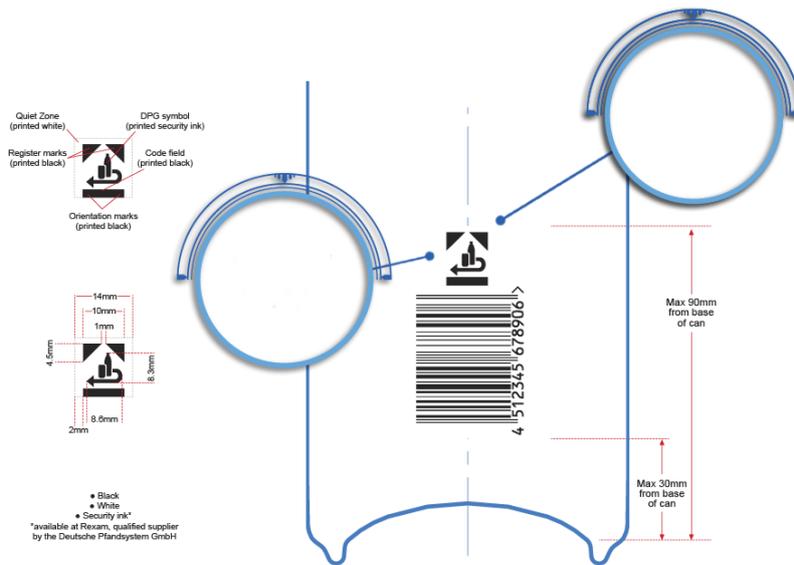
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D-33739 Bielefeld

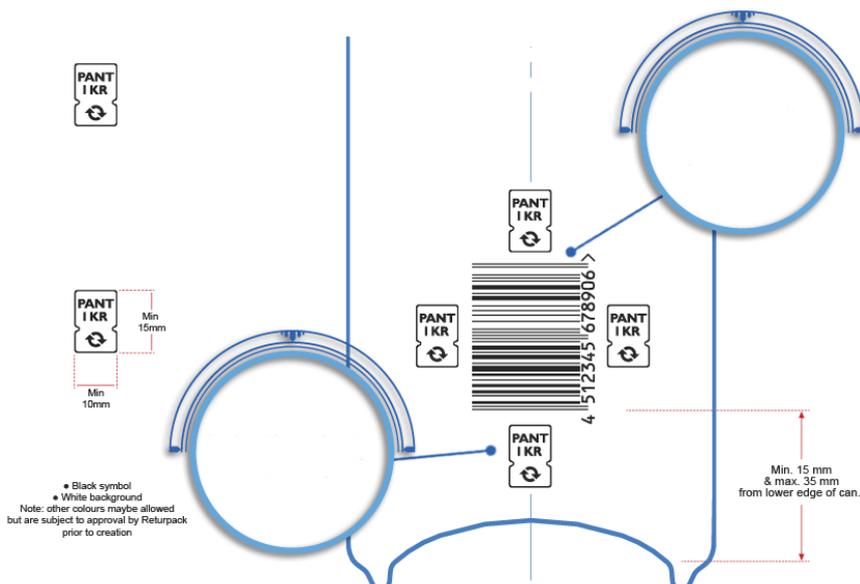
Fraud Prevention in a Deposit Return System

It is very simple to create an “Anti-Fraud” logo to be placed on each participating drink containers .this eliminated fraud, as security inks and cameras are used

Example of such a logo used in the German Deposit Return System (image courtesy of reexam website) <https://printguides.rexam.com/design-specs-symbols>



Example of such a logo used in the Sweden Deposit Return System (image courtesy of reexam website) <https://printguides.rexam.com/design-specs-symbols>



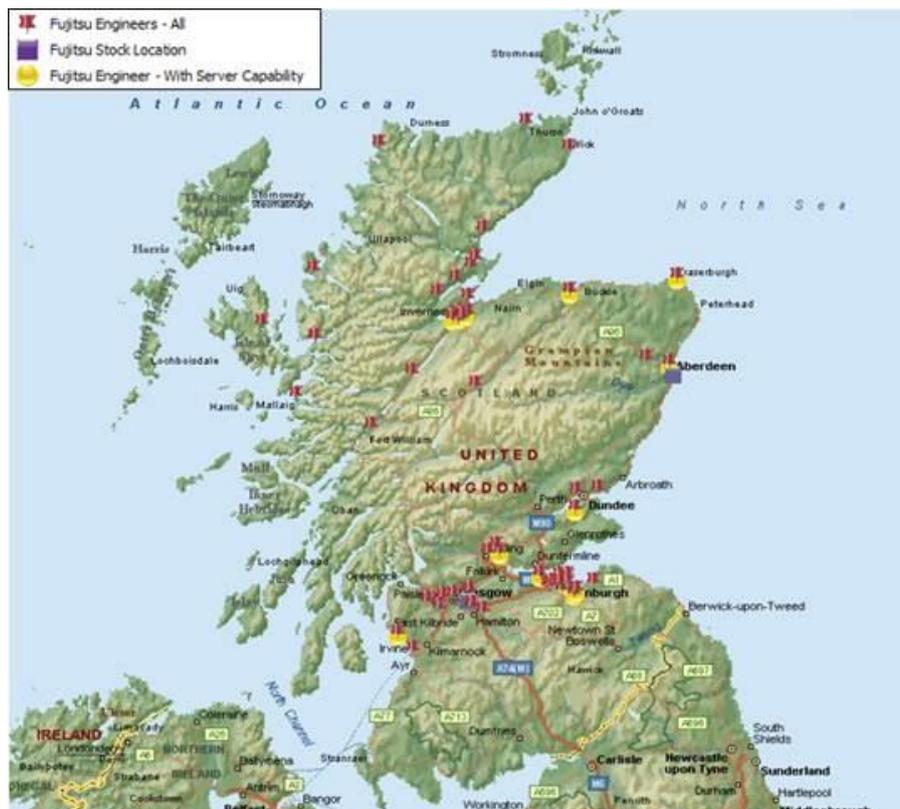
Scotland could have its own “Anti-Fraud” Logo

Example designed by Reverse Vending Corporation as an example only

Such a logo would be utilised on each participating used beverage container, with special security inks and special security cameras this would prevent fraud in the proposed Scotland Deposit Return System.



Installation/ Maintenance of Reverse Vending Machines in the UK



Fujitsu engineers are able to install and maintain all Reverse Vending Machines available on the Global market

Fujitsu would be able to install and maintain (produced by any manufacturer) all “Deposit Return System” machines in Scotland (if required).

1500 Trained Engineers in the UK

Fujitsu have a team of approximately 1500 engineers across the UK that can be either mobile or based on customer sites as required. This team includes resources that are security cleared supporting many Government and Ministry of Defence accounts or registered with many high street retailers.

They have various levels of security clearance including DV for Top Secret locations and Airside for civil airports and Military Air Bases. We have a mix of engineers; Customer Support Engineers are generalists but trained to a high level. We also have Enterprise engineers who provide hardware Engineering support for Mission-Critical platforms including Datacentre server, storage and network equipment. Supporting this we have specialists who own specific accounts and products, not only closing incidents but providing support to the other engineers and our end users.

Reverse Vending Corporation have helped to train a team of Fujitsu installation and maintenance engineers in the UK.

Reverse Vending Corporation have over thirty years “Reverse Vending” experience

In Scotland, Fujitsu have a wide geographical spread of engineers capable of delivering a hardware service up to and including servers, storage and networks.

The customer is at the forefront of Fujitsu decision making – Fujitsu understand their business, the business impact of failures, and the importance of minimising down time. We measure what matters, focusing on customer value whilst balancing cost with service.

Fujitsu aim is to fix customer issues 'first time' by providing resource with the right skills, parts and tools in line with the customer's requirements. We create, and work, in an environment where our people feel engaged and empowered, and seek to continuously improve process and service.

Note :

This report was generated by Steve at Reverse Vending Corporation to be used freely with no restrictions to use.