

DAN-X Recycling Ltd.

Environmental and Sustainability
Standing Committee

October 4, 2012



Who we are

- Established in 2009
- Partners: Dana Emmerson and Dave Hall
- Light bulb (containing mercury) recycling plant
- Headquartered in Burnside, Nova Scotia
- Only one of its kind in Canada



What we do

- DAN-X recycles light bulbs that contain mercury
 - Recycling process diverts 100% of the bulbs that contain mercury from landfills
 - Processed more than 600,000 bulbs to date
- Types of bulbs we recycle:
 - High Intensity Discharge (HID) lamps used for street lighting
 - Compact Fluorescent Lamps (CFLs) used in homes
 - Fluorescent tubes used in commercial and public buildings
 - Neon Tubes used in signs



DAN-X Recycling Plan

- In 2009, DAN-X began a three phase recycling plan rollout that would enable 'True' process for handling lamps that contain mercury.

- ✓ **Phase 1** (2009): Opening of the DAN-X Recycling facility

In 2010/2011, shipped approx. 350,000 bulbs to recycler in Ontario

- ✓ **Phase 2** (2012): Purchase of the Balcan MPC 4000 Lamp recycling system

- **Phase 3** (2013): Purchase of a Mercury Distiller to enable the recycling of mercury-bearing phosphorous powder on site



The Problem with Mercury

While the mercury in bulbs has reduced over the years, it is still present in fluorescent lamps and bulbs including energy efficient bulbs. There are still many older bulbs in circulation that contain much higher levels of mercury.

- Mercury is poisonous
 - Mercury vapour is odourless and cannot be seen making it very difficult to detect.
 - Hazardous to the respiratory and nervous system - potentially lethal
- Disposal in landfills means that mercury leaches into soil



Why Recycle Lamps/Bulbs?

Recycling lamps and bulbs is the best solution for the environment and people

- One traditional fluorescent tube contains enough mercury to pollute 20,000 litres of water.
- Lamp materials are in general 94% glass, 5% metal/plastic and 1% mercury bearing phosphor powder.
- The DAN-X process diverts all of these materials in an environmentally safe way by converting the materials for other uses.
- Recycling reduces the need for these materials to go needlessly to landfill.



Benefits of the DAN-X process

DAN-X is the only company in Canada that utilizes world class, Balcan technology - exclusive rights.

- Most versatile - One system that handles all types of types and sizes of bulbs
- Uses less energy

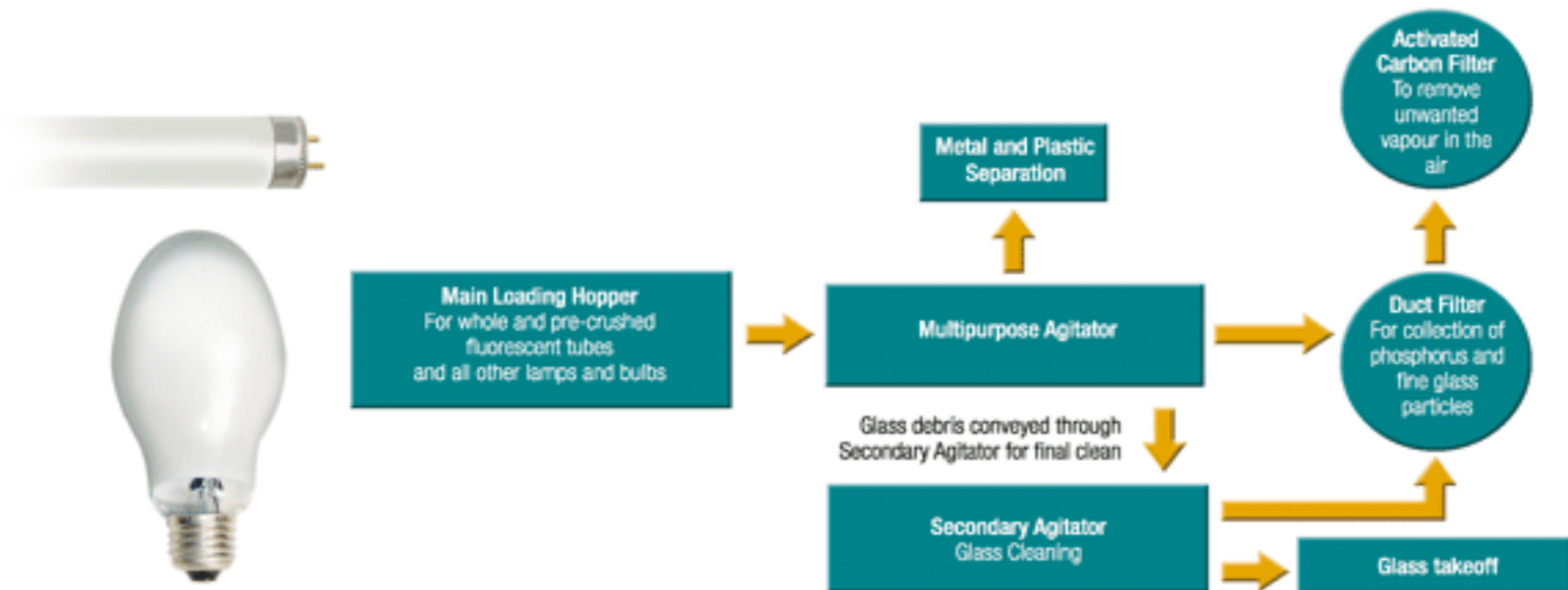
What happens to by-products after processing?

- Recycled and diverted from landfill
 - Glass is sent to bulb manufacturer Osram Sylvania for reuse
 - Metal is sent to local metal recycler
 - Phosphorous powder containing mercury shipped to Bethlehem Apparatus (U.S.) where mercury is extracted and reused in the manufacture of bulbs



The Balcan MPC 4000 Lamp Recycling Process

Lamp Recycling MPC4000 Plant



Our clients

- Acadian Seaplants Limited
- Advance Lighting & Design Inc.
- Bergman Electric
- Bell Media C-100
- Clean Nova Scotia
- Dalhousie University
- Direct Energy
- Eco Electric Limited
- Efficiency Nova Scotia
- L-3 Communications
- Nedco Electrical Div. of Rexel Canada Inc.
- Provincial Electric
- QEII Health Sciences Centre
- Rockingham Hardware
- Ron Hines Contracting Ltd.
- Ryson Construction Ltd.
- Scozinc Mine
- Summerhill Group
- TS Energy & Conservation Inc.



Achieving 100% Diversion

A “True Recycling” solution diverts 100% of all mercury containing lamps/bulbs from landfill.

How?

- Implement HRM lamp/bulb recycling program
 - Street, commercial/public buildings and residential
 - Could be branded under HRM’s sustainability program
- Implementation of Phase 3
 - The acquisition of a Mercury Distiller enabling processing of the mercury at the DAN-X facility
 - Enables the mercury processing from lamps/bulbs batteries, hospitals and dental fillings



HRM benefits

- Further improve in the area of sustainability
 - Helps HRM achieve its mandate for a healthy, sustainable, vibrant community
 - Contribute to HRM's position as a leader in the area of sustainability
- Achieve Cost savings
 - Local processing vs. shipping elsewhere
 - Lower transportation costs



Next steps

- Move forward with HRM recycling program; DAN-X can provide:
 - cartons to any site in HRM for the placement of spent lamps/bulbs destined for recycling
 - a pick-up service at a cost-effective fee to bring lamps/bulbs back to plant for recycling
 - HRM could, of course, arrange to drop off
- Garner HRM support for the acquisition of Mercury Distiller
 - RRFB
 - GMF - municipal environmental initiative under the waste category
 - ACOA



Thank You!

Questions?



Contact

David Hall

President

DAN-X Recycling Ltd.

Tel. 902-407-3780

Fax 902-468-2813

dmhall1@hotmail.com

Dana Emmerson

Vice President

DAN-X Recycling Ltd.

Tel. 902-407-3780

Fax 902-468-2813

emmerson@bulbeater.com

