

Industrial waste
Valuable commodities
recovered

C&D Recycling
Building better
options

Product Stewardship
Producer share
responsibility

**MEDIA
PLANET**

June 2012

RECYCLING & WASTE MANAGEMENT



RESPONSIBLE WASTE DISPOSAL TO RESOURCE RECOVERY

Learn the value of diverting your waste



How everyone has a role in waste
management, RCBC weighs in

Brock MacDonald
Chief Executive Officer of the
Recycling Council of B.C.

CHALLENGES

Question: Whose responsibility is proper waste management?

Answer: From consumer to heavy industry - we all have a role to play

Be a leader and start by setting an example

When it comes to waste management, British Columbians are very resourceful. That's because we no longer think in terms of managing waste, but rather in recovering valuable resources.

Throw back

Since the 1990s there's been a steady transition to a new system of diversion called product stewardship. This moves the responsibility of funding and managing product recycling from local governments to the industries that produced them.

Nowhere in Canada are there more industry product stewardship programs than in B.C. We lead all of North America in a process many consider to be the next industrial revolution. Here producers close the loop in a cradle-to-cradle system in which recycling ends up as new products. In many cases, made right here in B.C.

Canada's 2010 Olympic hockey medals had gold recovered by Teck's Trail smelter. It could have been from the computer that you

returned to a depot. Those old tires you replaced last month? Placon Plastics of Delta turned them into stomp stones and now, you're using them to make your new patio.

Great expectations

As of July 1, virtually every product with a plug or a battery will be collected by industry at the end of life. What we create from that pool of resources is limited only by our creative innovation.

How about a classic example of reuse. Last May, more than 600 old British cars were displayed at VanDusen Gardens. Many of those marquees, such as Triumph, MGB, and Austin Healey, are long since out of business. However, for years owners have kept their mechanical marvels running by recovering and using auto parts from end-of-life vehicles. Without that resource those long-lived and loved machines would have ended their days as scrap rather than vying for trophies in a vintage car show.

The renewal of our neighborhoods is also changing to a resource recovery model. We no longer demolish an old building, today we develop a deconstruction plan to reclaim metal, wood and even concrete. Rebar is recovered



Brock MacDonald
Chief Executive Officer of the Recycling Council of B.C.

BEST TIP

Don't throw it out, it's a resource. Return it to a depot

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for recycling. Drywall has been recycled for years by New West Gypsum. Materials slated for reuse include wood flooring, panels and beams. Even asphalt shingles can be used in the renewal of roadways reducing the use of petroleum.

Your role

Within the following pages are examples of the sustainability efforts happening in B.C. today. Governments, industries and consumers all have a role in our move from waste disposal, to resource recovery. When you reduce, reuse and recycle we all benefit by lowering municipal costs, increasing employment and conserving resources for a healthier environment and a more sustainable future. No matter what part you play, you can be part of the solution.

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WE RECOMMEND



Keith Sashaw
President of Vancouver Regional Construction Association

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How the mining and energy sectors are breathing new life into waste

Tire Stewardship of B.C. and the SCRAP-IT Program

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Show us how they are fighting for a better tomorrow

MEDIA PLANET

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Today, Merlin Plastics processes PE film scrap (printed & non-printed), injection moulding plastics pails, blow moulding HDPE, PET & HDPE (beverage) bottles as well as various scrap from commodity resin to engineering grade.

INSPIRATION



QUESTION & ANSWER



Who decides what products are included in EPR programs?

Products included in EPR programs are set by the BC Ministry of Environment and governed by the Recycling Regulation. Recently, the Canadian Council of Ministers of the Environment (CCME) established nationwide deadlines for a range of product categories. The BC Ministry of Environment is required to meet these deadlines and product lists, but may also choose to expand the program further.

SOURCE: COURTESY OF THE RECYCLING COUNCIL OF B.C.

Cradle to grave – it's our responsibility

Product stewardship; holding each other accountable to sustain our future

When you're buying anything from antifreeze to a new TV, there's a good chance you're not immediately thinking about the end-of-life plan.

Fortunately, the producers of these products are.

That's why a fee is attached to many products - everything from paint to smoke alarms - this eco levy is collected so proper steps are taken.

Product stewardship programs have been in place for about 20 years. Instead of general taxpayers paying for the cost of recycling hazardous materials in common products, the responsibility is shifted onto the user through a fee. The fee then goes back into industry, who manages and properly recycles the product.

Joe Zenobio, Executive Director of Call to Recycle, says "the cost of a fee is determined based on the product."

"It's dependent upon the product in question and vary depending

upon what is required to collect, divert, recycle and in some cases recover funds from the recycling," he explains.

President of Product Care Association Mark Kurschner says "most producers have joined together to form a common stewardship program, rather than run their own." He adds that every program does the same thing, but in a different way.

"They all provide some sort of post-consumer take-back system," he says.

Zenobio explains that consumers should care about these programs because it affects them on a large and small scale.

"Product stewardship supports sustainability," he says. "Products are reused, landfills are reduced and in some product categories toxins or other hazardous items are diverted from landfills and treated properly."

As for the future, Kurschner predicts there will be more programs developed, as new products are included in recycling regulations.

Ron Driedger, Executive Director of the BC Used Oil Management

Association, agrees.

"I see more cooperation from the BC Stewardship Program operators in working together with local governments to provide a common voice to the consumers in public education and information and in working together to providing more one-stop eco-depots. So con-

sumers can take back many different types of products and packaging under stewardship programs."

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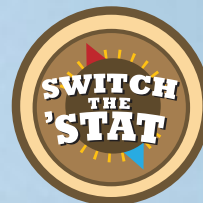
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INSPIRATION

CONSTRUCTION STREAMS REPLENISHED FROM WASTE

See the monetary value in your waste

As a new generation of builders apply sustainability ethics to building practices, recycling and reuse of building materials has become common practice.

Helen Goodland, a Managing Partner at green building advisors Brantwood Consulting, says most of the industry has laid the framework for reusing building materials.

"Vancouver construction companies - the ones who've been doing this for a while - recycle a minimum of 75 percent of waste," says Goodland. "Those types of practice are well established."

In fact, the forward-thinkers in the industry are finding ways to recycle 95 percent of their waste.

"To a large extent, improving the performance and the efficiency of the building is just common sense," says Goodland.

"It's good for business, it's good for your bottom line, it saves construction companies money and it's excellent marketing."

She says the economic benefits



Keith Sashaw
President of
Vancouver
Regional
Construction
Association

aren't limited to avoiding shipment to landfills and tipping fees for waste - the clean leftover products have residual value for the builders.

"Any type of metals - copper, zinc, etc... - because there's actually money to be made in taking these back to recycling centers," says Goodland.

It's not garbage

New steel typically contains 25 percent recycled content.

The lack of complex polymers in wood allows it to be recycled and reused for particleboard and drywall can be broken down and reused to recycle the gypsum.

Clean concrete is also easily recycled as it can be crushed and used for ballasts, gravel or road base.

"Types of materials which are generated in good volumes can be recycled easily and as a result they tend to find their way back into construction streams," adds Goodland.

Step by step

The next step is making disassembly of construction projects at the end of their life, easier.

Goodland says this involves avoiding complex products that are glued together or assembled difficultly and examining the life cycle of building materials from the time they harvested or exploited from the earth to when they become waste.

"One of the biggest impacts on landfill is from the construction industry and the demolition of existing buildings and construction waste," says Keith Sashaw, President of the Vancouver Regional Building Association. "Anything the industry can do in terms of reducing that impact is going to have tremendous long term benefits to the environment."

As municipalities increase restrictions on what can go into the landfills and develop economic models to drive behaviour, prudent contractors are going to have to recycle to avoid costs.

ANDREW SEALE

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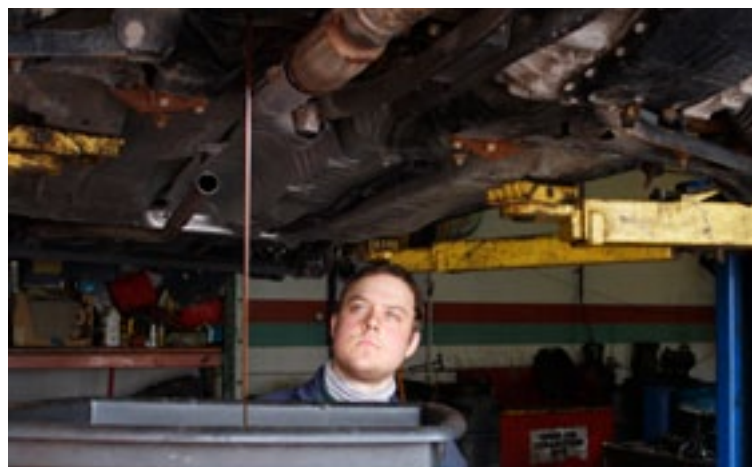


QUESTION & ANSWER

**Why do I need to recycle small batteries?**

Household batteries contain toxic metals such as zinc and cadmium; some batteries may also contain corrosive acids. When batteries are tossed in a landfill, they can erode landfill liners and leak into groundwater and neighbouring water bodies. Even though batteries are small, they can have serious impacts on our health and our environment

SOURCE: COURTESY OF THE RECYCLING COUNCIL OF B.C.



PHOTOS: AUTOMOTIVE RECYCLERS OF CANADA

Auto recyclers drive the green agenda

The green movement has become commonplace in recent years, yet the recycling of automobiles has been happening for more than a 100 years. While auto recycling was once scorned by its junk yard perception that no longer holds true. The industry has cleaned itself up, and in doing so strives to minimize its impact on the environment.

Start of a revolution

The first step was for the industry to adopt a voluntary environmental code of practice, which outlined in plain language how recyclers should appropriately dispose of hazardous materials found in cars.

The recipient of a number of environmental awards, Neil James, president of Ralph's Auto Supply, was the sparkplug that made the code common practice for recyclers in B.C., and has now been adopted throughout Canada.

"Compliance to the Code of Practice means that an auto recycler can dismantle, process and store a vehicle and its parts in a manner that does not pollute the environment," says James. "Vehicle owners can be assured that the cars they retire and the vehicles they buy parts from have not damaged our ecosystem." The Code has since been enacted into government

regulations in B.C.

What's in it for you

This initiative has not only been good for the environment, but it has also been good for the auto recycling industry. "The majority of our 190 members implemented the Code," says Colin McKean, Executive Director of the Automotive Recycler's Environmental Association. "Environmental compliance improved, the yards became cleaner and the businesses became more efficient, and more profitable."

And while the environment is cleaner thanks to the proper dis-

posal of automobile waste, consumers can do their bit by purchasing quality used parts, and save up to 50% compared to the cost of a new part, while saving the resources that would have been needed to create that new part.

"There are processes in place to give consumers a good degree of confidence that green, recycled parts, as we like to call them, are quality ones," says Ken Hendrickson, a consultant for the BC Auto Recyclers, a division of the Automotive Retailers Association.

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BC Auto Recyclers

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INSPIRATION

B.C. heavy industry finding value in protecting our environment

How the mining and energy sectors are breathing new life into waste

Energy production can be a dirty business

"At the end of the day there's always going to be impact from developing whatever resource you're developing whether it coal, oil and gas, solar, wind or hydro there's going to be an impact," says Travis Davies, spokesperson for the Canadian Association of Petroleum Producers.

From tailing ponds, to oil cuttings, waste fluids and solids - there's no shortage of refuse when it comes to developing natural resources.

"The idea is to mitigate that to the highest possible degree," says Davies of the growing contingent of companies implementing sustainable processes geared towards managing waste and in some cases - finding value in the refuse.

"There are a number of companies trying really hard to cut back on the waste," says Frank Came, President of the B.C. Environment Industry Association. "Waste in large measure, is a reference to energy losses that are avoidable."

According to Statistics Canada latest figures, the oil sands generated 645 million tonnes of waste, mine tailings generate 217 million tonnes and mine waste rock generated 256 million tonnes.

Added value

But waste is costly, which is one of the reasons why the energy industry is finding efficient new ways to not only reduce waste but recycle materials as well.

"Whether it's water recycling, reducing emissions, or more efficient reclamation, it has a bottom-line impact," adds Davies.

For the oil industry in particular, recovering oil from contaminated drilling muds and tanker sludge offers an interesting revenue stream.

"More and more we're seeing a movement towards waste as a raw product," says Came. "It's a bit of a logistics nightmare to pull all that stuff together but it represents a very solid and profitable avenue."

In B.C., there are several companies that process drilling muds, sludge and dirty oil - running it through a re-refinery process that essentially creates an oil comparable to its virgin form.

Hazardous waste, for the most part, must be labeled and transferred to a waste processor.

In some cases leftover stone from quarrying can be used in asphalt, earthworks and concrete; emissions can be used to generate heat; and recycled water can be re-injected back into energy applications.

"Your process is more efficient, you're using less energy, it's costing you less and you're using whatever waste you're producing," says Davies. "So not only are you doing good by your shareholders and your

business' bottom line but it has the side benefit of being in line with what Canadians expect from the oil and gas business.

Staking your (re)claim

Davies points out that nowadays, before an energy or mining company breaks ground they're required to do their due diligence by having a full land reclamation plan in place in addition to an environmental assessment.

"You don't get approved for a project until you set up a reclamation plan," says Davies adding that the social, environmental and, of course, economical benefits all play a role in sustainability.

Some fluids used in drilling processes can also be recovered from waste water and in some cases be

reused.

Even tailings, which have been a challenge for the mining and energy industries might find new life in roofing shingles if Michigan-based GreenSand Corporation's pilot project works out.

As regulations tighten on the energy industry, recovery and reuse will play a growing role in a more sustainable future.

"People are watching us and it always bodes well to be that innovator that goes out there and pushes that bar higher," says Davies.

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QUESTION & ANSWER

■ I've heard my computer has heavy metals in it. Is that true?

Many electronic items contain components that can cause environmental damage when thrown in the landfill. Circuit boards contain metals like cadmium, antimony, and lead. Mercury is present in switches and lamps of many photocopiers, scanners, and fax machines. Large amounts of lead can also be found in monitors and TV glass. Plastic computer casings can have brominated and chlorinated flame retardants, materials that can release toxic chemicals when incinerated.

SOURCE: COURTESY OF THE RECYCLING COUNCIL OF B.C.



NEXEN'S DILLY CREEK shale gas operation in Horn River Basin, B.C.
PHOTO: NEXEN

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INSPIRATION

Tire Stewardship of B.C. and the SCRAP-IT Program show you how they are fighting for a better tomorrow

Ever wonder what happens to your old tires after they come off your car? Twenty years ago, BC was the first jurisdiction in North America to implement a tire stewardship program, which ensures tires are recycled, and turned into new prod-

ucts- In the past, most ended up in the landfill. That cushiony surface surrounding your child's playground, or the synthetic track you run on are all made from the more than 2.6 million tires recycled in BC each year.

"Tires are no longer collecting in the environment," says Mike Hennessy, Tire Stewardship BC's executive director. "We are working with industry to find ways to increase the value of products made from recycled tires, so we can reduce or eliminate the eco levy that consumers currently pay on new tires."

Tire Stewardship BC also supports a grants program, whereby local governments and community organizations can apply for matching funds of up to \$30,000 for projects that use recycled tires. Largely this includes playgrounds and community centres. To date, more than \$1.5 million has been given out.

SCRAP-IT is another BC program that is contributing positively to the environment. Established in 1996, SCRAP-IT is an air quality management program, designed to get older, higher polluting cars off the road. "There is a large pool of old cars, especially in BC, that emit a lot of pollutants," says Dennis Rogoza, the program's CEO. "Older vehicles are up to 60 times more polluting than similar cars manufactured after 2004, when more advanced



PHOTO: B.C. SCRAP-IT PROGRAM

emission technologies began being used. By taking them off the road, we can see immediate benefits to air quality." So far the program has been responsible for removing more than 32,000 vehicles.

The success of the program is driven through incentives, whereby people are given a choice as to what incentive they would like in return for scrapping their old car. It could be a year's transit or West Coast Express pass, a new

bike, fees for a car sharing program, or even cash.

"The number one cause of poor air quality in Vancouver and Victoria is caused from vehicle emissions," says Rogoza. "And we need to do everything we can to remove many of the more than 500,000 older vehicles still being driven in BC."

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Each year in BC 3 million scrap tires are recycled into playground and running track surfaces, coloured landscaping mulch, livestock mats, and infill for artificial turf fields.



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