

We need more superheroes now!

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The background of the slide features a faint, stylized city skyline in shades of green and grey. A thick, curved green line sweeps across the lower portion of the image, partially obscuring the skyline. In the bottom left corner, the company logo is displayed.

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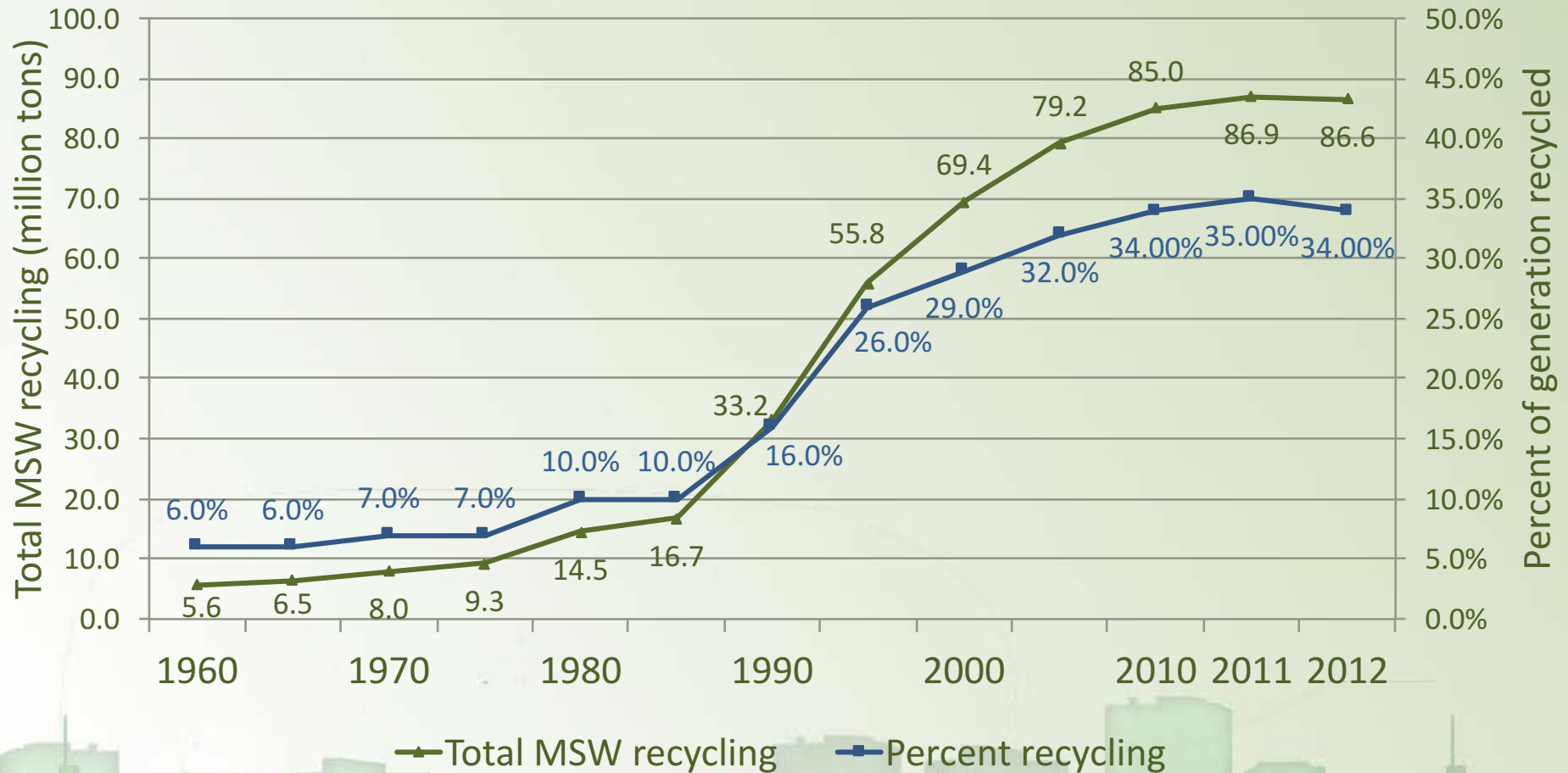
Recycling must change

- Gotham has changed for the worse.
- Heroic efforts are required.
- Are you ready to slip into that phone booth and change into your superhero outfit?

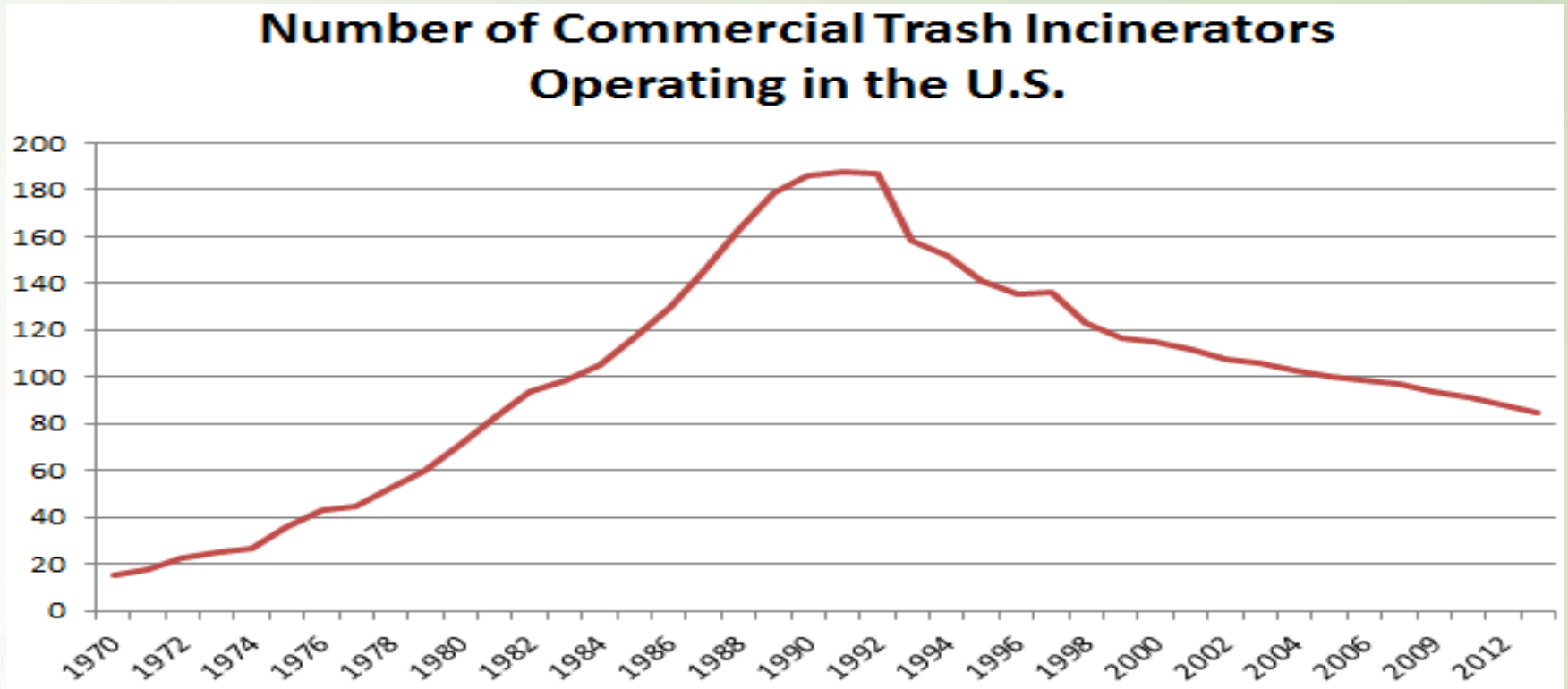
A new Gotham

Recycling's growth is essentially stalled. We're capturing the easy tons, and we've slowed down in recovering other tons. I predict when Statistics Canada issues its final report for 2014, the data will look just like that from the U.S.

MSW recycling volumes and rate



And incineration is also slow to grow



A new Gotham

A key reason for slow growth is cheap disposal costs. It's just too easy to get rid of stuff at the dump. Research by *Resource Recycling* shows a very strong correlation between a community's recycling rate and its cost of waste disposal.

State recycling rates and costs



Gotham did have previous success in new collections



As well as in processing



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Gotham is part of a solid base

More than 12,000 communities, with 70 percent of U.S. and Canadian single-family homes, now collect recyclables curbside, using 17,000 recycling trucks. Yes, more than 200 million Americans and Canadians can set out recyclables weekly.

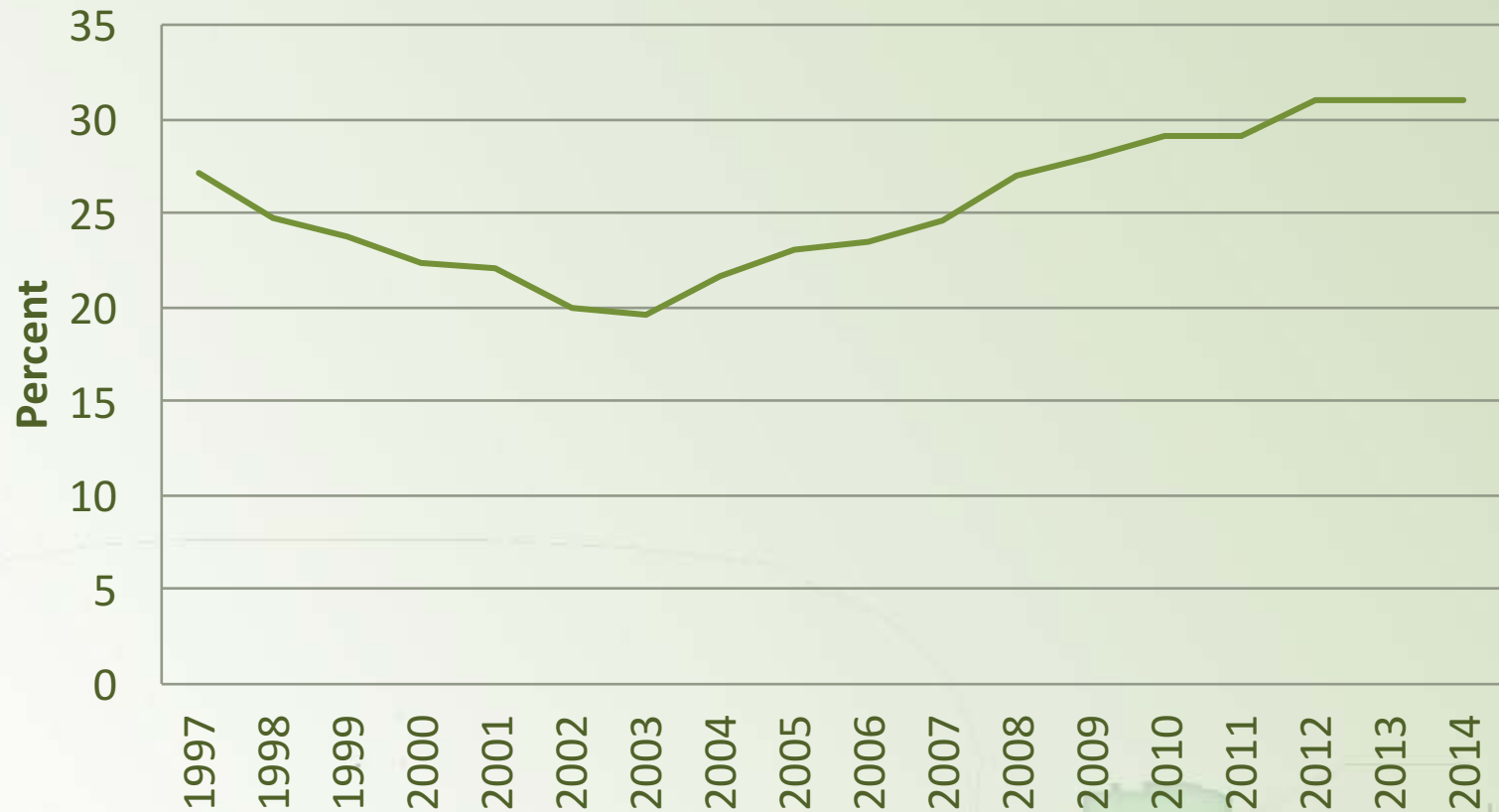
But our rate of progress has slowed.

Recycling rates have flattened out or even dipped slightly.

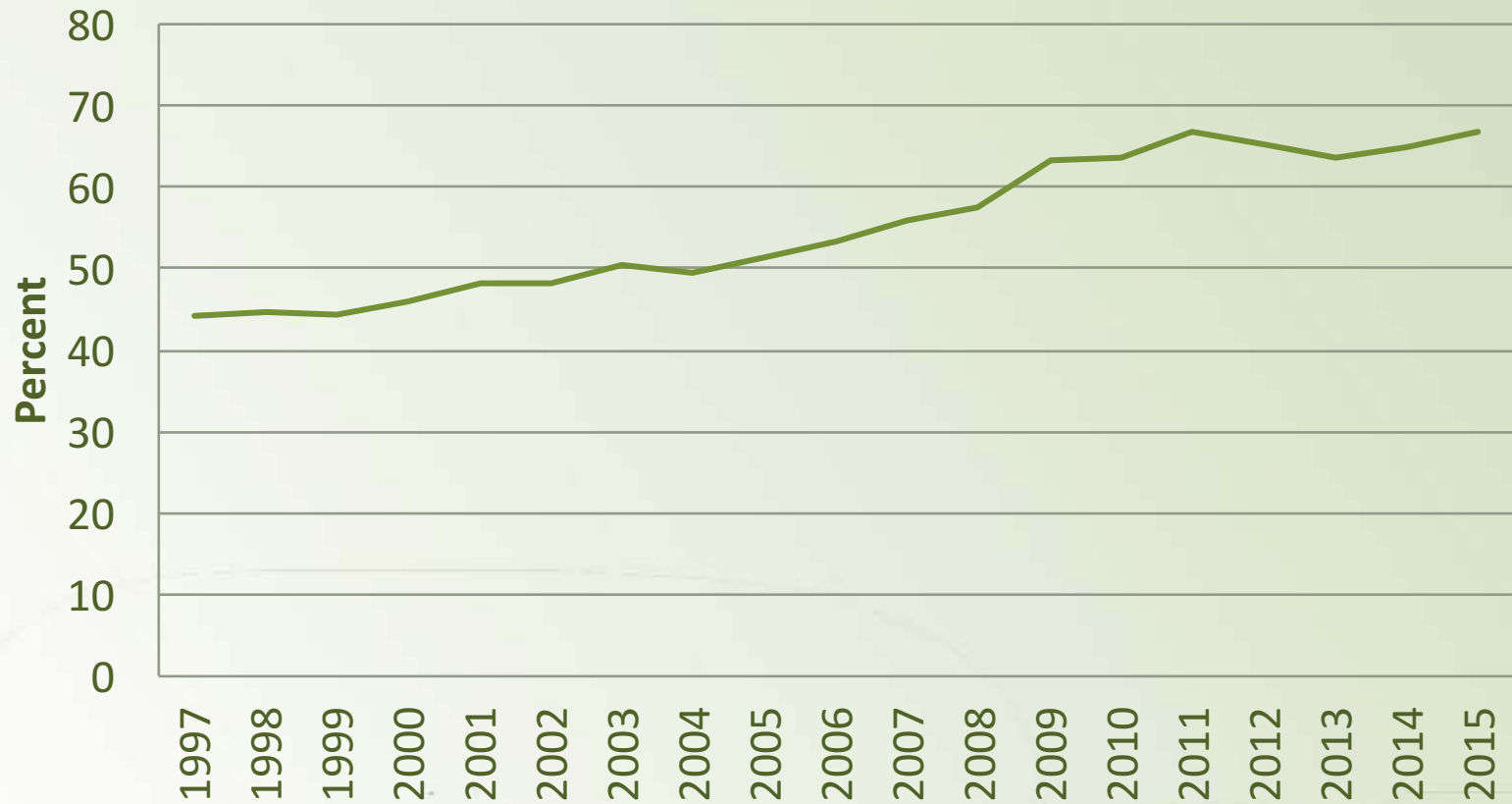
Aluminum can recycling rate



PET bottle recycling rate



Paper recycling rate



Steel recycling rate



Gotham's solid base is being eroded

North American recycling interests are confronting several major headwinds. The strongest factor is a continuing slump in the value of recovered materials. The drastic nature of weak recycling markets can be shown graphically from *Resource Recycling's* market database.

HDPE milk jug bale prices



Aluminum can prices



PET bale prices



Old corrugated container price



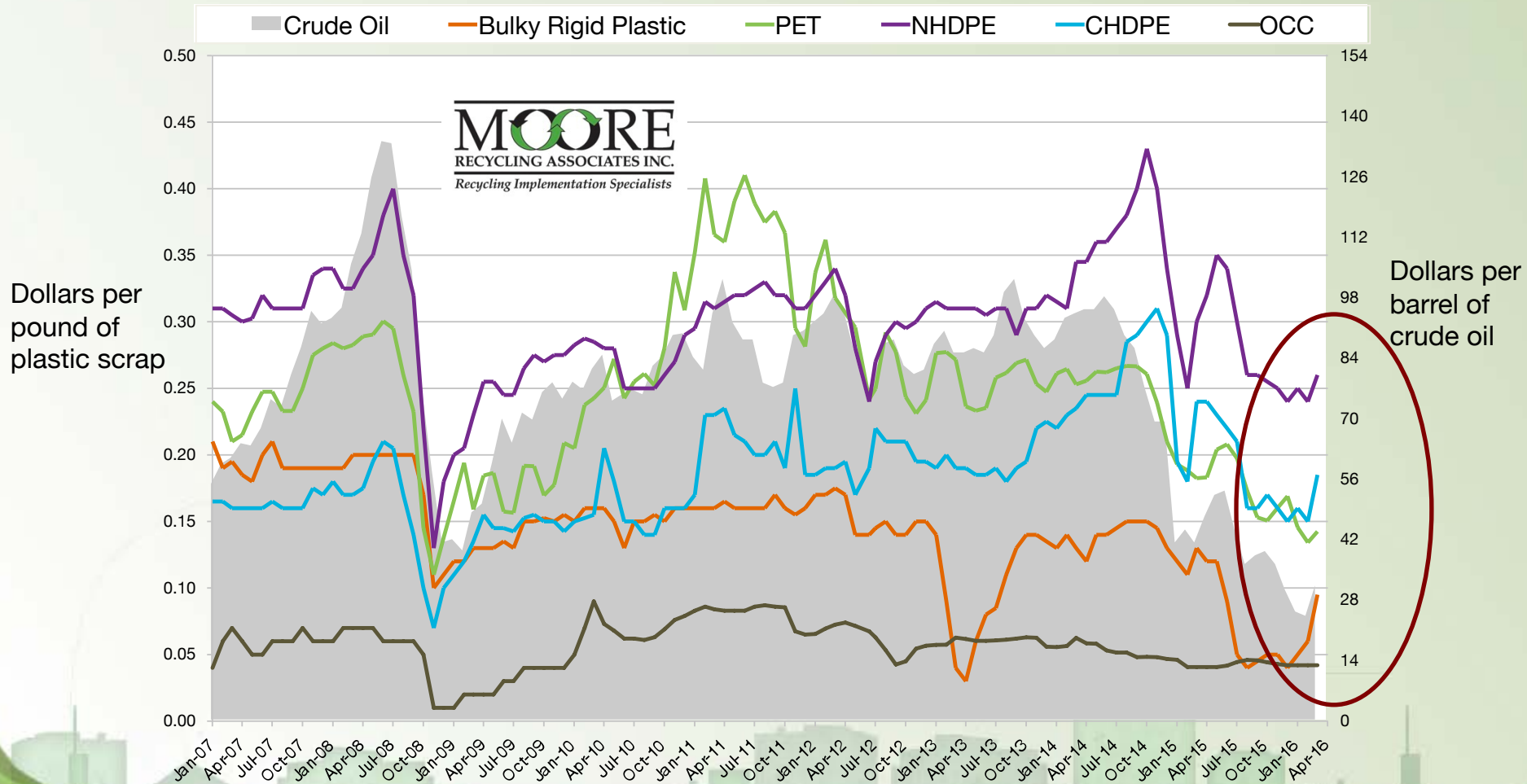
Ferrous scrap prices (No. 1 heavy melting steel)



Why do we have weak markets?

The single greatest cause is the historically low price for oil and natural gas, followed by an economic slowdown in China. A weak Canadian dollar is also a cause.

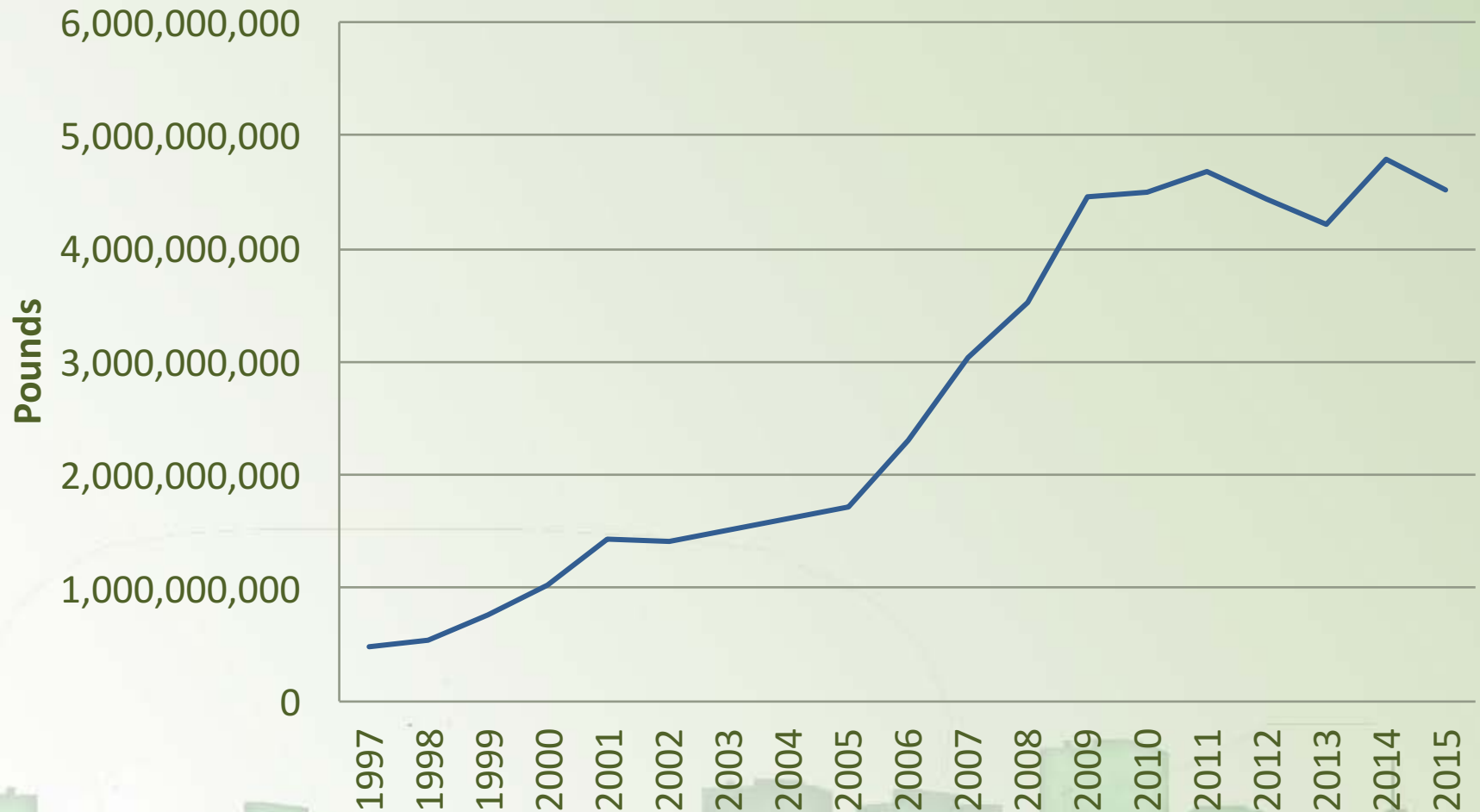
Price of plastic and oil since 2007



Why do we have weak markets?

This recycling market weakness is occurring in North America and elsewhere, as shown by the drop in exports of recyclables.

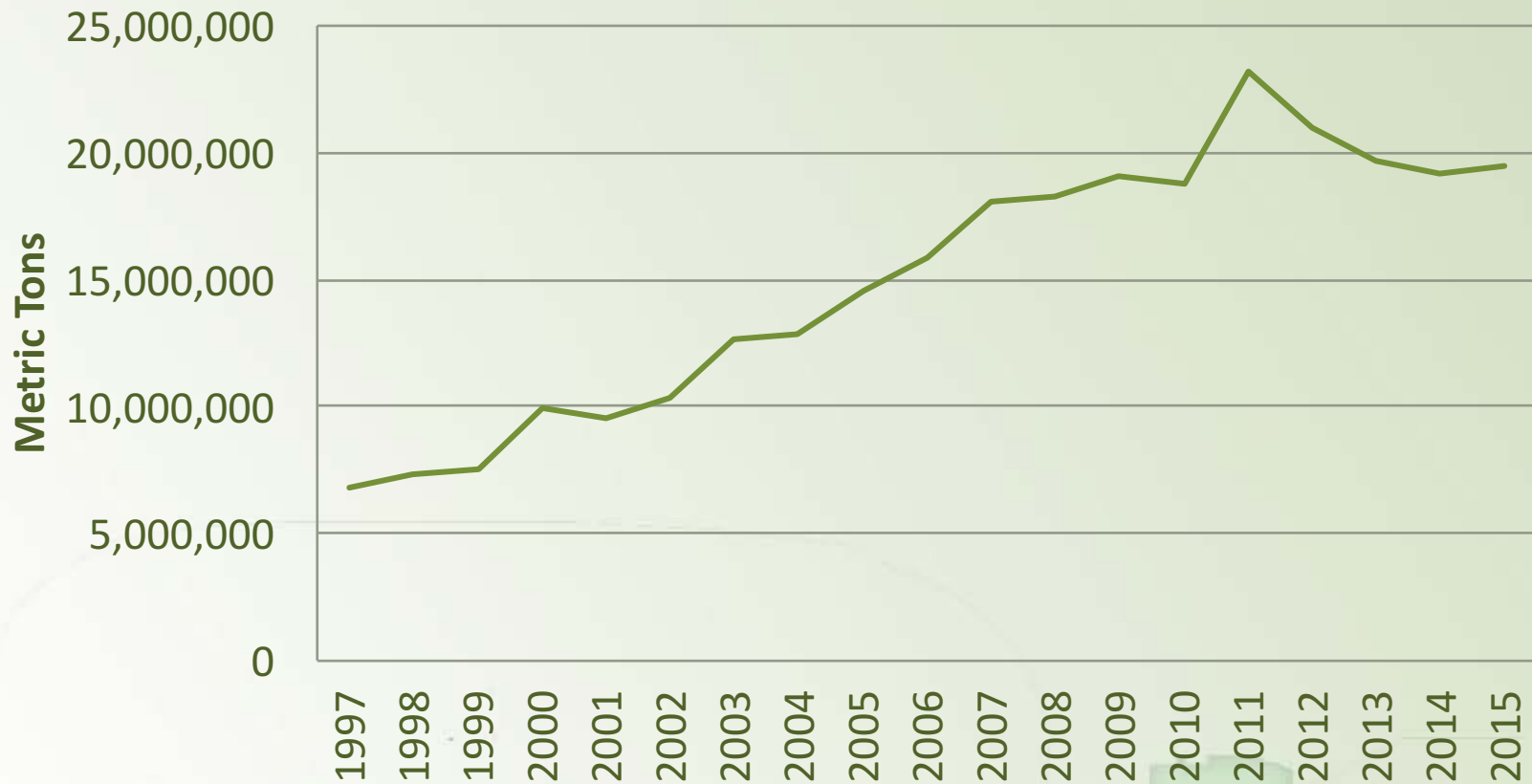
Plastics exports



Ferrous scrap exports



Recovered paper exports



Gotham's recycling program is being hurt by other factors

We are experiencing a decline in recycling commitment by some government and corporate leaders. A number of communities are reducing recycling service, and some waste haulers are very outspoken in saying “the current model is broken.”

Gotham's recycling system is being hurt by other factors

At the same time, we're operating under a new environment. More and more recyclables are being collected and processed by fewer and fewer players. Too, the number of end users is declining. Analysts say mergers and acquisitions will continue.

Gotham's recycling efforts are being hurt by other factors

Gotham is experiencing another trend. More and more large, regional, hub-and-spoke MRFs are coming on-line. Thus, you see smaller and smaller communities moving to single-stream recycling collection and a number of smaller, old MRFs will close.

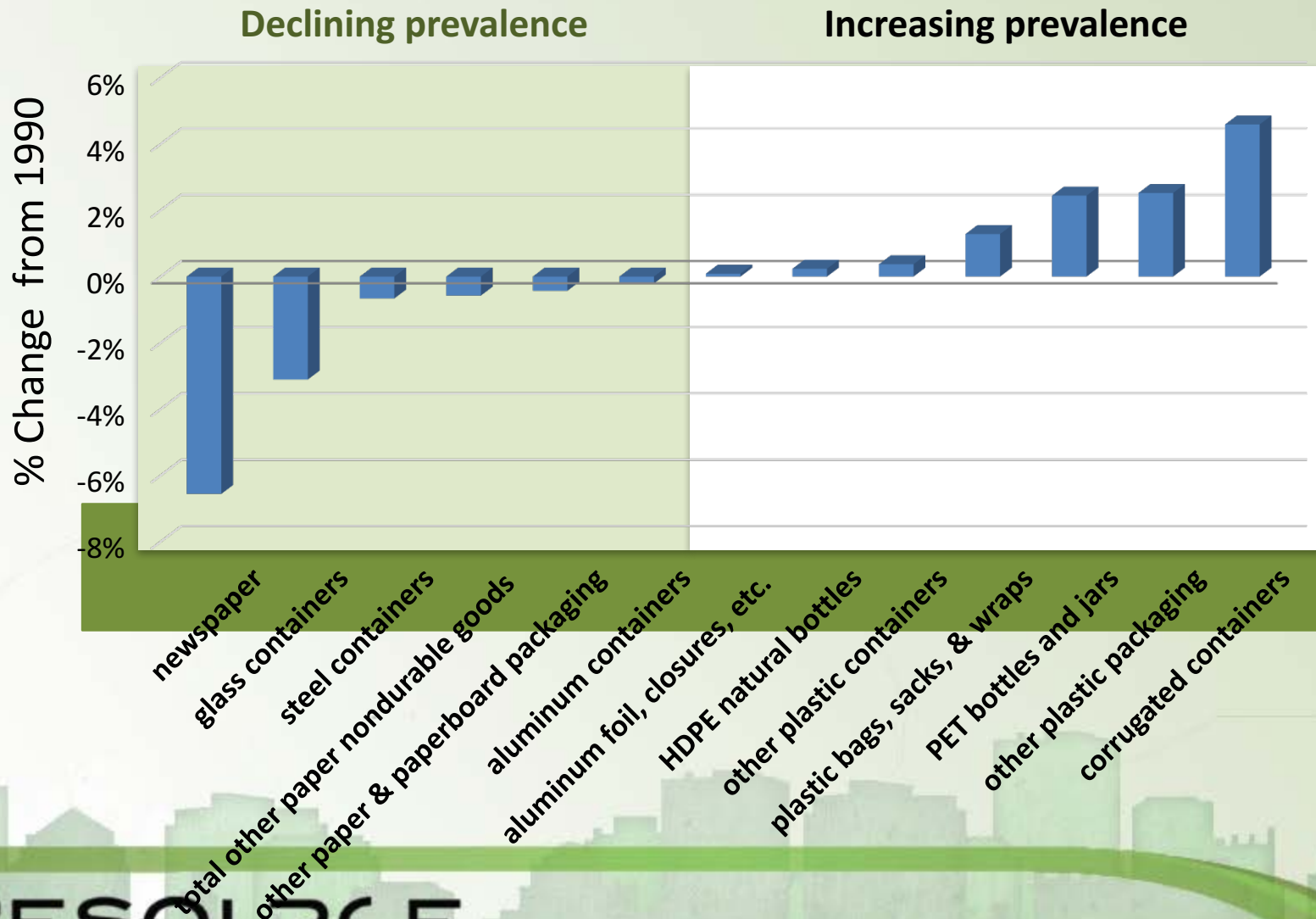
Gotham needs additional superheroes. We need heroes – individuals, government agencies, nonprofit groups and companies -- to take on key initiatives to advance waste reduction, recycling and composting in Alberta.

Batwoman: Help us handle the evolving ton

Per capita waste generation is down eight percent since 2000, thus affecting recycling, landfilling and waste incineration. We are seeing:

- less paper
- more plastics (up 25 percent)
- no growth for metals

Change in waste composition since 1990



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RESOURCE: Resource Recycling Systems, 2014

Batwoman's task: The evolving ton



Batwoman's task: The evolving ton

And we'll see more efforts to reduce the materials intensity in existing products. For example, between 2000 and 2011, the average weight of a half-liter PET bottle declined 48 percent. And aluminum cans have gone from an original eight per pound to 33 per pound now.

Spider Man: Help us start new programs

Even during our three-year recycling recession, more than 100 North American communities launched or expanded local recycling efforts. This trend has continued, as more communities drive deeper into the waste stream to attain recycling goals and also given the “evolving ton.”

Spider Man: You can do it!

With less waste being generated, Alberta's recycling programs have collection and processing capacity available. More materials are being added to many programs, such as aseptic packaging and mixed rigid plastics packaging (tubs, buckets, pails, etc.).

Wonder Woman: Lean on some local governments

As communities strive harder to attain higher recovery levels, we'll see more adoption across the U.S. and Canada of sterner measures:

- landfill bans**
- product bans**
- pay-as-you-throw garbage pricing**
- enforced mandatory participation laws**

Wonder Woman: Be cautious!

At the same time, some communities will try new approaches, especially mixed-waste sortation (Cleveland, Houston, Montgomery, San Jose) and possibly mixed-waste composting. But be wary. These systems have yet to show positive results, and investors have lost a lot of money.

Hulk: Focus on toxics

With Hulk's help, more local, provincial and state initiatives should target the management of toxics in solid waste. More product stewardship efforts are needed.

Hulk: Focus on stewardship's flaws

1. These are often 1R programs
2. They often lack market development elements
3. They often provide no local preference
4. Some have no downstream auditing
5. Some contain goals that discourage additional recycling

Captain Marvel: Food discards deserve your attention

Look for more and more North American communities to add food discards – both commercial and residential – to organics collection and composting systems. Kudos to Calgary for stepping up and reducing wastes by 40 percent. As a result of new food waste efforts, we'll see more programs picking up trash every other week.

Captain Marvel: Develop local recycling markets

The lack of attention in the U.S. and Canada toward an industrial policy will hurt recycling. As volumes of recyclables climb because of other superheroes and Chinese demand slows, states and provinces will be urged to, once again, launch recycling market development programs.

Superman: Consider the environmental impact of recycling

This past year saw recycling quality and the cost of recycling both rise, but for a good reason. China no longer wants to be the world's dumping ground. Recycling practices of the past no longer suffice.



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Chinese CRT glass processing





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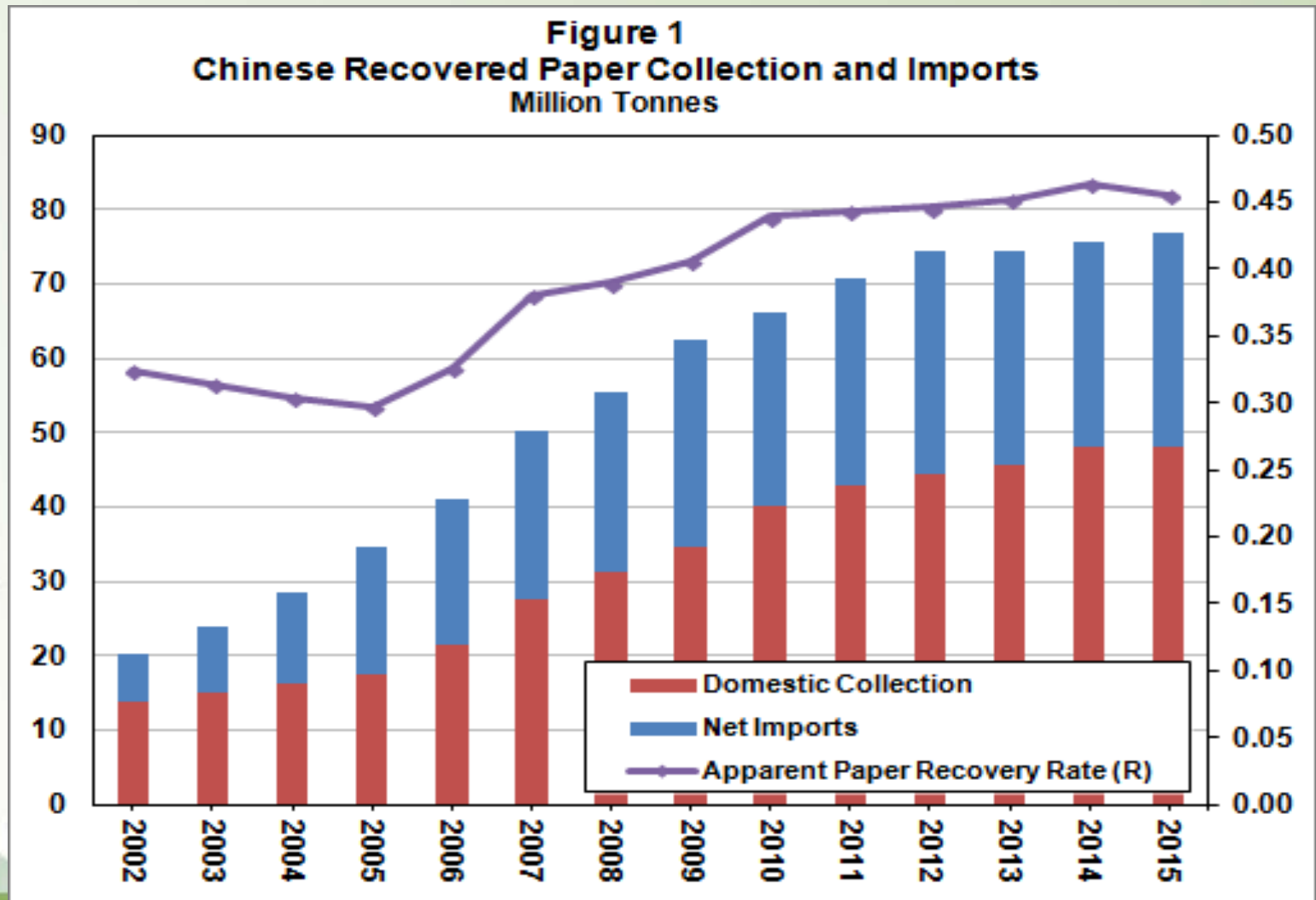


Superman: China will be replaced

China may no longer be the world's factory:

- rising wages
- increasing labor actions
- growing environmental concerns
- high literacy
- role of social media

China is becoming self-sufficient



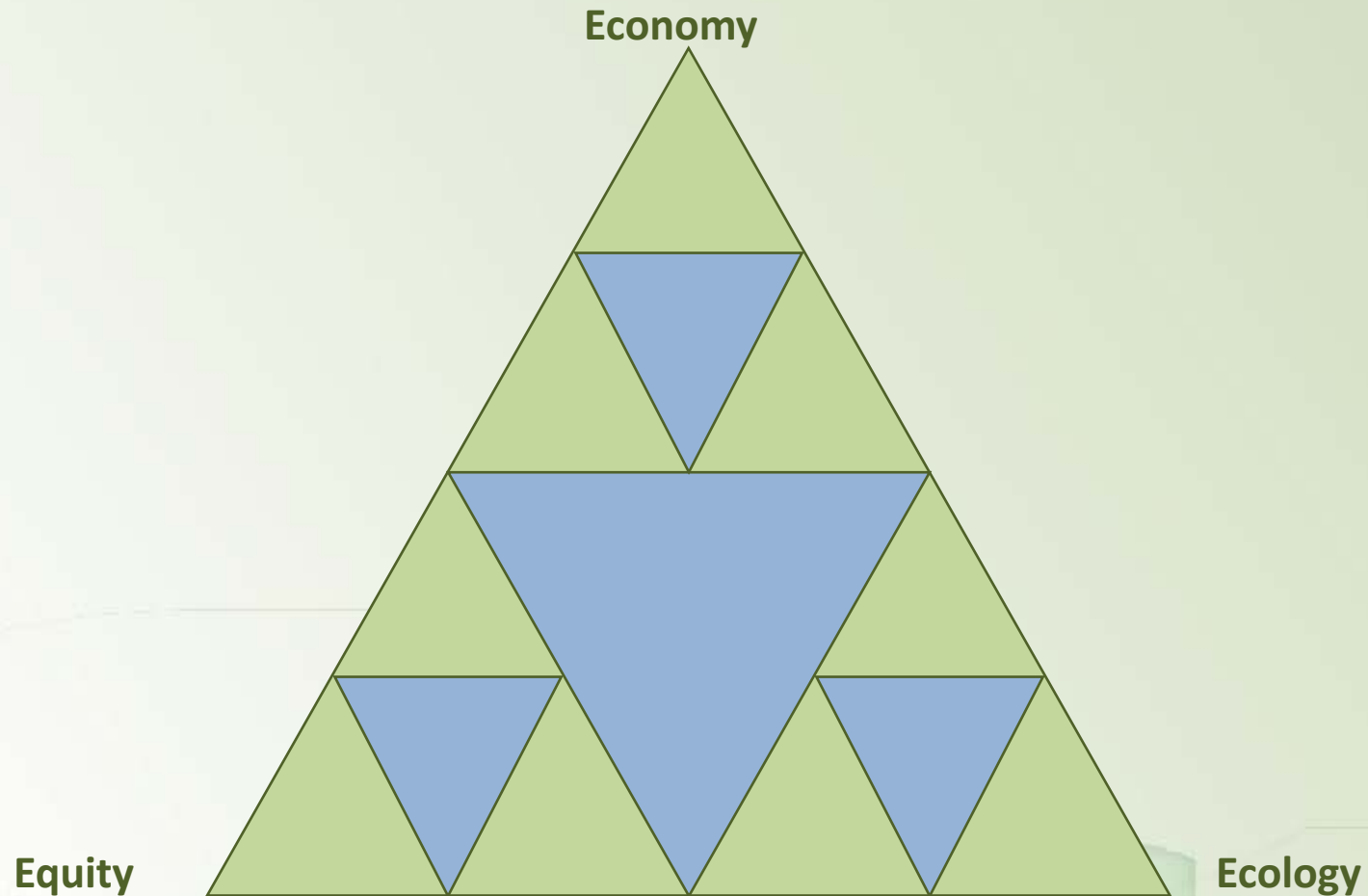
If superheroes succeed, we'll have a new model

We will move towards better metrics. Less attention will be focused on recycling rates, and more governments and industries will consider toxicity, global warming and life-cycle issues when making decisions. The U.S. EPA is already rethinking how it addresses wastes, as are some states, such as Oregon.

If superheroes succeed, we'll have a new model

We are far from being a sustainable practice, and more effort is required for us to move forward. That is recycling's greatest challenge in the coming decade.

Sustainability



Conclusion

We are ready once again to move forward in the U.S. and Canada. And we must.

Energy consequences of not recycling

Material	Annual lbs per Household	Barrels Saved per Ton	Barrels Lost Annually	Energy Value Lost (@\$75/bbl in billion dollars)	Value per Household
Fiber	1,821.6	1.70	85,425,000	\$6.407	\$116.14
Aluminum Cans	27.0	40.00	28,936,875	\$2.170	\$40.47
PET Bottles	39.0	16.30	28,115,870	\$2.108	\$23.87
HDPE Bottles	30.1	16.30	20,454,870	\$1.534	\$18.41
Glass Bottles	883.4	0.12	4,543,855	\$.341	\$3.98
Steel Cans	19.2	1.80	1,141,756	\$.085	\$1.30
Total	2,820.4	1.93	168,618,226	\$12.645	\$204.16

Source: SWANA/SRI

168,600,000 barrels or 3.5%

We are sending money to the landfill

Material	Recycling Rate	Value of Unrecovered Materials
Paper	61%	\$3.1 Billion
Aluminum Cans	65%	\$1.3 Billion
Plastic Bottles	31% HDPE, 30% PET	\$1.6 Billion
Steel Cans	65%	\$0.4 Billion
Glass Bottles	28%	\$0.1 Billion
Total		\$6.5 Billion

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Drop me a line

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