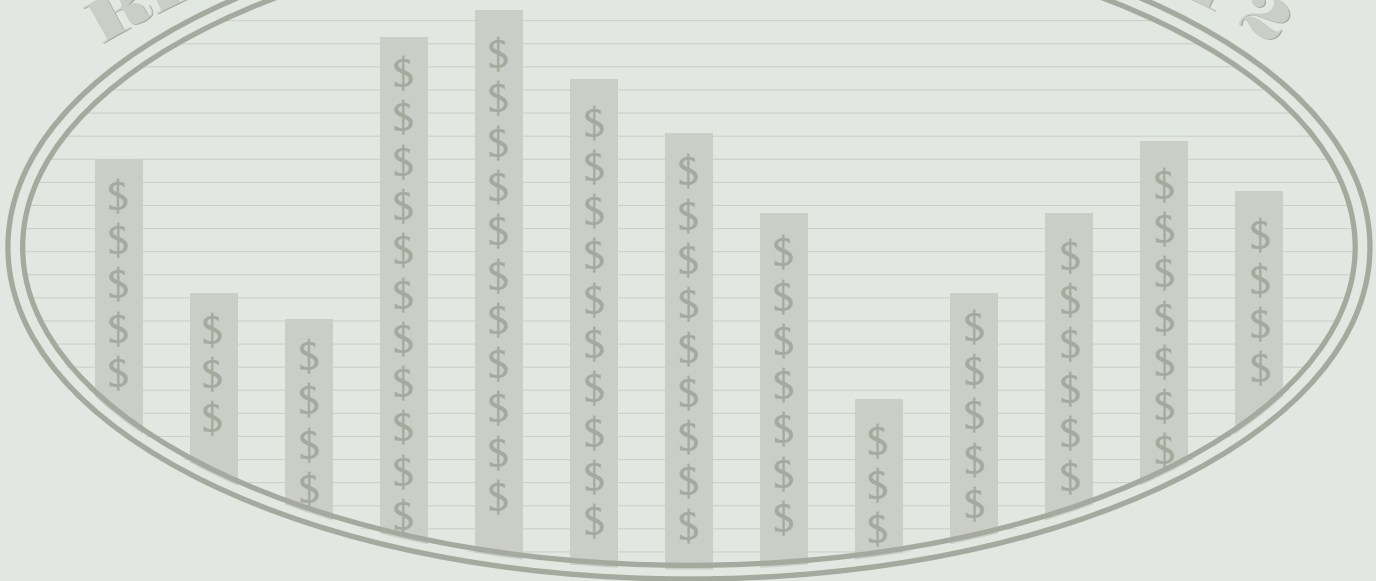


RECYCLING INCENTIVES: PART 2



How does pay-as-you-throw shape up against points-based incentive programs like Recyclebank or recycling credit options – and how the authors got all the how-to and how-much – is detailed in this second part of an extensive look into the ways the industry tries to boost recovery numbers.

BY LISA SKUMATZ, DAVID JURI FREEMAN, DANA D'SOUZA AND DAWN BEMENT

In part one of the story (published in last month's Resource Recycling), SERA, Inc. and the Econservation Institute detailed and compared the economics and impacts of recycling incentive alternatives of Recyclebank, recycling credits and pay-as-you-throw (PAYT). Part two of the story provides the methodology underlying their findings that PAYT is the cheapest option per ton, as well as operational experience from communities.

Are these programs rewards or penalties? And how much does a household net in rewards? PAYT is mislabeled by some as a penalty for high generators while Recyclebank is labeled a reward for recycling more. Frankly, both PAYT and Recyclebank seem quite similar in leveraging rewards and penalties. Under PAYT, every household that puts out less trash pays less on a monthly basis, and more recycling saves more, within size increment limits. The household saves money they can spend on anything they like. Recycling credit program participants pay less money if they recycle, but recycling more (rather than less) does not generally garner more savings. Recyclebank (RB, for brevity's sake) has households pay a monthly fee, and if they register and cash in points, they may recover coupons at partner businesses to offset part, or all, of the fee. More recycling under RB – or similar programs such as national firm

Waste Management's Think Green Rewards or programs being rolled out by local hauler EDS Waste System or others – gains more rewards, within weekly point maximums. In fact, each has elements of rewards and payments, linked, at least to some degree, to behavior choices (see Table 1). The dollar benefits from recycling 32 gallons out of the trash bin in a PAYT system is, on average, \$9 per month (based on a recent SERA analysis of average nationwide PAYT rate differentials).

Comparing household savings and incentives

Under RB's program, putting out 32 gallons – about 40 pounds – of recycling every week nets about 2.5 points per pound, or about 90 points per week in communities with that ratio, with the ratios varying, of course. Recycling more earns more points, 450 points per month maximum. Some communities work out deals for 10 points per pound – one community suggested their arrangement was one point for every five pounds. It is assumed the rewards are adjusted to provide overall consistency in value of rewards and recycling.

In one typical community, for example, it takes 2,500 points to get \$10 gift certificate. At 32-gallon recycling per week, that is 28 weeks, or 6.5 months, to get back \$10 in near-

Table 1 | Potential rewards calculation table for PAYT, Credits, and Recyclebank

IF Per month payment to RB is...	Annual payment to RB	Points from 40 lbs (32 gal) weekly recycling	Near cash value (in gift card dollars) per year	Net savings per year per household	Points if 64 gallons recycled each week	Annual gift card value	Net savings per year, 64 gallons recycling/wk	Savings per average household/yr if 50 percent sign up and 10 percent redeem RB coupons, 32 gal recy/wk	Savings/ hh/ yr with 50 percent / 10 percent and 64 gal recycling.wk
\$0.80	\$9.60	5200	\$20.80	\$11.20	10400	\$41.60	\$32.00	\$0.56	\$1.60
\$1.20	\$14.40	5200	\$20.80	\$6.40	10400	\$41.60	\$27.20	\$0.32	\$1.36
\$2.00	\$24.00	5200	\$20.80	-\$3.20	10400	\$41.60	\$17.60	-\$0.16	\$0.88
\$3.00	\$36.00	5200	\$20.80	-\$15.20	10400	\$41.60	\$5.60	-\$0.76	\$0.28
Recy Credit example \$1.50/mo			\$36.00	\$36.00		\$36.00	\$36.00	\$36.00	\$36.00
PAYT example, \$9 per can (or \$2.25/bag)			\$108.00	\$108.00		\$216.00	\$216.00	\$108.00	\$216.00

Totals assume the 2.5-points-per-pound scenario. We do not include materials value, recycling processing costs, or landfill savings because both are present for PAYT and RB; all would be larger for PAYT over RB due to larger recycling impacts and the presence of compost and source reduction impacts. Higher assumptions of RB redemption rates would lead to proportionally higher average savings results. The computations in this Table for the recycling credits option are independent of tons recovered from the program. For Table 2 and Figure 4 of Part 1 of this article, the performance of recycling credits maintains its relative rank even if extra tonnage recovered is as low as 20 percent of RB tons.

Source: SERA & EI 2011

cash, though there are certainly other prizes for redemption. However, “cash to near-cash” seems the fairest comparison – economic theory argues it allows the purchaser free selection of preferred goods. There are many other prizes of the save-if-you-buy variety. A recent search of Recyclebank’s website for other prizes showed 100 points for \$25 off if you spent at least \$125 at K-Mart; \$2 off glass cleaner for 50 points; buy-one-get-one-free pizza for 150 points; and other coupons. RB’s staff state that “every 10 points provides up to \$1 reward in voucher savings.”

Table 1 computes the household’s net savings under several RB pricing scenarios. One additional complexity is that our findings (reported last month) indicated that well less than 50 percent of the households were registering for RB and less than 20 percent in some communities. Additionally, of those registering, it was common for only 10 percent to have redeemed coupons – it is a different process for registering and coupon redemption. Thus, it is quite possible that these dollar rewards have only filtered down to about 2-to-3 percent or maybe 5 or 10 percent of the eligible population, a considerably lower payback to the community than might have been expected up-front. This last computation is also

included at the far right in Table 1.

Another estimate of the savings is provided by communities in the North Shore of Massachusetts. These results, reported in EPA’s *Spring 2009 Bulletin*, estimated that a community implementing PAYT saved an annualized \$41.93 in disposal costs per household, and the average of the RB communities with similar characteristics was \$12.23 per household. Savings in the PAYT community were 3.4 times those in the RB program.

For comparison, we also include examples of historical recycling credit program: One provides \$1.50 per month savings on the bill from recycling, and the other (included in the full report) provides the average value of city-wide recycling to a (recycling) household, regardless of actual recycling from that household.

Interviews and surveys about PAYT, recycling credits and Recyclebank

PAYT: Based on hundreds of interviews with PAYT communities, there are several universal comments about the program: 1) residents overwhelmingly like it after

it is in place (approximately 90 percent), but it takes political will to get it implemented; 2) communities and collectors think it’s highly effective in reducing trash and encouraging diversion; 3) the biggest pre-implementation concerns about PAYT center around illegal dumping; and 4) it is in place in more than 7,100 communities (Skumatz and Freeman, *Resource Recycling*, Oct. 2006), large and small, urban and rural, run by collectors or communities. We have found some, but very few communities that have cancelled PAYT programs once they are in place.

Recycling credits: Although they have been around for many decades, there are not very many traditional style recycling credit programs in existence, and many have been discontinued. Interviews with program managers suggest they provided a simple mechanism for rewarding recycling participation, but note that checking minimum participation is bothersome, the programs do not provide increasing incentives for recycling more, and the programs provide no incentives for waste reduction or behaviors beyond recycling. When we interviewed managers that had programs that provided rebates based on market values of commodities, one said they discontinued the program because it

Table 2 | Summary of interviewee comments about Recyclebank

Favorable Comments made about RB	Negative comments made about RB
<ul style="list-style-type: none"> • Great customer service staff. • Dedicated staff. • Households like the idea of getting reimbursed for recycling. • Attractive politically – seemed easier to get support from elected officials. • The incentives or coupons can spur residents to spend more money at local stores (local jobs). • Way of distinguishing a hauling company. • Don't have to retrofit trucks if using community-wide points program. • Reward/coupon too hard to do in-house; RB has an established system. • Helped fund larger carts and the switch to single-stream. • Some communities pleased with performance. • Households like the larger bins, combined recycling (single stream, not exclusive to RB, of course). 	<ul style="list-style-type: none"> • Small portion of households are registering for the programs (less than 50 percent, with a number of communities reporting less than 20 percent), and only a small portion of those registered are redeeming coupons and getting rewards (communities with data from RB claim the figures from the firm show that 6-10 percent of those registered are redeeming; one community reported as high as 20 percent), for an estimated financial incentive to 1.5-10 percent of households in the communities. • Concerns about the cost and about the lengthy contract terms in some communities (three, five, seven and up to 10 years). • Concerns about the business model – worries about selling household data and/or getting money from retailer partners. • Program is based on consumer's buy more mentality – coupons off for buying more stuff (although RB now offers some contribution options). • Only encourages recycling, not waste reduction or composting. • The bulk of the impact is from single-stream and bigger containers. • Collectors: Expensive for the services provided, and collectors still had to provide all core services. • Households: Takes a long time of recycling to earn any cash-type coupons; didn't (or need it to) change my behavior; never signed up / don't know how to check my points • Results not up to expectations in some communities; a significant number of communities are discontinuing the program or not renewing the contract. • Glitches in individual weighing upset public; hard to track household recycling rates, performance • Delays; data difficulties. • Not allowed to release information on RB performance.

Source: SERA & EI 2011

“didn't work very well in terms of changing behavior,” partly because the feedback was not household-based, and partly because they were looking for much more aggressive programs to get them to zero waste. The market rebate programs usually provided only annual or semi-annual rebates; the associated behavioral effect may be lower because the reminder only occurred occasionally, or larger because the dollar amount was “saved up” and households received bigger chunks of rebates. This has not been studied. The community replaced this decade-long credits program with an aggressive PAYT program along with curbside yard waste. However, we are finding RB's success has led to the idea of incarnations of these types of programs being revisited, in the form of locally-tailored community-wide, community- or hauler-run reward programs, as discussed later in this article.

Recyclebank: Because information on RB is somewhat difficult to obtain, we spent a great deal of time interviewing managers of programs with RB to examine the reasons for implementing the system, the performance, and impressions of the program, and reviewing household feedback gathered in a few locations. We found both positive and negative comments, which are discussed below and summarized in Table 2.

The intangibles

Both PAYT and RB provide versions of financial incentives that broaden appeal to many people who may not be motivated by other reasons to recycle such as climate change, saving resources, or conservation. Pocketbook incentives clearly increase recycling over non-pocketbook “do good” messages. PAYT has been shown in a multitude of studies to be the single most effective, cheapest, most flexible, adaptable and fastest program a community can adopt to increase recycling; however, it can take strong political will to implement the program as there is often resistance from collectors and a portion of the public to the program.

Despite the economic and impact data on RB there is still an intangible attraction to the program. The recycling industry has, for years, strived to make recycling a sexy topic and has sought for ways to get non-participants excited about recycling. RB has achieved something that recycling program managers were unable to do for many years – make recycling exciting and appealing to residents that might not otherwise want to recycle. RB uses a Facebook-like online platform and other social media that appeals to a growing share of the public. Politicians in some areas find it an easier sell to residents.

Recyclebank, behavioral change, business model

Interviewers noted that Recyclebank does not encourage source reduction or composting and it helps to perpetuate to idea that recycling should be free to households or that collectors should actually be paying households to collect their materials, a long-standing concern to the recycling industry and collectors. There are concerns it encourages more consumption, rather than rewarding waste prevention. Whether or not RB is the most effective, or most cost-effective, way to get tons out of the waste stream, it is has proven appealing. Behavioral economics and sociology show that a number of factors come into play in consumer or household decision-making, and the decision-making is not always symmetrical. As an example, the potential to save \$25 on a purchase of \$150 is not seen as spending \$125. For many consumers the potential savings of \$25 – with an accompanying purchase of five times that amount – are more exciting than saving nine actual dollars on a monthly trash bill – apparently, even if it takes much longer to rack up those potential savings.

The program has also proven the basis for a strong business model. Recyclebank has a potential net worth of \$1 billion

dollars and will hire 1,000 employees by 2012, according to CEO Jonathan Hsu in a Nov. 5, 2010 interview. Additionally, they have attracted a number of well-known nationwide financial investors, nationwide retailer partners, as well as collector and retail partners in many states. The rise of the RB program has made recycling an exciting topic and incorporated a triple bottom line (economic, environmental, social) mentality.

Save-as-you-throw?

PAYT's numbers are better – both in impacts and cost-effectiveness – and current research by the authors indicate that PAYT is continuing to grow substantially beyond the 7,100 communities the authors identified in 2006 (Skumatz and Freeman, “Pay As You Throw (PAYT) in the US: 2006 Update and Analyses,” prepared for the U.S. EPA and SERA, December 2006).

However, the brand may need rebranding if, indeed, the portion of the name related to “pay” hampers its acceptance. Whether that becomes “Save-as-you-throw,” “recycle and save,” or EPA's Saving Money and Reducing Trash (SMART) program, cities, haulers, program managers and elected officials continue to consider the tried-and-true PAYT option.

Recycling credits programs are also being revisited at the local level, thanks partly to the attention provided by RB and its community- or route-wide programs. RB's entry into the “incentives” game adds new options for communities looking to invigorate their recycling and diversion rates.

Context, considerations and refinements

Communities considering recycling incentive options will need to assess the following points – and tradeoffs. Each option has pros and cons; however, there are other types of programs that, in some cases, will encourage diversion and do so in a manner even more suited in some communities.

- PAYT is the cheapest, most effective and most flexible option for increasing recycling, composting and source reduction. In some communities, however, political will to implement the option is missing.
- RB's programs can be a politically attractive option for increasing recycling and it may be implementable in places where other options cannot move

forward.

- The payments to RB can be half of – or in more extreme cases, nearly equal to – the costs of providing a fully-operational curbside recycling program in some communities. That is, RB can nearly double the costs of the recycling program in some communities.
- RB contract costs are negotiated and vary quite a bit depending on services and negotiating ability, and contracts can last as long as three, five or even 10 years. Cities need to negotiate good prices, or need to establish well-designed baselines (in landfilled or recycling tons) to make sure they get a good deal.
- RB and its sophisticated outreach raise awareness of recycling in a community.
- RB can be a useful and politically palatable method of helping finance a transition to single-stream. Note, however, that communities can achieve a large majority of the diversion level as the program's impact with cost *savings* (rather than a payment to RB) by simply implementing a switch to single-stream recycling (assuming a single-stream MRF is nearby).
- To reduce direct cost outlays to RB – and assume greater control and flexibility – some communities are opting for home-grown, City-run (or hauler run) recycling credit programs, sometimes rewarding for other “green” or civic behaviors beyond just recycling.
- Communities can increase diversion cost-effectively by looking at yard debris instead of more recycling. For communities with weekly recycling, an every-other-week yard debris program can be introduced for a tiny increment in net cost beyond the savings from decreasing recycling to every-other-week (usually much less cost than the RB fee). This diverts a whole new waste stream, and 15 percent or more percentage points of new diversion.
- It may be that adding a direct social marketing program may achieve benefits equal to or greater than some of these options; and the costs are cheaper than the RB program (see Skumatz & Freeman, April, 2010 and Oct., 2010 *Resource Recycling*).
- A Recyclebank-type program on the trash side (dubbed “Garbage by the Pound,” Skumatz, Oct. 1989 *Resource Recycling*) would achieve even greater diversion than PAYT. Early experi-

ments with this option indicated it diverted 15 percent more tons beyond even a mature PAYT program; it would garner much higher diversion implemented in a non-PAYT community.

- PAYT seems complicated, no one “owns” it (so it is not marketed), and is not turnkey in nature. Collectors or others wishing to distinguish themselves in the market or win additional market share from communities interested in PAYT may wish to develop a turnkey approach to PAYT.
- Nothing prohibits both PAYT and RB or recycling credits programs. The only issue is that the marginal tons (the extra tons from the second program) become considerably more expensive, as all the costs, but only a few of the tons, can be attributed to the last program implemented. Costs per ton diverted are higher in total, but some additional tons are diverted.


Communities have many issues to consider in selecting their next steps.

Summary and conclusions

Each of these three types of program options has similar goals – to provide incentives for residents to recycle and divert more material. Each has pros and cons, which can be weighed based on an individual community's criteria. Communities do not necessarily have to pick just one, but the same tons are targeted by each program and, thus, the cost-per-ton will be much higher.

Initial information – which would certainly benefit from having data available from more Recyclebank communities that could be analyzed by third parties – indicates that costs per ton are considerably higher for the RB program than for either PAYT or recycling credit programs (old-style or new tailored versions). PAYT is the only one of the three options that encourages reductions beyond recycling (composting and source reduction) and avoids the concerns about encouraging consumption. The computations indicate that PAYT is the cheapest method of reducing residential MSW and increasing diversion, and tend to operate smoothly once in place. However, PAYT seems to take the highest degree of political will to implement initially, compared to the other programs. It might benefit from a renaming (perhaps to “Save-

as-you-throw”). Regardless, communities, collectors, program staff and policy-makers will just have to make the tradeoffs and choose what makes most sense given their local situation.

Note to readers: We would be much indebted if communities would share their (positive or negative) experiences with PAYT, Recyclebank, or recycling credits by emailing us (contact below) or filling out our “nationwide” survey link at www.serainc.com. These statistical studies are not possible without community information. 

Acknowledgements: The authors would like to thank all the community staff across the country that provided information critical to the analyses in this report. Of course, thank you to the project funders, SERA and EPA Region 9 through a grant

to Econservation Institute. The work for this project was funded in part by a grant from the U.S. Environmental Protection Agency Region 9 – No. X1-00T11610. Although the information in this report has been funded in part by the agency, it may not necessarily reflect the views of the agency.

Lisa Skumatz is principal and founder of Skumatz Economic Research Associates Inc., a solid waste research and consulting firm with city/county/state clients across the U.S. She can be contacted at skumatz@serainc.com. David Juri Freeman is a senior environmental analyst for SERA Inc. He can be contacted at freeman@serainc.com. Dana D’Souza and Dawn Bement are research analysts and can be

contacted at dsouza@serainc.com and bement@serainc.com, respectively. For questions or information on the study, all can be reached at (303) 494-1178.

The Econservation Institute, established in 1998, is a non-profit dedicated to research and education on practical resource conservation strategies and policy options in solid waste management, energy efficiency, and other environmental issues. Contact info@econservationinstitute.org for more information, www.econservationinstitute.org or (866) 758-6289 for publications and studies.

Reprinted with permission from Resource Recycling, P.O. Box 42270, Portland, OR 97242-0270; (503) 233-1305, (503) 233-1356 (fax); www.resource-recycling.com.