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Nine in Ten (92%) Americans 'Agree', However, That Recycling is Important for the Earth and for Future Generations

Toronto, ON – Americans are more likely to recycle everyday, household items compared to electronic items, according to a new poll conducted by Ipsos Marketing on behalf of Call2Recycle. Three-quarters of Americans say they've recycled aluminum or steel cans (76%) or plastic bottles or containers (72%) in the past year, while another seven in ten (71%) have recycled paper or cardboard in the past year.

When it comes to regularly-used electronic items, however, like batteries and cell phones, Americans are much less likely to have recycled such items. Only three in ten (31%) Americans say they've recycled single-use batteries in the past year, while only one-quarter (26%) have done so for rechargeable batteries. Only one-quarter (27%) of Americans have recycled their cell phone in the past year. The following table outlines in full the products Americans say they have recycled in the past year:

Material	%
Aluminum or steel cans	76%
Plastic bottles or plastic containers	72%
Paper or cardboard	71%
Print cartridges	45%
Single-use batteries	31%
Cell phones	27%
Rechargeable batteries	26%
Consumer electronics	26%
Light bulbs	24%
Power tools	10%

While Americans recycle certain products more than others, there is no denying that most Americans believe it is important to recycle. More than nine in ten (92%) recyclers 'agree' that 'recycling is important for the Earth' and that 'recycling is an important lesson for future generations'. Eight in ten (84%) 'agree' that 'it is their civic duty to recycle'. Two-thirds (67%) 'agree' that 'they would consider themselves to be 'Green'', while only two in ten (21%) 'agree' that they 'only recycle because other people do it'. Below is a complete list of how much Americans agree on matters pertaining to the importance of recycling:

- Recycling is important for the Earth – 92%
- Recycling is an important lesson for future generation – 92%
- I feel good about myself for recycling – 86%
- I know where to go to recycle different things – 85%

- It is important to reduce our carbon footprint – 84%
- It is my civic duty to recycle – 84%
- I keep up-to-date on what types of things can be recycled – 78%
- The town I live in promotes recycling/makes it easy to recycle – 77%
- I consider myself to be 'Green' – 67%
- I only recycle be other people do it – 21%

Although most Americans appear to agree that recycling is important, there is still the large disparity who don't recycle their electronic goods. Perhaps the reason why is that it isn't as easy as putting them in a blue bin out on the curb, often times electronic goods have to be brought to stores to be recycled.

Those who do recycle batteries and cell phones cite convenience (64% average based on 9 retail locations), that they visit the store regularly or like to shop there (36% average), or there is an easy-to-find recycling kiosk within the store (28% average). Once in a store, customers learn about recycling these products most from signs at the store (51% average) followed by a store associate or employee (26% average), flyers or circulars at the store (24% average), and the store's website (24% average). Customers learn the least about recycling at these stores, however, through email from the store (9% average).

The main reason that people who have not recycled single-use/rechargeable batteries or cell phones in the past year is that 'they haven't had the need' to (43%). Another four in ten (37%) say they 'didn't know where' to recycle these items. One-quarter (24%) 'didn't know they could' recycle items like cell phones and batteries, while two in ten (15%) 'thought that they had to go to a special place to recycle them'. 4% 'thought they could only recycle them once a year at a special place' or provided some other reason.

Many who haven't recycled such items in the past year, however, say they are likely to do so in the future. Two-thirds say they are 'likely' to recycle single-use batteries (67%) and cell phones (66%), while six in ten (60%) are 'likely' to recycle rechargeable batteries in the future. One-quarter (24%) appear indifferent to recycling rechargeable batteries in the future, while two in ten feel the same about single-use batteries (22%) and cell phones (21%). Two in ten (16%) Americans say it's 'unlikely' they will recycle rechargeable batteries in the future, while one in ten say the same about cell phones (13%) and single-use batteries (11%).

Those committed to making recycling a priority need to find new ways to motivate people to recycle their batteries and cell phones. Three in ten (31%) say incentive programs like cash back, rebates or coupons, or discounts on products would motivate people to recycle their batteries and cell phones. Two in ten (20%) say that either providing information on where to recycle and the benefits and importance of recycling would motivate them to recycle these products, while another two in ten (19%) say that they could be motivated by making recycling batteries and phones more convenient, through curbside pickup, as an example. 15% could be motivated by better advertisements, whether it be in-store or on TV.

Figuring out solutions to get more to recycle batteries and phones in stores is beneficial for these stores as well and not just beneficial for the environment. An average of 10% say they just go to these stores to drop off recyclables and leave. 37%, on average, say they shop for other types of items at these stores while an average of 32% say they buy replacement batteries or cell phones that they've just recycled. An average of 18% say they shop for items that require batteries after dropping off their recyclables, while 49%, on average, browse around the store.

Being able to recycle batteries and cell phones at these stores also has an effect on customer perception of these stores. 63% of respondents, on average, were more positive towards a store that offers a take-back program for these items. An average of 34% of respondents say these programs have no impact on their perceptions of the store, while 2% of respondents, on average, say that these programs had a negative impact on their perception of the store.

These are some of the findings of an Ipsos Reid poll conducted between May 22nd and June 25th, 2012, on behalf of the Call2Recycle. A sample of 1,000 Americans from Ipsos' Americans online panel was interviewed online, and 506 battery/cell phone recyclers in retail stores and 325 general recyclers were asked to answer a 20-minute attitude and usage survey. Weighting was then employed to balance demographics to ensure that the sample's composition reflects that of the adult population according to Census data and to provide results intended to approximate the sample universe. The precision of Ipsos online polls are calculated using a credibility interval. In this case, the poll is accurate to +/- 3.5 percentage points of all Americans in the general population, +/- 5 percentage points for battery/cell phone recyclers in retail stores, and +/- 6.2 percentage points for general recyclers. All sample surveys and polls may be subject to other sources of error, including, but not limited to coverage error, and measurement error. For more information on credibility intervals, please visit the Ipsos website at http://ipsos-na.com/dl/pdf/research/public-affairs/IpsosPA_CredibilityIntervals.pdf

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How to Calculate Bayesian Credibility Intervals

The calculation of credibility intervals assumes that Y has a binomial distribution conditioned on the parameter θ\, i.e., Y|θ~Bin(n,θ), where n is the size of our sample. In this setting, Y counts the number of "yes", or "1", observed in the sample, so that the sample mean ($\bar{y}$) is a natural estimate of the true population proportion θ. This model is often called the likelihood function, and it is a standard concept in both the Bayesian and the Classical framework. The Bayesian[1] statistics combines both the prior distribution and the likelihood function to create a posterior distribution. The posterior distribution represents our opinion about which are the plausible values for θ adjusted after observing the sample data. In reality, the posterior distribution is one's knowledge base updated using the latest survey information. For the prior and likelihood functions specified here, the posterior distribution is also a beta distribution (π(θ/y)~β(y+a,n-y+b)), but with updated hyper-parameters.

Our credibility interval for θ is based on this posterior distribution. As mentioned above, these intervals represent our belief about which are the most plausible values for θ given our updated knowledge base. There are different ways to calculate these intervals based on $\pi(\theta/y)$. Since we want only one measure of precision for all variables in the survey, analogous to what is done within the Classical framework, we will compute the largest possible credibility interval for any observed sample. The worst case occurs when we assume that a=1 and b=1 and $y = n/2$. Using a simple approximation of the posterior by the normal distribution, the 95% credibility interval is given by, approximately:

$$\bar{y} \mp \frac{1}{\sqrt{n}}$$

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[1] *Bayesian Data Analysis, Second Edition, Andrew Gelman, John B. Carlin, Hal S. Stern, Donald B. Rubin, Chapman & Hall/CRC | ISBN: 158488388X | 2003*

For this poll, the Bayesian Credibility Interval was adjusted using standard weighting design effect 1+L=1.3 to account for complex weighting[2]

Examples of credibility intervals for different base sizes are below.

Sample size	Credibility intervals
2,000	2.5
1,500	2.9
1,000	3.5
750	4.1
500	5.0
350	6.0
200	7.9
100	11.2

[2] *Kish, L. (1992). Weighting for unequal Pi . Journal of Official, Statistics, 8, 2, 183200.*