



## The inconvenient truth about packaging waste in Canada

What bugs the packaging industry more than anything else in the continual debate over the role of packaging in society is the virtual lack of recognition of packaging's overall purpose (to safely and efficiently deliver product) and the fact that *most* (but not all of it) is perfectly recyclable and/or compostable. What we get instead from the critics is how many tonnes of it (pick a number) are in the waste stream.

Weight is certainly a useful measuring stick for disposal and recycling, but it does not actually measure environmental performance. It measures weight. It was the re-use of wooden pallets and the recycling of corrugated boxes (both heavier materials) that largely determined that Canada's national packaging diversion target of 50% was met.<sup>1</sup>

In the absence of more credible and recent data, that 1996 Statistics Canada national packaging survey remains the best packaging snapshot we have. It provided a reasonable picture of packaging consumption, re-use, recycling and disposal over a wide range of industry sectors, and Canadian households.<sup>2</sup> Unfortunately, we don't have any more national packaging statistics because the funds set aside for a subsequent survey were swiped by the Canadian Council of Ministers of the Environment (CCME) for other purposes. Instead, we have biennial waste surveys commonly called WMIS (*Waste Management Industry Survey: Business and Government Sectors*), conducted by Statistics Canada.

What's wrong with WMIS? Well, number one is that it doesn't cover "packaging" per se, so it's hard to conclude anything credible about packaging. Rather it covers broad groups of wastes such as organics, tires, construction, renovation and demolition debris, electronics, white goods, mixed paper and newsprint, and a bunch of recyclable streams some of which do include packaging materials (corrugated and boxboard, glass,

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<sup>1</sup> Canada's National Packaging Task Force acknowledged in its *Final Report* to the Canadian Council of Ministers of the Environment (CCME) that "the diversion of *heavier* packaging materials (wood, paper, glass and steel) can have a *disproportionate effect* on the overall (packaging waste diversion) result" (Chapter 5, *Shortcomings of the Protocol*, page 30, italics added). According to Table 1 of the National Packaging Monitoring System (NPMS) Results reported to CCME in February 1998, the re-use of wooden pallets (1.7 million tonnes) and the recycling of paper packaging, principally corrugated boxes (1.3 million tonnes), accounted for 48.4% of total packaging diversion (re-use and recycling) in 1996.

<sup>2</sup> This Statistics Canada monitoring exercise over 10 years, and its final results, while now somewhat dated, covered 31 separate industry sectors of the economy and 32 different packaging material types, using surveys as well as information derived from Statistics Canada's international trade merchandise data and a national study of household packaging recycling. Some 10,000 surveys representing a total survey frame of almost 400,000 businesses were sent out, with the 61% response rate regarded by Statistics Canada as "consistent with other similar surveys." (*Milestone Report*, CCME, pages 6-7). Two significant findings of the NPMS were that over 70% of all packaging consumed in Canada was re-used or recycled; and that industrial recycling of packaging accounted for almost 75% of all packaging recycling (Tables 1 and 29).

plastics, ferrous metals, mixed metals, and copper and aluminum). But it is not clear how much of the glass, metals, aluminum or plastics is actually packaging and how much is non-packaging.

And if we were hoping to make reasonable conclusions about packaging's overall diversion performance, there is a significant omission: wooden pallets, boxes and crates. The WMIS survey forms do ask for information about wood but no specific results are given in the statistical tables published. Wooden pallets were the single-largest packaging material consumed in 1996 (at 2.5 million tonnes) and had the highest re-use rate (69%).<sup>3</sup> Indeed, the WMIS data virtually excludes the second of the three Rs (re-use) entirely. There is no recognition of the re-use of wooden pallets or glass beer and beverage bottles collected through Canada's many deposit/return systems.<sup>4</sup>

Nor can we conclude from the WMIS results how much packaging is actually consumed by Canadians in the first place; how much is re-used; or sent to landfill. The only information we get is an estimated breakout of a limited number of perhaps packaging materials that are "prepared for recycling", and an estimate of how much of these materials (in total) came from industrial versus residential sources.

Statistics Canada freely acknowledges other methodological limitations in the WMIS surveys. Unlike the national packaging survey of 1996, the WMIS surveys go to haulers in the waste management industry rather than to the actual industry generators of potential waste packaging materials (such as a factory or a supermarket, for example). Statistics Canada recognized way back in 1996 that as a consequence, "much of the recycling that is performed by the industrial sector is underestimated." And as WMIS notes in its latest survey: "These data do not include those materials transported by the generator directly to secondary processors, such as pulp and paper mills, while bypassing entirely any firm or local government involved in waste management activities."<sup>5</sup>

The Paper & Paperboard Packaging Environmental Council (PPEC) has demonstrated how enormously significant that missing data can be. The council claims that just one large Ontario supermarket chain sends over half a million tonnes of old corrugated containers (OCC) through a paper processor direct to a recycling mill every year. Half a million tonnes was *four times more* OCC than all Ontario municipalities combined sent for recycling in 2006.<sup>6</sup> But this tonnage is not counted in the WMIS surveys. And this is just one supermarket chain, in one province.

While the quality of *residential* packaging data has improved immensely in some provinces over the years, the absence of credible and comprehensive national and provincial packaging data from the *IC & I sector*, in

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<sup>3</sup> NPMS, *ibid.* Table 1.

<sup>4</sup> "These data do not include materials that were processed for re-use and resale for example, wholesale of scrap metals or used clothing or those materials that are collected through deposit return systems and which are not processed at a material recovery facility." Data coverage WMIS (2006) page 35.

<sup>5</sup> Statistics Canada WMIS Survey, 1996, Text Box 2.1 Notes on Recycling Data, and WMIS 2006, Table 4-2.

<sup>6</sup> Stewardship Ontario Fee Setting, Table 1 Generation and Recovery (2008). Ontario municipalities sent 126,807 tonnes of old corrugated containers (OCC) for recycling in 2006.

particular, has given rise to several common misrepresentations about packaging waste in Canada. Here are three of them:

### **Misrepresentation # 1: That packaging is a huge chunk of the waste stream.**

The National Packaging Task Force noted approvingly in its *Final Report* to CCME that packaging represented only 13% of solid waste in 1996.<sup>7</sup> But here we have Ontario Minister of the Environment, John Gerretsen, claiming publicly on at least two recent occasions, that “one-third” of what Ontarians send to landfill is packaging.<sup>8</sup>

The minister, or the staff who prepared his speech, have absolutely no basis in fact for concluding any such thing. The 2006 WMIS survey, upon which the minister appears to be basing other parts of his statement,<sup>9</sup> does not even break out disposal by broad material group, let alone packaging. And if you follow the tonnage trail, the minister’s claim would mean that Ontario by itself sent 30% more packaging to waste in 2006 than the whole of Canada did ten years earlier.<sup>10</sup> Further, if you back out the 2006 Blue Box packaging tonnages sent for disposal, then packaging alone, according to the minister, would represent almost 45% of all the industrial wastes sent for disposal in Ontario that year (including organics, printing and writing paper, white goods, electronics, tires, and construction and renovation debris). Sorry, that’s not credible.<sup>11</sup>

In the absence of good data, a more acceptable approach might be to assume the same national *disposal* rate for packaging that Statistics Canada determined back in 1996, and then apply it to Ontario’s 2006 population. This would give an Ontario packaging *disposal* in 2006 of just over one million tonnes, a far cry from the

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<sup>7</sup> The Task Force’s *Final Report* to CCME (*ibid*, Executive Summary, page 2 and Chapter 4, *Major achievements of the Protocol*, page 27). The NPMS estimated packaging disposal at 2.6 million tonnes. This represented only 13% of total solid waste (reported as being 20.6 million tonnes by Statistics Canada WMIS 1996, Table 2.1, Catalogue Number 16FOO23XIE).

<sup>8</sup> Recycling Council of Ontario reception: An Update on Waste Diversion Act review, October 19, 2009 and before 700 consumer packaged goods and packaging industry professionals at the fourth annual Walmart Canada Sustainable Packaging Conference, April 22, 2010 at the Toronto Congress Centre.

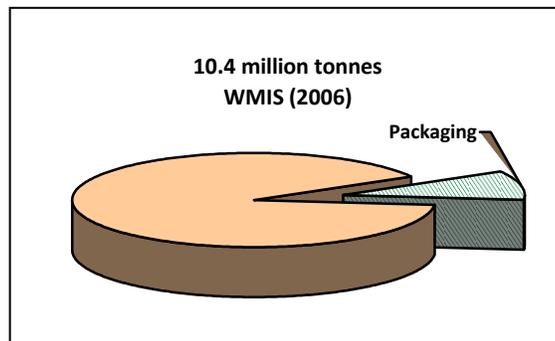
<sup>9</sup> The minister said that “Ontarians generate close to one tonne of waste per person per year” which is in line with Ontario’s generation of 12.8 million tonnes of waste (or the 0.94 tonnes per capita estimated by combining disposal and recycling tonnages in WMIS 2006, Tables 1.2 and 3). He then added that “close to 80%” of that 12.8 million tonnes (or 10.2 million tonnes) “is going to landfill”, and that “one-third of that (i.e. 3.4 million tonnes) is packaging.”

<sup>10</sup> All of Canada sent 2.6 million tonnes of packaging waste to landfill or incineration in 1996 (*NPMS*, and *Milestone Report*, National Packaging Protocol, 1996, CCME, January 1998, page 4).

<sup>11</sup> From the minister’s claim of 3.4 million tonnes of total packaging waste we deduct 0.4 million tonnes coming from the residential Blue Box program (*Stewardship Ontario Fee Setting 2008*, Table 1: *Generation and Recovery* for 2006), to leave the balance, approximately 3.0 million tonnes, supposedly coming from industrial sources. WMIS 2006 (Table 1-2) puts all waste disposal from Ontario IC & I sources at 6.7 million tonnes, so IC & I packaging waste at the minister’s derived 3.0 million tonnes would represent almost 45% of all IC & I wastes disposed of (including organics, printing and writing paper, white goods, electronics, tires, and construction and renovation debris).

minister's 3.4 million tonnes.<sup>12</sup> And if that one million tonnes of packaging disposal is a reasonable "guesstimate", we can further estimate that packaging may have represented just over 10% of all wastes disposed of by Ontario in 2006.<sup>13</sup> That 10% is not too far from the 13% of solid waste that packaging represented nationally back in 1996, and it's certainly far more credible than the minister's mystery 33% claim.

### ***Does packaging represent only 10% of Ontario's waste stream?***



### **Misrepresentation # 2: Canada is doing abysmally compared to the Europeans**

Canadians are suitably impressed when they hear European packaging "recovery" rates of 70, 80 or even 90 per cent. What they frequently don't realize is that the high "recovery" numbers from Europe usually include packaging materials sent to energy-from-waste plants as well. But the countries of the European Commission (EU) also have separate "recycling" data, which while not sometimes comparable among its member states, is more appropriate for comparing Canada's relative recycling performance.

In 1997, the closest we can get to comparable Canadian data, the average packaging recycling rate for the 15 countries of the European Commission (EU 15) was 46 per cent. Canada's recycling rate from a year earlier was basically the same (45%).<sup>14</sup>

The EU has continued to collect and analyse packaging data since 1997, and while there are various disclaimers about its quality,<sup>15</sup> recycling rates have steadily improved. By 2006, the average packaging recycling rate for

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<sup>12</sup> The NPMS used a Canadian population number for 1996 of 29,969,000. By dividing the tonnages consumed, re-used, recycled and disposed by population it is possible to derive per capita rates (i.e. 297 kg for packaging consumption, 136 kg per capita re-use, 73 kg per capita recycling, and 88 kg per capita disposal). These rates are then applied to Ontario's 2006 population from the 2006 Census (12,160,282 people). Assuming that Ontarians acted similarly to other Canadians, this would put packaging disposal in Ontario in the million tonne range (1.07).

<sup>13</sup> If packaging disposal totalled 1.07 million tonnes and waste disposal as a whole for Ontario was 10.4 million tonnes (WMIS 2006, Table 1-2) then packaging's estimated contribution to the Ontario waste stream would be just over 10 per cent.

<sup>14</sup> European Commission, Packaging Recycling 1997 – 2002 at <http://ec.europa.eu/environment/waste/pdf/1997-2002.xls> Canada's average packaging recycling rate is derived from the 1996 NPMS results (Table 1) where generation (consumption minus re-use) was 4.84 million tonnes and recycling 2.20 million tonnes.

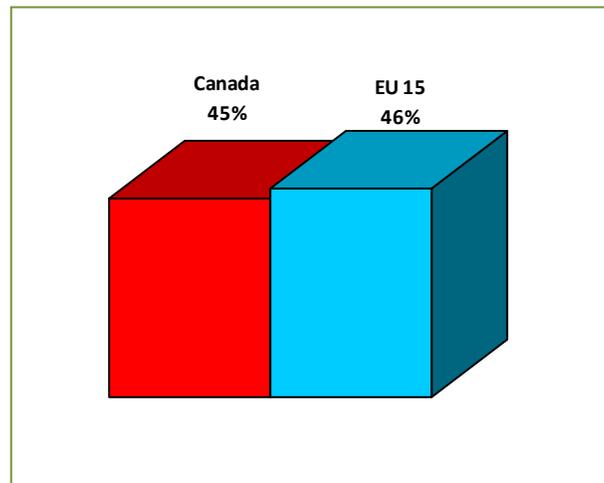
<sup>15</sup> These are to the effect that national data on packaging waste is not always comparable across the EU. If generation numbers do not include all packaging materials, then the recycling rate can often look better.

the EU 15 had risen to 58 per cent. However, if you take all of the countries of the expanded EU into account (EU 27), the 2006 average was 49 per cent.<sup>16</sup>

Unfortunately, Canada, or more precisely CCME, has chosen not to collect packaging data since 1996 so we have no national data on the generation or recycling of Canadian packaging that we could use to determine progress or even comparisons. There are bits and pieces of data but they are either not packaging per se, not national, or cover residential packaging only.

So there is no proof that we are doing “abysmally” compared to the Europeans (whichever Europeans we choose to compare ourselves to) and no proof that we might, in fact, be doing better.

### **Average Packaging Recycling Rates**



Sources: NPMS Canada (1996), European Commission (1997).

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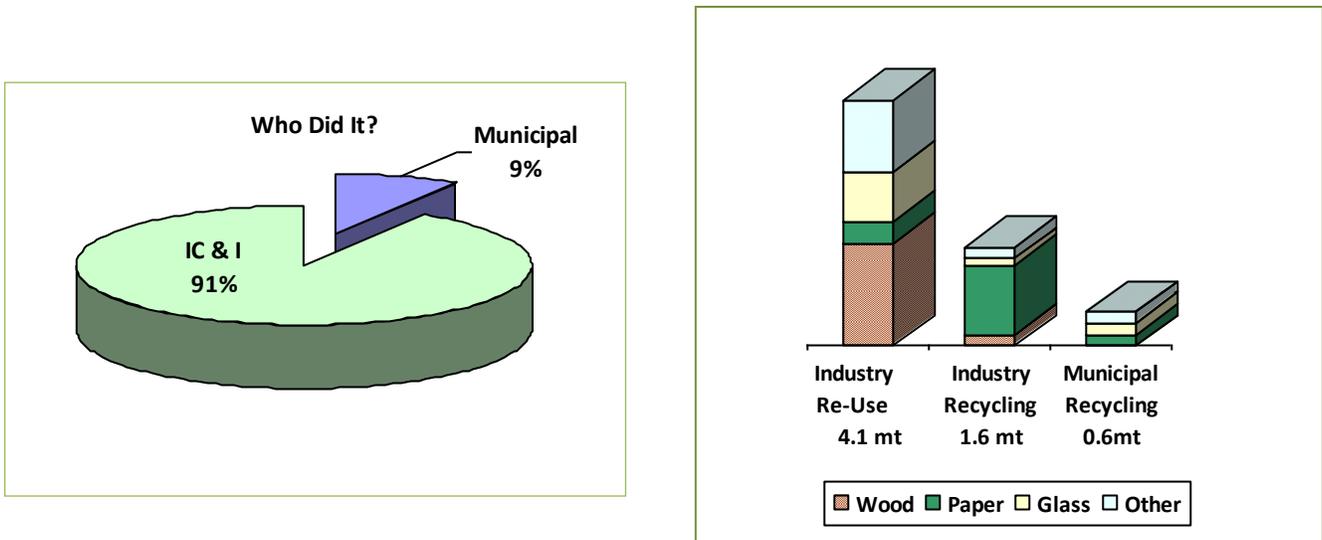
<sup>16</sup> A Report on the Implementation of Packaging and Packaging Waste Directive 94/62/EC by the Institute for Environmental Policy/Ecologic, May 2009, Annex Table 2: Total recovery and recycling (% of packaging waste generated) at <http://ec.europa.eu/environment/waste/reporting/pdf/Packaging%20Directive%20Report.pdf> The average rate for the EU 27 in 2006 was 48.7% (ranging from 10.8% for Malta up to 79.0% for Belgium). If the EU 15 countries are broken out from the EU 27, the average in 2006 was 58 per cent.

**Misrepresentation # 3: “Industry” is doing a lousy job in diverting packaging waste compared to municipalities.**

The genesis for this claim or implication is again suspect interpretation of the WMIS data. According to the WMIS 2006 survey, Ontarians, for example, diverted only 19% of the wastes they generated (industry achieving a diversion rate of 12% and municipalities 29 per cent).<sup>17</sup> But, of course, *this is all wastes, not packaging wastes*. And we have already pointed out the flaws and limitations of the WMIS surveys as far as packaging goes. So to claim or imply, as some municipal representatives have, that industry is diverting only 12% of its *packaging* waste is clearly false and misleading. Besides: 12% of what? WMIS doesn’t tell you how much packaging is used in the first place.

In fact, according to the national packaging survey, over 70% of all packaging consumed in Canada in 1996 was either re-used or recycled. “Industry” was responsible for 91% of this: all of the packaging re-use (mainly wooden pallets and glass bottles) and 74% of the packaging recycling (principally corrugated boxes).<sup>18</sup>

**Packaging Re-use and Recycling (1996)**



Source: NPMS Tables 1, 29

It is somewhat hypocritical to discount the re-use tonnes when there was so much pressure from government and environmental groups to include them as a means of “forcing industry to move up the 3Rs hierarchy.” But even if we exclude re-use, “industry” had a good story to tell about packaging recycling back in 1996.

<sup>17</sup> WMIS 2006 Tables 1-2 and 3. Ontarians recycled 2.4 million tonnes (or 19%) of all wastes generated in 2006 (12.8 million tonnes). “Industry” was estimated to have recycled 0.9 million tonnes (or 12%) of 7.6 million tonnes of all wastes generated, and householders 1.5 million tonnes (or 29%) of 5.2 million tonnes of all wastes generated.

<sup>18</sup> NPMS, *ibid.* Table 1. Total consumption was 8,905,760 tonnes of which 70.3% was either re-used (4,066,284 tonnes) or recycled (2,200,640 tonnes). The re-use tonnes were allocated to “industry” as were 1,636,353 tonnes of the 2,200,640 tonnes of packaging recycling. “Industry” was therefore responsible for 5.7 million of the 6.27 million tonnes re-used or recycled (91%).

We suspect, but we do not know, that “industry” had an even better story to tell in 2006 (and does so today, just as municipalities do of their more recent efforts in residential recycling), but the absence of current Canadian data on packaging consumption, re-use, recycling and disposal (both IC & I and residential) is a major (and frustrating) handicap. Until we get a comprehensive national database that includes data on packaging, the debate will go on and packaging in general will continue to be bad-mouthed by the ill-informed.

*Finding taxpayers’ money for establishing such a database is clearly not a problem when we can spend \$1.2 billion on security for the three-day G8/20 summits; \$1.9 million for a “fake lake” media centre so that foreign journalists can experience Ontario cottage country from Toronto; \$1.2 million to keep the delegates sandwiches safe; and a provincially-run casino and lottery monopoly (Ontario Lottery and Gaming Corp.) can splurge over half a million dollars by sending 250 of its senior staff to a gaming conference. No, we have the money, just not the right priorities.*