Board of Directors Meeting Highlights
Held on May 17, 2018 at 9:00 AM
at the MRF Board Room

Bluewater Recycling Association

Final Food and Organic Waste Framework

The Ministry of the Environment and Climate Change released the Food and Organic Waste Framework on April 30, 2018. For details on the actions and policies, please access the Framework on:

- The Environmental Registry (https://ero.ontario.ca/notice/013-1814), and
- The Ministry of Environment and Climate Change website (https://www.ontario.ca/page/food-and-organic-waste-framework)

The Food and Organic Waste Framework consists of two complementary components:

Food and Organic Waste Action Plan, which outlines strategic commitments to be taken by the province to address food and organic waste.

Food and Organic Waste Policy Statement under the Resource Recovery and Circular Economy Act, 2016, which provides direction to the province, municipalities, producers, Industrial, Commercial and Institutional sector (e.g. retailers, manufacturers, hospitals, schools), the waste management sector and others to further the provincial interest in waste reduction and resource recovery as it relates to food and organic waste.

The Policy Statement was issued by the Minister of the Environment and Climate Change, pursuant to Section 11 of the Resource Recovery and Circular Economy Act, 2016, on April 30, 2018 and came into effect at that time.

China announces import ban on an additional 32 scrap materials

Chinese government identifies 16 materials to be banned by the end of 2018, another 16 at the end of 2019. China's Ministry of Ecology and Environment (MEE) announced April 19, 2018, that China will ban imports of 32 types of scrap materials (which the MEE labels as "solid waste").

Sixteen materials, including scrap metals considered "Category 7" such as motors and wire and cable scrap, will be banned from import beginning Dec. 31, 2018, MEE says in an online announcement (in Chinese).

Another 16 types, including some forms of stainless steel scrap, will be banned beginning Dec. 31, 2019. The full list of banned materials is available online (in English).

The new policies follow earlier announcements to prohibit 24 categories of recyclable materials beginning Jan. 1, 2018, and the imposition of tighter quality standards on all scrap imports beginning March 1, 2018.

China began importing secondary raw materials in the 1980s and subsequently grew to become the world's largest importer of recyclables.

The Chinese government began taking action to phase out such imports in 2017, citing environmental concerns. Many recyclers and policy analysts, however, sense protectionism in the moves, since China's government has indicated it is taking measures to replace the imports with domestic resources before the end of 2019.

Wind Up Direction for the Municipal Hazardous or Special Waste (MHSW) Program

On April 12, 2018, the Minister issued a wind up direction letter to Stewardship Ontario for the MHSW program.

Stewardship Ontario must submit a wind up plan for the MHSW program to the Resource Productivity and Recovery Authority (the Authority) no later than June 30, 2019, and the program is to cease operation on December 31, 2020. The wind up direction to Stewardship Ontario and a complementary policy direction to the Resource Productivity Recovery Authority (Authority) can be found on the Authority's website (https://rpra.ca/municipal-hazardous-or-special-waste-mhsw-program-wind-up/).

Volvo Trucks presents second electric truck model in three weeks

Just three weeks after the unveiling of Volvo Trucks' first all-electric truck, the Volvo FL Electric, the company is expanding its product range with yet another electric truck. The Volvo FE Electric is designed for heavier city distribution and refuse transport operations with gross weights of up to 27 tonnes. Sales will commence in Europe in 2019.

The first Volvo FE Electric, a refuse truck with a superstructure developed together with Europe's leading refuse collection bodybuilder, Faun, will start operating in early 2019 in Germany's second-largest city, Hamburg.

Today, each conventional refuse vehicles emits approximately 31.300 kg carbon dioxide every year. An electrically powered refuse truck with battery that stands a full shift of eight to ten hours is a breakthrough in technology. Another benefit is the fact that Stadtreinigung Hamburg generates climate-neutral electricity that can be used to charge the batteries."

The new Volvo FE Electric will be offered in several variants for different types of transport assignment. For instance with Volvo's low-entry cab, which makes it easier to enter and exit the cab and gives the driver a commanding view of surrounding traffic. The working environment improves too as a result of the low noise level and vibration-free operation. Battery capacity can be optimised to suit individual needs, and charging takes place either via the mains or via quick-charge stations.

Mack to test fully electric collection vehicle in New York, in 2019

Electromobility, video telematics and updates on LR models focus for Mack at Waste Expo

At Waste Expo in Las Vegas, Mack hosted a press conference with several announcements, including the availability of pre-wired Lytx video telematics, new features for LR model collection trucks, as well as an announcement about the advancement of electromobility for collection fleets, through a pilot project planned for New York City, in 2019.

Mack Trucks plans to have a fully electric Mack LR refuse model equipped with an integrated Mack electric drivetrain operating in North America in 2019. The New York City Department of Sanitation (DSNY), one of Mack's largest customers, will test the demonstration vehicle in its highly demanding operations.

According to Mack, at this stage of electromobility technology and infrastructure development, a fully electric vehicle will deliver the most value within a closed loop application, in which the truck returns home every night, such as refuse. Benefits of fully electric trucks include zero emissions, significantly reduced noise and environmental sustainability. The ability to operate quietly at night is particularly attractive to refuse customers in urban areas.

SWANA announces renewed focus on plastic reduction and recycling

SWANA announced that it is committing to a renewed focus on improving recycling practices and reducing the generation of single-use plastics.

The Silver Spring, Maryland-based Solid Waste Association of North America (SWANA) has announced that it is committing to a renewed focus on improving recycling practices and reducing generation of single-use plastics.

In support of this renewed focus on ending plastic pollution, SWANA emphasized to all members and the public that “reduce and reuse” comes before “recycle” on the waste hierarchy for a reason, and noted that primary efforts should center on reducing the amount of waste generated and finding ways to give products a longer life cycle in order to reduce environmental impacts.

To successfully process plastic waste, the public must be educated on what goes into the blue bin to make smarter recycling choices: Plastic bags cause jams to processing equipment, batteries cause serious fires and food waste can contaminate an entire bale.

Contamination has been a major concern in the wake of China’s waste import restrictions. Recycling exports have declined and SWANA acknowledges the need for increased governmental support for North American recycling programs, an industry that provides jobs, tax revenue and preserves landfill space. SWANA recently sent a letter to key congressional leaders in the U.S. urging that recycling be included in any future Infrastructure bill.

SWANA’s new Recycling Task Force is working to address how North America can successfully and sustainably process the amount of plastic that is in our waste stream by initiating public education efforts, actively calling for increased funding for recycling infrastructure and exploring new opportunities to increase demand for recycled content.

China freezes out US scrap shipments for 30 days

Nation's shuttering of CCIC offices effectively seals market for May 2018.

The Washington-based Institute of Scrap Recycling Industries (ISRI) has notified its members that it has learned that the U.S. operations of CCIC North America (CCIC NA) have been suspended for one month, effective May 4 through June 4, 2018.

"As a result, no [outbound scrap shipment] inspections can be arranged or certificates issued during this period," states ISRI, as CCIC's preinspection system in North America has been temporarily closed. "There is no doubt that this will severely impact U.S. scrap exports to China," the organization says in its May 3 announcement.

According to ISRI, "This action affects only the scrap recycling industry and only shipments from the United States [and] containers that received CCIC approval prior to May 4 but that have not yet obtained their certificate will encounter difficulty at the port of entry."

The association also indicates that exporters responsible for containers that fail CIQ (China Inspection and Quarantine Services) inspection at a Chinese port could face losing their AQSIQ (General Administration of Quality Supervision, Inspection and Quarantine) export license.

According to ISRI, the Chinese General Administration of Customs has issued a notice stating specific steps are being taken because of the failure of "multiple batches" of material arriving at Chinese ports that did not meet the government's environmental protection standards.

Beginning May 4, all shipments arriving from the U.S. will be required to be 100 percent opened for inspection. Shipments containing unwanted materials will be subject to "100 percent examination with lab testing analysis," in a procedure that one trader based in south China suggests would cost about $20,000.

The materials listed as unwanted in the ISRI notification are: "hot plastic waste plastics, metal scrap containing powder and the waste papers containing hard-to-be-identified special paper (silicone paper, wet wax paper, thermal paper, moisture-proof paper, etc.) and waste paper with suspected hazardous materials."

Other steps are being taken:

CCIC NA has been suspended from performing inspections and issuing certificates for scrap materials bound for China effective May 4, 2018, and continuing through June 4, 2018.

CCIC NA has been placed on an "A category risk early warning measure." This penalty is aligned with AQSIQ regulations issued late last year that became effective Feb. 1 and includes new guidelines for holding exporters and inspectors responsible for shipments that fail to meet quality standards.

Those same AQSIQ regulations also allow independent inspection companies to apply for a Chinese government license to issue preshipment inspection certification for scrap exports. "Unfortunately, we believe there have been no licenses issued to any inspection company outside of CCIC NA since Feb. 1st, thus the penalty has been placed on the industry's only option for preshipment inspection and thus effectively shuts down the trade," ISRI says.

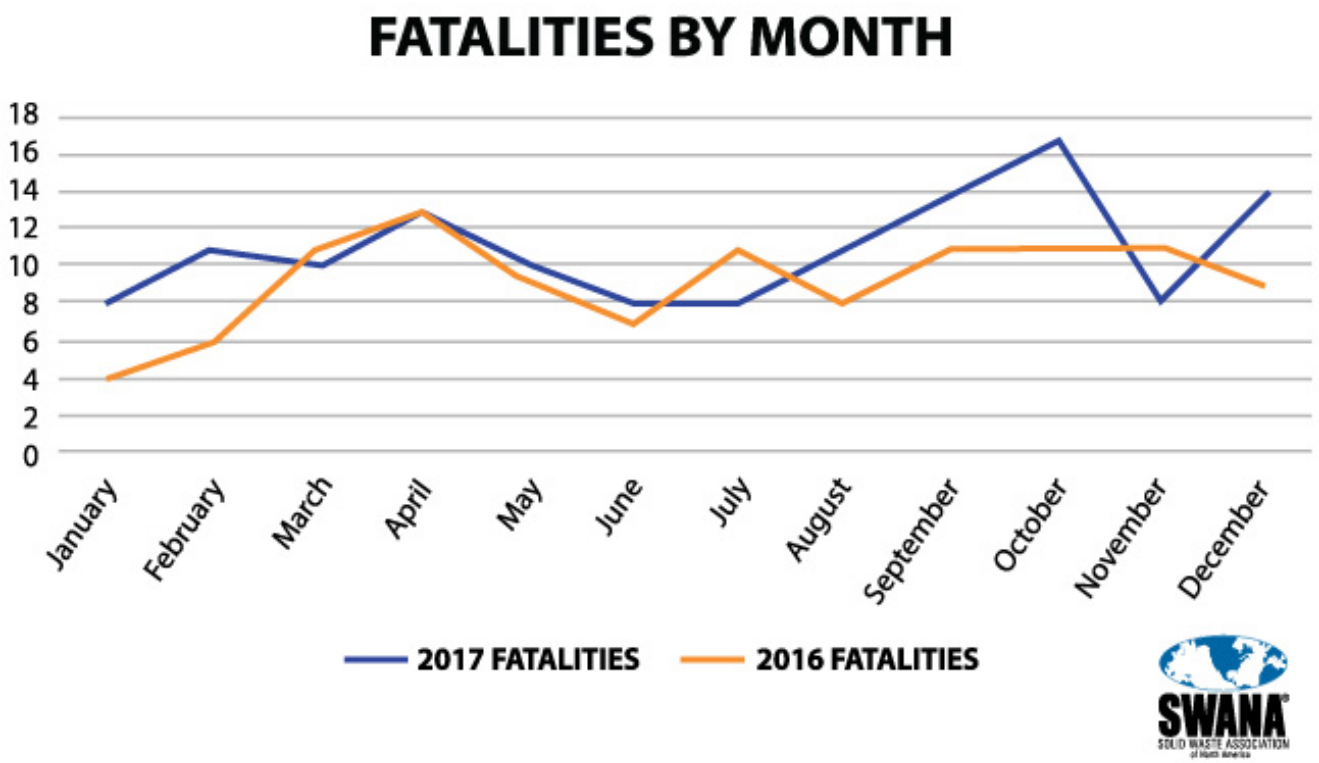
Port inspectors are directed to carefully review inspection and shipping documents to verify, among other information, that the preshipment inspection certificate was issued before shipping, proper preshipment inspection was conducted, and all addresses and other information is accurate.

The action takes place at the same time the two nations are trading tariff enactments and media reports are circulating that Chinese buyers have halted their purchases of U.S. soybeans.

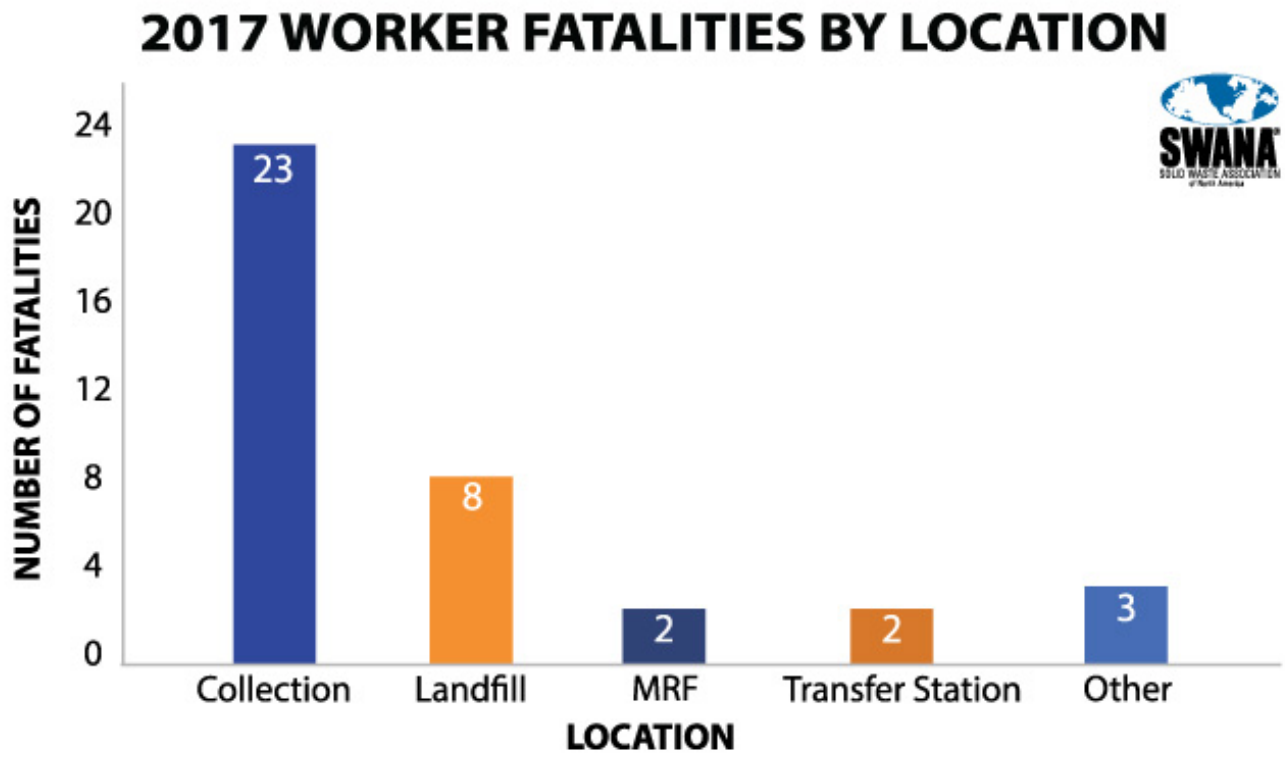
It also occurred on the first day of a two-day round of negotiations between high-level Trump administration negotiators and the Chinese government on critical aspects of the U.S.-China trade relationship. Neither side in those negotiations made any public announcements at the end of the first day (Thursday, May 3), and when the negotiations concluded at the end of China's workday Friday, May 4, the Xinhua news agency of China reported only that "considerable differences still exist on some issues [and] continued hard work is required for more progress."

SWANA Releases Sobering Solid Waste Industry Fatality Data for 2017

SWANA releases it's 2017 solid waste industry fatality data with 132 recorded fatalities – an 18 percent increase in total fatalities compared to 2016, with almost all incidents occurring in the United States. SWANA records and investigates fatal incidents that involve solid waste management as part of its mission, and releases industry data to create a better understanding of the state of safety in the solid waste industry and where improvements are necessary. In 2017, there were 94 members of the public killed and 38 workers on the job, with over 75 percent of the incidents involving a private sector solid waste company. October 2017 had the most fatalities at 17, though no month had fewer than eight. Compared to 2016, April had the most with 13 fatalities and January had the least with four. "I am disappointed in the waste industry's safety performance in 2017 based on the fatality-related data that SWANA maintains," said David Biderman, SWANA's Executive Director and CEO. "There were an unacceptable number of preventable fatal incidents involving our trucks and equipment."



The majority of deaths involving a member of the public occurred on the roadways, with 60 percent involving a solid waste vehicle and at least one other vehicle. Sixteen of these cases involved the other vehicle crossing into the lane of an oncoming waste vehicle. Ultimately, there were 94 third-party fatalities: 57 were drivers of or passengers in other vehicles, 23 were pedestrians, eight were bicyclists, four were motorcyclists, and two occurred at disposal facilities. Of the 38 workers who died on the job in 2017, approximately 60 percent were killed during collection, 21 percent died at a landfill, with the remainder occurring at Material Recovery Facilities, transfer stations and other locations. A disproportionate number of these incidents involved small companies, usually haulers with fewer than 20 trucks. Half of the fatalities that occurred at landfills were drivers working on or around their trucks at the time of the incident, and two of them were spotters.



"We need to do a better job of communicating to front line workers the importance of wearing safety belts while in the truck, lockout-tagout, and backing carefully, in order to mitigate the risk of preventable accidents," added Biderman. Consistent with previous years, solid waste workers died in a wide variety of ways, including being struck by their own truck, falling off the riding step, and colliding with other vehicles on the road and equipment at disposal facilities. In four of the 37 fatal incidents, a collection worker was struck and killed by another vehicle.

These sobering industry statistics are why SWANA is proud to support recent efforts to pass Slow Down to Get Around (SDTGA) legislation in several states, including South Carolina, Kansas, Ohio and Maryland. Recently passed in Nebraska, 17 states now have SDTGA laws on the books.

The first two worker fatalities in 2017 were both in Maryland, including the death of City of Laurel employee Marcus Colbert. City of Laurel Mayor Craig Moe testified at the Maryland statehouse to help pass the state's SDTGA bill, which is expected to be signed this spring. "The City of Laurel was grateful and privileged to work with the Solid Waste Association of North America on Maryland's new legislation; Motor Vehicles – Operation When Approaching Vehicle with Visual Signals will raise public awareness and provide a consistent message to motorists to pay attention to their surroundings to Slow Down to get Around," said City of Laurel Mayor Moe. "This legislation will allow workers on our roadways to successfully complete their assignments safely and to return to their families at the end of the work day," add Mayor Moe. SWANA embraces the goal of getting all workers home safely and urges industry professionals to use SWANA's safety resources, including the "Five to Stay Alive" safety series, weekly Safety Monday mailings, and safety events and trainings across North America, to move the solid waste industry off the federal government's list of most dangerous jobs.

Machinex Introduces Samurai sorting robot at Waste Expo and IFAT

Self-aware sorting technology developed in partnership with AMP Robotics

Featuring a unique 4-articulation robot, this machine employs superior artificial intelligence (AI) technology to identify materials for accurate, positive product recovery or as a precise quality control function. The AI operates according to a pre-determined order of task hierarchy to maximize financial return while continually improving and learning from operating experience to assure maximum recognition efficiency.

According to Machinex, compared to a human sorter, which achieves an average of 35 picks per minute, the SamurAI manages to double this average by reaching 70 picks per minute. The SamurAI has been designed to accommodate sorting conveyor width up to 48 inches while offering a modular design for multiple robot configurations.

Machinex says they have responded to the requirements of MRF operators, and that this robotic solution will reduce reliance on manual labour working in difficult environments, therefore reducing ongoing operating costs while improving overall system performance.

In recent years Machinex has developed equipment such as ballistic separators and optical sorters for integration into both new and existing sorting facilities to achieve extremely high recovery and purity levels. The SamurAI therefore comes in support to enhance the automation and the performance of the complete plant in order to reach the strict quality standards of the local and export markets and divert more material from landfill.

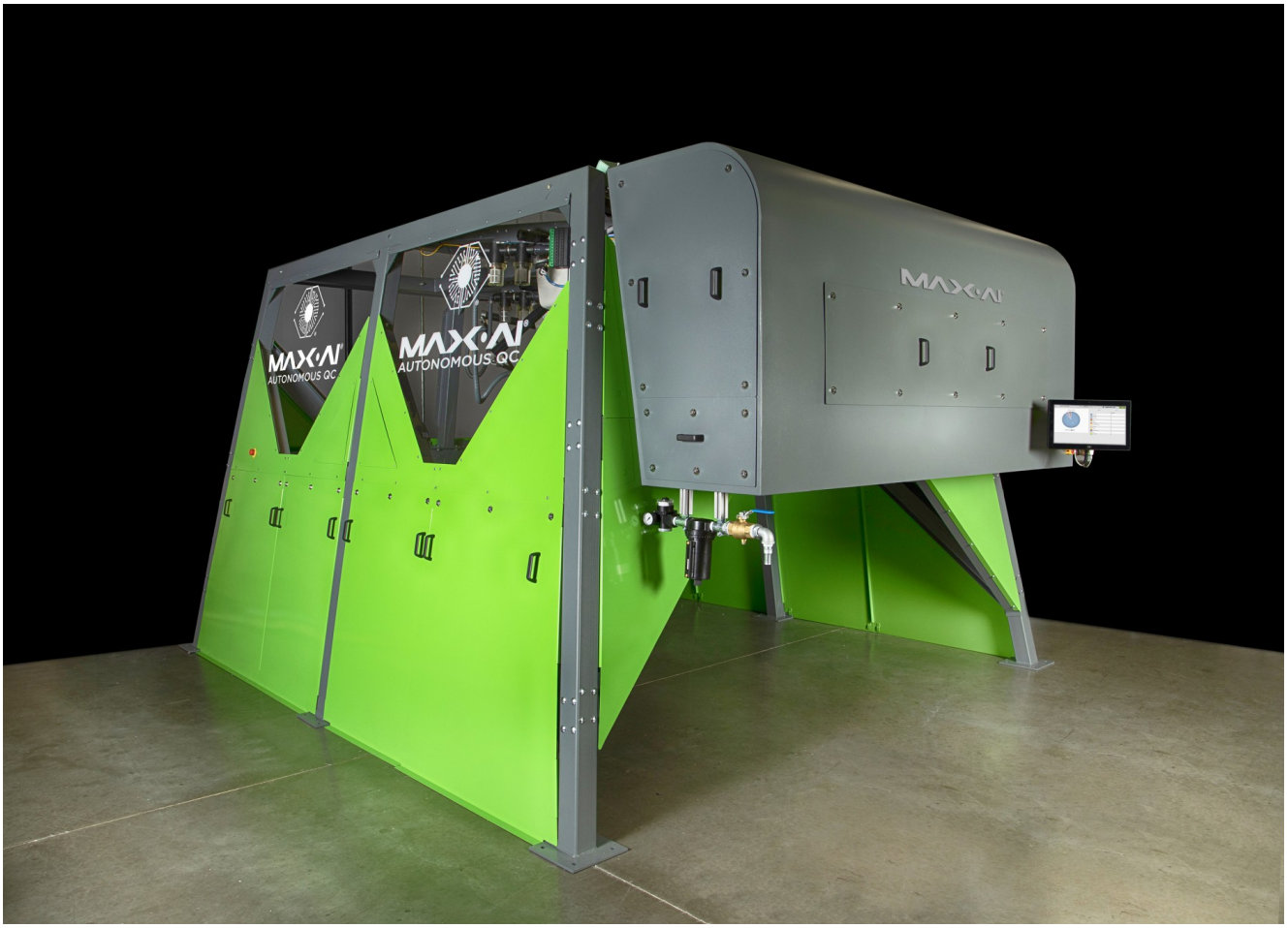
After a very detailed and rigorous process to select a partner to provide Machinex with an artificial intelligence system, AMP Robotics was engaged due to their wide experience and expertise within the recycling industry. AMP Robotics is well represented within the North American market and their AI technology is installed and successfully operating in several material recovery facilities. The role of AMP Robotics will be to provide the artificial intelligence for the robot, while Machinex will provide all of the required robotic hardware and will ensure its complete system integration.

Matanya Horowitz, CEO of AMP Robotics: "We are very excited to be partnering with Machinex, an industry leader in material recovery. With Machinex we not only expand our market reach but gain a truly collaborative and deeply experienced partner who shares our vision of the potential of artificial intelligence in the recycling industry."

The first two SamurAI units will be installed immediately following Waste Expo, in May 2018, at locations in both the United States and Canada. With the two new SamurAI and multiple AMP installations, Machinex is positioned to deliver the knowledge and experience to insure successful future operations. Further robots are soon to be installed while a number of other sales are currently being finalized with customers both from North America and Europe.

Max-AI AQC-2 robotic sorter expands application to newspaper sorting

AI-powered robotic sorter is now available for paper sorting applications



The Max-AI AQC (Autonomous Quality Control) product line from Bulk Handling Systems (BHS) has expanded with the release of the AQC-2 for paper sorting applications. Max-AI technology employs artificial intelligence (AI) to make material identification and selection decisions; high-speed robotic sorters carry out the sorting. The AQC-2 features two robotic sorters and is able to sort on belt widths up to 72" (1800mm). The release of the AQC-2 complements the earlier release of the AQC-1, which has been used to sort containers and contamination in plastics and metals, and to recover high value items from residue.

The new capabilities coincide with the industry's demand for technology to create a clean news product. The AQC-2 sorts at speeds superior to manual sorting while recovering cardboard, containers and plastic film and removing contamination to create a clean news product. The AQC-2 complements BHS' Tri-Disc technology and NRT optical sorters to fully automate the quality control process for paper and containers. The level of automation possible with Max-AI technology will significantly lower operating costs - especially while running multiple shifts - while adding production and quality capabilities that surpass those of manual sorting.

While it doesn't make financial sense to add another optical sorter to remove the remaining small cardboard, it does make sense to add the AQC-2, equipment that will recover the remaining cardboard while at the same time removing other commodities or contaminants from the news stream. The results have been excellent and the investment really pencils out. We are thrilled to have a solution for our customers that creates clean news with zero labor and provides a fast return on their investment."

Automation to impact at least 50% of Canadian jobs in the next decade: RBC research

A new RBC research paper, Humans Wanted – How Canadian youth can thrive in the age of disruption, has revealed that 50% of Canadian jobs will be disrupted by automation in the next 10 years.

As a result of this disruption, Canada's Gen Mobile – young people who are currently transitioning from education to employment – are unprepared for the rapidly changing workplace. With 4 million Canadian youth entering the workforce over the next decade, and the shift from a jobs economy to a skills economy, the research indicates young people will need a portfolio of "human skills" to remain competitive and resilient in the labour market.

Key Findings:

- Canada's economy is on target to add 2.4 million jobs over the next four years, virtually all of which will require a different mix of skills.
- A growing demand for "human skills" will grow across all job sectors and include: critical thinking, co-ordination, social perceptiveness, active listening and complex problem solving.
- Rather than a nation of coders, digital literacy – the ability to understand digital items, digital technologies or the Internet fluently – will be necessary for all new jobs.
- Canada's education system, training programs and labour market initiatives are inadequately designed to help Canadian youth navigate the new skills economy, resulting in roughly half a million 15-29 year olds who are unemployed and another quarter of a million who are working part-time involuntarily.
- Canadian employers are generally not prepared, through hiring, training or retraining, to recruit and develop the skills needed to ensure their organizations remain competitive in the digital economy.

RBC Future Launch is a decade-long commitment to help Canadian youth prepare for the jobs of tomorrow. RBC is committed to acting as a catalyst for change, bringing government, educators, public sector and not-for-profits together to co-create solutions to help young people better prepare for the future of the work through "human skills" development, networking and work experience.

Top recommendations from the report include:

- A national review of post-secondary education programs to assess their focus on "human skills" including global competencies
- A national target of 100% work-integrated learning, to ensure every undergraduate student has the opportunity for an apprenticeship, internship, co-op placement or other meaningful experiential placement
- Standardization of labour market information across all provinces and regions, and a partnership with the private sector to move skills and jobs information to real-time, interactive platforms
- The introduction of a national initiative to help employers measure foundational skills and incorporate them in recruiting, hiring and training practices

About the Report
RBC Economics amassed a database of 300 occupations and drilled into the skills required to perform them now and projected into the future. The study groups the Canadian economy into six major clusters based on skillsets as opposed to traditional classifications and sectors. This cluster model is designed to illustrate the ease of transition between dissimilar jobs as well as the relevance of current skills to jobs of the future.

Plastic-eating enzyme accidentally created by scientists could help solve pollution crisis

Scientists have created a substance capable of "eating" plastic that could help tackle the world's pollution problem.

The substance is based on an enzyme – a "biological catalyst" living in a Japanese recycling centre that researchers suggested had evolved it in order to eat plastic.

Dubbed PETase for its ability to break down the PET plastic used to make drinks bottles, the enzyme accelerated a degradation process that would normally take hundreds of years.

Decline in plastic bags on seabed shows tackling waste is working

Fine-tuning this naturally produced enzyme allowed a research team to produce something capable of digesting plastic more effectively than anything found in nature. By breaking down plastic into manageable chunks, the scientists suggest their new substances could help recycle millions of tonnes of plastic bottles.

Plastic is notoriously resistant to natural degradation, and the discovery of the Japanese plastic-eating bacteria in 2016 was heralded by experts and commentators alike as a potential natural solution to plastic pollution.

While attempting to verify these claims, University of Portsmouth biologist Professor John McGeehan and his colleagues accidentally created a super-powered version of the plastic-eating enzyme. During an investigation of the enzyme's structure, the scientists made a slight tweak to the part thought to be involved with plastic digestion.

Doing so ramped up the ability of the enzyme to degrade PET, and also gave it the ability to degrade an alternative form of PET known as PEF. The research was led by postgraduate student Harry Austin, and published in the journal Proceedings of the National Academy of Sciences.

Though simply breaking down larger pieces of plastic into smaller pieces is not in itself useful – and in fact creates microplastics of the type current causing damage to marine environments – the scientists suggest their method could be employed to make plastic recycling far more effective.

The discovery has been welcomed enthusiastically by other scientists, who nevertheless cautioned there would be a long way to go before these enzymes are widely applied in the recycling industry.

Awareness of plastic pollution has spiked in recent months, with communities across the UK implementing measures to cut down on plastic waste.

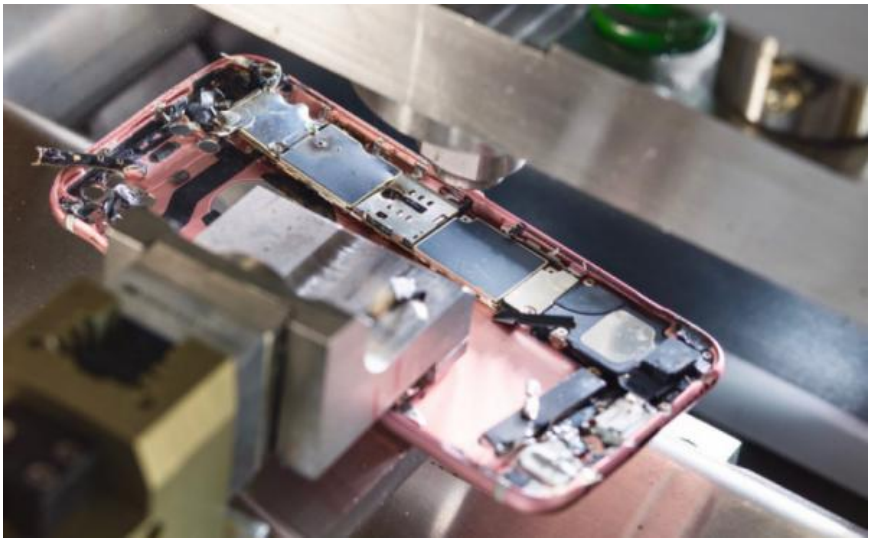
These local efforts have been accompanied by Government policies to help tackle this "scourge", including the ban on microbeads and the introduction of a bottle deposit scheme.

However, Professor McGeehan noted the role that science must also play in developing novel solutions to fight against the tide of plastic.

"Few could have predicted that since plastics became popular in the 1960s huge plastic waste patches would be found floating in oceans, or washed up on once pristine beaches all over the world," he said.

Stripping an iPhone? Leave it to Daisy

'Daisy' is the name that's been given to a robot developed by Apple for the deconstruction of its iPhones - another example of the company's increasing focus on reuse and refurbishment as a future business model.



According to the company, Daisy builds on a previous generation of technology dubbed 'Liam', which Apple developed to recycle iPhones and remove components to be reused for other purposes - and not necessarily just for new electronic gadgets.

Daisy can handle nine types of iPhone, according to Apple. 'We created Daisy to have a smaller footprint and the capability to disassemble multiple models of iPhones with higher variation compared to Liam,' it explains.

Also, it can recover materials for which recyclers do not yet have the tools, the company claims.

The launch of the new robot comes a year after Apple announced that its smart phones and MacBooks of the future would be made out of 100% recycled materials.

Potholes 'to be filled with recycled plastic bags' in desperate bid to solve roads crisis

Potholes will be filled in with recycled plastic bags in an attempt to tackle the desperate crisis sweeping Britain's roads.

Years of neglect combined with the recent extreme weather has seen millions of potholes cause havoc across the UK.

Now, in a landmark trial, Fife Council is in negotiations to use a bitumen-substitute material called MR6 to repair damaged road services.

The company behind the idea, Carlisle-based MacRebur, has won financial backing from Sir Andy Murray and billionaire Virgin boss Sir Richard Branson and has already undertaken a £200,000 resurfacing scheme on the A7 in the Lake District.

Similar schemes are underway elsewhere in Europe, including the Netherlands.

With recent estimates suggesting it will cost £1.2billion to tackling Scotland's pothole backlog, planners are naturally keen to find innovative solutions.

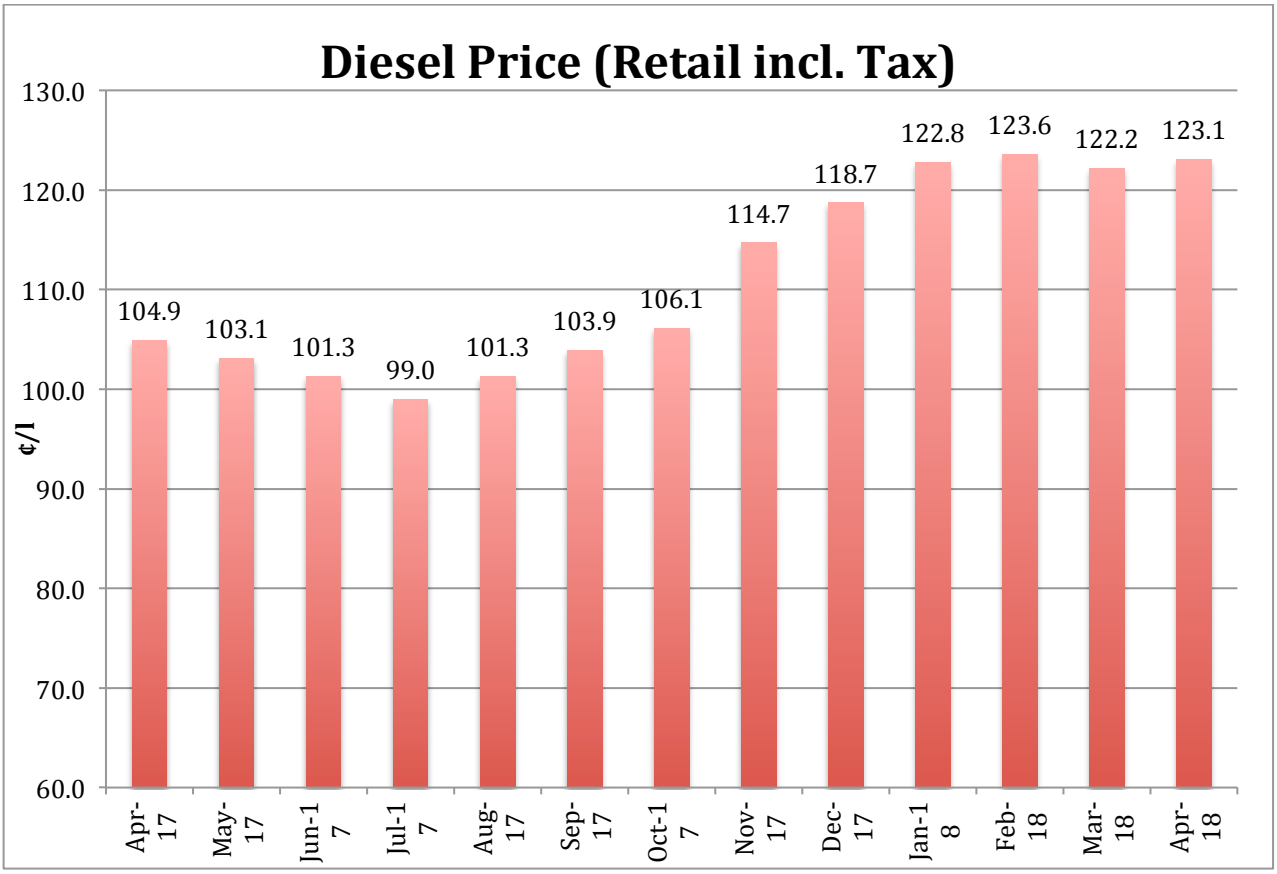
Tests suggest the MR6 filler is 60 percent stronger and lasts ten times longer regular asphalt.

Toby McCartney, MacRebur co-founder and chief executive, hit upon the idea while working in India for a charity helping people on landfill sites.

It would be wonderful to use these materials

Some of the waste plastic retrieved by them was put into potholes, had petrol poured all over them, and the rubbish set alight until the plastics melted into the craters.

Mr McCartney and his colleagues refined the idea, taking a mix of waste plastics which they turn into pellets which can be used for road repairs.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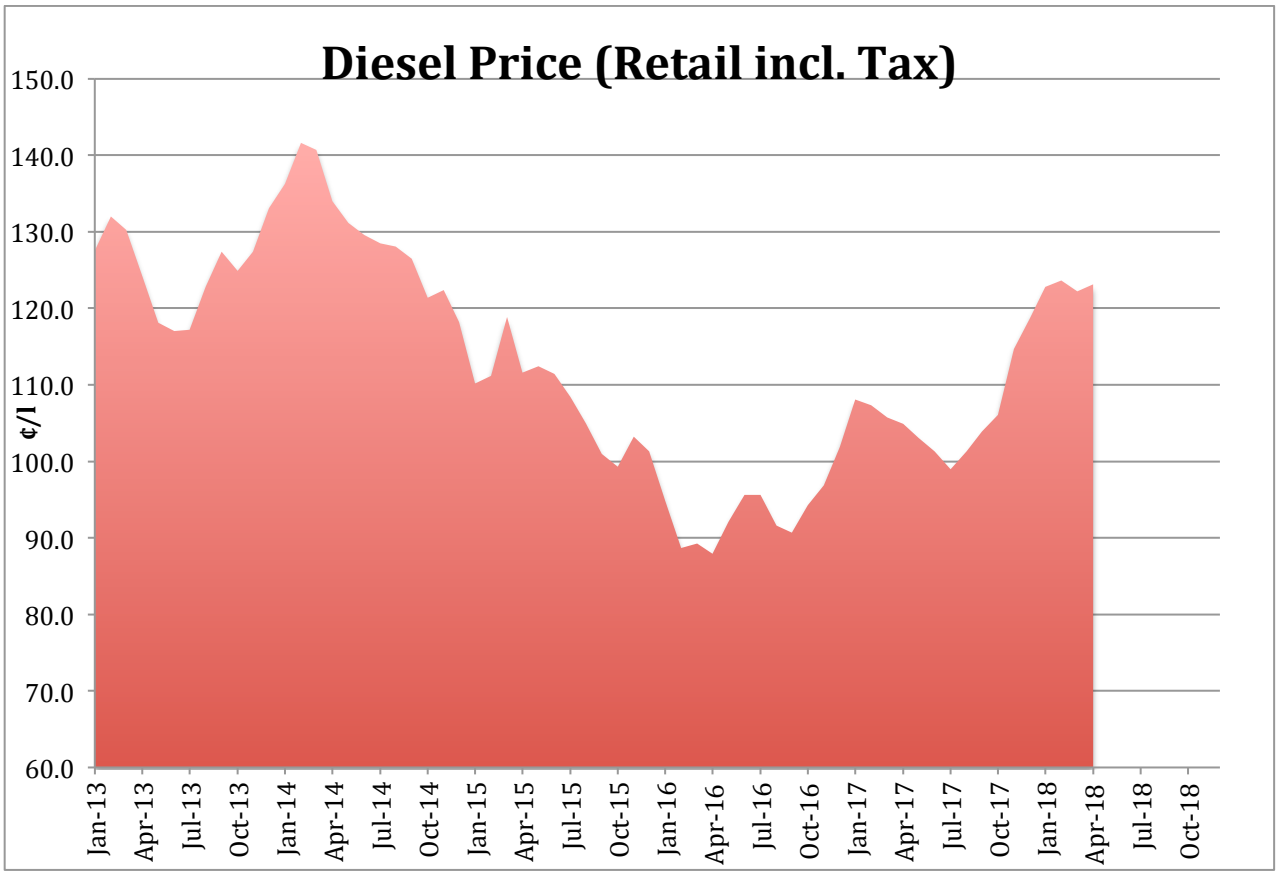
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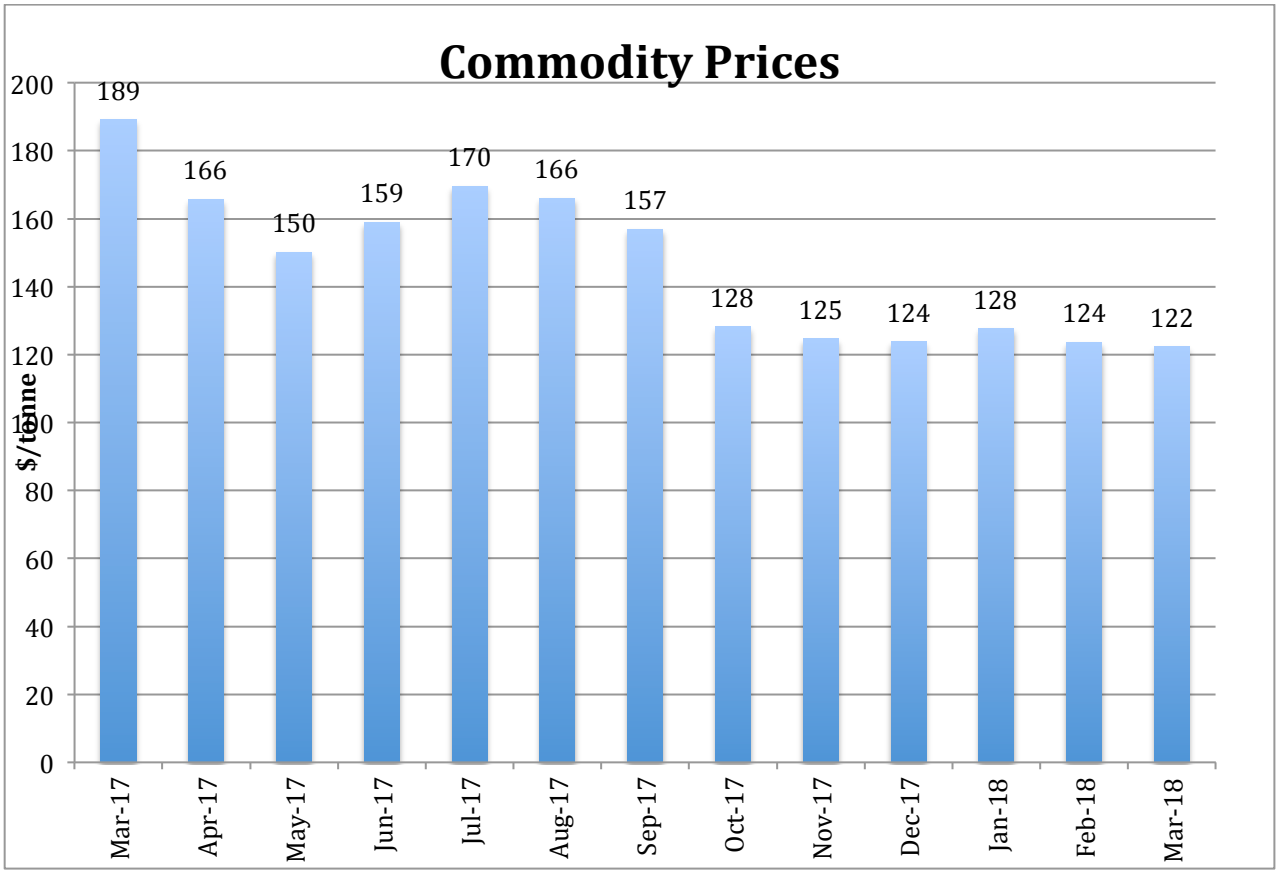
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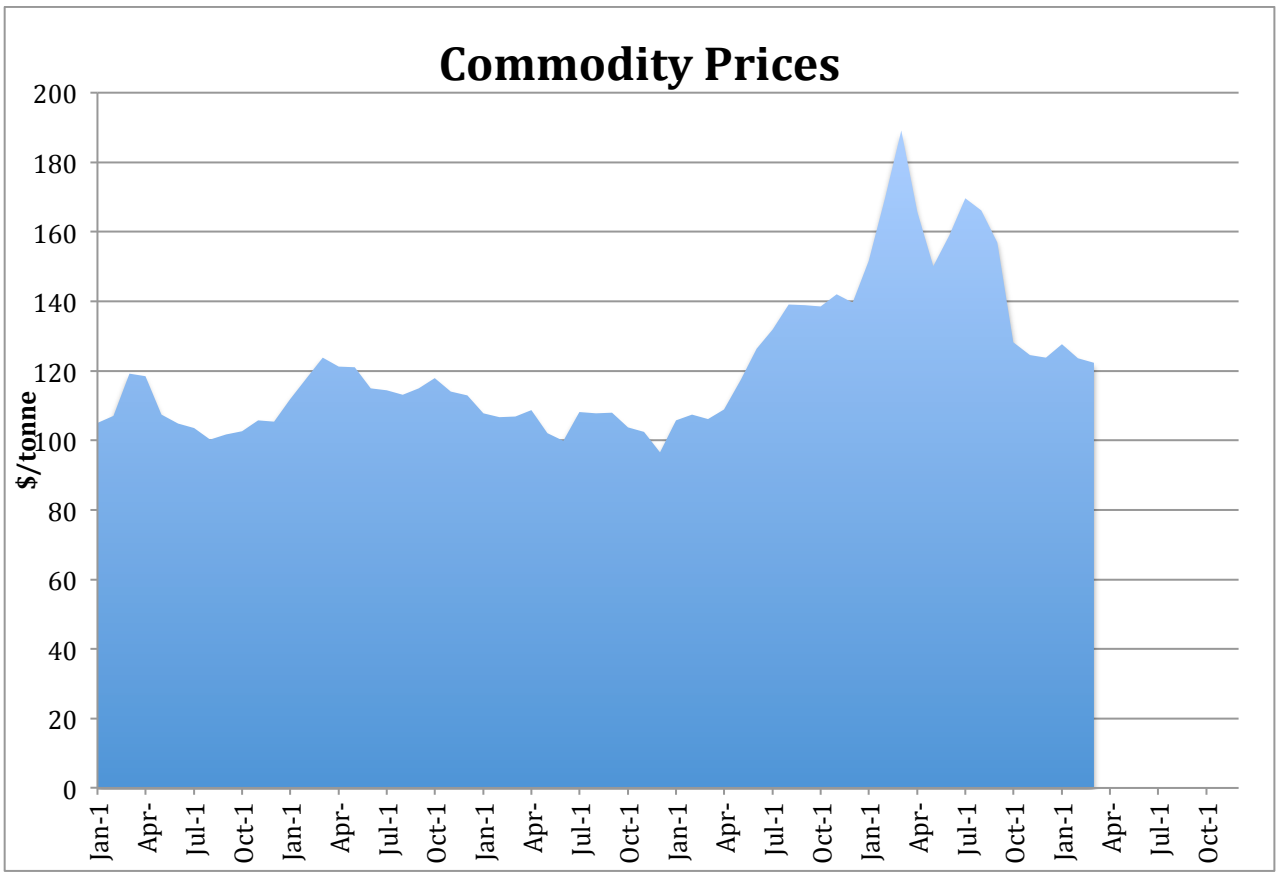
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