

## Lessons Learned

Despite all the positive impacts derived from the implementation of the projects, the assessment revealed a few elements that had not been anticipated during the project-design phase:

- In Mexico, it turned out difficult to carry out adequate and exhaustive tests on the electronic exchange of information on import and export of hazardous waste, owing to various changes in local computer systems and the lack of foresight and maintenance. This caused interruptions in the flow of information between the three countries.
- In Mexico, it was reported by interviewees that NOM-166 has had an important negative economic impact on the industry producing lead-acid emissions, given the substantial capital investments companies have had to make to comply with the new provisions.
- It was challenging to reach all beneficiaries and companies in Mexico that required authorizations to export hazardous waste to the US or Canada since the government platform was not sufficiently updated to include a section dedicated to disseminating and collecting the information.

## Recommendations

Following are recommendations that emerged from the assessment that could help increase the success of future projects on hazardous waste management:

- Reports, recommendations and project results need to be better disseminated in order to raise awareness among stakeholders.
- During the project-design phase, there needs to be a solid understanding of the differences in the national laws and regulations in Canada, Mexico and the US to ensure the effectiveness of the project and achievement of goals.
- In the future, it would be desirable to consider the socio-economic conditions of each of the three countries, in order to provide not only loans but also other incentives to stakeholders and sectors involved.

1. Pursuant to the North American Agreement on Environmental Cooperation (NAAEC) Article 13, the Secretariat may prepare a report on any matter within the scope of the annual work program.
2. CEC (2014). *Analysis of potential releases and approaches to quantifying releases of lead from secondary-lead smelters and other facilities that process SLABs* (Unpublished)
3. CEC (2015). *Environmentally Sound Management of End of Life Batteries from Electric Drive Vehicles in North America Final Report*. (<http://www3.cec.org/islandora/en/islandora/search/Environmentally%20Sound%20Management%20of%20End%20of%20Life%20Batteries%20from%20Electric%20Drive%20Vehicles%20in%20North%20America%20Final%20Report?type=dismax>)
4. CEC (2013). *Hazardous Trade? An Examination of US-generated Spent Lead-Acid Battery Exports and Secondary Lead Recycling in Canada, Mexico, and the United States*.

### Commission for Environmental Cooperation

700 de la Gauchetière St. West, Suite 1620  
Montreal (Quebec) H3B 5M2 Canada

Phone: 514.350.4300 Fax: 514.350.4314  
info@cec.org / www.cec.org



## Long-term Impact Assessment of the Sound Management of Hazardous Waste Work (1996–2014)



## Executive Summary

CEC's work on hazardous waste management spanned 18 years and included the following initiatives:

- Training and consolidating information-sharing among customs agencies regarding the illegal trade in environmentally regulated hazardous waste materials;
- Creating a series of comprehensive documents detailing the laws, regulations, trade patterns and enforcement experiences applicable to particular sectors;
- Developing technical guidelines and compiling best practices for the environmentally sound management of selected end-of-life vehicle batteries, including spent lead-acid batteries (SLABs).

In 2018, the CEC commissioned a report to assess the long-term impact of the CEC's hazardous waste management projects implemented between 1996 and 2014. The assessment concluded that these projects yielded several outcomes, including:

- Expediting the movement of legal materials across borders and supporting the efforts of Canada, Mexico and the United-States to implement the smart borders plan and related initiatives;
- Improving enforcement capacity, so that persons or entities illegally shipping or attempting to ship hazardous waste and materials, ozone-depleting substances, protected species and wildlife, or other illegal materials are stopped and appropriately penalized; and
- Promoting better information on North American hazardous waste movements.

The first series of projects on hazardous waste management were carried out as part of the environmental law enforcement work of the CEC between 1996 and 2009, and were designed to expedite the movement of legal materials across borders. They also included efforts to improve enforcement capacity to counter the illegal shipment of hazardous waste and materials, ozone-depleting substances, protected species and wildlife, or other illegal materials that could threaten human health or the environment in the territories of the NAFTA Parties.



An additional project on the Sound Management of Electronic Wastes in North America, under the CEC Operational Plan 2011–2012, aimed to improve understanding of the transboundary movements (flows) of used and end-of-life computers and monitors in/from North America and enhancing capacities of the e-waste refurbishing and recycling sectors to implement environmentally sound management practices.

Finally, another project (2013–2014) focused on developing technical guidelines on environmentally sound management practices for secondary lead smelters and other facilities that process SLABs, including best practices and technologies for collecting and recycling in a manner that protects the environment, and the health and safety of workers and the public. This project followed a Secretariat independent report on spent lead-acid battery exports and secondary lead recycling in the three countries.<sup>1</sup>

## Findings

### Sound management of hazardous waste projects (1996–2009)

*Did the projects achieve their environmental objectives as stated in the CEC Operational Plans?*

In the case of the sound management of hazardous waste projects (1996–2009), evidence shows that the work carried out by the CEC successfully addressed the main objective of enhancing enforcement capacity within the three countries as it relates to transboundary hazardous waste movement, more specifically to:

- Improve electronic and other information exchange on North American environmentally related trade, data, laws and policies; and
- Build capacity in legal and judicial systems.

The projects also represented the first trilateral engagement of customs and enforcement officials with environmental agencies to exchange information and intelligence data. By facilitating the exchange of data on non-compliant imports entering North America, the projects demonstrated the value of a coordinated approach to help “raise the bar,” in terms of environmental regulation and practices. The work also addressed a gap in regulatory coverage in Mexico and allowed a more seamless approach to transboundary movement of hazardous waste. Finally, findings also showed that the engagement of senior enforcement management in the three countries encouraged participation from other enforcement agencies.

#### Outcomes

The analysis highlighted the value of dialogue and information-sharing between environment, transport, and customs officials that increased over the years and clearly assisted the three countries in finding sound trilateral solutions to the environmental challenges posed by increased cross-border trade and transportation.

Following are some of the trilateral outcomes attributed to the work undertaken by the CEC:

- Increased awareness and knowledge of the regulations for controlling the traffic of Ozone-depleting Substances (ODS) and preparedness of authorities to combat illegal traffic of ODS and hazardous waste by stopping illegal shipment.
- A set of protocols and procedures in place for the Trilateral Intelligence-led Enforcement (ILE) information exchange system.
- Increased international cooperation to tackle the illegal trade of hazardous waste inter alia with Interpol and China.
- The promotion of knowledge and understanding of the legal and illegal trade in environmentally regulated materials and the creation of partnerships between Canada, Mexico, and the United States, which induced technical cooperation and technology transfers.
- Enhanced capacity of authorities in Mexico to institutionalize environmental training for judges and prosecutors, thus reinforcing the effective enforcement, compliance and application of law by the judiciary across North America.
- An online capacity building training course for companies on the environmental sound management of hazardous waste was launched in 2013. This key tool helped the private sector comply with the multiple domestic laws and international agreements. The training course is still used nowadays and represents the sixth most-visited page on the CEC website, with 13,779 views since June 2015.

## Assessment Methodology

Guided by the Open Standards for the Practice of Conservation developed by the Conservation Measures Partnership, the long-term impact assessment was designed to evaluate whether the various hazardous waste management projects have achieved their environmental objectives (as stated in the project descriptions), extract some lessons learned from the implementation, and make recommendations for any future hazardous waste work.

From an initial sample of 40 individuals who were associated with the implementation of the sound management of hazardous waste work (1996–2014) in Canada, Mexico and the United States—CEC staff, partners and government experts implementing the referred projects—seven individuals were interviewed, using open-ended questions.

In addition to the interviews, the assessment also considered information from CEC reports, as well as documents and communications associated with the development and implementation of the projects.

## E-waste projects: Sound Management of Electronic Wastes in North America

*Did the projects achieve their environmental objective(s) as stated in the CEC Operational Plans 2011–2012 and 2013–2014?*

In the case of the e-waste projects, evidence shows that the work carried out by the CEC was relatively successful in addressing the main objectives to:

- Estimate the amounts of transboundary movement of used and end-of-life computers and monitors within North America, and from North America to the rest of the world;
- Enhance the capacity of the e-waste refurbishing and recycling sectors to implement environmentally sound management practices; and
- Contribute to the implementation of intelligence-led enforcement in the region, increased identification of non-compliant shipments and targets, and coordination among relevant agencies in sharing hazardous waste-relevant information and expertise in regulatory and enforcement landscapes.

Following are some of the trilateral products and outcomes:

- The two workshops on “E-waste Recycling and Refurbishing: Environmentally Sound Management Practices,” held in Guadalajara, Mexico and Toronto, Canada, in 2013, brought together 125 participants from organizations and companies engaged in e-recycling. The workshops were instrumental in fostering alliances and partnerships between recycling companies from the three countries, thus facilitating the exchange of best practices and solutions associated with e-waste recycling and disposal regulations.
- A CEC web-based microsite was created in 2016 to disseminate relevant information on environmentally sound management of hazardous waste materials. It is still in operation and has attracted 925 visitors to date.
- A report commissioned to measure the trade flows for used and end-of-life computers and monitors was published in 2017. It has been downloaded 818 times from the CEC website to date.

## Spent Lead-Acid Batteries (SLABs) project: Environmentally Sound Management of Selected End-of-Life Vehicle Batteries, Including Spent Lead-Acid Batteries (SLABs), in North America

*Did the project achieve its environmental objectives, as stated in the CEC Operational Plan 2013–2014?*

In the case of the SLABs project (2013–2014), evidence shows that the work carried out by the CEC successfully addressed its main objectives, which were to:

- Enhance capacity to implement environmentally sound management practices for SLABs, mainly in Mexico;
- Assess the scope and magnitude of the issue, and identify opportunities for improvement or corrective measures by industry and governments; and
- Foster the protection of human health and the environment by reviewing SLABs quantities in each country as well as current and prospective end-of-life technologies/mechanisms.

Following are some of the trilateral products and outcomes:

- In 2014, guidelines for SLABs processors were developed and published by the CEC. The guidelines have been downloaded 213 times.
- A first report<sup>2</sup> on potential releases of lead and approaches to quantify releases of lead from SLAB processing facilities was completed, and another one<sup>3</sup> on the types, content, use, and disposal of batteries used in electric vehicles was also achieved and published in the CEC Virtual Library.
- In the United States changes were brought to the Federal regulations for all imports and exports regarding SLABs. The CEC’s work has had some impact on these changes as evidenced in the Rationale of the Hazardous Waste Export-Import Revisions rule, issued by the US Environmental Protection Agency (EPA) on November 11, 2016. The Rationale makes reference to the recommendations contained in the Secretariat’s independent report on Hazardous Trade.<sup>4</sup>
- In Mexico, the environmental official standards NOM-166 was issued in 2014 in an effort to align with SLABs regulations in Canada and the US. It helped reduce significantly the environmental impacts of SLABs. There is anecdotal reporting that officials involved in issuing these standards claimed the information developed by the CEC made it possible for *Secretaría de Medio Ambiente y Recursos Naturales* (Semarnat) to publish NOM-166.