

*The **AMERICAN CHAMBER** of Commerce in Mongolia*

**AMCHAM POSITION PAPER:**  
ENVIRONMENTAL DAMAGE  
OF OLD CAR BATTERIES AND  
RECOMMENDED SOLUTIONS

November 2020

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## **Background:**

This position paper, titled “Environmental Damage of Old Car Batteries and Recommended Solutions”, was developed by the American Chamber of Commerce in Mongolia (AmCham Mongolia), the Mongolian Automobile Distributors’ Association (MADA), and Authority for Fair Competition and Consumer Protection of Mongolia (AFCCP). The position paper outlines the environmental damages and health hazards for the population of Mongolia caused by old car batteries, and proposes certain policy recommendations based on local initiatives and international best practices in handling these issues.

The challenges and recommendations were developed with input from key stakeholders, raised and discussed during the Environmental Damage of Old Car Batteries and Recommended Solutions policy workshop held on October 13, 2020. The workshop was organized by AmCham Mongolia, MADA, and AFCCP, in cooperation with the Ministry of Road and Transport Development of Mongolia, Ministry of Nature and Environment of Mongolia, and the Ulaanbaatar Specialized Inspection Agency.

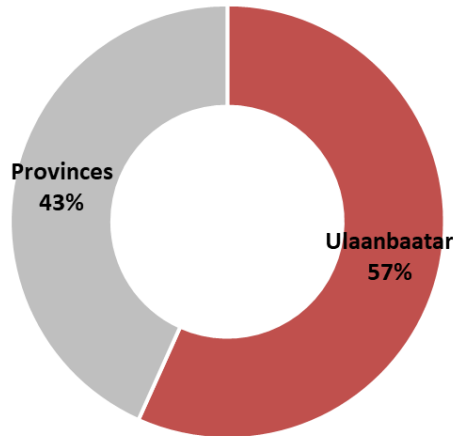
AmCham Mongolia, namely its Auto and Machinery Committee, and MADA stand ready to discuss these challenges and suggested solutions with the state’s authorities to make sure that necessary actions are taken to minimize risks and to avoid their potential negative impact on people and the environment.

## Policy Issues

### Increasing number of imported cars

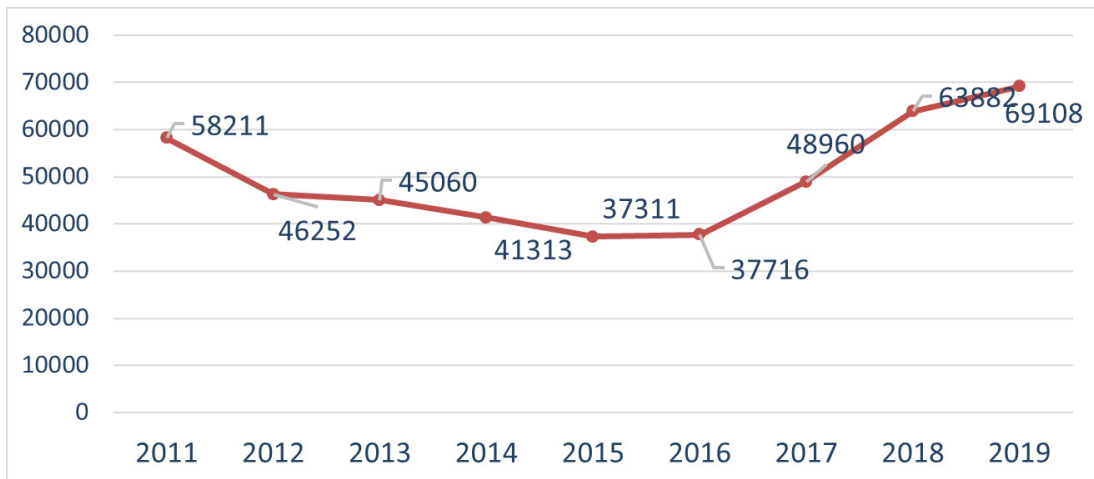
As of the end of 2019, the number of registered vehicles reached 934,142: 529,802 are in Ulaanbaatar and 404,340 are in the provinces.

#### PERCENTAGE OF VEHICLES IN MONGOLIA



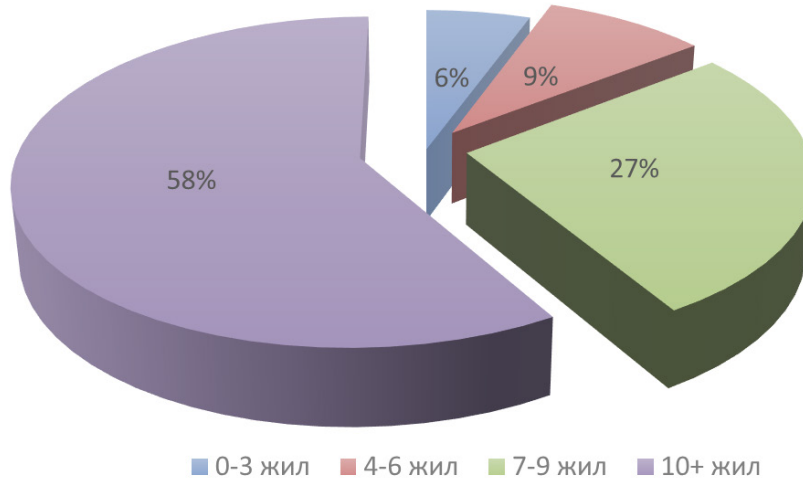
Between 2011-2019, every year Mongolia imported about 38,000 vehicles, but the overall number of imported vehicles in the country has increased since 2017, rising from 37,716 to 69,108 by the end of 2019. (Source: Report on Imported Vehicles, MADA, 2019)

#### NUMBER OF VEHICLES IMPORTED BETWEEN 2011-2019



In 2019, Mongolia imported a total of 69,108 vehicles. Fifty-eight percent of these vehicles were older than 10 years, 27 percent were 7-9 years old, 9 percent were 4-6 years old, and 6 percent were 0-3 years old, as shown below:

### AGE OF IMPORTED VEHICLES



Most of the old vehicles used in Mongolia are Toyota Priuses. Currently, there are 170,000 Toyota Priuses in Mongolia, and 30,000 more Toyota Priuses are being imported each year. The average age of these vehicles is 10 years or older: 25 percent are 7-9 years old and 75 percent are more than 10 years old. The factory guarantee for the battery of a Toyota Prius is eight years or 160,000 kilometers, and the average price of a new battery is 2,500 USD.

### Dangerous waste of old car batteries

As of May 13, 2020, the total number of vehicles in Mongolia was 990,856. As a result, there are 271,000 old car batteries per year. here are 140 entities and organizations, which import and sell 210,000 car batteries per year.

For instance, the amounts of lead at the car battery recycling plants of Zalamt Gol LLC and HBMC LLC are 4.5-100 times higher, the amount of cadmium is 0.6 – 13 times higher, and the amount of sulfate is 0.3-466 times higher than the maximum approved amount stated in Mongolian Standard MNS5850: 2008 concerning soil pollution. These large amounts of pollutants are causing sulfur and heavy metal pollution for employees and residents living near these plants.

Currently, there are 118 locations where secondary raw materials are collected in Ulaanbaatar. The Ulaanbaatar Specialized Inspection Agency conducted three inspections at these locations in 2018.

<sup>1</sup> <https://carbrain.com/blog/hybrid-battery-repair-or-replacement>

<sup>2</sup> Data from Capital City Specialized Inspection Agency, October 13, 2020





As a result of these inspections, it was concluded that it was necessary to establish a recycling plant for car batteries as soon as possible, after selecting an appropriate location. As the old recycling plants were closed down due to health and environmental hazards, there is the danger of not being able to monitor the exact locations where old car batteries are being disposed of.

### **Global best practices**

In the interests of the environment, the automobile industry is moving towards battery electric vehicles (BEVs). Traditional car manufacturers have existing BEVs and plan to increase their range in the next 3-5 years. Plus, there are new companies that make only BEVs, the most famous being Tesla. <sup>3</sup>

Batteries are some of the most toxic and environmentally unfriendly products ever made, and fall into the same category as nuclear waste when it comes to the challenges of how to recycle and dispose of them safely.

Today, conventional cars (petrol/diesel) use a 12-volt lead acid battery. These typically have a lifespan of around five years and then must be replaced. Batteries are very toxic and should not be simply dumped in standard landfills, because they will contaminate both the soil and groundwater. Today, 99% of 12V lead acid batteries are properly recycled in the developed automobile global markets. There are many companies that process these batteries and either refurbish them or break them down for use in other products. The technology is well proven.

Today, in addition to conventional vehicles, we also have hybrid, mild-hybrid, and plug-in hybrid vehicles. These are all stepping stones to entirely electric vehicles. These vehicles typically use 48-volt batteries, which are bigger and heavier, but which also must be replaced over time. These require proper handling because, like smaller 12-volt batteries, they are potentially hazardous if not properly handled. Again, there are companies that specialize in handling these batteries.

Battery electric vehicles (BEVs) all currently use large lithium-ion batteries, which are high voltage, large, and typically weigh hundreds of kilos. These must only be handled by trained high voltage technicians, who install them in vehicles and manage them throughout their active life (7-8 years) because they are not only toxic but potentially explosive. Unlike lead acid batteries, only around 5% of lithium-ion batteries are currently recycled because the process is incredibly complex and expensive. Electric vehicle manufacturers are working with battery recycling/reprocessing companies, but it is still very much a work in progress. For example, Tesla currently works exclusively with Panasonic but is planning to develop its own batteries.

BEV batteries will evolve; they will become smaller, lighter, and more powerful, but they will always need to be handled properly. Lithium-ion batteries may even be replaced by other types of batteries, such as hydrogen fuel cells

<sup>3</sup> Ulaanbaatar Traffic Critical Issues & Solutions, presentation by Steve Potter, Managing Director, StarChase Automotive LLC, Mongolia



If Mongolia is to invest in battery handling facilities, it must team up with specialists from the private sector who have the expertise to handle all types of existing vehicular batteries. Our suggestion would be to short-list a few companies, contact them, and ascertain their interest in investing in Mongolia.

### **Recommended solutions:**

To resolve the issue of old car batteries, AmCham Mongolia, MADA, and AFCCP are recommending the following policy actions:

- Replace old batteries in imported vehicles in their country of origin
- Register batteries from imported and older vehicles
- Immediately commission a recycling plant for car batteries
- Upscale vehicle inspections by increasing the number of inspection categories
- Agree on a date after which the importation of RHD and old (7 years or older) vehicles will be banned: July 1, 2021 is one suggested timeframe.
- Bring vehicle usage taxes to the same level of excise taxes
- The Ministry of Environment and Tourism needs to meet with the owners of the closed recycling plants and arrive at solutions, restore the former recycling plants and commission their operations, and expedite environmental assessments for a new recycling plant.
- The Ulaanbaatar Mayor's office needs to resolve the issue of land for the car battery recycling plant.

### **The way forward**

Certainly, addressing the identified policy issues is a complex and time-consuming process that may face resistance from different stakeholders. There is also a high economic cost issue involved with implementing these initiatives.

However, the best time for elected representatives to introduce policies that will be unpopular with some is just after they are elected, so that they have a full term (four years) for the majority of people to accept them. Public agencies need to take long-term, practical, and bold measures to tackle these issues, rather than relying on short-term solutions.

AmCham Mongolia, MADA, and our members are eager to support the government, to the extent possible, in addressing these challenging issues. Specifically, AmCham will be able to provide expert views and share international experiences in dealing with these issues; for example, by co-organizing a public-private dialogue to discuss solutions to these challenges.

The AFCCP will work toward ensuring the coordination of government agencies in tackling this issue, and the actual implementation of these initiatives and policy recommendations by the government, relevant ministries, and agencies.