Current Status of Japan’s Automobile Recycling System

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ABSTRACT

In this paper the author would like to consider on Japanese automobile recycling system from four points of view. The basic system concept of the automobile recycling law consists of 1) Prevention of illegal dumping, 2) Sustainable operations of ELV recycling and appropriate process, 3) Minimizing the final disposal volume, and 4) Encouragement of using the principle of competition among related businesses involved based on the existing role allotment. This report should outline the current status and issues for 1) to 4).

Keywords: Japanese automobile recycling law, illegal dumping, ELV, ASR, ELV recyclers

INTRODUCTION

It has passed almost ten years since the “Act on Recycling, etc. of End-of-Life vehicles,” or hereafter called the “Automobile Recycling Law,” took effect on 2005. Among other laws for establishing the cycle society, in other words 3R based Society, Junkangata-Shanakai, in Japanese, the automobile recycling law is distinctive from others such as container and packaging recycling law as well as electric household appliance recycling law because it makes detailed information and data of processes and recycling open to the public. Unlike container and packaging, and electric household appliances, automobiles entail registration and deregistration systems, and thus “invisible flow” does not happen. However, the Ministry of Land, Infrastructure, Transport and Tourism hardly take part in the automobile recycling law. Instead, the competent ministries of the law are the Ministry of Economy, Trade and Industry and the Ministry of Environment.

Under the automobile recycling law, new operations started with highlights of making a full use of Information Technology to secure the appropriate process and recycling, as well as of disclosure of the use of deposit (prepaid recycling fees, etc.). As the result, the number of processed/recycled ELVs is perfectly monitored up to the last digit through the “electronic manifesto” system. The system has been developed from the beginning by automakers and related parties under the leadership of METI. The cost of the electronic manifesto development would lower if it makes linkage with the Motorcar Total Information Advanced System (MOTAS) of MLIT. That could make registration/deregistration procedures more simple, as well.

The automobile recycling law was enacted in 2002. When illegal dumping of automobile shredder residue (ASR) was reported in Teshima Island, the automobile recycling industry was facing issues for securing the final disposal site. During late 1990s to 2001, the market price of steel scraps remained sluggish and the costs of the landfill of ASR made from ELVs were hiking. So business conditions of shredder operators, who crashes vehicle bodies and recycle scraps for a living, really worsened and vehicles are not processed in some areas.
To address above-mentioned issues, the ASR was considered potential waste, and the automobile recycling law assigned automakers, etc. (etc. mainly means importers) to take responsibility for ASR processing where “extended producer responsibility” was applied. This is a distinctive feature of Japan’s automobile recycling law. In 1997, five years before the law enacted, the Ministry of International Trade and Industry (former METI) announced the ELV recycling initiatives in which the target recycling rate was set at more than 95 percent in 2015. The target setting is affected by the ELV Directive of European Union which went into effect in October 2000.

The basic system concept of the automobile recycling law consists of 1) Prevention of illegal dumping, 2) Sustainable operations of ELV recycling and appropriate process, 3) Minimizing the final disposal volume, and 4) Encouragement of using the principle of competition among related businesses involved based on the existing role allotment. This report should outline the current status and issues for 1) to 4) as follows.

Problems with illegal dumping

According to a survey conducted by the Ministry of Environment, approximately 160,000 ELVs were found as illegal dumping or illegally stored as of the end of March 2003. Illegally dumped ELVs are mostly identified in remote islands. About 12.2 percent or 20,000 units of total ELVs illegally dumped were found in such islands. Recyclers capable of handling appropriate process are not operated in most of remote islands, so people have to transport ELVs to the mainland Japan.

METI and MOE took the matter seriously and allowed part of deposit of recycling fees to be used as aids for transportation of ELVs from remote islands and for removal of massive illegal dumping. The deposit is managed by a designated corporation called the Japan Automobile Recycling Promotion Center. Unfortunately, the safety net does not work effectively. Although transport cost aid is found to some extent after the law was introduced, however, such aid for removal of massive dumping was executed for only two cases, for removal in Amami City and Sapporo City. The author is deeply disappointed that the authority did not allow the deposit to be used for removal aid of disaster-damaged vehicles after the Great East Japan Earthquake and tsunami for the reason that the removal of damaged vehicles by the disaster is beyond the scope of the automobile recycling law. The aid was applied for removal of only few vehicles with missing license number plates. The author strongly felt that more speedy decision must be needed to help reconstruction of disaster-hit areas.

The latest data released by MOE showed that illegally dumped vehicles totaled 7,334 units, including 793 in remote islands as of the end of March 2014. The figure was by far small compared to that in 2003. The primary reason for the favorable change, however, is due to price hike of scraps and other materials of automobiles, which continued to the year of global economic crisis triggered by the Lehman Shock. The market price still allows businesses to get profit today. At the same time, illegal dumping would spread easily only if the material prices become stagnant.

Sustainable operations of ELV recycling and appropriate process

According to a report on the operations of the automobile recycling system for the previous year released in the annual METI/MOE joint meeting, the system was evaluated that “served us well in general.” On the other hand, automobile recyclers are recently suffering from increasing exports of used vehicles. Such
exported vehicles include even older vehicles which would have been dismantled in Japan before the law went into effect. When the used vehicle is exported, recycling fee should be returned to the final owner (exporter in most cases). This acts as incentives for exporters. The automobile recycling law thus is often ridiculed as “used vehicle export promotion act”. (The reason is that recycling fee is needed to operate the automobile recycling law in Japan to the end and it should be returned to owners if the vehicle is exported to overseas. Actually, the refund amounted to 10,594,096,000 yen in fiscal 2010 and it increased to 16,168,539,000 yen in FY2013)

Minimizing final deposit volume

With regard to the above goal, it is highly evaluated. Appropriate process of ASR, the final residue of ELVs, is conducted by the team TH consisting of Toyota, Honda and others and the team ART of Nissan, Mitsubishi Motors, Mazda and others, incorporating the principle of competition. At present, the ASR recycling sites include facilities of nonferrous metal smelter, gasification melting furnace, and cement plant. In fiscal 2013, ASR landfill by team ART was zero, while that by team TH is also heading for zero.

The ASR recycling is funded with the deposit of recycled fees. In the beginning, automakers posted red inks in financial results. However, it turned into profitable recently. This is primarily due to active involvement of automakers of each team. Actually they encouraged as many related parties as possible to join the ASR recycling. In fiscal 2005, most automakers had reported operating losses, including Toyota and Nissan. Recently, it turned into profitable in most automakers. In fiscal 2013, Toyota posted a net profit of 540.0 million yen, while Nissan announced 43.0 million yen of profit. Automakers thus began to lower the ASR recycling costs for selected models of vehicles.

Existing operators and new comers

As mentioned above, the “Encouragement of using the principle of competition among related businesses involved based on the existing role allotment” was the engine for establishing the automobile recycling law. So far, the government had not provided any instructions or support for the “vein” part of the automobile industry, especially for the automobile dismantling businesses. Dismantler had not been recognized as an official industry by the government. There were no relations and exchanges between the “artery” part of the industry such as automakers and the “vein” part, exclusive of a limited part of the country.

In accordance with the introduction of the automobile recycling law, the Japan Auto Recycling Partnership was established (JARP) to secure fluorocarbon gas collection and appropriate processing of airbags. JARP also is responsible for collecting recycling fees for fluorocarbon gas collection and doing payment to dismantlers for the appropriate process of airbags. For that reason, JARP members visit local dismantlers to inspect whether collection and processes are conducted appropriately for fluorocarbon gas and airbag. This enabled both part of the industry, “artery” and “vein”, communicate each other. For some dismantlers who sell used parts as their main business, the government designates them as used parts wholesaler and provides aid to help expand the recycled parts market.

A lot of new comers from different businesses entered the automobile recycling business before and after the
law’s introduction. They were from automotive industry such as car dealers, auto repair shops, gas stations, as well as from steel makers, mining companies, and waste management companies. By the way, the most important key to doing automobile recycling business is to how to collect ELVs. Existing recyclers have their own channel of ELV collection from local car dealers and auto repair shops. New comers, however, were hard to find such trade channels. At that time, many new comers happened to join a new recycling business in which they made successfully bids for used vehicles at auto auctions and then dismantled them as ELVs. Today, even older recyclers procure ELVs at auto auctions. Unexpected new comers appeared in the industry after the introduction of the law. They were foreign operators. Especially, Pakistani businessmen were positive. They used to do exports of used vehicle and then, through the firm network based on the regional bond and connection, got useful information on the demand for replacement parts in overseas market. Finally, they obtained official licenses of automobile dismantling in Japan, whereby shipping such used parts by containers to overseas. Those foreign and licensed dismantlers get used vehicles at auto auctions for these days. This is a really international development of automobile recycling.

To make matters worse, younger consumers are going away from cars, and minivehicles are increasing in the market, which are less attractive for recycling. Actually, it is forecasted that the ELV generation is declining in the future. Under these difficult situation, not a few dismantlers shut down business. Although locations of ASR recycling facilities increased compared with those at the time of introduction of the law, however, not a few operators withdrew so far.

CONCLUSION

At present, the automobile recycling law undergoes the second review work, which is scheduled to be taken once in five years. The most focused points are as follows: To have the low provide flexible respond to allow recycling fee deposit to be used for contingency situation such as the Great East Japan Earthquake; Information provision regarding appropriate recycling of the next-generation vehicles which are expected to expand, and infrastructure improvement; and A serious discussion is desired about a workable system for strongly promoting the use of reuse parts (e.g., “green procurement” to be applied when the car being repaired/parts replacement).

Note: The report was a modified version of the original contribution to *Environmental Economics and Policy Studies* 8-1, in Japanese, and then translated in English.