E-BIKES REGULATION IN BEIJING*

YU Lingyun**

SHI Lidong***

ZHAO Lijun****

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** YU Lingyun, Professor and Vice-dean of Tsinghua University Law School.

*** SHI Lidong, Lecturer, Soochow University Kenneth Wang School of Law; Ph.D. in law, Tsinghua University.

**** ZHAO Lijun, Lecturer, Beijing Administrative College; Ph.D. in law, Tsinghua University.
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Abstract

E-bikes regulation is a comprehensive urban traffic management, which connects all links and involves the participation of all interested parties. In Beijing, the E-bike governance has been changed from “prohibition” to “regulation”, which mainly concentrates on three aspects: product quality, registration for license plates, and management of non-standard vehicles. Product Catalog is an administrative guide demonstrating national standards that connect various regulation means: E-bikes should be qualified under the Catalog; the department of transportation manages the registration of electric bicycles and the application of license plates through the Catalog. Registration and license plates provide the transportation police with a means to effectively control the E-bikes running on the road. The transitional period of non-standard-vehicles is a beneficial attempt to balance the public’s well-being, government’s power, and citizens’ rights and obligations.

I. INTRODUCTION

In order to regulate traffic congestion and alleviate air pollution, Beijing has issued traffic control policies such as restricting the purchase of motor vehicles and prohibiting the use of motorcycles. The electric bicycle (hereinafter referred to as “E-bike”), standing out for being convenient, environmentally friendly, and cost-efficient, has been popular since it entered into the market. E-bike serves as an alternative means of transportation highly preferred by the public, especially the low-and-moderate-income population. As is estimated, there are roughly 4 million E-bikes in Beijing at present, with an average annual growth of 800,000 E-bikes.\(^1\)

However, the rise of E-bikes has brought about various management problems mainly centering around vehicles and riders.

On one hand, the majority of E-bikes fail to meet national standards. Among the E-bike models\(^2\) in the market, many have the

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\(^1\) Data come from the presentation of Mrs. Guo Jinzhi, President of Beijing Bicycle & Electric Vehicles Industry Association.

\(^2\) Those E-bikes including the standard E-bikes and non-standard ones. Before 15th April 2019, non-standard E-bike means E-bike out of the national standard (GB 17761-1999) but meet the local standard,
problems of being overweight and over-speeding. Low-quality reflection devices below the national standard also pose major safety risks. According to the results of E-bike quality-monitoring announced by the Beijing Administration for Industry and Commerce on May 13, 2013, a total of 10 E-bike models were categorized as unqualified products; three other models did not meet the requirements of national standards though they were categorized as qualified products.³

On the other hand, E-bikes have invoked traffic accidents with high mortality rates and noticeable violations of traffic rules. In 2004, the nationwide number of deaths in traffic accidents caused by E-bike was 589 and the number of injuries was 5,295.⁴ In 2013, the number of deaths surged to 5,752 and the number of injuries reached 29,010.⁵ During this decade, the number of deaths has increased by 8.8 times and the number of injuries has increased by 4.5 times. There are three types of common violations of traffic rules. First, the majority of E-bikes are not registered with license plates. A field research of E-bikes on the street of Beijing on May 24, 2012 showed that, of 296 E-bikes passing by in more than 40 minutes, only less than a quarter put on especially on the factors of weight and battery power. It is legitimate to make local standards because of the vast majority of factors in that national standard is just recommendatory rather than compulsory. See Guojia Zhiliang Jishu Jianduju (State Bureau of Quality & Technical Supervision), GB 17761-1999, Diandong Zixingche Tongyong Jishu Tiaojian (Electric Bicycles—General technical requirements) (1999), invalidated by GB 17761-2018 (2018). However, there was no E-bike manufacturer in Beijing, which means the quality inspection department in Beijing cannot inspect the productive process of E-bike according the local standard enacted by other provinces. More details will be discussed in the Part V.

³ According to another quality monitoring result two months later, 13 models were determined as unqualified products; another 2 models did not meet the requirements of national standards although they were determined as qualified products. See Beijing Shii Gongshangju Liutong Lingyu Diandong Zixingche Zhiliang Jieguo Gongshi (北京市工商局流通领域电动自行车质量监测结果公示) [Announcement of Quality Monitoring Results of E-bikes in Circulation Area in Beijing], BEIJING GOV’T (May 13, 2013), http://gsj.beijing.gov.cn/gzfw/spzlgs/spzlgs/201801/t20180109_1388843.html [hereinafter Announcement of Results]; Announcement of Results, supra note 3, BEIJING GOV’T (July 10, 2013), http://gsj.beijing.gov.cn/gzfw/spzlgs/spzlgs/201801/t20180109_1388855.html; Announcement of Results, supra note 3, BEIJING GOV’T (Aug. 2, 2013), http://gsj.beijing.gov.cn/gzfw/spzlgs/spzlgs/201801/t20180109_1388865.html.


license plates. Second, many E-bikes surpass the speed limits. A research carried out at the intersection of East 3rd Ring Rd. and North Chaoyang Rd. in Beijing on the morning of November 29, 2013 showed that among the 68 E-bikes passing by in 10 minutes, 80% of them surpassed the national standard speed of 20 km/h. Third, E-bike riders generally lack sufficient knowledge of the traffic rules and are unaware of the related safety risks. Based on a questionnaire conducted by the Beijing Bicycle & Electric Vehicles Industry Association, 80% of the respondents did not know the correct answer to questions of riding speed limit. Meanwhile, the respondents failed to recognize the safety risks of charging E-bikes. In addition, an empirical study carried out in an intersection in Beijing showed that among the 222 E-bikes surveyed, 138 went through the red light, accounting for 62% of the total amount surveyed.

In this context, Beijing has introduced stricter regulations on E-bikes since the end of the last century. During the past decades, the regulations have been transformed from prohibitive policies to normative regulations.

II. MANAGEMENT MODE: PROHIBIT OR REGULATE

Since the rise of E-bikes, the executive authority in Beijing has been keenly aware of the impacts they would bring to urban traffic control. For example, E-bikes are included in the scope of non-motor vehicles and can run in bikeways, but they run much faster than non-electric bicycles, thus posing a greater risk to bicycle riders. Unfortunately, according to the current Law of the PRC on Road

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7 See Xi Nan (习楠) & Zhao Xibin (赵喜斌), Bacheng Chaosu Beihou de Biaozhun zhi Kun (八成超速背后的标准之困) [80% E-bikes Over Speeding], BEIJING WANBAO (北京晚报) [BEIJING EVENING NEWS], Nov. 29, 2013, at A17.


Traffic Safety (2011 revision) (hereby referred to as “RS Law”) in China, E-bikes are not covered by the scope of motor vehicles and thus cannot run in the motor way. In 2002, Beijing Municipal Public Security Bureau issued the Notice on Enforcing the Management of E-bikes, which stipulated that all E-bikes should be prohibited from running on the roads in Beijing from January 1, 2006. However, the above-mentioned decision was abolished at the end of 2015 and E-bikes were again allowed to run on the road after being registered and granted with a license plate.

The management mode of E-bikes in Beijing has been changed from “prohibition” to “regulation”, which not only guarantees the welfare of citizens\(^{10}\), but also adheres more closely to the rule of law. The reason is that prohibiting E-bikes from running on the roads lacks legitimacy and is inconsistent with the principle of proportionality in administrative law. The principle of proportionality includes three sub-principles, i.e. “principle of suitability”, “principle of necessity”\(^{11}\) and “principle of proportionality stricto sensu”.\(^{12}\)

First of all, “principle of suitability” requires that the regulatory measures taken by the government must help to promote or achieve the goal that it pursues. It’’s observed that the decision makers’ original intention of the prohibition of E-bikes is to reduce the increasing traffic accidents caused by E-bikes. However, it is questionable whether the ban could truly achieve this purpose. On one hand, the cause of the accidents cannot be accurately assessed. It is uncertain whether the recently increasing mortality rate is attributable to the rider or the bicycle itself. In fact, many accidents happened because the riders lacked enough knowledge of traffic regulations or were unaware of the safety hazards. Under such circumstances, even if E-bikes are prohibited from running on the road, the riders could still engage in other dangerous activities that violate traffic rules, and thus threaten overall traffic safety. If there is no comparison between the

\(^{10}\) As we have mentioned above, E-bikes play a role of an alternative means of transportation and even becomes a preferred transportation by the public. Without E-bikes, it is inconvenient for citizens’ transportation—such a mega city in Beijing.

\(^{11}\) “Principle of necessity” is also called the principle of the “least restrictive alternative”.

\(^{12}\) For detailed interpretation of the principle of proportionality, see Yu Lingyun (余凌云). Lun Xingzhengfa shang de Bili Yuanze (论行政法上的比例原则) [On the Principle of Proportionality in the Administrative Law], 2 FAXUE JIA (法学家) [JURISTS’ REV.] 31 (2002).
accident rate of E-bikes and that of other alternative means of transportation, there is no guarantee that traffic safety can be improved after the prohibition of E-bikes.\textsuperscript{13} Once E-bikes are prohibited from running on the road, some people may possibly be forced to purchase a motor vehicle. The increased number of motor vehicles will significantly increase the rate of traffic accidents as well. Consequently, even if legislative measures are taken to prohibit E-bikes from running on the road, the purpose of improving traffic safety might still not be achieved.

Second, pursuing road safety should not be the only purpose for the government to regulate E-bikes. For one thing, as an important means of transportation, E-bikes fulfill the urgent needs of citizens. For another thing, an integrated E-bike industrial chain has already been formed. According to the estimates of the Moped Scooter Specialized Committee of China Bicycle Association, the E-bike industry creates six-million jobs every year nationwide, and the entire industry scale reaches up to 200 billion yuan.\textsuperscript{14} When introducing regulatory measures of E-bikes, the government should consider coordinating and balancing the interests of all parties. Ideal regulations of the government should both guarantee road safety and consider the public’s travel needs and the economic benefits of the E-bike industry. Regrettably, given that the E-bike ban only focuses on the former, but completely leaves out the latter two considerations with respect to regulatory purposes, the ban is not appropriate.

Last, the “principle of necessity” is recognized in the administrative laws and it requires that among the various alternatives, the government should adopt the one with the least restrictive effects. In order to reduce the traffic chaos caused by E-bikes, the government should coordinate and balance the interests of various parties.

\textsuperscript{13} An analysis of the statistics of road traffic accidents in Zhejiang Province in 2004 showed that the number of deaths per 10,000 km caused by motors are much more than that caused by E-bikes, the former being 0.206 and the latter being 0.039. \textit{See} Christopher R. Cheery, Electric Two-wheelers in China: Analysis of Environmental, Safety, and Mobility Impacts (Spring 2007) (unpublished Ph. D. dissertation, University of California, Berkeley), SEMANTIC SCHOLAR, http://pdfs.semanticscholar.org/0efc/559764ab406f26d11d91f6587a7432d318.pdf.

\textsuperscript{14} \textit{See} Wang Ke (王克), \textit{Zhongguo Zixingche Xiehui Zhuli Che Zhaanshehui Jia Diandong Zixingche Guankong Shouci Fasheng: Diandong Zixingche Guankong Yingdang Gengju Lixing} (中国自行车协会助力车专委会就电动自行车管控首次发声：电动自行车管控应当更具理性) [The Moped Scooter Specialized Committee of China Bicycle Association Voicing on E-bikes Control for the First Time: Control over E-bikes Should Be More Reasonable], 15 \textit{ZHONGGUO JINGJI ZHOUKAN} (中国经济周刊) [\textit{CHINA ECON. WKLY.}] 70, 70-71 (2016).
has several alternatives, including encouraging citizens to use E-bikes appropriately or prohibiting E-bikes completely. The “principle of necessity” requires the government to act in the former way. The regulation which prohibits E-bikes fails to meet the requirement of necessity because it imposes more restrictions on citizens’ rights than other alternatives. Specifically, taking regulatory measures at the stages of production, sale and use will cause less harm to the E-bike industry and its users. This is also a more detail-oriented and humanistic management style. “Prohibition instead of regulation” is a traditional way of thinking and reflects the indolent attitude of the policymaker. The prohibition disregards the specific causes of the current E-bike problems. The irrational policy will be difficult to be implemented in practice because it is so unreasonable that almost no person will be willing to obey. Beijing government prohibited E-bikers from driving on the road, but it failed to prevent people from selling E-bikes. This led to a situation that the prohibition of E-bikes, ironically, incurred the increasing number of E-bikes. To improve the effectiveness of its regulation, Beijing has adjusted the original prohibition to conditional allowance for riding, i.e., normative regulation. At present, except several cities including Zhuhai, Shenzhen, Guangzhou and Dongguan, which still adhere to the complete prohibition of E-bikes, most cities in China allow qualified E-bike to ride on the road.

Since 2013, the Legal Affairs Office of the People’s Government of Beijing Municipality has cooperated with the Public Law Research Center of Law School of Tsinghua University to research and develop the Provisions on E-bikes management in Beijing, in order to initiate government regulation on E-bike control. In the research, it has been realized that the management of E-bikes is not only a task of the transportation department but also requires the comprehensive cooperation between the upstream production and sales, midstream riding, and downstream recycling and scrapping. Thus, it is necessary to review E-bike regulations under the background of the comprehensive traffic control in Beijing, in order to effectively solve

the management problems of E-bikes. This cooperative research has invoked the concern of Beijing Municipal People’s Congress, which began to formulate the Regulation on the Non-motor Vehicles Management in Beijing to fundamentally solve the problem of E-bikes from a broader perspective in the form of local regulations. In the process of formulating this regulation, legislators and legal experts repeatedly discussed several key points, which include product quality, registration for license plates, and management of non-standard vehicles. The Regulation on the Non-motor Vehicles Management in Beijing was eventually adopted by the Seventh Meeting of the Standing Committee of the 15th National People’s Congress of Beijing on September 28, 2008. This local statute includes seven chapters and thirty-five articles and comes into force on November 1, 2018.\(^\text{16}\)

**III. SOURCE MANAGEMENT: NECESSITY OF PRODUCT CATALOG**

**A. Operational Procedure of Catalog Management**

Catalog management is a new procedure added in the link of production and sales of E-bikes in Beijing, which requires the brand, manufacturer, model and technical parameters of E-bikes to be in line with national standards and to be announced to the public. Manufacturers and vendors can apply for the inclusion of e-bikes in the Catalog to the Industry and Commerce department. Then the department is able to add the standard e-bike to the Catalog according to their functions and powers.

Facing the huge E-bike sales market and a variety of products, consumers can be assured to buy a qualified E-bike as long as they check if the brand and model are at the Catalog. For vendors, a dynamic and open product Catalog can help to expand the channel to participate in market regulation and city governance. For traffic management department of public security bureau, when registering license plates and performing work on the road, officers can quickly identify whether the vehicle meets national standards, which will

accelerate license plate registration\textsuperscript{17} and improve administrative efficiency.

Therefore, the purpose of the Catalog is to establish a mechanism for linking the industrial standards stipulated by the state to E-bikes products in the market, which serves as a convenient measure for converting technical specifications into commodity trademarks.

\textbf{B. Essential Function of Catalog Management}

E-bike Catalog connects national standards and license plate registration, which can seemingly facilitate purchase and management. However, after in-depth study, it can be found that the functional essence of E-bike Catalog is determined by the “vacuum regulatory state” caused by laggard national standards and rapid industrial development.

International experience shows that among the possible management methods, the preferred choice to regulate E-bikes is to set E-bikes standards and specify technical parameters for safe operation.\textsuperscript{18} The shortcoming is that the standards are easy to be outdated. If the E-bikes standards cannot be changed and updated in time, it will easily cause technical rigidity and prevent the enterprise from innovation.\textsuperscript{19} E-bikes at the current market are produced in accordance with the Electric Bicycles – General Technical Requirements (GB 17761—1999). In accordance with this standard, the maximum speed of E-bikes should not exceed 20 km/h, and the weight of the whole vehicle should not exceed 40 kg. The speed limit rule is mandatory while the weight measure is recommended. As the public demand for speed, appearance and other performance of an E-

\textsuperscript{17} Vehicles can be called as E-bikes if they meet the national standards. If vehicles do not comply with the E-bike national standards, they should be called non-standard vehicles rather than E-bike. More details about non-standers vehicles will be discussed on 5th section. For national standards, see Guojia Shichang Jiandu Guanlizongju (国家市场监督管理总局) [State Admin. for Mkt. Regulation], GB 17761-2018, Diandong Zixingche Anquan Jishu Guifan (电动自行车安全技术规范) [Safety Technical Specification for Electric Bicycle] (2018), DELI WENKU (June 25, 2018), http://www.deliwenku.com/p-242771.html.


bike has continuously increased and E-bike enterprises have improved their production technology in recent years, most non-standard vehicles on the road have exceeded the standard. In fact, the average speed of those vehicles can reach 50 km/h – 60 km/h, equivalent to the speed of a motor vehicle, while the weight of an E-bike is also over 40 kg.\(^{20}\)

Then, how could those non-standard vehicles be allowed to be produced and sold? For the production and sales of E-bikes, the national standards formulated in 1999 still prevail. However, among the various technical requirements, only the maximum speed, braking performance and the strength of the frame/front fork assembly are mandatory and the remaining is recommended. In practice, in order to alleviate the backward situation of existing national standards, some cities began to loosen restrictions on non-mandatory technical requirements for E-bikes (modifications have been made)\(^{21}\).

The introduction of local standards gives rise to a large number of E-bikes labeled with a certificate of quality in compliance with local standards but not conforming to national standards. Notably, there are no E-bike manufacturers in Beijing; many E-bikes are transported from other provinces and cities for sale, which makes it difficult to supervise the production process in Beijing. As a result, it is necessary to implement a product Catalog that conforms to national standards in the sales process.

Therefore, seen from the essence of function, the design of the catalog is to fill the loopholes in the management of non-standard vehicles that only meet local standards. It not only responds to the public’s doubt of “why non-standard vehicles can be sold but cannot be ridden” but also connects to the existing policies in the “transitional period” of non-standard vehicles. This system is especially suitable for cities like Beijing where there are no E-bike manufacturers so national standards should be implemented for E-bike management.

\(^{20}\) China has issued the new E-bikes national standards on May 15, 2018, which would be implemented on April 15, 2019. New national standards include many changes on the standards of E-bikes production which will be discussed below. See State Admin. for Mkt. Regulation, supra note 17.

\(^{21}\) Zhejiang and Jiangsu are typical examples. See Yu Lingyun (余凌云) & Shi Lidong (施立栋), Zuijia, Diandong Zixingche yu Qita Leixing Diandongche de Zhili (醉驾、电动自行车与其他类型电动车的治理) [Regulations of Drunk Driving, E-bikes and Other Sorts of Electric Vehicles] 69 (2017).
C. Legal Nature of Product Catalog

In practice, is it possible for unlisted E-bikes in the Catalog to be sold and registered? This problem is concerned with the legal nature of product Catalog.

If an unlisted E-bike in the Catalog cannot be sold, registered and granted with a license plate, the original intention for design of product Catalog would be fully implemented and the rigidity of product Catalog would be enhanced. Therefore, the Beijing legislature prefers to take this approach. The legislative expression of “being unable to be sold, registered or granted with a license plate” is actually a legal prohibition of e-bikes not listed in the catalog, which is identical to the nature of administrative licensing of “setting prohibitions”.

However, in the process of the statute-making, as to the issue, the authors disagreed with the legislators, and argued that the nature of product Catalog should be an administrative guide, which plays the role of records in actual operations. No prohibitions should be imposed, so the E-bikes models and brands, which meet national standards but are not listed in the Catalog can also be sold, registered and granted with a license plate but it will be very inconvenient for E-bike owners, consumers and traffic control department to register since these E-bikes are not listed in the Catalog. Consumers who buy an E-bike of this kind would spend a longer time on identification and waiting when applying for registration and a license plate in the traffic control department. Retailers selling vehicles of this kind cannot enjoy the convenience brought by the policy of “selling with license plates”. Although such explanation will bring the traffic control department

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22 In Chinese national level, Administrative Licensing Law stipulated that it is illegal to add administrative licensing items to local legislation without the authorization of law. But we have another choice to regulate E-bikes according to Administrative Licensing Law—“record” the information of standard E-bike in Catalog after they have been produced and sold, not “licensing” the E-bikes before they have been sold.

23 Catalog system is like a “package verification”, which means if an E-bike’s brand and model number are on the Catalog, police will license it directly. But if an E-bike’s brand and model number are not on Catalog, the owner should send the e-bike to a designated certifying agency to proof it is standard. The certifying duration is about 1 month and it will cost around 30,000 yuan. That is not only inconvenient but also expensive.

24 Authors’ explanation is different with the regulation in Beijing. The regulation in Beijing stipulated that unlisted E-bike in the Catalog cannot be sold. But our explanation is that unlisted E-bike in the Catalog cannot be sold after been certified it is standard. Our explanation is more loosely and is
certain pressures and costs to identify whether the vehicle meets national standards or not one by one, it is a necessary means and costs to reach the balance between the safeguarding of citizens’ rights, interests and the fulfillment of governmental responsibility in the society with rule of law.

D. How to Ensure the Catalog Works

The system function of the product Catalog mainly relies on the effective cooperation among the industrial and commercial administrative department and retailers (or the industry association). The Industrial and Commercial Administrative Department in Beijing should be responsible for the maintenance of sales order in E-bike markets and updating the product Catalog promptly and actively. The retailers should apply for the inclusion of new E-bike models and brands in the product Catalog in time. To this end, the department can, during market inspections, make statistics of the E-bikes under the jurisdiction which are sold by retailers but unlisted in the product Catalog. Retailers who are found slack to declare for more than once would be under more frequent inspection. Such practice can not only help to achieve the regulatory purpose but also demonstrate the work ethos of the State Council’s policy for normative regulation in middle of and after an event.

IV. Core Means: Registration, License Plates and Electric Snapshot

The E-bike registration is the most crucial step in the entire regulation process. License plates management is the core of the registration. There are three reasons why E-bikes are required to be registered. First, the information about registered E-bikes can be managed through archives, which provide a clue for future investigation on violations of E-bikes and recovery of stolen vehicles. Second, by strengthening the review of the registration advantageous to consumers and retailers’ rights and interest, but requires government invest more human resources and management costs. And we thought those costs are necessary because they make the regulation in line with Administrative Licensing Law (行政许可法).

process, it is possible to enhance the supervision of non-standard E-bikes and prevent them from running on the road. Third, it’s possible to achieve “user – vehicle matching”, in line with license plate management and technical road monitoring. Registration has solved the problem of owner’s information and the license plates are consistent with registration. By installing electronic monitors on the road, the violations of E-bike users can be captured in real time, thereby preventing and handling the rider’s violations such as running into the red light, retrograding, over speeding and riding on the motor-vehicle lanes or sidewalks.

A. Means to Ensure the Validity of Registration

In order to supervise whether the E-bikes are standard or not in an intensive way, the scope of E-bikes approved for registration should be limited to those that meet national standards. E-bikes currently in use which fail to meet national standards should be managed separately through registration for reference and for temporary use, and special provisions should be made on the conditions of application and the time limit for allowable use. E-bikes that are produced and sold after the implementation of legislation and do not meet national standards are not allowed for registration either for reference or for temporary use.

Although the registration and license plates management of non-motor vehicles imitate the management mode for motor vehicles, if it simply copies this mode, the implementation effect would be affected. For example, E-bikes are not the same as motor vehicles which are inspected annually, so if relevant registration procedures cannot be handled in a timely manner when the vehicle is transferred and scrapped, the traffic management department can hardly get information about the vehicle in time. For another example, there is no mandatory annual inspection system for E-bikes. If registration can be permanently valid and is not handled in time, once the vehicle is transferred or cancelled, the information recorded by the administrative authority will lag behind and hidden dangers are difficult to be found immediately.

Combining the principle of convenience to the public and validity of management, measures can be taken are as follows.
First, sales with license plates. In order to facilitate the E-bike owner to register a new vehicle, further consideration can be given to the implementation of the “sales with license plates” for new E-bikes. Retailers should register at the Traffic Management Department of Public Security Bureau and the new E-bike should be granted with a license plate. This brings registration process forward to the sales link. It is also possible to implement a free registration system, that is, no cost of production will be charged for buyers to apply for E-bike license plate. The free system will not only reduce the burden on the public, but also eliminate the public’s misunderstanding that the aim of government’s implementation of registration measures is to increase charges.

Second, install electronic chip in license plates. An electronic chip can be installed inside the license plate to facilitate the camera to achieve electronic snapshot. The electronic chip can be directly scanned by law enforcement instruments to display the owner’s information, so as to avoid conflicts caused by the rider forgetting to carry with relevant documents. More importantly, it must be ensured that the existing camera can capture the information about the license plate or trace the chip positioning. The chip can be installed on the frame of an E-bike as an invisible license plate.

The E-bikes management project in Qzhou which the authors have previously participated in shows that there is a possibility to upgrade and adjust the existing chip technology and snapshot equipment, and to optimize the cost of license plate production. In the process of E-bikes management, the People’s Government of Qzhou Municipality issued a series of normative documents such as the Notice on Registration of E-bikes and the Guidelines for Law Enforcement on E-bikes in Urban Areas, and provided three-month services for the public to apply for license plates in a centralized way. A total of 40 million yuan has been invested for E-bikes registration, license plates application, smart ships installation and premium subsidies. A total of 2,600 radar identification systems have been established in the urban area to achieve the goal of dynamic tracking and control of E-bikes in real time by combining the “Skynet Project”. Even more noteworthy is that the technology of the chip directly affects the effectiveness of the regulatory system. After a period of use, law enforcement in Qzhou found that the first generation of
chips in E-bike license plates’ power is low and could hardly been used any longer. Therefore, law enforcement has developed a second generational chip, using graphene technology to solve the problem of insufficient power of the chips.26

B. Application Problems of Old and New National Standards

The only criterion that distinguishes whether an E-bike should be granted with an ordinary or temporary license plate, is the national standard. The product Catalog is just the implementation of national standards. New national standards for E-bikes have been issued but will not be implemented until April 15, 2019, while the Regulation on Non-motor Vehicles Management in Beijing has come into force on November 1, 2018. In effect Beijing will be in the transitional period of old and new national standards when implementing the Regulation. The legislators in Beijing worry that during this transitional period, the new national standards are not in force so the relevant departments should identify E-bikes or non-standard vehicles by the old national standards. That will lead to the consequence that many e-bikes which exceed old national standards but meet the new standards will be identified as non-standard products. However, after around 6 months when the new standards come into force, those e-bikes are standard. This needs implausible cost. Therefore, it’s still unclear which national standards would be adopted for catalog management, as well as registration and application for license plate; the policy controversy will surely influence E-bikes manufacturer, retailers, riders, road traffic regulators and other entities.

First, for manufacturers and retailers, there are 11 months from the release (May 15, 2018) to the implementation (April 15, 2019) of new national standards. This is the period reserved by national standards makers for manufacturers and retailers so that they have enough time to change production lines and handle the existing inventory. In accordance with the communication with Beijing Bicycle Industry Association, it’s very simple and convenient to deliver back E-bikes in the current inventory for reinstallation and the cost of time and of capital can be affordable.

26 Data come from the Legal Affairs of Quzhou Municipal People’s Congress and the Justice Department of Quzhou Government [hereinafter Quzhou Data].
Then there are three types of E-bikes currently available for consumers: (1) those E-bikes meeting old national standards which can run on the road normally since each provision of new national standards can cover that of the old ones; (2) those non-standard E-bikes exceeding new national standards should be phased out within 3 to 5 years in accordance with the current management of E-bikes in the transitional period, whether at present or after the effectiveness of new national standards; (3) those E-bikes exceeding old national standards but conforming to new national standards to which the government shows an “ambiguous or holding” attitude and has not issued any mandatory measures yet. In a word, changes to standards should encourage consumers to buy standard E-bikes (including the old standards and new standards), and should make the registration process convenient as far as possible.

Finally, road traffic regulators are more concerned about what standards should be followed to manage E-bikes before the new national standards went into force. To this end, various measures have been adopted in different cities in China, which can be divided into three categories: (1) Holding and not managing temporarily; before April 15, 2019, E-bikes meeting new national standards may be registered and granted with a license plate, and those exceeding new national standards may not be registered temporarily, but are granted with a transitional period. (2) In accordance with existing local legislation, non-standard E-bikes will still be phased out in the transitional period (common period is 3 years). This model is suitable for cities where local legislation has been made on E-bikes, such as Quzhou. (3) Combining old and new national standards, E-bikes are

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27 As new national standards will be valid nationwide after coming into effect, the existing local standards for E-bikes will be invalidated then and the E-bikes produced according to local standards will not be granted with quality certificates. That means those exceeding new national standards after coming into effect will be unqualified and cannot be produced, sold, used and granted with a license plate. This will surely lead to a new round of local legislation and law amendment.


29 In 2016, Quzhou Municipal People’s Congress cooperated with the Public Law Research Center of the School of Law of Tsinghua University to research and develop legislative texts for E-bikes. On October 11, 2016, the 41st meeting of the Standing Committee of the 6th National People’s Congress of Quzhou reviewed and voted the Regulations on E-bikes in the Downtown of Quzhou, which would be
allowed to be registered as many as possible. This model is suitable for cities where regulations are currently formulated, such as Beijing.

The Regulation on Non-motor Vehicles Management in Beijing was announced in September 2018. This means that the standards for license plates application for E-bikes in Beijing are between the old and new national standards, which makes it unclear which standard should be adopted as the basis for registration and license plates granting.

The most significant difference between the new versus the old national standard is that the standards specifications are all mandatory in the new one. In this regard, authors believe that the original intention for E-bikes registration is to facilitate public administration of the standard and legislative measures should allow registration of as many E-bikes as possible. Therefore, Beijing is recommended to directly seek opinions from the Standardization Administration of the PRC and the General Administration of Quality Supervision, Inspection and Quarantine of the PRC for which provisions are mandatory in new national standards that must be followed for safety design of E-bikes. Such advice will help Beijing to establish local recognition standards for safety design performance based on old and new national standards, by following which the public can register and apply for license plates for E-bikes before April 15, 2019 when new national standards take effect.

Most importantly, the executive authority should clarify the specific provisions in the old and new national standards that should be adhered to. The significant difference between old and new national standards is that many technical parameters of E-bikes are listed as mandatory standards in new national standards. If new national standards are strictly followed, there are very few E-bikes that are qualified, and the effect of the regulations will not be obvious in a short term after release. If old national standards are fully followed, the load and speed limits are too low and most mandatory provisions of new national standards will be ignored, which is not conducive to the implementation of new national standards. The research group then submitted to Zhejiang Provincial People’s Congress for approval and implementation. See Quzhou Shi Shiqi Diantong Zixingche Guanli Guiding (衢州市市区电动自行车管理规定) [Regulations on E-bikes in the Downtown of Quzhou] (promulgated by Zhejiang Provincial People’s Cong., Dec. 12, 2016, effective May 1, 2017) (Chinalawinfo).
suggests that the Standardization Administration of the PRC and the General Administration of Quality Supervision, Inspection and Quarantine of the PRC should be consulted for which of the mandatory standards in new national standards have a direct impact on the safety of E-bikes, then to recognize what provisions in old and new national standards directly affect safety.

V. TRANSITIONAL PERIOD OF NON-STANDARD VEHICLES

A. Nature of Non-standard Vehicles

E-bikes that do not fully meet national standards are hereinafter called non-standard vehicles. Non-standard vehicles are nevertheless produced and sold on the market because the vast majority of the standards in GB17761-1999 (the old national standards) are merely recommended standards, and only three standards – the maximum speed, braking performance and frame strength – are compulsory. When E-bikes are put on the market, consumers, based on their own travel needs, demand that E-bikes’ battery life should be longer and E-bikes should be able to carry more goods. As a result, many E-bike manufacturers have developed new types of E-bikes with larger size, heavier body weight and longer battery life. In consideration of industrial development, certain local governments have therefore developed local standards\(^\text{30}\) that relaxes several requirements for E-bikes, particularly with regards to the weight and the battery power. This leads to a large number of E-bikes on the market that fall in line with local standards, but out of pace with national standards. These off-standard E-bikes are thus called “non-standard vehicles”.

In accordance with Article 119.4 of the RS Law, E-bikes that meet national standards are non-motor vehicles. Since Chinese law defines motor vehicles in accordance with the combination of Technical

Standards and Automobile Announcement, those not belonging to non-motor vehicles can only be defined as motor vehicles as long as they meet the technical requirements for motor vehicles. Does this mean that E-bikes that do not meet national standards should be classified as motor vehicles? In this regard, the RS Law and other relevant laws or administrative regulations do not have specific definitions. The authors consider that non-standard vehicles should be defined as vehicles of another category, instead of motor vehicles or non-motor vehicles, because it is actually a special category of vehicles that fall between non-motor vehicles and motor vehicles. Non-standard vehicles exist in such vacancy of legislation.

It should be noted that the non-standard vehicles belong to the third category of vehicles, which only means that the set of management systems for motor or non-motor vehicles of the RS Law does not apply to such category of vehicles as a whole. However, for specific management and regulatory purposes, it is still possible to design corresponding rules by reference to the standards for motor or non-motor vehicles if necessary.

**B. Reasons for Allowing Non-standard Vehicles to Apply for Temporary License Plates**

Non-standard vehicles are the key to E-bikes management and also the original intention of the local legislation to regulate the E-bikes chaos. There are two different regulatory schemes on whether to allow use of non-standard vehicles. The first scheme is to prohibit the use of non-standard vehicles on the road (or they can be allowed on the road only if they make alterations such that they meet national standards). The second scheme is to allow non-standard vehicles to be used on the road provided that there are specific management measures issued to ensure their safety.

From the perspective of maintaining the formal rule of law, it seems that the first regulatory scheme should be chosen. The internal logic is that since the generation of non-standard vehicles is a violation of the existing legal provisions, they should be resolutely prohibited to ensure that the requirements of the formal rule of law are strictly met.

However, China is currently in the period of social transition. Thus, the questioning of the legitimacy of government action should not be
based on a statutory or formal legal perspective, but should go beyond to further review the acceptability of the action.\textsuperscript{31} What is neglected in the first regulatory scheme is that, non-standard vehicles were widely produced and used because existing national standards were not only too far behind the development of the E-bike industry, but also inadequate to meet the actual needs of consumers. In addition, the government did not pay sufficient attention to the supervision of non-standard vehicles for a long time, and the government even acquiesced in the production and sales of non-standard vehicles. These were also important reasons for the present proliferation of non-standard vehicles. In this context, if the concept of a formal rule of law is followed to prohibit all non-standard vehicles from being used on the road, it will not only go against the legitimate expectations of the public but will also be difficult to obtain compliance and public support. In particular, there is clear evidence that the public has showed widespread skepticism towards the “motorcycles prohibition and E-bikes limitation” campaign carried out in March 2016 in Shenzhen.\textsuperscript{32}

Therefore, a substantive view of the rule of law should be upheld to allow non-standard vehicles to be used on the road. In fact, this approach has been adopted as early as the Notice on Strengthening the Administration of E-bikes (2011) jointly issued by the Ministry of Public Security, the Ministry of Industry and Information Technology, the State Administration for Industry and Commerce and the General Administration of Quality Supervision, Inspection and Quarantine of the PRC. The Notice requires local governments to set a transitional period to phase out non-standard E-bikes in service but did not prohibit them from running on the road.

\textbf{C. Policy of Three-year Transitional Period}

The central government proposes to set a transitional period for the regulation of non-standard vehicles. The Notice on Strengthening the


\textsuperscript{32} See Wu Xinzhong (武欣中), \textit{Zuiyan “Jinmo Xiandian” Xingdong Weihe Yin Zhengyi} (最严“禁摩限电”行动为何引争议) \textit{[Why Is the Strictest “Ban the Motorcycle and E-bikes” Arousing controversies?]}, \textit{ZHONGGUO QINGNIAN BAO} (中国青年报) \textit{[China Youth Daily]}, Apr. 6, 2016, at 4.}
Administration of E-bikes (2011) requires that local governments should set a transitional period to phase out non-standard E-bikes. That is to say, non-standard vehicles will be prohibited from running on the road beyond the transitional period.

The authors consider that the three-year transitional period is a result of weighing the property rights of the citizens and the governance responsibilities of the government. In accordance with data provided by the E-bikes industry association, the service life of batteries in the current E-bikes is 1.5 years to 2 years on average. Hence, even E-bikes that have just been purchased will reach the level of scrapping within three years.

Special attention needs to be paid to two aspects during the implementation of this policy. First, the sale and purchase of batteries in non-standard vehicles should be strictly controlled and prohibited during the three-year transitional period. Otherwise, there will still be a large number of non-standard vehicles in service after expiration of the transitional period. Second, the public should be encouraged to phase out non-standard vehicles. In one form, the government should provide appropriate subsidies to encourage manufacturers and retailers to recycle non-standard vehicles by means of trade-in and discounted repurchase. In another form, the government should provide subsidies to encourage the owners to scrap non-standard vehicles in advance.

33 See Haikou Shi Diandong Zixingche Guanli Banfa (2015 Xiuzheng) (海口市电动自行车管理办法(2015修正)) (Measures for Regulation on E-bikes in Haikou (2015 Revision)) (promulgated by Hainan Provincial People’s Cong., Nov. 27, 2015, effective Jan. 1, 2012) art. 17.3 (Chinalawinfo) (The article stipulates: “to encourage E-bikes manufacturers and retailers to repurchase non-standard E-bikes by means of trade-in and discounted repurchase.”). In Fuzhou, in order to encourage the owners of non-standard E-bikes to return such vehicles to retailers, the city introduced a repurchasing scheme in 2010 which stipulates that the government should separately provide the owner with subsidy equivalent to 20% of the repurchase price paid by the seller and 300-yuan bus pass. See Wang Yuping (王玉萍), Chuabiao Diandong Zixingche Huigou Jieshu, Fuzhou 15 Ge Yue Huigou Yu 13 Wan Liang (超标电动自行车回购结束，福州15个月回购逾13万辆) [Non-standard E-bikes Repurchasing Ended, Over 130,000 E-bikes Were Repurchased in Fuzhou in 15 Months], FUZHOU RIBAO (福州日报) [FUZHOU DAILY], Aug. 20, 2011, at A2.

34 For example, the Notice of the General Office of the People’s Government of Nanchang on Issuing the Implementation Opinions on the Prohibition of E-bikes and Gasoline Engine Driven Bikes with Temporary Access Marks from Running on the Road and Compensation for Scarping of Such Vehicles (2011) stipulates: “Owners who voluntarily scrap the vehicles in advance will be compensated 200 yuan by the government along with a bus pass worthy of 200 yuan by Nanchang Bus Communication Corporation and scrap value paid by a qualified scrapped motors repurchasing company determined by
VI. PASSAGE PROVISIONS AND ENFORCEMENT INNOVATIONS

A. Wearing a Safety Helmet

Empirical studies have shown that head injuries can be caused easily by road traffic accidents involving E-bikes.\(^{35}\) Therefore, riders and passengers are required to wear a helmet which can significantly reduce head injuries during an accident.\(^{36}\)

Although there are no provisions in the Road Traffic Safety Law of the PRC and its enforcement regulations that require E-bike riders and passengers to wear a safety helmet, it should not be construed as reservation of law. In this regard, Haikou City and Guizhou Province require that riders and passengers wear a safety helmet when riding an E-bike.\(^{37}\) Specifically, the local regulations of Haikou City clearly require that both drivers and passengers must wear helmets. Unlike the above two places, Xinjiang Autonomous Region requires that riders of non-standard vehicles should wear safety helmets, but the riders and passengers of standard E-bikes need not do so.\(^{38}\) Moreover, the

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\(^{35}\) A study on traffic injuries in Zhangjiagang City, Suzhou, found that among all hospitalized cases of accidental injuries caused by E-bikes, the part with the highest frequency of injury was the brain, which was as frequently as 46.4%; more than one third (35.9%) cases were traumatic brain injury (including skull fracture, concussion, etc.). See Wei Du et al., Epidemiological Profile of Hospitalised Injuries among Electric Bicycle Riders Admitted to a Rural Hospital in Suzhou: A Cross-sectional Study, 2014 Prevent. 128, 133 (2014).

\(^{36}\) A study conducted in Switzerland showed that although head and neck injuries were the most common injuries in hospitalized cases caused by E-bike accidents, they only accounted for 27.4% of the total injuries. The reason is that 75% E-bike riders in Switzerland wear safety helmets, but only 9% in China. See Sylvana Papoutsi et al., E-Bike Injuries: Experience from an Urban Emergency Department—A Retrospective Study from Switzerland, EMERGENCY MED. INT.L (Mar. 20, 2014), https://www.hindawi.com/journals/emi/2014/850236/abs/.


requirement of wearing a helmet is in fact in line with the overall legislative spirit of the Road Traffic Safety Law of the PRC on ensuring safe travel. Therefore, Beijing has the power to make its local legislation including strict regulations on E-bike riders and passengers to wear helmets.

B. Encouraging Insurance Purchasing

With respect to insurance purchasing for E-bikes, some local legislation includes requirements encouraging E-bike users to carry insurance. Normative documents issued by Kashgar Prefecture in Xinjiang clearly require that E-bike riders should buy insurance, and consider vehicle insurance certificates as an essential condition for license plate application. In some other places, the requirements for purchasing compulsory insurance are only limited to non-standard vehicles but not applicable to those that meet national standards.

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39 See Daolu Jiaotong Anquan Fa (道路交通安全法) [Road Traffic Safety Law] (promulgated by the Standing Comm. Nat’l People’s Cong., Apr. 22, 2011, effective May 1, 2011) art. 1 (Chinalawinfo) (“The Law is formulated in order to maintain road traffic order, prevent and reduce traffic accidents, protect personal safety, protect the property safety and other legitimate rights and interests of citizens, legal persons and other organizations, and improve the traffic efficiency.”).


Compared with common non-motor vehicles, E-bikes have faster speeding and heavier body, so they may pose a potential danger to other non-motor vehicles and pedestrians when running on the bicycle way. In accordance with the feedback from current law enforcement practice, since E-bike riders are mostly low-and moderate-income earners, road traffic accidents (especially serious injuries or fatal accidents) caused by E-bikes often cannot be effectively compensated, often difficult to resolve and endangering social stability. In this context, it’s necessary to diversify the risks in traffic accidents by introducing an insurance system for E-bikes.

However, Article 11 of the Insurance Law of the PRC (2015) stipulates that mandatory insurance system must be regulated by laws and administrative regulations. In the case that the central legislation (Insurance Law) lacks a compulsory insurance system for E-bikes, and local governments are not authorized to enact the compulsory insurance for E-bikes into local legislation in order to avoid conflict with the central legislation (Insurance Law). Thus, local governments should only encourage, but not force E-bike owners and riders to buy insurance.

The regulation of encouraging E-bike owners to buy insurance has been put into practice in Quzhou. From May 1, 2017 to May 1, 2018, there were totally 650,000 E-bikes licensed and over 98% of them are insured in the downtown of Quzhou. E-bike insurance in Quzhou is called “E-bike Comprehensive Insurance” (ECI), which includes three types. The first is the stealing and robbery insurance. If vehicles (including E-bikes and non-standard vehicles) cannot be retrieved after being stolen or robbed, the new vehicle will be paid 1,200 yuan, and the old vehicles will be paid 800 yuan. The second is the third-party liability insurance, the maximum payout limit of which is 50,000 yuan. The third is the drivers’ and passengers’ personal injury accident insurance, and the maximum payout limit of which is 2,000 yuan. The premium is 60 yuan. Among them, the owner of E-bikes bears 50 yuan of insurance, and the government subsidizes 10 yuan. If the owner is not willing to insure, these owners can still enjoy the government

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43 See Fu Yongtao (傅勇涛) & Ma Chao (马超), Diandong Zixingche Shigu Jufen Duo, Sanche Xian Nantuida (电动自行车事故多，三者险难推动) [Due to Too Frequent E-bike Accidents, Third Party Liability Insurance Is Difficult to Be Promoted], XINHUA MEIRI Dianxun (新华每日电讯) [XINHUA DAILY TELEGRAPH], Oct. 26, 2012, at 6.
subsidy of 10 yuan for third party liability insurance. During the whole year since the regulation enacted in Quzhou, more than 7,700 general liability insurance claimed against E-bikes have been handled with an average claim amount of 1,700 yuan, making riders’ life and property safety well guaranteed. The government has also invested more than 7 million yuan and the insurance company has paid more than 13 million yuan for the compensation during the same time.\(^\text{44}\)

It should be emphasized that E-bike insurance should be the result of the joint effect of the government and the market (company), and the government should continue to advance. In Quzhou, the ECI’s renewal work is unfavorable. Since the government has no subsidies for the renewal of the ECI in the second year and no annual E-bike inspection system, the renewal rate was only 26% in 2018.\(^\text{45}\) The renewal rate shows a broken-down decline, which is bound to affect the handling of subsequent traffic accident disputes.

**C. Innovations in Law Enforcement Means**

In accordance with the RS Law and its enforcement regulations, the effect of existing administrative punishment of violations of E-bike riders is limited. The punishment of ordinary non-motor vehicles is only a verbal warnings and penalty of 20 yuan, which has almost no effects; yet the punishment against motors seems too strict for E-bikers and riders. As a result, the existing national legislation in China lacks punitive and educational measures to ensure the safety of E-bikes use. Besides, with respect to administrative punitive measures, it is controversial whether the local regulations of Beijing can set stricter rules for illegal acts of E-bike riders than national punitive measures.

In view of how to enforce the law and implement legislative achievements, authors consider that the following measures can be used for reference.

First of all, the interpretation of “education” in the Administrative Penalties Law should be expanded, with educational means being innovated, and a transformation mechanism between educational and punitive measures should be established. Considering that E-bike riders’ awareness of safe riding is very weak in practice, it is possible

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\(^{44}\) Quzhou data, supra note 26.  
\(^{45}\) Quzhou data, supra note 26.
to consider establishing a transformation mechanism between punishment and education at the legislative level. For example, if an E-bike rider violates road traffic rules and should be subject to administrative penalties, the rider may be relieved or exempted from punishment provided that he/she voluntarily accepts education on traffic safety for no more than 30 minutes or assists the traffic police to maintain traffic order.

Then, a small-scale credit system should be established and credit records should be kept in the traffic management bureau which is connected to license application and motor vehicle verification. The traffic management department of the public security bureau should provide education and training for E-bike riders in the registration process to improve the riding skills.

Finally, a violation interconnecting mechanism should be established, and relevant authorities should be informed of violations. State agencies, enterprises and public institutions, schools, news media, industry associations and other social organizations also have an obligation to provide daily education and publicity for E-bike users.

VII. CONCLUSION

E-bikes regulation in Beijing means not only management of a certain link but also a regulation model connecting all links and including participation of all parties under the concept of comprehensive urban traffic management. Under the guidance of the principle of comprehensive regulation and social collegiality, national standards should be considered as the criteria to connect various regulation means. E-bikes should be ensured qualified through product Catalog management, to facilitate the traffic management department for registration and license plates application. Registration and license plates can provide the traffic police with effective control over E-bikes running on the road, and offer an effective way for E-bike owners to recover the lost vehicle and protect their property rights.

How to deal with the relationship between respecting the citizens’ rights to use E-bikes and ensuring a safe road environment by developing proper E-bike management schemes is also a basic issue for Beijing to consider when it comes to E-bike regulation. Legislation or other government regulation measures are lagging behind to some
extent under the over-changing social development. At the beginning, with respect to E-bikes regulation, Beijing has wrongfully prohibited E-bikes from running on the road and failed to resolve problems. Therefore, after Beijing has developed sound regulation rules, the governmental regulation simultaneously fulfills the citizens’ rights, the interests of the public who has been getting used to E-bikes and the E-bike industry. The implementation of E-bikes Catalog management and transitional period has achieved initial success. This is a beneficial attempt to balance citizens’ well-being, power and rights.