China Regulatory and Compliance Observation

June 2025

AEM | BESTAO

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Message from BESTAO

Dear Readers,

Like always, we're happy to present you with the June 2025 edition of China Regulatory and Compliance Observation for AEM.

In the edition, policies, laws, regulations, certification and standards for agricultural machinery, construction, cybersecurity and earth-moving etc. of China in June 2025 are elaborated.

In the horizontal section, you'll read about a national policy regarding tax reduction for advanced manufacturing enterprises.

The agricultural machinery section brought you with updates on national standards and promotion appraisals of agricultural machinery, and a new measure to further incentive the implementation of China NR IV emission management.

The construction and earth-moving machinery sections put forward key takeaways of a high-end technical conference on new energy construction machinery, and a standard on the intelligent architecture of coal mines.

Other important topics covered in this issue cover green, data security and standardization.

The policy briefing of this edition is a summary of work update of green-related standards for earth-moving machinery.

Enjoy the reading.

Best Regards,

AEM project team of BESTAO

Horizontal

1. New Round of Tax Reduction Announced for Hi-tech Manufacturing Enterprises

On June 9, 2025, three national ministries, the Ministry of Industry and Information Technology (MIIT), the Ministry of Finance (MOF) and the State Taxation Administration, issued the ***Notice on Relevant Affairs for the 2025 Additional Deduction for Value-added tax (VAT) for Advanced Manufacturing Enterprises*** (hereinafter referred to as "the Notice"), and elaborates the implementation period and some practical details for the VAT reduction.

The legal base for this VAT reduction policy for advanced manufacturing enterprises is an announcement[1] issued in September of 2023 by the MOF and the State Taxation Administration, outlining that the policy's validation period shall be from January 1, 2023, to December 31, 2027. The tax reduction rate is 5% of the deductible input tax for the qualified enterprises for the tax collection period.

The title of "advanced manufacturing enterprises" can be acquired through an application and assessment process, further details on qualification and applying procedures are stipulated in the ***Measures for the Administration of the Accreditation of High-Tech Enterprises***[2], which is issued in January of 2026 by the Ministry of Science and Technology (MOST), MOF and the State Taxation Administration.

AEM members with manufacturing facilities in China are highly recommended to study the policy further and apply for the title if qualified, because the acquisition of "advanced/high-tech manufacturing enterprise" in China shall not only benefit from the VAT reduction policy but also from other potential subsidies. In addition, it is also advised for AEM members with the intention to consult with taxation administration and finance management regulators at the regional level, specifically where the manufacturing facility is located, to find more details and potential support.

Moreover, some practical clarifications are provided in the Notice, and for AEM members who intend to apply or are already on the List:

- For those who are already on the List of 2024 and whose current high-tech enterprise qualifications remain valid, the policy will be suspended as of April 30, 2025.
- Those who wish to continue applying for inclusion in the 2025 list may submit their applications from June 2025 to April 10, 2026, during the period from the 1st to the 10th of each month.
- New applicants for the List of 2025 can submit their applications from September 2025 to April 10, 2026, during the same period each month.

[1] The ***Announcement on the VAT Reduction for Advanced Manufacturing Enterprises***, original link (in Chinese): http://beijing.chinatax.gov.cn/bjswj/c104624/202309/55effd54fe0d408fbeb6cdbc59b41894.shtml
[2] Original link with full text (In Chinese) is available at: https://www.gov.cn/gongbao/content/2016/content_5076985.htm

In addition, regarding the duration of policy enjoyment, clear instructions are elaborated for enterprises under different qualification scenarios, and AEM members who intend to apply or are already on the List shall check and see which scenario applies:

- For high-tech enterprises whose qualification remains valid throughout 2025, the policy enjoyment period is from January 1, 2025, to April 30, 2026.
- For high-tech enterprises whose qualification expires within 2025 and do not obtain a new qualification within the same year, the policy enjoyment period is from January 1, 2025, to December 31, 2025.
- For high-tech enterprises whose qualification expires within 2025 but obtain a new qualification within the same year, the policy enjoyment period is from January 1, 2025, to April 30, 2026.
- For newly recognized high-tech enterprises in 2025, the policy enjoyment period is from January 1, 2025, to April 30, 2026.

Original link for the Notice and its attachments (in Chinese):
https://www.miit.gov.cn/zwgk/zcwj/wjfb/tz/art/2025/art_9db7749f53f94d4cb469568a1a09f6f1.html

Agricultural and Forestry Machinery

2. Implementation Date Announced for Mandatory Tractor Safety Specification

On June 30, 2025, a new batch of national mandatory standards is announced for approval with their implementation date by the National Administration of China (SAC). A significant national standard for tractors is included in the announcement, namely the ***GB 18447-2025 Safety technical specifications for tractors*** (hereinafter referred to as "GB 18477-2025"), and its implementation date is set for July 1, 2026, replacing four currently effective standards:

- *GB 18447.1-2008 Safety requirements for tractors - Part 1: Wheeled tractors*
- *GB 18447.2-2008 Safety requirements for tractors - Part 2: Walking tractors*
- *GB 18447.3-2008 Safety requirements for tractors - Part 3: Crawler tractors*
- *GB 18447.4-2008 Safety requirements for tractors - Part 4: Belt-drive wheeled tractors*

GB 18477-2025 was drafted by SAC/TC140 (Tractors) with the assignment of the Ministry of Industry and Information Technology (MIIT). It specifies the safety requirements and/or measures for the design and manufacture of tractors and their test verification methods, which is the type of information provided by the manufacturer on safe operation (including residual risks). GB 18477-2025 also applies to tractors used in China and does not apply to tractors produced before the promulgation of this standard.

The draft of GB 18477-2025 was issued to call for public comments in July 2024[3], and the approval of the standard project dates back to 2020. Based on the fact that Chinese national standards are usually required to be finished within 18 to 22 months, this time span indicates the discreet attitude of the TC and relevant drafting experts, as well as potentially multiple disagreements during the formulation process.

For AEM and AEM members, this standard is a type C standard in the machinery safety standard system, meaning the highest importance level compared with type A and B, and is therefore of great importance. Type C standard refers to standards that specify the safety requirements for a certain unit or set of machinery. Requirements of type C standards shall prevail when they are inconsistent with those stipulated in types A and B.

In addition, the fact that GB 18477 does not adopt any international or foreign standard may potentially lead to a more direct impact on AEM members in this product line. But a positive factor for AEM and AEM members for this standard is that experts from MNCs such as John Deere China, AGCO China, and CNH Industrial have participated in the formulation, so international good practice is likely to be incorporated during drafting.

3. Implementation of China NR IV: Being Connected to Appraisal Certificates

[3] For further details please refer to article #15 of the monthly report named *20240815 BESTAO-AEM China Compliance - July 2024*.

On June 16, 2025, the Agricultural Mechanization Administration Station of the Ministry of Agricultural and Rural Affairs (MARA) issued the ***Notice on the Revocation of Testing and Appraisal Documents for Agricultural Machinery Models That Have Not Been Upgraded to China Non-Road Mobile Machinery Emission Requirements of Stage IV*** (hereinafter referred to "the Notice").

According to the notice, manufacturers that have been approved with appraisal certificates for their agricultural machinery products in China must ensure such products conform with China non-road mobile machinery emission requirements stage IV (hereinafter referred to as "the China NR IV") requirements, and submit relevant documents to revise the corresponding appraisal certificates before 17:00 of June 30 of 2025. It means that if an agricultural machinery product model with a valid appraisal certificate fails to prove its conformity with the technical requirements of the China NR IV, the appraisal certificate will be withdrawn. The Notice also provides two attachments[4] of all models that are on the verge of disconformity, covering a couple hundred products from both domestic and foreign manufacturers, some products are from AEM member companies, and the two lists are:

- An information list of product models whose appraisal certificates haven't been revised under China NR IV requirements
- An information list of product models whose appraisal certificates haven't been fully revised under China NR IV requirements

It is commonly known that since December 1, 2022, all non-road diesel machinery under 560kW must comply with China NR IV emission regulations (mainly the national mandatory standard ***HJ 1014-2020 Emissions control technical requirements of non-road diesel mobile machinery*** and relevant other significant regulations, etc.). The actual implementation has encountered some challenges, but under the context that the country is making all efforts possible to achieve its national carbon peak and carbon neutrality goals, such challenges shall not waive the determination for strict implementation.

For next steps, after June 30, 2025, if products listed in the two attachments still haven't been updated or revised per request, their appraisal certificates shall be revoked. Appraisal certificates that are for products of China NR III shall also be revoked at the same deadline, and no further upgrade/revise applications will be accepted.

This move reinforces China's commitment to greener agricultural machinery and stricter emission controls in the non-road sector. For AEM and AEM members, it means that only China NR IV-compliant machinery will remain eligible for subsidies and sales in China. Meanwhile, AEM members with business in China are strongly advised to look into the attachment lists, and if any affected models are covered within, they should verify and update their appraisal status immediately, contacting their appraisal bodies for further instructions and actions needed to maintain certificate validation.

Additional information:

About China's appraisal system for agricultural machinery

China's current appraisal system for agricultural machinery is based on the ***Measures for Testing and Appraising the Agricultural Machinery****, issued in 2018 by the Ministry of Agricultural and Rural Affairs, and came into force in April 2019. It stipulates two types of appraisals:*

- ***Promotion Appraisal****: the primary form of agricultural machinery testing and evaluation, targeting mature, mass-produced machinery. It conducts comprehensive testing based on national or industry*

[4] Full list (in Chinese) is available at: http://www.amic.agri.cn/secondLevelPage/info/43/206450

standards to assess performance, safety, and reliability. Machinery that passes promotion appraisal can be included in the national recommended catalog, qualifying for subsidies and policy support, making it the mainstream pathway to market access.

- ***Specialized Appraisal:*** *it applies to innovative or region-specific machinery (such as first-of-its-kind equipment or specialized tools) that lacks established promotion standards. It focuses on evaluating key performance metrics and providing a market entry pathway for new technologies. Some approved products may qualify for pilot subsidies, with the potential to transition to promotion appraisal once proven.*

About the Agricultural Mechanization Administration Station of MARA

It is a subordinate institution directly under the Ministry of Agriculture and Rural Affairs (MARA), and serves as the national technical support body for agricultural mechanization. Its key responsibilities include conducting machinery appraisals (promotion and specialized), technology extension, standard formulation, data statistics, and information system development.

4. Five National Standards on Agricultural Machinery Approved for Implementation

On June 30, 2025, the National Standardization Administration of China (SAC) issued No. 14 of China's national standard notice to announce the approval of a new batch of national voluntary standards or an amendment list, together with their implementation date.

The notice contains a total of nearly 300 standards, and five of them are related to agricultural machinery, with the following key information:

Standard No.	Standard Name	Main Contents	TC/Organization in Charge	Standard to be Replaced	Relation with International Standards	Implementation Date
GB/T 3871.3-2025	Agricultural tractors—Test procedures—Part 3: Power tests for power take-off	It specifies test procedures for determining the power available at the power take-off (PTO) on agricultural tractors of the wheeled, track-laying or semi-track-laying type.	SAC/TC140（Tractor)	GB/T 3871.3-2006	Modified ISO 789-1:2018	2026/1/1
GB/T 18389-2025	Requirements for distribution services of agricultural machinery	It stipulates the service providers, service requirements, as well as the content of service evaluation and improvement of agricultural machinery distribution. This document applies to relevant distribution activities.	China Federation of Logistics & Purchasing	GB/T 18389-2001	N/A	2025/10/1
GB/T 19209.1-2025	Examine general rule of repair quality for tractor—Part 1:Wheeled tractor	It establishes the main items of post-repair quality inspection of wheeled tractors, specifies the technical requirements, and describes the inspection methods. It applies to the quality inspection of wheeled tractors after repair.	SAC/TC201/SC2 (Agricultural Mechanization)	GB/T 19209.1-2003	N/A	2026/1/1

Standard No.	Standard Name	Main Contents	TC/Organization in Charge	Standard to be Replaced	Relation with International Standards	Implementation Date
GB/T 19209.2-2003	Examine general rule of repair quality for tractor—Part 2：Caterpillar tractor	It establishes the main items of quality inspection after repair of caterpillar tractors, specifies the technical requirements, and describes the inspection methods. It applies to the quality inspection of caterpillar tractors used in field operations after repair.	SAC/TC201/SC2 (Agricultural Mechanization)	GB/T 19209.2-2003	N/A	2026/1/1
Amendment No. 1 of GB/T 21962-2020	Corn combine harvester	8 items of amendment, and mainly include: 1) Change the referred standard version from GB/T 24675.6-2009 to GB/T 24675.6-2021. 2) Modified the requirements on reliability (article 6.2) into stricter parameters.	SAC/TC201 (Agricultural Machinery)	GB/T 21962-2008, GB/T 21961-2008	N/A	2025/8/1

Besides GB/T 3871.3-2025 that relate to safety testing, all other four standards are voluntary ones that are revised from the previous version, and they may apply to AEM members in the agricultural machinery sector that need to establish an evaluation system to judge local partners in China on repair or distribution; or have self-owned repair and distribution team in China for the products sold locally.

5. Guideline Revised on Encouraged Agricultural Machinery Models for Promotion

On June 27, 2025, the Agricultural Mechanization Administration Station (hereinafter referred to as "the Administrative Station") of the Ministry of Agricultural and Rural Affairs (MARA) issued the ***Guideline on National Supported Product Categories of Promotion Appraisal of Agricultural Machinery***. (hereinafter referred to as "the Guideline 2025").

The Guideline is an important supportive document for China's promotion appraisal system for agricultural machinery. It is revised on an annual basis to reflect the latest product categories that are encouraged for use and promotion in the country and by the appraisal schemes.

This newly released Guideline encompasses a total of 40 items, categorized under 29 subcategories and 15 major categories. These items are established based on the evaluation and technical assessment of relevant agricultural machinery conducted during testing and appraisal activities. They are also aligned with the current development needs of agricultural mechanization. Compared to the 2024 edition of the guidelines, the key revisions in this updated version include:

- The addition of the following items: Plows (hydraulic reversible plows with ≥ 4 shares) and leaf harvesters (specifically two types of leafy vegetable harvesters).
- A revision of the scope for eight existing items: precision seeders, rice transplanters, straw choppers for field return, total mixed ration (TMR) feed mixers, feed conveyors, grain (food) dryers, fruit and vegetable graders, and agricultural diesel engines.
- The removal of these six items: Hole planters, milking monitoring and management equipment (systems), rapid cooling equipment for raw milk, livestock and poultry manure turning equipment,

fruit and vegetable washing machines, and fruit waxing machines.

The Administrative Station clarifies that agricultural machinery enterprises may voluntarily submit applications for appraisal as per the relevant regulations and guidelines governing the appraisal of agricultural machinery. For AEM and AEM members, especially the members who have products included in the previous version of the Guideline, are advised to check this latest version and ensure that the changes to the contents will not have any impact.

The complete list of the product categories and details are available (in Chinese) at: http://www.amic.agri.cn/secondLevelPage/info/30/207130.

Construction Machinery and Utilities

6. Two National Standards for Industrial Truck Calling for Comments

In early June of 2025, SAC/TC332 (Industrial trucks) issued drafts of two national voluntary standards to call for public comments.

Industrial trucks—Lorry-mounted trucks—Part 1: Safety requirements and verification

On June 6, SAC/TC332 publicized the draft of this standard, and public consultation period will end on August 6.

This newly-drafted national standard is an identical adoption of ISO 20297-1:2017 with the same name. It specifies safety requirements and their verification for industrial and rough-terrain lorry-mounted trucks, and is applicable to those trucks capable of self-loading onto a carrier vehicle. It is not applicable to i) trucks that are driven onto the carrier vehicle, or; ii) trucks that are loaded onto the carrier vehicle with the assistance of external means, i.e. crane or other lifting device.

China does not have its own safety requirement standard on lorry-mounted trucks in the current national standard system, the adoption of this ISO standard shall fill in the blank. The drafting experts expect it to improve its technical level and product quality, and ensure work safety of the product category.

Industrial trucks—Safety requirements and verification—Part 4: Driverless industrial trucks and their systems

On June 9, 2025, the draft of this standard is issued to call for public comments until August 10, 2025.

The draft is identically adopted from the international standard ISO 3691-4:2023. It specifies safety requirements and the means for their verification for driverless industrial trucks and their systems. It is also applicable to driverless industrial trucks which are provided with:

- automatic modes which either require operators' action(s) to initiate or enable such automatic operations;
- the capability to transport one or more riders (which are neither considered as drivers nor as operators);
- additional manual modes which allow operators to operate the truck manually; or
- a maintenance mode which allows manual operation of truck functions for maintenance reasons.

It is not applicable to trucks solely guided by mechanical means (rails, guides, etc.) or to remotely-controlled trucks, which are not considered to be driverless trucks.

Once this standard is approved, it will replace the currently effective national standard GB/T 10827.4-2023 (an identical adoption of ISO 3691-4:2020). The main purpose of this revision is to align with the international standard version change.

To summarize, for AEM and AEM members, the these two identical adoptions of ISO standards will greatly mitigate the potential impacts that the future implementation of the two standards shall bring. In addition, feedback for both standard drafts can be submitted to email gyclbwh@163.com (suggest to be in Chinese), and questions can be consulted to the TC secretariat via +86 10 8965 9783/8965 9786. Both standards are planned to be approved and published before April of 2026.

7. Updates on National Standards for Lifting Appliance

On June 30, 2025, the National Standardization Administration of China (SAC) announced a new batch of national standards that have been approved, as well as their implementation date. It totally covers 278 items, and 4 of them are for lifting appliances with the following details:

Standard No.	Standard Name	Main Contents	Standard to be Replaced	Adopting International Standards	Implementation Date
GB/T 6974.4-2025	Cranes—Vocabulary—Part 4: Jib cranes	It defines the terms related to jib type cranes. Mobile cranes, tower cranes, railway cranes, and offshore cranes are excluded. Annex A contains a diagram showing the different types of jib cranes.	GB/T 6974.4-2016	MOD, ISO 4306-4:2020	2025/10/1
GB/T 20863.3-2025	Cranes—Classification—Part 3: Tower cranes	It provides the classification of tower cranes for construction work as defined in ISO 4306-3, and gives specific requirements for steel supporting structure, mechanisms, ropes and further components basing on standard service conditions, mainly expressed by the following: — the number of working cycles; — the load spectrum factor; — the average displacements; and — additional values for factors to be used at the structural or mechanical calculation. Tower cranes for construction work are exclusively equipped with a hook as load-handling device. For tower cranes intended to be used for other purposes and/or equipped with other load handling devices, other values according to the specified usage of the tower crane may result.	GB/T 20863.3-2007	IDT, ISO 4301-3:2021	2026/1/1
GB/T 23720.3-2025	Cranes—Training of operators—Part 3: Tower cranes	It covers the specific subjects considered necessary for training tower crane operators.	GB/T 23720.3-201	IDT, ISO 9926-3:201	2026/1/1
GB/T 23724.3-2025	Cranes—Inspections—Part 3: Tower cranes	It specifies the regular inspections to be carried out on tower cranes. It does not cover inspection prior to the first use of a tower crane.	GB/T 23724.3-2010	MOD, ISO 9927-3:2019	2026/1/1

All four standards are managed and are drafted under the organization of SAC/TC227 (Lifting appliance), and are adoptions from ISO standards. AEM members are advised to check into the modified adopted standards when they applies to their products

Meanwhile, on June 30, TC227 issued a notice to call for comments on the revising comments for the existing national voluntary standard ***GB/T 24809.5-2009 Cranes - Requirements for mechanisms - Part 5: Bridge and gantry cranes*** and the comment collecting deadline will be July 25, 2025. This public consultation is a bit irregular, because it does not take place with a national standard draft, but is carried out even before a standard proposal is presented to SAC for approval. The reason for such unusual activity lies in the fact that, SAC/TC227, being the mirror group of ISO/TC96/SC9, might be assigned the by ISO/TC96/SC9 to revise the international standard ISO 10972-5:2006, and this standard is the one that has been identically converted into China's GB/T 24809.5-2009. So this comment collecting is more like a round of pre-research to help the TC on their potential task in the international standardization community, while also acquiring feedbacks for the revision of the Chinese national standard GB/T 24809.5-2009.

In such case, AEM and AEM members may have two different channels to also participate in the revision of ISO 10972-5:2006: by contact TC227 in its public consultation via qzjxbwh@163.com, or engage in the future discussions that shall happen in the ISO community.

8. Annual Conference Held for New Energy Construction Machinery

On June 17 to 19, 2025, On June 17 to 19, the Tianjin Research Institute of Construction Machinery (TRICM) held ***2025 New Energy Construction Machinery Conference*** (NECMC) in Shandong province of China.

It is an annual meeting since 2023 for the purpose of gathering industrial wisdom and promoting the new energy development of construction machinery. More than 300 participants attended the conference, including technical and standardization experts from the whole industrial chain, such as machinery manufacturers, key components and system suppliers, research institutes and universities.

For **statistics** on the development of new energy construction machinery, some experts expect China market to have big potential for new energy construction machinery products. For example, for excavators, it is expected to have approximately 150 thousand units of market volume, and the main application scenario shall be in municipal, water, and tunnel projects, and some experts would expect a faster growth may happen in at least 5 to 6 years later when battery prices keep dropping and more energy-saving technologies are applied. And for loaders, more than 3500 electric units were sold in 2023 in China, and the market penetration in January to May of 2024 has reached 15%.

Specifically for **technical developing trends**, attending experts shared their observation on the following aspects:

- Energy sources shall further vary, which is likely to extend from battery electric and hybrid electric to fuel cells and hydrogen fuel engines etc., some manufacturers are also considering methanol.
- Besides development of electric drive systems, the hydraulic fluid power may also become electric.
- The control systems may apply more Electrical/Electronic Architecture (EEA), and multi-domain controls.
- Construction sites will become more intelligent and digital, functions or technologies such as remote-control, unmanned driving and cloud control platforms may further push and facilitate the development of new energy equipment.
- More reformed platforms may emerge and grow, such as those for "fuel-driven to electric-driven", new energy models etc.

Attendees also discussed the **challenges** for the development of new energy construction machinery:

- In general, technical route for new energy construction machinery in China is still in exploration, different applied routes are applied by different manufacturers. So an overall technical planning is not ready and needs further research and study.
- The standard system for new energy machinery remains further constructed and optimized, because up to today only a limited number of national standards are in place.
- Along with the stricter requirements on green and environmental friendly products in China, the biggest challenges for new energy construction machinery may lie in the data collecting and use for carbon footprint.

Analysis and observations on **China's policy and standardization trends** are also shared by several keynote speakers, with following key takeaways:

- Policies in China regarding environmental protection and green transition, especially those for scenarios such as green mining, green harbour and "full electric construction sites" etc., may further facilitate the new energy construction machinery.
- A serial of national policies on promotion of equipment upgrade and renewal calls to replace the high energy-consuming, polluting and out-of-date construction machinery with new models.
- More standards on electric excavators, loaders and dumpers are required to be formulated[5].

For AEM and AEM members, the development of China's new energy construction machinery is definitely a direction that the whole industry and community shall stick to, yet the challenges and differences that the China market and products have compared with international practice, may require some attention from AEM members that intends to sell electric models in China to understand the competition.

[5] The ***Action Plan for Upgrading Standards to Guide Equipment Renewals and Consumer Goods Trade-ins***, issued by seven national ministries including the State Administration for Market Regulation (SAMR) and the Ministry of Industry & Information Technology (MIIT) etc.

Green and Environmental Protection

9. Two National Standards Implemented for Electric Earth-moving Machinery

On June 30, 2025, two electric earth-moving machinery national standards are announced for publication by the National Administration of China (SAC) in the No. 14 national standard notice. Both standards shall come into force on January 1, 2026.

Key information about these two standards is summarized as follows:

Standard No.	Standard Name	Main Contents
GB/T 45926-2025	Earth-moving machinery—Battery swap system of electric hydraulic excavators—General requirements	It defines the terms and definitions, relevant requirements, and describes the corresponding test methods of the battery swap system for electric hydraulic excavators. It is applicable to the design and manufacture of battery swap systems for electric hydraulic excavators with a working mass of more than 6000 kg and less than 50000 kg. The battery swap systems of other electric earthmoving machinery can refer to this document for use.
GB/T 45929-2025[6]	Electric earth—moving machinery—Safety requirements	This standard specifies safety requirements for electric earth-moving machinery and describes the corresponding test methods. It applies to earth-moving machinery equipped with an onboard electric drive system with a maximum operating voltage of 30V–36kV (AC) or 60V–36kV (DC). It covers: - Battery-electric earth-moving machinery - Hybrid earth-moving machinery - Battery-swapping earth-moving machinery □ Externally powered electric earth-moving machinery Excluded from this standard: Fuel cell-powered earth-moving machinery, and machinery operating in explosive, underwater, or other unique environments.

For AEM and AEM members, these two standards, drafted by SAC/TC334, may mainly be referred to as an observation document to understand China's approach and technical status for electric earth-moving machinery. It is also worth noting that TC334 actively work in the ISO/TC127 (Earth-moving machinery) on international standards in the same field.

For the latest information on TC334's standardization work on electric and green-related works, please refer to the attachment of this report *20250715 BESTAO Briefing - Work Update of Green-related Standards for Earth-moving Machinery*.

[6] For more detail regarding the drafting and comment-calling of this standard, please refer to item #9 of *20250317 BESTAO-AEM China Compliance - February 2025*.

10. Requirements on Intelligent System Architecture of Coal Mine Specified in National Standard

On June 20, 2025, the National Mine Safety Administration issued notice to publicize drafts of 5 coal mine national standards to call for public comments. One national voluntary standard named ***Requirements for the intelligent system architecture of coal mines*** (national project no. 20230399-T-627, hereinafter referred to as "the Draft") may trigger some further changes or impact to mining machinery.

According to the Draft, this standard stipulates several aspects for intelligent coal mines, including overall architecture, the architecture of information platforms, the network architecture, the business architecture, the management architecture, and the standard system. It is applicable to the intelligent construction and upgrading transformation of new and production-type underground coal mines.

China is determined to complete the intelligent upgrade for its coal mines, considering it the future developing trend, and the core technical support to achieve the goal. This national standard is drafted under the concept that the intelligent upgrade for coal mines shall integrate emerging technologies (such as industrial internet, 5G, artificial intelligence and big data etc.) with mining technologies, and the following elements are fully considered in the formulation process:

- Further enhance the requirements on production, safety and supportive technologies.
- Be aware of the new systems and platforms that shall be needed for the intelligent coal mines, including but not limited in safe production management platform, big data platform, comprehensive automated system, robots management platform etc.
- Solving existing issues in the present development of intelligent coal mines: i) lack of unified rules to deal with the connections of data managing process etc. between different systems. This issue prevents coal mine systems from being interactive on a cross-platform basis; ii) currently standards on intelligent coal mines mainly stipulates requirements for design criteria, general technical specification and construction specification etc., but they does not specify an overall architecture for all relevant systems.

AEM and AEM members are advised to notice that the Draft does not adopt or refer to any international standards as the drafting group carefully studied related international and foreign standards (such as ***ISO 17757 Earth-moving machinery and mining — Autonomous and semi-autonomous machine system safety*** etc.) and determined that the international practice does not fit China's situation due to geographical condition difference. This fact may increase the possibility of impacts when this standard is implemented, especially on the requirements of equipment/machinery on intelligent connection, data interaction and processing, man-machine interaction etc., and other supportive standards that may be drafted or revised when the Draft is implemented. So it is necessary to observe the future update of this Draft.

Moreover, feedback shall be submitted before August 19 of 2025 with the template[7] provided in the notice via email to fgkjszhc@126.com, and for any question regarding the standard or public opinion consultation, a contact phone number is presented: Mr. Sun, +86 10 8426 1759. All contact or feedback are advised to be in Chinese or at least submitted with Chinese translation.

[7] Template is provided in *Annex II - Feedback form of mining national standards*.

Green and New Energy

11. Mandatory Standard Planning for Safety Evaluation of Lithium-ion Batteries

On July 19, 2025, the Department of Science and Technology of the Ministry of Industry and Information Technology (MIIT) issued a notice to call for public comments on 17 mandatory national standard projects. One of the standards is related to lithium-ion batteries, which may be of great importance with traction batteries for new energy vehicles and machinery, namely the ***Specification for the evaluation on classified protection of lithium-ion batteries*** [8] (project no. GSJCPZQ0105-2025, hereinafter referred to as "the Lithium-ion Battery Standard").

Very limited information has been disclosed regarding these standard projects so far, and for the Lithium-ion Battery Standard, the following information has been acquired:

- The main drafters shall include a national standardization organization, China Electronics Standardization Institute (CESI), and the top giant manufacturer of the lithium-ion battery in China, the Contemporary Amperex Technology Co., Limited (CATL). A couple of other relevant battery manufacturers and stakeholders are also expected to participate in the drafting, but the full list has not yet been announced.
- It shall be a horizontal mandatory standard on the safety protection classification for lithium-ion cells to be exact. Experts in the drafting group explained that such application scope is set because quite a few types of lithium-ion battery cells currently exist in the Chinese market. Besides being part of a battery pack or system, such cell products shall also have safety requirements to ensure safe use.

The Lithium-ion Battery Standard may fill in a gap in China's standard system, being the first mandatory one to stipulate on the elements of lithium-ion batteries from an overall perspective, and it potentially shall initiate specific stricter requirements on the upstream of battery products. The country's lithium-ion battery standard system now only has two voluntary standards for overall requirements, namely ***GB/T 42729-2023 Guidelines for safety use of lithium ion cells and batteries*** and ***GB/T 42728-2023 Guidelines for safety design of lithium-ion batteries***. Then specifically for lithium-ion batteries, although there are a few national standards on safety requirements, but they are more for a specific product category (electric self-balancing vehicles, scooters, and motorcycles, etc.) or a certain product model (portable batteries, etc.) For similar existing national standards, there are three national standards in China on the safety of lithium batteries:

- ***GB 8897.4-2008 Primary batteries - Part 4: Safety of lithium batteries***
- ***GB 19521.11-2005 Safety code for inspection of hazardous properties for dangerous goods of lithium batteries***
- Under drafting: ***Technical requirements for transport safety and intermodal transport of traction lithium batteries*** *(project no. 20221525-T-469)*

[8] The official English name has not been announced, so it is just for temporary use.

Feedbacks on the standard projects are required to be submitted within the template provided in the notice (please see Annex I – Feedback form of standard project) via email (email shall be sent to: KJBZ@miit.gov.cn, suggested in Chinese).

Considering the standard shall apply to battery cells, it is likely to have a horizontal impact on all types of lithium-ion batteries that are used in new energy non-road mobile machinery for the Chinese market. AEM members who have business or plans on new energy models for the country's market may need to keep up with the future progress of this standard.

12. Green Standardization Plan Specified for Industry and Information Technology Sectors

On June 13, the Ministry of Industry and Information Technology (MIIT) issued the ***Implementation Plan of Further Promoting the Green and Low Carbon Standardization Works for Industry and Information Technology Sectors*** (hereinafter referred to as "the Implementation Plan") in the purpose of optimizing green and low carbon standard systems to support the transition and upgrade of industry and information technology sectors.

The Implementation Plan is a supportive document in response to the tasks and objectives that are set in national policy documents including but not limited to the ***National Standardization Development Outline***[9], the ***Accelerating the All-round Green Transformation of Economic and Social Development***[10]and the ***Accelerating the Promotion of the Green Development of the Manufacturing Industry***[11]. It contains 5 chapters and an annex that covers overall requirements, further planning, and key working points on the standard systems that would need to be focused, and supportive measures.

Overall goals are put forward in this document for the development of green and low- carbon standard systems in industry and information technology sectors (hereinafter referred to as "the Standard Systems") in two stages:

- By 2027, the Standard Systems shall be successively optimized with over 100 being formulated or revised. The efficiency of standardization work should be further enhanced.
- By 2030, the foundation for green and low-carbon standardization work in industry and information technology will be more solid, the Standard Systems will be more complete, and their supporting role of standardization will be more prominent.

According to the Implementation Plan, standards with the following characteristics within the Standard Systems shall be prioritized and focused:

- Those are urgently needed, especially standards on carbon footprint accounting, and comprehensive utilization of resources.
- Those that relate to innovative topics or products: standards that will foster green and low-carbon industries, and that will support the integration of digitalization and green development.
- Those will promote the upgrade and improvement of standards: standards on energy and water conservation shall be optimized or formulated at a faster pace; standards on green manufacturing

[9] Issued by the National Standardization Administration of China (SAC) in October 2021.
[10] Issued by the State Council in July 2024.
[11] Issued jointly by 7 national ministries, including MIIT, etc., in February of 2024.

shall be upgraded and optimized.

For AEM and AEM members, the following contents in this document may be of interest:

- Adequately formulate and revise standards on limit values of energy consumption for machinery products;
- Further facilitate the research and formulation of standards and specifications on hydrogen energy, such as hydrogen fuel cells, etc.

Another significant piece of information provided in the Implementation Plan is the Annex, in which a full list of research standard projects is listed under various fields for the 2025-2027 period, outlining the potential standards that may be under consideration or formulation. The items that may be of interest to AEM are:

Item No.	Field	Key research direction of standards	Industry
19	Carbon footprint management	Greenhouse gases—Quantification methodologies and requirements for carbon footprint of products — lithium batteries	Electrical and electronics
20	Carbon footprint management	Greenhouse gases—Quantification methodologies and requirements for carbon footprint of products — vehicle traction batteries	Electrical and electronics
61	Remanufacturing	General technical requirements for the remanufacturing of industrial robots	Machinery
68	Green construction machinery	Earth-moving machinery — noise limits	Machinery
69	RoHS	Requirements for restricted use of hazardous substances in electrical and electronic products	Electrical and electronics

In terms of supportive measures, the document requires accelerating the establishment of a TC on green and low-carbon topics within MIIT, and following measures will be taken:

- Fully organize and collaborate on the corresponding standardization works within MIIT, and a guideline on the construction of the Standard Systems shall be drafted.
- Strengthen the dissemination and implementation of relevant standards, especially their implementation in the relevant planning and policymaking, and in activities such as testing and inspection, governmental procurement, and biddings, etc.
- Enhance the full lifecycle management of standards, and reinforce the communication and cooperation between cross-cutting SDOs.

Cybersecurity and Data Protection

13. Draft Calling for Comments for Guideline on Cross-border Transfer of Vehicle Data

On June 13, 2025, China's Ministry of Industry and Information Technology issued the draft of the *Guidelines for the Security of Automotive Data Cross-Border Export (2025 Version)* (hereinafter referred to as the Guideline) to call for public comments. It is a move amid rapid growth in the new energy vehicle and automotive IoT fields, where increasing data processing activities and export demands have led to rising compliance challenges. To address these concerns and mitigate compliance risks, Chinese authorities decided to develop the guidelines, reducing the regulatory burden on the automotive businesses.

The Guideline was formulated per China's ***Cybersecurity Law***, ***Data Security Law***, ***Personal Information Protection Law,*** **and** ***Regulations on the Network Security Management***. It is positioned as a regulatory document that bridges the ***Provisions on Promoting and Regulating Cross-border Data Flow*** **and the** ***Several Provisions on the Management of Automotive Data Security (Trial Implementation)*** released in 2021. Once implemented, the Guideline will fill in the regulatory gap in the data cross-border transfer specific to the automotive industry.

Key information of the draft of the Guideline includes:

- Fundamental principles that enterprises can use to assess if they need to initiate a security assessment for their data cross-border activities: scope of application (situations considered data export), classification of data export pathway, and security assessment exemption criteria. It also puts forward 9 scenarios for exemption.
- It defines "Cross-border Transfer of Key Data", which include 49 key data found in 6 major scenarios requiring security assessment, specifically: R&D Design scenarios, manufacturing scenarios, driving-automation scenarios, software upgrade services scenarios, network operation scenarios and scenarios fall under sector standard for recognizing key industrial data, namely ***YD/T 4981-2024 Guideline for identification of key data in industrial field***
- It also clarifies quantitative standards for important data, implementation procedures for data export, and security protection requirements for data export.

The contents of the Guideline specifically target personal information and key data generated throughout the automotive lifecycle, including car design, manufacturing, sales, usage, operation, and maintenance. If China rolls out the Guideline, it will impact a wide range of stakeholders such as:

- Automotive manufacturers,
- Component and software suppliers,
- Telecommunications operators,
- Autonomous driving service providers and platform operators,
- Dealers,
- Maintenance service providers, and
- Mobility service platforms, etc.

The Guideline shall not initiate direct impact for AEM and AEM members; however, it is worth noting that the approach and restrictions may extend to the machinery sector when the new energy models are widely used in China. Therefore, it is necessary to keep up with relevant progress and information.

14. CAC Revised Cross-border Data Transfer Guideline

In June, 2025, the Cyberspace Administration of China (CAC) issued the ***Guidelines for Application for Security Assessment of Cross-border Data Transfer*** (the third edition) for implementation (hereinafter referred to as "the Guideline"). It aims to guide data processors on how to apply for a security assessment for cross-border data transfer. The legal basis is the ***Measures for Security Assessment of Cross-border Data Transfer***[12] and the ***Regulations on Promoting and Regulating Cross-border Data Flow***[13].

The Guideline clarifies which situations must be declared for assessment, mainly including when critical information infrastructure operators (CIIOs) provide personal information or important data to overseas, and when other data processors provide important data to overseas, or when they cumulatively provide more than 1 million ordinary personal information or 10,000 sensitive personal information overseas. It defines which behaviors are considered as data cross-border transfer, including data transmission to overseas, overseas access to data stored in the domestic territory, and processing of domestic personal information overseas, etc.

It provides detailed regulations on the declaration methods and procedures, emphasizing that the main approach is through the online *Data Cross-border Declaration System* (website: https://sjcj.cac.gov.cn). Special entities may submit their applications offline through the regional cyberspace administrations, and the administrations will verify the completeness of the materials within 5 working days. If the verification is passed, the materials will be transferred to CAC, which will decide whether to accept the application within 7 working days. During the assessment process, additional materials may be required. The data processor can check the progress online and will eventually receive a notification of the assessment result.

In addition, the Guideline puts forward that under specific conditions (such as the scope of the purpose of data transfer abroad remaining unchanged, the recipient not changing, and the increase in data volume not exceeding 20%, etc.), data processors may apply for an extension of the validity period 60 days before its expiration. The application is also mainly made through the online system.

Moreover, contact information for consultation and reporting (phone number and email address), and lists of multiple important attachments (such as requirements for application materials, various templates, etc.) are provided in the Guideline as specific references and norms for the application. The document emphasizes that data processors are responsible for the authenticity of the materials submitted, and false materials will result in the assessment not being passed and legal liability being borne.

AEM and AEM members are advised to be aware of relevant requirements, as the intelligent transformation of China's non-road mobile machinery sectors and the development of new energy models may have AEM manufacturers being cross-border data processor at a certain point of time. It is also worth noting that, the Guideline is advised frequently by CAC to keep up with the latest progress (original version issued in 2022 and then the first revision took place in 2024). Comparing with the second edition, following changes are made in the Guideline:

[12] Issued by CAC and has come into force on September 1, 2022.
[13] Issued by CAC and has come into force on March 22, 2024.

- The relevant materials that data processors need to submit for applying for a security assessment have been optimized and simplified.
- The conditions, procedures, and materials for data processors to apply for extending the validity period of the security assessment results have been clearly defined.

Standardization

15. Policy Issued to Guide Standardization on Development and Governance of an Intelligent Society

On June 10, 2025, the Office of the Central Cyberspace Affairs Commission (which is also the Cyberspace Administration of China, CAC) and the State Administration for Market Regulation (SAMR) jointly issued national policy document name the ***Guideline on Standardization for Development and Governance of Intelligent Society*** (hereinafter referred to as "the Guideline")

This document is drafted under the requirements and tasks set up in the ***Opinions on Accelerating the Construction of a Unified National Market***[14] and the ***National Standardization Development Outline***[15]. It puts forward a set of national guidelines that are designed to ensure the safe, fair, and beneficial integration of smart technologies (such as artificial intelligence, etc.) into society. It aims at mitigating or solving new challenges such as threats to privacy, fairness, and employment brought by technologies like self-driving cars, smart healthcare, and smart cities, while they bring significant convenience. The core goal of the Guideline is to establish a common set of benchmarks and a standard framework to anticipate and address these issues proactively, guiding the healthy development of technology in the development and governance of society.

Three fundamental principles are outlined in the Guideline:

- Technologies should promote social well-being and harmony: they should aim for a better society and improved quality of life. Their development must not create social conflict or discrimination and should benefit everyone fairly.
- Protect individuals and safeguard rights: the safety, privacy, freedom of choice, and other fundamental rights of every person must be protected. The needs and usage preferences of diverse groups (like the elderly or vulnerable populations) must be respected.
- Advance innovation responsibly: both technology developers and users must bear responsibility, ensuring the safety and controllability of technologies. Management must be flexible and efficient to respond to risks promptly, encouraging all sectors of society to participate in rule-making.

The Guideline also states that it is necessary to clarify the application scenarios of smart technologies, identify, define, observe, and evaluate the related social impacts to be well-prepared for possible risks and challenges. It categorized the application scenarios and impacts of intelligent society development and governance into three levels: microlevel, mesolevel, and macrolevel by considering the objects of smart technologies.

- Microlevel: scenarios and applications that act on individuals, such as how smart home and mobile apps affect your behavior, feelings, and privacy.
- Mesolevel: scenarios and applications that act on organizations and industries, such as how smart factories and smart hospitals change company operations and industry rules.
- Macrolevel: scenarios and applications that act on the whole society, such as how smart cities and digital governments affect public services and government management.

[14] Issued by the State Council in March 2022.
[15] Issued by the National Standardization Administration of China (SAC) in October 2021.

To understand technology's impact, the Guideline advocates for *AI social experiments*, specifically referring to conducting small-scale pilot testing in real-world settings before widespread rollout. Such tests require careful selection of scenarios and participants, scientific measurement of all changes (positive and negative) caused by technology, strict risk prevention, and finally, summarizing lessons learned to form improvement suggestions or new rules.

The Guideline also establishes a comprehensive *Standard System for Smart Social Development and Governance* that includes five standard categories:

- Fundamental standards: defining core concepts and terminology.
- Standards for principles on development and governance: setting ethical and safety baselines that technologies must adhere to.
- Scenario application standards: providing detailed operational specifications for specific fields like healthcare, education, and urban management.
- Methodology and technical standards: explaining specific methods for impact analysis, experimentation, data management, and risk assessment.
- Evaluation standards: defining how to assess the ultimate effectiveness and risks of technology applications.

AEM and AEM members are advised to be aware that the central idea of the document is clear: all development and application of smart technologies must prioritize people, ensuring safety, fairness, and controllability. And the Guideline can serve as an operational guide to some extent for governments, businesses, and research institutions, mandating that safety, fairness, and controllability are non-negotiable boundaries when developing and using smart technologies. It promotes the use of scientific methods (especially pilot testing) to identify problems and guide development to ensure that these technologies deliver tangible benefits for all people and drive social progress. The main contents of the Guideline should be aware of the potential specific standards that may be formulated or revised within the machinery sector as per the Guideline.

BESTAO policy review to this Issue:

- Policy Briefing - Work Update of Green-related Standards for Earth-moving Machinery

What can be expected in the following editions:

In the following editions, China Regulatory and Compliance Observation for AEM will still cover policies, laws, regulations, certification and standards for agriculture and forestry machinery, construction, and mining machinery of China, which will include but not limited to:

1. National policy on the integration of informatization and industrialization.
2. Several earth-moving machinery standards call for feedback from TC members

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Accessing the Chinese market has become increasingly more important for overseas companies of all kinds and having a better understanding of the requirements to enter this large and complex market will give you the advantage over your competition. BESTAO Consulting can help you understand the Chinese regulatory environment to gain access quick and effective access to the Chinese Market.

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- Our intelligence collection team gathers up-to-date information on China's technical regulations and standardization in sectors like electrical and electronics products, consumer products, mechanical products, automotive, etc. We also make tailor-made observations for our clients upon their requests. We make sure that our clients stay informed on the latest developments in regulations, certification, and standardization in China.
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- We also offer China representative, "virtual office" services and tailor-made China regulatory retainer services for overseas clients.

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