中国汽车技术研究中心有限公司
China Automotive Technology and Research Center Co., Ltd.

Proposal for sub-groups and/or task forces under the A-LCA IWG

China Automotive Technology and Research Center Co., Ltd
December 2022

PROPOSAL FOR SUB-GROUPS

■ **Proposal for sub-groups: China proposes to adopt the proposal of WBCSD and add a general group on this basis to coordinate the research work among several groups. China applied to be the leader of the supply chain sub-group and supported the work of other sub-groups.**

Proposed Sub-Groups and/or Task Forces	Who is the leader?	Main participant (CPs & NGOs)	Outputs	Until when	Profits	Concerns
Total group		China				coordinate
Supply-chain	China	China	Methodology of carbon footprint accounting for automotive materials, power batteries and fuel cell system, etc.	December 2024	Promote the carbon emissions accounting capacity, help carbon emissions data transferring through the supply chain.	Material classification; Material boundaries; Material use factor; Allocation rules of recycled materials; Cut-off rules; Parts types.
Use phase		China				Test procedure and energy mix of different regions and countries.
End-of-life		China				Open-loop; closed-loop
Cross-cutting methodology topics		China				

- **Overview of China's Automotive Supply Chain:** As the world's largest production and sales market of automobile, China has a complete automotive industry chain.

BAOSTEEL
NISCO
HBIS GROUP
BAOWU
Steel

CHINALCO
NANSHAN
HeungKong
Aluminium

KINGFA
恒力石化 HENGLI PETROCHEMICAL
WANHUA
Plastics

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CATL
国轩高科 GOTION HIGH-TECH
SUNWODA 欣旺达
EVE
Battery

zc rubber
万力轮胎
TRIANGLE
Tyre

WEICHAI 潍柴
新动力科技 SNAT
正驰动力 ZHENGCHI POWER
Motor

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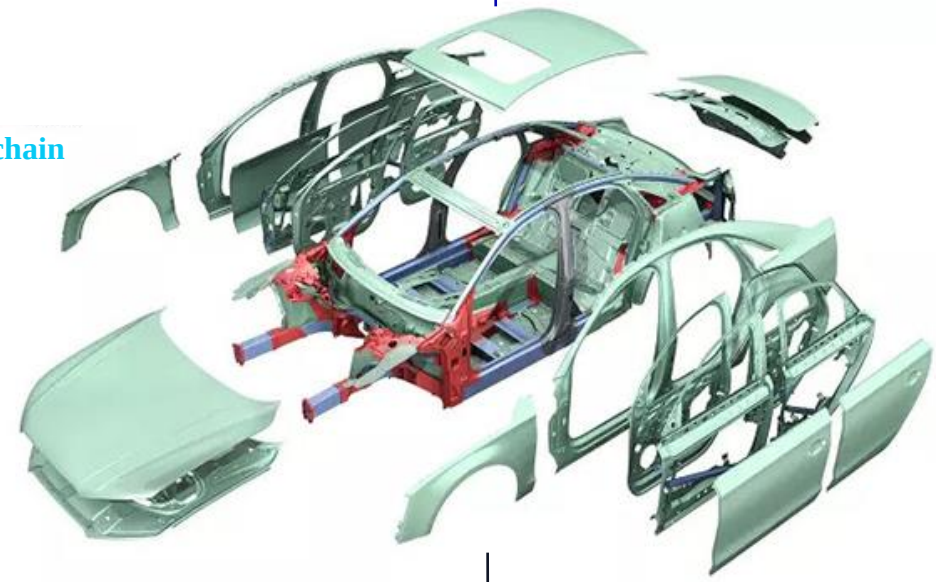
Part supply chain

Material supply chain



OEM

长安汽车
广汽集团 GAC GROUP
东风汽车 DONGFENG MOTOR
长城汽车 Great Wall
蔚来 NIO
小鹏

YUTONG
KING LONG
中通客车 ZHONGTONG BUS
FORLAND

一汽解放
中国重汽 SINOTRUK
陕汽控股
江铃汽车集团有限公司 JIANGLING MOTORS GROUP CO.,LTD.

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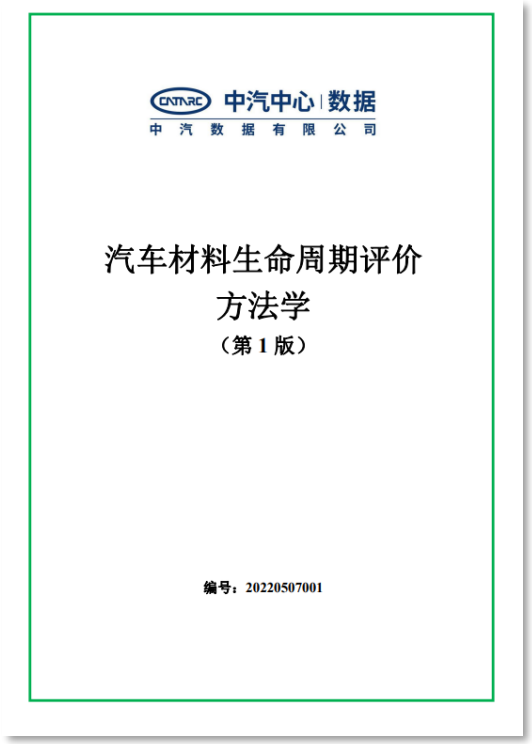
Downstream of the industrial chain

Car purchase service
Aftermarket services
End-of-life

- **Standard research:CATARC has conducted research on carbon footprint methods and standards for automobile supply chains such as materials and power batteries. The two criteria have passed the project approval.**

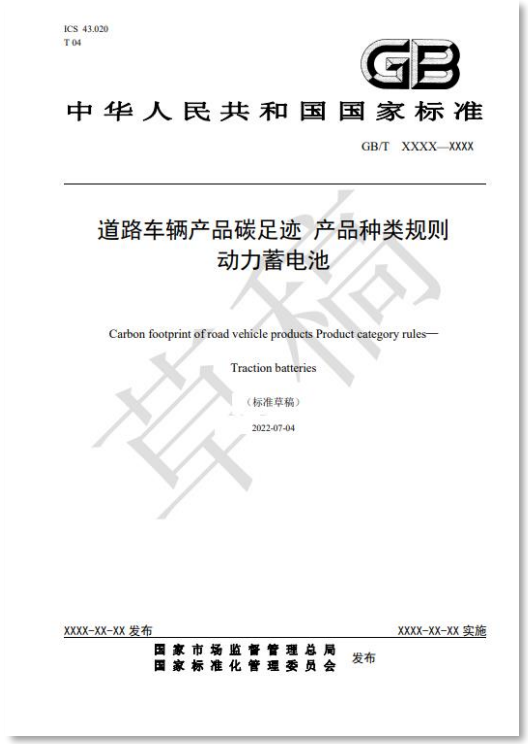
Methodology



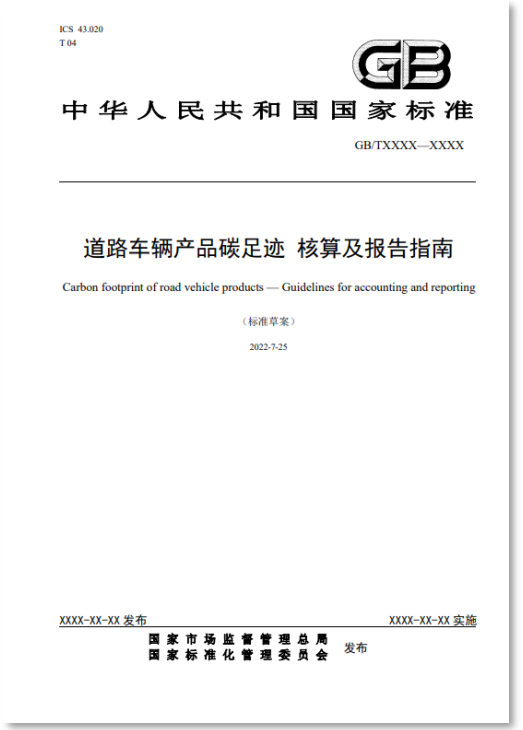
Life cycle assessment methodology for automotive materials

Life cycle assessment methodology for automotive parts

Standard: passed the project approval



Carbon footprint of road vehicle products—Product category rule—Traction batterie



Carbon footprint of road vehicle products — Guidelines for accounting and reporting

- **Standard research: Since 2019, more than 10 expert seminars and industry opinion gathering meetings have been held. Over 40 experts and 1,000 enterprise representatives have participated in the meetings and actively promoted opinions and suggestions. A total of more than 500 comprehensive opinions have been collected and processed, and nearly 20 editions of the standard text have been improved accordingly.**


1st Industry Opinion Gathering Meeting


2nd Industry Opinion Gathering Meeting


3rd Industry Opinion Gathering Meeting


Experts Seminar

4th Industry Opinion Gathering Meeting

2019


1st Industry Opinion Collection Meeting in 2020


2nd Industry Opinion Gathering Meeting in 2020

3rd Industry Opinion Gathering Meeting in 2020

2020


1st Industry Opinion Gathering Meeting in 2021


2nd Industry Opinion Gathering Meeting in 2021


3rd Industry Opinion Gathering Meeting in 2021

2021


1st Industry Opinion Gathering Meeting in 2021


2nd Industry Opinion Gathering Meeting in 2022

2022

■ **Supply Chain Data Collection: CATARC has established working groups around the Automotive Steel, Power Battery, Non-ferrous Metals, Polymers, Biology Base, Glass and Tire, aims to establish a "carbon link" between material enterprises and automotive enterprises through the construction of cross-industry workshop. It covers more than 100 enterprises, and held technical exchange meetings for more than 10 times.**

Cross-industry low-carbon workshop	Low-carbon resource database for automotive materials	Guidelines for the development of deep de-carbonization in the industry	Policy suggestions and measures for deep decarbonization of automotive materials
Bring together the automobile industry, material industry and third-party institutions to form a "carbon link" and communicate the demands and difficulties of the provide side and the demand side.	Build a low-carbon resource database for automotive materials based on CICES, to help the automobile industry understand the current situation and emission reduction potential of the material industry, and provide green and low-carbon procurement support.	Help automobile enterprises to put forward more clear requirements and acceptability for material carbon reduction, quality control and cost, and increase the driving force of deep decarbonization in the material industry.	Study and put forward relevant policy suggestions and submit them to competent government departments to ensure that the automobile industry and the material industry are coordinated in low-carbon development.

Automotive enterprise

Materials enterprises

Iron and steel	Power battery	Non-ferrous metals	High polymer	Biology base	Glass	Tires
China Baowu China Iron and Steel Industry Association Iron and Steel Research Institute of Ansteel Group Shougang Group Iron and Steel Research Institute of HBIS Group Panzhihua Iron and Steel Research Institute Hunan Valin Iron and Steel Group etc.	Gotion High-Tech Lishen Battery AVIC Lithium battery Sunwoda Electronic Shenzhen BAK Power Battery CALB BYD-Fudi Battery, etc.	Flat-rolled Product Division of Nanshan Aluminum Shandong Nanshan Aluminum Co., Ltd. Aleris Aluminium (Zhenjiang) Co., Ltd. China Non-Ferrous Metals Industry Association Aluminum Corporation of China Shanghai Huafon Aluminum Corporation	Kingfa Covestro (Shanghai) Nanjing Julong Science & Technology Co., Ltd. Foshan Peguform Automotive Plastic Technology Co., Ltd. (FPAT) Jiangmen Shenqiang Plastic and Machinery Co., Ltd.	Covestro DuPont Biology Base, etc.	Fuyao Glass Meizhou Saint-Gobain Automobile Glass AGC automobile glass Xinyi glass etc.	Double Coin Group (Chongqing) Tire Nanjing Desai Linglong Automobile Tire GITI Tire Qingdao Doublestar Tire Michelin Tire R & D Center Zhengxin Rubber (China) ZC Rubber

■ **Supply Chain Data Collection: CATARC has established a life cycle assessment system: including database, model and tool has been built, which has been applied for authorization by thousands of Oems and suppliers, and improved the life cycle management ability of the automobile industry chain.**

Model for standardizing the accounting process

Database provides the industry's basic carbon footprint data

①China Automobile Life Cycle Assessment Model CALCM

Brief introduction:

- China Automobile Life Cycle Assessment Model (CALCM), which is developed by Automotive Data of China Co., Ltd., refers to **the model for assessment of various fuel types of passenger cars and commercial vehicles' main materials, key components, key processes, and vehicle life cycle. And it consists of** 45 key modules;
- Use of CALCM has been authorized to a lot of international institutions and colleges & universities (including Cambridge University and Yale University) and enterprises (including Baosteel, Saudi Aramco, Great Wall Motor, Changan Ford, NIO, and SAIC Passenger Vehicle), in order to improve enterprise life cycle assessment technology and ability.

Highlights:

- ✓ CALCM is used to standardize and guide enterprises' rapid calculation of carbon emissions by cars of different materials, different components, different production processes, and different fuel types, which will facilitate assessment to carbon reduction benefits of improved processes and alternative materials. The model may be updated according to actual conditions of the enterprises.
- ✓ CALCM may be embedded in OBS tool for use.

Accounting standardization

②Automobile Product Life Cycle Assessment Tool OBS2.0

Brief introduction:

- Automobile Life Cycle Assessment Tool (OBS) is China's first proprietary professional life cycle assessment software suitable for the automobile industry, and it is developed by Automotive Data of China Co., Ltd.

Highlights:

- ✓ OBS is developed according to main characteristics of China automobile industry and automobile products, and it can be embedded into China Automobile Life Cycle Database (CALCD) and China Automobile Life Cycle Assessment Model (CALCM);
- ✓ OBS invokes China Industrial Carbon Emission Data Information System(CICES) to form CICES site database.
- ✓ OBS helps generate analysis charts such as Sankey, Sunburst, and tree diagram, leading to sharp increase of the corporate data analysis efficiency;
- ✓ The only product carbon footprint accounting tool in China automobile industry.

Carbon Footprint Calculation Tool

③China Automobile Life Cycle Assessment Database (CALCD)

Brief introduction:

- CALCD Database is the only Chinese database that is used for domestic automobile industry and developed by Automotive Data of China Co., Ltd., and it covers carbon emission factor data in 5 sectors including materials, fuel/energy, processing, transportation, and use.

Highlights:

- ✓ CALCD database provides basic carbon emission factors (e.g., power factor) required by the enterprises;
- ✓ CALCD database may be embedded in OBS tool, and it, together with CICES database, contributes to creation of enterprise database.

Basic Carbon Emission Factor

④China Industrial Carbon Emission Information (CICES)

Brief introduction:

- China Industrial Carbon Emission System (CICES) is a uniform carbon emission data reporting and information management platform that is developed by Automotive Data of China Co., Ltd. under the support of relevant ministries/commissions and national special fund, in order to improve China industrial sector's carbon emission management level and promote collection and application of supply chain carbon emission data.

Highlights:

- ✓ The only carbon emission data platform in the automobile industry, which is authorized by relevant ministries and commissions.
- ✓ The only software that fully conforms to National Standard for Automobile Carbon Emission formulated by China Automotive Technology and Research Center.
- ✓ CICES will be connected with the Automobile Carbon Footprint Information Publicity Platform that was built by China Automotive Technology and Research Center under the approval of relevant ministries and commissions, and it will serve as data traceability platform for carbon footprint publicity;
- ✓ It has been applied in 10-odd carmakers and 300-odd suppliers.

Supplier Carbon Footprint Site Data

⑤Product Carbon Footprint Standard Management Tool (PCFst)

Brief introduction:

- Automatically process BOM information and match carbon emission data and support custom consolidation of duplicates.

Highlights:

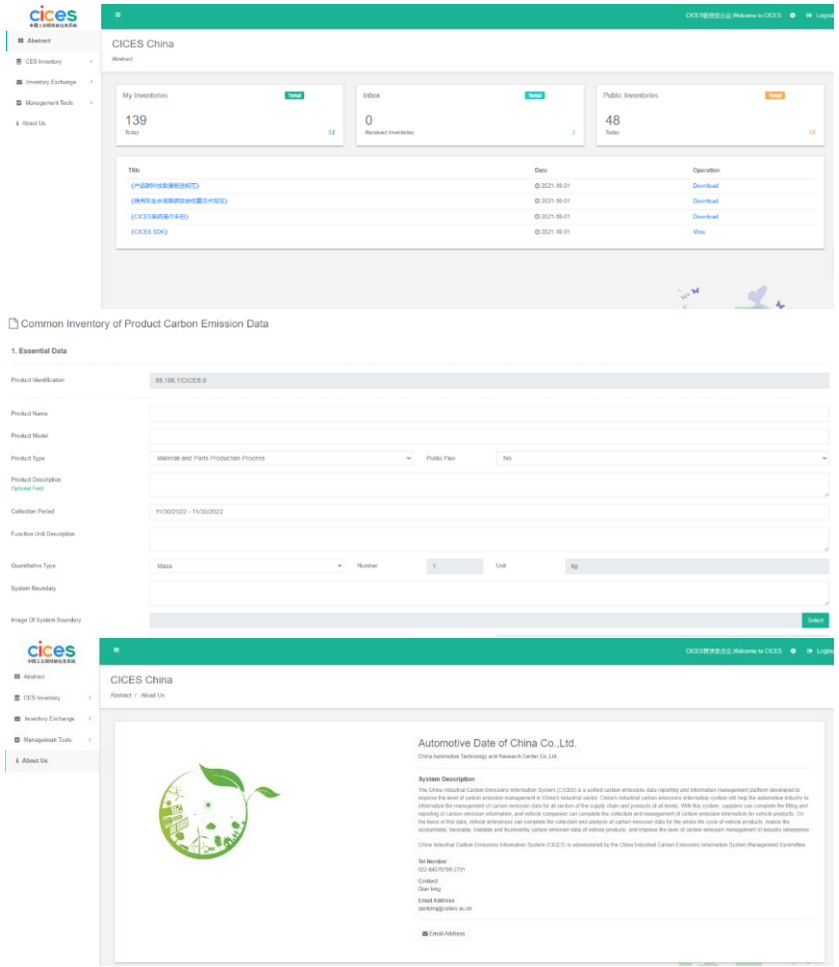
- ✓ Transformation from enterprise BOM to standard BOM; carbon emission data matching; flexible consolidation of duplicates in BOM information.

BOM Information Processing and Consolidation

Used for BOM information processing and integration

CICES is used for collecting the suppliers' site databases

- **Supply Chain Data Collection:** CATARC has established China Industrial Carbon Emission Information System (CICES) to collect the primary data. The participating units of CICES include 15 automobile enterprises such as Chang'an Automobile and Dongfeng Motor, and 790 supply chain enterprises. The system has recorded nearly 1,700 carbon footprints of automotive products, covering the fields of steel, non-ferrous metals, plastics and other automotive materials, as well as the fields of body, chassis, powertrain, interiors & exteriors, electronic & electrical, air conditioning and power batteries.



Vehicle OEM

长安汽车 · 东风汽车 DONGFENG MOTOR · 广汽集团 GAC GROUP · 长城汽车 Great Wall · 理想 · 蔚来 NIO · 小鹏 · 上汽大众 SAIC VOLKSWAGEN · 一汽-大众 FAW-VOLKSWAGEN · PATAC · Ford · 广汽 HONDA · NISSAN

Supply chain

首钢股份 · BAOSTEEL 上海宝钢 · 鞍钢集团 ANSTEEL · 包钢集团 BAOGANG GROUP · TAGAL · KOBELCO KOBE STEEL, LTD. · GONVVAMA · CHALCO 中国铝业 · NANSHAN · Dicastal 中信戴卡 · SHUNBO 顺博 · CSMET · ADITYA BIRLA NOVELIS · PRET 普利特 · KINGFA 金发科技股份有限公司 · covestro · JULONG 南京聚隆 · TECHSTORM Reliable Solution 道生天合 · Huafon 华峰超纤 · CHDL · AsahiKASEI 旭化成ホームズ · 中广核 CGN · 中化国际 · 万华 · CATL 宁德时代 · 中航锂电 · SUNWODA 欣旺达 · ARASIS 孚能科技 · SVOLT 蜂巢能源 · SDM · 福耀集团 FUYAO GROUP · SAINT-GOBAIN · MICHELIN · 万力轮胎 · 浦林成山 PRINX CHENGSHAN · AEOLUS 风神轮胎 · PIRELLI 倍耐力轮胎 · Yanfeng · Valeo 法雷奥 · APTIV · 采埃孚 · MINTH · faurecia inspiring mobility · 华域汽车 · LuXshare 立讯精密工业 · LEAR CORPORATION · 中国兵器工业集团 · 凌云中央研究院 Lingyun Central Research Institute

中国汽车技术研究中心有限公司

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