

MEMORANDUM OF UNDERSTANDING

between

UT-BATTELLE, LLC

and

CHINA AUTOMOTIVE TECHNOLOGY AND RESEARCH CENTER

regarding

China Vehicle Research

This Memorandum of Understanding (MOU) is between UT-Battelle, LLC (UT-Battelle) and China Automotive Technology and Research Center (CATARC), hereinafter collectively referred to as the "Participants." Oak Ridge National Laboratory (ORNL) is a Department of Energy (DOE) national laboratory, managed and operated by UT-Battelle, a limited liability company, organized and existing under the laws of the State of Tennessee, pursuant to DOE Contract No. DE-AC05-00OR22725.

China Automotive Technology and Research Center is a research institute engaged in the management of the auto industry in China, subordinate to the State-owned Assets Supervision and Administration Commission of China. The institute assists the government in various activities, such as auto standard and technical regulation formulating, product certification testing, quality system certification, automotive industry planning and policy research.

BACKGROUND/PURPOSE

In order to deepen energy cooperation between the two countries, the U.S.-China Clean Energy Research Center Protocol (the "CERC Protocol") has been effective since November 2009, and was amended in September 2015. Both ORNL and CATARC are participants in activities under the CERC Protocol, and are interested in the collaboration on method developments, data sharing and policy analysis on the vehicle market, especially as related to new energy vehicle market. The collaborative activities will be mostly relevant and beneficial to the Systems Assessment thrust under CERC. Therefore, the Participants intend to cooperate in a mutually beneficial manner to pursue these objectives.

ROLES OF THE PARTICIPANTS

The Participants intend to collaborate in the following areas:

- a. New Energy Vehicle and Related Analysis. Specific areas may include market analysis modeling methodology, calibration for market analysis model with regional strategies and scenarios, China vehicle data processing, consumer surveys and investigations.
- b. Transportation Energy System Evaluation. Specific areas may include corporate average fuel economy (CAFE), life-cycle analysis of advanced vehicle technologies, transportation emissions of greenhouse gases and air pollutants, and evaluation of Chinese and U.S. incentives/policies for new energy vehicles.
- c. Public Outreach and Education. The Participants plan to jointly release annual reports on the Chinese new energy vehicle market and related technology development to the public, and to discuss potential co-authorship of research publications in the marketing analysis, to be undertaken pursuant to an appropriate written agreement therefor. The Participants may also build close communication through mutual visits, meetings, telephone conversations and personnel trainings.

GENERAL CONSIDERATIONS

1. **POINTS-OF-CONTACT.** The designated Points-of-Contact for implementation of this MOU are:

UT-BATTELLE, LLC

Name: Zhenhong Lin

Title: Senior R&D Staff

Phone: +001-(865)946-1308

CHINA AUTOMOTIVE TECHNOLOGY AND RESEARCH CENTER

Name: Renzhi Lyu

Title: Department of Automotive Assessment Assistant Director

Phone: +086-138-1048-0312

2. **FUNDING, INTELLECTUAL PROPERTY RIGHTS, AND OTHER RESOURCES.** This MOU does not create any legally binding obligations between the Participants. Any commitment of funds, protection and allocation of intellectual property rights, disclosure of

proprietary information, or commitment of other resources is to be made under a separate written agreement.

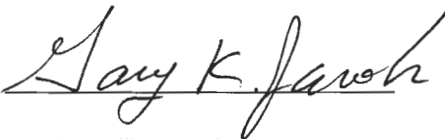
3. APPLICABLE LAWS, REGULATIONS AND AGREEMENTS.

Each Participant should conduct the activities under this MOU in accordance with the laws and regulations to which it is subject, and applicable international agreements to which its Government is party.

4. Cooperation under this MOU may commence upon signature and continue for a period of five (5) years, unless discontinued in accordance with paragraph 5 of this Section. This MOU may be extended or modified by mutual written consent of the Participants.
5. The Participants may discontinue this MOU at any time by mutual consent in writing. Alternatively, a Participant that wishes to discontinue its participation in this MOU should endeavor to provide at least sixty (60) days advance notice in writing to the other Participant.

Signed at Oak Ridge, in duplicate, this 24th day of August, 2016.

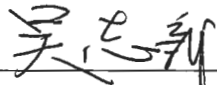
FOR UT-BATTELLE, LLC:

By: 

Name: Gary K. Jacobs

Title: Associate Laboratory Director

**FOR CHINA AUTOMOTIVE TECHNOLOGY
AND RESEARCH CENTER:**

By: 

Name: Zhixin Wu

Title: Vice President of CATARC