**Keynote Speech**

Good morning, ladies and gentlemen. I am honored to have been invited to speak at this conference. I major in power electrics. Today, my topic is Development Status and Application Analysis of Vehicle to Grid ( V2G). I will deliver my speech from three main parts: why we need to develop V2G? What V2G brings to us? And what are the challenges we are facing?

Why we need to develop V2G?

In response to global climate issues and energy issues, China attaches great importance to energy savings and emission reductions and is vigorously developing low-carbon economies. To follow the theme of the time, transformation of traditional automobile is inevitable. Since the rapid development of [electric](C:/Users/Sony/AppData/Local/youdao/dict/Application/8.5.3.0/resultui/html/index.html" \l "/javascript:;) [vehicle](C:/Users/Sony/AppData/Local/youdao/dict/Application/8.5.3.0/resultui/html/index.html" \l "/javascript:;)s, the problem of how to transfer power from grid side to vehicles more reliable is in badly need of solving.

What V2G brings to us?

Let us see a series of numbers. By 2019, there are around 3 million electric vehicles in the Chinese market. Even if the average battery capacity of each vehicle for V2G is 20 kW·h, the battery capacity of 3 million electric vehicles will reach 60 GW·h. This is not a small energy storage capacity for the power grid. The cumulative installed capacity of China's energy storage projects reached 28.9 GW by 2018, of which the installed capacity of the energy storage is 389.8 MW. If all the electric vehicles have V2G function, the EV is not only a green vehicle but also an energy storage terminal of the energy internet．

What are the challenges we are facing?

The V2G model is a product of new energy vehicles developed to a certain stage. At this stage, China's development of the V2G model still faces some problems:

1. The question of whether the charging of new energy vehicles is convenient. The construction of charging facilities in China is still not completed and the service network of charging facilities has not yet achieved full coverage．
2. Insufficient demand for the V2G model. As China's urban power supply first supplies household electricity to protect the basic living requirements of residents．
3. The standard of the V2G mode is not uniform．

In conclusion, the development of V2G still has a long way to go. What we should do is learning the mature experience from some developed countries, and apply it to our own systems according to our practical situation flexibly.

Thank you for your attention.