Together WE
Move the World

Charles Lu, Founder and Chairman

Broad Ocean Motor Group
BROAD-OCEAN MOTOR GROUP

- A Young & Energetic Company founded in 1994
- 22-Year Rapid Growth with more than US$ 1 Billion Revenue in 2016
- Strong balance sheet and solid bottom line, with ~8% net income in 2016

Broad-Ocean Motor Motors rotate Inside our Homes and Vehicles,
Helping and Serving You Enjoy the Journey and Move the World

www.broad-ocean.com
Broad-Ocean Motor: Who We Are?

Broad-Ocean Motor Business Units

HM BU
Leader in Air-conditioning Motor and Drives
#1 in North America
#3 in China

RE BU
Leader in Vehicle and Off-road Equipment Starters and Alternators
#1 in Buses
#3 in CV
#7 in PV

EV BU
Leader in New Energy Vehicle Power-train Systems
#1 in China
#1 in CV
#1 in PV

EVOP BU
Pioneer in Establishing New Energy Vehicle Eco-systems
~5000 New Energy Vehicles
~2700 Charging Stubs
e-car-Rental

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Broad-Ocean Motor Global Facilities

North America
- Chicago
- Detroit
- Buffalo
- Houston
- Mexico

Europe
- Germany
- United Kingdom
- Russia

China
- Zhongshan
- Shanghai
- Beijing
- Wuhan
- Wuhu
- Ningbo
- Shandong

Latin America
- Brazil

Australia

Brazil

Russia

India

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Broad-Ocean Motor: Who We Are?
Hybrid and plug-in bus motor systems (30-200kW)

Fuel cell and pure electric motor systems (30-120kW)

Hybrid and plug-in car motor systems (9-55kW)

Micro electric vehicle motor systems (3-20kW)

Offering all kinds of serialized and standardized automotive motors working at 3-200kW as well as their control system product line.
Hardware In Loop For DDMH System
Why China Needs Hydrogen Fuel Cell Vehicles?

People Need Clean Air
- Air Quality in Major China Cities Directly Links to Hundreds of Millions of People’s Life
- People, leaders or layperson, rich or poor, are equal when breathing the air and are equally concerned on Air Pollution, PM2.5, etc., after satisfying with their basic needs
- It is politically Important to Cure the Air Pollution

China Needs Reliable Clean Energy
- More than 60% of the Oil are Imported
- Coal is not Clean, although China has rich Coal Resources
- Energy Security is Critical for China’s Future Development

Hydrogen Fuel Cell Vehicles Can be the Best Answer for Both Questions
- Hydrogen Fuel Cell Vehicle is Clean, has Zero Exhaust, and does not Pollute Air
- Hydrogen Fuel Cell can be a good solution replacing Coal and Imported Oil
- Compared with closing factories & letting people losing jobs in remote and less developed regions, promoting new energy vehicles in rich central cities seems to be more politically fair, more acceptable to people, and an easier task to carry out
What Broad-Ocean Motor Can Contribute?

**Big China Market**
- A Market Sold 26 Million Vehicles (including 500K New Energy) in 2016
- A Market Consumed 6 Trillion Kw Electricity in 2016
- Broad-Ocean Motor is Serving Most of the Major Vehicle OE’s in China

**Affordable Hydrogen Fuel Cell Vehicles**
- Leading Cost Effective Manufacturing Base
- Established Mature Efficient Suppliers and Supply Chain
- Established Economy of Scales, 50 Million Air Conditioning Motors, 4 Million Starters and Alternators, and 60K New Energy Traction Systems

**Quick, Creative, and Nimble Responses to Market Needs**
- Establish Sales and Application Team
- Dedicated Application Engineering Team
- Close to Customer and Rich Problem-Shooting-Solving Skills
- Strong Culture on Speed, Nimble, Quality, and Innovation
Leverage the use of EV leasing platform to procure fuel cell vehicles

Drive demand for clean energy buses and trucks with BOMC components

Work with Hydrogen infrastructure partners to deploy fueling stations

Access leading fuel cell technology

Leverage operational excellence to build fuel cell engines in China based on Ballard licensed designs

Drive down cost of integrated FCEV engines and drive train through supply chain design expertise
Strategic Partnership With Ballard

- Technology transfer of Ballard-designed engines to Broad-Ocean Motor for high volume manufacturing
- Operations in Shanghai, Wuhan and Liaocheng
- Collaborate on cost reduction
- Strategic equity investment in Ballard
Recent Developments and Progress

Shanghai

- Set up a fuel cell project team and develop action plans
- Leverage Shanghai E-Drive capabilities and relationships
- Workshop construction completed by September 30, 2017
- Installation and commissioning of the production line in October 2017
- Start initial production in October 2017
**Recent Developments and Progress**

**Hubei Province**
- Invest 540 million dollar at Wuhan to set up a new energy vehicle industry park, which will include power train, motor, FC engine
- Invest to set up facility at Xiaochang to manufacture fuel cell engines, along with hydrogen delivery and cooling system up to capacity 17000 units per year.

**Shangdong Province**
- Broad-Ocean and Zhongtong Bus to form a $75 million joint venture in Liaocheng in Shandong Province to develop a new fuel cell bus platform and powertrain.
  - $400 million total investment
  - MD30 and HD85 production lines with capacity of 10,000 units per year
  - Zhongtong is NO. 1 EV bus company in China, shipped approximately 6,500 buses in the first half of 2017. Total capacity is 30000 units.
Recent Developments and Progress

Other Key Partnerships

- Agreement with fuel cell industry vertical partners to promote FC vehicle
- Foton: Top bus company at China, based at Beijing
- Furuise: Hydrogen tank supplier
- Qfeng: Hydrogen fueling station provider

Volume Expectations

- Initial trial of 600 prototype buses and trucks with OEMs in progress in Shanghai, Shangdong, and Other Partners
- Targeting opportunity for 16,000 vehicles in 5 years
TARGET → ~30% of all New Energy Vehicles to be FCEVs by 2024
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