

EPRI

2011 Global Climate Change Research Seminar



**CHINA'S ROLE IN MANAGING
GREENHOUSE GAS EMISSIONS**

A UTILITY INDUSTRY PERSPECTIVE

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View of Pudong, Shanghai (1983)

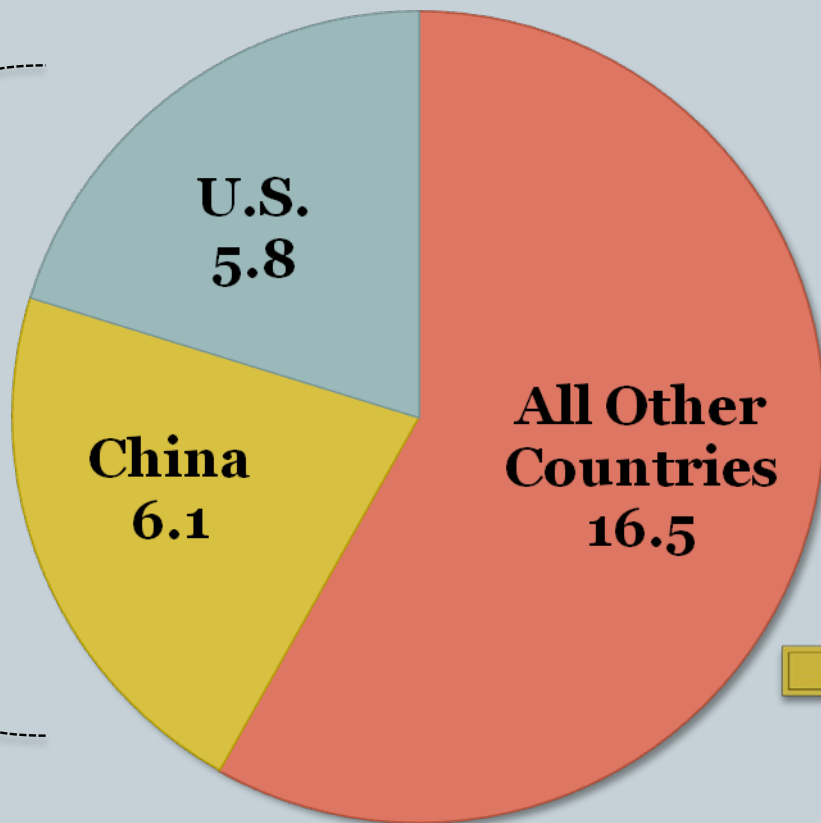


View of Pudong, Shanghai (2010)



Total and Per Capita Emissions Foreshadow a Difficult Challenge

**Annual CO₂ Emissions
(Billion Metric Tons)**



U.S. and China account for 42% of all global CO₂ emissions

MWh Electric Consumption Per Capita

China	2.3 (- exports)
U.S.	13.6 (+ imports)



Although China leads the world in total emissions, the U.S. consumes much more electricity per capita.

As the consumption gap narrows, Chinese emissions will grow significantly.

Partnership Objectives



- Accelerate technology development and commercial application through technology demonstration, deployment, and knowledge transfer
- Generate & execute new commercial investments and business development opportunities
- Gain access to diverse sources of capital
- Attract companies to Duke Energy's service territory in support of economic development

Potential partners are selected based on:

- Commitment to our objectives
- Areas of technology expertise
- Desire to build a mutually beneficial relationship

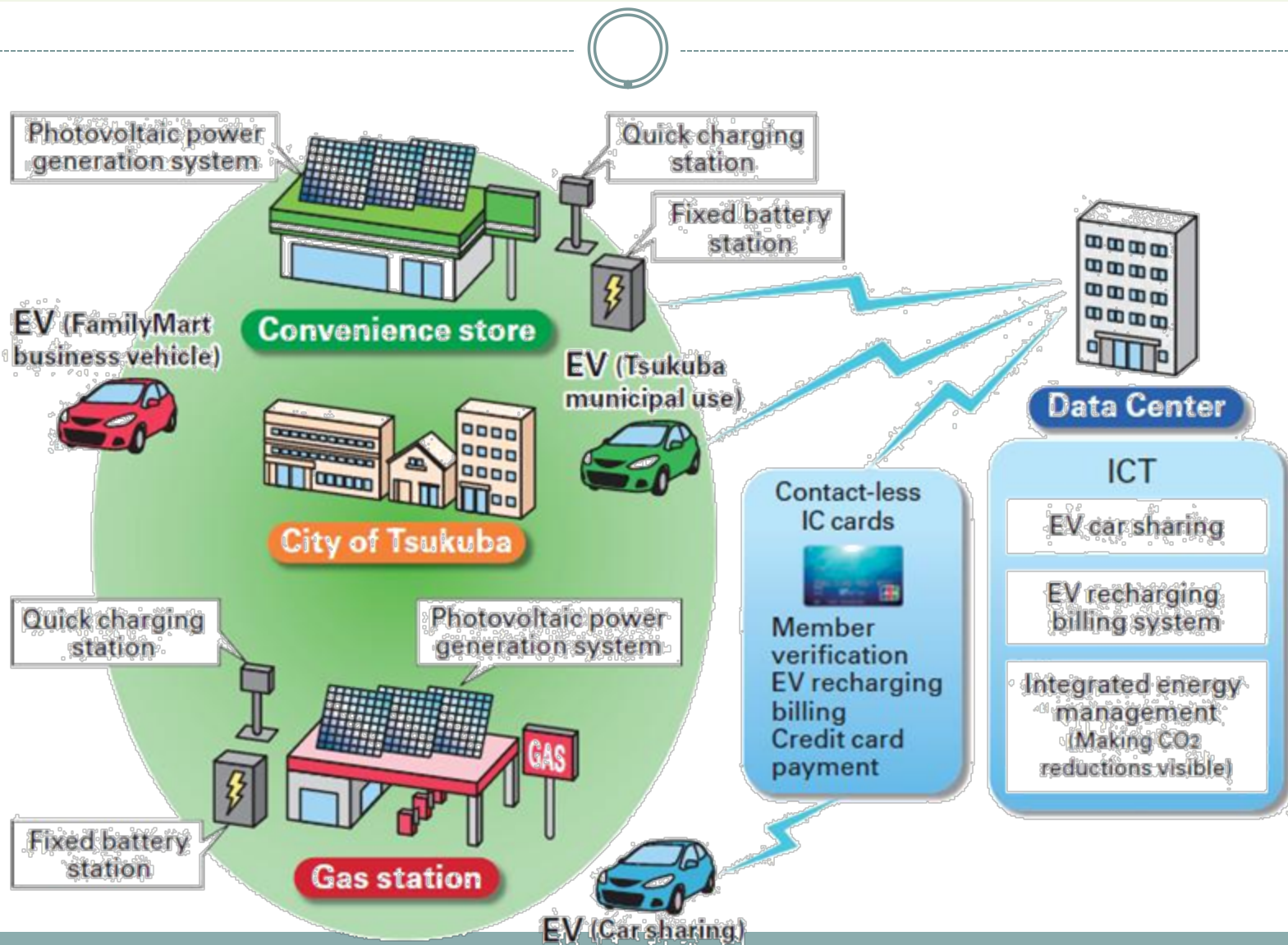
A light blue BYD E6 electric car is parked at a charging station. The station has a red sign that says "EV Charging Equipment" and "电动汽车充电桩". A yellow arrow points from the text box to the charging equipment. The car has a "BYD" logo on the rear and "e6" on the side. A second yellow arrow points from the text box to the rear of the car.

**EV Fast Charging
coupled with Storage:**
an avenue to mitigate demand
spikes created by EV charging

**BYD's all
electric E6:**

In support of
electrifying our
fleet we are in
discussions to
integrate six e6's

ITOUCHU Tsukuba City Project Plan





Absorption tower

Regeneration tower

Huaneng Post Combustion CO₂ Capture System removes 3,000 tons of CO₂/year



ENN Greenhouses for CO₂ BioFixation





ENN EcoCity:

As part of the US-China EcoPartnership, ENN will share lessons from the EcoCity which features a variety of distributed technology solutions