

# Sustainable City - Integrated Infrastructure for Maximum benefits

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# Chinese Gov't Committed to Sustainability

## 1) Chinese government's commitment

- 40~45% of CO2 emission reduction per unit GDP by 2020
- 15% of energy from non-fossil fuel
- 40 mm ha of forest increase from 2005

## 2) First batch of low-carbon experimental areas announced by NDRC

- Guangdong, Liaoning, Hubei, Shannxi, Yunnan
- Tianjin, Chongqing, Shenzhen, Xiamen, Hangzhou, Nanchang, Guiyang, Baoding

## 3) Urbanization by 2020

- Urban population to 55% from 50% today
- 50% of new buildings in the world will be built in China



# Cities need to address these goals ...



## Economic development

- Balanced urban and rural development
- Income equality
- Industry structure optimization
- Growth of **green** industries and technologies



## Quality of life

- Public health
- Traffic congestion control
- Noise pollution reduction
- Green space



## Environmental protection

- Energy conservation
- Emissions reduction
- Water utilization
- Land use
- Waste management

# Significant challenges remain ...



- Unclear goals and targets on CO2 reduction and energy efficiency improvement
- Limited financing available for development
- Lack of integrated & comprehensive planning



- Infrastructure (power supply, etc.)
- Consideration for cost of usage / living in the long-term
- Municipal & industrial waste treatment
- Healthcare, education, etc.



- *"Build first ... expect them to move in later"* mentality
- Preference to invest in low-carbon industries
  - High-tech, Bio-science, Corp. HQ, R&D Center, etc.

# Key elements of integrated design ...

## 1) Power supply / usage – A critical factor for long-term sustainability

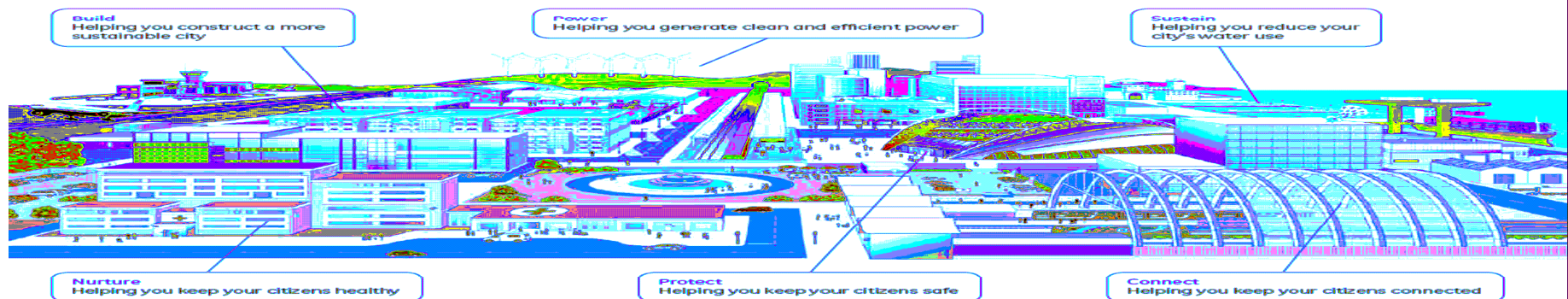
- Distributed power generation
- Readiness to connect with renewable energies – Solar, etc.
- CHP & CCHP from coal or NG for energy efficiency
- SmartGrid / MicroGrid

## 2) Water supply and treatment

- Direct drinkable water from the tap – clean water for safety, and energy saving
- Distributed waste water treatment – for local reuse and cost saving

## 3) Transportation – a major source of energy usage and increasing

- City layout impacts transportation pattern
- Future electrical car charging station impacts energy usage pattern
- Flexible lane to reflect traffic volume changes



# GE's sustainability initiative

Pursuing a comprehensive approach to address the issues ...



## Planning

- Optimized land usage
- Multi-use commercial + residential development
- Dynamic carbon balance
- Criteria and standards for low-carbon
- Long-term economics for the city
- Key advisor for urban / industrial infrastructure



## Project

- Global and China Industrial experience
- Integrated solution for projects
- One face to the customer
- EPC capabilities
- Demos or showcases



## Products / financing

- Advanced & feasible technologies and products
- Compete through fair and open tender process
- Partnering with local developers / EPCs
- Finance through leasing or energy performance / energy management contracts
- Brand image to enhance attractiveness of local investment environment

## Partners



GE  
Expanded  
Focus



GE  
Traditional  
Focus



imagination at work



## ecomagination Challenge- The largest one in history

# \$200 MILLION

To improve the way we CREATE. CONNECT. USE. power

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ROCKPORT  
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Technology Ventures



Foundation  
CAPITAL

KP  
CB

# ECOMAGINATION CHALLENGE

Open for submissions

**7/13**

Submissions  
closed

**09/30**

Short list  
announced

**10/21**

Awards  
announced

**11/08**

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- Entries submitted via [ecomagination.com](http://ecomagination.com) over 10 weeks
  - Entries will be evaluated as candidates for future commercial relationships as well as a \$100,000 innovation challenge award
  - Independent judging panel evaluates candidates in both categories
  - General public reviews, evaluates and comments on entries

# GE strategies – To win the big opportunities through innovations

“Clean Technologies”

**ecomagination**

“Green is Green”

“Access to Healthcare”

**healthymagination**

“Healthy is Wealthy”

+

**Benefit to customers, investors, employees, and societies**

# Summary

- ✓ Creating sustainable city requires integrated and comprehensive designing and planning
- ✓ Infrastructure is the foundation
- ✓ Innovative and low-carbon infrastructure differentiate the city for investments and long-term growth
- ✓ GE actively working with partners to develop sustainable cities in China



imagination at work

梦想启动未来

