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# Sustainability on a Smarter Planet





# Something profound is happening



# INSTRUMENTED

Measure, sense and see the exact condition of practically everything in near real-time.



# INTERCONNECTED

People, buildings, processes, cities, systems are now interacting in entirely new ways.



# 

Harness information to make optimal decisions based on historical trends and predicted events.







#### INTEGRATED ENERGY MANAGEMENT

Monitor and actively manage energy use across all assets, shift power, move workloads out of the data center, etc.



#### **ENERGY & GRID**

Aggressively participate in demand response systems; anticipate power shortages; sell excess energy capacity 3 back to the grid



#### **TRAFFIC & PUBLIC WORKS**

Understand traffic & public works to maximize employee productivity and routing of vehicles to minimize fuel consumption and delays



#### RESOURCE OPTIMIZATION

Maximize real estate portfolio and assets based on anticipated use



#### WEATHER

Anticipate and be aware of current and future weather conditions; heating & cooling requirements; targeted truck rolls



IBM is working with organizations worldwide to leverage

Technology Innovation

# Business Analytics & Optimization

Deep Industry Insight











### In order to build sustainable

# Infrastructure

Lower cost, increase efficiency/utilization & reduce environmental impact of assets

# Operations

Optimize for energy, carbon, water & waste across all aspects of the business & value chain



Gather, synthesize & apply information to change the way entire industries/societies operate

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### This systems approach requires a rich ecosystem of partners





### Green Sigma<sup>™</sup> Coalition

### Academia/Research 'Collaboratories"

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### To deliver substantive results

### **UK's Defra**

Used statistical modeling to determine energy usage and calculate CO<sup>2</sup> reductions.



Plans to decrease carbon emissions by more than 2,000 metric tons of CO<sup>2</sup> per year, and cut ICT energy costs by more than 30 percent—roughly US\$500,000 in operational savings annually.

### COSCO

Consolidating distribution centers to reduce emissions by 15% and fuel costs by 25%.



After analyzing its operations across product development, sourcing, production, warehousing and distribution, the Chinese shipping giant consolidated its distribution centers from 100 to 40 to prevent 100,000 tons of emissions each year.

### Singapore

Lowering congestion and carbon emissions by influencing traffic patterns on a city scale.



Developing one of the world's most sophisticated, smart transportation systems leveraging road pricing; integrated fare management; and deep analytics to predict and avoid traffic congestion up to an hour in advance with 85% accuracy. © 2010 IBM Corporation





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