



Using less. Doing more.

Opportunities for Improving Energy Efficiency in Cities

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Presentation Overview

- A Few Words about the Alliance to Save Energy...
- The importance of policy leadership at every level and the power of cities
- Buildings Efficiency: City of Atlanta
- Water & Energy: City of Monclova
- Looking ahead: Georgetown Energy Prize

What is the Alliance to Save Energy?

Mission:

To promote energy efficiency worldwide to achieve a healthier economy, a cleaner environment, and greater energy security.

Organization:

- Staff of 40+ professionals
- 38 years of experience
- \$7 million annual budget
- Recognized as a premier energy efficiency organization



What is the Alliance to Save Energy?

Nonprofit organization headquartered in U.S.; international reach

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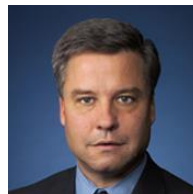
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Highlights of U.S. Federal Leadership

- **Better Buildings:** Commercial buildings aim to be 20% more efficient over the next decade
 - **Leading by Example:** US\$4 billion commitment to fund building upgrades to Federal buildings through ESPCs
- **Better Plants:** 157 industrial organizations committed to EE goals; saved 457 trillion BTU and \$2.4 billion
- **Building Codes:** Since 2009, improved building energy codes have saved \$44 billion on energy bills
- **Standards:** Appliance & equipment standards will save Americans \$450 billion on utility bills through 2030
- **Transportation:** CAFE Standards to 54.5 mpg will save \$1.7 trillion by 2025



Better Buildings Challenge in Action: Atlanta

Goal: To reduce energy & water consumption 20 percent by 2020, across 40 million sq. ft.

Actions

- Built a network of partners
- Provided tools and incentives to encourage EE upgrades:
 - free building assessments
 - technical assistance for implementation
 - education and training courses
 - access to project financing
 - public recognition

Results

- Participating floor space more than doubled from 40m to 100m sq. ft.
- Energy use intensity dropped by 11%
- By 2014, buildings saved 163m gallons of water



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Water & Energy in Cities

- Globally, energy is among the top 3 costs to water utilities.
- Cities can use 50-60% of their budgets to process and deliver water
- Aging infrastructure and system inefficiencies
- Measures to help save energy in water systems
 - Optimize pumping systems
 - Identify and minimize leaks in the pipes and fixtures
 - Automate control pumps and water pressure
 - Install meters to monitor/improve system performance

Monclova, Coahuila

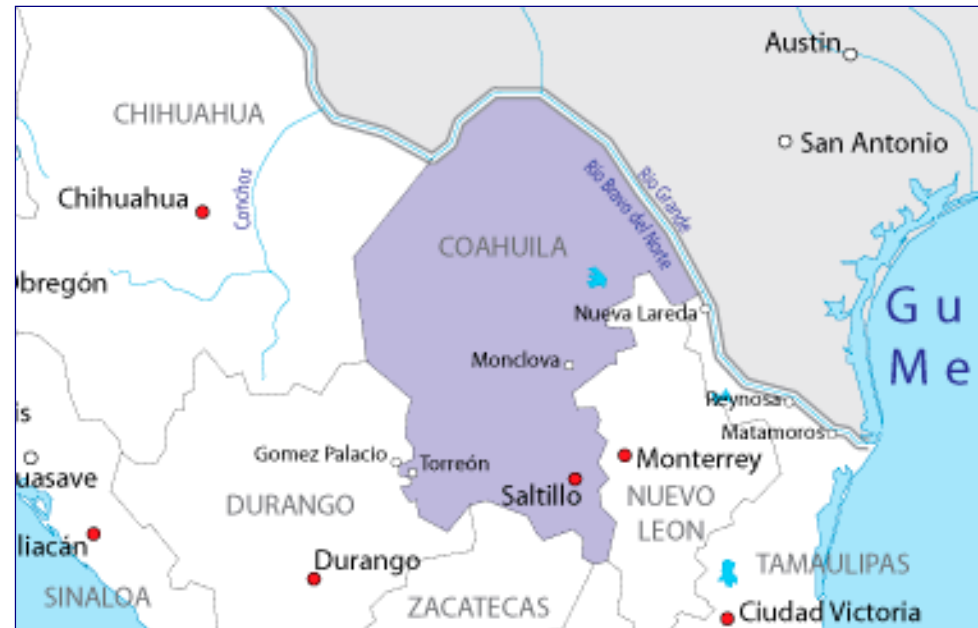
SUCCESS: Once sporadic service, now 24x7

ISSUES:

- 48% losses from system
- Water only 6 hours every 3 days

APPROACH:

- Leak detection
- Variable speed drives
- Electromechanical efficiency improvements
- Managerial & operational improvements



Monclova, continued

RESULTS

- **Service** improvements
20% reduction in water loss
available 24x7
- **Water** saved p.a.
10 million m³
- **Energy** saved p.a.
6100 MWh
- **Cost** saved p.a.
US\$ 727,000



Georgetown Energy Prize

- Innovative challenge to U.S. cities to reduce energy consumption
- Projected impact:
 - **\$1+ billion in savings**
 - **5m+ tons CO₂ emissions avoided**
- Millions of people in 60+ communities across the country
- More than \$70 million in energy savings since 2014 launch
- Next phase under development for energy productivity prize



What is Energy Productivity?

$$\frac{\text{Economic output (e.g. GDP)}}{\text{Energy consumption (e.g. kilowatts)}} = \text{Energy Productivity}$$

Energy productivity measures the economic benefits of energy efficiency





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Thank you!

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