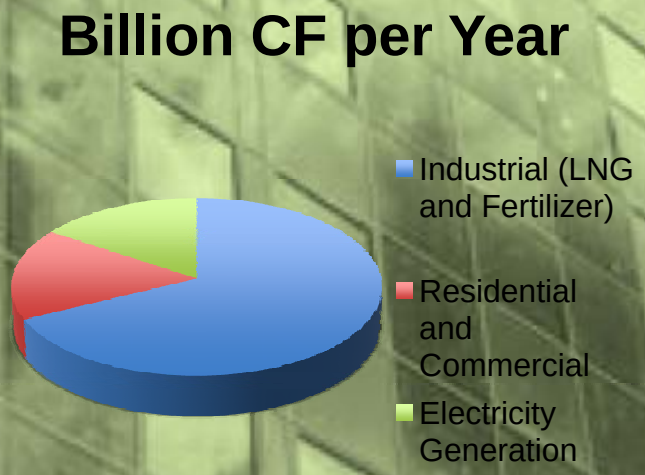
# Diminishing Gas Deliverability & Energy Efficiency in Anchorage

**Chris Rose, Executive Director**

REAP | Renewable Energy Alaska Project

# Cook Inlet Gas Consumption

- Approximately 200 billion CF consumed annually




*Source: Alaska Department of Natural Resources, Oil and Gas*

# Doing More with Less

- ***Energy efficiency*** reduces the amount of energy consumed while still delivering the same quality of services
- ***Energy conservation*** requires conscious decisions and behavior changes that result in reductions in energy consumption
- ***Large-scale implementation*** requires a comprehensive strategy

# U.S. Energy Efficiency Potential

- 2008 – Energy efficiency products and practices saved Americans **$19 billion** on utility bills.
- United States could save **$1.2 trillion** by 2020 with $520 billion investment in energy efficiency, plus $50 - $150 billion in program costs.

*Sources: U.S. Dept. of Energy and Environmental Protection Agency*
*McKinsey – Unlocking Energy Efficiency in the United States*

# Buildings

- Buildings consume about 70% of all electricity generated, and account for roughly 40% of total energy use in the U.S.

- **The DOE's Building Energy Codes Program**
  - Provides research, funding, and assistance for the development of state and municipal building codes.
  - Estimates that every $1 spent on the program will save $50 - $60 over the lifetime of the investment.

*Source: U.S. Department of Energy*

# Energy Efficiency in Alaska

- AHFC's Rebate and Weatherization Programs
  - Average savings per home of 780 therms (CCFs)/year of natural gas
    - Estimated annual savings per home: more than $760/year
  - **Potential savings over 10 billion CF/yr with 100% participation from Enstar customers.**
    - 10 billion CF per year represents approximately 5% of total natural gas consumed each year.

*Sources: Alaska Housing Finance Corporation*
*Enstar Natural Gas*

# Alaska's Energy Efficiency Needs

- AHFC programs are reducing the energy demand in Alaska.
  - How can we increase residential participation in AHFC programs?
  - How can we include commercial and industrial sectors?
  - How can we develop an energy efficient culture to live in these improved homes?

# Fundamental Barriers

- Significant investment in EE is required for future savings
- EE potential is scattered and fragmented
- EE is not a primary focus in economy
- Difficult to measure and verify energy that is not consumed

*Source: McKinsey – Unlocking Energy Efficiency in the United States*

# Realistic Barriers

- The biggest challenge is NOT inventing new technologies.
  - **Behavior: "Experts leave the lights on, too."**
- Competing Incentives
  - Guests in hotels
  - Landlords pass costs to the tenants
  - Lack of consumers choice, e.g, cable box
  - **Significant issue – up to 25% of residential energy use**
- Availability of capital and adequate resources
  - U.S. Energy Secretary Steven Chu: buildings could be built 40% more efficient with off-the-shelf technologies.
  - Cost of new technologies
  - Poor building practices and lack of building codes
  - Lack of experience
  - Lack of monitoring building performance.
  - "Green" buildings are still thought of as novel ideas
- Need for a holistic approach…

*Source: Dan Charles. "Efficiency Gap." Science Magazine. 14Aug09*

# Addressing Barriers

- CCHRC's *Program and Policy Recommendations*
  - State Leadership
  - Funding Energy Efficiency
  - Financial Incentives
  - Building Codes and Standards (i.e. BEES)
  - Baseline Data
  - Public Education and Outreach

*Source: CCHRC (2008) Alaska Energy Efficiency Program and Policy Recommendations*

# Juneau, Alaska

April 2008 – Avalanche crippled power lines and cutoff Juneau's hydroelectric energy supply.

- Price per kWh jumped from $0.11 to nearly $0.50
- Energy efficiency and conservation adopted overnight
- Behavioral changes temporarily reduced energy consumption by @ 30%
- After hydro power was restored, @ 8% sustained energy use reduction

*Sources: Alaska Electric Light and Power*
*Dr. Alan Meier and Wayne Leighty – Survey on Juneau's Response*

# Sustaining Energy Reductions

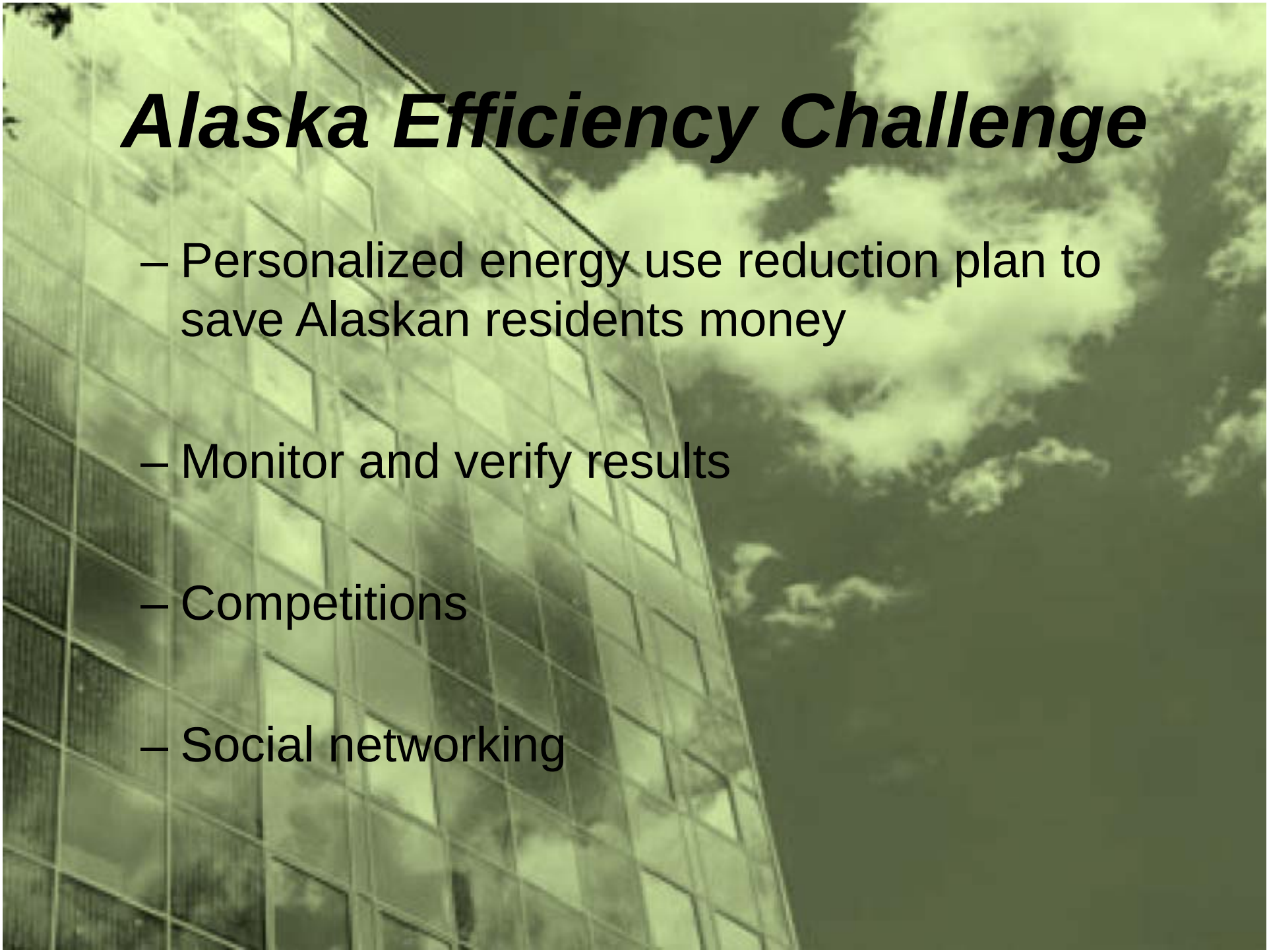
- Is a crisis necessary to change a community's energy behavior?

- Competition can also be a driving force:
  - Sacramento Municipal Utility District
    - Experimented with 35,000 customers.
    - On each utility bills, customers' energy usage was compared to the consumption of the other 35,000 participants.
    - Resulted in an average 2% decrease in energy usage.

# Fostering an Efficient Culture

A Holostitic Approach

- **Structural**
  - Access to accurate energy saving advice
  - Incentives for investing in new technologies
  - Building codes and standards
  - Aligning utility interests with energy efficiency
- **Behavioral**
  - Why conserve?
    - Savings potential
    - Increased energy security
  - Make energy efficiency “normal”
  - Competitive nature of humans



# *Alaska Efficiency Challenge*

- Personalized energy use reduction plan to save Alaskan residents money
- Monitor and verify results
- Competitions
- Social networking

# Alaska Efficiency Challenge

| Efficiency Action | Savings/year | Therms/year |
|---|---|---|
| Insulate hot water pipes | $6 | 5 |
| Use a low flow showerhead | $19 | 17 |
| Reduce shower length | $21 | 19 |
| Wash larger clothes loads | $19 | 17 |
| Buy a water heater jacket | $13 | 12 |
| Lower washing machine temperature | $11 | 10 |
| Reduce water heater temperature | $24 | 22 |
| Install a programmable thermostat | $43 | 39 |

With over 400 efficiency actions, the *Alaska Efficiency Challenge* website can provide participants with the information needed to live more efficiently as well as facilitate friendly competitions (i.e. schools, villages, and cities) while fostering an energy efficient culture.

*Source: SmartPower's Climate Culture*


REAP
Renewable Energy
Alaska Project
308 G Street,Suite 207
Anchorage, AK 99501
907.929.7770
www.REalaska.org