

**THE 2009 NATIONAL SYMPOSIUM ON MARKET TRANSFORMATION
"The Changing Face of Market Transformation"**

**Working Session I2:
Identifying Emerging Trends
in Industrial Programs**

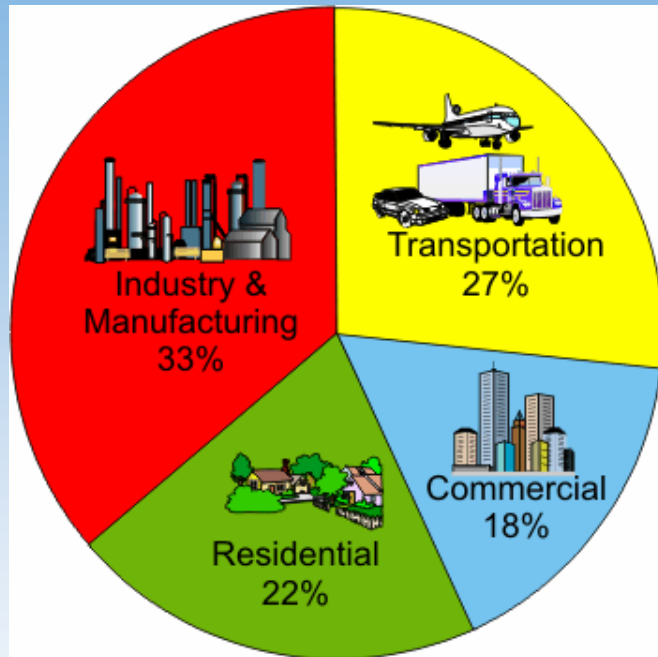
March 30, 2009

**Marriott Wardman Park Hotel
Washington, D.C.**



Working Together, Advancing Efficiency

Industrial Sector Represents a Big Opportunity to Save Energy



U.S. industry represents:

- 37% of U.S. natural gas demand
- 29% of U.S. electricity demand
- 30% of U.S. greenhouse gas emissions
- More energy use than any other single G8 nation
- Large opportunities for
 - Energy reduction
 - Emissions reductions
 - Fuel flexibility

Energy for Heat, Power, and Electricity Generation

Process/Assembly (80%)

- Process Heating
- Process Cooling & Refrigeration
- Machine Drive
- Electro-Chemical Processes
- Other

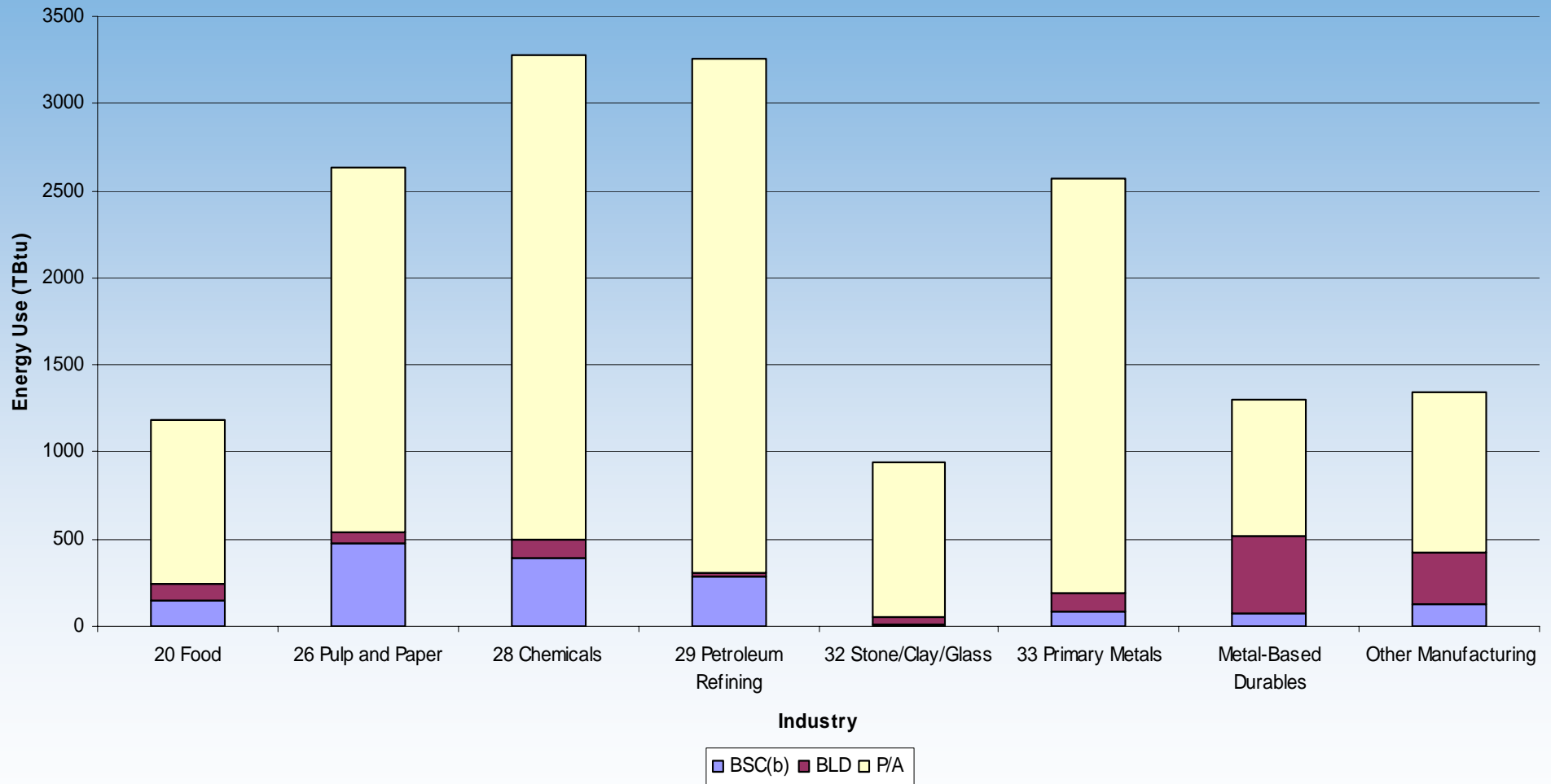
Boilers/Steam/Cogen (10%)

- Conventional Boiler Use
- Cogeneration

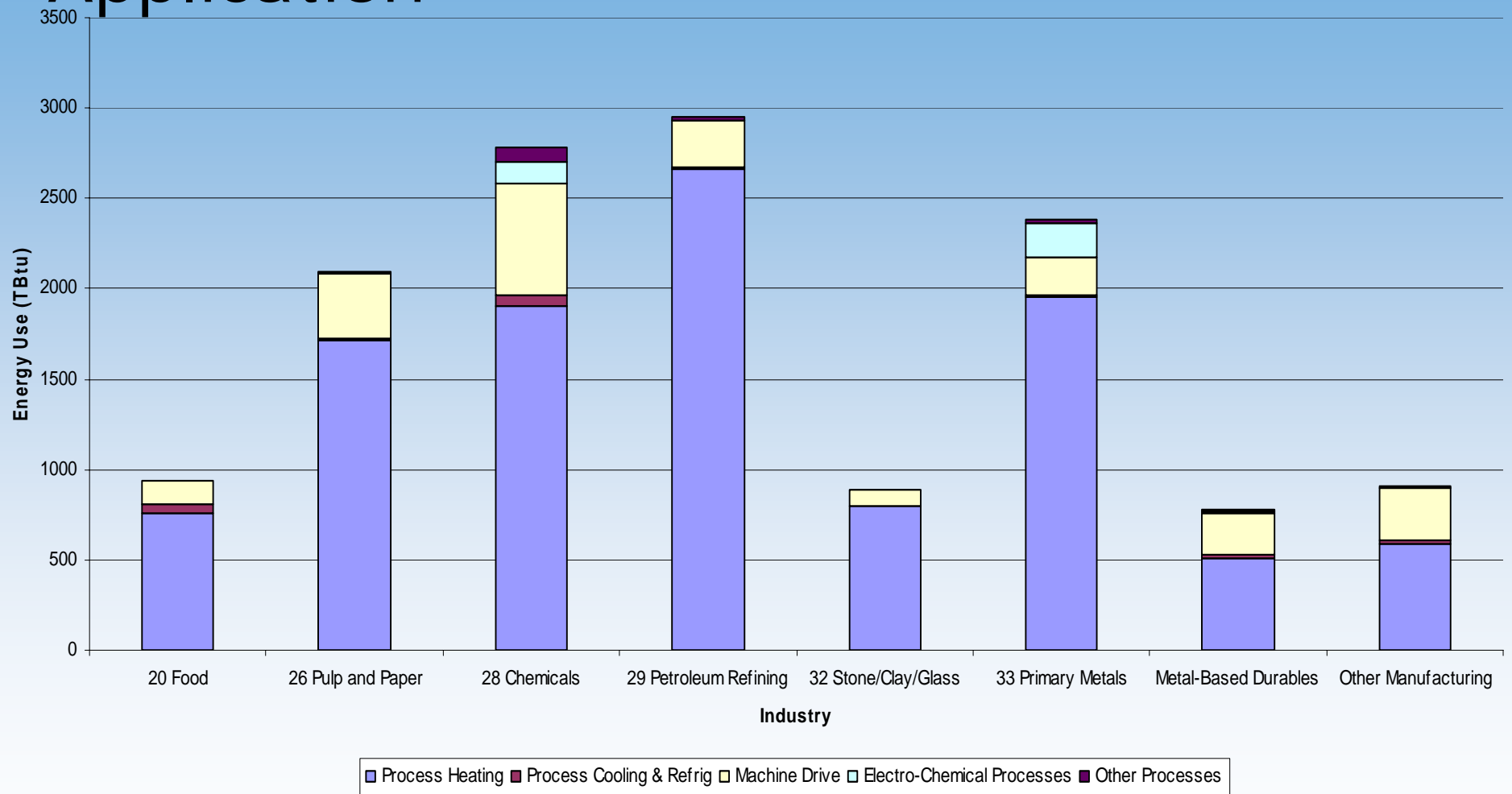
Building Use (7%)

- Facility HVAC
- Facility Lighting
- Conventional Electricity Generation

Energy Consumption (TBtu) by Industry and Component

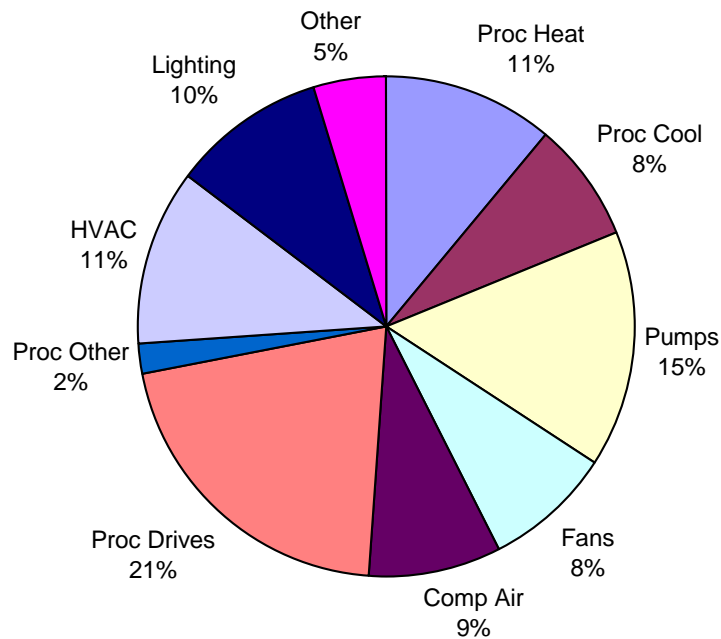


Process Energy Use by SIC and Application

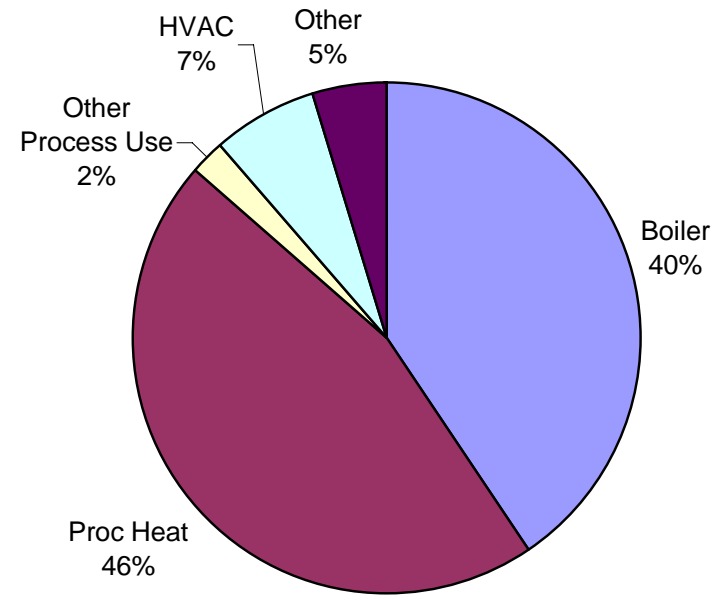


Baseline Energy Consumption (CA)

(Source: California Industrial Existing Construction Energy Efficiency Potential Study, May 2006)



Electricity



Excludes gas used for feedstocks

Natural Gas

Questions for this Session

- Who administers public benefit programs?
 - How do they typically address energy savings in the industrial sector?
- What trends are we seeing among industrial efficiency programs?
- What are the implications for programs in the future?

Who Administers Efficiency Programs?

- Budget and administrative oversight are authorized by the state legislature
- Regulators within each state are tasked with approving programs (including budgets, goals)
- Program administration is commonly performed by the utility (investor-owned or municipal), state energy office, or regional- or state-level efficiency organization

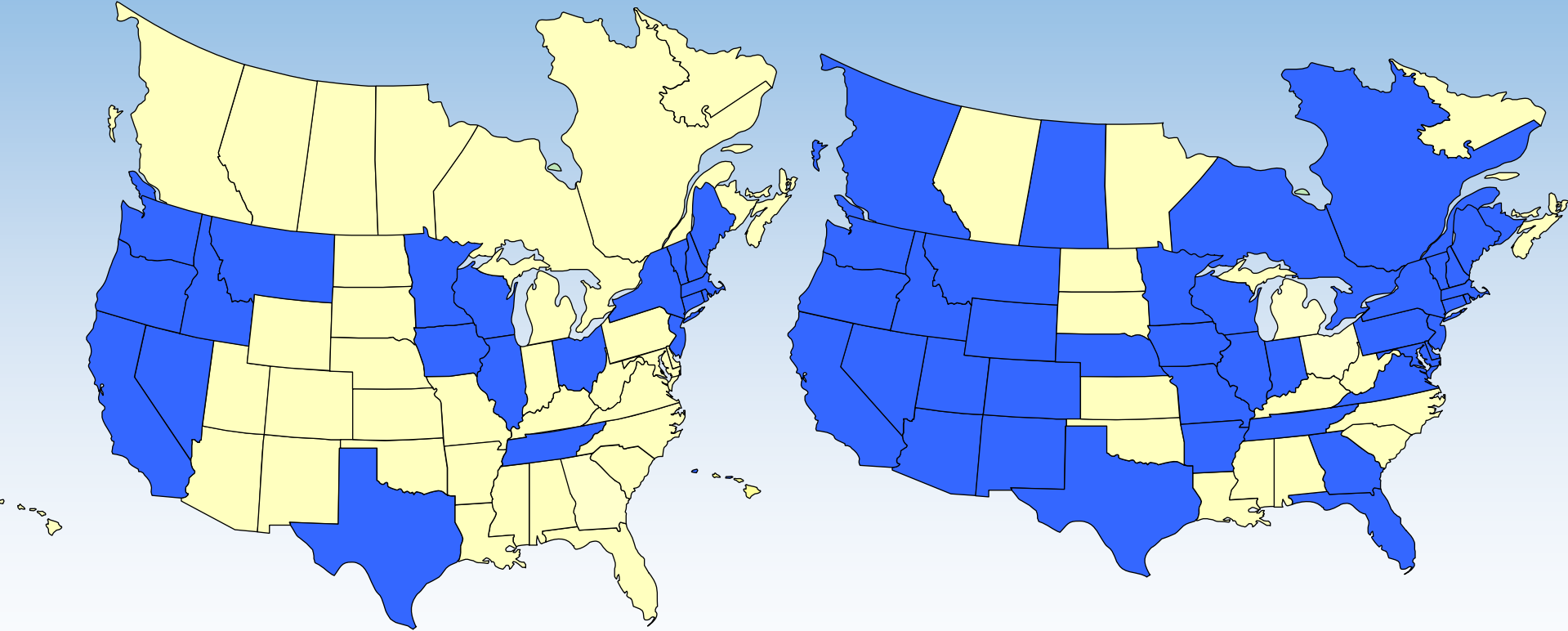
Program Administrators

- **PG&E, SCE, SDG&E**
- **SMUD, LADWP, SoCal Gas**
- **NW Alliance, Oregon Trust**
- **BPA, Seattle, Tacoma, Puget**
- **Idaho Power, Cascade Gas**
- **Nevada Energy, Snohomish**
- **Rocky Mountain Power, UT, WY**
- **TX—TXU, Austin**
- **AZ—SRP, APS**
- **WI Focus on Energy + IOUs**
- **Xcel (MN, CO, NM), Great River**
- **All Iowa IOUs; Ameren UE, IL**
- **CenterPoint—MN, TX, AR**
- **Vectren, Dominion, TVA**
- **Com Ed, Con Ed, NIPSCO**
- **All MA utilities, electric, gas, and SEO—e.g. NGrid**
- **Efficiency Vermont**
- **NY—NYSERDA, LIPA, ConEd**
- **All CT utilities**
- **NJ BPU, PSE&G, SJersey Gas**
- **All NH utilities**
- **Efficiency Maine**
- **PEPCO Holdings, PPL**
- **Hydro Québec**
- **Ontario Power Authority**
- **Gaz Metropolitain, Union Gas**
- **BC Hydro, Terasen**
- **Efficiency NB, SASKPower**
- **NRCAN, Enbridge**

Growth in Programs as Indicated by CEE Membership

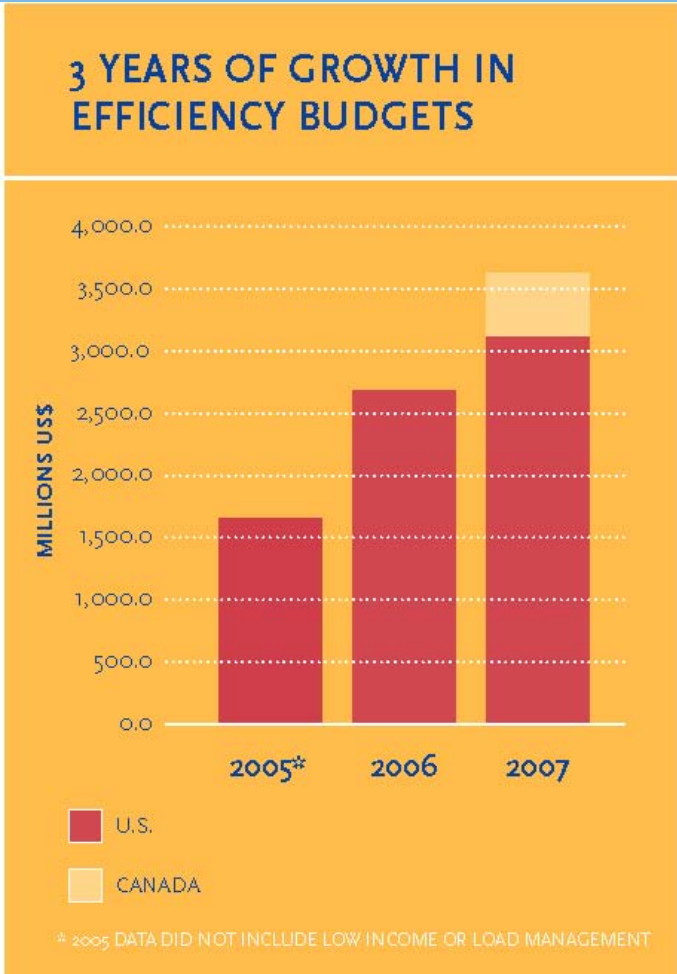
2003

2008



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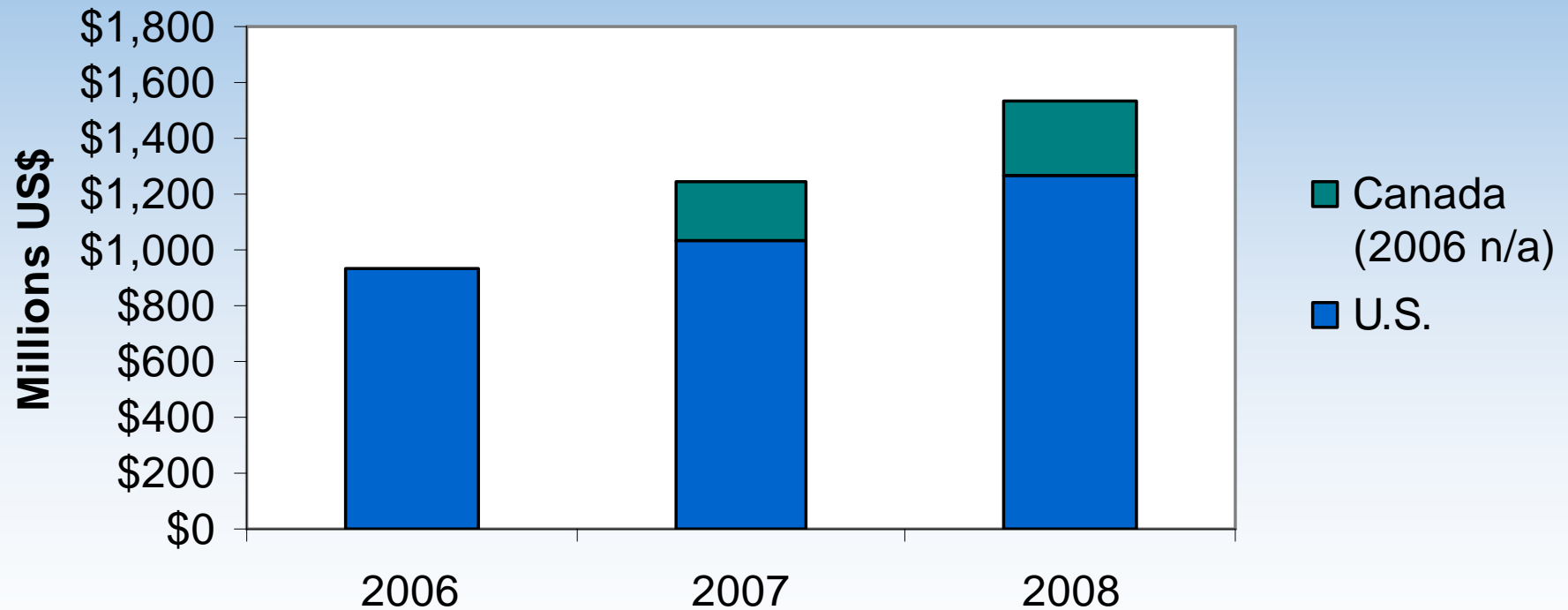
More Efficiency Programs, Means more \$



Working Together, Advancing Efficiency

Efficiency Programs Today: A \$4.5B Industry

2008 Commercial & Industrial Electric Efficiency Program Budgets: \$1.5B



Typical Efficiency Program Offerings

- Informational
 - Education/Training
 - Plant Assessments
- Incentives
 - Prescriptive
 - Downstream
 - Upstream
 - Custom
- Deemed Measures
- Financial Assistance
 - includes on-bill financing
- New Construction
 - Design Assistance
- Standard Performance Contract
- Energy Bidding

Program Types

- **Prescriptive:** Provide financial incentives, typically rebates, for specific pieces of equipment that meet prescribed energy efficiency specifications or standards, such as NEMA Premium®
- **Custom:** Incentives may be based on energy savings achieved or on the incremental or total project cost for retrofit and renovation projects. Some programs require monitoring and verification of proposed savings at project completion, while others do not. The scope of projects covered varies from program to program
- **New Construction:** Incentives may be based on projected energy savings or on incremental or total project cost. Reimbursement rates vary, with some programs covering up to 100%.

Program Types (cont.)

- **Standard Performance Contracts (SPC):** Provide funds to any qualified applicant proposing a project that meets the program criteria, usually based on a kW or kWh savings threshold. Usually, energy service companies (ESCOs) or design engineering firms work with end users to develop and submit projects. Applications often require simulations or other calculations to support the projected energy savings and normally have monitoring and verification requirements. Programs may place a cap on the amount that any one firm, customer, or individual project may receive.
- **Deemed Measures:** project elements that do not require monitoring and verification as a prerequisite for reimbursement. Deemed savings are used where there is either a standard or specification that defines product performance, or there has been sufficient experience with the process to preclude the need to actually demonstrate that the projected savings were achieved.
- **Energy Bidding:** allows industrial customers to determine the incentive they need to implement an energy efficiency project by bidding for incentive funds.

Program Approaches

End-Use Focus

- Motors, Drives, Lighting
- Compressed Air, Pump Systems
- Refrigeration, Process Cooling
- Boilers and Steam Systems
- Process Heating,
- Controls, EMS
- Co-Generation & CHP

Market Sector Focus

- Food Processing
- Pulp&Paper
- Water Treatment

Management-Based Initiatives

- Commitment to energy mgmt.
- Establishing energy champions and energy teams
- Conducting Assessments - technical, business
- Developing measurable key performance indicators
- Action planning using KPIs
- Supporting internal energy awareness and training
- Project implementation
- Recognizing Achievements

Greater latitude to manage efficiency measures on a portfolio basis

- Multi-year program budgets (3 years, 5 years)
- Can demonstrate cost-effectiveness across a host of measures rather than on a single measure basis
- Have the latitude to support measures devoted to specific customer segments (e.g., food processing)
- Can support non-traditional measures
 - emerging technologies
 - “softer” approaches (e.g., O&M)
 - energy management
 - retrocommissioning

Agenda

- Industrial Program Trends: Anna Chittum, ACEEE
- Program Perspective: Roger Baker, ComEd
- Discussant: Rafael Friedmann, PG&E
- Open Discussion

Questions

- What program trends are you seeing?
 - How are they different than the ones highlighted today?
 - Are these trends local, regional or national in scope?
- What opportunities are you seeing that programs should be responding to?
- What are the implications of these trends on efficiency programs in the long and short term?