GUAM POWER AUTHORITY

Demand Side Management Programs

Aturidåt Ilektresedåt Guahan

October 18, 2007

R·W·BECK

Mind Powered: Insight with Impact.

Demand Side Management

- Goals
- DSM History at GPA
- Implemented Programs – Summary Results
- Current Status
- Potential New Programs
- Budget (Annual DSM Expenditure Cap !)

Goals

- Increase efficiency (reduce GPA's operating costs)
- Energy Savings
- Peak Reductions and defer construction of power generation
- Customer equity (consumers participation and response to energy conservation and environmental issues).
- Cost-effectiveness
- Market transformation
- Reduce environmental degradation

DSM History at GPA

- SRC study 1993: GPA DSM plan was expected to achieve 27 MW savings by year 2000 and 39 MW by year 2101. The plan has 10 proposed programs
- After more analysis and screening, GPA started implementing the Energy Sense Program with four DSM Programs (August 1994).
- SRC Study 1998: Evaluation of Energy Sense Programs' implementation and performance over the period 1994 –1997

Implemented Programs – Summary Results

- Four Programs implemented based on a rebate Concept:
  - Efficient Home A/C Program
  - Efficient Home Water Heating Program
  - Efficient Commercial A/C Program
  - Efficient Commercial Lighting Program

DSM at GPA

- Direct financial incentives
- Marketing and educational campaigns: Customers and Local Trade Allies

Conclusions and Observations of Past DSM Efforts

- Efficient Room A/C program has highest customer acceptance (~600 rebate applicants per year). The program accounted for 86 % of total energy savings.
- Commercial A/C Program has been fairly consistent (~60 participants per year): (Hotels, Restaurants, Retail Outlets, other)
- Energy Impact:

	Year 1	Year 2	Year 3
MWh	3,139	2,815	3,449
kW	448	421	531

Conclusions and Observations of Past DSM Efforts

- SRC 3-years evaluation recommended:
  - Different Marketing and Educational Approach –
  - Information needs to reach more participants and trade allies: Seminars, Newsletters, Advertisements, visits, Case studies, workshop groups.
  - Streamline applications processing.

Current Status

- What is GPA current thinking and “where we go from here” !

Energy Act of 2005

- Creates a 30-percent tax credit for the purchase of residential solar water heating, photovoltaic equipment, and fuel cell property. The maximum credit is $2,000 (for solar equipment) and $500 for each kilowatt of capacity (for fuel cells).
- Creates a 30-percent business tax credit for the purchase of fuel cell power plants and a 10- percent credit for the purchase of stationary micro-turbine power plants.
- Creates a 10-percent personal tax credit for energy efficient improvements to existing homes. The maximum credit is $500 ($300 for windows).
- Creates a business tax credit for the construction of new energy efficient homes. The credit applies to manufactured homes meeting a 30 percent energy reduction standard and other homes meeting a 50 percent standard.
- Provides a deduction for energy efficient commercial buildings meeting a 50 percent energy reduction standard. The maximum deduction is $1.80 per square foot of the building.
- Provides a manufacturers' tax credit for energy efficient dishwashers, clothes washers, and refrigerators manufactured in 2006 and 2007.

Energy Act of 2005

- Paragraph 11: Net Metering (help DG generation offset utility generation)
- Paragraph 12: Fuel Sources (Utilities must minimize dependence on one fuel source)
- Paragraph 13:Fossil Fuel Generation Efficiency (10-year plan to increase efficiency of fossil fuel generation)
- Section 1252: Time-of-use Rates and Smart Meters

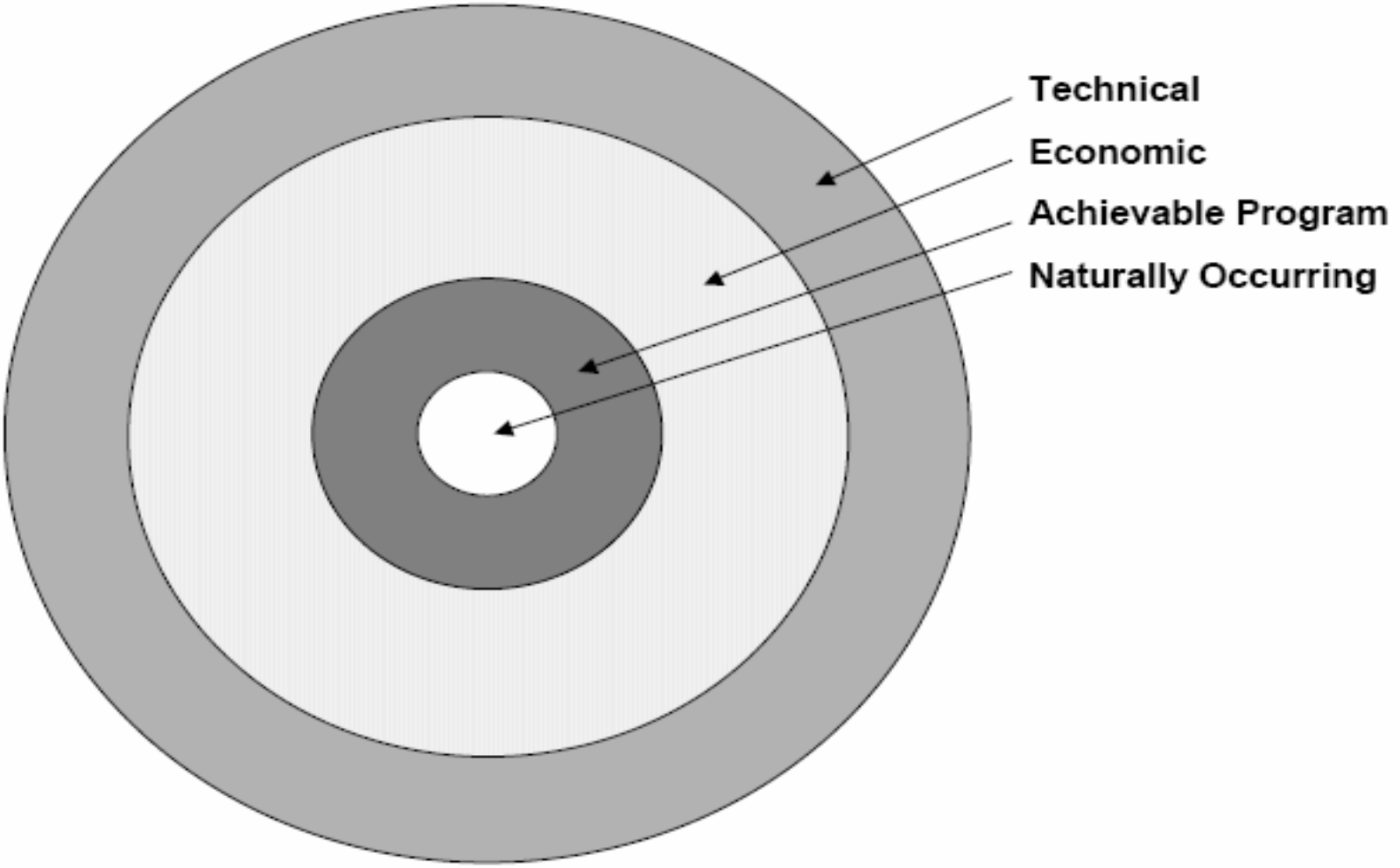
Potential New Programs

- Trends in the Mainland:
  - Demand Response:
    - SCE's Lighting Energy Efficiency Demand Response Program
    - IntelliGrid Architecture: integrating data communication networks and smart equipment on the grid and on consumer premises
    - Consumer portal: a two-way communication link between utilities and customers to exchange information
  - O&M : (Utilities or 3rd Parties assist Customers improving the performance of equipment and machines).

Potential New Programs

- Potential Programs
  - Residential Lighting (CFL, Fluorescent, Halogen, ..)
  - Residential Appliances (Clothes Washer, Dishwasher, Refrigerator, ..)
  - Firm DR (Direct or scheduled interruptions of electrical equipments and appliances)
  - Non-firm DR (Curtailable rate, time-varying prices (TOU, RTP, Critical peak pricing, and demand bidding programs)
  - Commercial O&M (Lighting control Tune-up, Chiller Tune-up, Fan and Pump O&M, ..)
  - ENERGY STAR New Manufactured Homes
  - Online Energy Audit

Evaluation Processes



Budget (Annual DSM Expenditure Cap !)

- The purpose of this cap is to recognize that ratepayers are essentially paying (the initial investment) for DSM programs.
- So, how much of an immediate impact on customers' electricity bills can be tolerated?

Questions?