



Demand Response & Education

Randy Altergott

Planning & Evaluation Specialist, Energy
Efficiency and Renewable Programs



Demand Response and Education

- **Direct Load Control**
- **Education and Outreach**
- **Time of Use Rates**

Direct Load Control

- DLC – direct control of customer's end use equipment
- TEP only
- C & I Program
- Residential / Small Commercial Program



Direct Load Control

- C & I Program:
 - Target Large Commercial & Light Industrial
 - Big Box stores, Grocery chains, Large office buildings
 - Pay for MW reduction
 - Up to 40 MW under contract within 2 - 3 years
 - Aggregate customer load
 - HVAC, lighting, refrigeration, motors, etc
 - Under contract negotiations

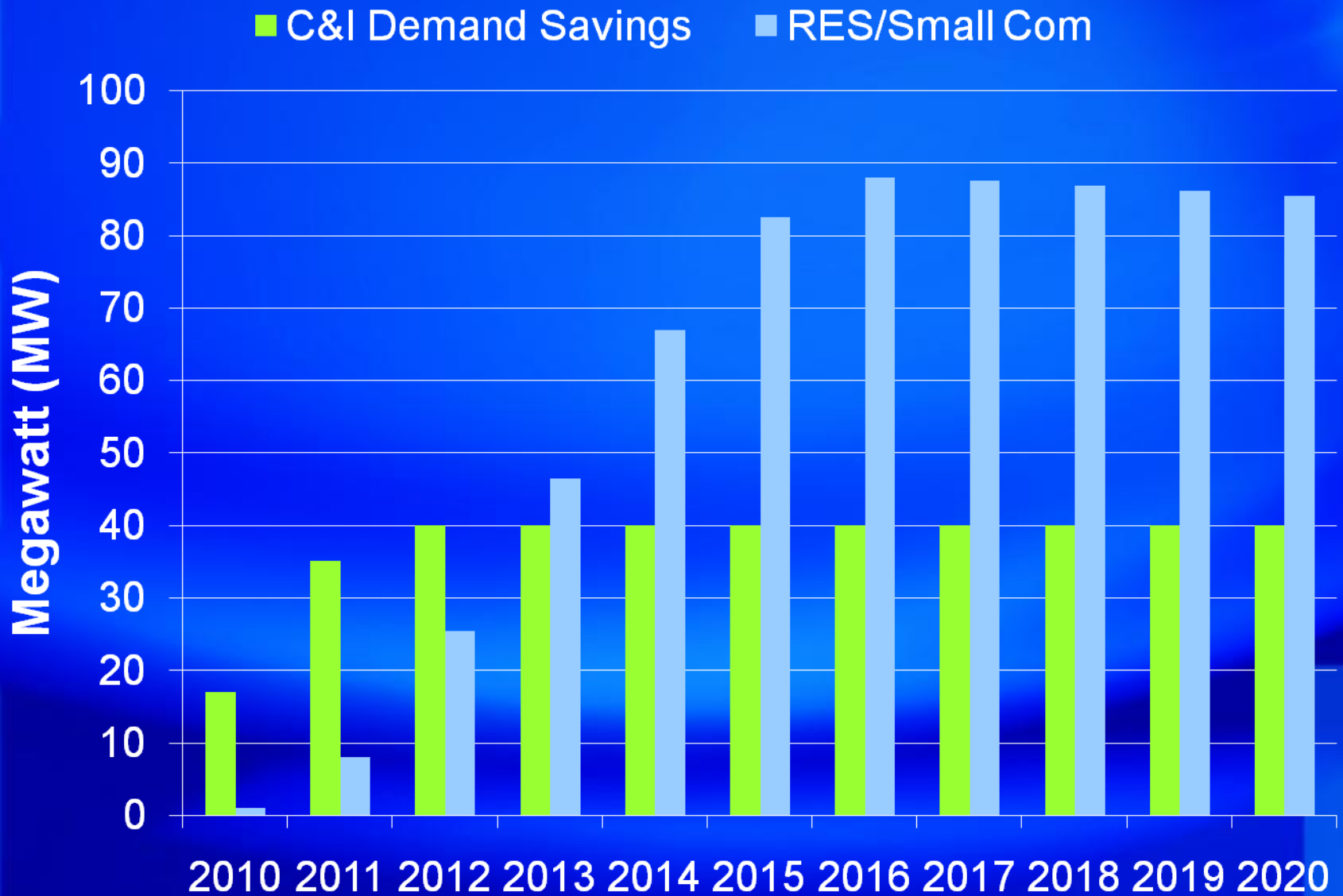
Direct Load Control

- Residential / Small Commercial (Mass Market)
 - Target residential & small commercial
 - strip malls, small retail, small office buildings, etc
 - Control AC (thermostats, some switches)
 - Utilize 2-way communication technology (Broadband internet access)

Direct Load Control

- Residential / Small Commercial (Mass Market)
 - Pilot Program to test technologies and verify savings
 - Technologies may include some In-Home Displays
 - 600 residential and 200 small commercial for pilot
 - Customer incentive \$25/yr residential (\$40/yr commercial) and free thermostat
 - Last 2 - 3 years

TEP MW Reduction



Education and Outreach

- Services that inform and educate customers about available programs and energy efficiency
- Time-of-Use Education
- On-Line Energy Audits
 - (Energy Advisor)
- On-line Energy Calculators
- School Programs
- Energy Efficiency Advertising

Visit us online at

www.tep.com/green

www.uesaz.com/green

Education and Outreach

- On-line Energy Calculators



Cooling Calc



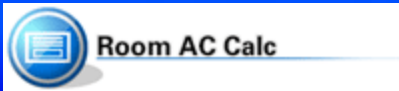
Heating Calc



Thermo Calc



Lighting Calc



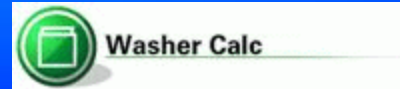
Room AC Calc



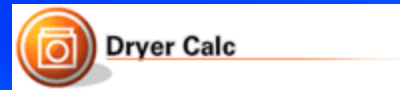
Appliance Calc



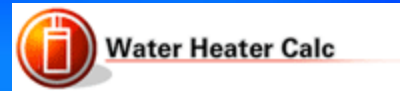
Fridge Calc



Washer Calc



Dryer Calc



Water Heater Calc

Online Energy Information

- Energy Saving Tips
- Carbon Footprint Calculator
- Kilowatt Counter
- “Phantom Energy” Calculator



Carbon Footprint Calculator

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Green Energy

Carbon Calculator

Profile Energy & Water Transportation Waste Actions

* indicates required field

1 Zip Code* 85701

2 Home Type* Detached Single Family H

3 Home Age* 10-15

4 Living Area (sq ft)* 1076

5 Number of Occupants* 2

6 Number of Vehicles* Select

7 Swimming Pool* No

8 Pool Heater* Select

update Next

My Carbon Footprint 0 tons CO₂/yr
National Avg. 24.4 tons CO₂/yr

Carbon Emissions

National Avg Emissions My Carbon Emissions

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Time of Use Rates (TOU)

- Voluntary program to induce customers to shift energy use to off-peak time
- Reduce peak demand but not total energy use
 - some studies show a net energy use reduction



Time of Use Rates (TOU)

- **TEP & UNSE PowerShift™**
- **Residential - Three Options**
 - Weekend Includes Peak
 - Weekend Includes Shoulder
 - Weekend Entirely Off-Peak
- **Commercial – One Option**



Demand Response

- Future Possibilities
 - Mandatory TOU?
 - Real Time Pricing?
 - Critical Peak Pricing?

Questions

Contact Info

Randy Altergott, CEM CDSM

Office: (520) 918-8359

raltergott@tep.com