

# Utility Perspective: SRP

Lori Singleton  
Director, Emerging Customer Programs  
Solar, Sustainability and Telecom  
Salt River Project

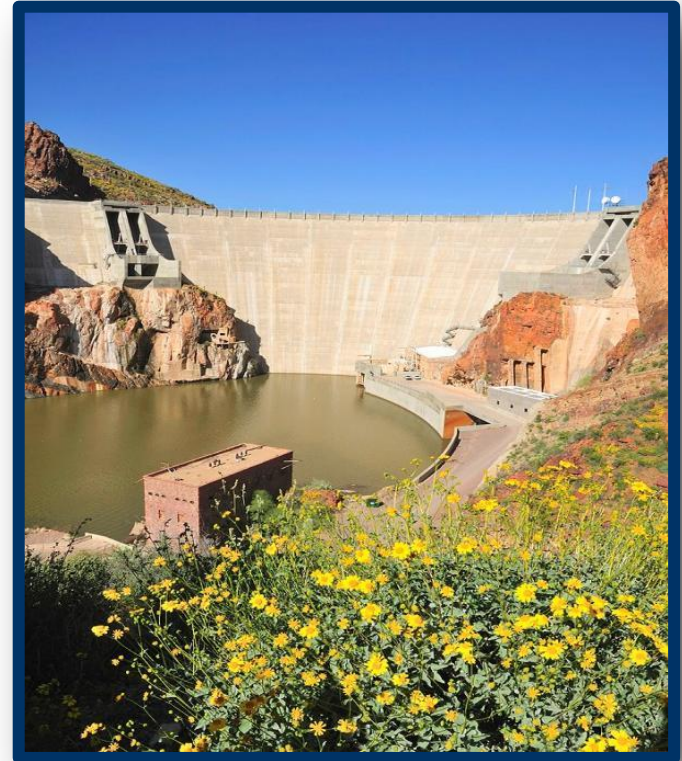
July 30, 2015

# Who We Are...

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## Salt River Project (SRP)

- Established in 1903 as a federal reclamation project
- Third largest public power utility in the Nation
- Largest water supplier to the Valley of the Sun (Phoenix Metro)
- 1M electric customers



# J.D. Power 2015 Electric Utility Residential Customer Satisfaction Study<sup>SM</sup>

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- “Highest in Customer Satisfaction among Large Utilities in the West,”  
14 Years in a Row
- The study looked at the following factors:
  - ✓ Power quality & reliability
  - ✓ Price
  - ✓ Billing & Payment
  - ✓ Corporate Citizenship
  - ✓ Communications
  - ✓ Customer Service

**Disclaimer:** Salt River Project received the highest numerical score among large utilities in the West region in the proprietary J.D. Power 2002-2015 Electric Utility Residential Customer Satisfaction Study<sup>SM</sup>. 2015 study based on a total of 102,525 online interviews ranking 13 providers in the West (AZ, CO, ID, MT, NM, OR, SD, TX, WA). Proprietary study results are based on experiences and perceptions of consumers surveyed in July 2014-May 2015. Your experiences may vary. Visit [jdpower.com](http://jdpower.com).

# Emerging Customer Programs

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- Solar
- Technology Solutions
- Energy Efficiency Solutions

# Solar

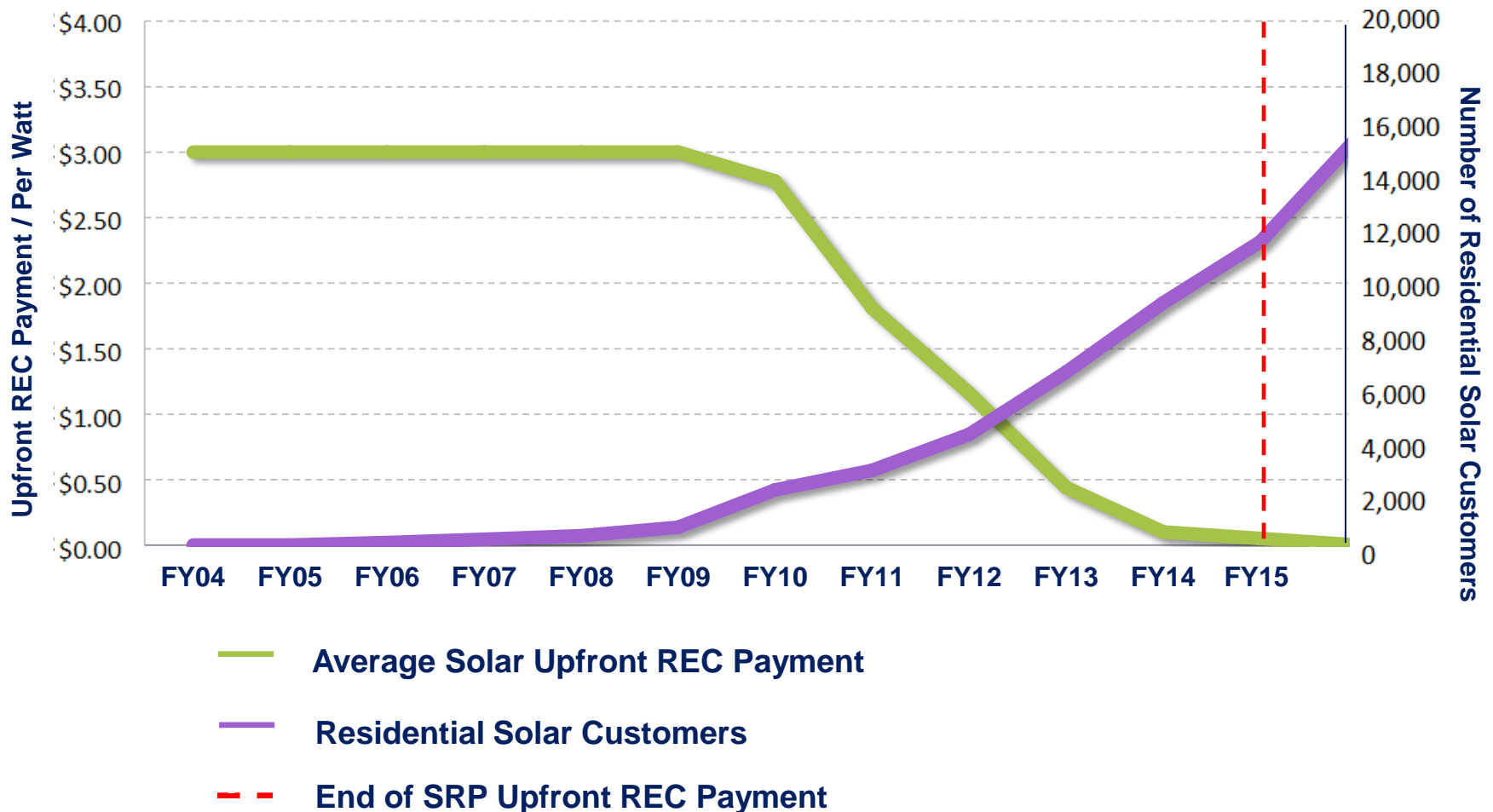
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# SRP Residential Solar Customer Growth and Upfront Renewable Energy Credit Payment

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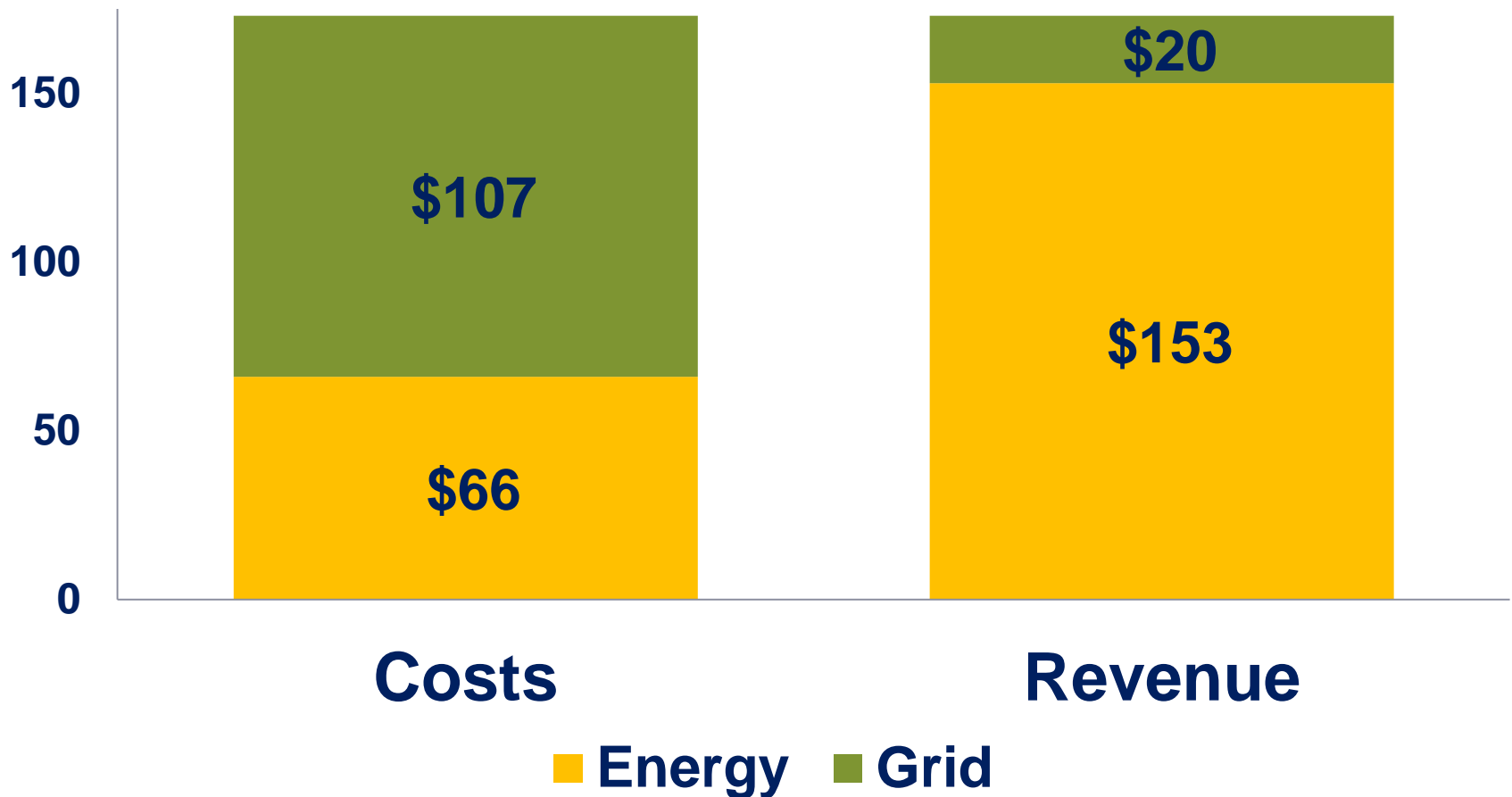
(August 2004 – December 2014)



# Typical Solar Customer: Costs & Revenues

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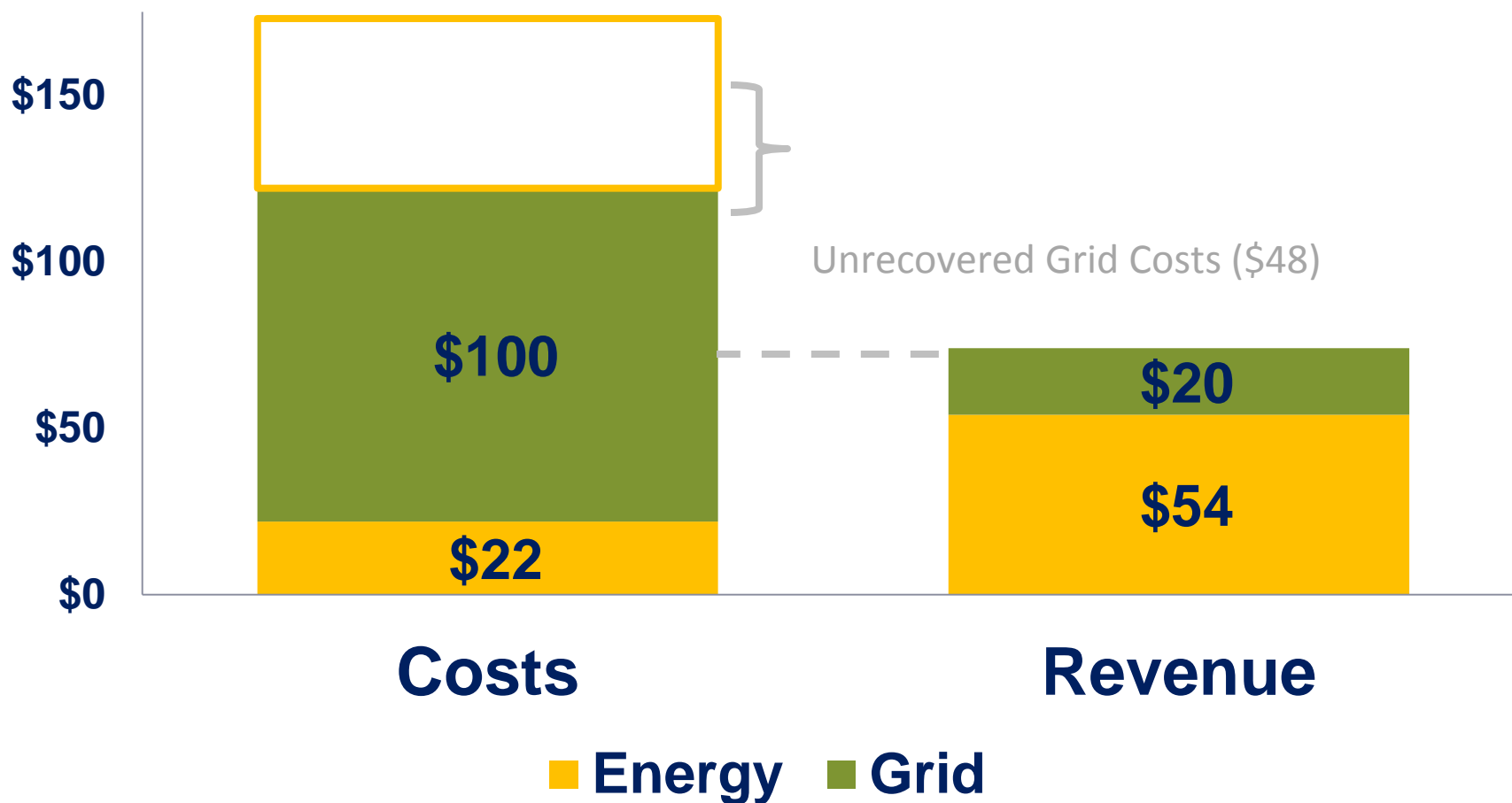
Monthly Cost and Revenues (Before Solar)



# Typical Solar Customer: Costs & Revenues

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Monthly Cost and Revenues (After Solar)



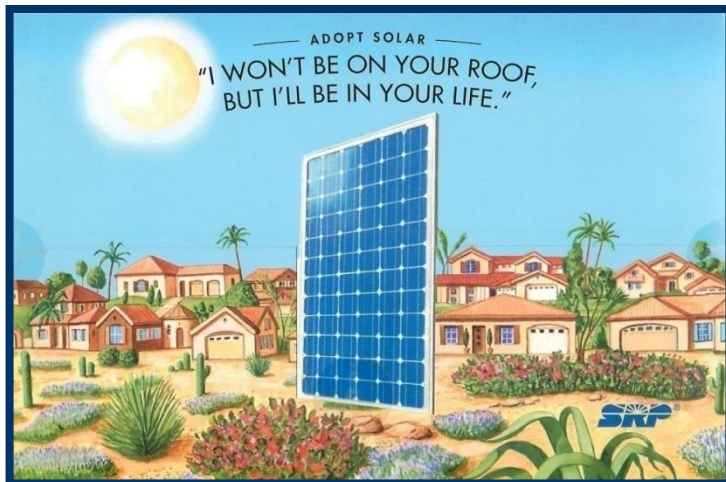


# Community Solar Program

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Copper Crossing Solar Ranch  
Florence, AZ



- Allows customers to purchase output from local 20 MW solar plant
- Alternative to rooftop solar installation for customers who may not own their home or who have unsuitable roofs for solar
- Alternative to “leasing” option currently offered by solar vendors
- Price fixed over participation term
- 2,810 residential customers, 96 schools
- Program billed as if system was installed on customer’s rooftop
- Program currently in redesign

# Earthwise Energy

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The Phoenix Zoo



Desert Botanical Gardens



Nina Mason Pulliam Rio Salado  
Audubon Education Center



Sunshine Acres



- Allows customers to fund solar energy projects on nonprofits throughout the community
  - 4,500 residential customers
  - 70 business customers
- Over 30 projects completed since 2007

# Technology Solutions

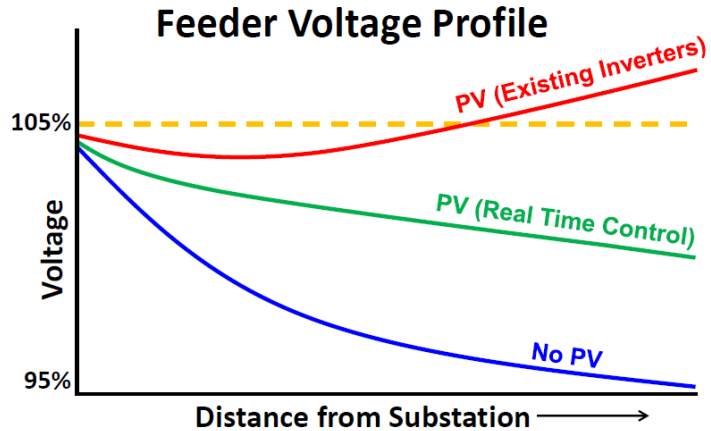
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- Advanced Inverter Project
- Battery Storage Project
- Electric Vehicle Programs
- Smart Thermostats
- Demand Reduction Solutions
- Home Automation
- Home Energy Disaggregation

# Advanced Inverter Project

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## Real Time Voltage Management



- Three-year project held in partnership with EPRI to analyze the benefits of advanced inverters on SRP's grid
- Deploy and test 950 advanced solar inverters (new and current customers)
- Optimize inverter settings to enhance grid reliability
- Install and test inverters at SRP facility prior to customer installs
- Anticipated Underwriters Listing inverter certification in October

# Battery Storage Pilot

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**POWERWALL**  
TESLA HOME BATTERY

**OutBack**  
**POWER™**

- Test various battery solutions that will reduce peak demand
- Deploy battery storage pilot with limited number of customers
- Request for Information from local vendors
- Currently have 25 customers with solar/battery installations (used for emergency back-up only)

# Electric Vehicle Programs

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- SRP's Fleet of Electric Vehicles
  - 37 vehicles
  - Ford Fusion, Ford C-Max, Ford Focus, Nissan Leaf, Chevrolet Volt, Chevrolet 1500 Fleet Truck
- EV Rewards
  - Offers residential customers \$50 Amazon gift card in exchange for self-reporting EV ownership
- EV Rebates
  - Offers commercial customers \$500 rebate for purchase and installation of Level 2 charger
  - Offers homebuilders \$100 rebate to install 240 Volt outlet in garage of new construction homes

# Smart Thermostats

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- Determine whether customers who use a smart thermostat will save on SRP's EZ-3 rate (3:00pm-6:00pm)
- Saves customers money by precooling home to avoid consumption during peak hours
- 147 customer installations
- Energy Hub software platform
- Radio Thermostat hardware
- Wi-fi enabled thermostat
- Multi-utility study with EPRI

# Demand Reduction Solutions

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- Pursuing vendor solutions for demand reduction for customers on new Customer Generation Price Plan
  - Provides in-home display for current kW (demand) usage and cost
  - Provides real-time monitoring and alerts
  - Allows customer to avoid usage of multiple large appliances





# Home Automation

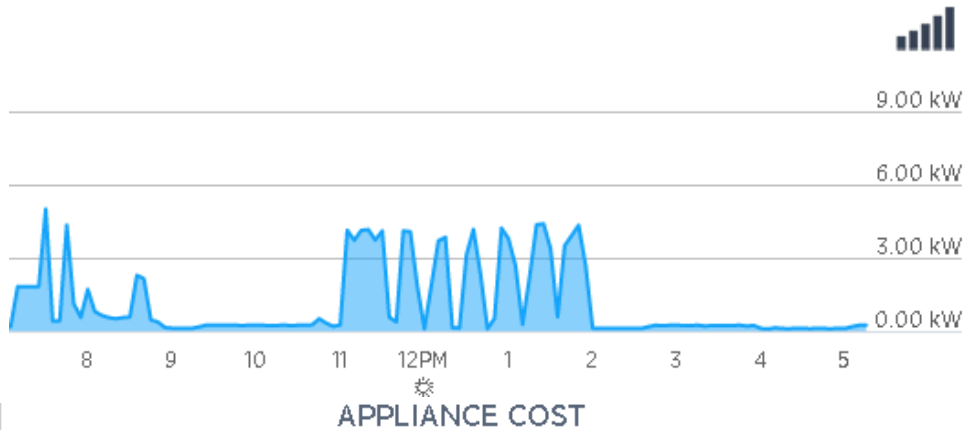
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- Initial discussions with home automation companies
  - Research indicates customers may prefer this service from utilities
  - Considerations
    - Do it yourself vs. Professional install
    - Low upfront cost/higher monthly fee
- OR
- High upfront cost/lower monthly fee

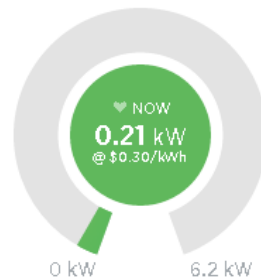
# Home Energy Disaggregation

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Appliance Category	Cost
COOLING	\$1.50
POOL PUMP	\$0.37
REFRIGERATION	\$0.10
ALWAYS ON	\$0.17

## REAL-TIME ENERGY USAGE



- Proposed pilot with Bidgey
- Device communicates with smart meter to disaggregate total home consumption to appliance level
- Provide real-time data to customers by appliance
  - Demand, energy, cost
  - Daily, monthly, yearly

# Energy Efficiency Solutions

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- Save with SRP
- School of Energy
- SRP DataStation

# Save with SRP Rebates

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- Energy Audit
  - \$99 ENERGY STAR in-depth inspection of home
- Air Conditioning
  - Up to \$400 back on new energy-efficient AC or heat pump
- Refrigerator Recycling
  - \$50 for recycling old refrigerator
- Shade Tree
  - Two free desert-adapted trees to plant in energy-saving locations around residents home
- Pool Pump
  - Save \$100 on ENERGY STAR variable-speed pool pumps
- Shade Screen
  - Rebates on professionally installed shade screens

# School of Energy

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- Provide three schools with energy management training to promote behavior modification, kWh reduction, electric bill savings
- Submetering and dashboard via Elster Enacto hardware/software
- Enhances SRP's goal to be "Trusted Energy Advisor" for all customers
- Year long pilot implemented for 2015 expansion to additional schools in the following years

# SRP DataStation

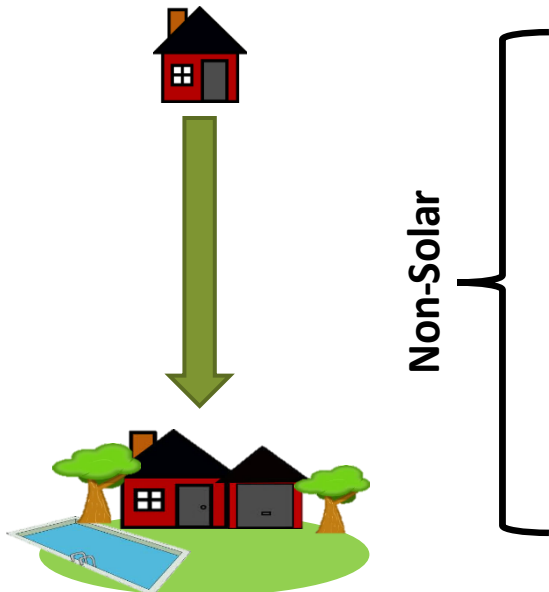
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- Modular data center that can be deployed outdoors and connected directly to the grid
- Brings load to where power is available and where growth opportunities exist
- Provides extremely reliable power at significantly reduced cost

# Questions

# Solar Customers are Different

Average Month			
		<u>kWh</u>	<u>On-Peak kW</u>
	Stratum 1	261	2.7
	Stratum 2	512	4.3
	Stratum 3	756	5.4
	Stratum 4	1,033	6.4
	Stratum 5	1,430	7.6
	Stratum 6	2,275	9.7
Typical Solar Customer		491	7.3



# Customer Generation Price Plan

## 200 Amp Service

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	Monthly Service Charge	Distribution Charge	Demand/Grid Charge			Energy		Season
			1st Block	2nd Block	3rd Block	On-Peak	Off-Peak	
			(3kW)	(7kW)	(all else)			
E-27	\$20.00	\$12.44	\$8.03	\$14.63	\$27.77	\$0.0486	\$0.0371	Summer
			\$9.59	\$17.82	\$34.19	\$0.0633	\$0.0423	Peak
			\$3.55	\$5.68	\$9.74	\$0.0430	\$0.0390	Winter

# Customer Generation Price Plan

## Typical Solar Customer – 200 Amp Service

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### Pre-Solar

	Monthly Service Charge	Distribution Charge	Demand/ Grid Charge	Energy	Average Monthly Bill
E-26	\$20.00	-	-	\$152.96	\$172.96
E-27	\$20.00	\$12.44	\$73.97	\$65.26	\$171.67

### Post-Solar

	Monthly Service Charge	Distribution Charge	Demand/ Grid Charge	Energy	Average Monthly Bill
E-27	\$20.00	\$12.44	\$67.92	\$21.55	\$121.91