



ACEEE HOT WATER FORUM.

NEW TECHNOLOGY
Commercial buildings.

ACT D'MAND CIRC KONTROLS SYSTEMS[©]

PRESENTED March 2018

BY

LARRY K. ACKER CEO

**IT TAKES MORE ENERGY TO HEAT
WATER THAN ANY LIQUID OR
METALS IN THE WORLD**

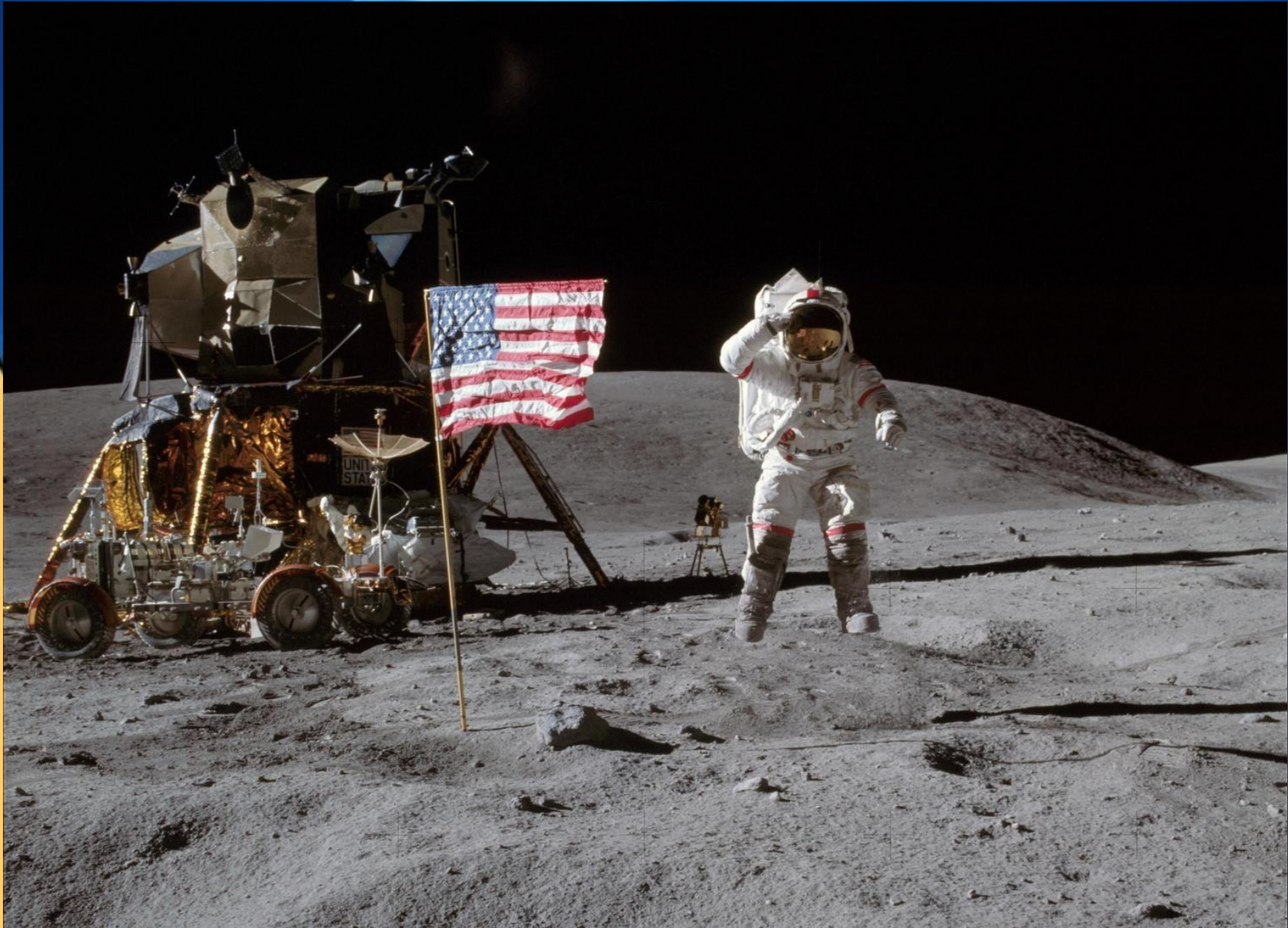


FACTS

- **IT TAKES 37 TIMES MORE ENERGY TO HEAT 1000 GALLONS OF WATER THAN IT DOES TO MOVE 1000 GALLONS FROM A WATERSHED TO A HOME AND ON TO A SEWAGE TREATMENT PLANT**

- 20 PERCENT OF THE ENERGY USE IN THE WORLD IS IN PUMPING.

- Energy used by the Water sector
 - Nationally – more than 30 billion kWh/ year







STRUCTURED PLUMBING®

- A SUSTAINABLE PLUMBING SYSTEM DESIGNED FOR HOT WATER DISTRIBUTION TO BENEFIT THE GREATEST SAVINGS OF WATER AND ENERGY IN RESIDENTIAL AND COMMERCIAL BUILDINGS, PLUS ADDED CONVENIENCE TO THE USER.



STRUCTURED PLUMBING®

- **COMMERCIAL**
Smart controls



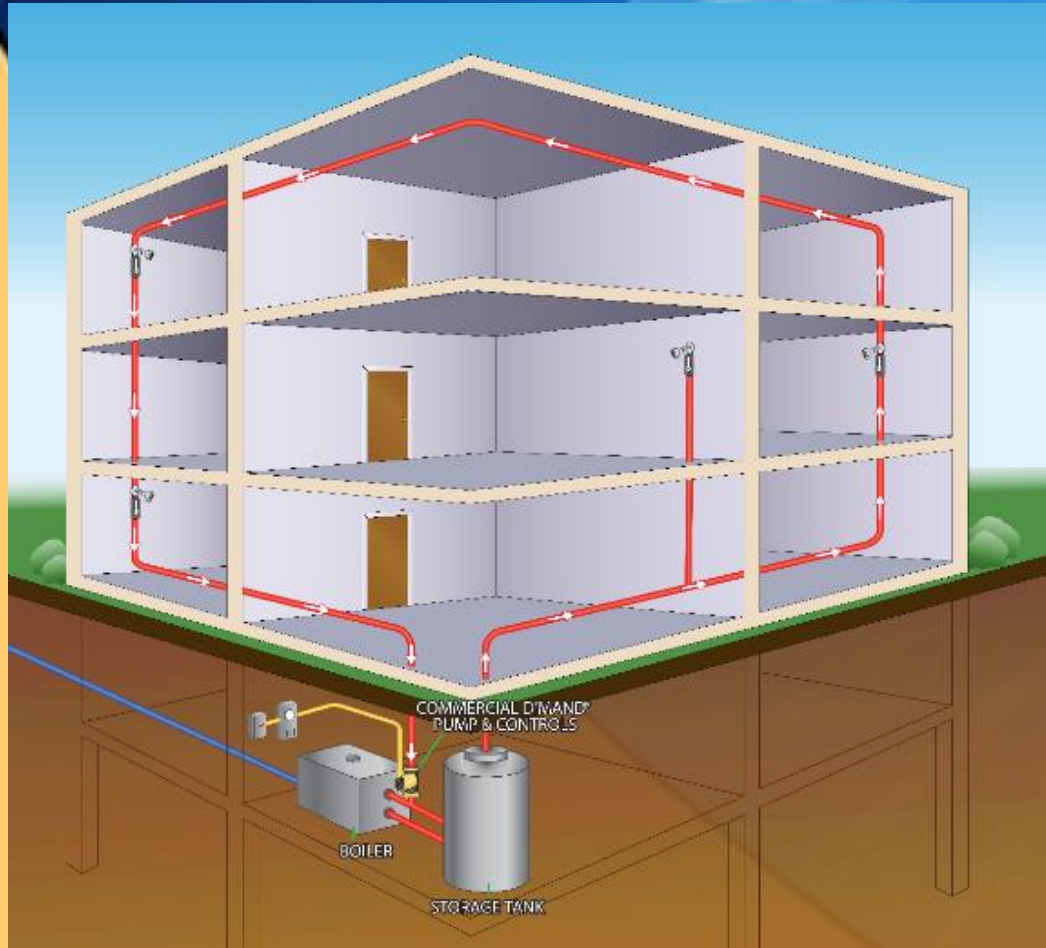
D'MAND CIRC DATA COLLECTION

- **Remote collection by site managers/owners or utilities. Gas/Energy collection-daily/weekly based on base costs and tiers.**
- **Pattern changes in equipment. (warning signals)**
- **Up grade EMC compatible motors.**
- **Automatic electronic sensor for Hydronic Systems.**
- **Manage multi hot water returns.**
- **Manage up to 7 HP Pumps/3 phase/220/240**

Hot Water on D'MAND®

D'MAND CIRC® - Multi Family Target Markets

- Property Management Companies
 - Commercial Plumbing Contractors
 - Mechanical Engineers and Architects
- Apartments and Condominiums
- Hotels
- Senior Living Facilities
- Resorts and Time Share Properties





D'MAND CIRC KONTROLS®

Internet computer remote connections

Monitoring

- **Pump run time.**
- **Pump stop/start time.**
- **Pattern changes**
- **Memory based**
- **Water temperature measuring.**



RESIDENTIAL KONTROLS©

- Blue Tooth Technology
- LED Lighted Buttons—Multiple activation
- Memory Kontrols
- Sonar/sound waves
- Voice activation



INTERNET CONNECTIONS.
CAMERA SITE VIEWING ON DEMAND.



SONAR ACTIVATION

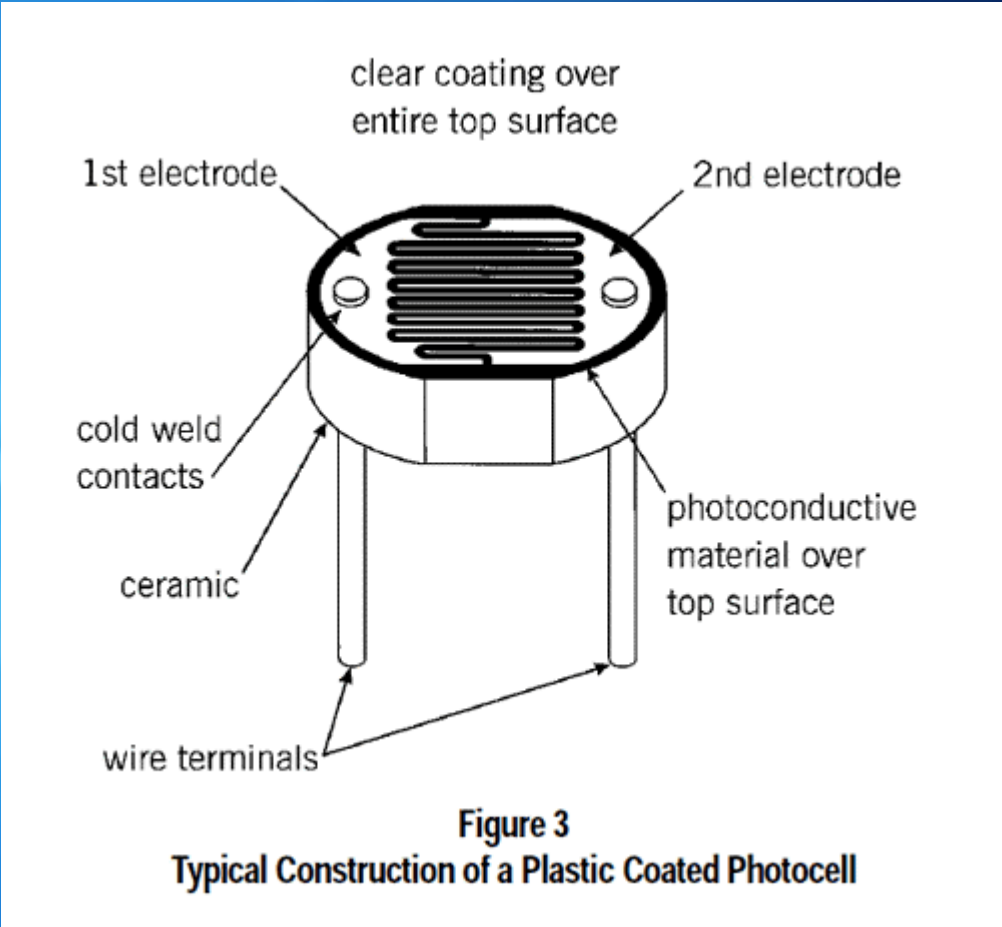
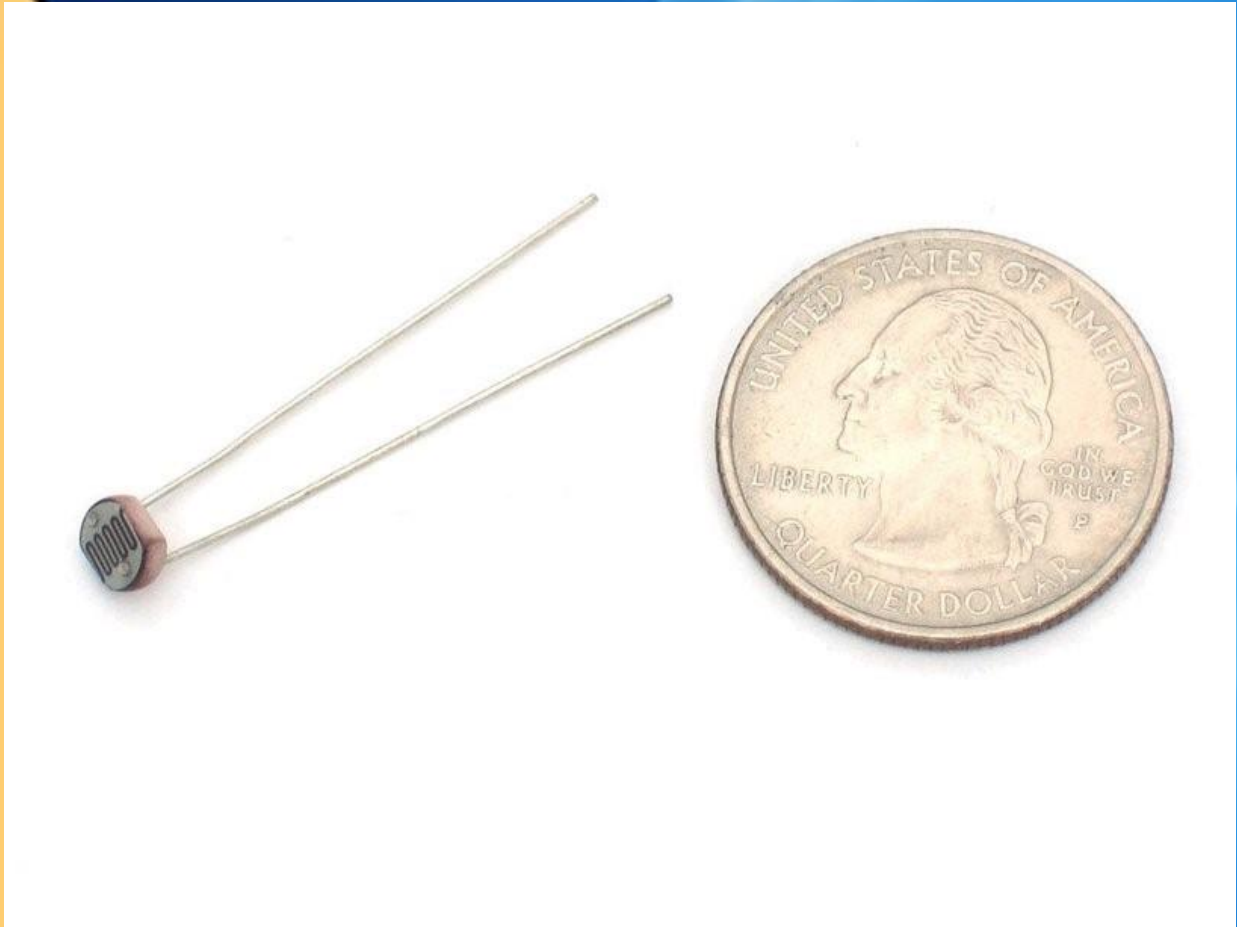
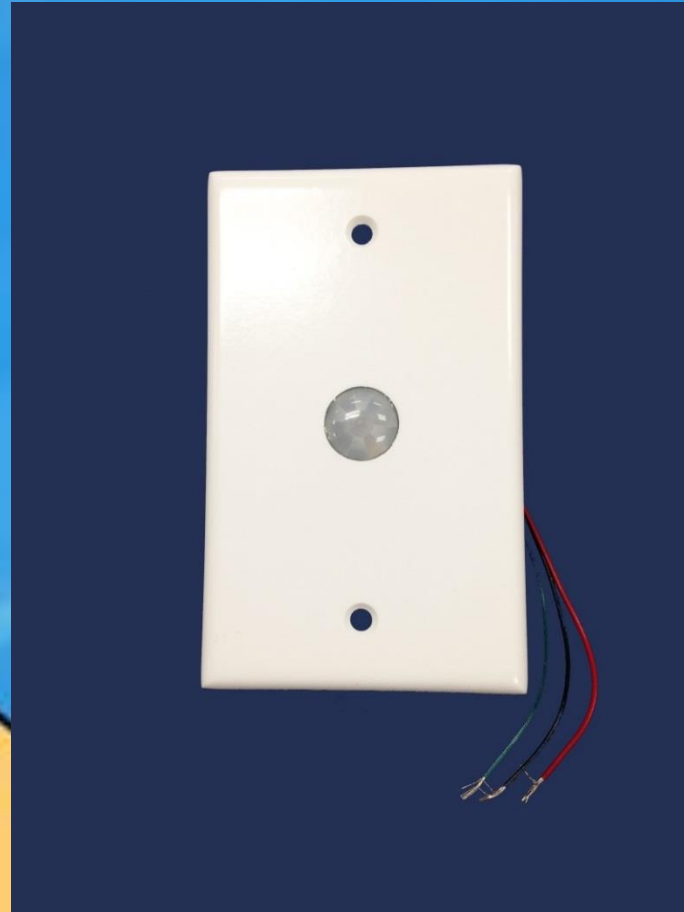


PHOTO CELL APPLICATION



Hard Wired Motion Sensor



Hardwired Accessories



*Electronics Makes
the Difference[®]*



LED
Decor
a
Switch



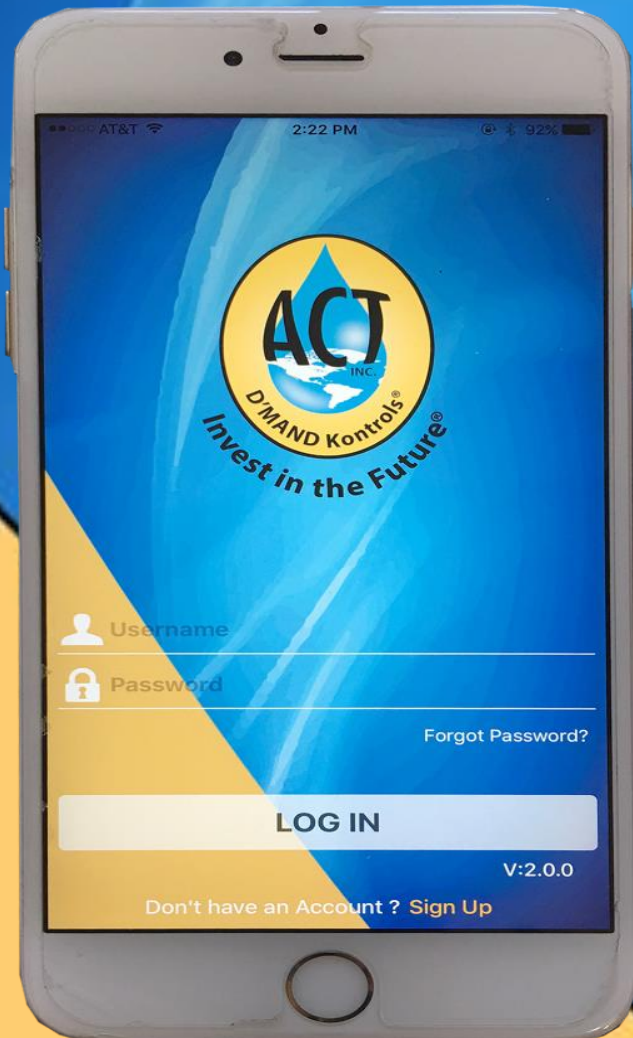
NEW
LED Hardwired
Button



Motion Sensors



New Bluetooth Capability



- Available for both iOS and Android.
- Simple & convenient activation.











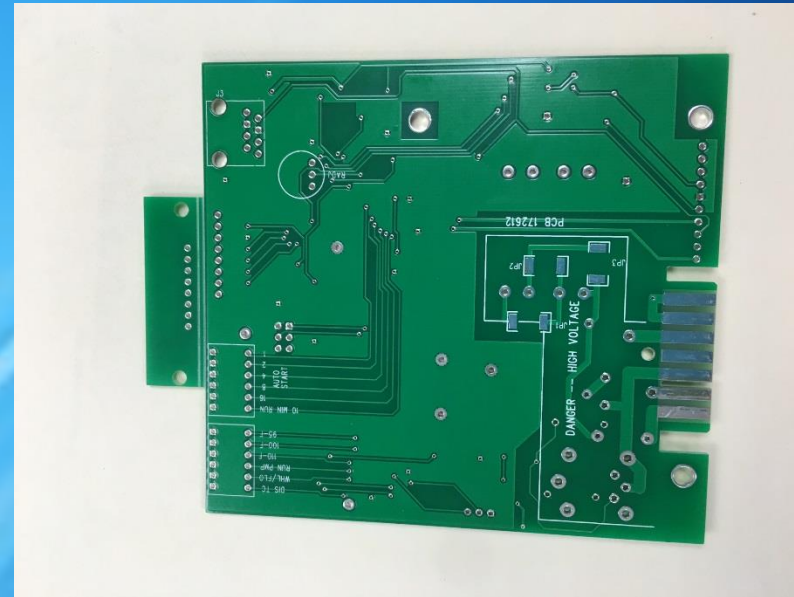
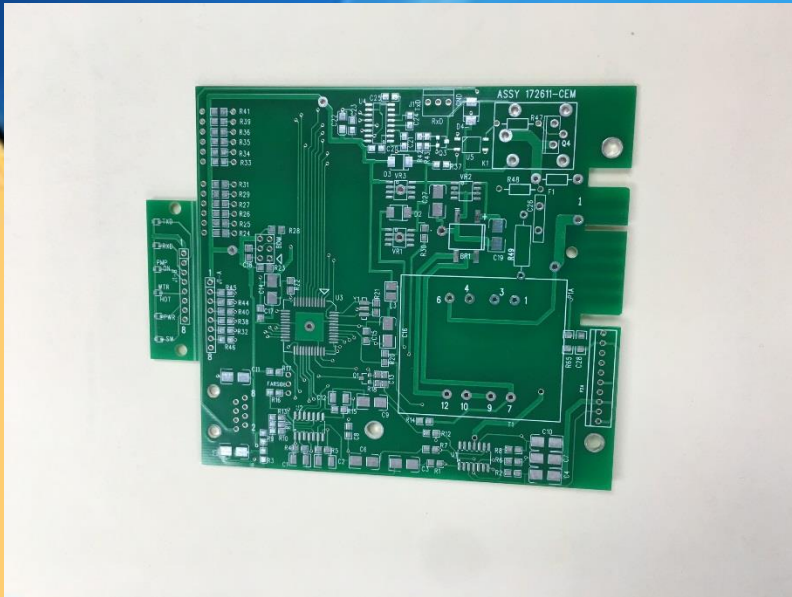
MONITORING/DATA COLLECTION

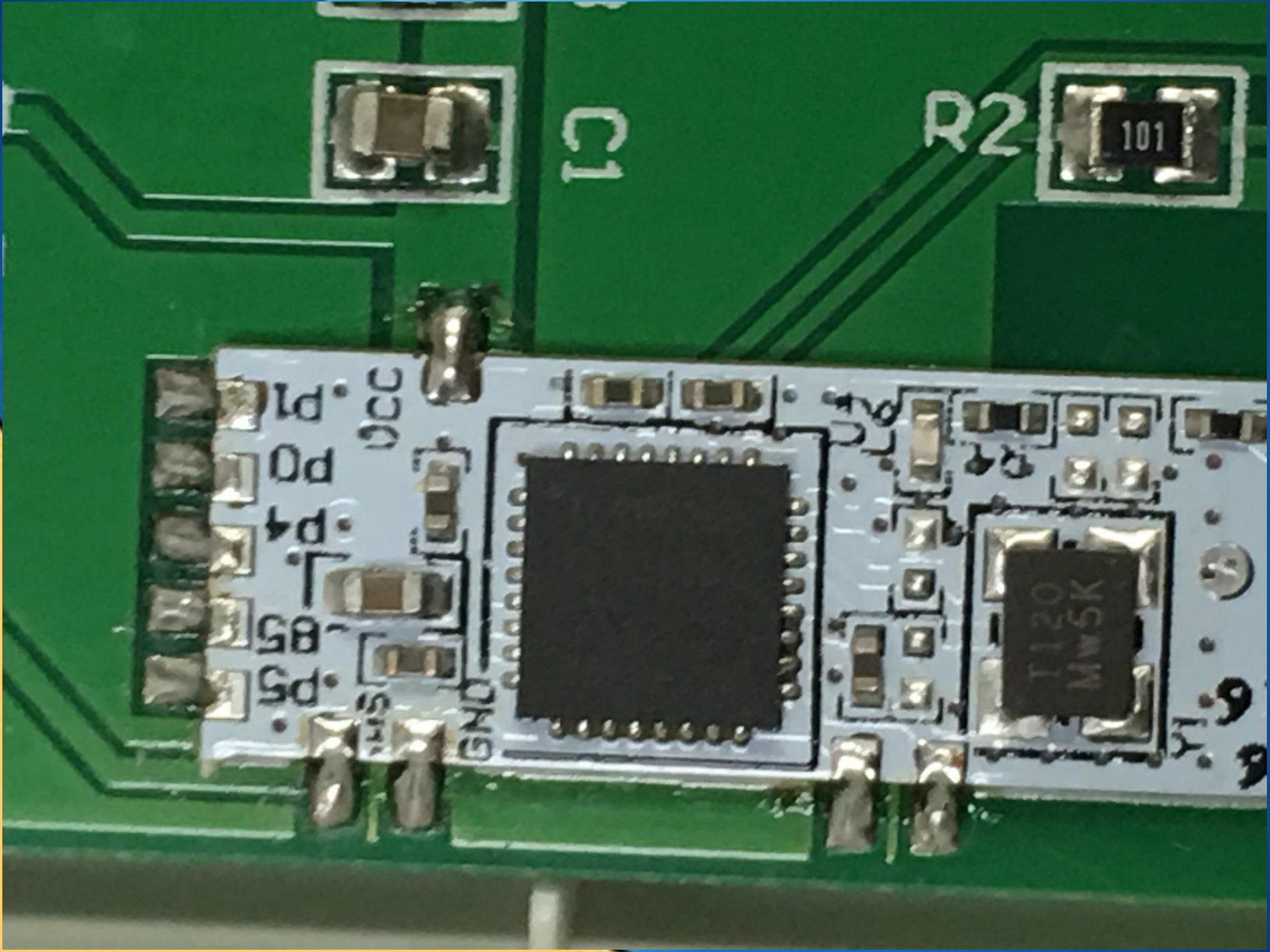
- **Pump run time.**
- **Pump stop/start run time.**
- **Internet Data Collection**
- **Energy collection by use of remote computer**
- **Computer spread sheet collection**
- **Pattern changes/ possible problems.**



DAILY ENERGY COLLECTION

- Ability to insert cost of gas/electric
- Ability to add changes and tier costs
- Both home owner and utility can collect data through the use of internet.
- Daily/weekly cost of energy/water can be determined for D'MAND KONTROLS/PUMP for gas/electric.





ON DEMAND CONTROLS FOR CENTRAL HOT WATER SYSTEMS

- Next Steps for Technology – New Markets, New Opportunities
- SoCal Gas Territory – Multi-family buildings
- Expand to other geographic areas and other types of buildings
 - Hotels, Motels, Resorts, Timeshares and other lodging and hospitality structures
 - School Dormitories (Secondary Schools, Colleges, Universities, etc.)
 - Military Housing, Barracks

Gas Technology Institute

GTE® Project Number 21263

January 22, 2014





ON-DEMAND EFFICIENCY (ODE) PROGRAM



ENERGY EFFICIENCY PROGRAM
FOR MULTIFAMILY BUILDINGS



2018 BUSINESS REBATE GUIDE AND APPLICATION



ENERGY EFFICIENCY



CENTRAL WATER HEATER MULTIFAMILY BUILDING SOLUTIONS PROGRAM



ENERGY EFFICIENCY PROGRAM



ON DEMAND CONTROLS FOR CENTRAL HOT WATER SYSTEMS®

- **Summary White Paper Report**
 - Gas Technology Institute
 - GTE® Project Number 21263
 - **January 22, 2014**
- **Measurement and Verification Plan**
 - CLEAResult
 - **June 17, 2016**



ON DEMAND CONTROLS FOR CENTRAL HOT WATER SYSTEMS®

- SoCal Gas – ODE Program

Gas Savings CCF Pump/Yr	Electricity Savings kW Pump/Yr	Project Material and Install Cost per Pump controller	Payback	Life of Measure	Savings per Life Measure
1,484	1,230	\$900	8 mo	15	
\$1,247	\$93.31		< 1 yr.		\$20,100

- 1) CCF rate is \$.840/CCF
- 2) kW rate is \$.076/kW
- 3) Pumps rated as an average of 159 watts/pump
- 4) Averages are based on 300 installed sites



ON DEMAND CONTROLS FOR CENTRAL HOT WATER SYSTEMS

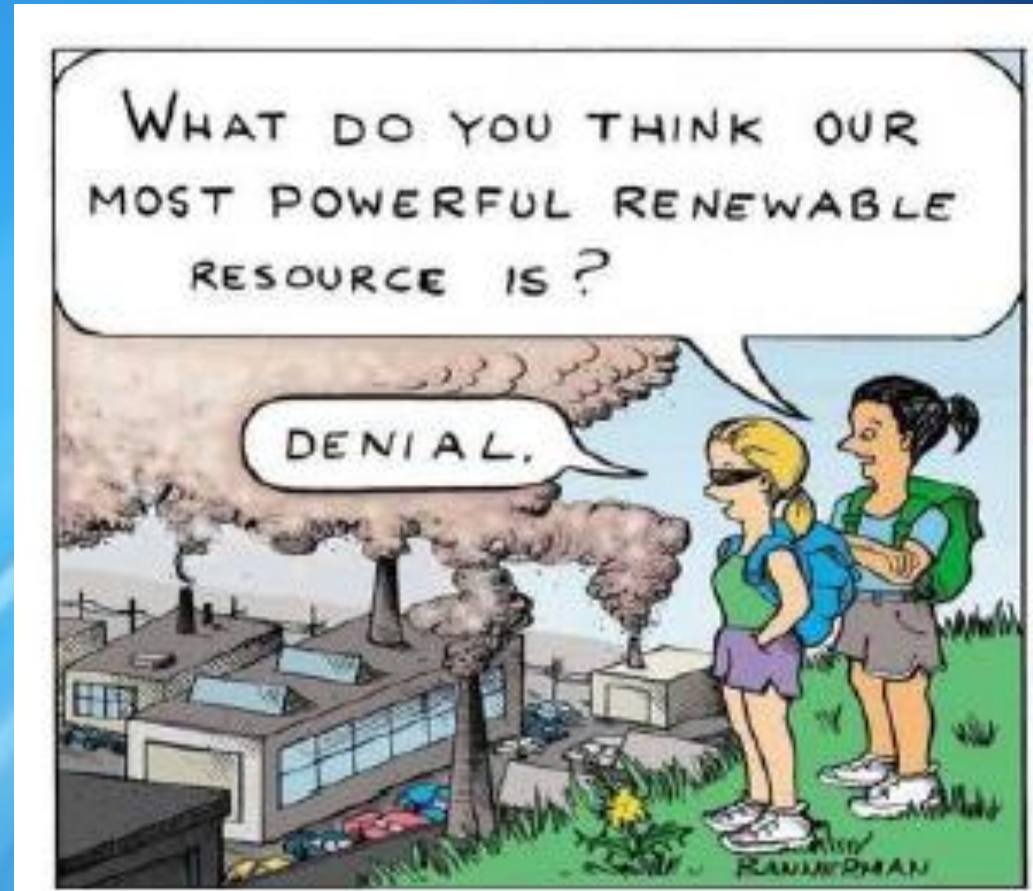
- Oklahoma Natural Gas
- ONG On Demand Pump Controls Program

Gas Savings CCF Pump/Yr.	Project Material and Install Cost per Pump	Rebate Paid CCF Per Pump Controller	Payback (years)	Life of Measure	Gas Savings per Life Measure
1,235	\$750	\$.95/ccf	4 months	15	
\$1,247		\$1,173	1 yr.		\$18,705

- 1) Heatherstone Apartments – Measurement and Verification Plan 6/17/16, CLEAResult Oklahoma City, OK
- 1) Averages are based on 8 installations
- 2) CCF rate is \$1.009/CCF
- 3) Payback incorporates the estimated incentive

Hot water distribution design impacts three major resources in addition to air quality:

- 1) Water
- 2) Energy
- 3) Sewage processing
- 4) Air pollution





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INVENTED IN AMERICA,
MANUFACTURED IN AMERICA SINCE
1992

Life.*

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