

PROPERTY ASSESSED CLEAN ENERGY
(PACE)

- NAME DOESN'T TELL THE WHOLE STORY:
 - PROPERTY ASSESSED-YES
 - CLEAN ENERGY-THAT IS NOT ALL THAT IT DOES.
 - ENERGY EFFICIENCY/WATER CONSERVATION, TOO
 - ARKANSAS STATUTE EXTREMELY BROAD
 - ARK. CODE ANN. § 8-15-114
 - APPROVED IMPROVEMENTS CREATE POSITIVE CASH FLOW
 - I.E., CANNOT BE WINDOW DRESSING-MUST SAVE MONEY OVER THE LIFETIME OF THE IMPROVEMENTS.

- **WHAT IS PACE???**
 - ACT 1074 OF 2013--CODIFIED AT ARK. CODE ANN. §§ 8-15-101 *ET SEQ*
 - 21ST CENTURY SPIN ON WHAT HAS BEEN DONE SINCE 19TH CENTURY IN ARKANSAS
 - ENERGY IMPROVEMENT DISTRICT
 - SAME THING THAT WAS USED TO FINANCE ROADS, LEVEES, SEWERS, DRAINAGE
 - <https://www.arkansasag.gov/assets/opinions/2010-043.pdf>
 - MECHANISM TO FINANCE IMPROVEMENTS
 - OVERSEEN BY PULASKI COUNTY ENERGY IMPROVEMENT DISTRICT BOARD OF DIRECTORS
 - DISTRICTS IN LITTLE ROCK AND FAYETTEVILLE/SPRINGDALE, TOO
 - PULASKI COUNTY'S JURISDICTION IS COUNTY WIDE-ALL THE FOLLOWING PROPERTY OWNERS
 - INDUSTRIAL,
 - COMMERCIAL,
 - AGRICULTURAL,
 - MULTI-FAMILY RESIDENTIAL (>4 UNITS)
 - LIMITED CREDIT ANALYSIS TAKES PLACE-PRIMARY FOCUS ON:

- ENERGY SAVINGS
- POSITIVE HISTORY OF TAX PAYMENTS
- NO FORECLOSURES/BANKRUPTCY IN RECENT PAST
- EQUITY AVAILABILITY IN PROPERTY
- VOLUNTARY PARTICIPATION
- THIRD PARTY ADMINISTRATORS
 - RESPONSIBILITIES INCLUDE
 - PROJECT DEVELOPMENT
 - PROGRAM MARKETING
 - SHEPHERDING PROJECTS
 - CONTRACTOR TRAINING
 - PRESENTATION TO BOARD FOR APPROVAL
 - TWO IN ARKANSAS/PULASKI COUNTY
 - A2E2 (Katie Niebaum)
 - PACE AR (Jordan, Inc. – Jordan Haas)
- KEY TO PACE IS LONG-TERM FINANCING
 - UP TO 20 YEARS
 - WEIGHTED LIFE OF IMPROVEMENTS
 - ALLOWS FOR LOWER ANNUAL PAYMENT THAN TRADITIONAL BANK LOANS
 - WHO CAN FINANCE?
 - ANYONE FOR THE MOST PART!
 - COMMERCIAL BANK
 - PRIVATE EQUITY
 - REVOLVING LOAN FUND
 - BONDS
- ANNUAL PAYMENTS MADE AS PROPERTY TAX ASSESSMENT ON ANNUAL BILL
- ANNUAL ASSESSMENT ACTS AS SECURITY
 - COVERS COST, APPLIED INTEREST, AND ADMINISTRATION FEES
- LIEN STAYS WITH PROPERTY WHEN PROPERTY IS SOLD
 - NO DIFFERENT ANY OTHER IMPROVEMENT DISTRICT
 - NEW OWNER IS AWARE OF THE LIEN ON THE PROPERTY AND RECEIVES THE BENEFITS OF THE IMPROVEMENTS

- NO ACCELERATION
- FORECLOSURE ALLOWED
- SECURED BY TAX-STATUS PRIORITY LIEN AGAINST PROPERTY
- **PACE IS ULTIMATELY ABOUT:**
 - NOT KICKING THE CAN DOWN THE ROAD-ADDRESSING DEFERRED MAINTENANCE PROBLEMS AND HIGH BILLS NOW AS OPPOSED TO WAITING
 - INCREASING PROPERTY VALUES AND CREATING JOBS
- **PACE AND BROWNFIELDS**
 - IF YOU'RE A PROPERTY OWNER AND YOU HAVE A BUILDING THAT HAS ENVIRONMENTAL HAZARDS THAT NECESSITATE REMEDIATION, THEN THERE ARE LIKELY GOING TO BE OUTDATED SYSTEMS THAT NEED TO BE UPDATED, IE HVAC, WINDOWS, ROOF, WATER CONSERVATION
 - IF LAND IS CONTAMINATED, COULD CLEAN AND THEN INTALL SOLAR PANELS
- VIDEO EXPLAINING PACE
 - <https://www.youtube.com/watch?v=5gnN72buw4>
- Contact Will Gruber
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 - wigruber@pulaskicounty.net
 - Phone
 - 501-340-8285
- Visit PACE Nation Website
 - www.pacenation.us

PULASKI COUNTY ENERGY IMPROVEMENT DISTRICT PROPERTY ASSESSED CLEAN ENERGY

ELIGIBLE IMPROVEMENTS

The following tables are a non-exclusive list of various qualifying energy efficiency, renewable energy, and water conservation improvements. To the extent that the following improvements are made, the following specifications are to be utilized:

Energy Efficiency Improvements—Commercial

Measure Name	Requirement Spec
Doors, Glass	U 0.40 or less, SHGC 0.40 or less
Doors, Solid, Insulating	Energy Star
HVAC Air Conditioning - Split System Unit	14.5 SEER or 12 EER
HVAC Heat Pumps - Geothermal Exchange Closed Loop	≥ 15.5 EER
HVAC Heat Pumps - Geothermal Exchange Open Loop	≥ 17.8 EER
Insulation, Duct	Energy Star
Insulation, Reflective or Radiant Barriers	Energy Star
Insulation, Sub-floor	R19 minimum
Lighting, High Efficiency Fixtures	Energy Star
Pool Equipment, Pool Circulating Pumps	variable flow and/or multi-speed with controllers
Sealing, Whole House	Energy Star
Skylights	U value 0.60 or less, SHGC 0.30 or less
Water Heater, Natural Gas Storage	≥ 0.67 EF and Energy Star
Water Heater, Tankless	≥ 0.82 EF and Energy Star
Weather-stripping	Energy Star
Window Filming	NFRC glazing ratings
Windows	Energy Star
Coatings, Reflective Roof and Wall	Energy Star
Cool roof system	Energy Star
HVAC Air Conditioning - Package Unit	13 SEER or 11 EER

Renewable Energy Improvements—Commercial

Measure Name	Requirement Spec
Photovoltaic (PV) Systems	Rated by SRCC (Solar Rating and Certification Corp.)
Solar Thermal Systems for Hot Water	Rated by SRCC
Solar Thermal Systems for Pool Heating	Rated by SRCC

Water Conservation Improvements-Commercial

Measure Name	Requirement Spec
Aerators, Faucet	≤ 1.50 gpm
Core Plumbing System	Energy Star
Hot Water Heater, Instantaneous	Energy Star
Hot Water Recirculation System	Energy Star
Hot Water System, Demand Initiated	Energy Star
Insulation, Hot Water Pipes	R4
Irrigation Control System	ET Weather Based with Rain Sensor/Shut-off
Irrigation System	Matched Precipitation rate spray heads or drip
Rainwater Cistern	Permanently Installed
Showerhead	≤ 1.50 gpm
Toilets, High Efficiency	≤ 1.28 gpf
Water Softener, Demand Initiated	Energy Star
Whole House Water Manifold System	Energy Star
Aerators , Faucet	0.50 gpm
Pre-rinse Spray Valves	1.2 gpm
Urinals	1 pint
Urinals, Waterless	waterless

ELIGIBLE ENERGY EFFICIENCY IMPROVEMENTS				
SYSTEM	SUBSYSTEM	MEASURE	EFFECTIVE USEFUL LIFE (YRS)	SOURCE FOR EFFECTIVE USEFUL LIFE
Domestic Hot Water (DHW)	Water Heater	Efficient Unit Replacement	14	ASHRAE: DHW
	Water Heater	DHW Pipe Insulation	20	CADMAC EUL (Appendix F)
	Commercial Kitchen	Pre-rinse Spray Valve	5	Watersmart Guidebook (EBMUD-2008)
	Commercial Laundry	Ozone Laundry System	10	PG&E Work Pater
	Pumps	Efficient Unit Replacement	24	ASHRAE: Heating Pump
	Pumps	Trimmed Impeller	24	ASHRAE: Heating Pump
	Pumps	Installing VFD & controls	13	ASHRAE: EMS Controls
Envelope	Doors	Reduce Building infiltration	Subject to review	
	Walls	Insulation (Conditioned spaces only)	22	ASHRAE-HVAC Application 36.3 Table 4: Insulation

	Roof	Insulation (conditioned spaces only)	22	ASHRAE-HVAC Application 36.3 Table 4: Insulation
	Roof	Cool roof surface	15	DEER 2008: EUL Summary
	Roof	Green roof installation	Subject to review	
	Windows	High Performance Windows	20	DEER 2008: EUL Summary
	Windows	Window film installation	10	DEER 2008: EUL Summary
Lighting	Fluorescent	Efficiency improvement	12	DEER 2008: EUL Summary
	Compact Fluorescent	Efficiency improvement	12	DEER 2008: EUL Summary
	Induction Lighting	Efficiency Improvement	12	DEER 2008: EUL Summary
	Cold Cathode Lamps	Efficiency Improvement	12	DEER 2008: EUL Summary
	HID	Efficiency Improvement	14	DEER 2008: EUL Summary (avg of all HID)
	Bi-Level Fixtures	Replace existing lighting in Stairwells and Garages with Bi-level Lighting fixtures	16	DEER 2008: EUL Summary
	Exit Signs	Replace with LED/LEC exit sign	16	DEER 2008: EUL Summary
	Exit Signs	Replace with self- luminescent	16	DEER 2008: EUL Summary
	Interior Lighting	Replace with Induction or LED	10	IOU-specific Measure Evaluations
	Exterior Lighting	Replace with Induction or LED	10	IOU-specific Measure Evaluations
	Street Lighting	Replace with induction or LED	10	IOU-specific Measure Evaluations
	Daylighting	Skylights	NA	NA
	Controls	Demand Response Controls	13	ASHRAE: EMS Controls
	Controls	Lighting scheduling controls	8	DEER 2008: EUL Summary
	Controls	Daylighting controls	16	DEER 2008: EUL Summary
	Controls	Occupancy sensors	8	DEER 2008: EUL Summary
	General	De-lamping		
HVAC	AC/Split Systems/Heat Pumps	Efficient Unit Replacement	18	ASHRAE: AC/HP/Split
	AHUs	Airflow distribution improvements	24	ASHRAE-HVAC Applications 36.2 Table 3: DX air dist equip

	AHUs	Economizer (Air or Water-side) Repair or New Unit	10	IOU-specific Measure Evaluations
	Boilers	Burner upgrade	21	ASHRAE-HVAC Apps 36.3 Table 4: Burners
	Boilers	Combustion fan VFD	13	ASHRAE: EMS controls
	Boilers	Economizers	10	IOU-specific Measure Evaluations
	Boilers	Efficient Unit Replacement	22	ASHRAE-HVAC Applications 36.2 Table 3: Boilers, HW, steel gas-fired
	Boilers	Heat recovery	22	ASHRAE-HVAC Applications 36.2 Table 3: Boilers, HW, steel gas-fired
	Boilers	Oxygen trim controls	15	IOU-specific Measure Evaluations
	Boilers/Chillers	Pipe insulation	20	CADMAC EUL (Appendix F)
	Chillers	Add water-side economizer	15	DEER 2008: EUL Summary
	Chillers	Efficient unity replacement	21	ASHRAE: Chillers
	Chillers	Heat recovery	25	ASHRAE: Chiller, Heat Recovery
	Cooling Tower	Installing VFD & controls-fans	13	ASHRAE: EMS Controls
	Cooling Tower	Replacement or add. capacity	22	ASHRAE-HVAC Applications 36.2 Table 3: Cooling Towers, metal
	Energy Management Controls	Cooling tower fan sequencing	13	ASHRAE: EMS Controls
	Energy Management Controls	Demand Response Controls	13	ASHRAE: EMS Controls
	Energy Management Controls	Improved scheduling capability	13	ASHRAE: EMS Controls
	Energy Management Controls	Sensors calibration/optimal relocation	13	ASHRAE: EMS Controls
	Energy Management Controls	Ongoing-commissioning software	13	
	Evaporative Cooling Systems	Offset existing mech. cooling	15	DEER 2008: EUL Summary
	Fans	Installing VFD &	13	ASHRAE: EMS
	Furnaces	Condensing furnaces	18	ASHRAE-HVAC Applications 36.3 Table 4: Furnace
	HVAC System (General)	Duct testing and sealing	Subject to review	
	HVAC System	Duct testing and	Subject to review	

	(General)	sealing		
	HVAC System (General)	VAV systems conversions	15	IOU-specific Measure Evaluations
	HVAC System (General)	Radiant Heating/Cooling	Subject to review	
	HVAC System (General)	Geothermal HVAC	Subject to review	
	HVAC System (General)	Thermal Storage for Load Shifting	Subject to review	
	Steam Heating	Install/Replace Steam Traps		
	Labs	Reduced ACH	15	IOU-specific Measure Evaluations
	Labs	VAV fume hoods	15	IOU-specific Measure Evaluations
	Motors	Efficient Unit Replacement	18	ASHRAE: Motors
	Pumps	Efficient Unit Replacement	19	ASHRAE: Cooling Pumps
	Pumps	Trimmed impeller	19	ASHRAE: Cooling Pumps
	Pumps	Installing VFD & controls	13	ASHRAE: EMS Controls
	Ventilation	Demand controlled ventilation	21	ASHRAE: Exhaust Fan
	Ventilation	Garage CO controls	21	ASHRAE: Exhaust Fan
Refrigeration	Refrigerated Cases/Walk-ins	Addition of insulation	11	DEER 2008: EUL Summary
	Refrigerated Cases/Walk-ins	Anti-sweat heater controls	12	DEER 2008: EUL Summary
	Refrigerated Cases/Walk-ins	Auto-closers for cooler/freezer doors	8	DEER 2008: EUL Summary
	Refrigerated Cases/Walk-ins	Case-lighting controls	13	ASHRAE: EMS Controls
	Refrigerated Cases/Walk-ins	Efficient evaporator fan motors	18	ASHRAE: Motors
	Refrigerated Cases/Walk-ins	Efficient Unit Replacement	13	ASHRAE: Refg. Equipment
	Refrigerated Cases/Walk-ins	Evaporator fan controllers	16	DEER 2008: EUL Summary
	Refrigerated Cases/Walk-ins	High Efficiency Display Cases	13	ASHRAE: Refg. Equipment
	Refrigerated Cases/Walk-ins	Improved Defrost Controls	13	ASHRAE: EMS Controls
	Refrigerated Cases/Walk-ins	Install doors w/low/no anti-sweat heat	12	DEER 2008: EUL Summary
	Refrigerated Cases/Walk-ins	Installing Night covers	5	DEER 2008: EUL Summary
	Refrigerated Cases/Walk-ins	Suction line insulation	22	ASHRAE-HVAC Applications 36.3 Table 4: Insulation
	Thermal Storage	Thermal Storage for	Subject to review	

	Systems	Load Shifting		
	Compressors	Add VFD and	13	ASHRAE: EMS Controls
	Compressors	Added Heat Recovery	15	IOU-specific Measure Evaluations
	Compressors	Addition of Mechanical Sub-cooling	15	DEER 2008: EUL Summary
	Compressors	Efficient Unit Replacement	15	IOU-specific Measure Evaluations
	Compressors	Floating Head Pressure Controls	15	DEER 2008: EUL Summary
	Compressors	Floating Suction Pressure	15	DEER 2008: EUL Summary
	Condensers	Efficient Unit Replacement	15	DEER 2008: EUL Summary
	Condensers	Evaporative Condensers	20	ASHRAE-HVAC Applications 36.3 Table 4: Condensers, Evaporative
	Condensers	Floating Head Pressure	15	DEER 2008: EUL Summary
	Condensers	Replace Air Cooled with Evaporative Condenser	20	ASHRAE-HVAC Applications 36.3 Table 4: Condensers, Evaporative
	Controls	Retro-commissioning	10	DEER 2008: EUL Summary
Compressed Air	Air Compressors	Efficient Unit Replacement	20	ASHRAE-HVAC Applications 36.3 Table 4: Recip compressors
	Compressed Air Storage	Additional compressed air storage	15	IOU-specific Measure Evaluations
	Controls	Improved compressor sequencing	13	ASHRAE: EMS Controls
	Controls	Improved scheduling or controls	13	ASHRAE: EMS Controls
Process/Plug Loads	Boilers	Efficient Unit Replacement	22	ASHRAE-HVAC Applications 36.2 Table 3: Boilers, HW, steel gas-fired
	Boilers	Burner upgrade	21	ASHRAE-HVAC Applications 36.3 Table 4: Burners
	Boilers	Combustion fan VFD	13	ASHRAE: EMS Controls
	Boilers	Economizers	10	IOU-specific Measure Evaluations

	Boilers	Heat recovery	22	ASHRAE-HVAC Applications 36.2 Table 3: Boilers, HW, steel gas-fired
	Boilers	Oxygen trim controls	15	IOU-specific Measure Evaluations
	Chillers/Cooling	Efficient Unit Replacement	15	IOU-specific Measure Evaluations
	Air/Water Distribution System	Efficiency Improvement	12	IOU-specific Measure Evaluations
	Fans	Efficient Unit Replacement	20	ASHRAE-HVAC Applications 36.3 Table 4: Fans
	Fans	Installing VFD & controls	13	ASHRAE: EMS Controls
	Industrial Process	Equip. scheduling for load reduction	Subject to review	
	Industrial Process	Process improvement	Subject to review	
	Motors	Efficient Unit Replacement	18	ASHRAE: NRR manual
	Elevators	Hoisting and Standby Improvements	Subject to review	
	Pool	Add pool cover	6	IOU-specific Measure Evaluations
	Pool	Efficient Heater Replacement	5	DEER 2008: EUL Summary
	Pool Pump	Reduce/Optimize Flow/Configuration	13	ASHRAE: EMS Controls
	Pool Pump	Replace Motor	18	ASHRAE: NRR manual
	Pool Pump	Replace Pump	20	ASHRAE: HVAC Apps 36.3 Table 4: Pumps
	Pool Pump	Variable Flow	15	IOU-specific Measure Evaluations
	Pumps	Efficient Unit Replacement	20	ASHRAE: HVAC Apps 36.3 Table 4: Pumps
	Pumps	Installing VFD & controls	13	ASHRAE: EMS Controls

Mobility	Elevators		20	
	Elevators		20	

ELIGIBLE WATER CONSERVATION IMPROVEMENTS

SYSTEM	SUBSYSTEM	MEASURE	EFFECTIVE USEFUL LIFE (YRS)	SOURCE FOR EFFECTIVE USEFUL LIFE
Domestic Water Use	Toilets	Efficient Unit Replacement	20	Watersmart Guidebook (EBMUD-2008)
	Urinals	Efficient Unit	10	Watersmart

		Replacement		Guidebook (EBMUD-2008)
	Commercial Kitchen	Pre-rinse Spray Valve	5	Watersmart Guidebook (EBMUD-2008)
	Laundry Systems (Multi-family dwellings)	Efficient Unit Replacement	13	Water Conservation Handbook (2002) pg. 125
Commercial Kitchens	Pre-rinse valves	Efficient Unit Replacement	5	Watersmart Guidebook (EBMUD-2008)
	Dishwashers	Efficient Unit Replacement	10	Watersmart Guidebook (EBMUD-2008)
	Commercial ice-makers	Efficient Unit Replacement	6	Watersmart Guidebook (EBMUD-2008)
Laundry & Laundromats	Commercial Laundry	Efficient Unit Replacement	13	Water Conservation Handbook (2002) pg. 125
	Commercial Laundry	Retrofit with wastewater recovery system	TBD	
HVAC	Cooling Towers	Upgrades to Reduce Bleed-off and Drift	TBD	
	Condensors	Upgrades to Reduce Bleed-off and Drift	TBD	
	Steam Boilers	Upgrades to Reduce Bleed-off	TBD	
Industrial/Process Water	Steam Sterilizers/Autoclaves	Efficient Unit Replacement	10	Watersmart Guidebook (EBMUD-2008)
	Car Wash Operations	Water Recycling System	TBD	
	Manufacturing	Film/X-Ray Processing	TBD	
	Manufacturing	Food/Beverage Processing	TBD	
	Manufacturing	Metal Finishing	TBD	
	Manufacturing	High Tech Manufacturing	TBD	
SYSTEM	SUBSYSTEM	MEASURE	EFFECTIVE USEFUL LIFE (YRS)	SOURCE FOR EFFECTIVE USEFUL LIFE
Renewable- Thermal Energy				
DHW	Service water	Solar thermal water heat	35	
HVAC	Heating	Solar thermal space heat (hydronic)	35	

Process	Pool	Solar Pool hat	20	
<u>Renewable-Electric Energy</u>				
Photovoltaic	PV	PV System	20-25	
Microturbine (Renewable fuel)	Micro-turbine using renewable fuel	Micro-turbine	15	
Internal Combustion Engine (ICE) (Renewable fuel)	ICE using renewable fuel	ICE	15	
Fuel Cell (Renewable fuel)	Electric-only fuel cell using renewable fuel	Fuel cell	15	
<u>Non-Renewable-Electric Energy</u>				
Subject to Pulaski Pace review	Electric-only fuel cell using non-renewable fuel (e.g., natural gas)	Grid-tiered fuel cell	15	