

# Energy Related Projects

We will not waste energy.  
We will not waste energy.  
We will not waste money.

New Jersey Association of Counties

County Government with a Unified Voice

NJ Association of Counties, 150 W. State Street, Trenton, NJ 08608, TEL. 609-394-3467



# Topics

- ▶ What is an “Energy Related Project”
- ▶ What Projects are Ideal Candidates?
- ▶ What is an Energy Usage Index?
- ▶ How Can Energy Related Projects be Funded?
- ▶ What’s the ESIP Process?
- ▶ How Does a PPA Work?
- ▶ Why is Independent 3<sup>rd</sup> Party Commissioning Important?
- ▶ Q & A



# What Is An Energy Related Project?

- ▶ Saves Energy
- ▶ Compelling Business Case
  - *Return On Investment (ROI)*
  - *Reduce Carbon Footprint*
  - *Cash Flow*
  - *Facility Upgrade*
- ▶ Measurable Results
  - *Before and after project*
- ▶ Usually Involves Lighting, HVAC; Envelope, Space Heaters

# What Projects Are Ideal Candidates?

- ▶ Aging Infrastructure In Need of Capital Replacement
  - *Boilers*
  - *Chillers*
  - *Pumps*
- ▶ Mix Low-Hanging Fruit with Long Payback Equipment
  - *Bulbs for Boilers*
  - *Operational Savings (turning stuff off)*
- ▶ 20% Higher Than Average Energy Usage Index (EUI)
- ▶ County Utility Authorities

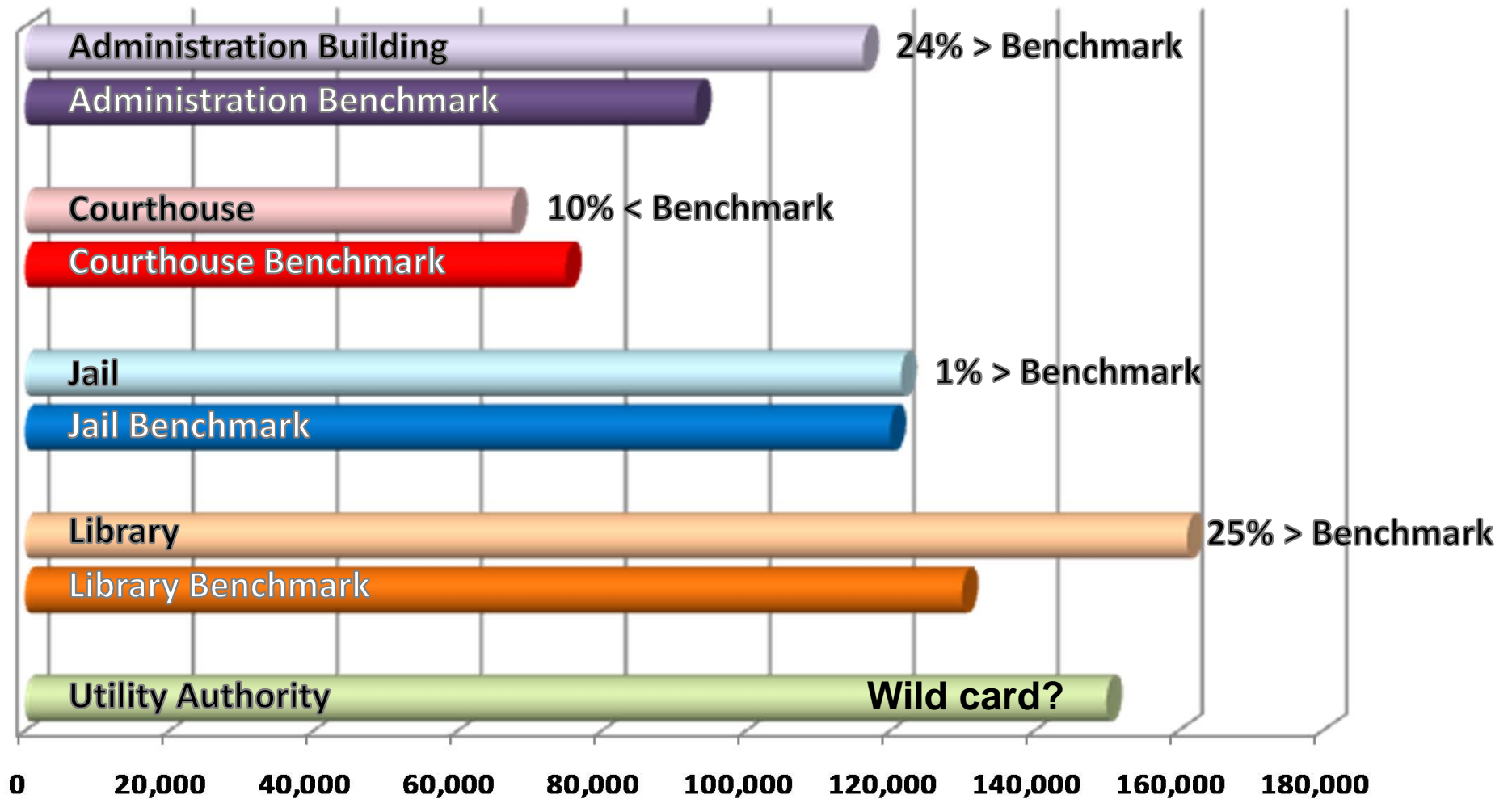
# What Is An Energy Usage Index (EUI)?

- ▶ A Measurement of Energy Efficiency
- ▶ A Means to Establish a Baseline
  - *Validates Energy Conservation Measures (ECMS) results*
- ▶ Provides Ability to Compare
  - *Buildings in a county*
  - *County buildings against other similar counties*
- ▶ BTUs per square foot per year (at site)
  - *Based on actual kilowatt hours (electric) & therms (gas)*
- ▶ Provides quick reference on \$ opportunity for Energy Projects

# How Do You Calculate an EUI?

- ▶ Get Square Footage of Each Building
- ▶ Determine Which Meter(s) Supply Each Building
- ▶ Record Utility Use by Month by Meter for 12 Months
- ▶ Convert to BTUs
  - *1 Therm = 100,000 BTUs*
  - *1 Kilowatt Hour = 3,412 BTUs*
- ▶ Total the BTUs for the Facility for the Year
- ▶ Total BTUs divided by Total Square Footage = EUI [BTU/SF]
- ▶ Ask for EUI Calculator, LGEA, or TES Will Calculate

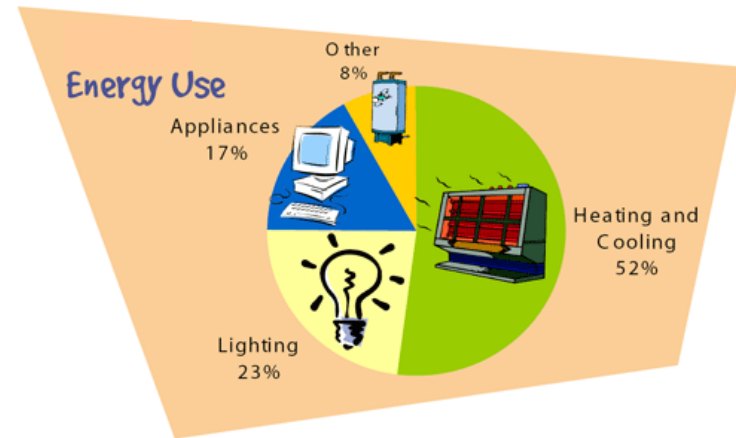
# Energy Benchmarking (BTU/Sq Ft)



# Energy Programs For Counties

## ▶ Local Government Energy Audit (LGEA)

- *BPU Pay 100% Of Audit Costs*
- *5 Approved Audit Firms*
- *First Step In ESIP Process*
- *Identifies Preliminary ECMs*



## ▶ Energy Savings Improvement Plan (ESIP)

- *Self-funds energy projects over 15 years*

## ▶ Pay For Performance Program (P4P)

- *Building-wide, Not Component Program*
- *Generates Unallocated Cash in conjunction with an ESIP*





# Project Potential Test of Reasonableness

Facility	Annual Energy Cost	Estimated Cost Savings	% of Total
Administration	\$800,000	\$200,000	25%
Courthouse	\$500,000	\$35,000	7%
Jail	\$1,000,000	\$150,000	15%
Library	\$700,000	\$210,000	30%
<b>TOTALS</b>	<b>\$3,000,000</b>	<b>\$595,000</b>	<b>20%</b>
ESIP Potential Project at 20% Savings	\$3,000,000	\$595,000	New Project \$ (Savings x 15)
Potential ESIP \$			<b>\$8,925,000</b>

# Pay for Performance Potential

Facility	Annual Energy Cost	Estimated Annual Savings	P4P Payout
Administration	\$800,000	\$200,000	\$292,500
Courthouse	\$500,000	\$35,000	\$51,188
Jail	\$1,000,000	\$150,000	\$219,375
Library	\$700,000	\$210,000	\$307,125
<b>TOTALS</b>	<b>\$3,000,000</b>	<b>\$595,000</b>	<b>\$870,188</b>

Pay for Performance (P4P) incentive calculation: Electricity assumed to be 70% of total energy usage, natural gas assumed to be 30% of total energy usage. Electricity cost estimated at \$0.16/kWh, natural gas cost estimated at \$15.00/dTh. P4P incentive pays \$0.22/kWh saved and \$25.00/dTh saved

# How can Energy Projects Be Done & Funded?

- ▶ Traditional
- ▶ Energy Savings Improvement Program (ESIP)
- ▶ Power Purchase Agreement (PPA)



# “Traditional” Energy Projects

- ▶ Can start with Energy Audit (optional)
- ▶ Identify ECMs (Energy Conservation Measures)
- ▶ Develop Estimate of Project Cost
- ▶ Issue Bonds
- ▶ A/E develops plans and specs
- ▶ Bid and Award
- ▶ Construct (include Commissioning of new systems)



# “Traditional” Energy Projects - Financing

- ▶ County introduces Bond Ordinance
- ▶ Bonds issued on tax exempt basis for ECMs/Solar
- ▶ County keeps SREC (Solar Renewable Energy Credit) Revenue
- ▶ Bonds increase net debt of County

# Energy Savings Improvement Program (ESIP)

- ▶ Financed through Energy Savings Obligations (ESO's) – a hybrid form of bond (energy savings pay the principal and interest)
- ▶ ESO's cannot be used to fund capital improvements that don't result in a reduction of energy use!
- ▶ Scope is limited by \$\$ generated by Energy Conservation Measures
- ▶ Start with Energy Audit
- ▶ Identify ECM's (Energy Conservation Measures)
- ▶ Develop Energy Savings Plan (ESP)



# Energy Savings Improvement Program (ESIP)

- ▶ Engage an independent Commissioning Agent (CxA)
- ▶ ESP must be verified by 3<sup>rd</sup> Party, filed with BPU
- ▶ Prepare plans and specs based on ESP
- ▶ Bid and award contracts for construction
- ▶ ESIP performance must be verified by an independent 3<sup>rd</sup> Party (e.g. independent CxA or original auditor)



# ESCO's and ESIP's

- ▶ ESCO's are “Energy Savings Companies” – a specific DPMC classification
- ▶ ESCO's can provide any or all of the following:
  - *Preparation of the Energy Savings Plan (ESP)*
  - *Preparation of construction plans and specs*
  - *Construction contracting*
  - *Commissioning*





# Financing ESIPs

- ▶ Savings generated by project must pay for the debt service on the issuance of Energy Savings Obligations (ESOs) or rent payments on an Energy Lease/Purchase agreement
- ▶ ESOs do not increase the County's net debt
- ▶ ESOs require approval of Local Finance Board; Energy Lease/Purchase agreements do not

# Power Purchase Agreement (PPA)

- ▶ PPA's relate primarily to solar power projects
- ▶ Contract with a private vendor ("the solar investor") who installs and maintains the PV system
- ▶ You agree to purchase power generated by the PV system
- ▶ Some considerations:
  - *Solar arrays must be on your building or your land*
  - *Responsibility and risk is shifted to the Solar Investor*



# Financing PPAs

- ▶ Maximum term is 15 years
- ▶ Solar Investor keeps:
  - *SREC revenue*
  - *Accelerated Depreciation*
  - *30% Federal grant/tax credit*

# Why do I need a Commissioning Agent?

- ▶ Commissioning Agent (CxA) provides verification that the County's needs are being met
  - *During design, CxA verifies that Owner's Project Requirements are reflected in plans and specs*
  - *Independent CxA can verify the ESP and the performance of the energy related improvements*
  - *CxA's can be utilized for on-going (annual) verification of performance*
  - *CxA organizes System Manuals and facilitates training*
  - *CxA facilitates maintenance and service planning*



# Why do I need a Program Manager?

- ▶ Program Managers act as the Owner's advocate and provide guidance throughout Energy Related Projects
- ▶ Assist County with:
  - *Identifying potential projects*
  - *Determining most suitable Project Delivery method*
  - *For ESIPs, the Program Manager will assist in defining the role of the ESCO*
  - *Procurement of professional services and contractors*



# Why do I need a Program Manager?

- ▶ Assist County with:
  - *Managing and coordinating work on behalf of the County*
  - *Contract Administration*
- ▶ Program Managers protect your interests!



# Questions?

Thank You



McManimon & Scotland LLC

**Tozour Energy Services**  
THE POWER TO SAVE

# Contact Information

\*The contents of this report are confidential and are intended for the sole use of School Districts.

- ▶ Robert Notley, LEED AP, Senior PM, GREYHAWK
  - *rnotley@greyhawk.com*
  - *856/722-1800*
- ▶ Ronald J. Ianole, Esq. McManimon and Scotland LLC
  - *rji@mandslaw.com*
  - *973/622-5056*
- ▶ Josh Costell, Executive VP, Tozour Energy Services
  - *jcostell@tozourenergy.com*
  - *610/962-1679*
- ▶ Documents provided upon Request
  - *Legislation and Programs*
  - *EUI calculator*
  - *Informative Websites*
  - *Acronyms*