ENERNOC

An Enel Group Company

Cooperative Energy Purchasing

September 20, 2018

Metropolitan Washington Council of Governments

Presentation Outline

- About EnerNOC/Enel
- Cooperative Purchasing - BRCPC
- Understanding Today’s Evolving Energy Marketplace
- Adapting Procurement with the Market – Key Elements
- Energy Procurement Best Practices – Managed Portfolio

About EnerNOC and Enel

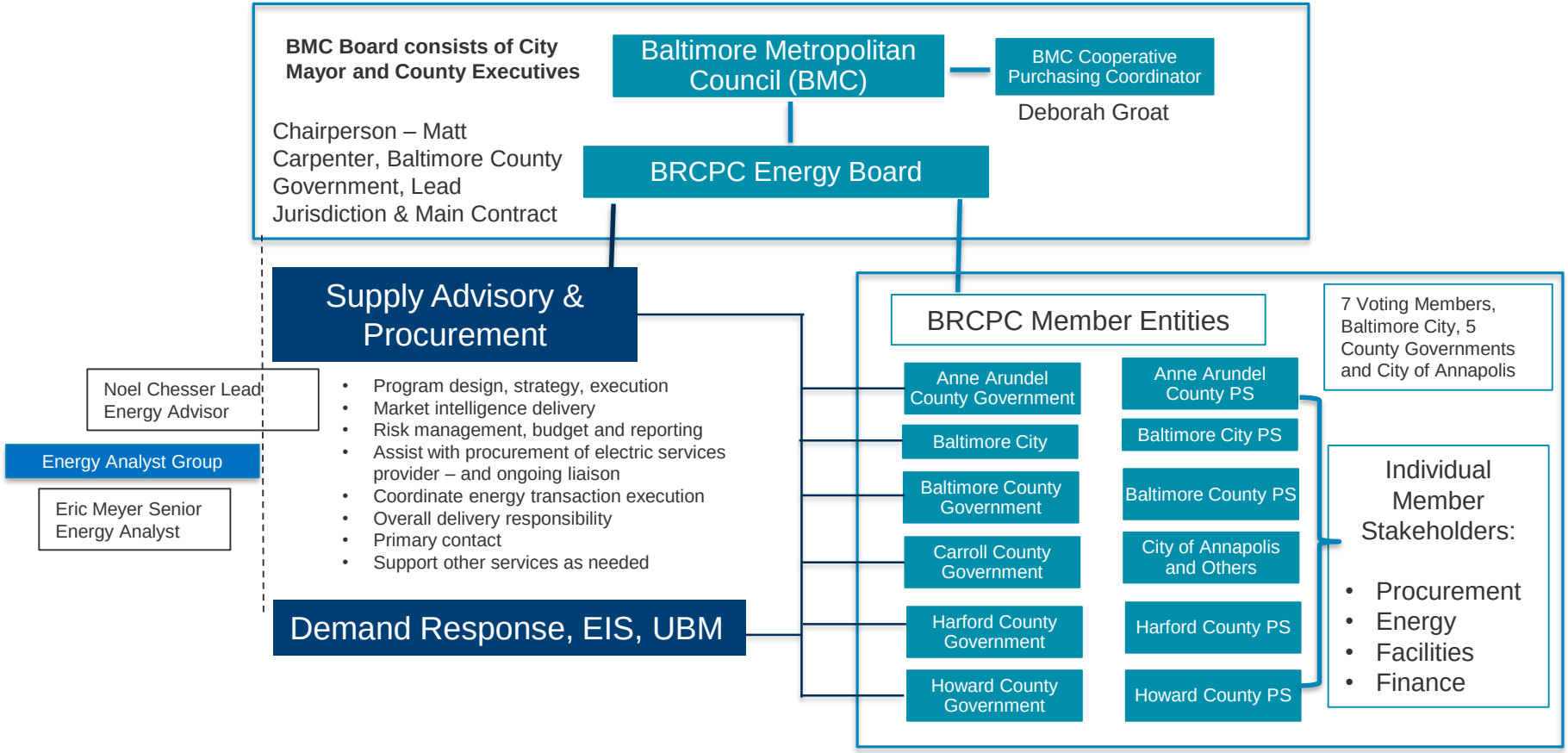
- EnerNOC
  - Was NASD publicly traded company headquartered in Boston
  - Largest demand response company in the world offering:
    - Energy Supply Consulting , Energy Intelligence Software, Utility Bill Management Services
  - Acquired by Enel in August 2018 and rebranded as Enel X effective October 1, 2018
  - Enel X focus on digitalization of the grid including demand response, distributed generation (batteries), renewables and electric vehicles
- Enel
  - Global energy company headquartered in Rome Italy
  - 70+ billion euros in annual revenues, 63,000+ employees worldwide
  - Own generation, transmission and distribution utilities in Europe and South American
  - Large renewable project developer and largest renewable project operator in the world

Cooperative Purchasing - BRCPC

BRCPC Energy Program Profile

- 23 Central Maryland local government entity participants
- Electric
  - 3,800 accounts
  - 276 MW Peak Load
  - 1.62 million annual MWhs
  - Largest purchaser of electricity in Maryland
- Natural Gas
  - 2.5 bcf annual consumption
  - 1,150 accounts

BRCPC Cooperative Energy Program



Cooperative Program Development

Problem Statement:

- Existing program was not meeting their needs:
  - Risky approach of buying multi year full requirements at one-time (one market point)
  - Cumbersome coordinating multiple entities for pricing/contracting
  - Added cost by requesting suppliers to hold prices for extended period
  - Overall complexity of the product being purchased

Solution

- Engaged consultant (EnerNOC in 2005):
  - Educate members on energy markets
  - Identify and review different procurement approaches/structures (pros and cons)
  - Design a best practices program that most effectively met member needs and objectives

Cooperative Program Development (cont'd)

- Established MOU among participants:
  - Buyers
  - Consultant
  - Retail Electric Supplier
- Established Written Energy Cost Management and Procurement Strategy
- Implement program with the assistance of the Energy Consultant
- Monitor/Report ongoing performance and compliance with Procurement Strategy.

Program Operation

- Utilizes managed portfolio approach with dedicated PJM subaccount since 2006
- Bi-monthly meetings of energy committee including voting members
  - Market intelligence update
  - Portfolio Review
    - Review of program results (costs to date, comparison to budget, forecasts)
    - Review of hedge position and hedging strategy
    - Review of budget billing rates
- Preparation of annual budgets provided by EnerNOC
- Ongoing transactions – Coordinated with EnerNOC
- Fixed budget billing for electric supply from electric services provider

Program Performance/Benefits

- Low and stable energy cost costs since 2006
- Cost avoidance since inception estimated at $153.4 million when compared to local utility fixed SOS rates*
- Timely and accurate budgets
- Ongoing energy market intelligence
- Facilitates integration of renewable energy projects, PPA's
- Better value from contracting/contracts
  - Longer term contracts (10 yrs including options) reduce time consuming costly RFP processes
  - Procure lower supplier service fees as incumbents achieve economies of scale, familiarity with customers and longer term lengths
- Professional Management – support/defense from scrutiny

*excludes type III hourly priced SOS accounts

Opportunities for Mid Atlantic Purchasing Team (MAPT)

- Northern Virginia Counties, schools systems, towns, community colleges
  - Greater opportunities to contract with retail Competitive Service Provider behind Dominion utility
    - Lower costs
    - Will require Aggregation, subject to SCC approval
    - Eligibility for end users

- EnerNOC has recently assisted several large VA end users to leave the utility and contract for third party supply

Energy Procurement Best Practices

Adapting Procurement with the Market

Today's Evolving Energy Marketplace:

- Generation fuel mix evolution and impact on prices
- Evolving Capacity and Transmission markets
- Load flexibility/Technology/Demand Response
- Organization Sustainability and Renewable Goals (California 100% zero carbon electricity by 2045)
- Renewable Energy Options
- Distributed Generation
- Electric Vehicles

Successful Energy Procurement:

- Well defined strategy reflecting organization objectives
- Transparent
- Flexible
- Incorporates ongoing market intelligence
- Professional management

Energy Procurement Best Practices - Key Elements

	Key Element	Description
1.	Well-Defined ***Strategy***	Reflects organization's financial and business objectives with full stakeholder buy-in
2.	Market ***Expertise***	1. Sufficient understanding of the market and what is being purchased (internal) 2. Access to ongoing ***market intelligence*** and experienced professionals (external)
3.	***Efficient*** Market Execution	**1. Timely access** to market products ***2. Pricing transparency***… market indexes and/or multiple counterparties/suppliers ***3. Integration*** of renewables and distributed generation
4.	***Unbundling***	Unbundled price components and management thereof
5.	***Diversify*** Market Points	Avoid locking in single fixed price (one market point) for all energy requirements over an extended period. ***An investment portfolio does not invest in one stock all purchased on the same day – same concept with energy***
6.	***Governance*** – Structured Program	***1. Customer Internal Energy Procurement Program Champion*** 2. Roles and responsibilities defined 3. Performance metrics and risk management tools 4. Periodic reporting and ongoing management

Best Practices Strategy: Managed Portfolio

- Defined:

  “Art and science of making decisions about energy purchase mix and policy, matching purchases and balancing risk against performance as well as deploying strategies and tactics for controlling the non energy supply cost components.”

- Best practices for energy procurement for 5 MW + end users

  “Successful organizations recognize that significant energy consumption/spend demands expertise and proactive ongoing management”

Managed Portfolio (MP) – Why?

- Customized strategy to meet organization objectives that incorporates:
  - Organization risk tolerance
  - time diversity (avoid speculative single market point)
  - value purchasing (quickly and efficiently seize market opportunities)
  - utilize operational flexibility to manage component costs
- Procurement structure that provides:
  - Market efficiency
  - Access to full range of market products for cost and risk management
- Risk management tools for ongoing cost and risk management

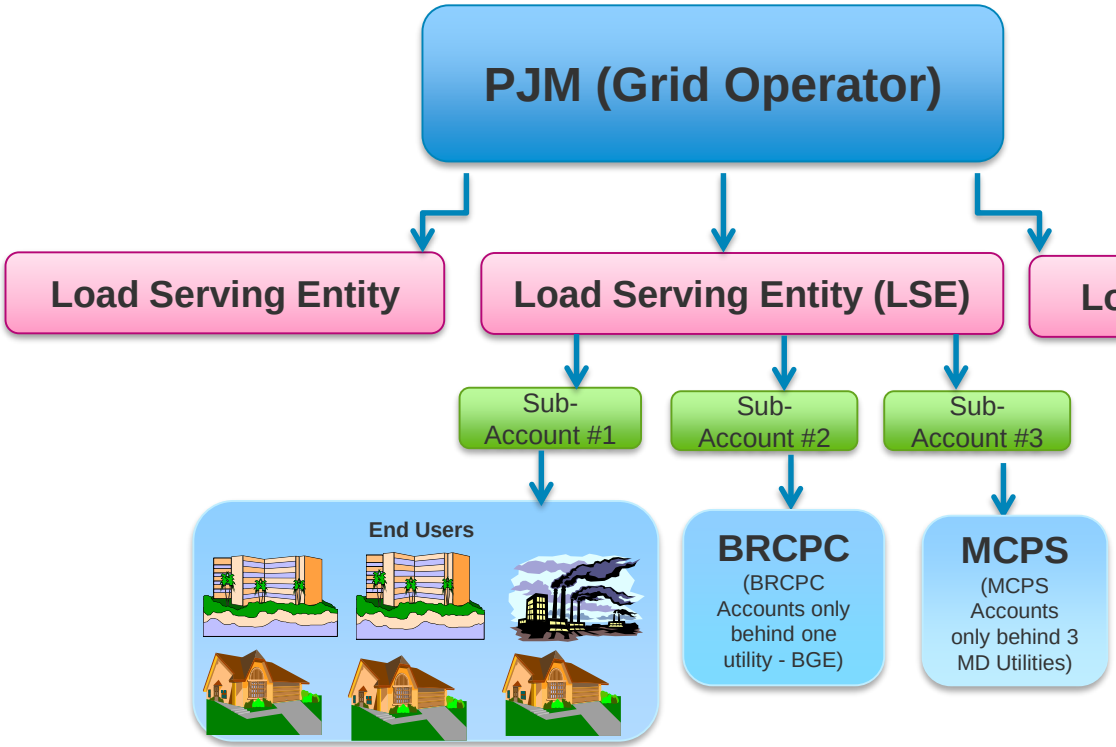
Appendix - PJM Sub Account

PJM Market Design

Load Serving Entity (AKA supplier)

Buy generation and sell electricity to end users

- Manage energy supply requirements and counterparty contracts
- Licenses/memberships – Grid Operator, Federal, State, EDI-Utility
- Bundles end users together to hedge risk
- Builds up cash reserves to buffer against risk



End Users

Purchase electricity from LSEs

- Enter into fixed rate contracts/blocks with LSEs, or
- Billed by LSE for indexed rates (PJM LMP prices)

Sub-Account – What is It?

- Account established between PJM and LSE
- LSE customer accounts enrolled in Sub-Accounts (LSE can have multiple Sub-Accounts)
- PJM passes thru all charges associated with those accounts into the Sub-Account
- LSE responsible for paying PJM for all charges (weekly and monthly settlement)
- LSE bills the end user customer accounts.

Sub-Account – Why? … an Effective Vehicle for MAPT

Savings

- Lower cost of capital for customer relative to supplier
- Avoid supplier risk premium for every cost component
- System credits (e.g. trans. loss credit) are fully passed through

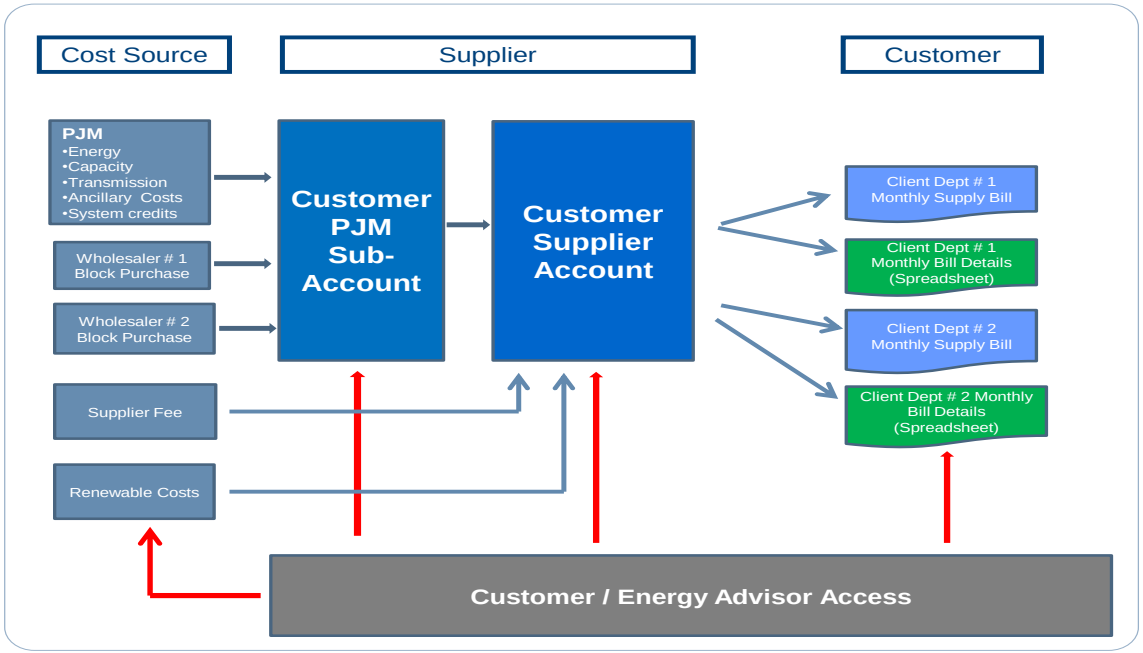
Control – More Risk Management Tools

- Budget certainty through EnerNOC budget billing rate
- Control of when to get in/out of the market
- Bi-lateral contracts/renewables purchasing

Transparency

- Visibility to actual wholesale cost components
- Blocks bid directly into the wholesale market
- Fully-auditable

Sub-Account Cost and Billing Process



1

Sub-account customers must meet certain criteria for the strategy to be attractive to both suppliers and end-users

Typical Requirements

- Creditworthy Entity (s)
- 20+ MW Aggregate Peak Load
- 1500,000+ MWhs annually
- Many utility accounts – primarily in one utility zone
- Long term strategy (min 3 years)

Example EnerNOC Sub-Account Customers

BRCPC Baltimore Regional Cooperative Purchasing Committee

City of Philadelphia · Life · Liberty · And You

MCPS

DC.gov

ESMEC Energy Trust

FACT

Frederick Area Cooperative Team (MD)

Tucker Davis

Principal Energy Advisor
443 573 1527
tdavis@enernoc.com

Noel Chesser

Principal Energy Advisor
443 573 1528
nchesser@enernoc.com