

# **Presentation to the Frankfort Plant Board**

**Regarding Questions Raised by**

**EnvisionFranklinCounty and Synapse Energy Economics**

**Concerning the**

**AR Contract and KyMEA Power Supply Portfolio \***

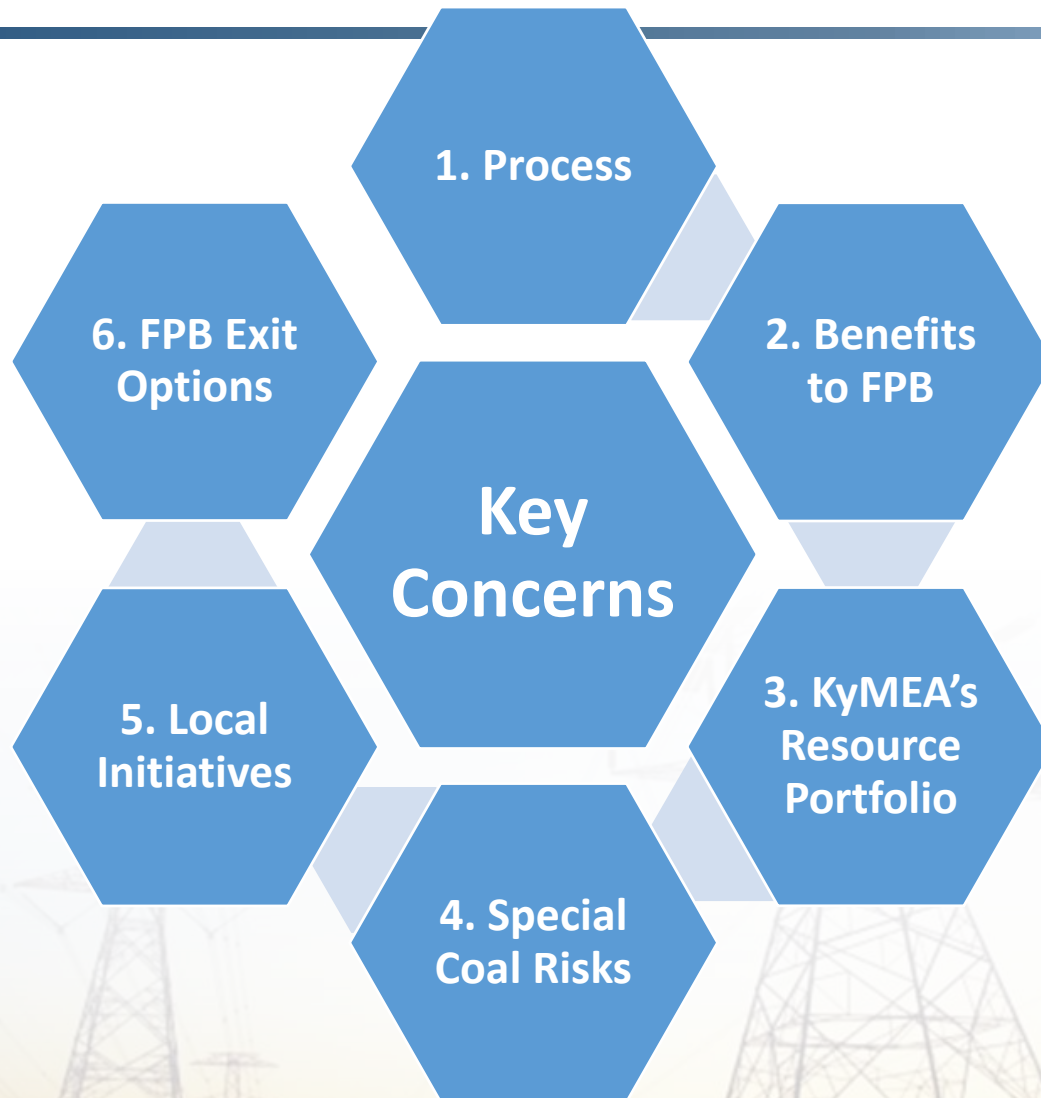
**November 15, 2016**

\* See the presentation to the FPB by EnvisionFranklinCounty dated November 1, 2016 (the “EFC Presentation”), with the attached Synapse Energy Economics (“Synapse”) report titled “Review of Frankfort Plant Board’s All Requirements Contract & KyMEA’s PPAs” of the same date (the “Synapse Report”).

DRAFT v5 of 11/11/2016

# Goal of Presentation:

Review Answers to Key Concerns in the Following Areas Raised in the EFC Presentation and the Synapse Report



# KyMEA and FPB Advisors

All have Very Extensive Experience with Joint Action Municipal Power Agencies and Their Power Supply Programs



John Painter  
Fred Haddad Jr.  
Bob Davis



Brown Thornton



Tom Trauger  
Margaret McGoldrick



Charlie Musson



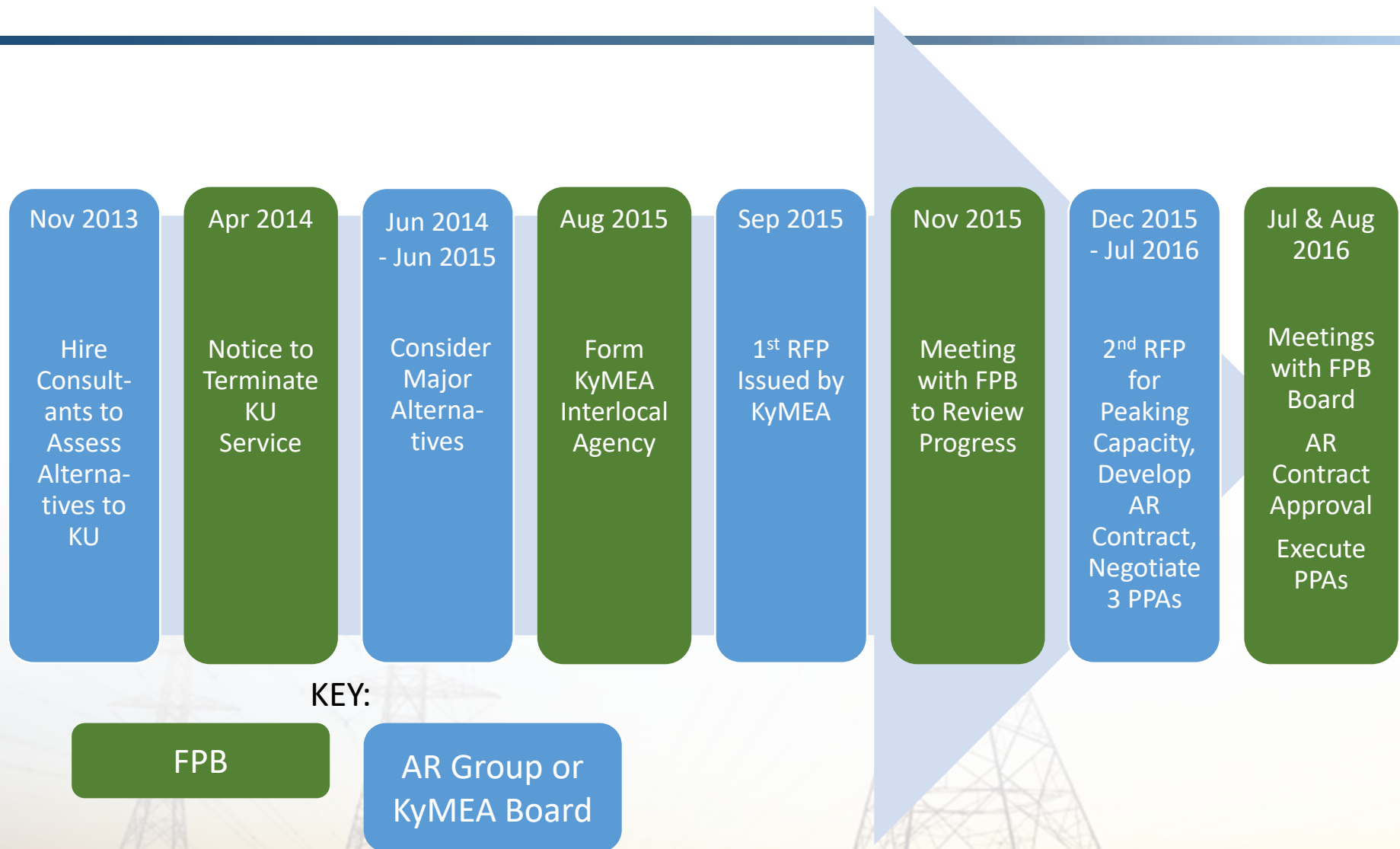
Michael Mace

# Topic 1: Process

## FPB's consideration of power supply alternatives has been extensive and has benefited from working with the other KyMEA Members

1. The Frankfort Plant Board (FPB) decided in 2014 to provide notice to terminate its agreement with KU after hiring independent consultants with the other 11 KU wholesale customers to help evaluate whether more attractive options likely would be available.
2. From July 2014 through May 2015, the group considered major options, such as
  - Forming an agency to assemble a portfolio
  - A special arrangement proposed by OMU
  - Joining a large, existing joint action agency that would assemble a portfolio for the Members
3. In mid 2015, FPB participated in the creation of the Kentucky Municipal Energy Agency ("KyMEA" or "the Agency") in order to work with the other KyMEA Members to obtain a more economical, diverse, flexible, and environmentally responsible power supply for the benefit of Frankfort residents and businesses.
  - During the past year, under the direction of FPB and the other KyMEA municipal members, the Agency conducted two competitive power supply procurements and extensive analyses of alternatives.
  - By acting together, FPB took advantage of the larger group's purchasing power in successfully assembling just such a supply portfolio.

# Key Milestones in FPB's Process of Developing its New Power Supply Arrangements



# KyMEA Received Numerous Proposals in Response to its September 2015 RFP

## RFP – Overview of Proposals Received *30 Proposals from 12 Suppliers*

### Base Load and Intermediate Resources

#### Coal

- 6 Proposals
- Terms Offered:
  - 3, 10, or 10 with option to extend to 20 yrs.
- Unit, System or Reserved Power
- Del. Point - LGE/KU or MISO

#### Combined Cycle – Efficient Natural Gas Fueled Resource

- New Large Plant
- 2 CTs on 1 HRSG
- Del. Point - MISO
- Terms Offered: 10 – 20 yrs.

#### LD (Cost of cover)

- 7x24 Strips
- 5x16 Strips
- Energy Only – Must take
- Price fixed over term
- 10 Proposals
- Terms Offered: 3 to 10 years
- Del. Point - MISO or PJM

### Other Resources

#### Peaking Resources

- 3 Proposals for CTs
- Duct Firing in Combined Cycle Unit
- Heat Rate Call Option LD
- Hydro Peaking Resource (Letter of Interest)
- Del. Point - LGE/KU, MISO, or PJM

#### All Requirements Service

- Load Matching LD for AR Members (3 or 10 years)
  - Del. Point - MISO
- 110 MW Cost-based (May 2019 thru Dec 2021)

Figure 1 - Overview of Proposals Received



# KyMEA also Received Numerous Proposals in Response to its April 2016 RFP

## RFP – Overview of Proposals - Optionality

Number	Provider	Resource	Term	Capacity Amounts	Fuel
1	Paducah	CT - Aero	Extendable beyond 10 yrs. "at neg. price"	Can nominate lower amount down to 30 MW beginning year 4	Seller will supply gas, Buyer can supply and use Seller's firm transportation at incremental cost
2A	Dynegy/IPMC	CT - Joppa Frame 6B	NA	NA	NA
2B	Dynegy/IPMC	Coal - Joppa priced LD Energy - Variable Energy Price	NA	NA	NA
2C	Dynegy/IPMC	Coal - Joppa priced LD Energy - Fixed Energy Price	NA	NA	NA
2D	Dynegy/IPMC	CT - Joppa Frame 7B	NA	NA	NA
3	Big Rivers	CT - Reid	Neg. extension to 10 years	NA	NA
4	BP	HR Call Option - LD Energy Only - No Capacity Included	NA	NA	NA



Summary - Peaking Capacity Proposal Evaluation – May 26, 2016 – Confidential – See Slide 2

Figure 1- Overview of Proposals Received

# Topic 2: Benefits to FPB

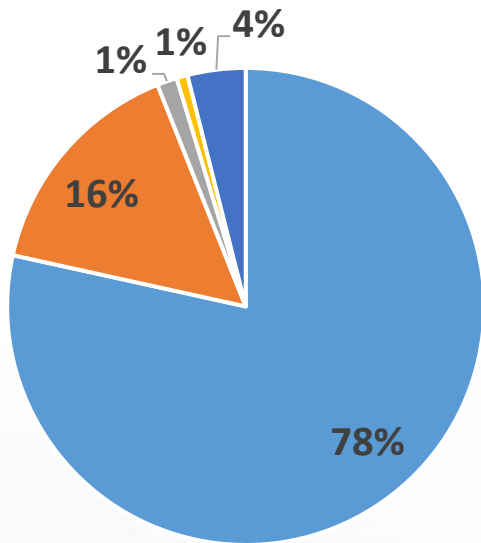
	As Customer of KU	KyMEA Benefits FPB Working Collaboratively With Other Municipal Systems
<b>Control of Future Power Supply Situation and Power Supply Costs</b>	<ul style="list-style-type: none"> <li>➤ No Control over Decisions</li> <li>➤ Subject to KU's Formula Derived Cost of Service</li> <li>➤ Recourse: FERC Complaints</li> </ul>	<ul style="list-style-type: none"> <li>➤ Potential for Substantially Lower Power Costs</li> <li>➤ Collaboratively Plan</li> <li>➤ Recourse: Discuss with other Members, Weighted voting</li> </ul>
<b>Reliance On Coal</b>	Projected to Remain Very High through 2029 and Beyond	<ul style="list-style-type: none"> <li>➤ Less Reliance on Coal through 2029</li> <li>➤ Additional flexibility after 2029</li> <li>➤ Expected to be less exposure to CPP costs than as customer of KU</li> </ul>
<b>Opportunities to Use Member-Owned Resources</b>	Practically --- None	<ul style="list-style-type: none"> <li>➤ AR Contract Provides for KyMEA to Facilitate Member-Owned Resources</li> <li>➤ Increased benefit to FPB from SEPA Entitlement</li> </ul>
<b>Opportunities to Encourage Customer Efficiency Programs</b>	Not Constrained	Not Constrained, KyMEA Can Assist
<b>Opportunities to Use Renewable Resources</b>	Practically -- Limited to Net Metering	KyMEA and/or Members can Choose to Develop Renewables



# Cost of Power is Very Important to FPB Electric Customers

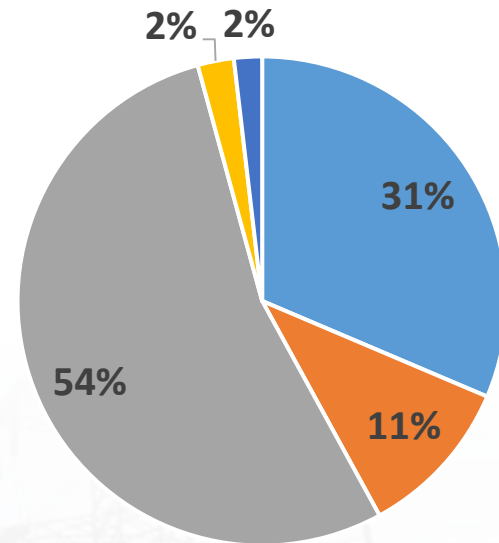
67% of Energy Sales are to Industrial, Commercial, and Municipal Customer Groups, and the Residential Customer Group includes low income customers, *all of which are price sensitive*

**FPB Provides Service to Approximately  
21,000 Customers**



■ Residential      ■ Commercial  
■ Industrial      ■ Municipal  
■ Sec. Ltg. & Misc.

**54% of Energy Sales are to Industrial  
Customers, including State Government**



■ Residential      ■ Commercial  
■ Industrial      ■ Municipal  
■ Sec. Ltg. & Misc.

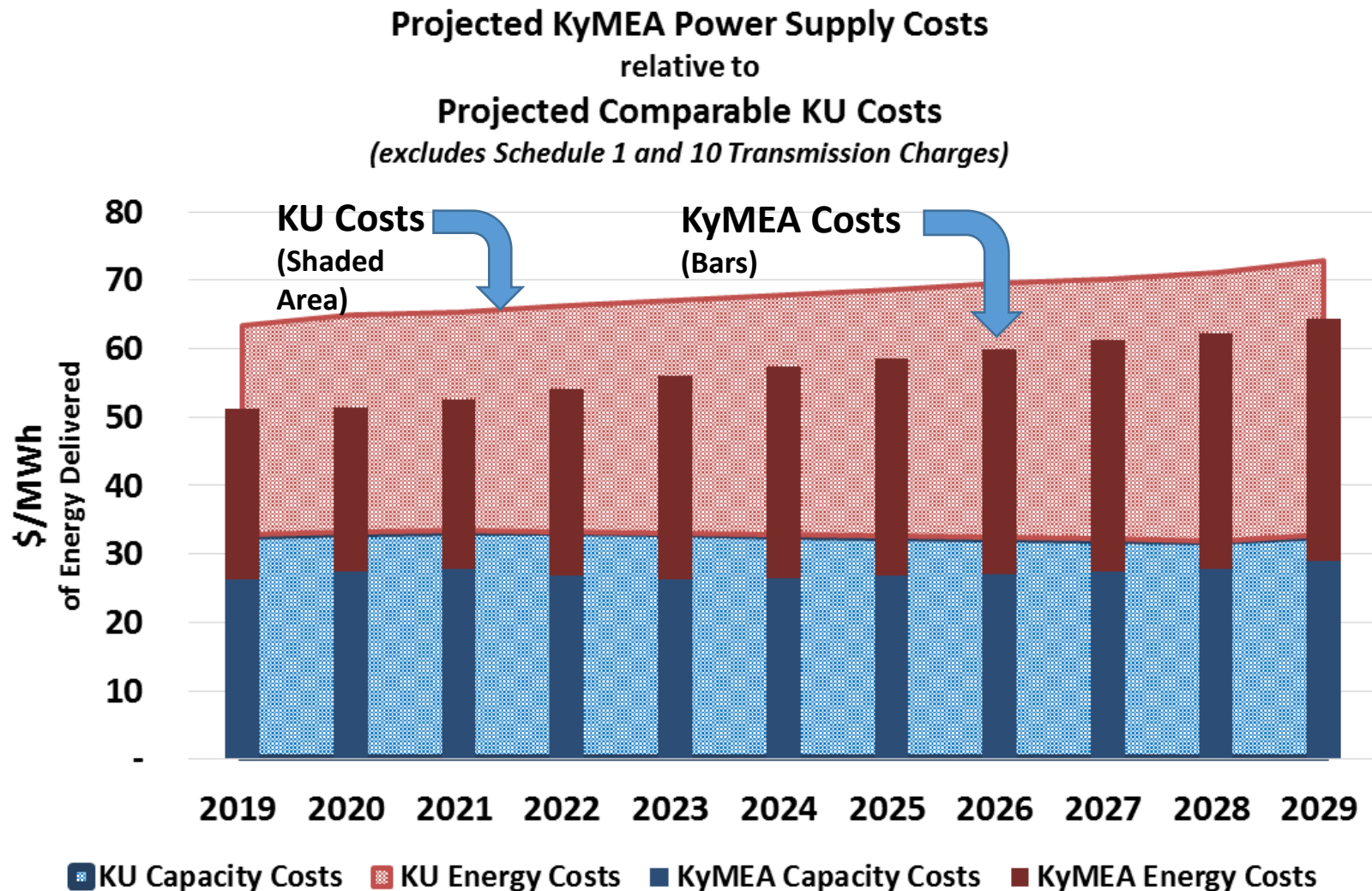
Prepared by NewGen Strategies & Solutions, LLC

# Projected Effect on FPB's Cost of Power

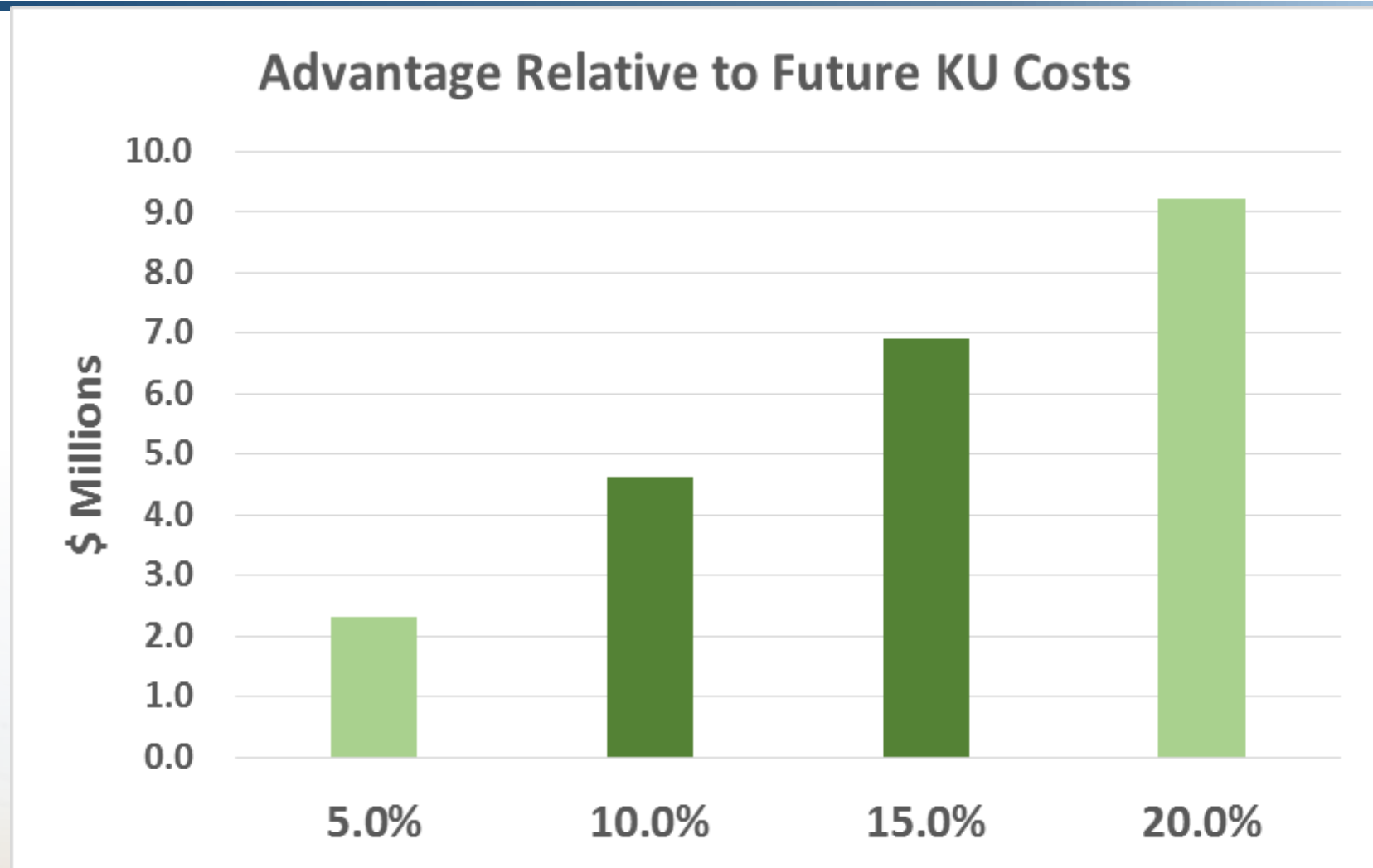
The projected impact of the proposed KyMEA portfolio on FPB's costs of power is very favorable

- 1. KyMEA is well positioned, and is highly likely, to have a significant and sustainable competitive advantage relative to KU through the 2020s**
    - in terms of both capacity and energy related costs
    - under a wide range of future circumstances
  - 2. The potential competitive cost advantage KyMEA provides to FPB is very significant and important to FPB and its residential, commercial, and industrial customers**
    - Potential for \$Millions in lower costs each year in the 2020s
  - 3. KyMEA has rights to extend key contracts beyond 2029, which positions KyMEA well to continue that advantage into the 2030s**
- 1. The following slides show representative projected comparisons of KyMEA's costs to KU's costs under a consistent, reasonable, and, in key respects, conservative set of assumptions about future conditions.*
  - 2. Because future costs are dependent on many factors, it would be a mistake to focus on a single percentage or dollar amount of projected benefit.*

# KyMEA's Power Supply Costs are Projected to be Competitive with KU – One Scenario



## Potential *Annual* Benefits of Lower Projected Future Power Supply Costs -- Very Significant for FPB and the Frankfort Community



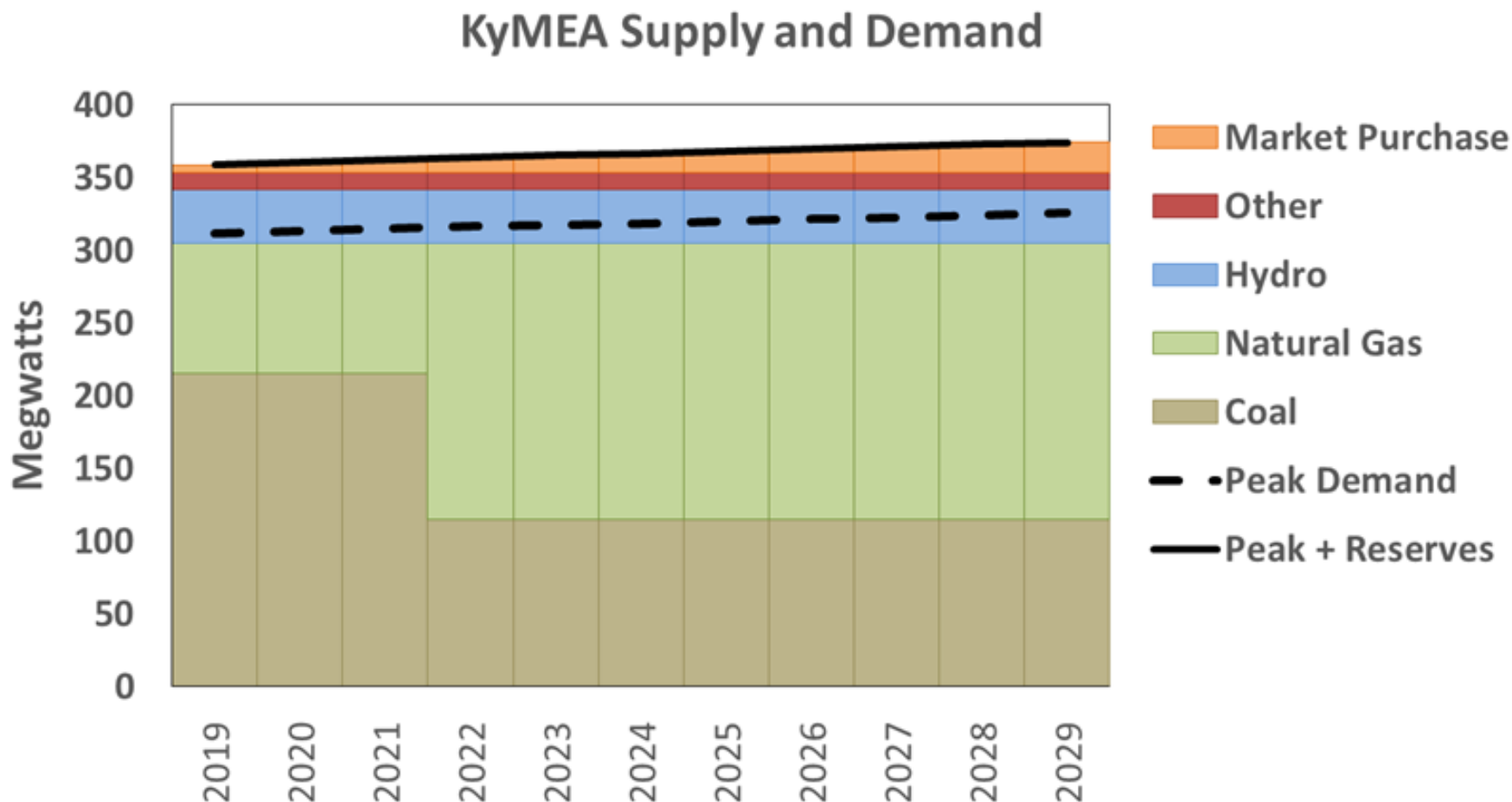


# Topic 3: KyMEA's Resource Mix

KyMEA's planned resources mix is diverse and flexible. The PPAs provide KyMEA significant flexibility to adapt as future conditions change.

1. **KyMEA is developing a diverse portfolio of resources that use coal, natural gas and water to produce electricity.**
  - KyMEA has entered PPAs for coal and peaking capacity resources and has committed to enter agreements to use the Members' SEPA Entitlements in its portfolio.
  - KyMEA is currently working to add a PPA for one or more natural gas fueled combined cycle resources ("NGCC") -- commencing by June 2022.
2. **KyMEA is positioned with considerable flexibility to adapt capacity resources if peak demands prove to be lower than current forecasts or KyMEA or Members choose to provide capacity from renewables.**
  - Through May 2019, KyMEA can provide notice to reduce the capacity to be purchased from Paducah beginning June 2022 by as much as 60 MW.
  - The portfolio is now being constructed to meet most, but not all, of KyMEA's currently forecasted peak demand requirements through May 2029.
  - KyMEA is not constrained from remarketing capacity purchased under the PPAs.
3. **The KyMEA portfolio includes hour-by-hour scheduling flexibility to accommodate more economical sources of energy or renewable energy purchases from**
4. **additional sources.**

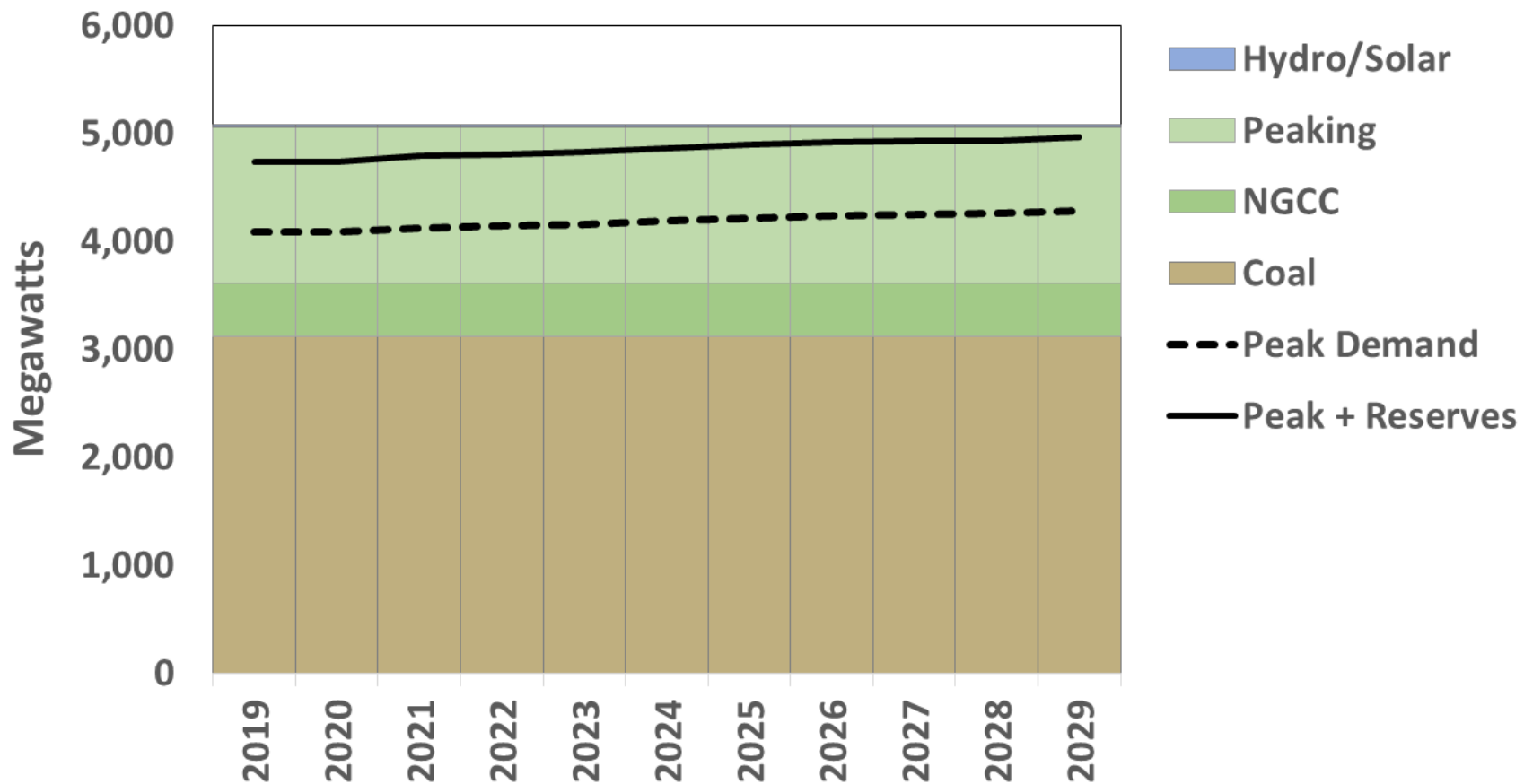
## KyMEA's All Requirements Power Supply Portfolio is a Diversified Mix of Capacity from Coal, Natural Gas and Renewable Resources





## KU's Portfolio is Projected to Remain Heavily Dependent on Coal Capacity through the 2020s – with a Very Minor Renewable Component

Projected KU Supply and Demand



## Topic 4: Coal Resource Related Risks

The coal related risks have been well managed in the PPAs and are expected to be less than had the FPB remained a wholesale customer of KU.

### 1. Pricing in the PPA with IPMC (Dynergy) will not increase:

- a. Because of the costs to IMPC of complying with environmental rules mentioned by Synapse; or
- b. In the event other new environmental regulations are promulgated.

### 2. While the terms of the BREC agreement are confidential:

- a. Big Rivers is already in compliance with all existing regulations regarding management of coal ash, wastewater, and other pollutants and does not anticipate any associated additional costs which could impact the KyMEA PPA; and
- b. The Clean Power Plan requires states to reduce CO<sub>2</sub> emissions by 32%. The idling of BREC's Coleman Station has reduced the carbon footprint of Big Rivers by 33%. Big Rivers has the flexibility to either restart Coleman or utilize it as one of its CPP compliance options. In that regard, it is much better positioned than many other generators.

# The AR Contract Provides Significant Flexibility to Develop Resources that Meet the Priorities of KyMEA's Members

## The AR Contract Provides for 5 Types of Resources:

### ➤ **KyMEA Resources**

1. **Portfolio Resources** – like BREC, IMPC, Paducah and NGCC PPAs
2. **Generation Resource Projects**
  - Projects that may involve less than full participation by the KyMEA Members
  - Projects that would be financed by KyMEA

### ➤ **Local Resources by FPB or Other Members**

3. **Member-Owned Resources**
4. **Customer Resources**
5. **Efficiency Programs**

# Topic 5: Local Initiatives

Provisions in the AR Contract facilitate FPB development of renewable and other resources and efficiency programs

## 1. Nothing in the AR Contract prevents responsible actions by FPB with respect to:

- FPB resources, such as SEPA, community solar or direct load control
- Customer resources
- Energy efficiency programs

## 2. The AR Contract

- Provides multiple avenues for FPB and other members, individually or collectively, to adopt energy efficiency programs and to develop renewable or other resources.

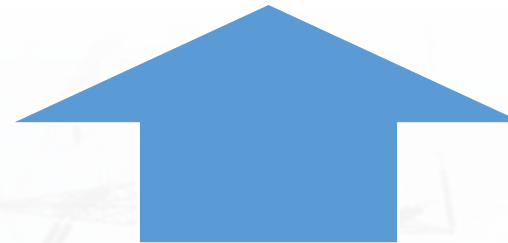
# AR Contract Provisions Pertaining to Local Resources

## Balance Competing Principles

**Avoid Shifting Costs to  
Other Members**

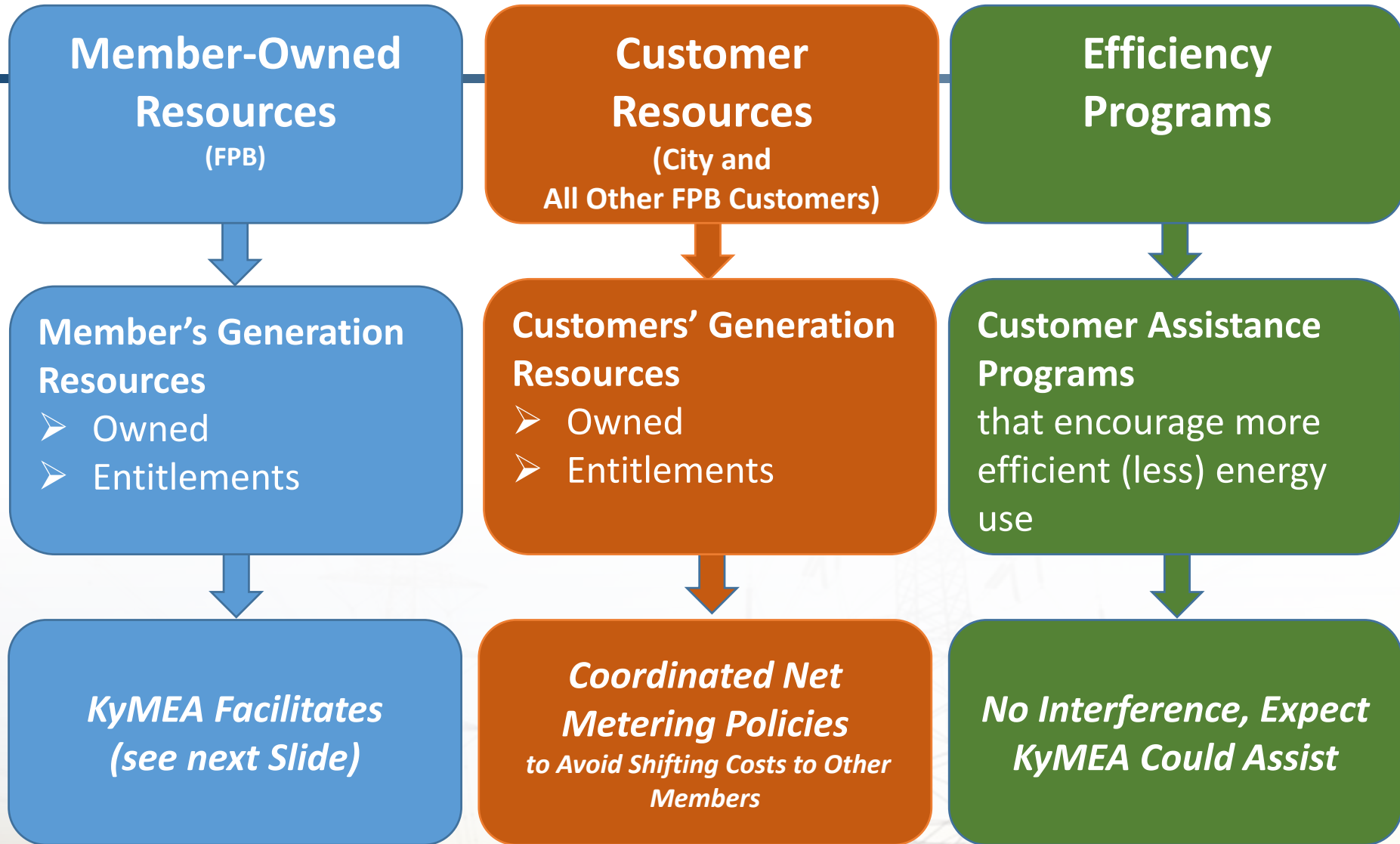


***Key Principles Driving  
Pertinent Provisions of  
the AR Contract***



**Maximize Value  
to the Member**

# AR Contract Provisions Separately Deal with Three Key Situations *Pertaining to Local Resources and Programs*





# Member-Owned Resource Examples

**SEPA  
Entitlements**

**Paris'  
Diesels**

*Existing*

**Direct Load  
Control**  
*(e.g., Water Heater  
Load Shedding)*

**Community  
Solar  
Facility**

*Potential*

# The All Requirements Contract Provides for KyMEA to Facilitate Member-Owned Resources in One of Three Ways

## *Member's Options:*

1. KyMEA will  
Contract to Use and  
Provide Value-  
Based Credits to  
Member

Credit to Member

*Based on  
100% of the  
Value to KyMEA*

2. KyMEA will  
Contract to Market  
Output on Behalf of  
Member

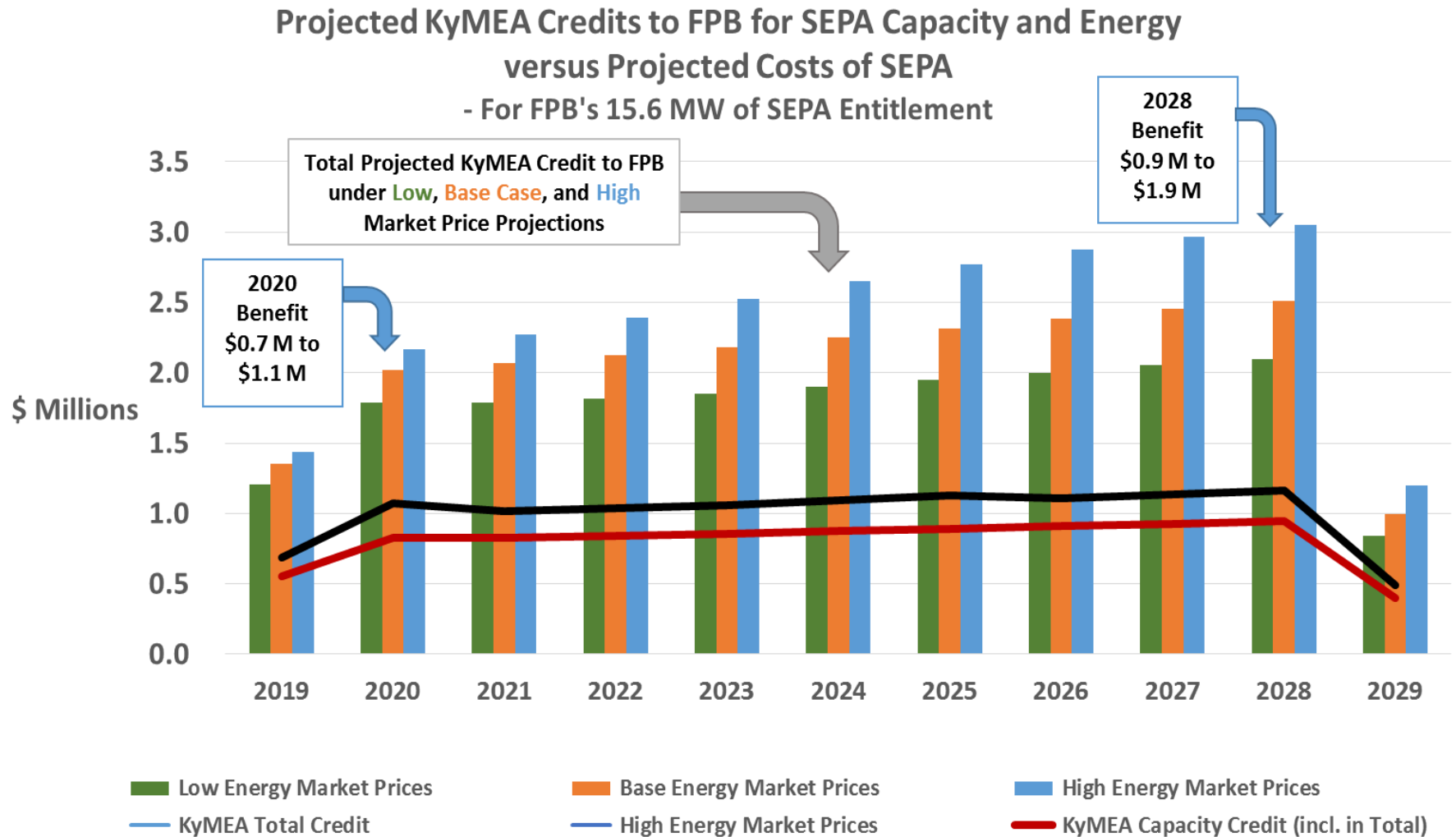
Credit to Member

*Based on  
100% of Net Revenue  
Received*

3. Member can  
Market Output  
through Another  
Party

# Under Option 1: Total KyMEA Credits for FPB's SEPA Entitlements are Projected to Result in Significant Net Benefit to FPB

-- KyMEA Fixed Capacity Credits Alone Would Cover Most Projected SEPA Costs



# Topic 6: FPB Exit Options

The AR Contract balances interests of all Members in providing for any Member to terminate the agreement on reasonable terms

**Avoid Exposing Continuing Members  
to Costs of Commitments Made for an  
Exiting Member**



***Key Principles Driving the  
Determination of the Exit Option  
Provided in the AR Contract***



**Realize Benefits of  
Planning for the  
Longer Term**

# Term and Termination

Page	Section	Summary/Key Points
6-7	2	<p>(a) Perpetual Term, but AR Agreement may be terminated:</p> <ul style="list-style-type: none"><li>➤ By Member on 5 years' notice effective May 31</li><li>➤ But not prior to May 31, 2024</li><li>➤ Provided that the Member shall remain responsible for any Resource Obligations, as determined in accordance with Section 12</li></ul> <p>(b) Member can terminate earlier if all Agency obligations are met</p> <p>(c) Agreement may be terminated in the Event of Default per Section 12</p>

# Because the Agency will plan for Longer than 5 Years, Some Agency Commitments may Extend beyond the Termination by a Member

Page	Section	Summary/Key Points
14-15	6(b)	<p>To achieve long-term economic benefits,</p> <ul style="list-style-type: none"><li>➤ the Agency's power supply planning horizon shall be at least ten (10) years, and</li><li>➤ the Parties anticipate that the Agency will enter into power supply-related commitments both shorter and longer than the notice of termination period specified in Section 2(a).</li></ul>



# Member MAY have a Continuing Obligation to the Agency after Terminating the Agreement

Page	Section	Summary/Key Points
22-23	12 (d) and (e)	<p>(d) Notwithstanding termination,</p> <ul style="list-style-type: none"> <li>➤ A Member must fulfill any previously agreed to Resource Obligations</li> <li>➤ To fulfill a Resource Obligation, a Member would pay monthly charges to the Agency designed to recover any amount by which               <ul style="list-style-type: none"> <li>i. costs to the Agency associated with Member's Resource Obligation exceed</li> <li>ii. value the Agency can realize by using or marketing the Member's allocated share of the Agency Obligation underlying the Resource Obligation.</li> </ul> </li> <li>➤ Agency may require Letter of Credit to secure Resource Obligations</li> </ul> <p>(e) Schedule of Agency Obligations that could result in Resource Obligations</p> <ul style="list-style-type: none"> <li>➤ Updated annually and</li> <li>➤ Member's share based on load ratio share of Billing Demands in the 12 months just before effective date of termination, unless a different basis for "share" has been established in another agreement.</li> </ul>

# Overall Conclusions: The Proposed AR Project Offers Significant Advantages to FPB

