

# ***MEEIA 2 Collaborative***

## **Initial Results**

September 7, 2016

# Agenda

- Project Activities
- Summary of Proposals
- Individual Ideas Research Results
- Matrix Criteria and Supporting Documentation
- Next Steps

# Project Activities

- July 15<sup>th</sup> – Kick-off, Matrix Review, Proposals ✓
  - Joint Ameren Missouri/KCP&L
- Remainder of July – Refine/clarify proposals ✓
- August – Research proposals ✓
- September 7<sup>th</sup> – Share research findings ←
- September 21<sup>st</sup> – Stakeholder feedback on research findings
- Week of October 3<sup>rd</sup> – Submit utility reports to Commission

# Organization of Collaborative Proposals

- **Category #1 – Significant Overlap with Approved Programs**
  - C&I Concierge
  - Advanced Lighting Controls
  - Education Program for Teachers
  - Multifamily One Stop Shop
- **Category #2 – Marketing/Delivery Opportunities for Approved Programs**
  - Up-Stream Residential Products
  - C&I Mid-Stream Lighting
- **Category #3 – New Programs/Budget Requiring Commission Approval**
  - Residential Bundling
  - Low Income Single Family
  - Bulb Buyback
  - LED Street Lighting
  - Water Heater Direct Load Control
  - Circuit Rider
  - Financing
  - Exterior Lighting
  - Competitions (Gamification)

# Summary of Collaborative Proposals

	Incremental for 2017/2018			Cost Effective?
	Energy (MWh)	Demand (MW)	Budget (MM\$)	
<b>Significant Overlap with Approved Programs</b>				
C&I Concierge	18,692	2.2	\$8.0	✗
Advanced Lighting Controls	0	0	\$0.0	✓
Education Program for Teachers	0	0	\$0.0	✓
Multifamily One-Stop-Shop	8,380	1.9	\$7.0	✗
<b>Marketing/Delivery Opportunities for Approved Programs</b>				
Up-Stream Residential Products	25,382	8.5	\$10.9	✗
C&I Mid-Stream Lighting	9,870	1.9	\$4.3	✓
<b>New Programs/Budget Requiring Commission Approval</b>				
Residential Bundling	292	0.1	\$0.9	✗
Low Income Single Family	6,035	1.4	\$4.7	✓
Bulb Buyback	4,463	0.3	\$0.5	✓
LED Street Lighting	34,442	0	\$14.0	✓
Water Heater Direct Load Control	0	4	\$4.5	✗
Circuit Rider	4,394	1.7	\$0.3	✗
Financing	1,721	1.1	\$1.2	✓
Exterior Lighting	43,969	0.1	\$6.5	✓
Competitions (Gamification)	0.2	0.1	\$0.1	✗
<b>Total</b>	<b>157,640</b>	<b>23.3</b>	<b>\$62.9</b>	

# Category #1 – Significant Overlap with Approved Programs

- C&I Concierge
- Advanced Lighting Controls
- Education Program for Teachers
- Multifamily One-Stop-Shop

# C&I Concierge

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	18,692	2.2	\$8.0
Pct. Change	3.3%	1.3%	5.1%

<u>Cost Effectiveness</u>
TRC – 0.71
UCT – 1.26
PCT – 1.45
RIM – 0.54

## Significant Research Observations

1. Customer contacts are managed by Key Account Managers and a dedicated team of energy efficiency program representatives
2. Program continuity would support longer-term agreements typically associated with customer savings plans
3. Estimated that existing programs are accomplishing 80% of C&I Concierge savings; the remaining 20% would have higher costs per kWh

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities




# Advanced Lighting Controls

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	0	0	\$0
Pct. Change	0%	0%	0%

<u>Cost Effectiveness</u>
TRC – 1.63
UCT – 3.32
PCT – 3.24
RIM – 0.59

## Significant Research Observations

1. Advanced Lighting Controls are already eligible for incentives in the Custom program
2. Ameren Missouri has incentivized Advanced Lighting Controls projects
3. The Advanced Lighting Controls technology is advancing and prices dropping rapidly

Other Factors	
	Learning Opportunity
	Disruption to Approved Portfolio
	Consistency with PSC Priorities



# Education Program for Teachers

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	0	0	\$0
Pct. Change	0%	0%	0%

<u>Cost Effectiveness</u>
TRC – N/A
UCT – N/A
PCT – N/A
RIM – N/A

## Significant Research Observations

1. Part of existing School Kit Program Educating 16,000 Students/yr
2. No savings directly attributed to education portion of the program although spillover may be quantified in evaluation report

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

# Multifamily One-Stop-Shop

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	8,380	1.9	\$7.0
Pct. Change	2.9%	2.3%	4.4%

<u>Cost Effectiveness</u>
TRC – 0.71
UCT – 0.71
PCT – N/A
RIM – 0.26

## Significant Research Observations

1. Significant overlap with Multifamily Kits and Small Business Direct Install (“SBDI”)
2. Above results do not reflect reductions to the Kits and SBDI program
3. Similar structure as Multifamily Low Income program, but likely to have higher free ridership

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

## Category #2 – Marketing/Delivery Opportunities for Approved Programs

- Up-Stream Residential Products
- C&I Mid-Stream Lighting




# Up-Stream Residential Products

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	25,382	8.5	\$10.9
Pct. Change	4.5%	5.1%	6.9%

<u>Cost Effectiveness</u>
TRC – 0.28
UCT – 0.85
PCT – 1.01
RIM – 0.28

## Significant Research Observations

1. EPA launching Retail Products Platform Pilot – Increasing number of utilities participating, 5 to 7 measures included
2. Incentive structure for ENERGY STAR® Retail Products Platform introduces challenges as some measures may not be cost effective but must be included
3. Overlap with two measures in the Efficient Products program

Other Factors	
	Learning Opportunity
	Disruption to Approved Portfolio
	Consistency with PSC Priorities

# C&I Mid-Stream Lighting

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	9,870	1.9	\$4.3
Pct. Change	3.5%	2.2%	2.7%

<u>Cost Effectiveness</u>
TRC – 1.48
UCT – 1.57
PCT – 8.14
RIM – 0.57

## Significant Research Observations

1. Target customers are expected to be served by Small Business Direct Install program
2. Ameren Illinois is currently running a mid-stream program and has found challenges with distributors requiring significant training and needing changes to the distributor's accounting system to handle incentives

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

## Category #3 – New Programs/Budget Requiring Commission Approval

- Residential Bundling
- Low Income Single Family
- Bulb Buyback
- LED Street Lighting
- Water Heater Direct Load Control
- Circuit Rider
- Financing
- Exterior Lighting
- Competitions (Gamification)

# Residential Bundling

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	292	0.1	\$0.9
Pct. Change	0.1%	0.1%	0.5%

<u>Cost Effectiveness</u>
TRC – 0.36
UCT – 0.42
PCT – 1.85
RIM – 0.31

## Significant Research Observations

1. Requires multiple visits to customers' home, increasing program costs
2. Similar measures already offered in existing energy efficiency programs
3. Lighting measures account for significant savings in successful programs

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

# Low Income Single Family

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	6,035	1.4	\$4.7
Pct. Change	1.1%	0.8%	3.0%

<u>Cost Effectiveness</u>
TRC – 1.02
UCT – 1.02
PCT – 4.40
RIM – 0.40

## Significant Research Observations

1. Opportunity to pair with Weatherization funds
2. Opportunity for neighborhood blitz implementation
3. Lighting measures account for majority of savings in successful programs

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities



# Bulb Buyback

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	4,463	0.7	\$0.5
Pct. Change	0.8%	0.4%	0.3%

<u>Cost Effectiveness</u>
TRC – 4.38
UCT – 4.38
PCT – N/A
RIM – 0.48

## Significant Research Observations

1. Risk of poor evaluation results associated with incandescent bulbs
2. Potential to strengthen Community relations
3. Modeled on the Connecticut program

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

# LED Street Lighting

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	34,442	0	\$14.0
Pct. Change	6%	0%	8.9%

<u>Cost Effectiveness</u>
TRC – 1.11
UCT – 1.46
PCT – N/A
RIM – N/A

## Significant Research Observations

1. Ameren Missouri is currently converting 66% of Company-Owned street lights outside of MEEIA
2. 82% of Customer-Owned street lighting energy is associated with a single customer
3. Decorative LED street lights are not yet cost effective

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

# Water Heater Direct Load Control

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	0	4	\$4.5
Pct. Change	0%	2.4%	2.8%

<u>Cost Effectiveness</u>
TRC – 0.74
UCT – 0.74
PCT – 0.74
RIM – N/A

## Significant Research Observations

1. Significant range of kW savings per water heater
2. Mature technology, opportunity to leverage smart meters
3. Movement to heat pump water heaters would significantly reduce demand savings

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities




# Circuit Rider

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	4,394	1.7	\$0.2
Pct. Change	0.8%	1.0%	0.1%

<u>Cost Effectiveness</u>
TRC – 0.81
UCT – 11.59
PCT – 1.0
RIM – 0.81

## Significant Research Observations

1. Relatively New Approach, evaluations are limited, Primarily in Uniform Code States
2. Modeled after Arizona Public Service delivery (Arizona is Home Rule State like Missouri)
3. Potential for significant incremental costs to customers

Other Factors	
	Learning Opportunity
	Disruption to Approved Portfolio
	Consistency with PSC Priorities

# Financing

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	1,721	1.1	\$1.2
Pct. Change	0.3%	0.7%	0.8%

<u>Cost Effectiveness</u>
TRC – 2.05
UCT – 2.73
PCT – 5.12
RIM – 0.76

## Significant Research Observations

1. Evaluations do not typically attribute savings directly to Financing
2. Program continuity would support longer-term agreements typically associated with multi-year financing
3. Can be resource intensive to administer
4. Modeled after Ameren Illinois On-Bill Financing Program

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

# Exterior Lighting

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	43,969	0.1	\$6.5
Pct. Change	7.7%	0.1%	3.8%

<u>Cost Effectiveness</u>
TRC – 1.32
UCT – 2.52
PCT – 3.49
RIM – 0.47

## Significant Research Observations

1. Modeling based on Lockheed Martin inputs
2. Demand savings are limited compared to other measures

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

# Competitions (Gamification)

Incremental Plan Increases (2017 & 2018)			
	Energy (MWh)	Demand (MW)	Budget (\$MM)
Incr. Change	0.2	0.09	\$0.11
Pct. Change	0.03%	0.05%	0.07%

<u>Cost Effectiveness</u>
TRC – 0.31
UCT – 0.31
PCT – N/A
RIM – 0.23

## Significant Research Observations

1. Existing programs in body of research limited to Residential participants
2. Modeled as a Behavior Modification Program with Limited Persistence (2 yrs)
3. Potential to offer more options with smart meters

Other Factors	
●	Learning Opportunity
●	Disruption to Approved Portfolio
●	Consistency with PSC Priorities

# Project Activities

- July 15<sup>th</sup> – Kick-off, Matrix Review, Proposals
  - Joint Ameren Missouri/KCP&L
- Remainder of July – Refine/clarify proposals
- August – Research proposals
- September 7<sup>th</sup> – Share research findings
- September 21<sup>st</sup> – Stakeholder feedback on research findings
- Week of October 3<sup>rd</sup> – Submit utility reports to Commission





**FOCUSED ENERGY. For life.**