



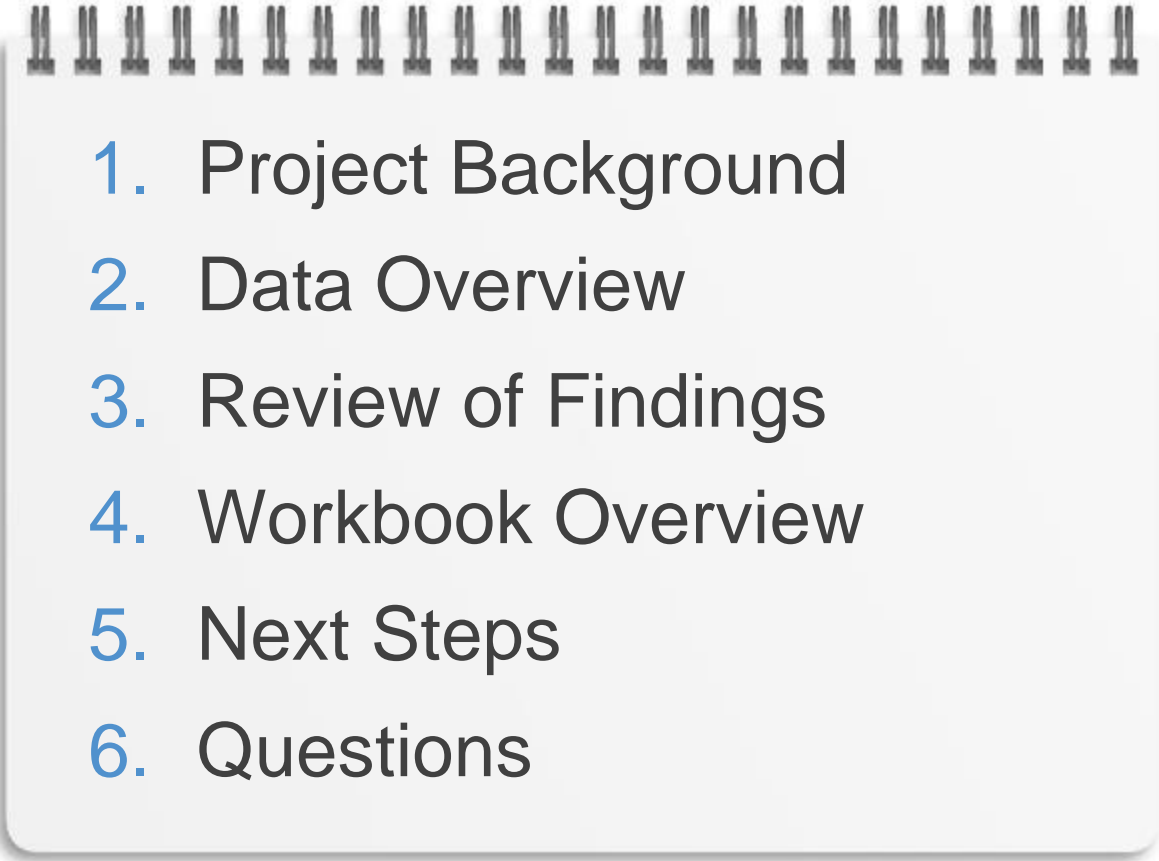
# SIX GOING ON SEVEN



Danielle Walker



# AGENDA

- 
1. Project Background
  2. Data Overview
  3. Review of Findings
  4. Workbook Overview
  5. Next Steps
  6. Questions

# DISCLAIMER



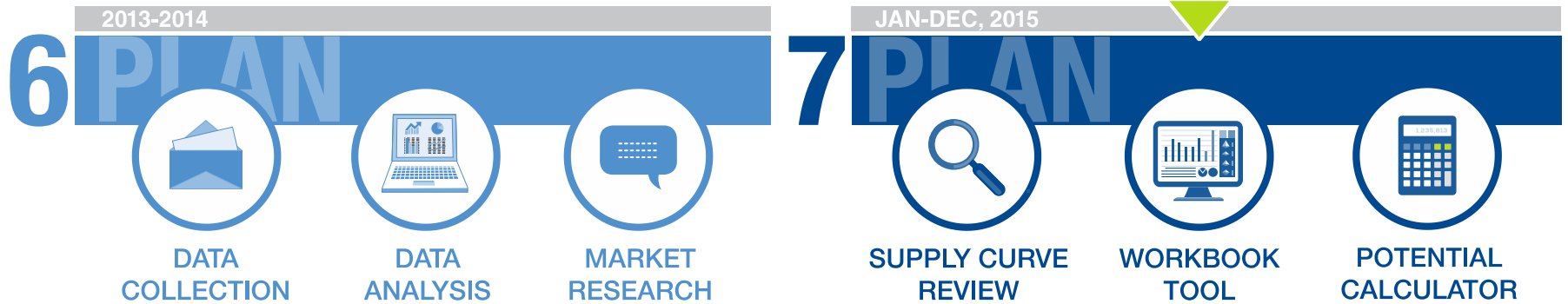
.....  
OFFICIAL DRAFT NUMBERS COMING



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# PROJECT BACKGROUND

# THE WORK WE ARE DOING



# PROJECT GOAL & PURPOSE



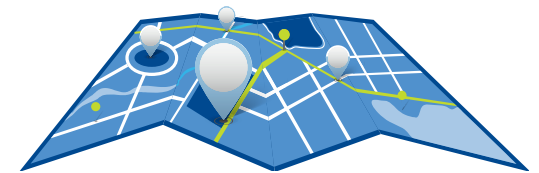
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PROVIDE  
INSIGHT INTO  
SAVINGS  
POTENTIAL



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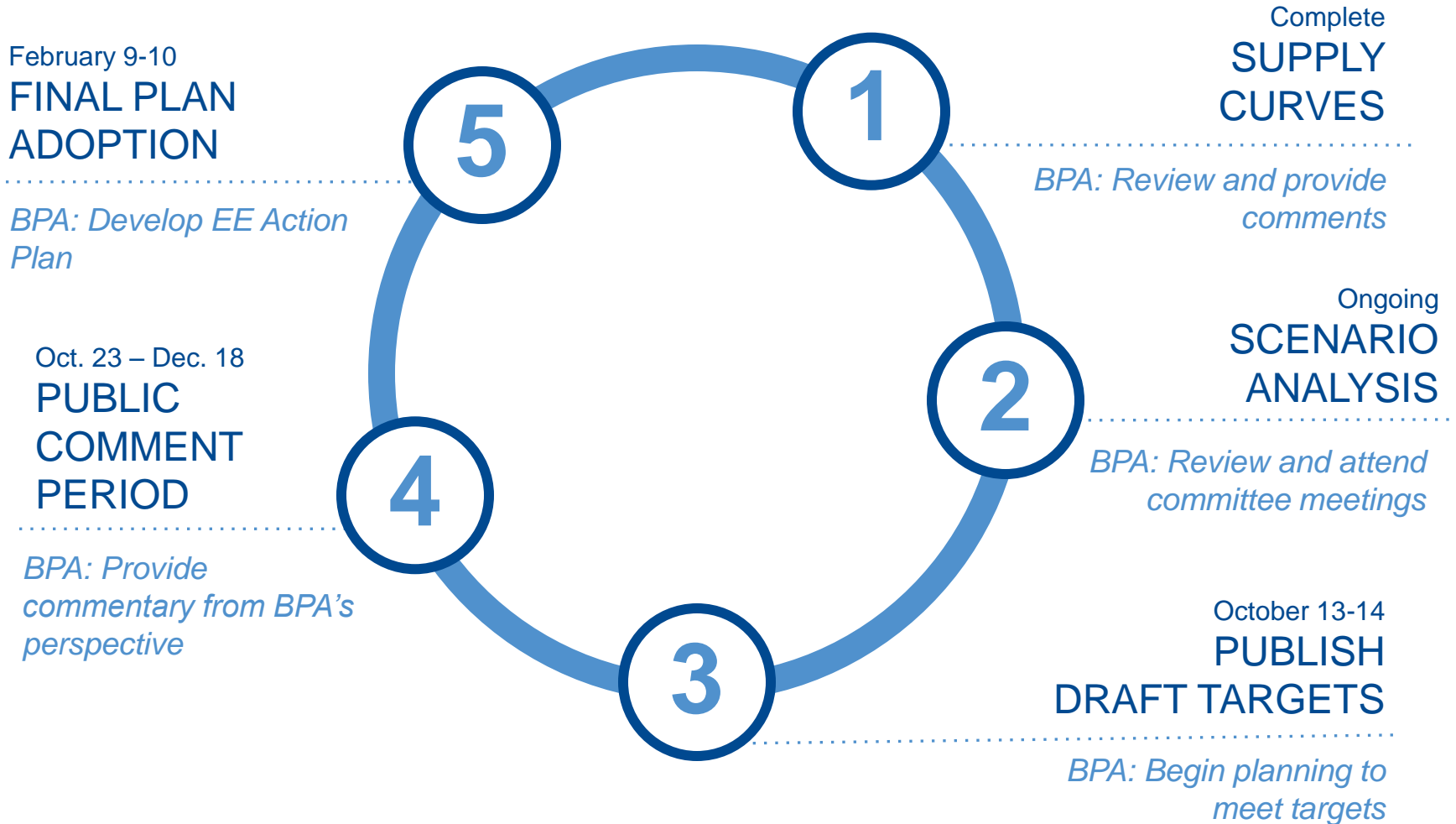
EXPLORE WHAT  
IS COST  
EFFECTIVE



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BEGIN  
PLANNING  
PUBLIC POWER  
APPROACH

# THE COUNCIL'S PROCESS



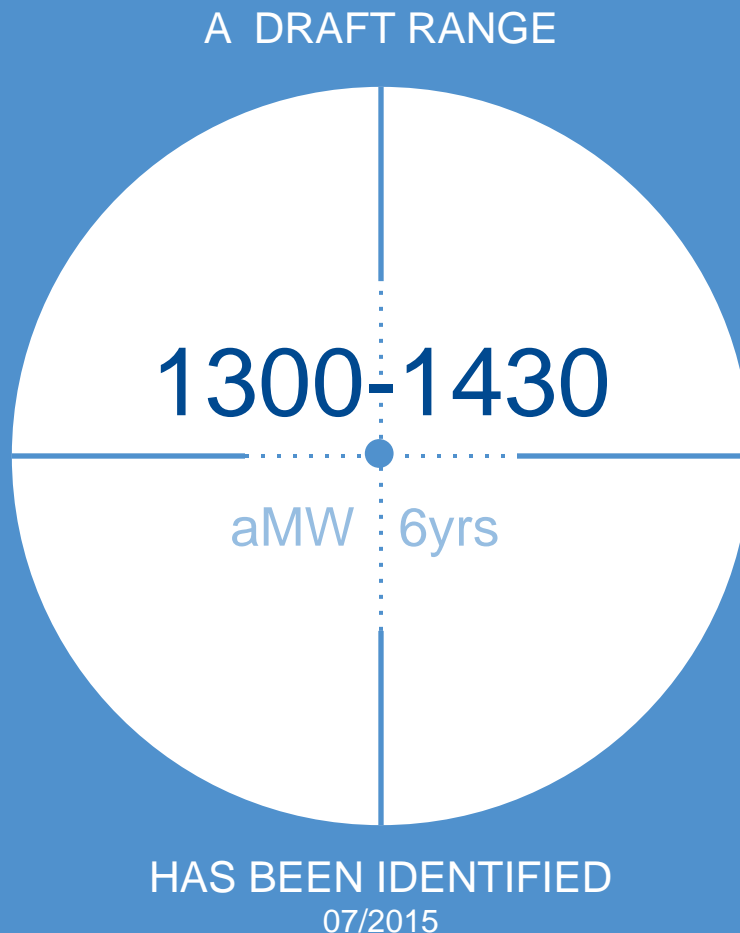
# A 6-YEAR PLAN?



*In consideration:*  
**6-YEAR ACTION PLAN PERIOD**  
2016-2021



# 7<sup>TH</sup> POWER PLAN PROGRESS



## OUR DATA ASSUMED:

- **1440 aMW**  
potential over 6 years
- **\$100/MWh**  
TRC levelized cost screen

## CAVEATS:

1. This **levelized cost value is not final** and will likely change as the Council releases its draft targets in October.
2. We have made **no distinction between retrofit and lost opportunity** measures: we have applied this screen uniformly.
3. This analysis assumes **BPA share** is **42%** of the regional total



# DATA OVERVIEW

# OVER 60 WORKBOOKS EXAMINED

*For each savings workbook, we determined its...*

1

TECHNICAL  
POTENTIAL

2

ACHIEVABLE  
POTENTIAL

3

LEVELIZED  
COST

4

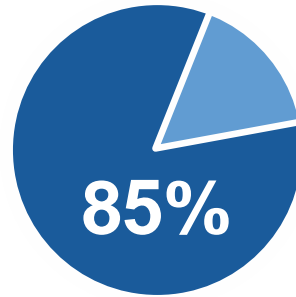
ECONOMIC  
POTENTIAL

# ACHIEVABLE POTENTIAL



TECHNICAL  
POTENTIAL

X



ACHIEVABILITY  
FACTOR

÷



RAMP  
RATES

# LEVELIZED COSTS

*7<sup>th</sup> plan*  
**Levelized Costs**

.....  
 Total Resource Costs  
 incurred over the lifetime  
 of the measure  
 .....

*2012 dollars*

Total Resource Costs include:

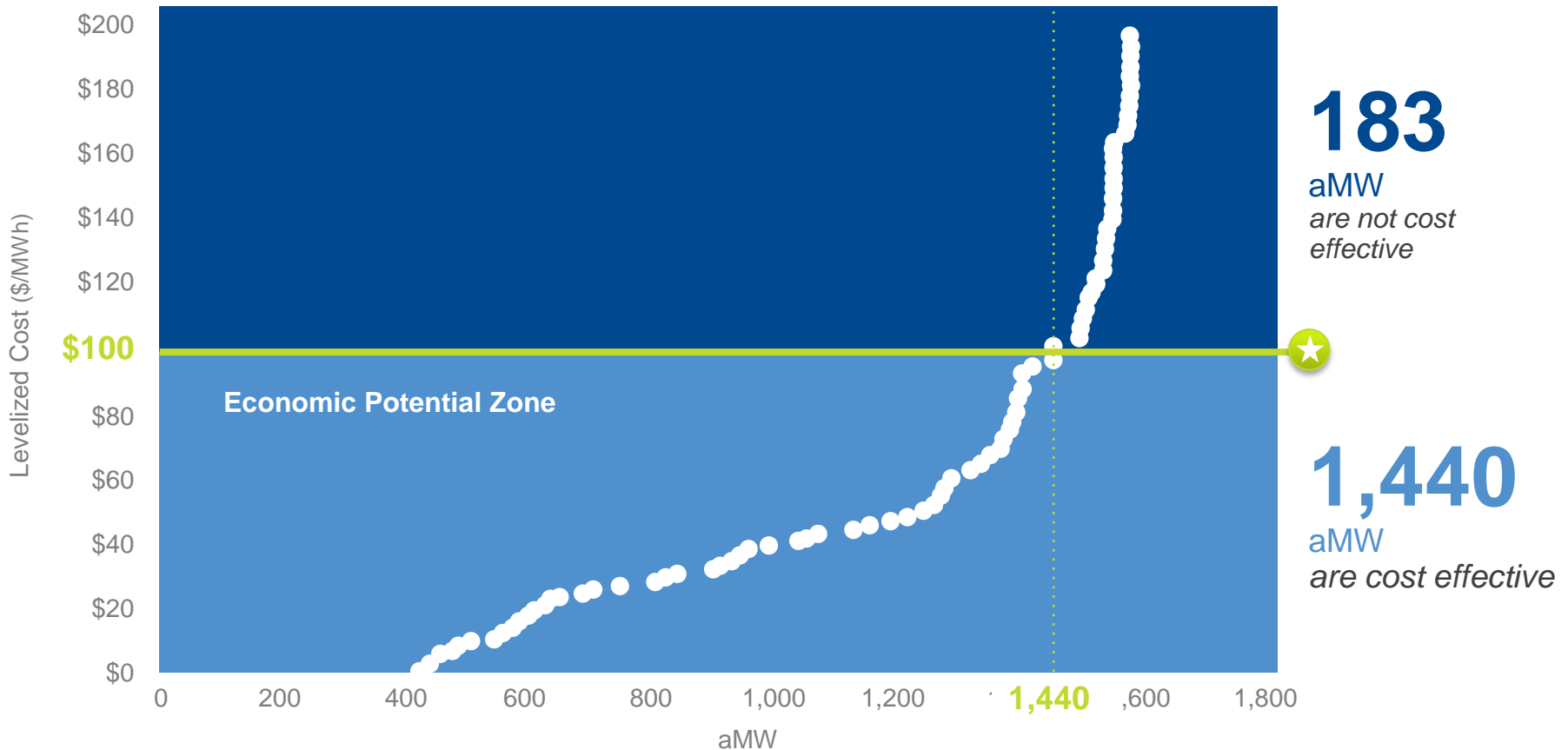
- INCREMENTAL COSTS**
- OPERATIONS & MAINTENANCE COSTS (+/-)**
- PROGRAM ADMIN COSTS**
- INCENTIVES**



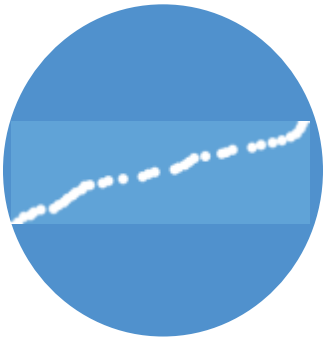
\* October 2014 CRAC presentation provides additional details

# ECONOMIC POTENTIAL (6-YR)

7<sup>TH</sup> PLAN DRAFT SUPPLY CURVE

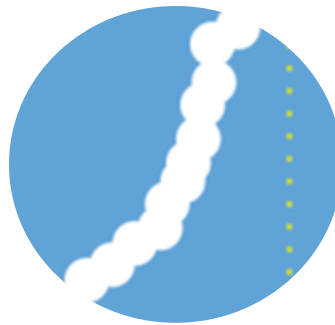


# ECONOMIC POTENTIAL (6-YR)



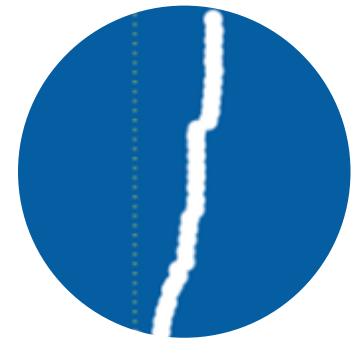
**< \$60 MWh**

**1272 aMW  
SAVINGS**



**\$61-\$100 MWh**

**167 aMW  
SAVINGS**



**> \$101 MWh**

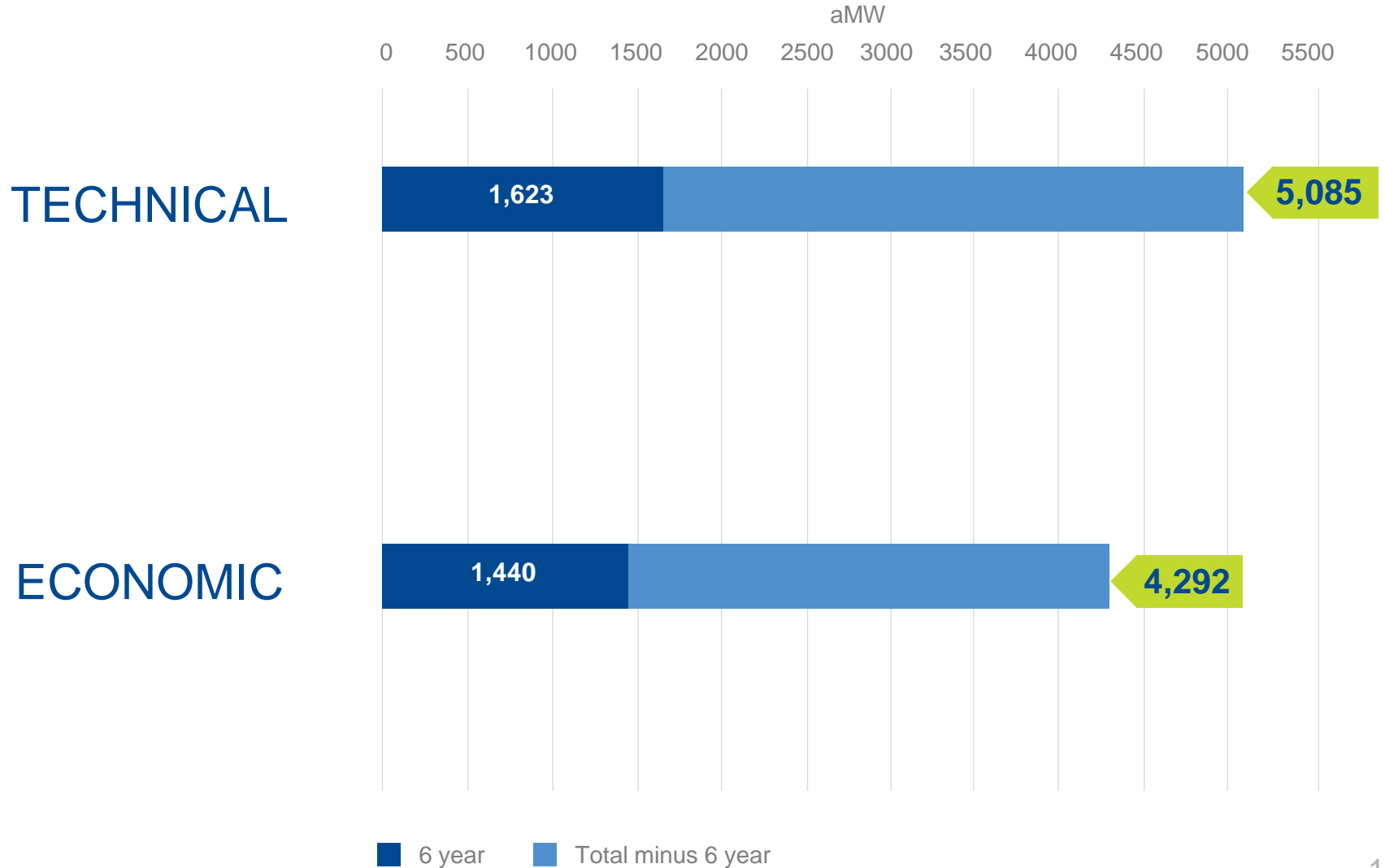
**183 aMW  
SAVINGS**



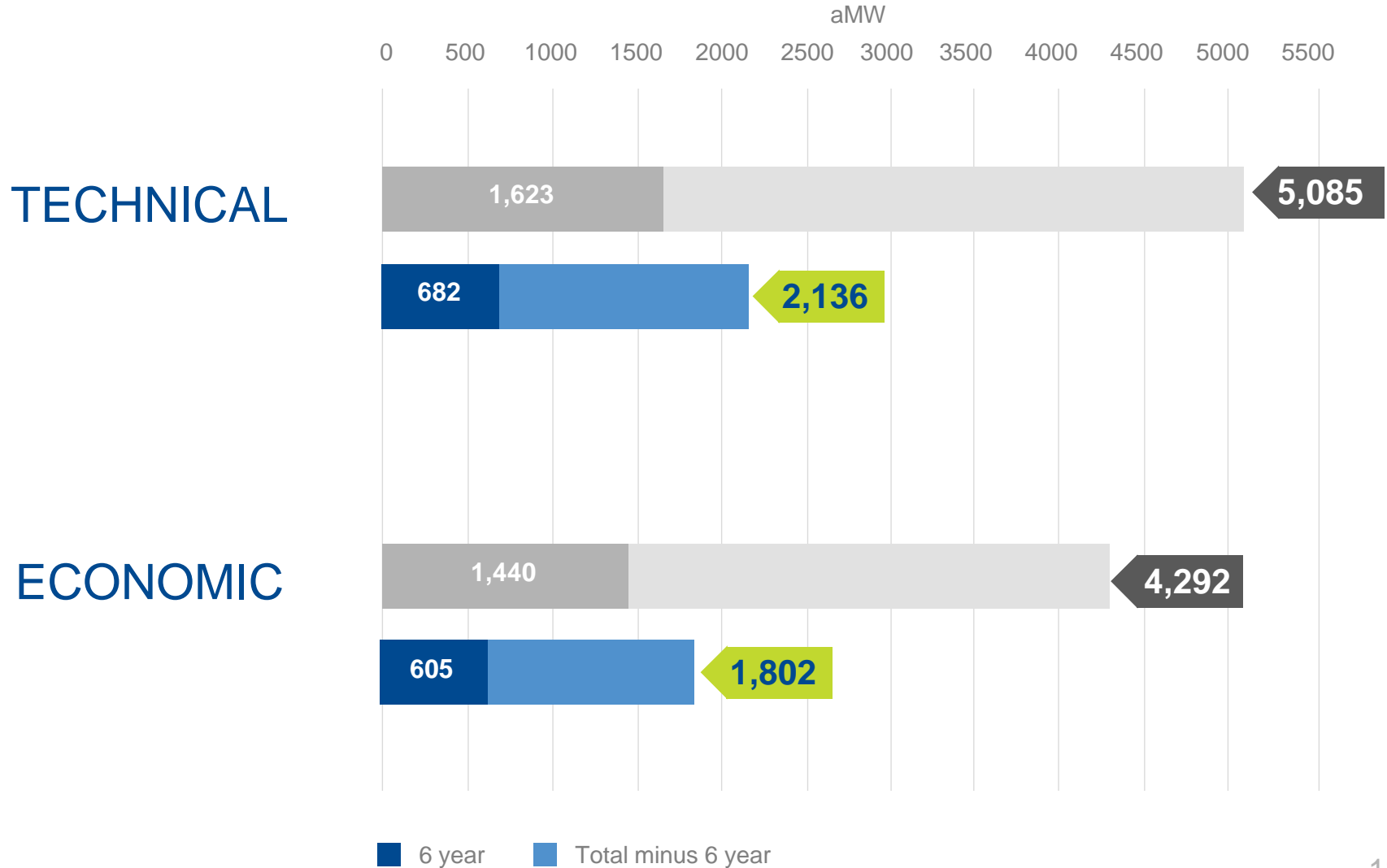
# REVIEW OF FINDINGS



# REGIONAL ACHIEVABLE POTENTIAL



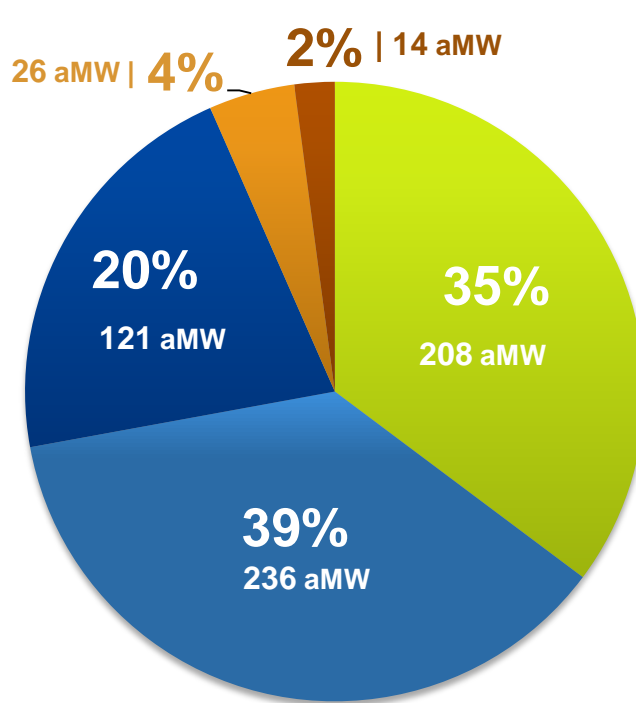
# PUBLIC POWER ACHIEVABLE POTENTIAL



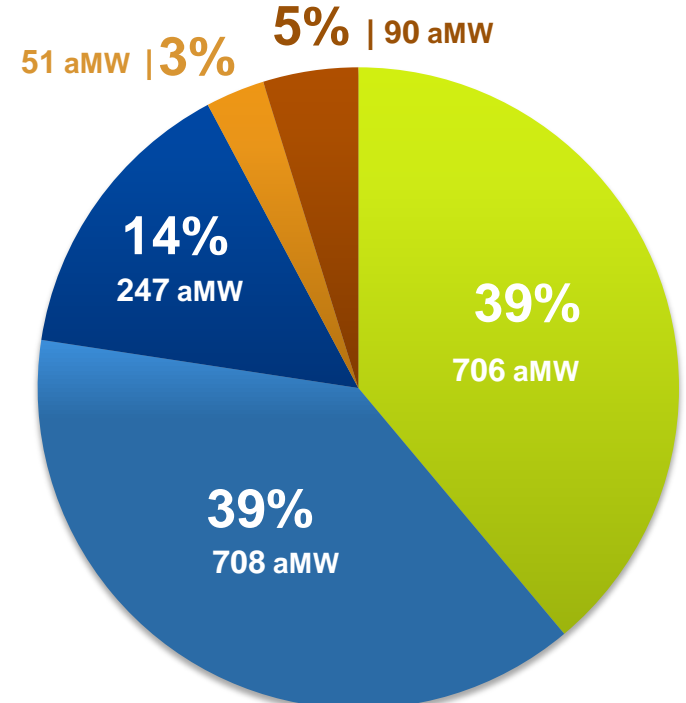
# PUBLIC POWER ECONOMIC ACHIEVABLE POTENTIAL

**89%**  
OF 6-YEAR  
*Technical Potential*

**84%**  
OF 20-YEAR  
*Technical Potential*



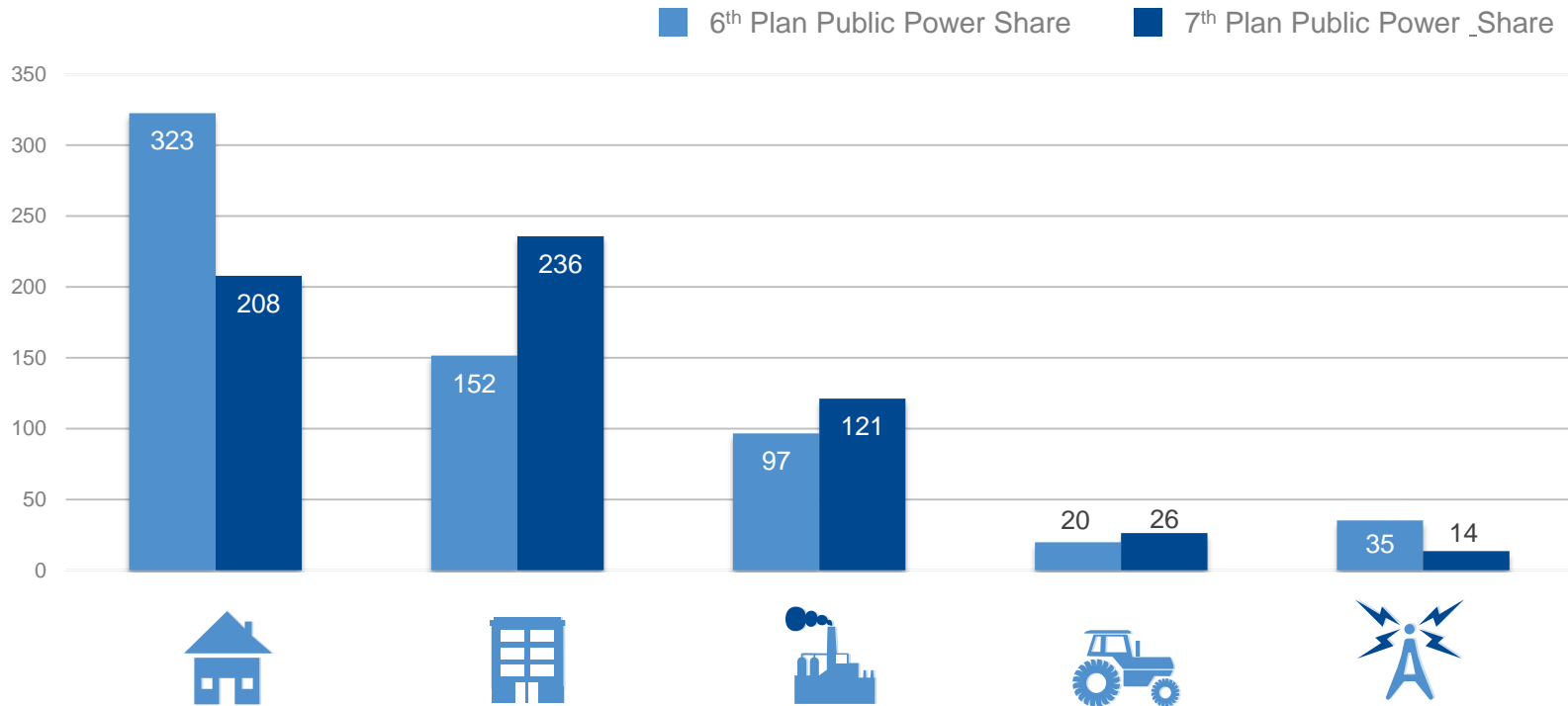
6 year aMW  
**605 aMW**



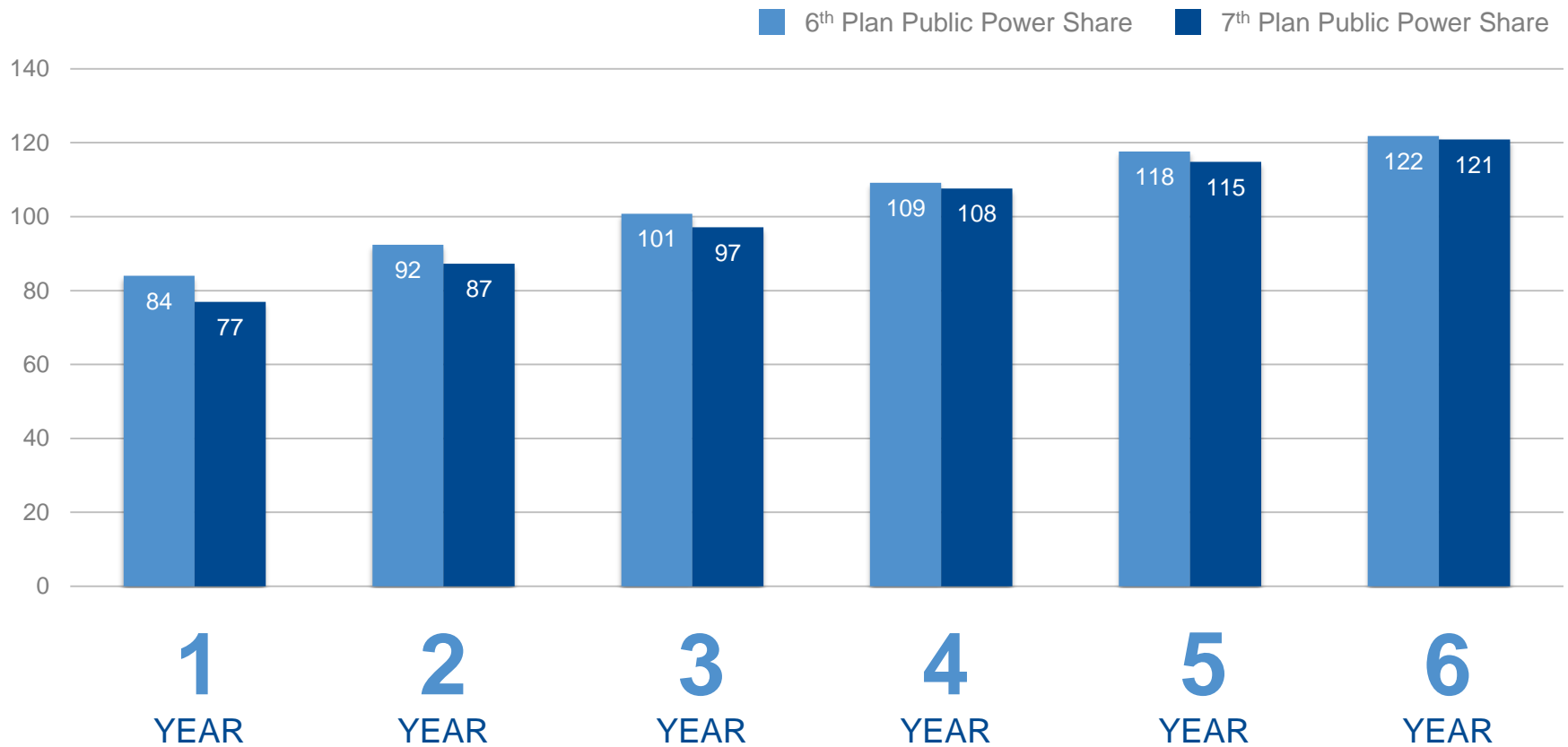
20 year aMW  
**1,802 aMW**



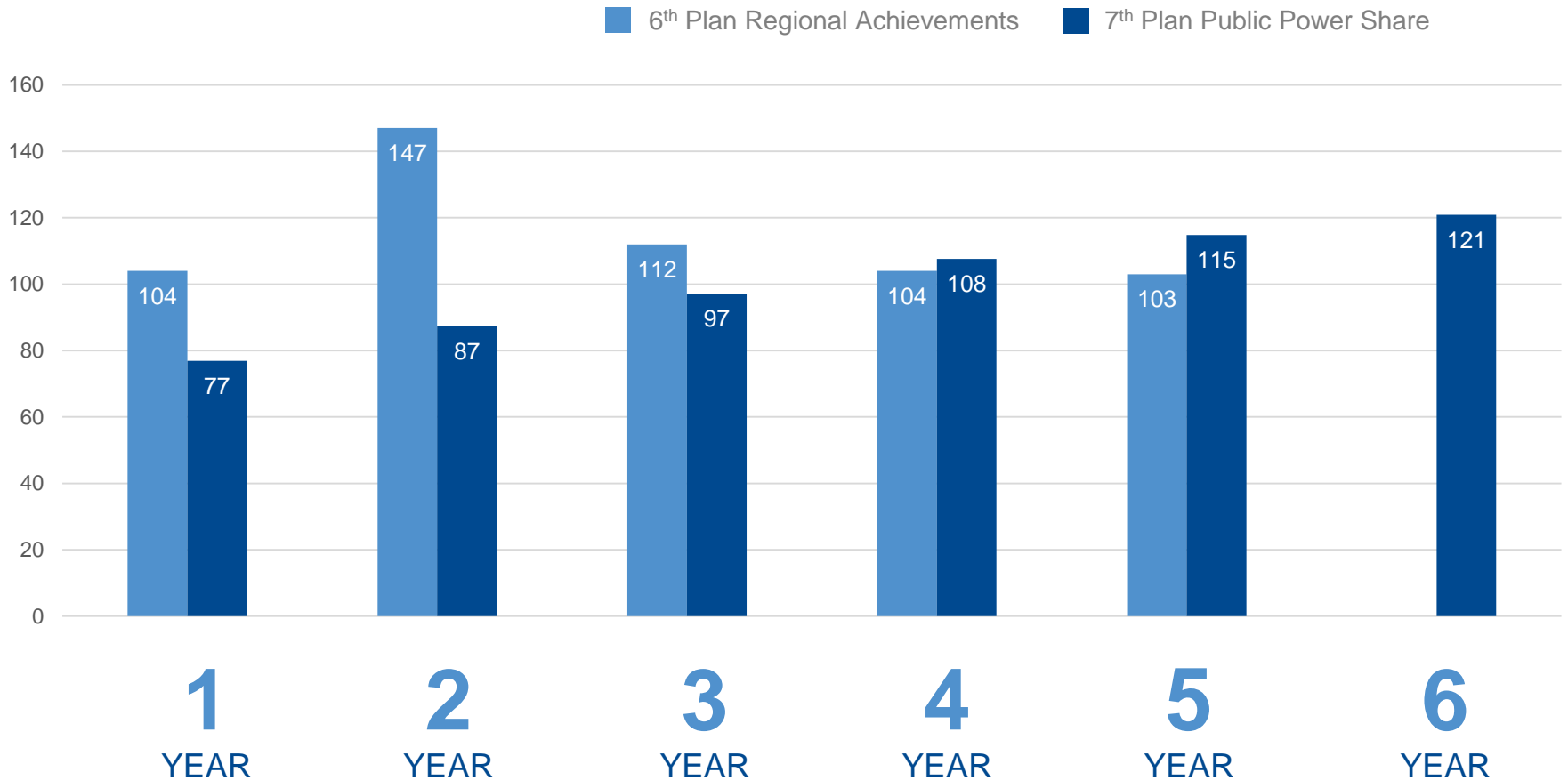
# PUBLIC POWER ECONOMIC POTENTIAL COMPARISON TO 6<sup>TH</sup> PLAN TARGETS



# PUBLIC POWER ECONOMIC POTENTIAL COMPARISON TO 6<sup>TH</sup> PLAN TARGETS



# PUBLIC POWER ECONOMIC POTENTIAL COMPARISON TO 2010-2014 REGIONAL ACHIEVEMENTS



# PUBLIC POWER RESIDENTIAL POTENTIAL

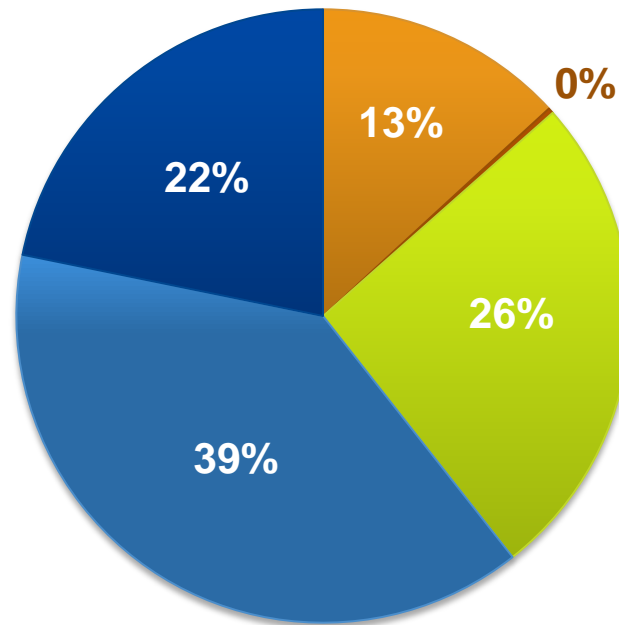


**208** aMW

6-YEAR  
ECONOMIC POTENTIAL  
*75% of Technical Potential (276 aMW)*

**706** aMW

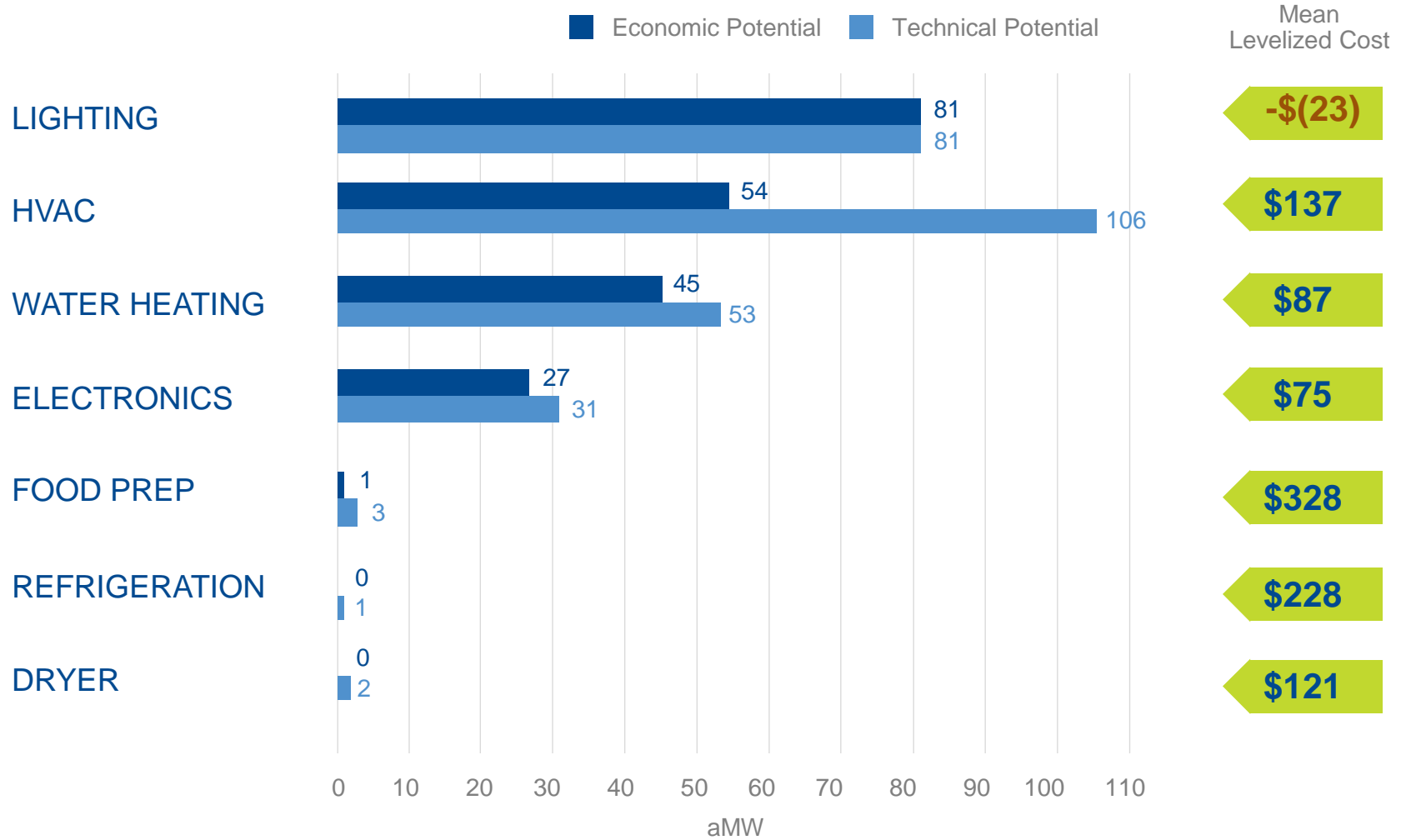
TOTAL  
ECONOMIC POTENTIAL  
*71% of Technical Potential (999 aMW)*



6-YEAR  
Economic Potential

- Electronics
- Food Preparation
- HVAC
- Lighting
- Water Heating

# PUBLIC POWER 6-YEAR POTENTIAL RESIDENTIAL END USES





# PUBLIC POWER COMMERCIAL POTENTIAL

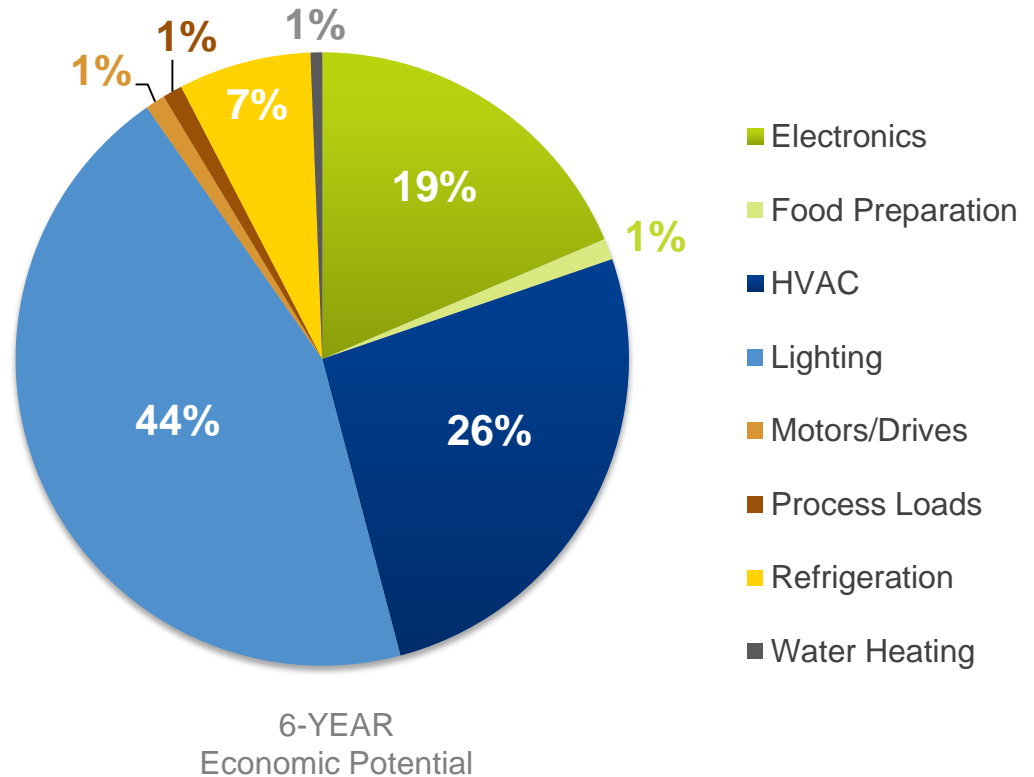


**236** aMW

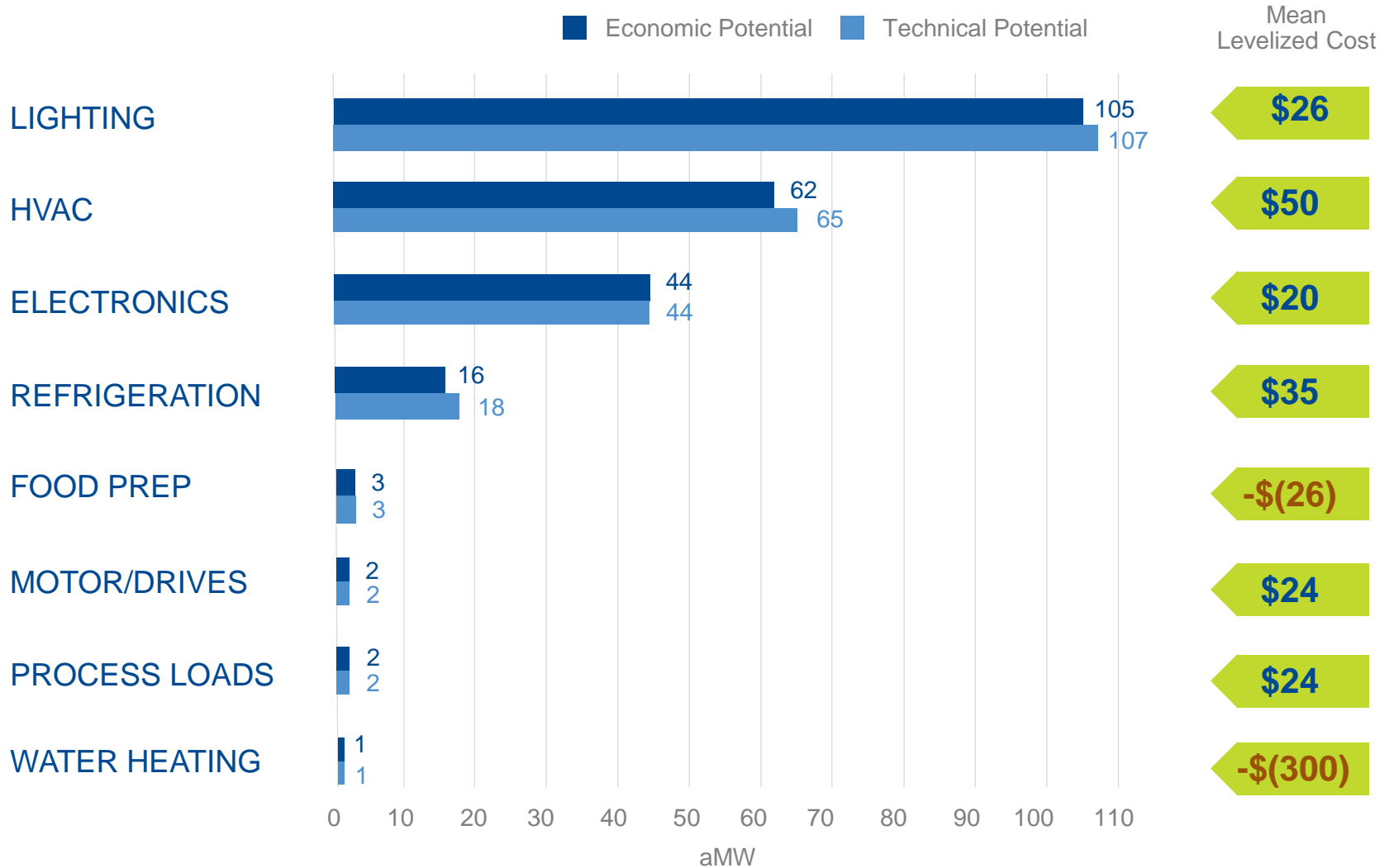
**6-YEAR  
ECONOMIC POTENTIAL**  
*97% of Technical Potential (244 aMW)*

**708** aMW

**TOTAL  
ECONOMIC POTENTIAL**  
*95% of Technical Potential (744 aMW)*



# PUBLIC POWER 6-YEAR POTENTIAL COMMERCIAL END USES



# PUBLIC POWER INDUSTRIAL POTENTIAL

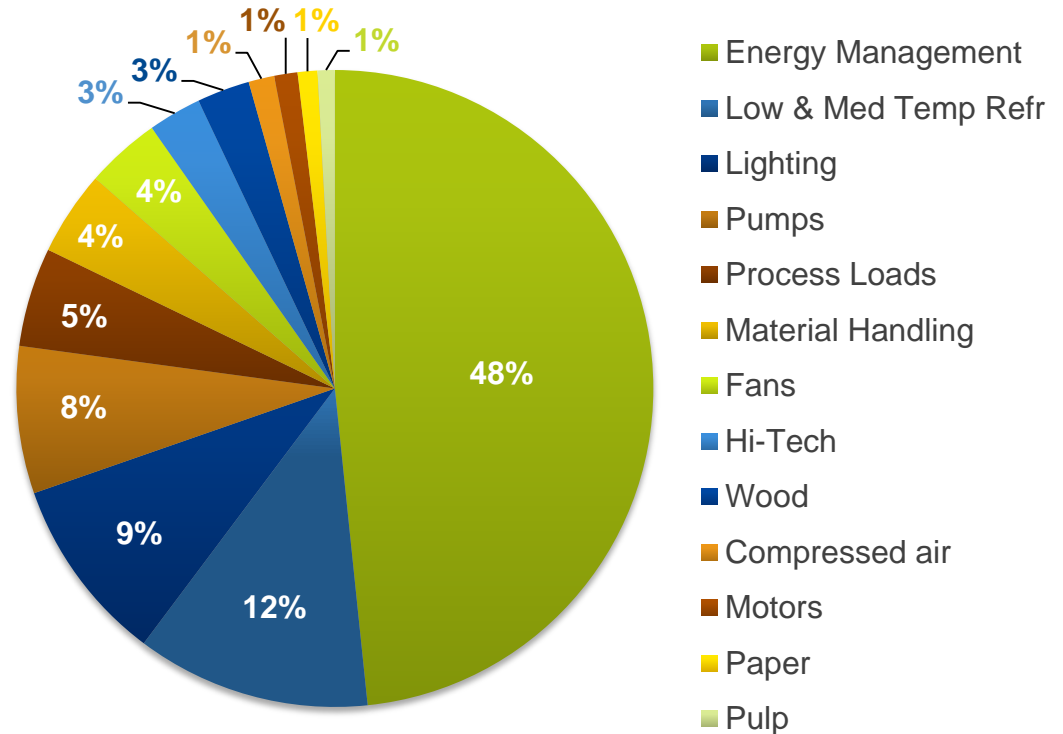


**121** aMW

**6-YEAR ECONOMIC POTENTIAL**  
 100% of Technical Potential (121 aMW)

**247** aMW

**TOTAL ECONOMIC POTENTIAL**  
 100% of Technical Potential (248 aMW)

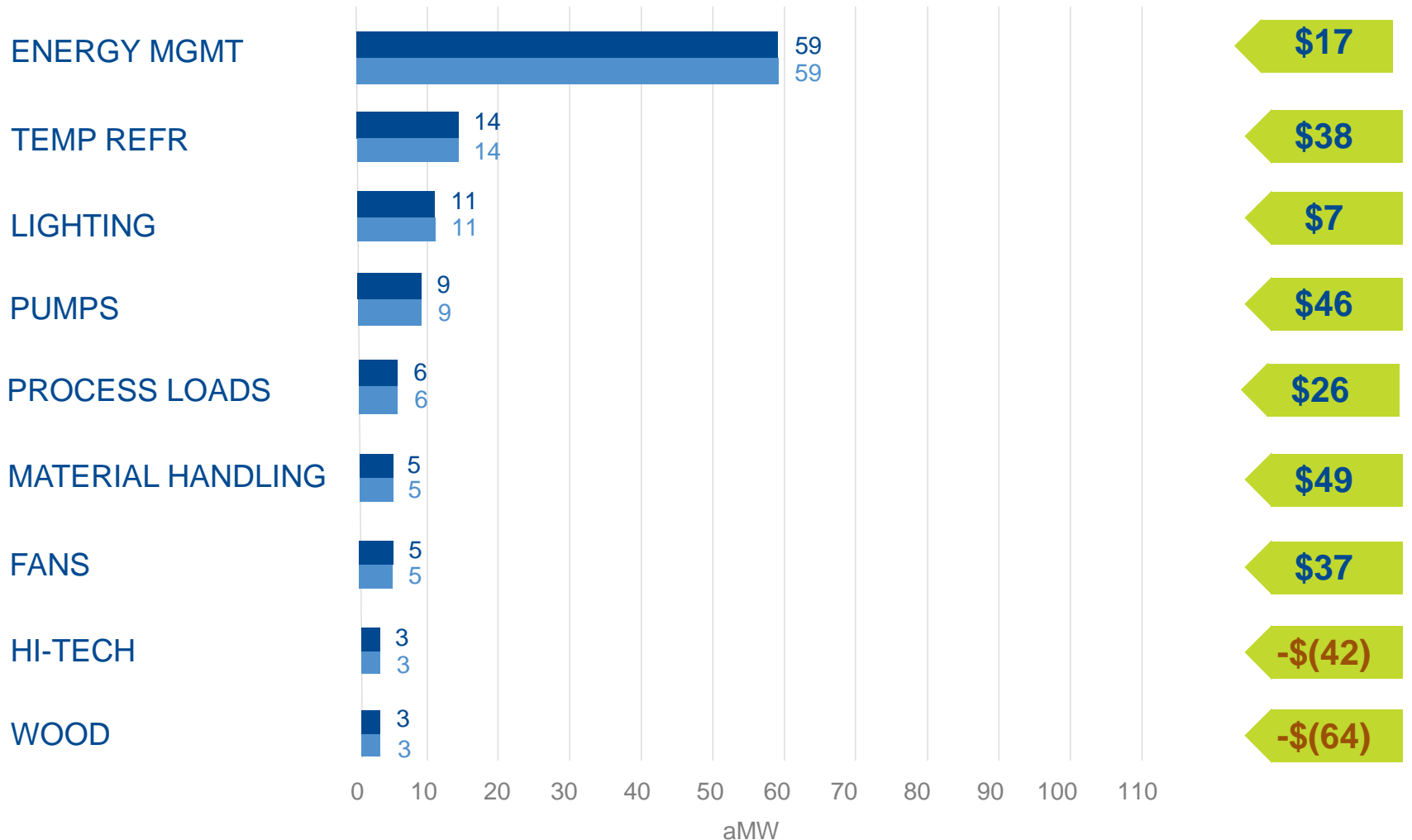


6-YEAR Economic Potential

# PUBLIC POWER 6-YEAR POTENTIAL INDUSTRIAL END USES

■ Economic Potential ■ Technical Potential

Mean Levelized Cost



# PUBLIC POWER AGRICULTURE POTENTIAL

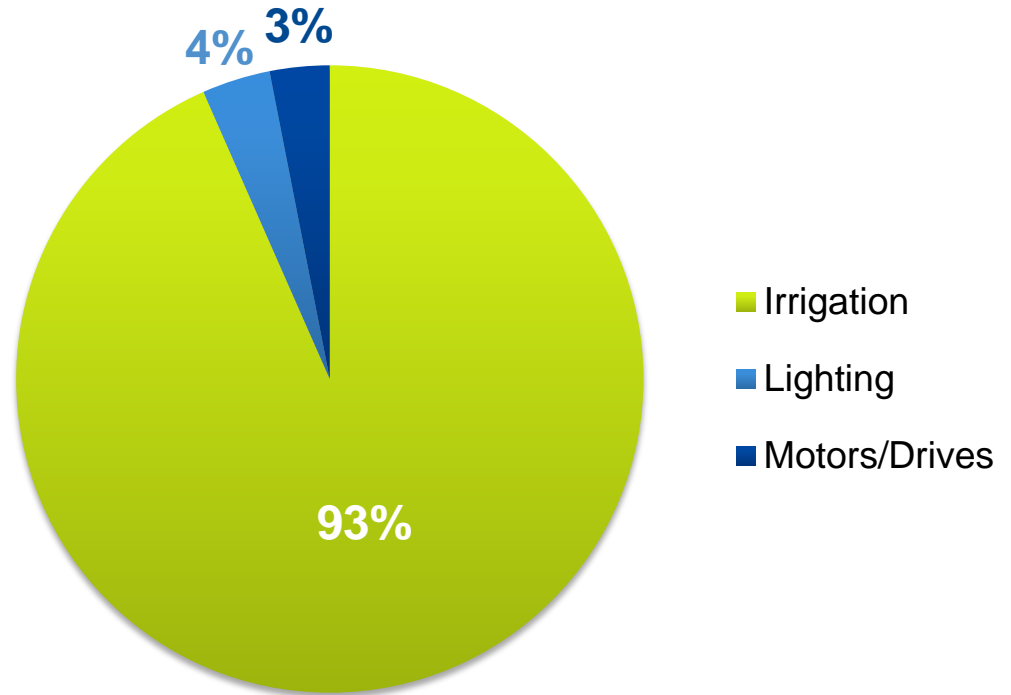


**26** aMW

6-YEAR  
ECONOMIC POTENTIAL  
*96% of Technical Potential (27 aMW)*

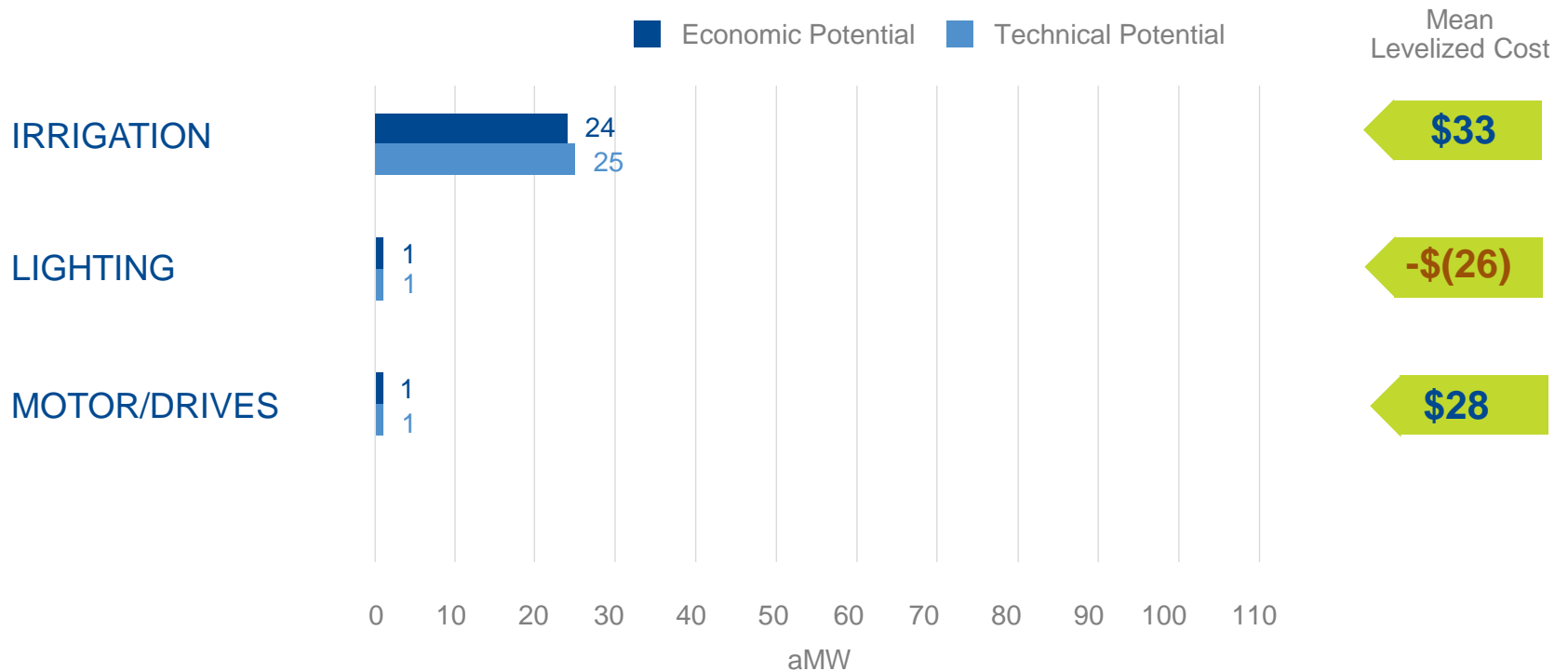
**51** aMW

TOTAL  
ECONOMIC POTENTIAL  
*96% of Technical Potential (53 aMW)*



6-YEAR  
Economic Potential

# PUBLIC POWER 6-YEAR POTENTIAL AGRICULTURE END USES



# PUBLIC POWER COST EFFECTIVE MEASURES (6-YR)

## TOTALLY NEW



• Energy Management

## APPROVED YET EMERGING



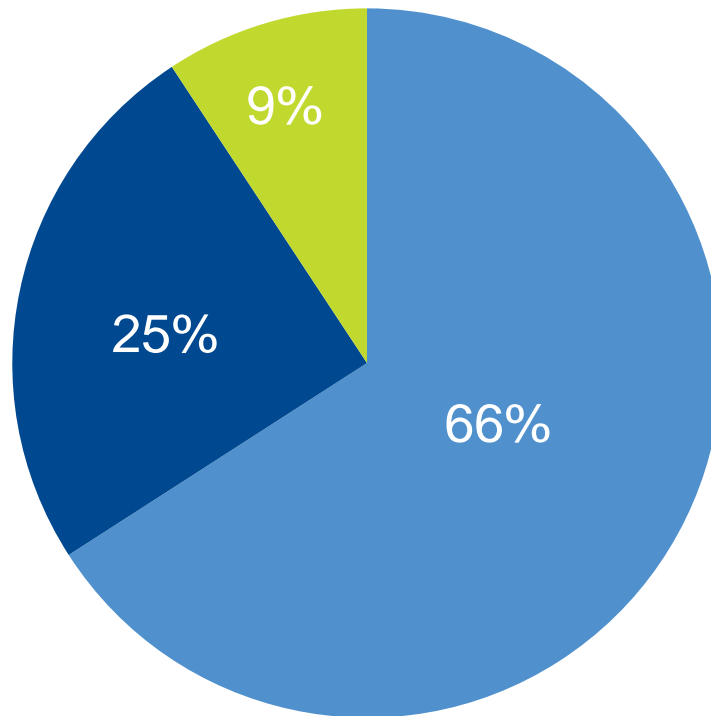
• Advanced Power Strips



- DHP
- Exterior Building Lighting
- Data Centers
- Low Power Linear Fluorescent Lamps
- Advanced Rooftop Controller



• Distribution System Efficiency



## MARKET READY



- LED Lighting
- Showerheads
- Weatherization
- DHP



- Grocery Measures
- Commercial Lighting

# AREAS WE ARE WATCHING



- Weatherization
- Ductless Heat Pumps
- ASHP
- Heat Pump Water Heaters



- Smart Plug Power Strips
- Demand Control Ventilation
- Lighting Controls Interior
- Variable Refrigerant Flow

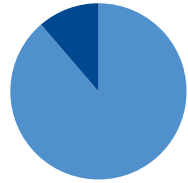


# MAJOR TAKEAWAYS



**7<sup>th</sup> Plan  
potential  
is similar**  
to 6<sup>th</sup> Plan

But baselines are  
higher



**89%**  
of the 6-year  
potential is  
**economic** at  
\$100/MWh



**Res is down  
Com is up**  
compared to 6<sup>th</sup> Plan  
potential  
+  
Commercial potential is  
slightly higher than  
residential in the first 6  
years.



**2/3**  
of the 6-year  
potential is from  
**market ready**  
measures

But nearly half  
of the potential  
is brand new to  
the Plan

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# WORKBOOK OVERVIEW

# WHAT IT INCLUDES

Individual supply curve measure data including savings, levelized costs, and ramp rates



Summaries of savings by sector, end use, and measure category.

## YOU CAN CALCULATE

**1** Economic potential by changing the levelized cost screens

**2** Public Power share of savings

**3** Ramp rate scenarios



# NEXT STEPS

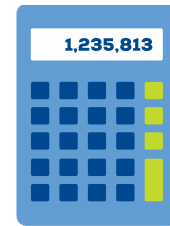
# CHECK OUT THE WEBSITE



PRESENTATION



COMPREHENSIVE  
WORKBOOK



REGIONAL  
SAVINGS & COST  
ANALYSIS  
2010-2013



KEY  
TERMS

VISIT: \_\_\_\_\_

[www.bpa.gov/EE/Utility/toolkit/Pages/Six-Going-On-Seven.aspx](http://www.bpa.gov/EE/Utility/toolkit/Pages/Six-Going-On-Seven.aspx)

# NEXT STEPS

1. Post workbook to website
2. Council releases draft targets in October
3. BPA provides public comments in Nov/Dec
4. Council adopts plan in February



# QUESTIONS

# QUESTIONS

Danielle Walker

[dngidding@bpa.gov](mailto:dngidding@bpa.gov)

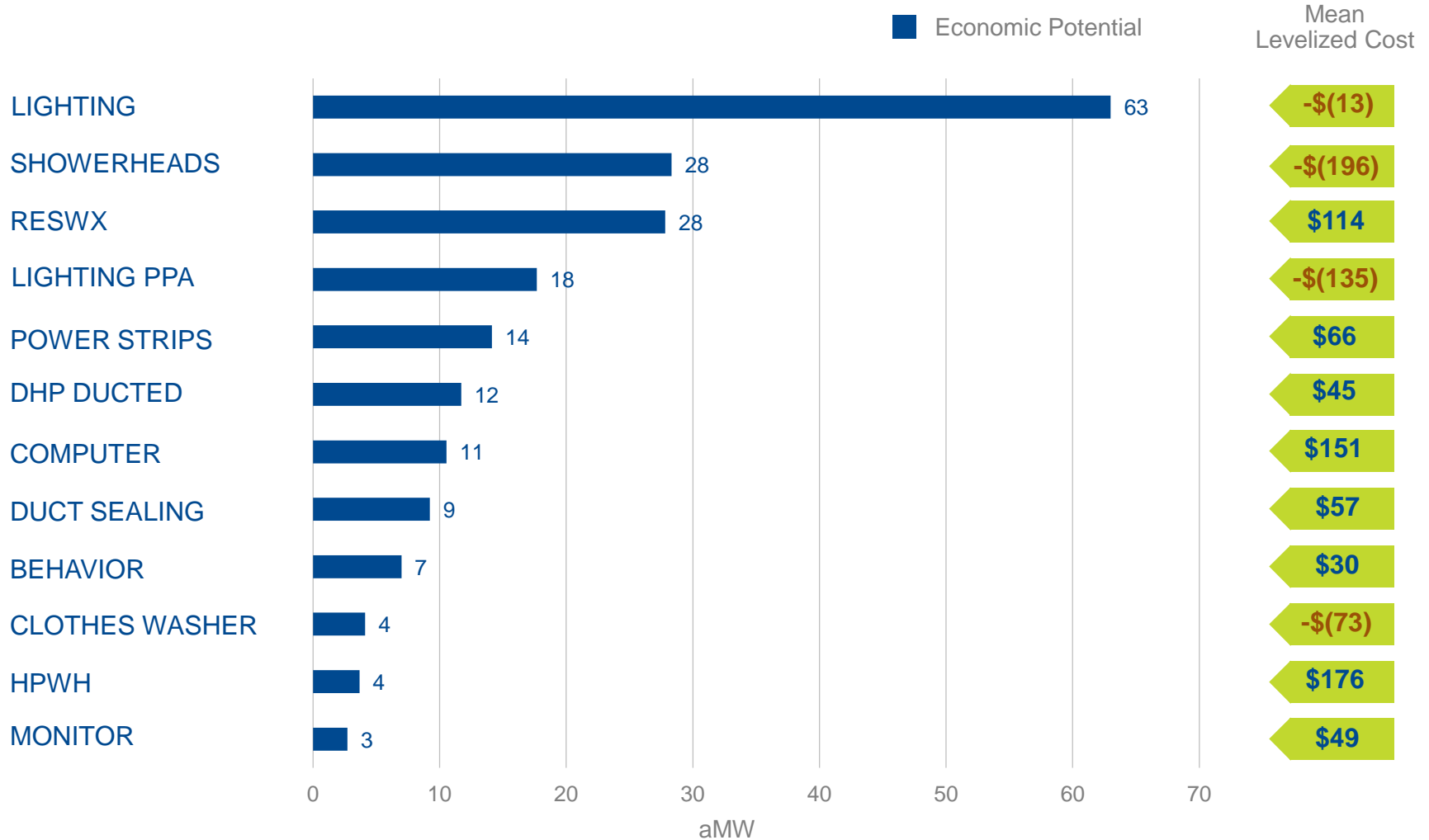
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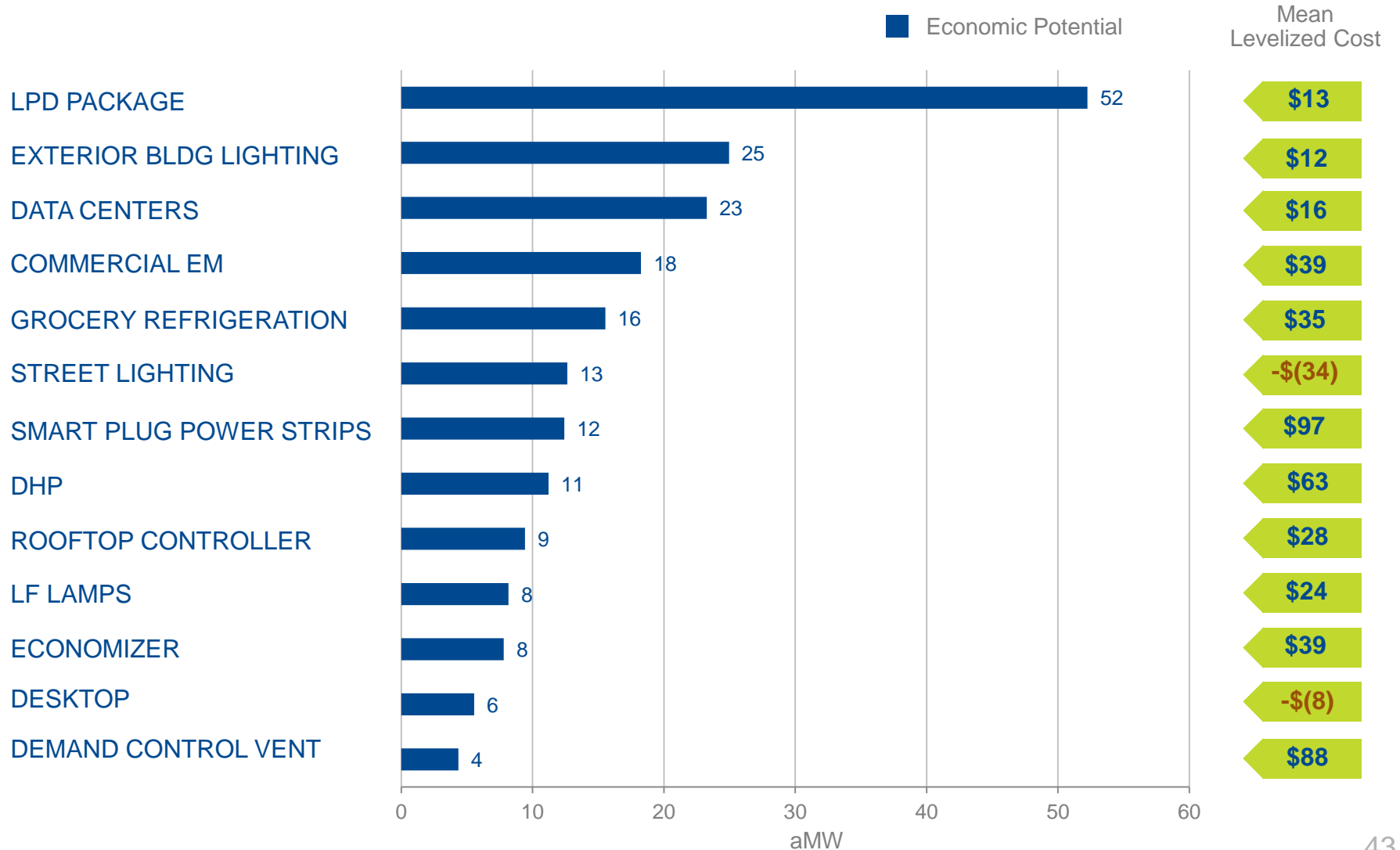
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# APPENDIX

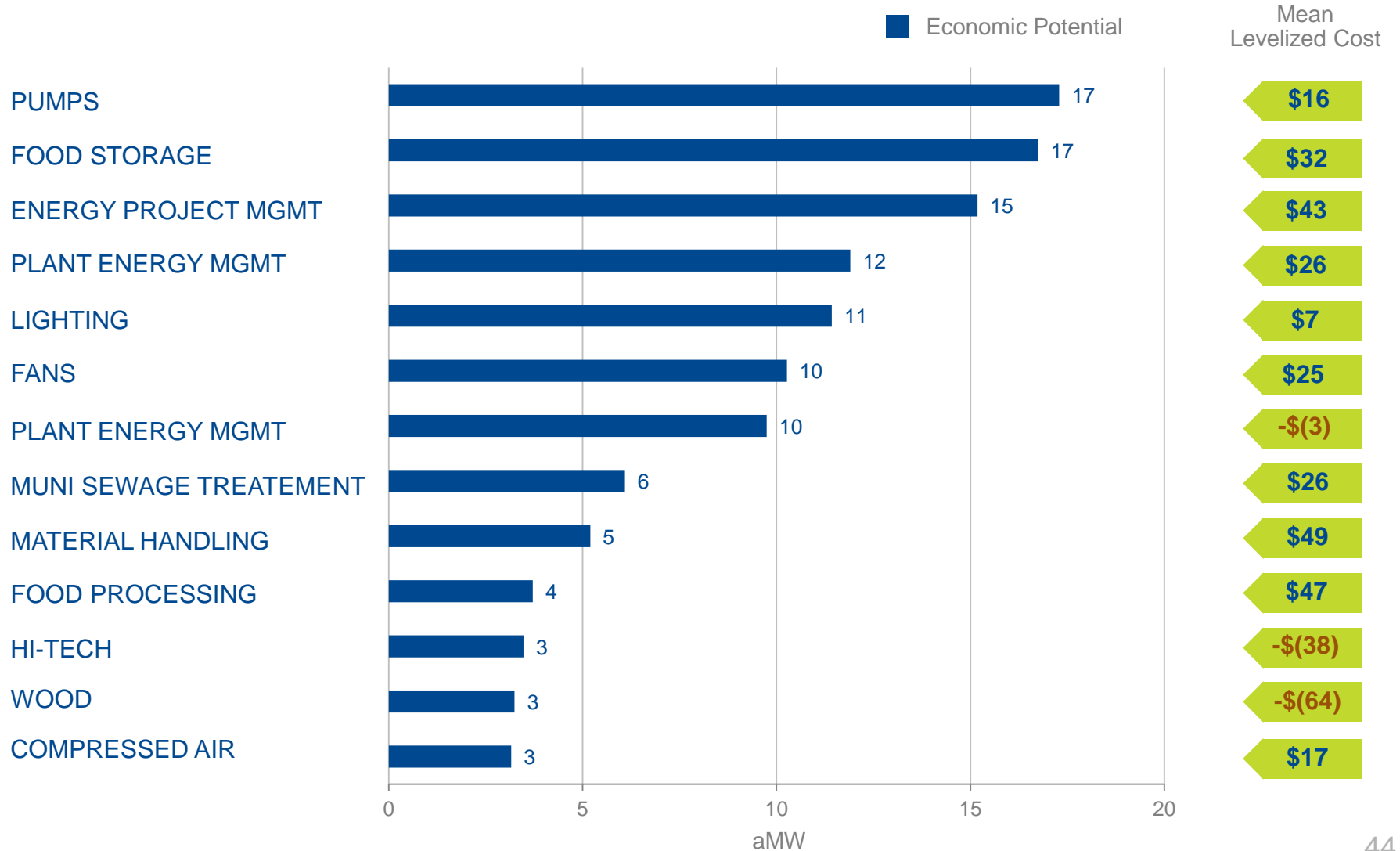
# PUBLIC POWER 6-YEAR ECONOMIC POTENTIAL RESIDENTIAL MEASURE CATEGORIES



# PUBLIC POWER 6-YEAR ECONOMIC POTENTIAL COMMERCIAL MEASURE CATEGORIES



# PUBLIC POWER 6-YEAR ECONOMIC POTENTIAL INDUSTRIAL MEASURE CATEGORIES



# PUBLIC POWER 6-YEAR ECONOMIC POTENTIAL AGRICULTURE MEASURE CATEGORIES

