



Bonneville  
POWER ADMINISTRATION



# INTEGRATED PROGRAM REVIEW GRID MODERNIZATION

June 16, 2020

# AGENDA

Time	Topic	Speaker
1 to 1:05 p.m.	Welcome, safety moment, introductions	Allie Mace <i>Director of Grid Modernization</i>
1:05 to 1:30 p.m.	Grid modernization overview	Allie Mace
1:30 to 1:45 p.m.	FY 2022 and FY 2023 spending levels	Allie Mace
1:45 to 2 p.m.	Question and answer session	Allie Mace



**35+** **GRID**  
Modernization



# BPA 2018–2023 Strategic Goals

**#1**

**STRENGTHEN  
FINANCIAL HEALTH**

**#2**

**MODERNIZE  
ASSETS &  
SYSTEM OPERATIONS**

**#3**

**PROVIDE  
COMPETITIVE  
PRODUCTS & SERVICES**

**#4**

**MEET  
CUSTOMER NEEDS  
EFFICIENTLY & RESPONSIVELY**

**GRID MOD**

**35+**  
PROJECTS  
ACROSS BPA



AUTOMATION



IMPROVED  
ACCURACY



ENHANCED  
VISIBILITY



**1.  
Support a More  
Reliable, Efficient and  
Effective System**

**2.  
Reduce  
Future Costs**

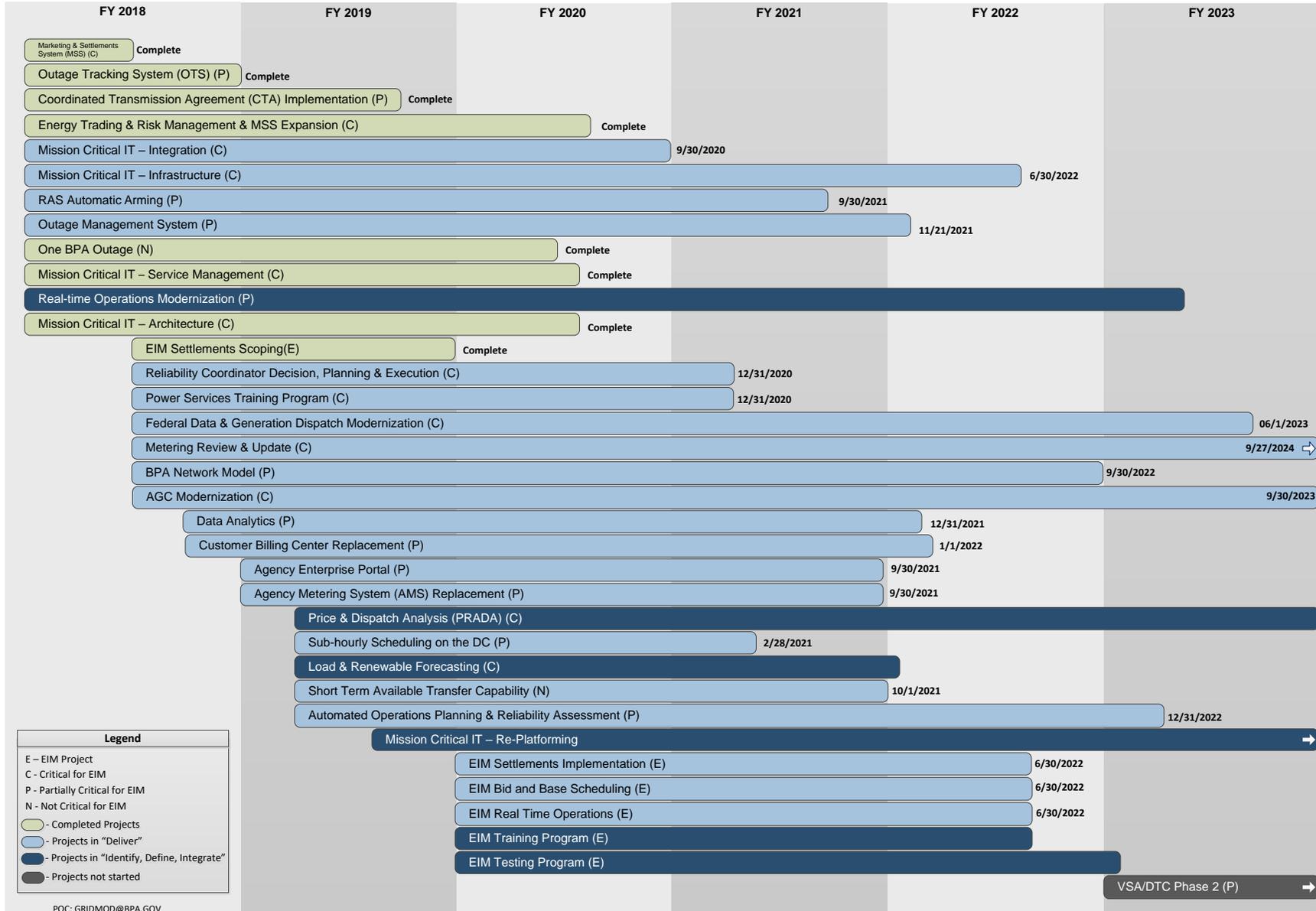
**3.  
Create New  
Market Opportunities**

# GRID MODERNIZATION ROADMAP

## Grid Modernization Roadmap

FY20 Q3

As of 06/10/2020 – Subject to Change



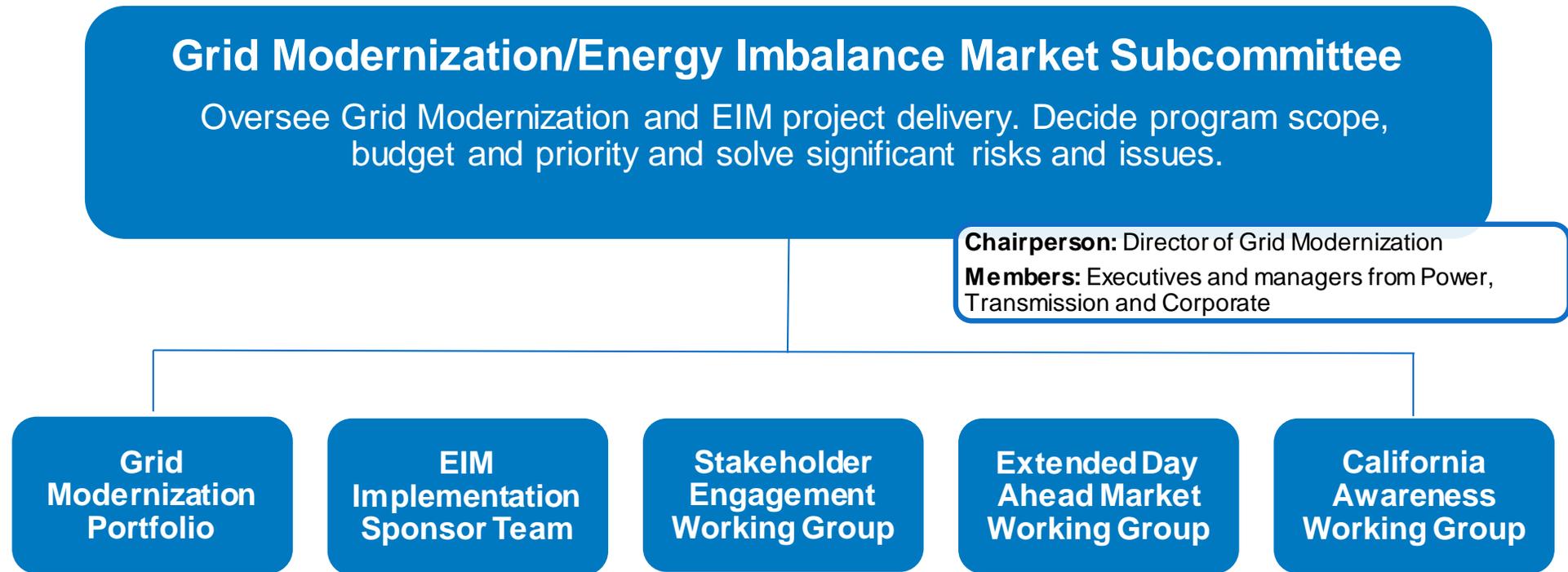
**Legend**

- E – EIM Project
- C - Critical for EIM
- P - Partially Critical for EIM
- N - Not Critical for EIM
- Green bar - Completed Projects
- Blue bar - Projects in "Deliver"
- Dark blue bar - Projects in "Identify, Define, Integrate"
- Grey bar - Projects not started



POC: GRIDMOD@BPA.GOV

# PORTFOLIO GOVERNANCE



# PORTFOLIO MANAGEMENT

## Identify

- Create common understanding of a proposal to address a business opportunity or problem.
- Evaluate if there is enough potential value to invest further effort.

## Define

- Establish desired value.
- Analyze impact of change on business in terms of people, process, technology and policy.
- Start outlining potential business capabilities that may close existing gaps.

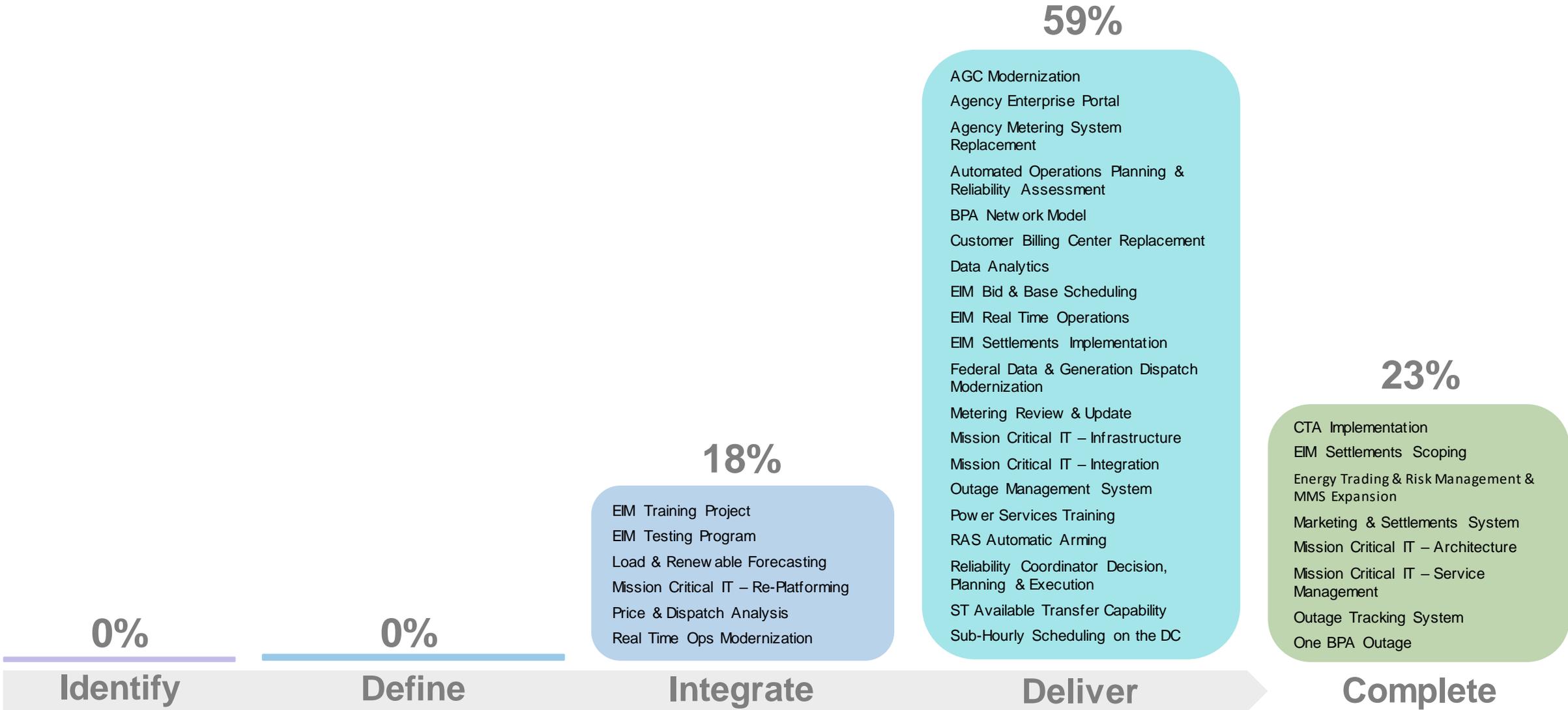
## Integrate

- Plan and secure resourcing and sequencing of work.
- Identify and validate interdependencies across projects and organizations.

## Deliver

- Execute defined work.
- Measure success in terms of value delivered to the business.

# MOBILIZATION STATUS



# AUTOMATION

- Automated Operations Planning and Reliability Assessment
  - Enables automation of case development to enhance and optimize transmission system operations.
  - Allows study engineers to perform more studies which can reduce margin in system operating limits and allow for more sophisticated analysis.
- Remedial Action Scheme Automatic Arming
  - Automates the process of arming the most effective generation required to support the transmission capacity needed.
  - Reduce frequency and duration of generation arming and drop to minimize impacts to customers.
- Sub-Hourly Scheduling on the Pacific Direct Current Intertie
  - Eliminates manual processes to reduce chance of errors and will allow for BPA to be more responsible to customer requests.



AUTOMATION

# IMPROVED ACCURACY

- BPA Network Model
  - Improves accuracy of available surplus capacity to market.
- Outage Management System
  - Improves data accuracy and speed to enhance BPA's real-time situational analysis for strategic decision-making and to ensure appropriate compliance reporting.
  - Automates business processes, which will eliminate redundant data entry and the potential of human error.
- Short-term Available Transfer Capability
  - Improves short-term ATC accuracy and forecasting by automating data inputs and outputs and using better commercial modeling assumptions informed by risk tolerance.



IMPROVED  
ACCURACY

# ENHANCED VISIBILITY

- AGC Modernization
  - Improve communication and transparency within BPA and between BPA, neighboring balancing authorities and FCRPS plant operators.
- Real-Time Operations Modernization
  - Provide clearer visualizations which will allow for more simplified and strategic decision making.
  - Decrease the amount of time to mine data to make operational decisions in order to operate the federal power and transmission system closer to its limits while maintaining reliability for customers.
- Reliability Coordinator Decision, Planning and Execution
  - Provides additional services including forward system (day-ahead and intra-day), 24-hour system analysis and look-ahead real-time contingency analysis.



ENHANCED  
VISIBILITY

## Five Phases to Western EIM Decision



**Exploration** July 2018–June 2019

**Implementation agreement** June–Sept. 2019

**Policy decisions** Oct. 2019–Aug. 2020

**BP-22 & TC-22** Nov. 2020–July 2021

**Close-out** Late 2021

# EIM READINESS FOR FY 2022

- BPA anticipates a March 2, 2022, go-live date in the EIM.
- BPA initiated five EIM-specific grid modernization projects in FY 2020 that are expected to conclude in FY 2022.
  - EIM Bid and Base Scheduling
  - EIM Real Time Operations
  - EIM Settlements Implementation
  - EIM Testing Program
  - EIM Training Program
- Further information on BPA's implementation plan will be shared in stakeholder meetings this fall.

# EIM IMPLEMENTATION

## Partially Critical for EIM

- Agency Enterprise Portal
- Agency Metering System Replacement
- Automated Operations Planning and Reliability Assessment
- BPA Network Model
- Coordinated Transmission Agreement Implementation
- Customer Billing Center Replacement
- Data Analytics
- MCIT Re-platforming
- Outage Management System
- Outage Tracking System
- Real-time Operations Modernization
- Remedial Action Scheme Automatic Arming
- Sub-hourly Scheduling on the DC Intertie

## Critical for EIM

- Automatic Generation Control Modernization
- Energy Trading and Risk Management and MSS Expansion
- Federal Data and Generation Dispatch Modernization
- Load and Renewable Forecasting
- Marketing and Settlements System
- MCIT Architecture
- MCIT Infrastructure
- MCIT Integration
- MCIT Service Management
- Metering Review and Update
- Power Services Training Program
- Price and Dispatch Analysis
- Reliability Coordinator Decision, Planning and Execution

## EIM-Specific Projects

- EIM Bid and Base Scheduling
- EIM Real-Time Operations
- EIM Settlements Implementation
- EIM Settlements Scoping
- EIM Testing Program
- EIM Training Program

# GRID MODERNIZATION IN FY 2022 AND 2023

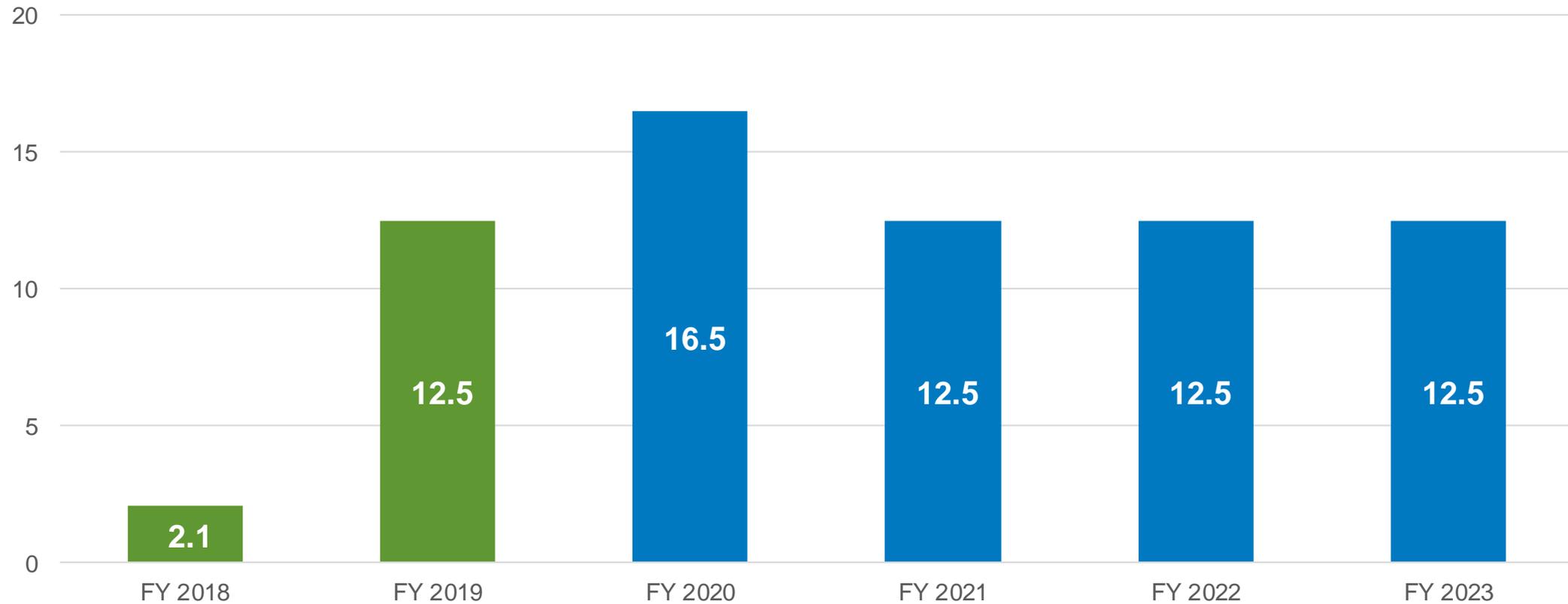


# PORTFOLIO SPENDING

## Grid modernization spending

In millions of dollars

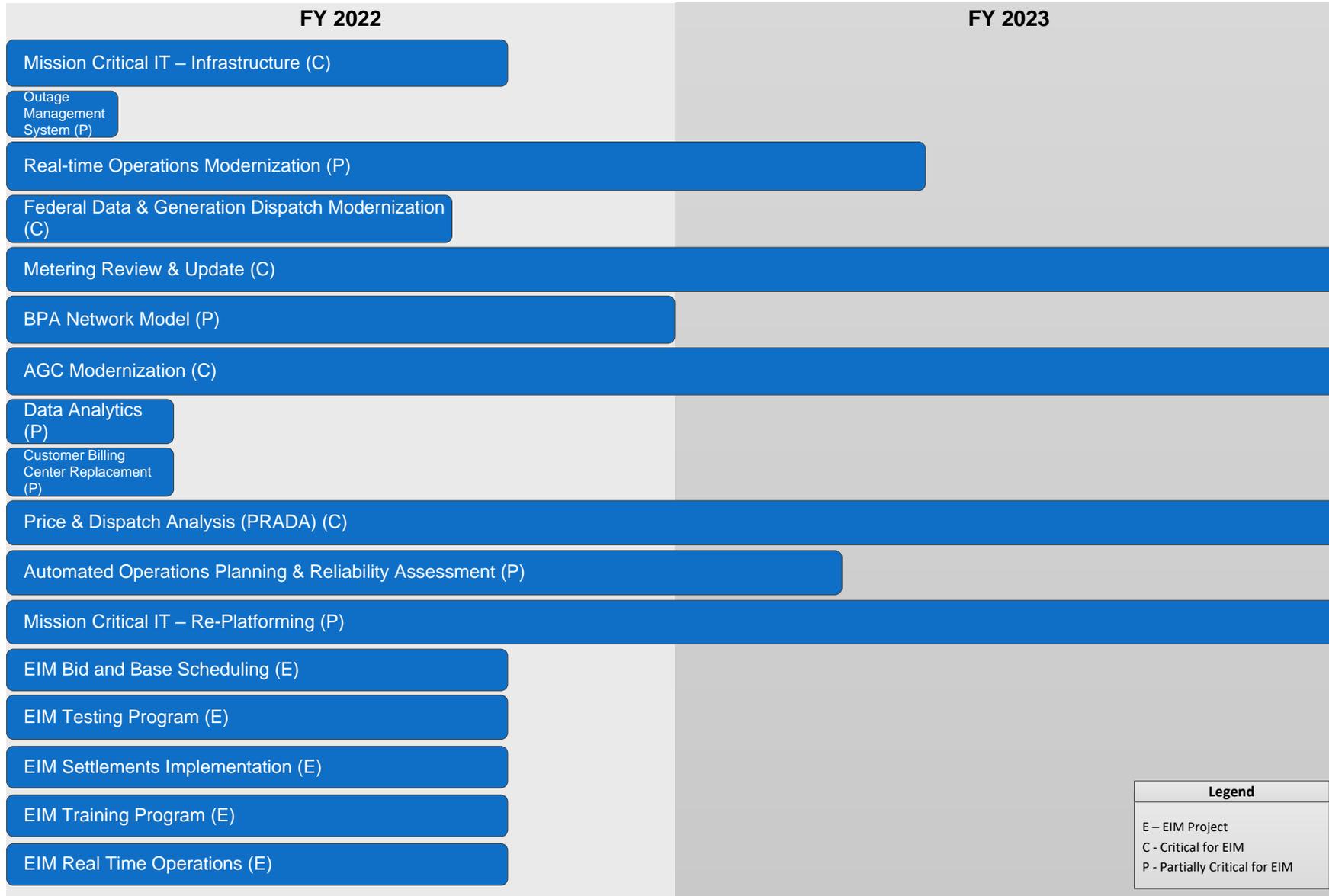
■ Actuals ■ Forecast



# FY 2022 AND FY 2023 SPENDING

- BP-22 is last rate period of incremental spending for the Grid Modernization Key Strategic Initiative.
- Incremental spending remains flat at \$25 million, equal to spending levels in BP-18 and BP-20.
  - Spending will be split \$12.5 million between FY 2022 and FY 2023.
- Allocation between Power Services and Transmission Services also remains consistent with BP-18 and BP-20.
  - 35% Power
  - 65% Transmission

# FY 2022 AND FY 2023 SPENDING



**Legend**  
 E – EIM Project  
 C - Critical for EIM  
 P - Partially Critical for EIM



# QUESTION AND ANSWER

# MORE INFORMATION

**For more resources on grid modernization**, navigate to [www.bpa.gov/goto/gridmodernization](http://www.bpa.gov/goto/gridmodernization).

**For more resource on BPA's Western EIM process**, head to [www.bpa.gov/goto/eim](http://www.bpa.gov/goto/eim).

**Have a question that hasn't been answered?**

Email [gridmod@bpa.gov](mailto:gridmod@bpa.gov).

# FINANCIAL DISCLOSURE

This information was publicly available on June 12, 2020, and contains information not sourced directly from BPA financial statements.