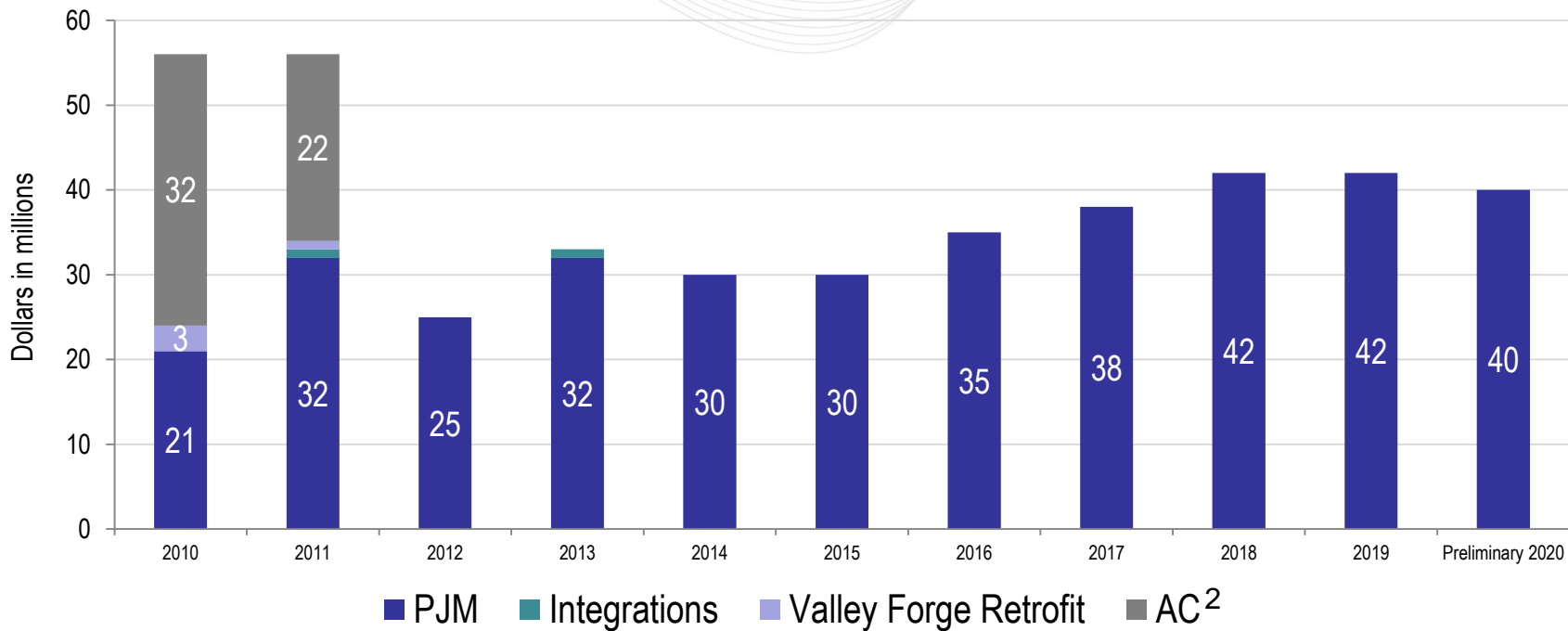
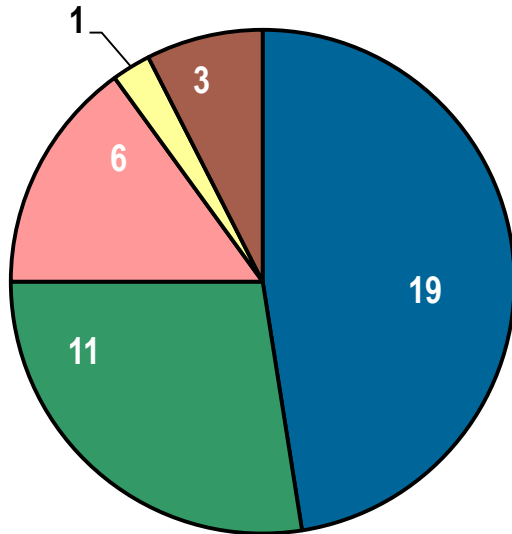


# Preliminary 2020 Budget

Planning Committee  
September 12, 2019  
Jim Snow



Total = \$40 million



- Current Applications & Systems Reliability
- Facilities and Technology Infrastructure
- Application Replacements
- Interregional Coordination
- New Products/Services

<i>(dollars in millions, except rates)</i>	2019	2020
Capital	15	19
Expense	5	6

**eDART Refresh and Enhancements** – A series of projects to integrate the Dispatcher Application and Reporting Tool (eDART) into PJM’s updated standardized software tools framework, and to provide functional enhancements to the application.

**Access and Identity Manager** – A series of projects to improve provisioning access and enhance access workflows for transfer, start up and separation requests.

**Markets Application Improvements** – A series of projects to make functionality enhancements to real-time, demand response and other markets-related applications.

**Cyber Security Enhancements** – A series of projects to enhance monitoring and security access of PJM’s computer systems.

**Membership Tool Enhancements** – A series of projects to enhance the membership resource management tool as well as the system that allows our members to control access to our tools for their accounts.

**PJM.com and Intranet Enhancements 2020** – A series of projects to address functionality updates to PJM.com and PJM’s internal employee website.

**Dispatch Tools Enhancements** – A series of enhancements for dispatcher interactive map application, security constrained economic dispatch and other visualization tools

<i>(dollars in millions, except rates)</i>	2019	2020
Capital	11	6
Expense	4	4

**nGEM** – This project is a collaborative project with vendor and ISOs/RTOs to transform the market systems architecture, technology and products.

**Spectrum 7 Upgrade** – This project will implement 64 bit architecture allowing for future expansion of PJM's Supervisory Control and Data Acquisition (SCADA) model.

**Market Settlements System Refresh** – The Market Settlements calculations and reporting systems will be updated and repositioned on a PJM supported platform enabling the retirement of the vendor supported legacy platform.

**Telephone System Refresh** – This project will replace PJM's Private Branch Exchange (PBX) and voicemail system.

<i>(dollars in millions, except rates)</i>	2019	2020
Capital	13	11
Expense	2	1

**Infrastructure Upgrades** – This project will purchase network, servers, and storage, infrastructure that align with PJM’s current architecture as older infrastructure becomes obsolete.

**Computer Room Air Conditioning and Chiller Replacements** – Replacement of Valley Forge Control Center below grade level cooling units and Milford computer room air conditioning

**Intrusion Prevention Hardware Replacements** – Replacement of end-of-life hardware appliance responsible for blocking external threats.

**Conference Room Equipment Replacements** – A series of projects to replace aging audio and visual conference room equipment.

**Data Center and Network Switch Replacements** – A series of projects to replace aging network equipment for the central network infrastructure and supporting equipment controlling the flow of network traffic.

<i>(dollars in millions, except rates)</i>	2019	2020
Capital	1	1
Expense	---	---

**Market-to-Market Enhancements** – This project will address work required for vulnerabilities identified in the dispatch management tool and updates to password encryption methodologies.

**Market-to-Market Freeze Date**– This project will update the historical transmission entitlements calculations to align with planning, markets and operations processes.

<i>(dollars in millions, except rates)</i>	2019	2020
Capital	2	3
Expense	1	1

**Energy Price Formation** – This project addresses the implementation of market changes that result from FERC’s price formation proceedings. These changes may affect one or more market clearing engines.

**Financial Risk Mitigation Effort** – A series of projects to address market surveillance.

**Data Miner** – This project will expand the capabilities of the Data Miner Platform for membership use to obtain PJM data.

**Commercial DIMA**– This project will provide transmission owner access to the Dispatch Interactive Map Application that enhances grid operator situational awareness.



- Video Walls \$2.2M – Replacement of video cubes in the Milford control room and Information Technology Operations Center (ITOC)
- Hardware Replacements \$0.5M – A series of purchases for aging computer hardware
- Communications Recording Room \$0.5M – Construct a dedicated audio, recording, and editing room

Date	Group	Topics
August 20	Finance Committee	Preliminary 2020 Budget and Projects
September 10	Operating Committee	Preliminary 2020 Projects
September 11	Market Implementation Committee	Preliminary 2020 Projects
September 12	Planning Committee	Preliminary 2020 Projects
September 17	Finance Committee	Proposed 2020 Budget Recommendations
September 20	Finance Committee Member Representatives	Recommendation Letter to PJM Board of Managers
October 1	Board of Managers	Consideration of Proposed 2020 Budget