PJM Framework for Evaluation and Prioritization of Emerging Technologies

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Emerging Technologies Forum
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Overview

1. Highlight framework PJM has developed to evaluate and prioritize emerging technologies

2. Update on Emerging Technologies Dashboard for pjm.com

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Emerging Technologies Framework

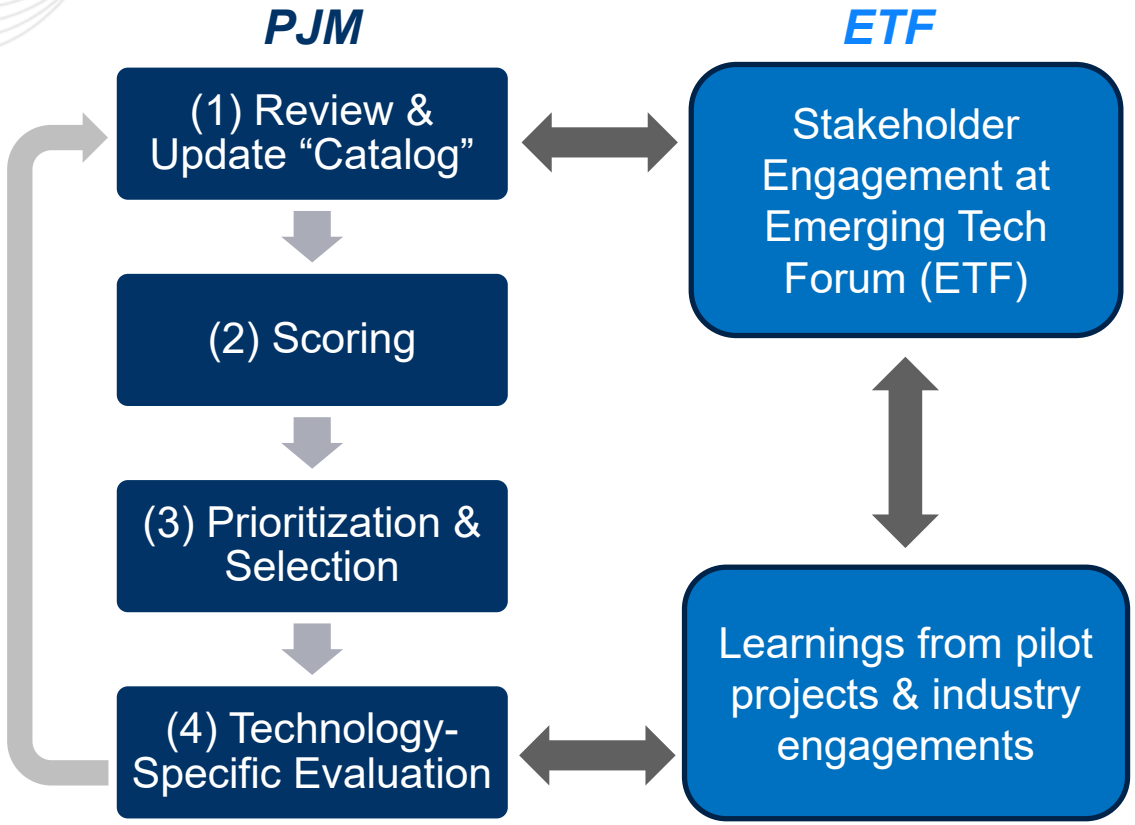
What

A holistic and coordinated set of processes to track and prioritize the evaluation and integration of emerging technologies at PJM.

Why

- Enhance PJM's engagement on emerging technologies with stakeholders and industry experts
- Critical for PJM's role in industry leadership and innovation

Key Framework Steps



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Step 1: Emerging Technologies Catalog

- Centralized repository for information and status of technologies and research initiatives that PJM is tracking

- Updated periodically by reviewing:
  - Industry research & development initiatives, including but not limited to FERC Office of Energy Policy and Innovation (OEPI) initiatives, ARPA-E projects, EPRI projects, National Lab projects, IEEE Trending Technologies; CIGRE Preferential Subjects
  - Advanced Technology Pilot Program engagement;
  - Stakeholder engagement through the Emerging Technologies Forum and touchpoints with standing committees on emerging technology feedback; and
  - Emerging technology surveys

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Step 2: Technology Scoring Parameters

Scoring Objective

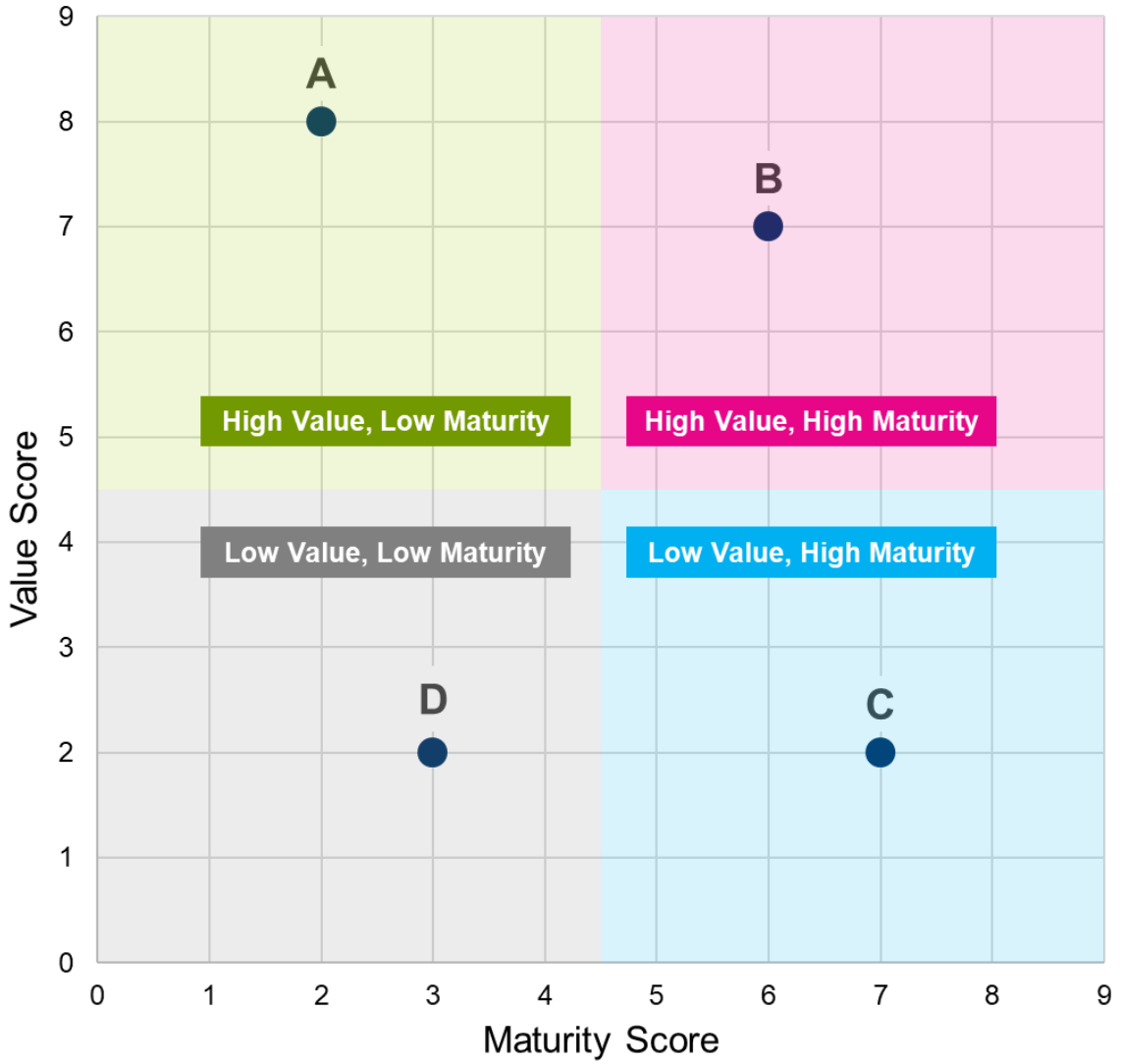
Aid for determining which technologies will be prioritized for more detailed evaluation.

Maturity parameters measure the level of technology exploration and demonstration in industry as a whole and at PJM.

Value parameters measure alignment with PJM's mission of enhancing reliability and efficiency, and internal & external drivers for PJM to evaluate the technology.

	Parameter	Scoring Criteria	Weight
Maturity (0-9)	Technology Demonstration in Industry	0 - Developed and evaluated by academia, national labs. 1 - Demonstrated through an industry pilot project. 2 - Commercially deployed in other areas of the world. 3 - Commercially deployed in other area of the United States.	1.5
	Technology Evaluation at PJM to Date	0 - PJM staff has not yet evaluated the technology. 1 - PJM staff has conceptually evaluated the technology. 2 - Cross-divisional PJM staff have evaluated the technology and developed preliminary design and/or implementation requirements. 3 - PJM has engaged in a pilot project involving the technology.	1.5
Value (0-9)	Value Added to PJM as a Company	*Add up for all that apply:* 0 - Little to no value to PJM as a company. 1 - Ability to significantly enhance reliability. 1 - Enhances efficiency (reduces congestion, streamlines processes). 1 - Adds flexibility (opportunities for members / new technology provider)	0.50
	PJM's Role in Enabling Technology Deployment	1 - Member-driven, PJM action not required to enable 2 - Member-driven, PJM action may required to enable 2 - PJM-driven, may enable member-driven innovation	0.50
	External Drivers: Level of Interest from Emerging Technologies Forum Stakeholder Survey	0 - Low 1 - Medium 2 - High	1.00
	Aligns with Corporate Strategy	0 - No 1 - Yes, Indirect but logical alignment with corporate strategy 2 - Yes, Direct alignment with corporate strategy	0.33
	Percent of "actively considering the impact of technology in next 5 years" on Internal Emerging Technology Survey	0 - Less than 25% 1 - 25% to 49% 2 - 50% to 74% 3 - Greater than 75%	0.33
	Priority on Internal Emerging Technology Survey	0 - Low 1 - Medium 2 - High	0.33

Step 3: Prioritization & Selection



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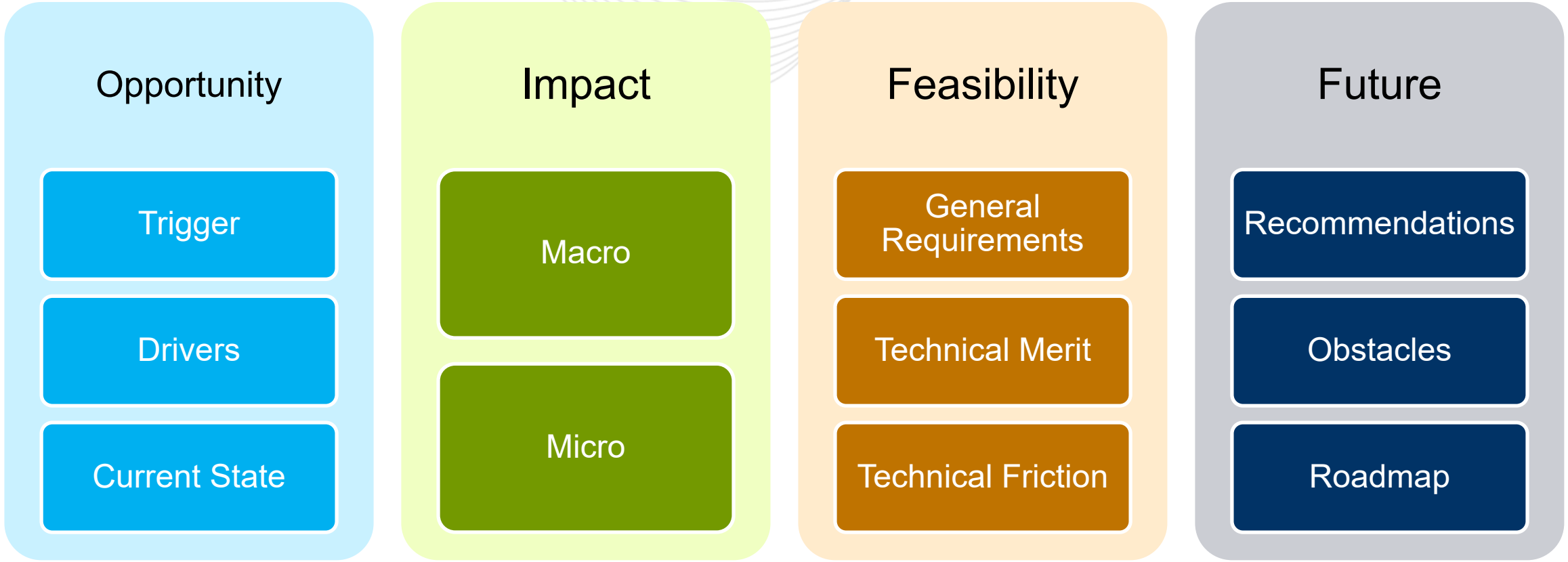
Step 4: Technology-Specific Evaluation



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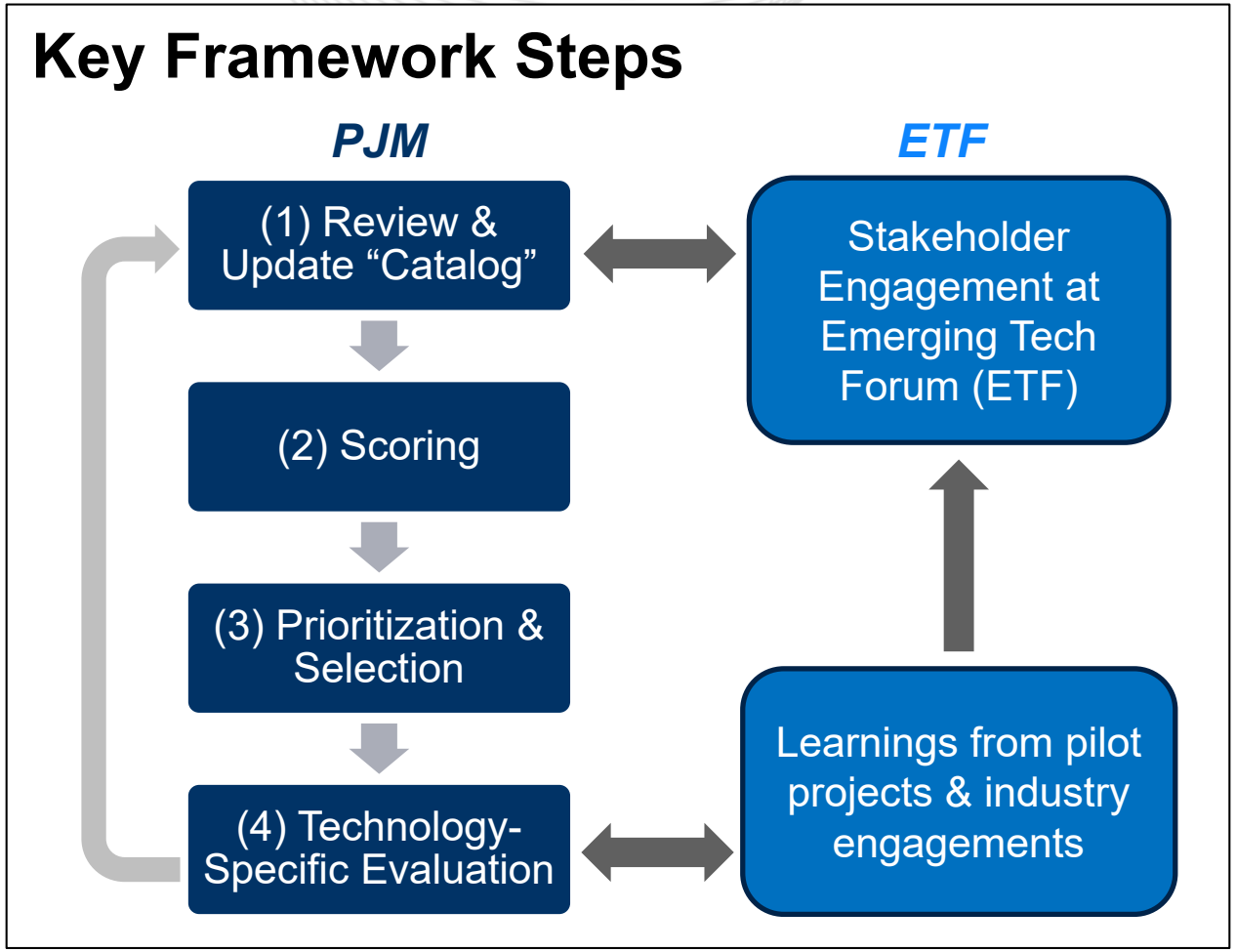
Emerging Technologies Framework Wrap-Up



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Emerging Technologies Dashboard

- **Current Status**
  - Excel sheet with display of current:
    - ETF Emerging Technologies Catalog
    - PJM Advanced Technology Pilot Program Projects
- **Future Plans for 2022**
  - Create page similar to “Issue Tracking” including information in spreadsheet
  - Make catalog interactive by including
    - Links to educational materials
    - Living survey where stakeholders can submit information about emerging technologies of interest

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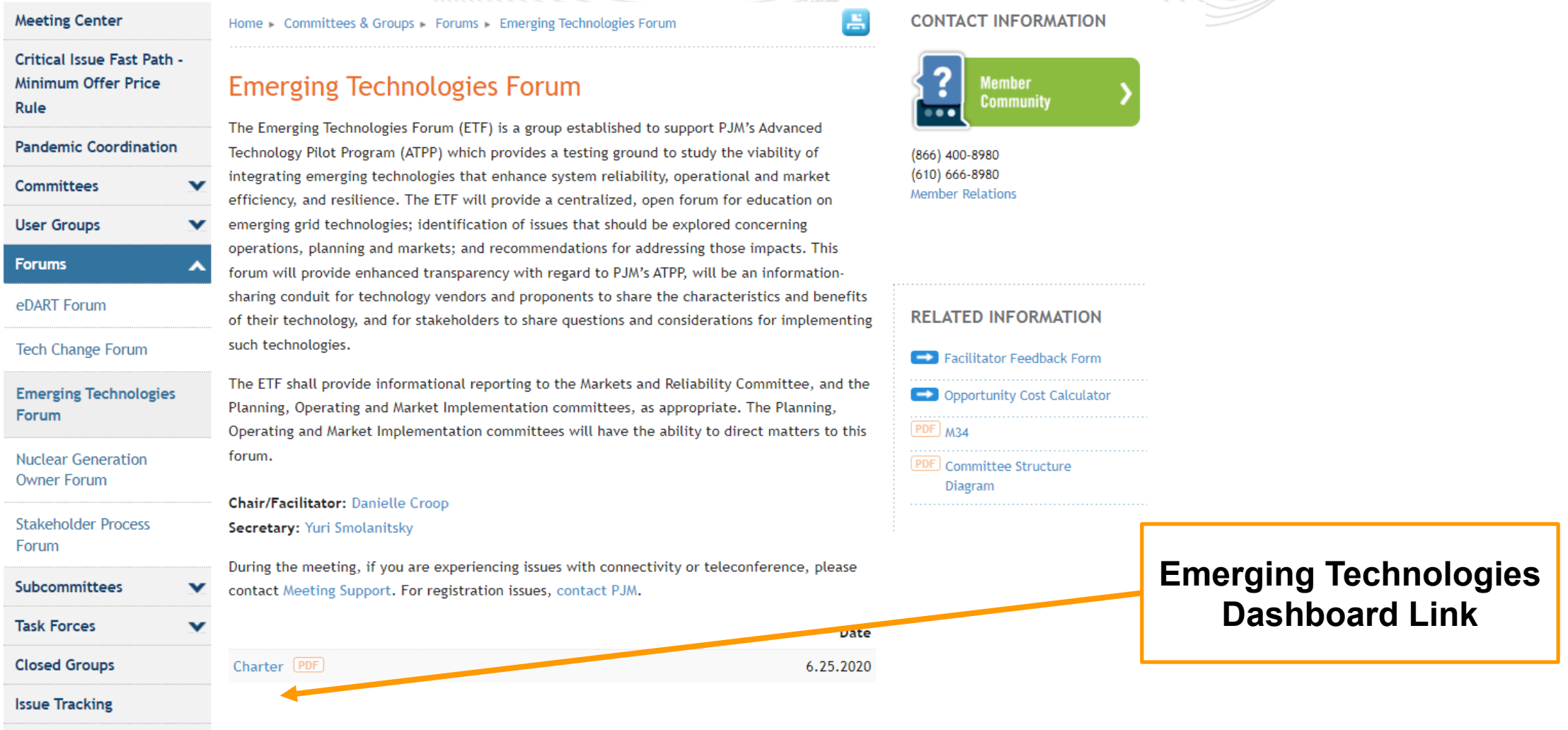
Future Location of Dashboard on ETF Page



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- **Any additional information that would be helpful for:**
  a. Understanding or enhancing PJM Emerging Technologies Framework?
  b. Inclusion on the Emerging Technologies Dashboard?

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