CGA appreciates MISO's comprehensive HVDC Impact Assessment. These comments reflect input from multiple HVDC developers, HVDC operators, and energy non-profits.

Rather than ranking recommendations as 'most' or 'least' important, we propose MISO adopt a **deliverable-focused timeline** that sequences work items by quarter through 2026-2027. All identified recommendations address genuine challenges; the critical question is how to sequence work to achieve value.

The assessment's statement that recommendations are "not time-bound" creates fundamental uncertainty for project development and financing decisions in MISO's $40+ billion marketplace. MISO has indicated 2026 is the design phase and 2027 is implementation for resource adequacy accreditation work (August 2025 RASC). Without adequate milestones, stakeholders cannot determine when policy frameworks will exist to support investment decisions.

Key Recommendations:

1. Elevate resource adequacy HVDC transmission risk modeling from "low" to "high" priority and begin early as this is a complex issue that will take time and stakeholder involvement to complete
2. Develop external resource accreditation and HVDC line accreditation frameworks in parallel rather than sequentially
3. Implement a dashboard tracking all HVDC initiatives across stakeholder entities with assigned ownership and defined timelines
4. Establish timeline accountability through bookend completion dates or quantitative penetration triggers

1 Proposed Timeline-Based Implementation Framework

1.1 High Priority Items - 2026 Quarterly Timeline

MISO has indicated 2026 is the design phase and 2027 is the implementation phase for HVDC initiatives (August 20 RASC, Item 10). We propose the following quarterly work plan with appropriate representation in stakeholder forums for high priority items:

Timeline	Workstream | Recommendation	Priority	Brief Rationale
Q1-Q2 2026	Merchant HVDC | Improvements to MISO Attachment GGG process	High	Already in progress with February 2026 filing target
	Merchant HVDC | MHVDC Business Practice Manual	High	Already in progress; critical for interconnection clarity

	Resource Adequacy | Resource Adequacy treatment of External Resources, including those delivered via HVDC	High	Foundation for subsequent accreditation work; clarify existing rules first
	Resource Adequacy | Representation of **HVDC** transmission in Resource Adequacy risk modeling	**Elevate from Low to High**	Complex issue requiring early start; foundation for line accreditation (see detailed justification below)
Q2-Q3 2026	Reliability Operations | Contingency management procedures for HVDC facilities	High	Addresses state regulator concerns about system risk
	Resource Adequacy | Accreditation enhancements for External Resources **and HVDC transmission line accreditation**	High	**Modified to explicitly include HVDC transmission**; requires DLOL interface technical sessions with project developers
Q3 2026	Resource Adequacy | RASC presentation on external resource and transmission line accreditation frameworks	**New milestone**	Present findings from Q1-Q3 work; stakeholder discussion on draft framework proposals

Supporting Observations:

We commend MISO's progress on several high-priority items already in development or planned. With Attachment GGG improvements targeting February 2026, the MHVDC BPM advancing, and external resource accreditation already planned for Q1 2026, MISO has demonstrated commitment to near-term deliverables. To ensure the yearlong Impact Assessment investment yields additional value, we recommend 1) explicitly incorporating HVDC transmission line accreditation into the external resource workstream and 2) elevating transmission risk modeling to high priority as a new initiative resulting from stakeholder input.

Rationale for 2026 Timeline:

- Resource adequacy work has a long lead time; delays now create financing barriers later
- Clarifying existing external resource rules (Q1-Q2) provides foundation for enhancements (Q2-Q3)
- Consolidating related work enables comprehensive rather than piecemeal solutions

1.2 Recommended Priority Change: Elevate Transmission Line Accreditation to High Priority

Recommendation: Elevate "Representation of transmission in Resource Adequacy risk modeling" from low to high priority. Develop external resource accreditation and HVDC transmission line accreditation frameworks in parallel rather than sequentially, prioritizing inter-regional applications before intra-regional.

Justification for Priority Change:

Why Parallel Development Matters: Inter-regional HVDC projects connecting other systems (like PJM or SPP ties) face a fundamental challenge: the external resource accreditation paradigm assumes the ability to point to specific generators behind the transmission interface. For multi-GW transmission infrastructure potentially serving diverse resource portfolios, forcing all capacity value through individual resource registrations creates unnecessary administrative barriers and may not reflect operational reality. Parallel development allows MISO to address both use cases (dedicated external resources and transmission infrastructure providing system capacity) without unnecessarily delaying either approach.

MISO's existing 'slice-of-system' approach for external resources demonstrates that capacity accreditation can be based on fleet-level portfolios without identifying individual resource availability. This precedent supports extending similar principles to HVDC transmission line accreditation, particularly for inter-regional ties where pointing to specific generators across asynchronous interconnections is impractical. The technical challenge is determining how HVDC transmission (as a resource type distinct from generation) should be modeled in emergency scenarios to establish appropriate capacity credit.

MISO's current approach appears sequential by clarifying external resources first, enhance external resource accreditation second, and only potentially address transmission line accreditation. This creates unnecessary delays for projects that don't fit the external resource paradigm where pointing to individual generators across an inter-regional tie is impractical.

Page 40-41 of the assessment states: "No RTO in North America currently allows transmission lines to earn capacity credit… Implementing such a change would represent a significant shift." However, ISO New England's HQ Phase I/II interconnection receives capacity credits based on probabilistic tie benefit modeling from Quebec, without requiring firm contracts to specific generators[1]. This demonstrates capacity accreditation can reflect transmission infrastructure's access to external capacity generally, rather than requiring dedicated resource contracts.

MISO's assessment notes that 'estimating the reliability contributions of an HVDC line, independent of the resources involved, would likely require incorporating transmission in the LOLE model' (page 43). This raises important technical questions about scope: whether MISO would need to model all transmission infrastructure in resource adequacy studies, or whether HVDC-specific modeling approaches are feasible that treat HVDC as a distinct resource type without requiring wholesale changes to how AC transmission is modeled. These questions warrant early stakeholder discussion and cannot be resolved without beginning the work. We cannot develop

[1] https://www.iso-ne.com/static-assets/documents/2021/06/icr-reference-guide.pdf

meaningful accreditation methodologies for HVDC transmission without first addressing how such facilities would be represented in MISO's resource adequacy modeling framework.

The complexity argument actually supports elevating to high priority because complicated issues require longer timelines. Deferring this work to low priority with undefined penetration triggers means it may never begin, creating a fundamental barrier to inter-regional HVDC project financing.

Scope Modifications Needed:

This work stream must address fundamental questions beyond the current low priority item description:

- Whether RA accreditation should be considered for HVDC transmission lines and/or underlying resources
- How MISO can properly credit pooled arrangements that deliver capacity value to the region
- How prevailing economic flow differs from available emergency capability flow, which may occur in opposite directions during different system conditions
- How HVDC transmission lines interface with DLOL (Direct Loss of Load) methodology

1.3 Recommended Content and Timeline Changes:

- **Modify the recommendation "Accreditation enhancements for External Resources"** to explicitly include HVDC transmission: "MISO should evaluate updating the accreditation of external resources **and HVDC-enabled transmission** to improve alignment with the Direct Loss of Load Resource Adequacy (RA) Hours approach"
- **Elevate the recommendation "Representation of transmission in Resource Adequacy risk modeling** from low to high priority with Q1-Q2 2026 start
- **Focus initially** on inter-regional HVDC line accreditation before addressing intra-regional applications
- **Target Q3 2026** for RASC presentation and stakeholder discussion on high priority issues; complete framework proposals by Q4 2026
- **Begin detailed technical discussions** with project developers to work through real-world applications

2 Additional Feedback

2.1 Ownership, Accountability, and Transparency Dashboard

Recommendation: Designate a MISO staff lead with overall ownership for HVDC initiative coordination across all stakeholder processes. Implement a dashboard similar to IMM quarterly tracking or provide routine written updates during Main Parent Entity week.

Rationale: The HVDC initiative spans MSC, RASC, PSC, PAC, IPWG, and regional state committees. The assessment states "roadmap and prioritization" is "out of scope," yet without ownership and tracking, recommendations risk becoming orphaned across committees where competing priorities may deprioritize HVDC work. Each stakeholder committee independently determines priority, potentially downgrading items regardless of assessment categorization.

Implementation:

- Assign MISO staff lead for overall initiative coordination across MSC, RASC, PSC, PAC, IPWG, and regional state committees
- Implement dashboard tracking: recommendation, status, discussion venue, target milestones, penetration thresholds, dependencies (similar to IMM Quarterly Report progression tracking)
- Alternative: Provide routine written updates during Main Parent Entity week Liaison Reports with progress, obstacles, revised timelines, and explicit ownership

2.2 Timeline Accountability For Medium and Low Priority Items

Recommendation: Establish clear timeline accountability for medium and low priority items through either bookend completion dates or transparent penetration triggers.

Rationale: The assessment's medium and low priority categories rely on undefined "as penetration increases" language, creating uncertainty about when work will begin. HVDC projects currently exist and are actively advancing, including upgrade projects for existing HVDC lines and multiple interregional projects in development. Additionally, HVDC can reach several gigawatts with just a handful of projects, meaning penetration levels can increase rapidly. Without clear accountability mechanisms, recommendations risk indefinite deferral.

Implementation Options:

Option 1: Bookend completion dates to establish hard deadlines regardless of penetration levels:

- Medium priority items: Complete no later than end of 2027
- Low priority items: Complete no later than end of 2028

This approach maintains flexibility to accelerate work as projects advance and aligns with MISO's stated 2026 design phase and 2027 implementation phase for resource adequacy work.

Option 2: Quantitative penetration triggers that define transparent criteria for each recommendation:

- Specify whether penetration refers to MW operational, number of projects (at what development stage), or other metrics
- Include metrics in accountability dashboard (Section 2.1)

MISO may select either option or combine approaches (penetration triggers with backstop completion dates). The critical requirement is establishing measurable commitments rather than undefined "as penetration increases" language.

2.3 Serial to Parallel Merchant HVDC Study Processing

Recommendation: Process merchant HVDC interconnection studies in parallel rather than serially.

Rationale: Serial processing could cause 18-24 months of unnecessary delay (6-8 months per study × three projects). For projects targeting 2030-2032 commercial operation, this could jeopardize financing windows. Studies use external consultants, eliminating internal resource constraints. Parallel processing of three geographically separated projects would reduce total duration from ~24 months to ~8 months.

2.4 Non-Discriminatory Reserve Requirements and Cost Allocation

Recommendation: Ensure frameworks for HVDC reserve requirements and ancillary services avoid discriminatory treatment compared to generation or other transmission.

Rationale: Medium priority recommendation "Contingency management procedures for HVDC facilities" suggests assessing "contingency reserve cost increases" and "alternative cost allocation processes" as penetration increases. This implies HVDC facilities should bear specific costs for their contingency risk. When large generators (including nuclear plants) are added, MISO does not conduct extensive cost allocation forums or create special reserve assessments. HVDC lines also provide reserves and ancillary services, yet the assessment focuses on costs rather than holistic value.

Implementation:

- Clarify what constitutes "loss of HVDC line" (bipolar vs. single pole outage)
- Integrate HVDC into existing contingency management and reserve frameworks rather than creating special categories
- New resources should not face additional hurdles unless technical studies demonstrate frequency decline or reliability concerns

2.5 Market Integration Clarifications

Inter-regional dispatch coordination: Medium priority recommendation "Intra-regional HVDC in market and operations processes" addresses market and operations processes. This may need earlier prioritization if HVDC projects advance as MVP designations requiring MISO functional control. Minnesota Power's Square Butte HVDC (offered into day-ahead market with real-time optimization) does not create congestion issues. Current manual scheduling processes for existing HVDC lines successfully avoid problems referenced in the white paper.

Requests for clarification:

- Whether issues are theoretical (NREL studies) or observed in actual operations
- Whether EMS/LMP calculation tool modifications are needed, and if so, what timeline
- Whether negative pricing optimization concerns are genuine arbitrage issues or theoretical edge cases

3 CONCLUSION

CGA commends MISO's thorough assessment. However, the value will be determined through implementation. Without clear ownership, defined timelines, and systematic tracking, recommendations risk becoming diffused across stakeholder processes where competing priorities may defer HVDC work indefinitely.

Given the significance of these issues and the year-long effort invested in developing the Impact Assessment, we request MISO schedule a public stakeholder meeting to discuss submitted feedback and MISO's responses, rather than relying solely on written responses via the feedback tool. The December workshop demonstrated strong stakeholder interest and the complexity of these issues warrants continued dialogue. A written-only response format would not provide adequate opportunity to discuss the feedback and MISO's positions, particularly given the time-critical nature of HVDC project development and the foundational policy decisions at stake.

We respectfully request that MISO's February 6, 2026 response to stakeholder feedback include:

1. Schedule a public stakeholder meeting to discuss feedback and MISO's responses
2. Acceptance or rejection of a timeline-based framework
3. Designation of MISO staff lead with overall HVDC initiative coordination responsibility across stakeholder entities
4. Quarterly milestone commitments for 2026 high-priority items
5. Timeline accountability commitments using bookend completion dates, quantitative penetration triggers, or combined approach

This working group commits to constructive engagement on all recommended initiatives and stands ready to provide technical input and support MISO's efforts to integrate HVDC as a valuable reliability and economic resource.