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# Interconnection Queue Reform

Rural MN Energy Board

September 22, 2008

# Overview

- Old process – quick recap
- New process
  - Salient Points
  - Pre-queue phase
  - Application review phase
  - System Planning and Analysis phase (SPA)
  - Definitive Planning Phase (DPP)
- Transition Plan and Queue Statistics

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# Old process – backlog drivers

- Queue position being significantly valuable
- Having a relatively lower cost of entry into the queue
- Inordinately high amount of interconnection requests against a highly constrained transmission system (figure on next slide)
- High attrition driven primarily by the apparent oversupply of requests, and resultant rework, delays and uncertainty for subsequently queued projects
- No cost/penalty for suspension, resulting in large number of projects being suspended
  - adverse impacts on timelines and uncertainty for later queued generators dependent on the transmission upgrades of the suspended generators.

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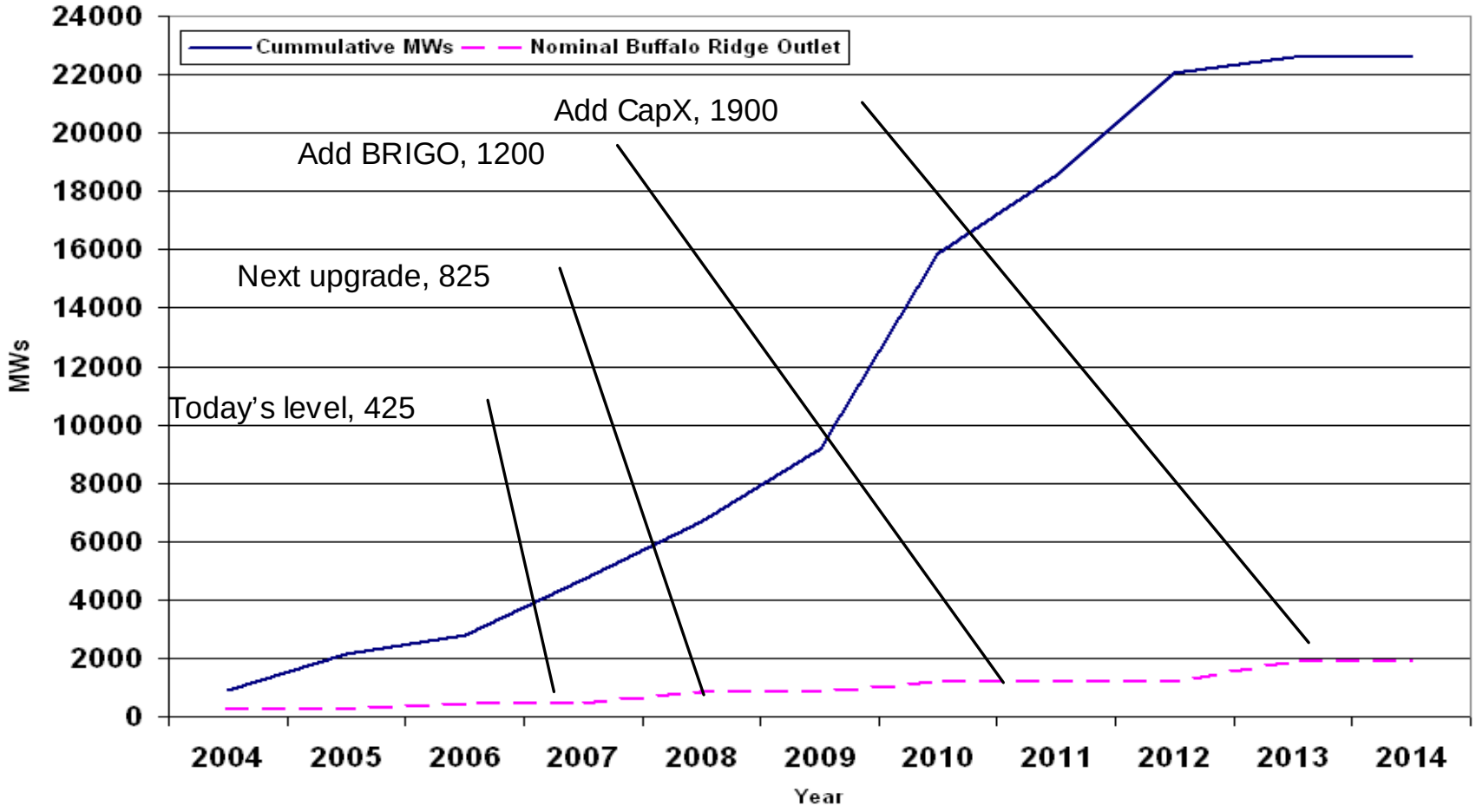
# MW requested v/s transmission capability in the Buffalo Ridge Area




**Requested in-service date**

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# New Process Highlights

- Transition from a "*first-in, first-served*" approach to "*first-ready, first-served*" as demonstrated through the achievement of specific milestones
- Creation of:
  - a Pre-Queue phase in the process
  - a "fast-lane" for projects in less-constrained areas
- Up front deposit for all studies based on project size
- Elimination of the ability to suspend projects for economic reasons

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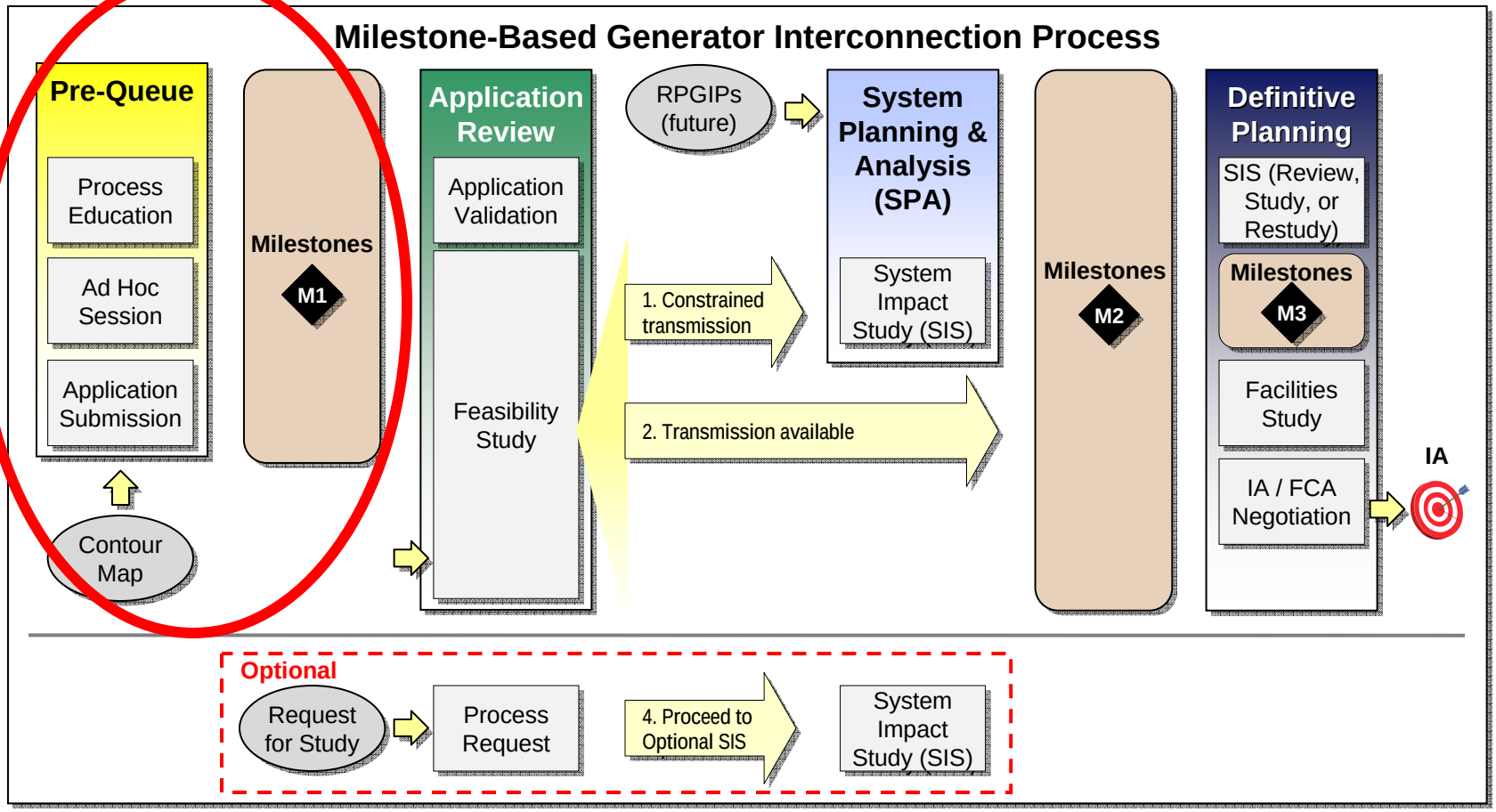
# Generator Interconnection Process

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# Pre-Queue Phase

- A new group within Transmission Access Planning dedicated to pre-queue support efforts
- Designed to assist and prepare customers prior to submitting a request
- Workshops to help educate/inform customers about the Generator Interconnection process
- Ad hoc information session upon request to discuss specific situations
- Posting of contour map to help customers in making a high level informed decision

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# Pre-Queue Phase (Cont.)

Information posted on Midwest ISO's Generator Interconnection Web Site:

- Scheduled workshops
- Ad hoc information session request forms
- GIP educational training material
- Contour map
- Frequently asked questions

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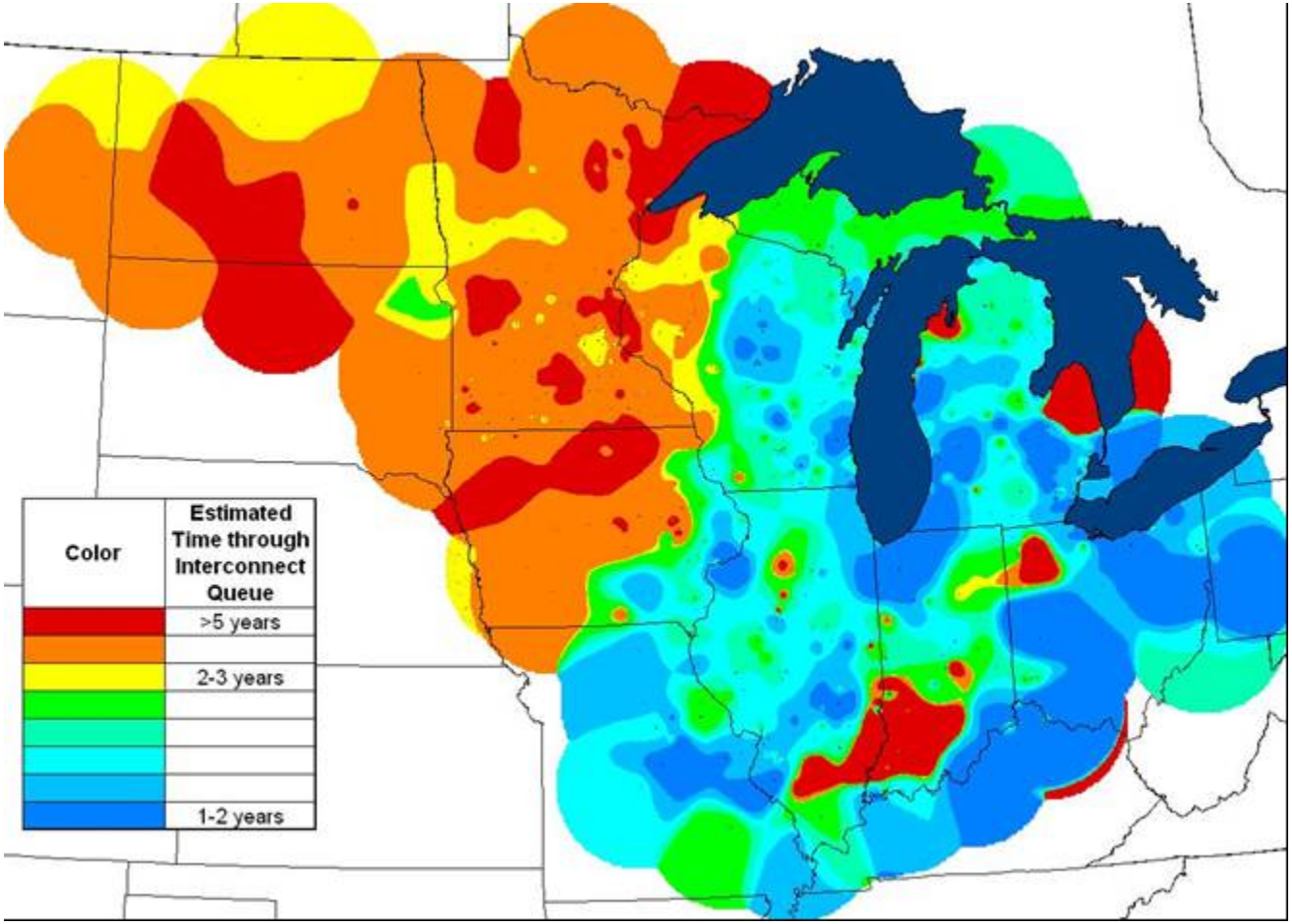
# Sample Contour Map




**Gives an idea of relative incremental injection capability**

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# Application Submission

- Customer submits interconnection request/application
  - Appendix 1 - Interconnection Request
    - Attachment A - Generating facility data (unit ratings)
    - Attachment B - Interconnection study agreement
    - Attachment C – Confidentiality agreement
  - Other Appendices
- Midwest ISO acknowledges receipt of Request

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# M1 Milestones

- Complete Application (Appendix 1 & Attachments)
- Proof of site control, or $100,000 deposit in-lieu of site control (Dedicated refundable deposit)
- Point of Interconnection (POI)
- Generic Stability Model
- Impedance from collector substation to POI
- Technical data to run studies
- One-line diagram
- Generation output (MW)
- Step-up transformer data

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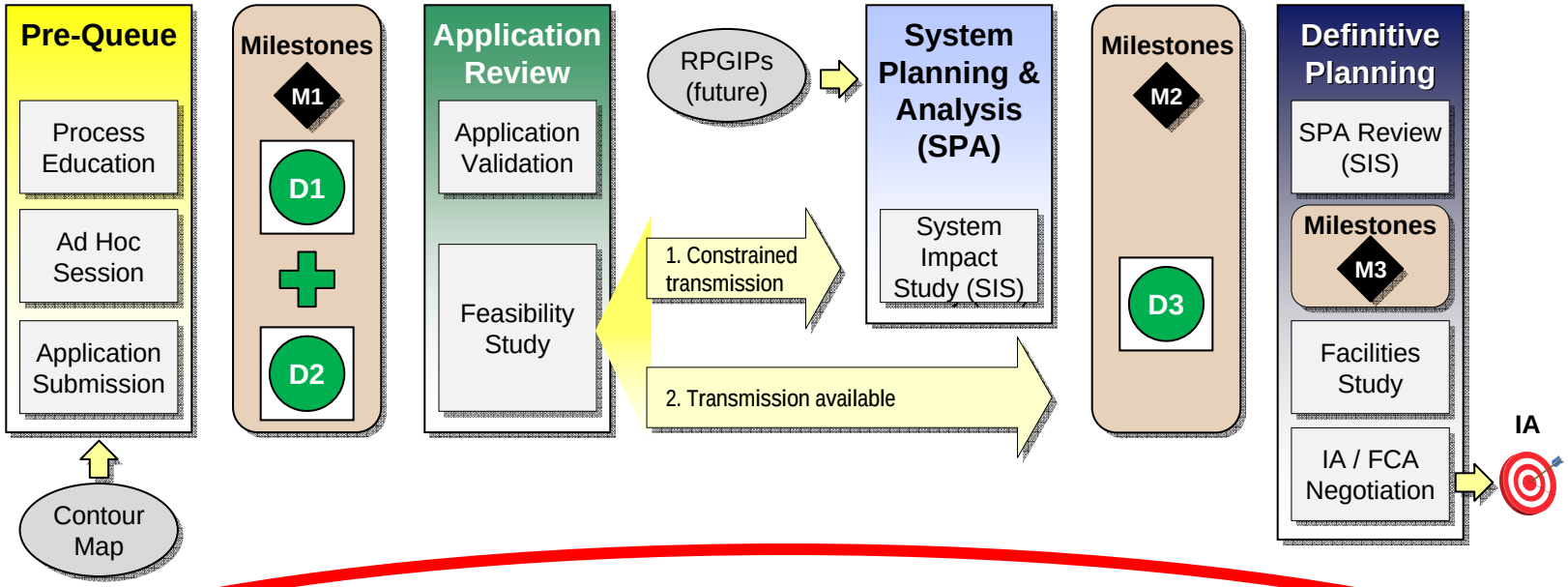
# GI Study Deposits




| Ref | Description/Rationale | Refund | <6 MW | 7 - 20 MW | 21 - 50 MW | 51 - 100 MW | 101 - 200 MW | 201 - 500 MW | 501 - 999 MW | 1000+ MW |
|---|---|---|---|---|---|---|---|---|---|---|
| D1 | Application Fee/Fund FeS* | No | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 | $5,000 |
| D2 | Fund System Impact Study | Yes | $10,000 | $20,000 | $30,000 | $60,000 | $60,000 | $60,000 | $90,000 | $120,000 |
| D3 | Fund Definitive Planning | Partial | $40,000 | $100,000 | $150,000 | $210,000 | $260,000 | $360,000 | $440,000 | $520,000 |

** FeS = Feasibility Study (a.k.a. SPT)*

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# Study Deposits

- D1 - Application Fee and fund Feasibility study
- D2 – Fund System Planning Analysis (SPA) or part of Definitive Planning studies for projects bypassing SPA
- D3 – Fund Definitive Planning Phase (DPP)
- Deposits D1, D2 & Site Control (if required) are due at application
- Deposit D3 is due upon entering the Definitive Planning Phase

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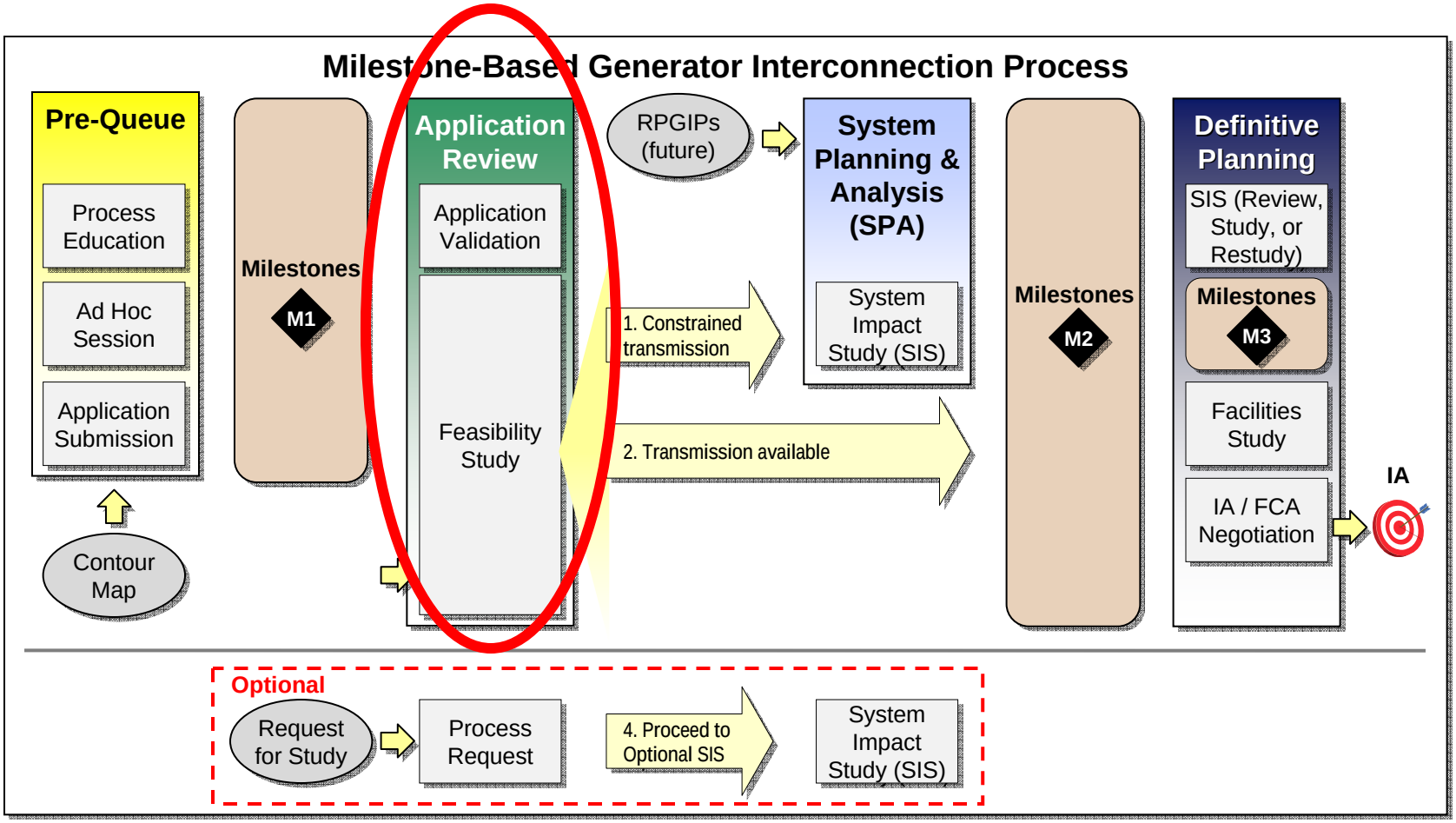
# Generator Interconnection Process

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# Application Review Phase

- Review and validation of application - verify information and clarify any ambiguity
- Customers notified of any deficiencies
- Send copy of countersigned Interconnection study agreement back to customer
- Arrange scoping call, if required
- Perform feasibility studies
  - Run every six weeks
  - increased significance: in addition to providing a preliminary assessment, it also determines whether the request would be able to avail of the “fast-lane”.

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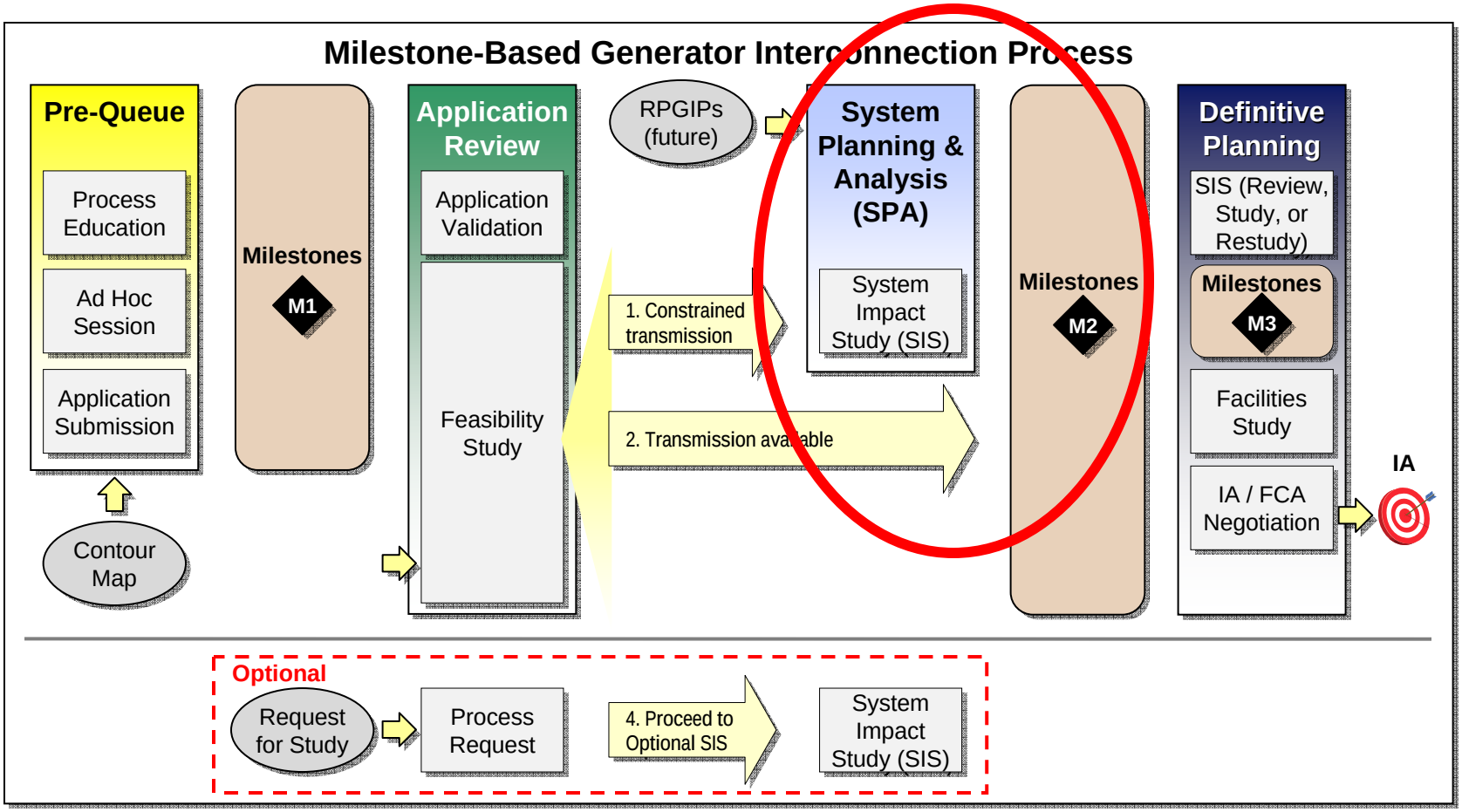
# Generator Interconnection Process

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# System Planning & Analysis (SPA)

- System impact studies in SPA phase will generally have higher degree of complexity and broader scope
- Designed to determine network upgrades that will reliably and efficiently integrate the generator on to the transmission system
- Provide preliminary estimates of cost and time to construct Network Upgrades
- Midwest ISO will use reasonable efforts to complete study within 1 year
  - If a subset of projects can be connected with simpler upgrades, such projects will be sent to DPP sooner

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# M2 Milestones

- Detailed stability model for generator
- Definitive point of interconnection
- Definitive one-line diagram
- Definitive generation output (MW)
- Proof of Site Control, or M1 site control deposit becomes non-refundable
- Meet any two of the following five milestones or their substitute deposits or letter of credit

  1) Equipment on order 2) Necessary permits 3) Regulatory approval 4) Board approval 5) Deposit or letter of credit

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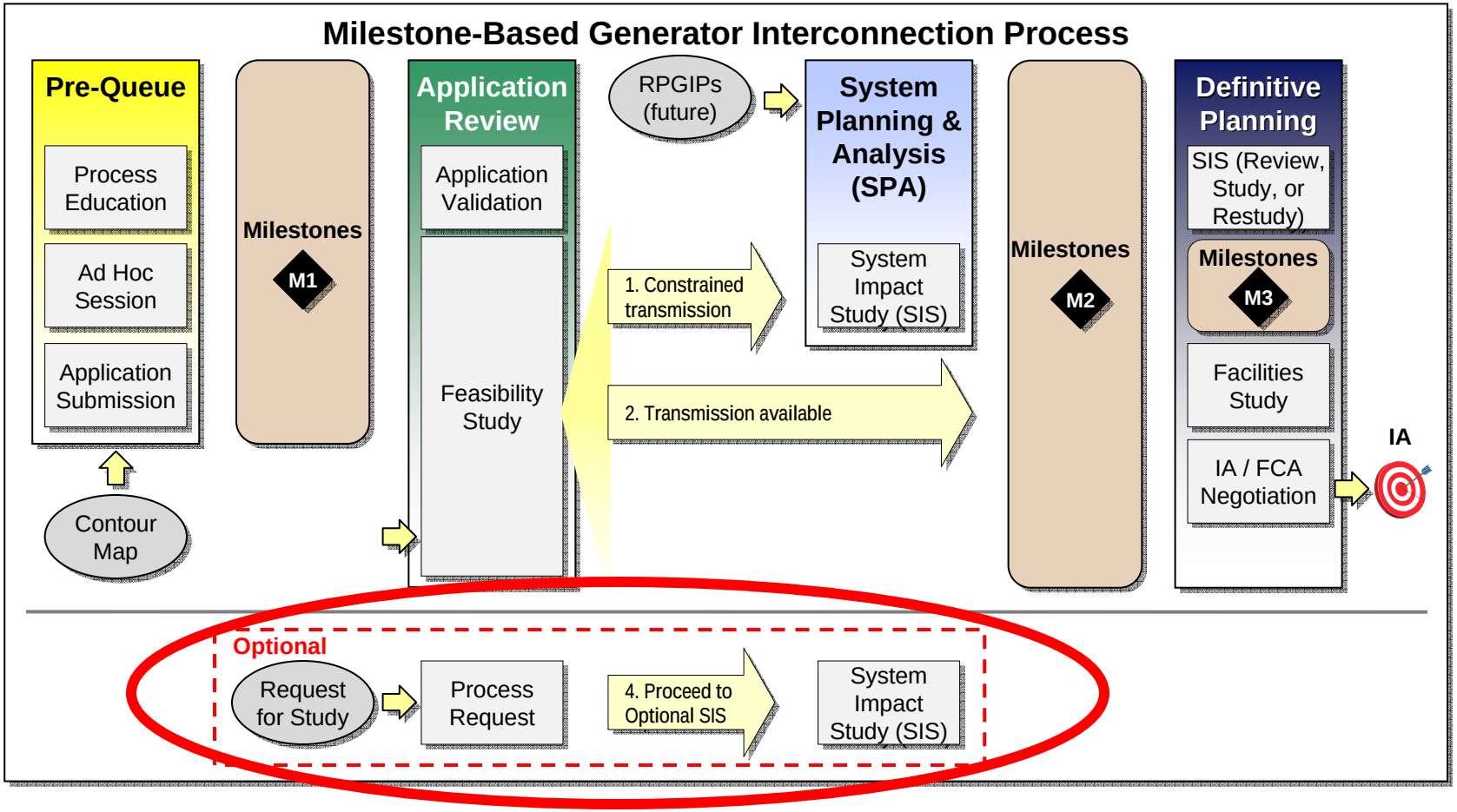
# Generator Interconnection Process

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# Optional Study

- Optional Studies requested/performed solely to get additional information/results to help customers in making business decisions on their project
- Optional Study for a project will have no impact on the processing time of other projects in the Queue
- Request an Optional Study by submitting Appendix 5 along with a $60,000 study funding deposit
- The studies will be performed based on the assumptions outlined by the Interconnection Customer
- Results of such informational studies will be non-binding

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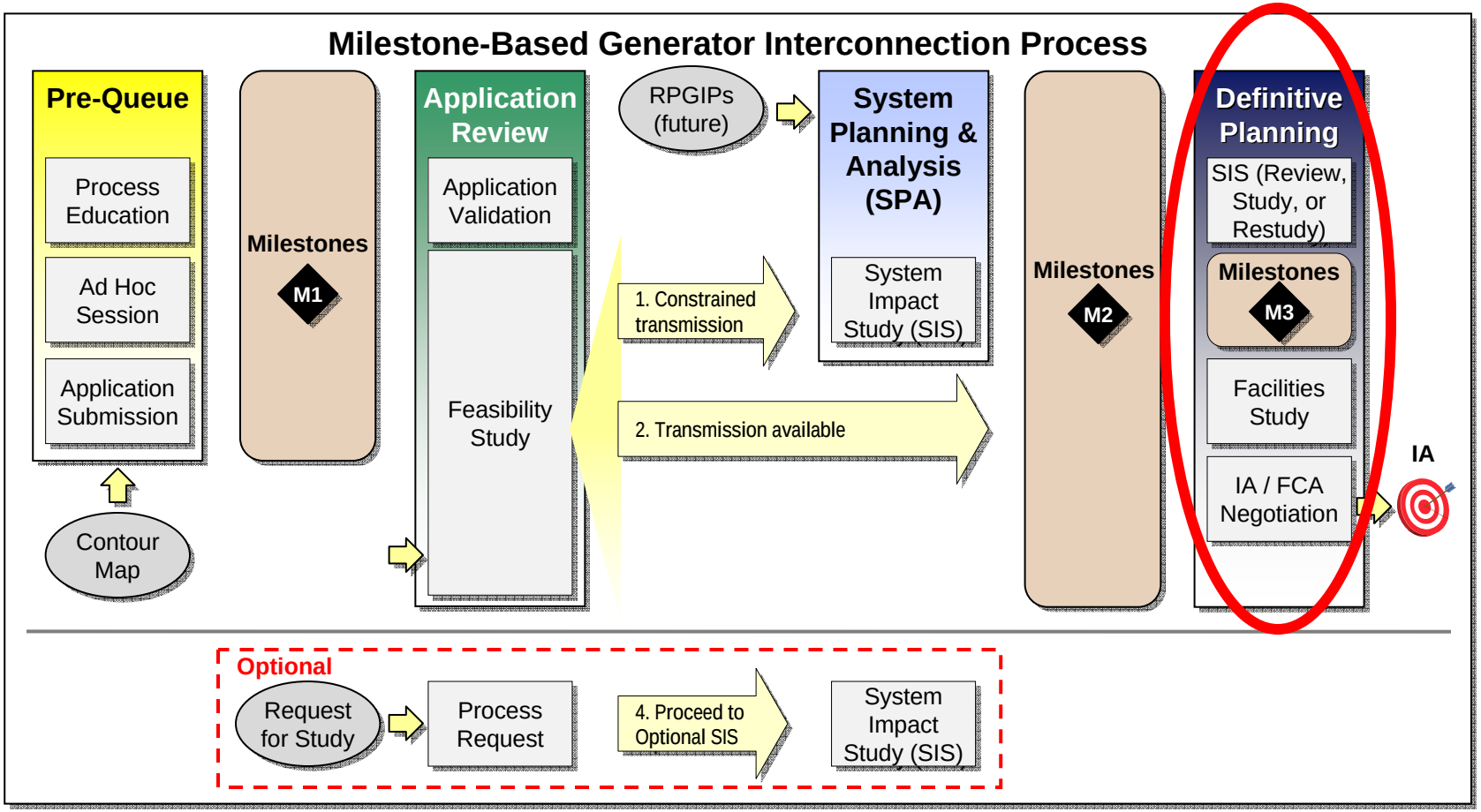


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# Definitive Planning Phase

- M2 milestones must be met in order to enter the DPP
- Deposit D3 is due upon entering the DPP
- Consists of SPA Review, Facilities Studies, and GIA negotiation
- SPA review could include a restudy, a new SIS, or sensitivity analyses to true-up assumptions
- Study report will include a plan to integrate generation and a planning level estimate of time and cost of network upgrades construction.
- Midwest ISO will use reasonable efforts to complete SPA review within 120 calendar days

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# M3 Milestones

In order to enter the Facilities Study stage, a project will have to meet M3 milestones (must meet one of the following):

- Deposit or Letter of Credit for estimated Network Upgrades as determined in the System Planning and Analysis Review (Refundable upon execution of IA)
- Execution of a contract for sale of electric energy or capacity from the Generating Facility, or statement signed by an officer or authorized agent of the IC attesting that the Generating Facility is included in applicable state resource adequacy plan
- Demonstration that generation turbines have been ordered for the Generating Facility

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# Facilities Study in DPP

- Study to determine the cost and time estimate to construct Network upgrades and TO's Interconnection Facilities necessary to interconnect the IR to the system
- Facility Study report includes draft Appendices to the GIA
- Cost estimates will be determined to a +/- 20% margin if the lead time to in-service does not exceed 18 months; for longer lead times a good faith estimate will be developed
- Midwest ISO will use reasonable efforts to complete study within 120 calendar days

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# GIA Negotiation

- Facility Study report includes draft Appendices to the GIA
- Finalize Appendices to the GIA
- Proof of site control, demonstrating that there is sufficient land area equal to 100% of that required to support the size and type of generating facility proposed or post an additional $250,000 deposit in-lieu of site control (Within 15 bd of GIA, becomes non-refundable and will be applied toward future construction costs)
- File Final executed or unexecuted GIA with FERC

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# Post GIA

- Suspension
  - Permitted only for Force Majeure reasons
  - Will require an up-front payment equivalent to greater of Network Upgrade costs or $5 million
  - Will result in forfeiture of any remaining funds from Definitive Planning study deposit (D3)
  - FERC approved language that provides for a six-month grace period beginning as the date of the Order
  - Suspended IRs may be revisited periodically to ensure customer is working toward coming out of Suspension

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# Transition Plan

- Midwest ISO has determined a transition plan for each project currently active in the queue
- Provided are Milestone/Deposit responsibilities for the projects in order to transition them to the new procedures
- The new Application non-refundable deposit has been waived for current queue customers
- Transition true-up amounts were netted against customer's current project balance
- New Applications will be required from only those customers transitioning to new studies requiring additional data or forms
- Customers have 60 calendar days from the effective date of the Order to conform to the new procedures

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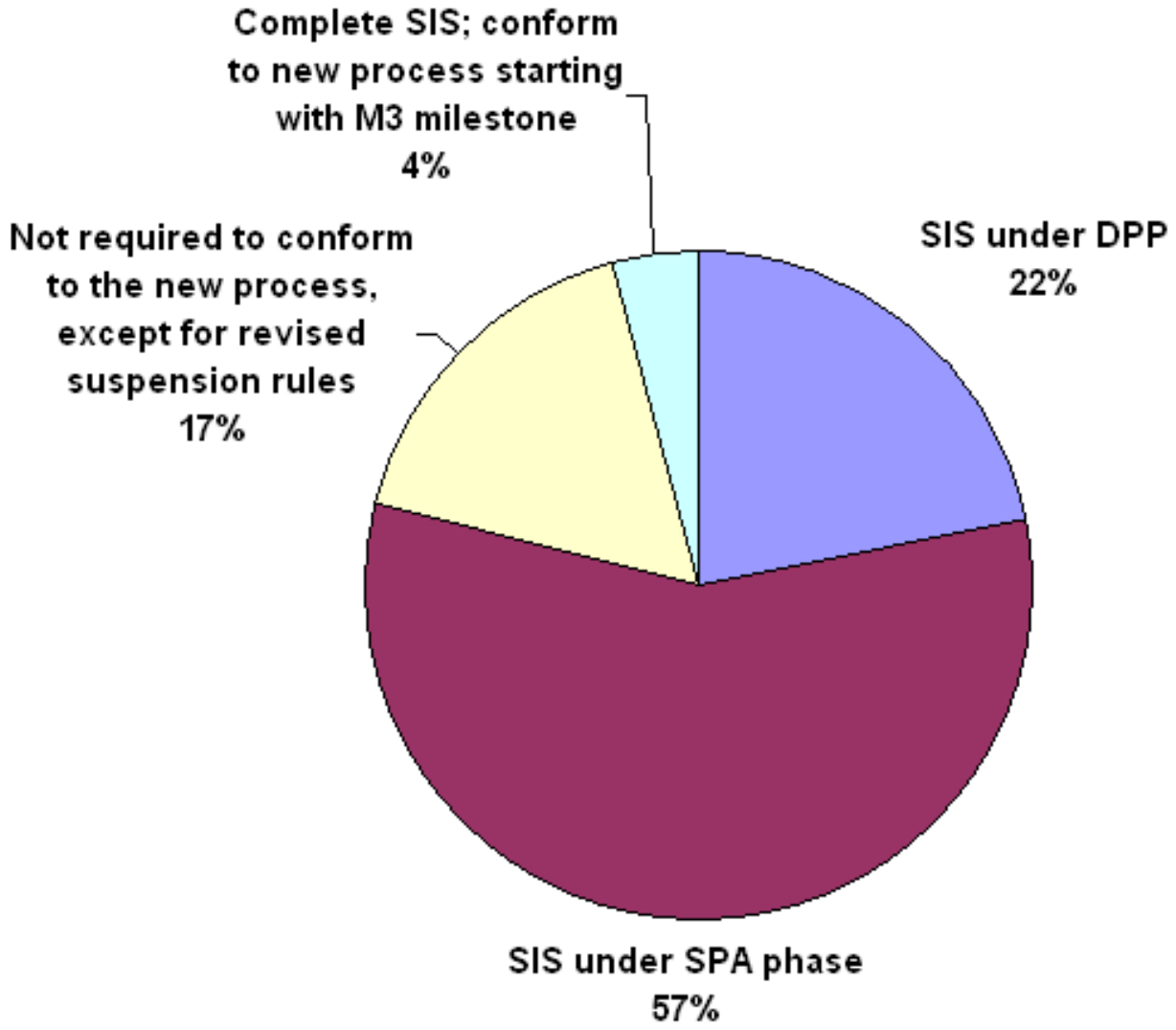
# Queue break-up under transition

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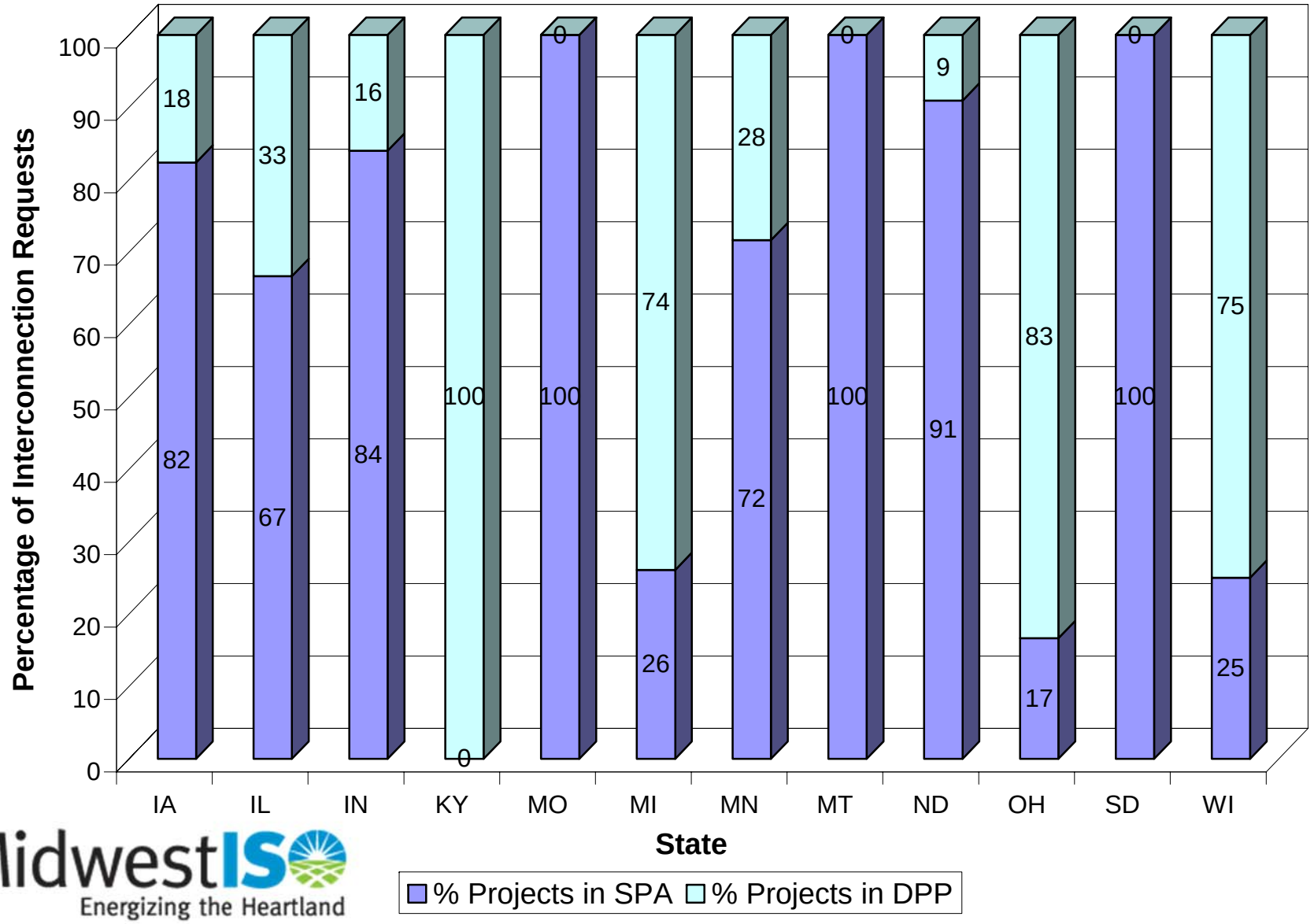
# Comparison of projects in SPA v/s DPP

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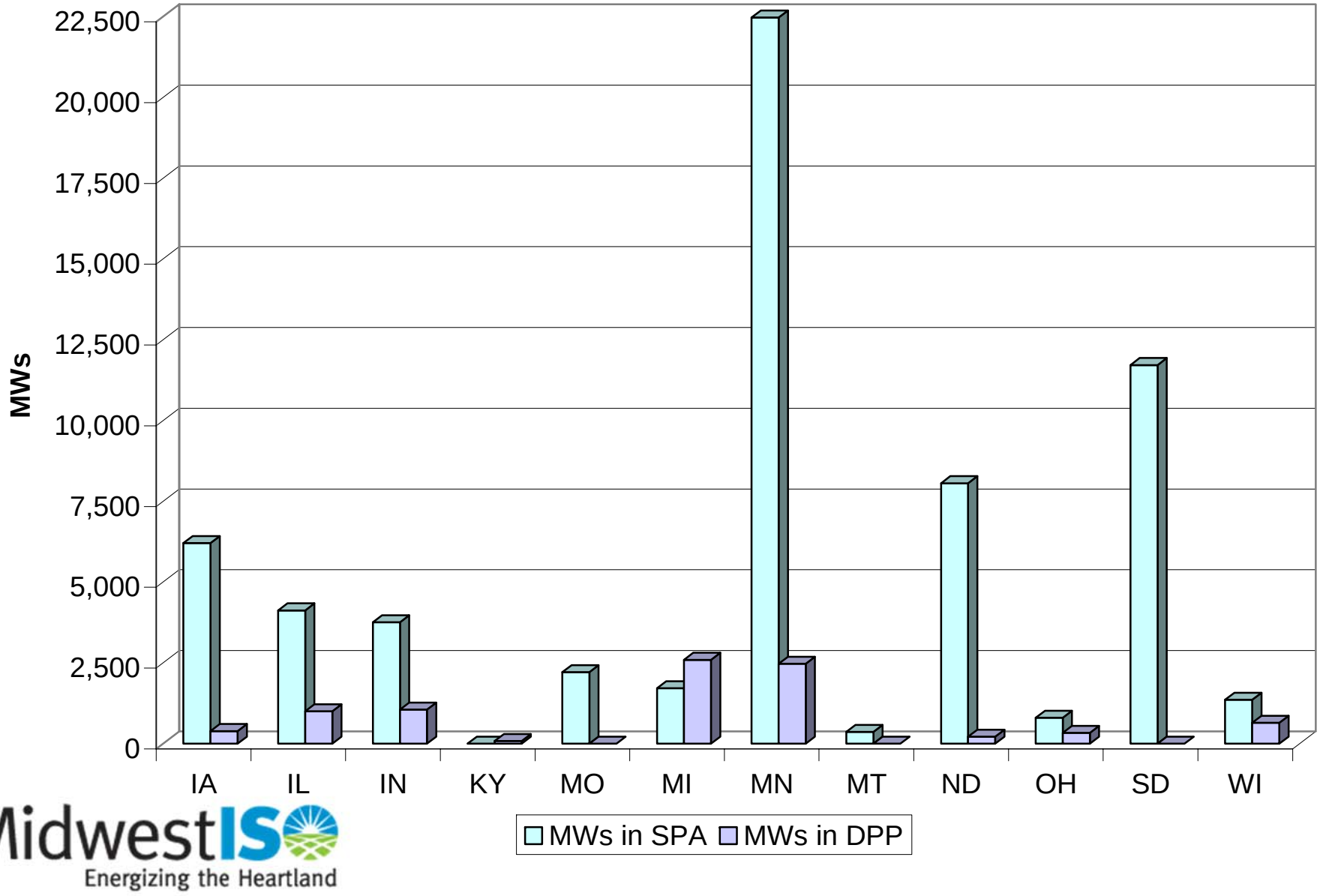
**Note**: Only projects requiring SIS under new process are considered.

# Comparison of MWs in SPA v/s DPP

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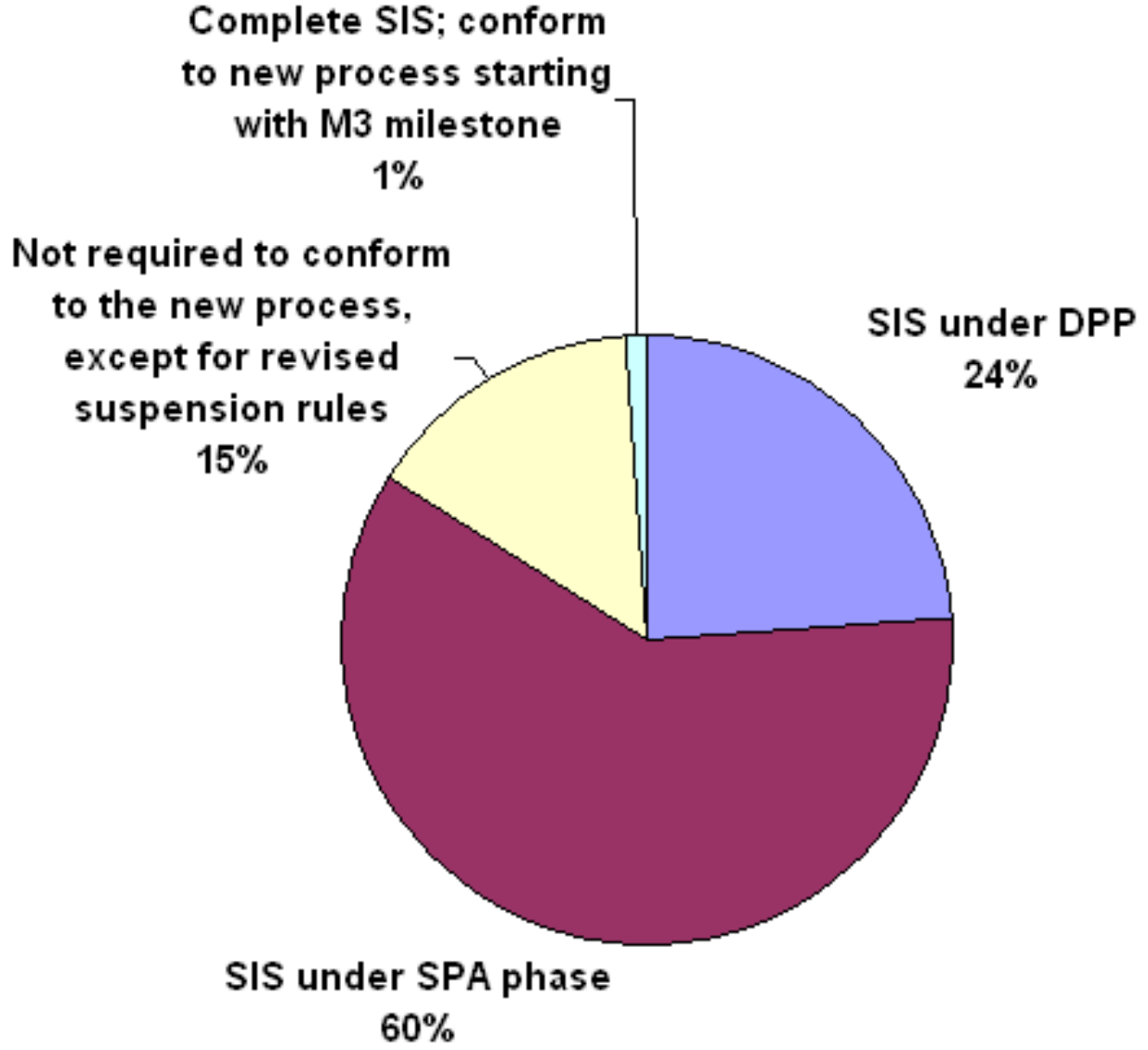
# Queue break-up under transition (MN only)

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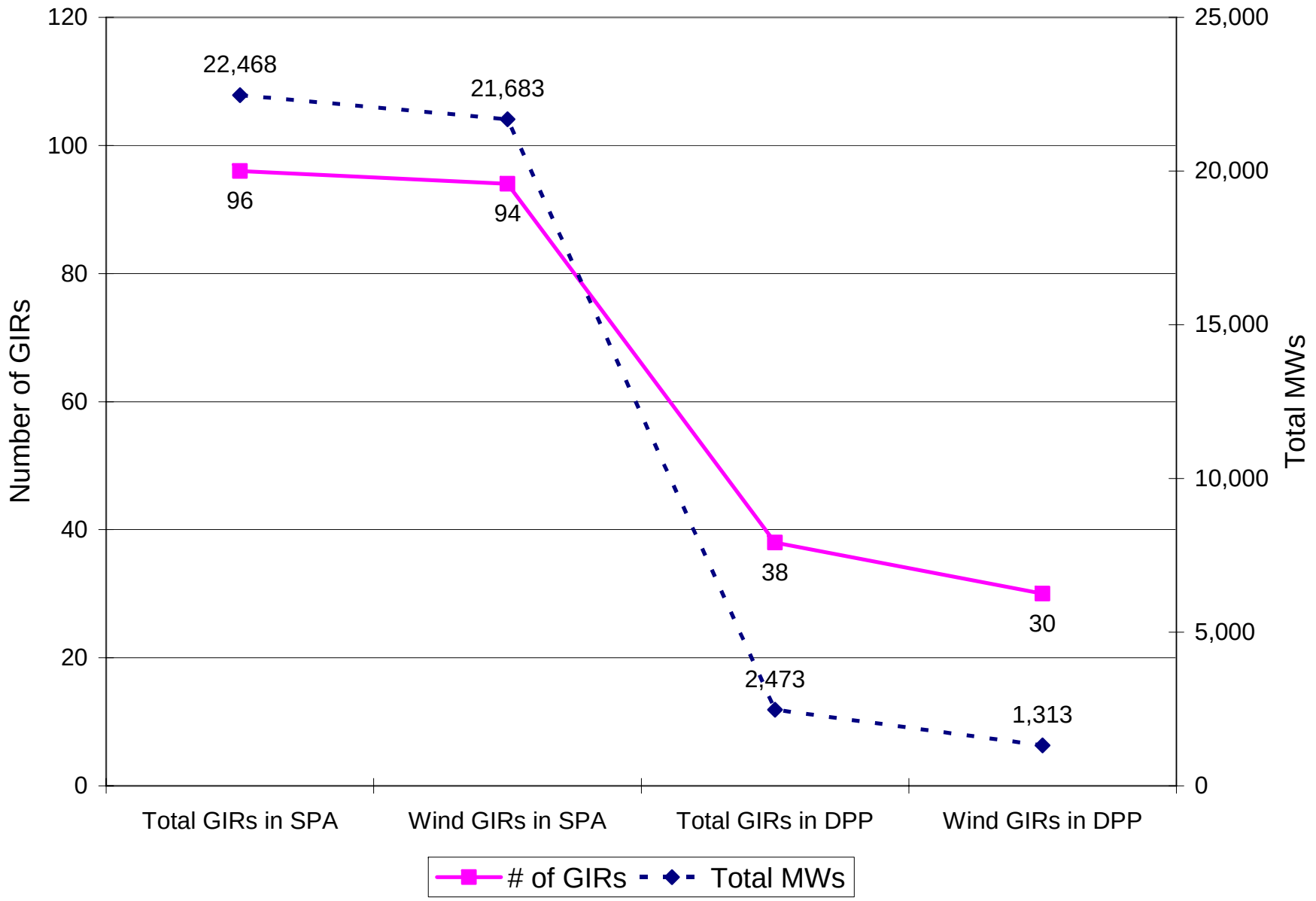
# MN wind and non-wind generation in SPA v/s DPP



# Contact information

- Website:

  http://www.midwestmarket.org/page/Generator+Interconnection

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  - Paul Muncy: (317) 249 5632
  - Diwakar Tewari: (317) 249 5715
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