



Central Region Generator Interconnection Studies

3rd Central Subregional Planning Meeting
September 6, 2022

Purpose and Key Takeaways



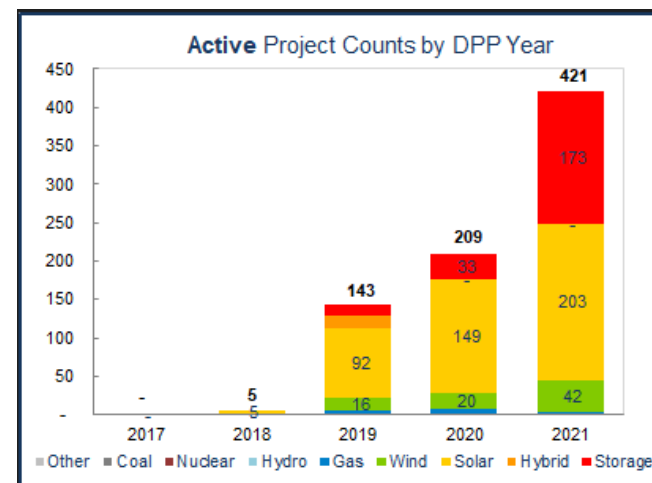
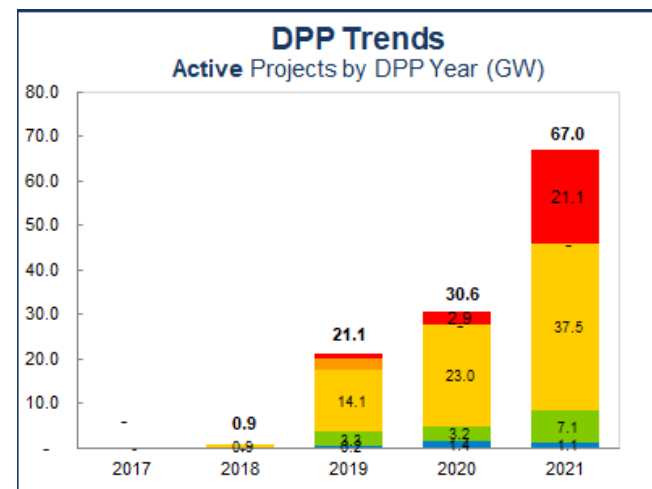
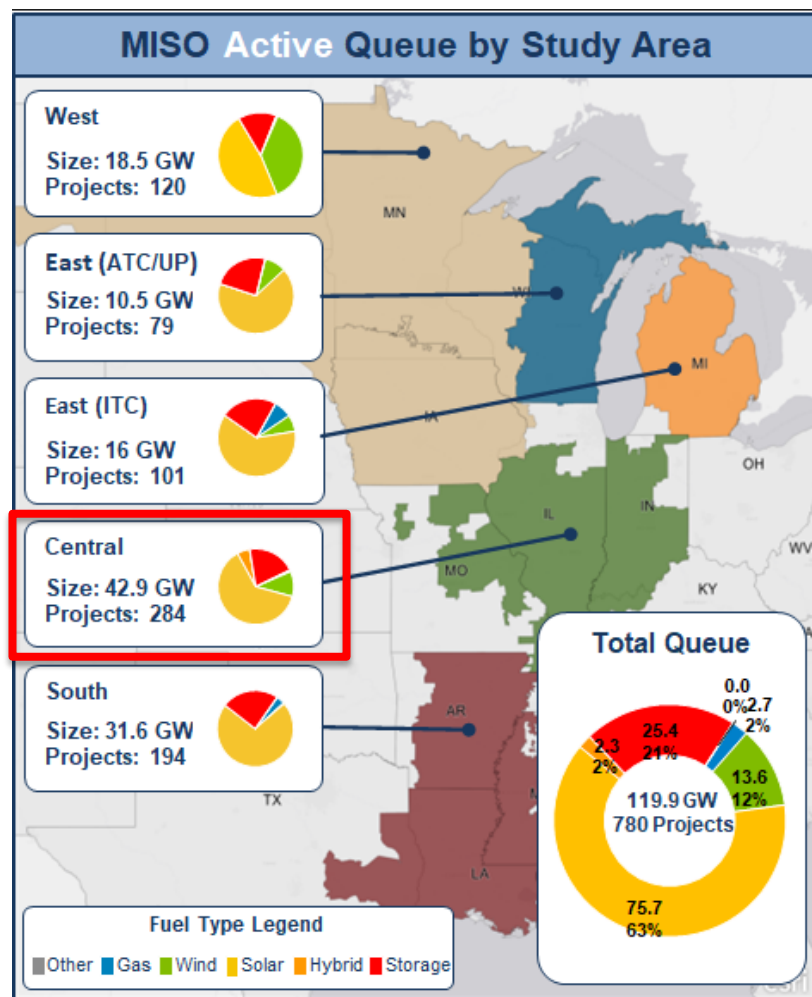
Purpose: Review statuses of recently completed, on-going, and upcoming Central DPP cycles

Key Takeaways:

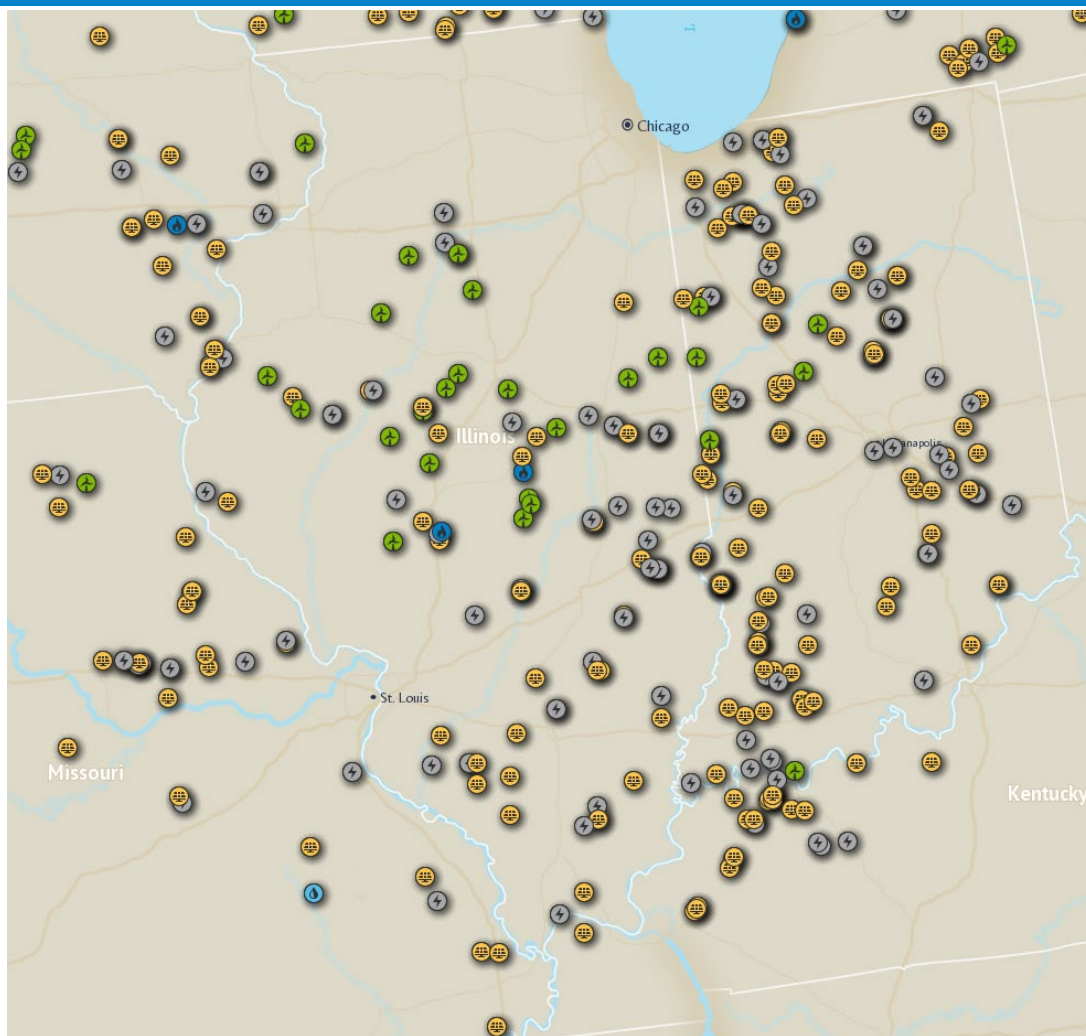
- **DPP-2018-APR Study Cycle**
 - 33 Active Projects (7,049 MW)
 - Current Status = GIA Negotiation
- **DPP-2019-Cycle Study**
 - 76 Projects (11,760 MW)
 - Current Status = DPP Phase 3
- **DPP-2020-Cycle Study**
 - 85 Projects (13,180 MW)
 - Current Status = DPP Phase 1
- **DPP-2021-Cycle Study**
 - 120 Projects (17,900 MW)
 - Current Status = Phase 1 Model Build

Generator Interconnection: Overview

The current generator interconnection active queue consists of **780** projects totaling **119.9** GW



MISO Queue Central Study Area



Projects

	Battery Storage (172)
	Biomass (0)
	Coal (1)
	Co-Gen (0)
	Combined Cycle (0)
	Diesel (1)
	Gas (15)
	High Voltage DC (2)
	Hybrid (79)
	Hydro (2)
	Landfill Gas (0)
	Nuclear (0)
	Oil (0)
	Solar (495)
	Steam (0)
	Trash (0)
	Waste Heat Recovery (1)
	Wind (88)
	Wood (0)

Showing Active projects between DPP-2018-APR through DPP-2021 Cycles

MISO Queue Schedule / Central Summary

Current DPP Schedule version:

8/1/2022

Region	Study Cycle	Number of Projects	MWs	Site Control Date	DPP Start	DPP 1 Completion	DPP 2 Completion	DPP 3 Completion*	GIA Execution*	Current Stage/Status
Central	DPP-2018-APR	34	7,344		4/22/2019	1/7/2020	3/10/2021	9/1/2022	1/29/2023	DPP 3
	DPP-2019-Cycle	81	13,216		6/23/2020	8/5/2021	5/20/2022	9/20/2022	1/6/2023	DPP 3
	DPP-2020-Cycle	85	13,173		3/15/2021	10/7/2022	1/17/2023	3/14/2023	6/30/2023	DPP 1
	DPP-2021-Cycle	119	17,586		12/8/2021	11/6/2022	2/16/2023	4/13/2023	7/30/2023	DPP 1
	DPP-2022-Cycle	-	-	9/15/2022	12/14/2022	3/20/2023	7/3/2023	8/31/2023	12/18/2023	

Central Updates - Summary:

- **DPP-2018-APR Study Cycle** → GIA Negotiation/Network Upgrade Facility Studies
- **DPP-2019-Cycle** → DPP Phase III Model Build
- **DPP-2020-Cycle** → DPP Phase I Study (Steady-state Mitigations)
- **DPP-2021-Cycle** → DPP Phase I Model Build
- **DPP-2022-Cycle** → Application and Site Control Deadlines set for **9/15/2022**

Issues and Concerns:

- Queue Sizes (2019, 2020, & 2021)
 - Model Building, Mitigation Development, Regional LPC's
- Affected Systems Studies Delays

This information can be found on the MISO webpage (Definitive Planning Phase Schedule):

https://www.misoenergy.org/planning/generator-interconnection/GI_Queue/

DPP Study Cycle Cost Breakdown - Central

Cost Breakdown	DPP 2018 APR (DPP Phase III Results)	DPP 2019 (DPP Phase II Costs)	DPP 2020 (DPP Phase I Analysis)	DPP 2021 (Phase I Model Build)
# of Projects (~Total NRIS MW's)	33 (7,049 MW)	76 (11,760 MW)	85 (13,180 MW)	120 (17,900 MW)
ERIS Network Upgrades	\$27,260,800	\$332,015,480	TBD	TBD
Affected System Network Upgrades	\$68,816,370	\$397,010,696	TBD	TBD
NRIS Network Upgrades	\$74,454,200	\$550,063,503	TBD	TBD
Interconnection Facility Network Upgrades	\$198,912,356	\$473,965,416	TBD	TBD
Total Network Upgrade Cost (excluding Affected System & TOIF)	\$300,627,356	\$1,753,055,095	TBD	TBD

A study cycle summary page, a complete project list, & the SIS network upgrade cost table for each project (For applicable study cycles) can be found in the following appendices at the end of the presentation:

- **Appendix A:** DPP-2018-APR Study Cycle
- **Appendix B:** DPP-2019 Study Cycle
- **Appendix C:** DPP-2020 Study Cycle
- **Appendix D:** DPP-2021 Study Cycle

DPP 2018 April – Central – Update/Summary

DPP-2018-APR Central Phase III Update:

- 1) Central Phase III kicked-off with 34 projects:
 - 7,144 MW (NRIS)
- 2) Phase III Study is complete.
 - 1) Projects without any SIS Network Upgrades are in GIA Negotiation.
 - 2) Projects with assigned SIS NUs are undergoing Network Upgrade Facility Studies.
- 3) Post Phase III one project has opted for Penalty Free Withdrawal and has prompted a reanalysis of the NRIS Network Upgrades.
 - 1) An Addendum or Revised System Impact Study Report will be issued to reflect results of the NRIS reanalysis.

DPP 2019 – Central – Update/Summary

DPP-2019-Cycle Central Phase II Updates:

- 1) DPP Phase I kicked off with 102 projects, totaling 15,725.6 MW (NRIS).
- 2) DPP Phase I System Impact Study Report was Posted.
 - 86 ERIIS Network Upgrades
 - 25 NRIS Network Upgrades
- 3) DPP Phase II kicked off with 81 projects, totaling 13,200 MW (NRIS).
 - 17 projects withdrew at DP1, for 2,500 MW
- 4) DPP Phase III kicked off with 76 projects totaling 11,760 MW ERIIS and 10,800 MW NRIS.
 - 5 projects withdrew at DP2 (800 MW).
 - 2 projects reduced ERIIS (36 MW)
 - 12 projects reduced NRIS (811 MW)
 - Phase 3 Model Build activities are underway

DPP 2020 – Central – Update/Summary

DPP-2020-Cycle Central Phase I Update:

- 1) A10 Model Review period has closed
 - All project feedback is being processed, the large cycle size and volume of model updates has led to delays
- 2) Phase I Model Package has been finalized and posted
 - Central contingency files are being corrected to account for topology changes due to addition of 2020 projects.
 - Corrections made to the input files.
- 3) Phase I Analysis
 - ERIS Thermal, Voltage, and LPC mitigations are underway.
 - NRIS/Deliverability mitigations will follow.

DPP 2021 – Central – Update/Summary

DPP-2021-Cycle Central Phase I Update:

- 1) Phase 1 Model Build is underway.
 - A10 Model Review has concluded.
 - Current activities include finalizing deficiencies across all DPP Regions.

Questions?

Contact information for Central Region Team

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Curious about the MISO Generator Interconnection Queue?

Great place to start:

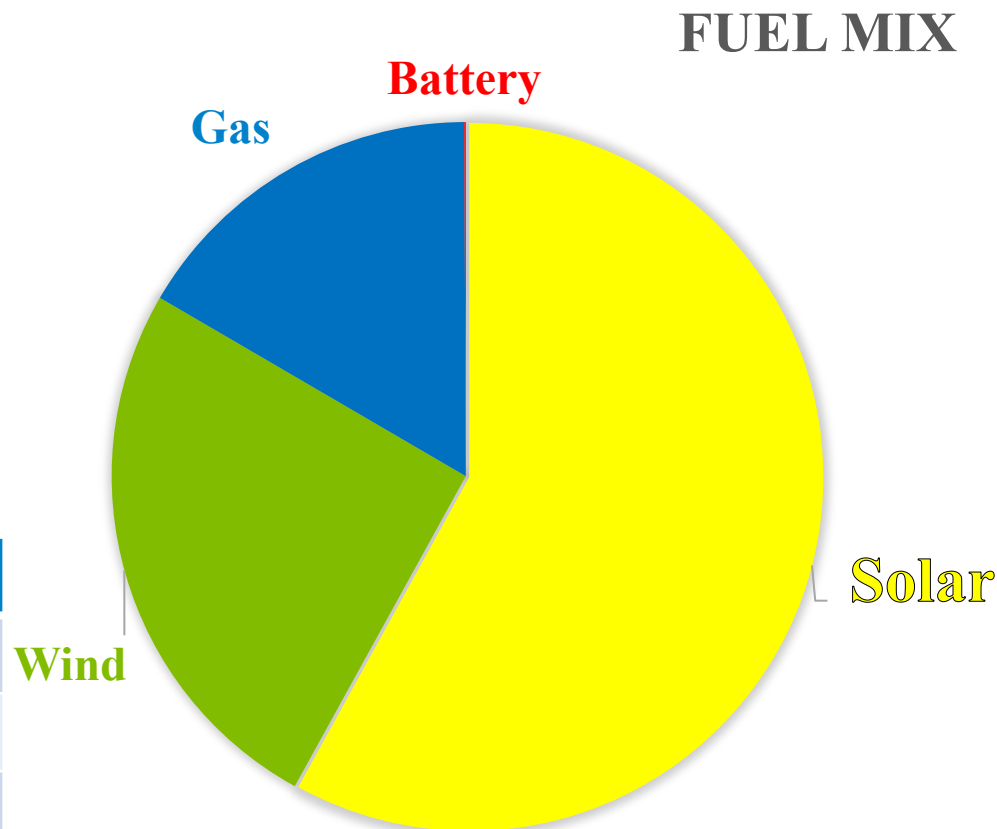
https://www.misoenergy.org/planning/generator-interconnection/GI_Queue/

Appendix A: DPP 2018 April - Central

Summary of Final Central DPP-2018-APR Phase III:

- Phase III completed with 33 projects totaling 7,049 MW

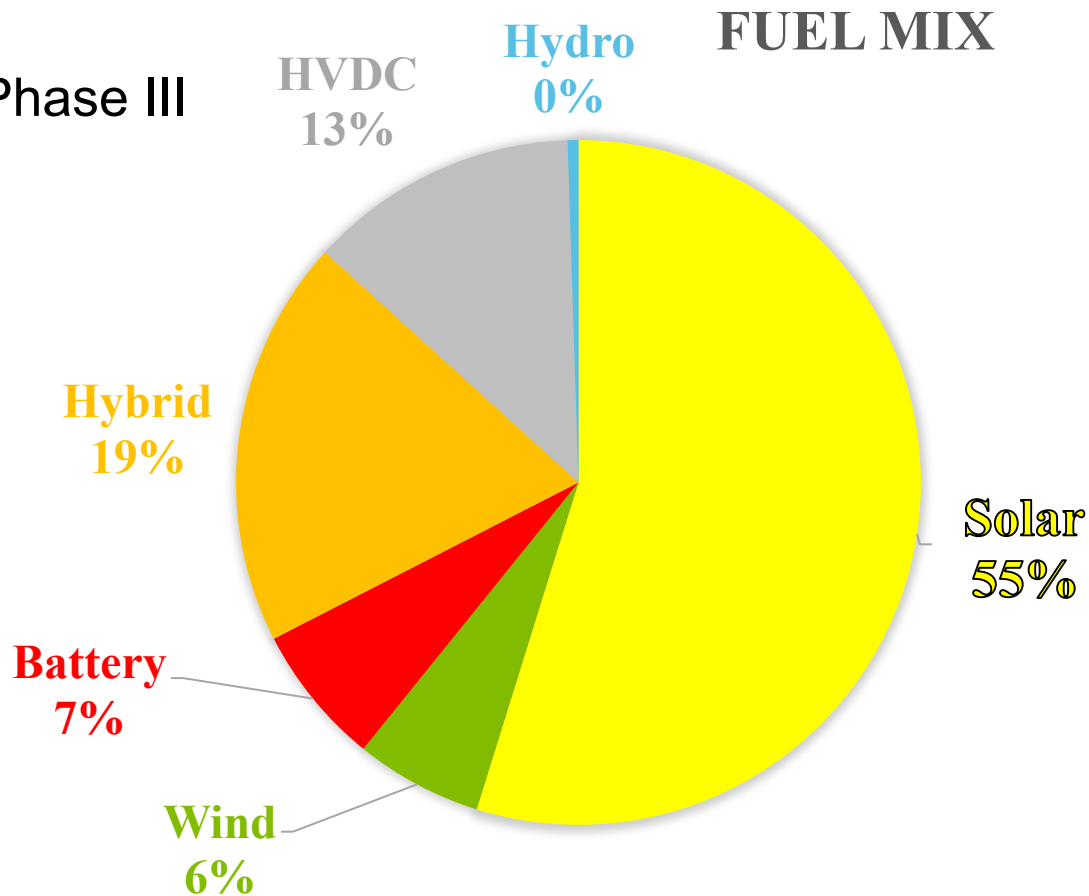
Fuel Type	Total MW's (ERIS)
Solar	4090
Wind	1789
Gas	1165
Battery	4.95



Appendix B: DPP 2019 Cycle - Central

- 76 Active Study Projects (Phase III data)
- 11,760 MW
- Decision Point 2 Complete – Phase III Model Build underway
- Fuel Mix:

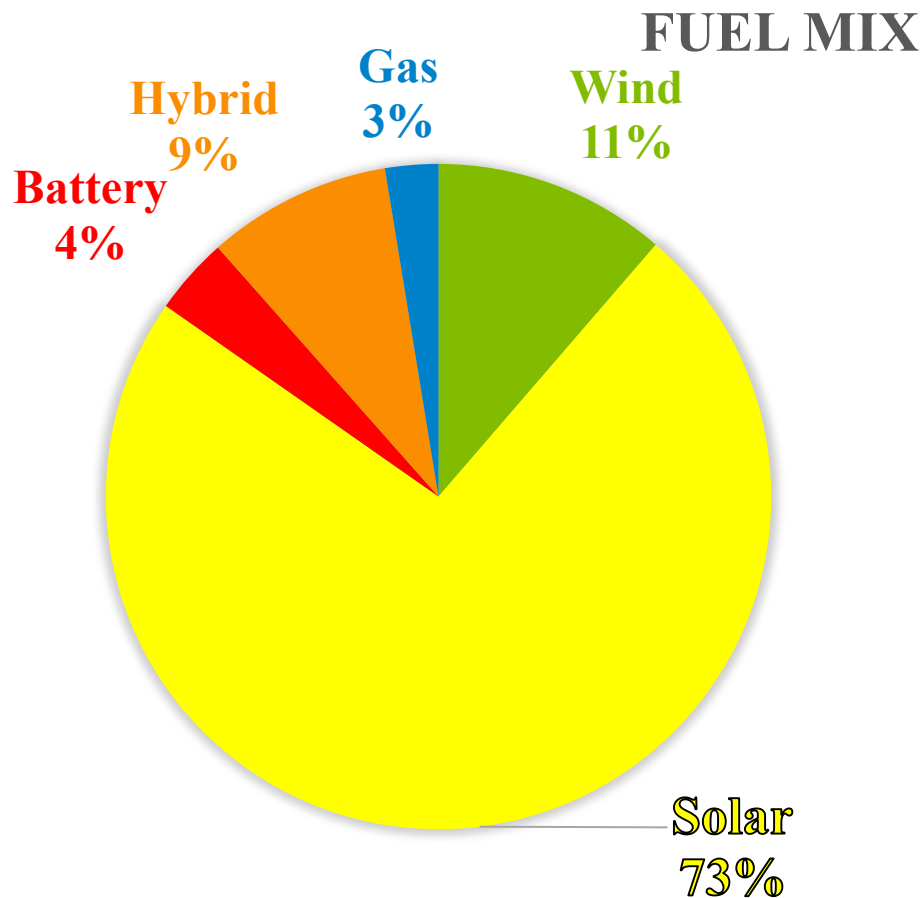
Fuel Type	Total MW's (ERIS)
Wind	706
Solar	6445
Battery	782
HVDC	1500
Hybrid	2267
Hydro	60



Appendix C: DPP 2020 Cycle - Central

- 85 Active Study Projects
- 13,180 MWs
- DPP Phase 1
- Fuel Mix:

Fuel Type	Total MW's (ERIS)
Wind	1494
Solar	9678
Battery	495
Hybrid	1181
Gas	340



Appendix D: DPP 2021 Cycle - Central

- 120 Active Study Projects
- 17,900 MWs
- DPP Phase 1
- Fuel Mix:

Fuel Type	Total MW's (Summer)
Wind	2,308
Solar	8,987
Battery	3,348
Hybrid	3,246

