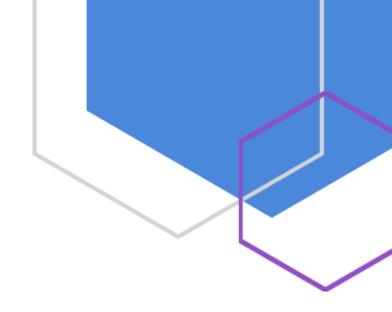
2021 Interconnection Process Enhancements – Gridwell Consulting Proposed Issues

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PHASE 1

NEAR-TERM ENHANCEMENTS FOR MAY 2022 BOARD MEETING



- Issue: The interconnection queue far outstrips any estimate of future need, the queue is bloated
- Interconnection and procurement is at a major inflection point; we cannot squander scarce time and human resources studying unviable interconnection requests
- Developers do not have sufficient data to evaluate potential project interconnection sites, and resort to hedging their risk with superfluous interconnection requests that are destined to fail



- CAISO interconnection data transparency and reporting has not kept pace with the amount change since the GIDAP implementation in 2012.
 - This is the fourth iteration of IPE
 - The GIDAP BPM has been revised 27 times and the Generator Management BPM has been revised 30 times
- Without suitable data stakeholders cannot independently evaluate interconnection queue trends or develop data driven opinions on major reforms to be proposed in Phase 2 of this effort



- Availability vs accessibility
 - Accessibility the quality of being easy to obtain, use, examine, or appreciate
- Increasing CAISO data <u>accessibility</u> will drive better policy outcomes and increase the likelihood that stakeholders come to consensus on a proposal
 - Everyone is aligned around the same data set
 - Proposals and insights and be independently validated
 - Everyone experiences improved efficiency and has more time for the fun policy development work



- Standard methods for increasing accessibility
 - Provide data in an accessible format (usually excel)
 - Include a summary dashboard with key metrics
 - Include primary keys to facilitate analysis (queue position and Resource_ID)
 - Provide a data dictionary to define what values mean and increase data literacy

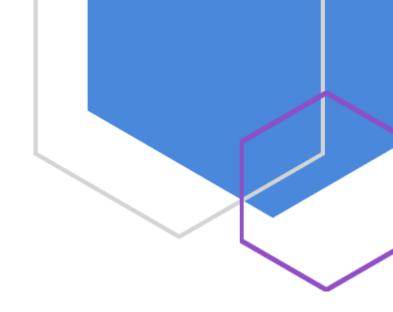


- CAISO Interconnection Queue improvement opportunities:
 - Resource ID
 - Transmission Planning Study Area and Sub Area
 - Partial Capacity Deliverability Status percent or MW amount
 - Phase level nameplate MW, interconnection capacity MW, Fuel Type, Technology, In-Service Date, COD
 - Restructure the fuel type by column (wind, solar, BESS) rather than Fuel-1, Fuel-2, Fuel-3
- Information is publicly available in other CAISO sources (TPP documents, NQC spreadsheet, etc)



- Transmission Planning data improvement opportunities:
 - Share study report data available across multiple reports in an excel document (posted on NDA site)
 - Create a transmission project tracking report with information from TPP appendices and RIMS Transmission module
 - Ideally transmission data would include, element upgrade name, description, region, expected in service date, From_Sub, To_Sub, model identifier, voltage, project status, line miles, and facility rating mva.





PHASE 2

LONG-TERM ENHANCEMENTS FOR NOVEMBER 2022 BOARD MEETING



- Review of the modern queue (clusters TC through 12) shows that only 1 in 10 interconnection requests and 4% of proposed MW reach COD
- Superclusters extend the study process to 3.5 years and compounding existing alignment challenges with procurement timelines

	Queue Position		MW at POI	
Application Status	Count	% of Total	Sum	% of Total
Active	196	16%	44,014 MW	20%
Completed	100	8%	9,328 MW	4%
Withdrawn	922	76%	170,333 MW	76%
Grand Total	1218		223,675 MW	



- Drivers for superclusters:
 - Expected procurement levels
 - Low threshold for entry; interconnection requests are not structured to control for proportionality – it costs the same amount to request 30 MW as it does 1000 MW
 - \$250,000 site exclusivity deposit (in lieu of land rights) is never at risk;
 - Projects have limited financial motivation to drop out before the completion of Phase I
 - Information on regional curtailments, known transmission constraints, and known deliverability availability without a study is difficult to find
 - Only 2% of IRs with executed GIAs end up withdrawing, financial drivers appear to be most effective

