MI POWER GRID

Making the Most of Michigan's Energy Future

MI Power Grid Phase II

Competitive Procurement Kick-off Workgroup Meeting

Jesse Harlow

MPSC

Michigan Public Service Commission

Agenda Items

- Overview of MI Power Grid Initiatives
- Overview of U-20852 Competitive Procurement Order
- Specific Tasks and Expectations
- FERC PURPA Order 872
- Recent Trends in Competitive Procurement
- Focused Discussion on Pre – Integrated Resource Plan (IRP) Request for Proposal (RFP) vs Post – IRP RFP
  - Request for Comments
- Adjourn at Noon

Workgroup Instructions

1. This meeting is being recorded
2. Please be sure to mute your lines
3. There will be opportunities for question/comments after each of the sections identified in the agenda
   - Please type questions into the chat function or use the raise hand function during this time
   - We will open it up to those on the phone after those using the chat function
   - We will be requesting comments after all of the meetings which will be posted to the webpage
4. The presentations for all the meetings are posted to the Competitive Procurement webpage.

Overview of MI Power Grid Initiatives

- Focused, multi-year stakeholder initiative to maximize the benefits of the transition to clean, distributed energy resources for Michigan residents and businesses

- Engages utility customers and other stakeholders to help integrate new clean energy technologies and optimize grid investments for reliable, affordable electricity service

- Includes outreach, education, and regulatory reforms

Key Drivers

- **Declining prices of distributed energy resources**
- **Changing resource mix**
- **Customer preferences for clean energy**
- **Electrification of transportation and buildings**
- **Environmental and sustainability goals**

Core Areas of Emphasis

- **Customer Engagement**
- **Integrating Emerging Technologies**
- **Optimizing Grid Performance and Investments**

Customer Engagement

- Customer Education and Participation
- Innovative Rate Offerings
  - Time-Based Pricing
  - Distributed Generation Pricing
  - Voluntary Green Pricing
- Demand Response
- Energy Programs and Technology Pilots

Integrating Emerging Technologies

- Interconnection Standards and Worker Safety
- Data Access and Privacy
  - Distribution System Data Access
  - Customer Data Access and Privacy
- Competitive Procurement
- New Technologies and Business Models

Optimizing Grid Performance and Investments

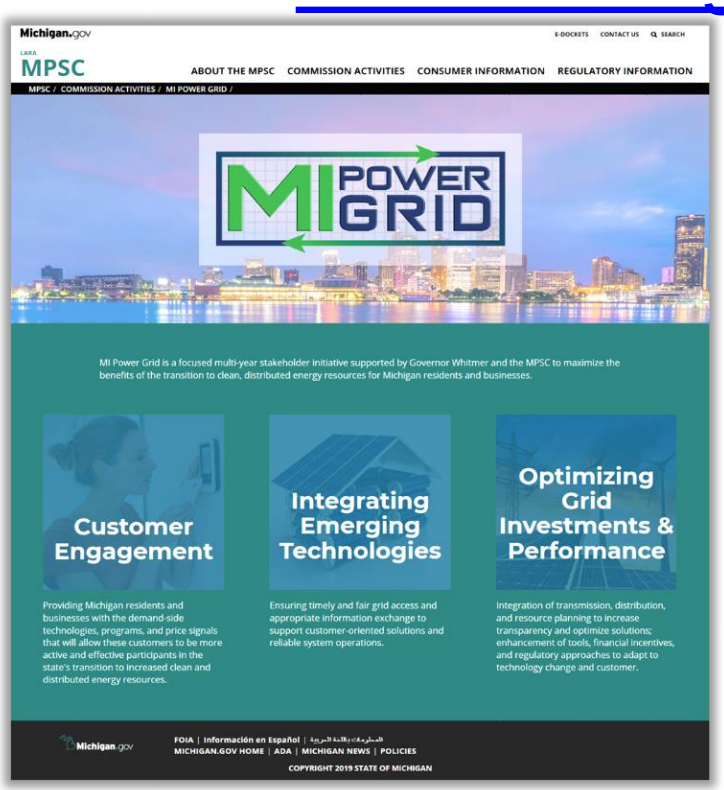
- Financial Incentives/Disincentives
- Grid Security and Reliability Metrics
  - Service Quality & Reliability Metrics
  - Grid Security
- Advanced Planning Processes
  - IRP
  - Distribution Planning
  - Integration of Resource/Transmission/Distribution Planning

Phase I Activity Overview

- Interconnection Rules
- Distribution Planning
- Energy Programs and Technology Pilots
- Demand Response
- Grid Security and Reliability

How to Get Involved In Other MPG Initiatives

www.Michigan.gov/mipowergrid



- Email: mipowergrid@Michigan.gov
- Contact team leads
- Follow @MichiganPSC on Twitter
- Sign up for listservs

Questions

Overview of U-20852 Competitive Procurement Order

Competitive Procurement Workgroup Purpose

- On August 20, 2020, the Commission opened the U-20852 docket with an order commencing the start of the Competitive Procurement Workgroup
    - This Workgroup will develop recommended competitive bidding rules or guidance that also aligns with the comprehensive planning process being developed through the MI Power Grid collaborative in U-20633.
    - The Commission's objective for the Workgroup is to ensure a strong, technology-neutral market response and value for ratepayers through transparency, non-discriminatory access, certainty, and fairness in bidding processes.
    - Additionally, the Commission referenced several cases in which it has discussed Competitive Procurement.

Competitive Procurement Workgroup Purpose

- "Following the initial meeting of the workgroup, the **Staff shall issue, no later than October 1, 2020, a strawman proposal** seeking written comments from the workgroup participants on the principles or topics to be addressed that are in contention or are missing from those mentioned above. The Staff shall then use the comments submitted to identify information needs and plan subsequent workgroup sessions, which will be communicated to the workgroup participants."
  - We will refine the strawman proposal throughout this Workgroup
  - The finished document will be reviewed and considered by the Commission

Similar Concepts in FERC Order 872

- Open, non-discriminatory treatment of resources regardless of ownership structure, resource type or size, and location.
- All potential bidders provided with information on the minimum RFP requirements and specification of evaluation criteria.
- Oversight and independence of RFP process, including defined the use and role of a third-party administrator/evaluator.
- Inclusion of the Staff and stakeholders in the process and continuous improvement in bidding processes as the energy industry evolves.

Questions

Specific Tasks and Expectations

Competitive Procurement Workgroup Tasks

1. Use, suitability, and expectations for all-source bidding and ways to address potential procurement barriers to emerging technologies. **(All Source Bidding)**

2. Alignment and timing of processes and regulatory review/approvals for procurement and resource and distribution planning. **(Timing and Review)**
   - timing and processes to determine resource need
   - use of mandatory RFPs under the IRP statute, MCL 460.6t(6) contract approvals as well as the timing and mechanics for any Staff, stakeholder, and Commission review of RFP documents and results.
   - coordinate with the collaborative initiated in Case No. U-20633, due to the important linkages between planning and procurement.

3. Minimum information that must be included in the RFP **(Required Information)**
   - template contracts and price and non-price factors and other evaluation criteria for PPAs, build transfer, and other ownership structures.

4. Independence issues (i.e., different models for the use and role of third-party administrator/evaluator; separation of utility roles). **(Independent Evaluator)**

All Source Bidding

This discussion should be taking place at all of the meetings

- This ties into the Timing and Review task

Timing and Review

Alignment and timing of processes and regulatory review/approvals for procurement and resource and distribution planning.

- Address timing issues related to MCL 460.6t(6) today
- Comments on MCL 460.6t will be requested by Wednesday, September 23, 2020
- Coordinate discussions with the U-20633 Workgroup
- The discussion of Staff, Stakeholder and Commission review of RFP documents and process will take place at a late October meeting

Required Information

Late October meeting with developers and utilities presenting

- Also discuss the mechanics for Staff, stakeholder, and Commission review of RFP documents and results

Independent Evaluator

November Meeting with Commission Staff throughout the Country presenting on their experiences

Questions

FERC PURPA Order 872
Merideth Hadala

MI POWER GRID

Making the Most of Michigan's Energy Future

FERC PURPA Reform Order No. 872: Competitive Solicitation

MPSC

Michigan Public Service Commission

Recent FERC PURPA Activity

- June 29, 2016
  - Technical Conference on Implementation Issues
- September 19, 2019
  - Issued a NOPR proposing to modify PURPA rules
  - Rules promulgated in 1980 with minimal changes since
- July 16, 2020
  - Issued Order No. 872 (nearly 500 pages!)
  - Order covers many aspects of PURPA, but today's slides will focus on competitive solicitation.

FERC Order No. 872
Competitive Solicitation

- Competitive solicitations meeting minimum criteria may now determine a utility's avoided costs
- Relevant discussion begins in Part B, section 8 of the Discussion section of the order
  - Summarizes the NOPR, comments received, requests, and the Commission determination

Qualifying Competitive Solicitations Minimum Criteria

a) Open and transparent process
b) Solicitations open to all sources
c) Solicitations conducted at regular intervals
d) Oversight by an independent administrator
e) Certification as fulfilling above criteria by state regulatory authority

Competitive Solicitations

- If all capacity acquired through competitive solicitation and no capacity added from self-build or purchasing power outside of the solicitation
  - Competitive solicitations could be the exclusive vehicle for the purchasing electric utility to pay avoided capacity costs to a QF

Competitive Solicitation

- If a state requires the inclusion of self-build and power purchase options in competitive solicitations
  - QF not obtaining award from the solicitation has no right to an avoided cost capacity rate more than zero
    - Utility's capacity needs met by solicitation
    - QFs retain the right to put energy to the utility at the as-available avoided energy cost rate

Competitive Solicitation

- If a state does not require the inclusion of self-build and power purchase options in competitive solicitations
  - QF not obtaining award from the solicitation may have a right to an avoided cost capacity rate more than zero if utility still has a capacity need after the competitive solicitation
    - If capacity need could be met through self build or purchase options

Allegheny Principles

- Four principles under which FERC evaluates a competitive solicitation
  1. Transparency
  2. Definition
  3. Evaluation
  4. Oversight

Allegheny Principles
Transparency

- Open and fair
- No informational advantage
- All information released at the same time
- Widely publicized
- Equal access to data
- All communication between bidders and issuer of RFP should be available to all parties

Allegheny Principles Definition

- Product(s) sought through RFP should be defined in a manner that is clear and non-discriminatory
- RFP should state all relevant aspects of product(s) sought
  - At minimum capacity and term, but other characteristics include fuel type, plant technology, and transmission requirements

Allegheny Principles Evaluation

- RFP should clearly specify price and non-price criteria for evaluation of bids
  - Price criteria should specify relative importance of each item, as well as any discount rates used in the evaluation
  - Non-price criteria should also specify relative importance of items such as
    - Firm transmission reservation requirements, credit evaluation criteria, the plant technology, plant performance requirements, and anticipated in-service date

Allegheny Principles
Oversight

- Use of an independent third party in the design, administration, and evaluation stages of the competitive solicitation
  - No financial interest in any potential bidders or the outcome of the process
  - State Commission approval of third party can ensure independence
  - Can ensure the RFP process is transparent and fair

Allegheny Principles Oversight (continued)

- Third Party
  - Can evaluate bids based on both price and non-price factors
  - Can consider both asset generation bids and power purchase agreements
  - Can independently verify transmission characteristics that may limit the suitability of certain alternatives

FERC Order
Post-solicitation Report

- Electric utility will provide to the State Commission, and make available for public inspection
  1. Identify winning bidders
  2. Include a copy of any reports issued by the independent evaluator
  3. Demonstrate that the competitive solicitation was implemented without undue preference for the interests of the purchasing utility or affiliates

Important Points to Note

- At this time, the Commission has declined to define the following:
  - Regular intervals
  - Independent administrator
- States are in the best position to consider their particular local circumstances
- Not requiring a link between competitive solicitations and IRPs, although it is permitted at state's discretion

Challenge

- If a competitive solicitation has not been conducted in accordance with these guidelines, the aggrieved entity may challenge the competitive solicitation by:
  1. Initiating or participating in proceedings
  2. Filing for judicial review of any state regulatory proceeding in state court
  3. Filing a petition for enforcement against the state at the Commission

Questions

Recent Trends in Competitive Procurement

Fritz Kahrl

All-Source Competitive Solicitations: State and Electric Utility Practices

Presented by Fritz Kahrl, 3rdRail Inc.
Lisa Schwartz, Berkeley Lab, project manager/technical editor
Michigan Public Service Commission workshop – September 14, 2020

Agenda

- About the Future Electric Utility Regulation series
- Presentation
- Q&A

Draft report available on request: lcschwartz@lbl.gov

Final report will be posted at https://emp.lbl.gov/projects/feur/

Future Electric Utility Regulation Series

- A series of reports from Berkeley Lab taps leading thinkers to grapple with complex regulatory issues for the electricity sector
- Unique multi-perspective approach highlights different views on the future of electric utility regulation and business models and achieving a reliable, affordable, and flexible power system to inform ongoing discussion and debate
- Funded by U.S. Department of Energy's Grid Modernization Laboratory Consortium
  - Office of Electricity
  - Office of Energy Efficiency and Renewable Energy - Solar Energy Technologies Office
- Expert advisory group provides guidance and review (next slide)

Advisory Group

- **Chair Jeffrey Ackermann**, Colorado Public Utilities Commission
- **Janice Beecher**, Institute of Public Utilities, Michigan State University
- **Ashley Brown**, Harvard Electricity Policy Group
- **Paula Carmody**, Maryland Office of People's Counsel
- **Ralph Cavanagh**, Natural Resources Defense Council
- **Steve Corneli**, consultant
- **Tim Duff**, Duke Energy
- **Jordy Fuentes,** Arizona Residential Utility Consumer Office
- **Scott Hempling**, attorney
- **Steve Kihm,** Slipstream
- **Lori Lybolt**, Consolidated Edison
- **Jeff Lyng**, Xcel Energy
- **Sergej Mahnovski**, Edison International
- **Kris Mayes,** Arizona State University College of Law/Utility of the Future Center
- **Jay Morrison,** National Rural Electric Cooperative Association
- **Kristin Munsch,** National Grid
- **Delia Patterson,** American Public Power Association
- **Commissioner Jennifer Potter,** Hawaii PUC
- **Karl Rábago,** Pace Energy & Climate Center, Pace University School of Law
- **Rich Sedano,** Regulatory Assistance Project
- **Chair Sally Talberg,** Michigan Public Service Commission
- **Chair Ted Thomas,** Arkansas Public Service Commission
- **Jordan White,** Western Electricity Coordinating Council

Other Reports in the Series

Distributed Energy Resources (DERs), Industry Structure and Regulatory Responses

Distribution Systems in a High DER Future: Planning, Market Design, Operation and Oversight

Performance-Based Regulation in a High DER Future

Distribution System Pricing With DERs

Recovery of Utility Fixed Costs: Utility, Consumer, Environmental and Economist Perspectives

The Future of Electricity Resource Planning

The Future of Centrally-Organized Wholesale Electricity Markets

Regulatory Incentives and Disincentives for Utility Investments in Grid Modernization

Value-Added Electricity Services: New Roles for Utilities and Third-Party Providers

The Future of Transportation Electrification

Utility Investments in Resilience of Electricity Systems

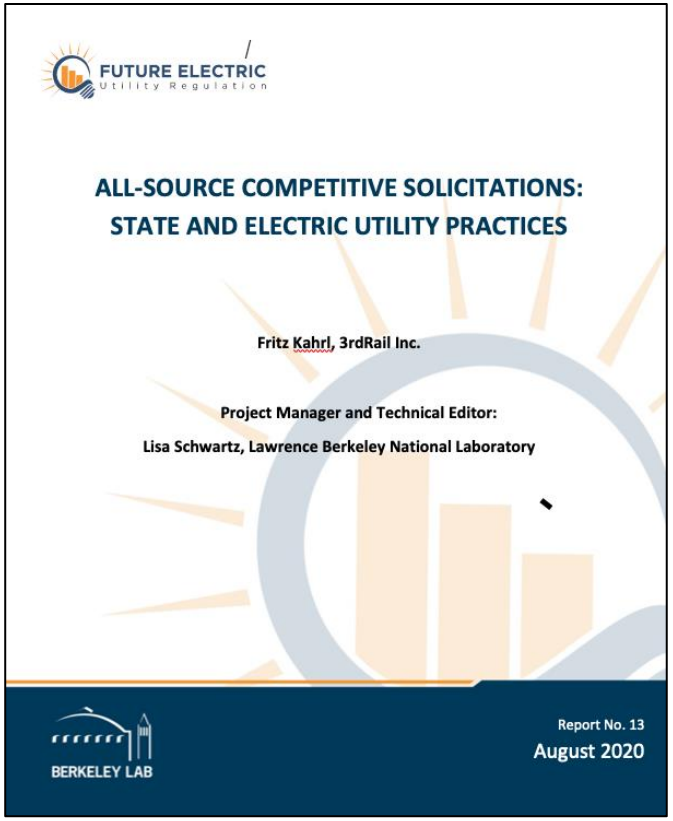
Renewable Energy Options for Large Utility Customers

Reports, webinar slides and recordings at feur.lbl.gov

Additional reports forthcoming

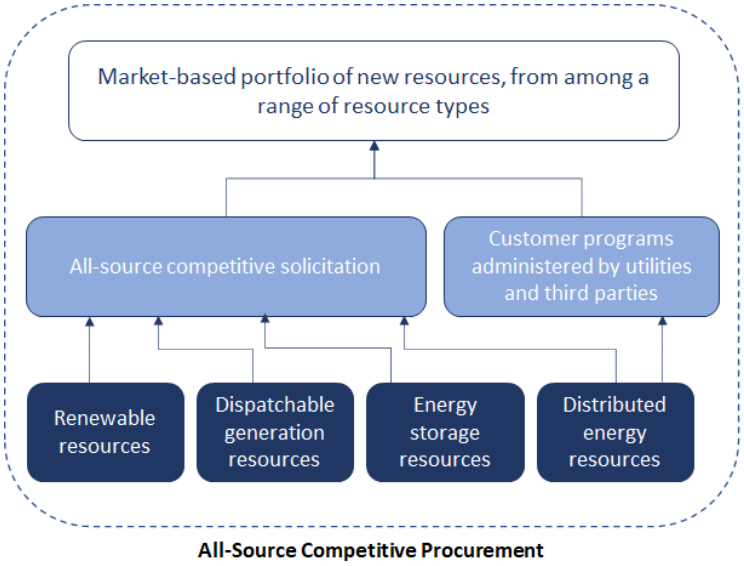
Report Overview

- Describes principles, practices, and emerging issues in all-source competitive solicitations by vertically integrated utilities
  - Includes utilities that participate in markets run by regional transmission organization/independent system operator and those that do not
    - Does not cover publicly owned utilities or rural coops
- Focuses on procurement to meet bulk power system needs
- Also describes competitive solicitation practices for non-wires alternatives for distribution system needs
  - Not covered in this presentation

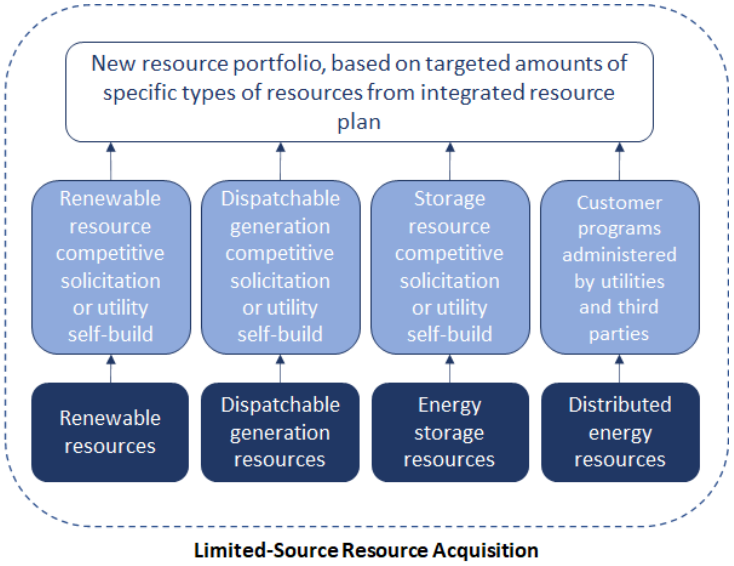


All-Source Competitive Solicitations

- **All-source**: All potential resources can participate in the solicitation
- **Competitive**: All sellers meeting minimum eligibility criteria, including utilities and their affiliates, can participate in the solicitation
- *Report does not seek to adjudicate what is and is not "all-source" or "competitive"*



All-Source Competitive Procurement



Limited-Source Resource Acquisition

Key Takeaways (1)

- **State PUCs play a critical role in building confidence in the fairness and integrity of the solicitation process.** Achieving a competitive process with innovative offers requires thoughtful design and implementation.
- **Utility resource plans provide a foundation for all-source solicitations.** It's important to consider how resource plans and all-source procurement will interact.
- **All-source competitive procurement can complement state energy policies.** Moving to technology-neutral procurement is not intended to supersede state energy goals.
- **Net value is a more important metric than cost in evaluating bids.** Utility resource evaluations must compare technologies with very different operating characteristics.
- **Ongoing efforts are needed to improve bid evaluation methods.** Methodological challenges include capacity credit, value of real-time flexibility, congestion management, transmission and distribution (T&D) deferral, and natural gas price risk.

Key Takeaways (2)

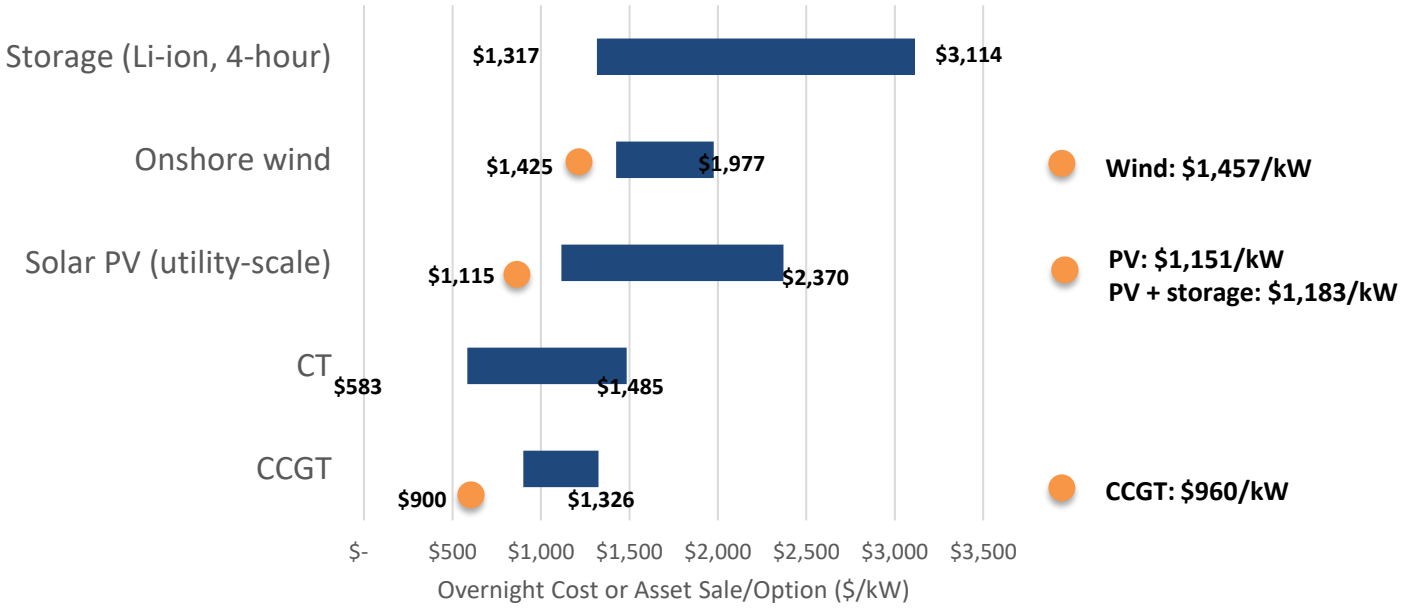
- **New opportunities are emerging for participation of distributed energy resources (DERs) in all-source solicitations.** Still, utility DER programs will remain an important procurement mechanism.
- **Unique evaluation challenges for energy storage warrant systematic analysis by utilities.** States can require utilities to ensure they are capturing the full benefits of storage.
- **Ensuring comparable evaluation between utility-owned and non-utility-owned resources presents ongoing challenges for public utility commissions.** Three key challenges to creating a level playing field are debt equivalence, development and performance risks, and contract length.
- **For investor-owned utilities, independent evaluators (IEs) play essential roles in all-source solicitations.** IEs help ensure that solicitation and selection processes are objective and impartial.

Historical Perspective and Current Trends

- All-source competitive procurement first emerged in the 1980s, as a response to the federal Public Utility Regulatory Policies Act (PURPA).
- Some states have required utilities to use all-source competitive solicitations for decades.
- Recent increased interest in all-source competitive solicitations is driven by rapid technological change:
  - Technology cost uncertainty
  - Steep declines in solar, wind, and battery costs
  - Portfolio effects of wind, solar, and energy storage
  - Renewed interest in demand-side resources

Trends: Addressing Uncertainty in Technology Costs

Range of cost estimates based on a screening study for Northern Indiana Power Service Company's (NIPSCO's) 2016 IRP (blue bars) and average bid prices for asset sale/ option in NIPSCO's 2018 all-source competitive solicitation (orange dots)



Trends: Adapting to an Evolving Market

Responses to requests for proposals (RFPs) for Public Service Company of Colorado's (PSCo's) all-source solicitations in 2013 and 2017. The 2017 results illustrate the emergence of solar PV, storage, and innovative hybrid resources—pairings with storage.

2013 all-source competitive solicitation

Technology	Number of Bids	Nameplate Capacity (Rounded to the Nearest 50 MW)
Gas-Fired	14	2,750
Wind	26	7,000
Solar (PV and Thermal)	14	750
Dispatchable Storage	1	50

2017 all-source competitive solicitation

Generation Technology	# of Bids	Bid MW	# of Projects	Project MW	Median Bid Price or Equivalent	Pricing Units
Combustion Turbine/IC Engines	30	7,141	13	2,466	$ 4.80	$/kW-mo
Combustion Turbine with Battery Storage	7	804	3	476	6.20	$/kW-mo
Gas-Fired Combined Cycles	2	451	2	451	[redacted]	$/kW-mo
Stand-alone Battery Storage	28	2,143	21	1,614	11.30	$/kW-mo
Compressed Air Energy Storage	1	317	1	317	[redacted]	$/kW-mo
Wind	96	42,278	42	17,380	$ 18.10	$/MWh
Wind and Solar	5	2,612	4	2,162	19.90	$/MWh
Wind with Battery Storage	11	5,700	8	5,097	21.00	$/MWh
Solar (PV)	152	29,710	75	13,435	29.50	$/MWh
Wind and Solar and Battery Storage	7	4,048	7	4,048	30.60	$/MWh
Solar (PV) with Battery Storage	87	16,725	59	10,813	36.00	$/MWh
IC Engine with Solar	1	5	1	5	[redacted]	$/MWh
Waste Heat	2	21	1	11	[redacted]	$/MWh
Biomass	1	9	1	9	[redacted]	$/MWh
Total	430	111,963	238	58,283		

Sources: PSCO's 2013 All Source Solicitation 20-Day Report; 2017 All Source Solicitation 30-Day Report

Storage: An Emerging Resource

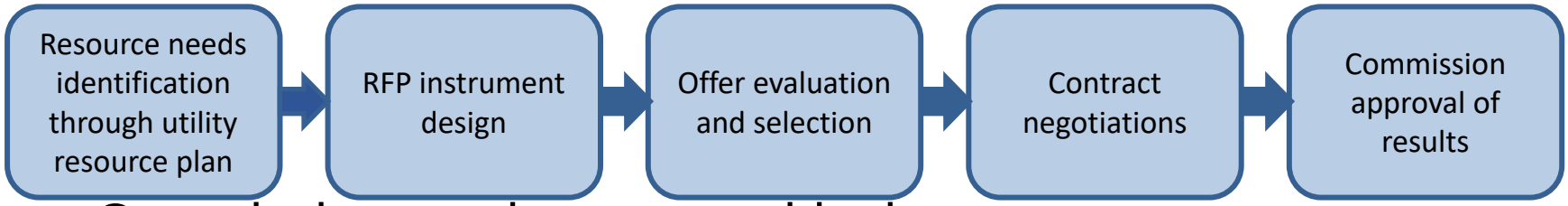
- Storage is not new to utility planning and procurement.
  - Pumped storage and, to a lesser extent, flywheels and compressed air energy storage
- Recent interest is driven by declining battery costs and expanding functionality.
- Storage, especially batteries, has unique characteristics.
  - Short lead time, modularity, siting flexibility, operational flexibility, T&D substitute, energy limits
- Storage functionality and value are not always well captured in utility resource evaluations.
- Hybrid resources are creating new evaluation challenges.

Example Storage Values

Energy arbitrage	- Traditional energy price arbitrage - Day-ahead and real-time price arbitrage - Congestion management - Renewable energy integration
Ancillary services	- Frequency regulation - Operating reserves
Capacity	- System resource adequacy - Local/zonal resource adequacy - Distribution - Transmission
Reliability and resilience	- Backup generation

Overview of All-Source Competitive Procurement

- All-source competitive procurement process generally has five main steps.



- Commission requirements guide the process
  - Use of independent evaluators, stakeholder review, when utilities must use competitive procurement, timelines and deadlines for procurement process, requirements for RFP documents, and evaluation procedures and methods
- Design of all-source competitive solicitations involves multiple tradeoffs.
  - Including flexibility, transparency, timeline, and bidder requirements

Resource Needs Identification

- Resource need in all-source solicitations is technology-neutral.
  - Capacity, energy, reserves
  - Other needs are difficult to meaningfully define *ex ante.*
- Capacity is typically the binding constraint.
  - Interpretation of capacity varies
  - Load-resource balance, including retirements
- Additional information may be helpful to bidders
  - Location
  - Drivers of need
- Actual procurement may differ from identified needs
  - Some flexibility is helpful

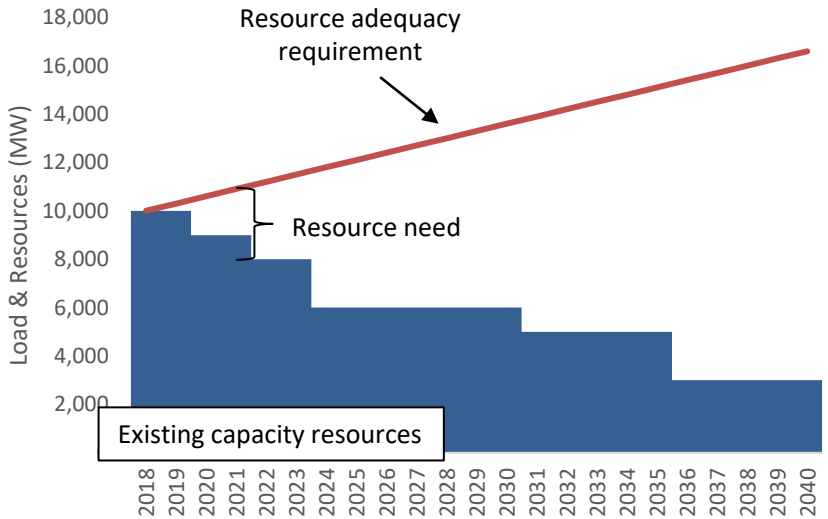


Illustration of load-resource balance

RFP Instrument Design

- RFP instrument refers to the process, documents, and communications used to solicit resource offers
- Key elements of RFP instrument design include:
  - Documents and information for bidders
  - Process and timeline
  - Eligibility requirements
  - Products solicited
  - Confidentiality
- Many elements require careful design and consideration.
  - Practices in other states can be a useful reference.
- Key considerations for all-source competitive solicitations include:
  - Products — defining resource categories
  - Eligibility — minimum size and types of DERs

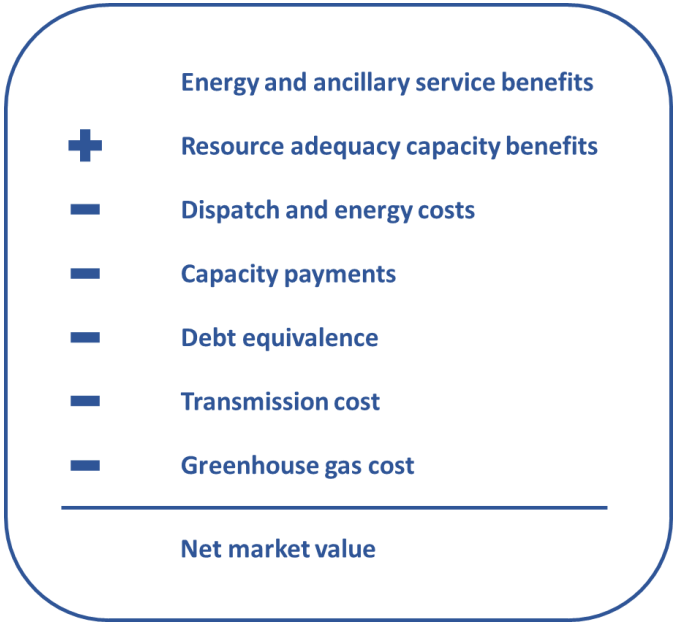
Offer Evaluation and Selection (1)

- Utilities consider price and non-price factors in evaluating bids.
  - Non-price factors may include development and contract risk, bidder financial viability, technology viability, policy compliance benefits, resource diversity, transmission system impact, resilience, environmental impact, and utility financial impact.
- Economic evaluation is a key challenge in all-source solicitations because of potential diversity of bids.
  - Different ownership structures and contract lengths
  - Resources with different operating characteristics
  - Different combinations of resources within the same bid (hybrids)
  - Bids for resources that are shaped or firmed with energy storage or energy market purchases
- Need for flexibility and judgment in evaluation is a key reason for using IEs.

AES Corporation

Offer Evaluation and Selection (2)

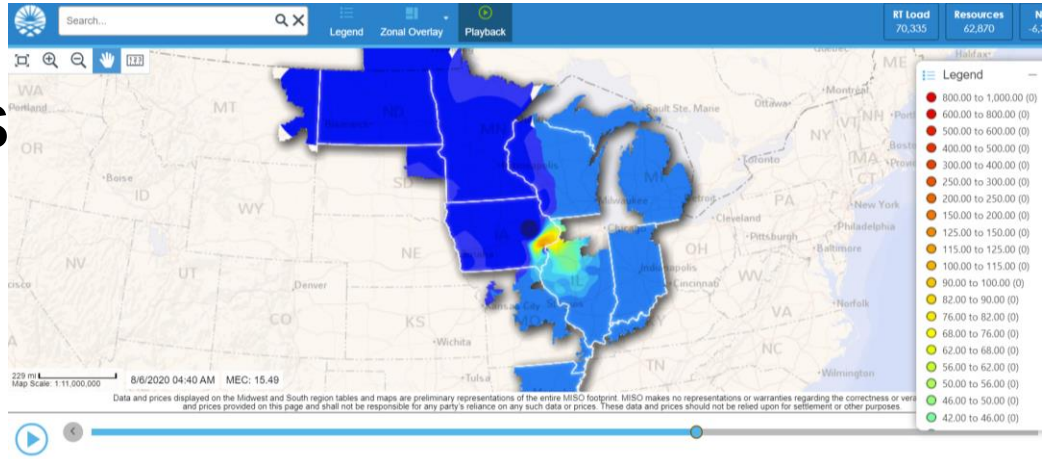
- Evaluating bids for resources with different operating characteristics requires a way to compare benefits and costs on an equivalent basis.
- Net value (benefits – costs) is a more meaningful metric than cost.
  - Utility models may already capture net value.
- Two general approaches to modeling net value
  - Portfolio expansion
  - Net value evaluation



Net market value framework used in Southern California Edison's 2013 all-source solicitation

Offer Evaluation and Selection (3)

- Models used in bid evaluations need ongoing enhancements to accurately capture the benefits and costs of emerging resources.
  - Capturing variable energy generation requires higher spatial/temporal granularity in models, new approaches to assessing and managing capacity value risk.
  - Level of transparency for analysis of utility fuel price risk varies.
    - Balance between physical and financial hedging
- Increasing emphasis on energy storage
- Focus on real-time capacity value



Real-time market prices in MISO on 8/6/20

Conclusions

- Interest in all-source competitive solicitations is growing across the U.S.
  - Can help to reduce cost uncertainty and discover competitive pricing across a range of resources
  - Enables integrated procurement of resources that have interactive effects (e.g., wind, solar, and storage)
  - Can facilitate coordination between bulk power system resources and DER procurement
- All-source competitive solicitations are complex.
  - Require thoughtful process design and implementation
  - Involve trade-offs between stakeholder participation, transparency, time, flexibility, and discretion
- Evaluation is the central challenge of all-source competitive solicitations.
  - Methods must be able to compare different resources on an equivalent basis.
  - Models need ongoing improvements.
- Independent evaluators play essential roles in all-source solicitations.
  - IEs help ensure that solicitation and selection processes are objective and impartial.

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Questions

RFP Timing
IRP Input vs IRP Output RFPs

MCL 460.6t(6)

Requires utilities to issue an RFP for any new supply-side capacity resources prior to filing an IRP

- For resources needed in initial 3-year planning period
- Used to inform IRP
- Must submit all proposals as attachments to the IRP
- Respondents to an RFP may request that certain proprietary information be exempt from public disclosure

Potential Options

Option 1: Structure pre-IRP RFP as a Request for Information (RFI)

- All-Source RFP
- Price and resource discovery to inform IRP
- Final RFP would take place post-IRP
    - Pros
        - Would be responsive to modeling and the contested process taking place in the IRP proceeding
    - Cons
        - MCL 460.6t(6) uses the wording “RFP”

Option 2: Propose RFP procedures in the IRP

- Utilize the approved RFP procedures in post IRP

Option 3: Conduct full RFP prior to IRP with resulting successful projects approved in the IRP.

- No post-IRP RFPs unless needed.
    - Pros
        - Adheres to exact language in MCL 460.6t(6)
        - Relies on market response for resource acquisition vs. use of planning models/projections to identify resource needs
    - Cons
        - Long lead-time for developers (> one year) which may introduce risk for bidders/increase costs
        - Need identified in IRP may not match RFP results

Questions to Answer

- Feedback on options identified, including pros and cons given statutory language and potential market and pricing implications.

- Other options we should consider?

Comments on Pre vs Post IRP RFP

- Deadline to respond – October 16, 2020
- Send Comments to Jesse Harlow harlowj@Michigan.gov

Questions and Discussion

Timeline

October 1, 2020

- Staff Straw Proposal Released

October 16, 2020

- Initial Straw Proposal Comments due
- Comments on Pre vs Post – IRP RFP Due
- Send Comments to Jesse Harlow harlowj@Michigan.gov

November 2020

- Next Workgroup Meeting
- Discuss Required Information task along with review of documents