

**Northwest Power Pool**  
**Request for Proposal for Market Operator**

# Northwest Power Pool Request For Proposal for Market Operator

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## Request for Proposal

### A Introduction

The Northwest Power Pool Market Assessment and Coordination Committee (“MC Initiative”) is seeking a Market Operator (“Market Operator” or “MO”) to provide a range of services associated with a sub-hourly, Security Constrained Economic Dispatch (“SCED”); also known as an Energy Imbalance Market (“EIM” or “Market”). Potential respondents to this Request for Proposal (“RFP”) are required to price the services identified in Section B (Specifications); including both the market operation itself as well as associated administrative, before-the-hour, real-time and after-the-fact functions (as identified below) to run a sub-hourly SCED/EIM on behalf of the participating Balancing Authorities (“BAs”).

Proposals received to provide these services will be evaluated based on the following: the completeness of the Proposal received, the respondent’s prior experience offering these services, the respondent’s demonstrated capability to meet the objectives of this RFP, the pricing for the services offered, and the respondent’s organizational and technical approach to offering the services requested under this RFP.

It is anticipated that this RFP review and selection process will be completed in early 2015. The MC Initiative’s Executive Committee will make a decision in early 2015 whether to enter into negotiations with a potential Market Operator.

#### A.1 About the MC Initiative

The MC Initiative was launched in 2012 to explore a range of alternatives that could help the BAs and scheduling utilities in the Northwest Power Pool (“NWPP”) area address growing operational and commercial challenges affecting the regional power system. The NWPP MC Initiative includes 16 BAs and three scheduling entities that represent loads of approximately 270,000 GWh and approximately 330,000 GWh of generation, on an annual basis (less PacifiCorp given their CAISO EIM participation).

The MC Initiative created the following Problem Statement to guide the process:

- NWPP BAs and scheduling entities need additional tools to respond to rapid changes in load resource balance (ramps) and the increasing demand for balancing capacity driven by the growth of variable energy resources;
- Utilities within the NWPP footprint are managing load and resource balance without systematically sharing the diversity between their systems; this may be resulting in increased costs and wear and tear on generating resources;
- The region’s increasingly constrained transmission system would benefit from new tools for congestion management and more efficient use of existing infrastructure;
- The costs and compliance risks associated with operating a BA are increasing; this has reinvigorated conversations on potential BA consolidation among interested parties;
- Evolving operation measures must clearly address cost causation and cost allocation;
- NWPP members wish to recognize and, if possible, leverage existing platforms (such as automated sharing of contingency reserves) and innovative and valuable work from more recent initiatives within the NWPP footprint that deal with reliability, renewables integration, and transmission congestion management, including efforts by Columbia Grid, Northern Tier Transmission Group (and their Joint Initiative), and the Wind Integration Forum. At the same time, these efforts would benefit from greater focus, coordination, and commitment to implementation among a critical mass of utilities;

- It is very important to the NWPP members to preserve the value of the existing contingency reserves sharing program (known as the Reserve Sharing Group or RSG).

It is anticipated that in early 2015 the NWPP MC Executive Committee will review the successful Proposal received in response to this RFP and decide whether to continue the development and deployment of a SCED through the NWPP MC Initiative in partnership with the potential Market Operator.

## **A.2 Objectives of this RFP**

This document constitutes a request for proposals from qualified third parties (“Respondents”) who can provide Market Operator services. This RFP is issued by the MC Initiative as an invitation to qualified interested parties to submit. The objective of this solicitation is to outline what the MC Initiative believes it needs from a qualified Market Operator and to provide sufficient information for a potential Market Operator to respond effectively with its Proposal to develop and operate a SCED within a region covering a yet-to-be-finalized market footprint comprised of a portion of the Western Interconnection, excluding the area of the California Independent System Operator and the Alberta Electric System Operator. The BAs, TSPs, TOPs, and the RC will retain all NERC and WECC functional roles; the MO will take on only those functional roles related to its role as MO.

## **A.3 Scope of this RFP**

This document covers the timelines and evaluation criteria that will be used in the RFP process. This RFP does not commit the MC Initiative to select any particular Respondent. This RFP does not create a contractual relationship between the MC Initiative and any Respondent. The scope and intention of this RFP does not require a Respondent to make any purchases for this RFP process. Terms are defined in the RFP document, the SCED RFP Market Summary Appendix E.5, or other industry sources. Respondents should be familiar with all the documentation to this RFP in order to make an informed Offer.

## **B Specifications**

This section describes the services and work upon which the MC Initiative is asking the Respondent to base its Proposal. The MC Initiative will use the specifications outlined in this section as guidance to evaluate the submitted Proposals.

Proposals should address the requirements and elements in this RFP. Furthermore, Respondents should describe in detail the deliverables and services they will provide.

### **B.1 Requirements**

The MC Initiative is seeking a Market Operator to develop and implement a SCED by October 1, 2017, that will fulfill the goals of increased efficiency in the utilization of energy resources and enhanced reliability for the region. The Market Operator will also be responsible for all tasks related to operating the SCED.

The MC Initiative requirements for the SCED are set forth in the attached Appendix E.5 – SCED RFP Market Summary. Respondents should clearly indicate how their offer will fulfill the requirements in the SCED Summary, as may be clarified by further discussion between potential Respondents and the MC Initiative. Respondents should use the Pricing Template to provide the cost to develop and operate the SCED according to the requirements set forth herein and in the SCED Summary.

The MC initiative assumes a conforming Proposal will incorporate several key systems operated and supported by Peak Reliability including but not limited to their Energy Management System, SCADA, State Estimator, Contingency Analysis, Short-Term Load Forecasts, and Mid-Term Load Forecasts.

In the event the MC Initiative receives a Notice of Intent from a Respondent who does not appear to be qualified to provide the services identified herein, they will be contacted directly to clarify their status.

## B.2 Evaluation Criteria

The responses will be evaluated according to, but not restricted to, the following criteria and weightings:

Criteria	Weight
Responsiveness/Completeness of Proposal	5%
Previous Relevant Experience	10%
Respondent's demonstration of its capabilities to meet the RFP objectives	35%
Respondent's Offer for cost of services	25%
Respondent's organizational and technical approach	25%

In the event a non-conforming Proposal is received the evaluation committee will assess the degree to which the non-conforming Proposal is consonant with the goals articulated in this RFP.

### B.2.1 Evaluation of proposed SCED Development Plan

Respondents are expected to provide a "Development Plan," which is a comprehensive plan for developing, testing, and validating the SCED. The evaluation committee will review and evaluate the quality and completeness of the proposed SCED Development Plan against the following criteria:

- a) Clear identification and cogent sequencing of SCED development tasks. Respondents must provide a detailed Gantt chart covering all tasks and major milestones from contract award to "go live" date. The plan will be evaluated against the following criteria:
  - i. The degree to which the Development Plan includes all major functional market design and implementation requirements with sufficient detail to validate that Respondent understands the operational requirements of SCED functionality and development interdependencies.
  - ii. The degree to which the Respondent has identified interdependencies between discrete SCED functional modules, and has considered those interdependencies in the development steps and associated scheduling of module development.
  - iii. The degree to which the Respondent has identified all third-party and Market Participant development responsibilities, and integrated those requirements and schedules into the overall SCED Development Plan.
  - iv. The degree to which the Respondent has acknowledged any requested optional SCED capabilities, and provided a clear framework for exercising and integrating those optional capabilities into the overall SCED Development Plan, if required.

- b) Clear demonstration that the Respondent has a comprehensive understanding of the proposed market design, and a clear plan for developing the required market infrastructure:
  - i. For discrete modeling systems, data collection systems, and communications systems, the Respondent has identified hardware and software development and/or acquisition requirements and implementation plans.
  - ii. The degree to which hardware requirements have been identified, the cost of those hardware requirements and whether the hardware will be purchased or leased, and whether it will be procured and/or owned by the Respondent or the MC Initiative.
  - iii. For all required software systems, the degree to which the Respondent has identified a procurement plan, and the extent to which each software system will employ off-the-shelf systems or will be developed by the Respondent or its subcontractors.
  - iv. The degree to which the Respondent has clearly identified the proposed ownership and licensing of systems hardware and software.

### **B.2.2 Proposed SCED**

The evaluation committee will review and evaluate the quality and completeness of the proposed SCED against the following criteria.

- a) Organizational design of proposed operating organization:
  - i. The degree to which the Respondent has articulated an organizational structure for the proposed operating organization that will ensure efficient and effective market operation.
  - ii. The degree to which the Respondent has identified staffing requirements and articulated an employee recruiting and retention strategy.
  - iii. The degree to which the Respondent has articulated a conceptual continuity of operations plan and risk mitigation strategies.
- b) Completeness:
  - i. The degree to which the Respondent has addressed all relevant operating responsibilities.
  - ii. The degree to which an operating plan has anticipated key requirements of the SCED market design and explicitly links the discrete components of the operating plan to key functionalities of the SCED.
- c) Physical location of staff and infrastructure.

### **B.2.3 Qualifications of Respondent and Primary Subcontractors**

The evaluation committee will assess the experience and capability of the Respondent to successfully develop and implement the SCED, and the financial strength of the Respondent to ensure a high probability of a fully functional SCED.

- a) Qualifications of Respondent:
  - i. The degree to which the Respondent has demonstrated experience and expertise in developing complex systems similar to the SCED.
  - ii. The experience of the Respondent with electric utility operations, energy markets, and an understanding of regulation of the US electric utility sector.

- iii. The qualifications of each key individual assigned by the Respondent to executive oversight and project management responsibilities for SCED development.
  - iv. The financial strength of the Respondent's organization.
- b) Qualifications of key subcontractors:
- i. For each key subcontractor, the degree to which the subcontractor has demonstrated experience and expertise in developing and deploying systems and infrastructure consistent with their identified role in the Respondent's SCED development plan.
  - ii. The qualifications of key subcontractor personnel.
  - iii. The financial strength of key subcontractors.

#### **B.2.4 Cost**

The Respondent's Offer should, at a minimum, address the staffing requirements and associated costs necessary for the activities listed below:

- Develop or acquire a market database to hold all of the forecast data and participant-submitted data
- Develop or acquire a Market settlements application
- Develop or acquire a Market portal
- Develop or acquire central historical data archives
- Develop or acquire training materials for staff and market participants
- Assist in acquiring market monitoring services

The Offer should also include the on-going annual operational cost of providing Market Operator services. Costs must be provided using the Pricing Proposal Template in Appendix E.4.

If the Respondent can provide requested line-item functions without incurring additional costs, then please explain how and list those items as no cost or credits as appropriate in the gross Offer price.

#### **B.2.5 Contingency Planning/Risk Management**

The evaluation committee will assess the degree to which the Respondent has anticipated potential development and cost risks in implementing its proposed SCED Development Plan and Operations Plan ("Operations Plan"), and the efficacy of its contingency planning:

- a) Identification of potential Development Plan cost and schedule risks:
- i. The degree to which the Respondent has identified key risks to the project schedule including development timing of individual SCED modules and the parallel development by individual market participants of the data collection and systems development and integration.
  - ii. The degree to which the Respondent has identified the risks to project budget associated with project development risks, and whether the Respondent has developed associated contingency plans.
  - iii. The assessment of the efficacy of proposed contingency and risk mitigation plans and associated risks to project cost and schedule.



- b) Identification of potential Operations Plan cost and schedule risks:
  - i. Degree to which the Respondent has identified key risks to project operations including formation and staffing of operating entity, interfaces with NERC/WECC operating entities, and integration with systems and operations of Market Participants.
  - ii. Degree to which the Respondent has identified the risks to the operating budget associated with operations risks, and whether the Respondent has developed associated contingency plans.
  - iii. Assessment of the efficacy of proposed contingency plans and associated risks to SCED operations.

**C Respondent Instructions**

**C.1 RFP Procurement Schedule**

Milestone	Target Completion Date
Pre-Offer Conference	10/9
RFP Issued	10/31
Confirm Notice of Intent to Participate	11/10
Respondent Questions Due	11/10
MC Initiative Response to Questions	11/17
Conference with Respondents (if necessary)	TBD
Proposal Submission Deadline	12/19
Proposal Evaluation (including interviews, as necessary)	January 2015
Offer Selection and Notification	Q1 2015

NOTE: The MC Initiative reserves the right to adjust this schedule as necessary.

**C.2 MC Initiative Designated Contact**

Upon release of this RFP, all Respondent communications shall be directed to the RFP official contact listed herein. Unauthorized contact regarding this RFP with any other MC Initiative representatives or any third party may result in disqualification. Any oral communications will be considered unofficial and non-binding by the MC Initiative. Respondents shall rely on written statements issued by the RFP official contact.

MC Initiative RFP Official Contact:  
 Email: [proposal@nwppmc.org](mailto:proposal@nwppmc.org)

**C.3 Notice of Intent to Participate**

Please acknowledge receipt of this RFP and confirm your intent to respond by the required date. Please direct your acknowledgement, using Appendix E.3 – Intent to Participate form, via email to [proposal@nwppmc.org](mailto:proposal@nwppmc.org). Should any addenda to this RFP be necessary, such addenda shall be sent to all Respondents who have submitted a Notice of Intent to Participate form by the deadline.

#### **C.4 Proposal Submittal**

Proposals for this RFP must be received electronically on or before 5:00 PM Pacific Time on December 19, 2014 to the following address: [proposal@nwppmc.org](mailto:proposal@nwppmc.org). Please also send a hard copy and an electronic copy (using a portable storage device such as CD or USB flash drive) of the entire Proposal via mail to:

Northwest Power Pool  
Attention: Jerry Rust, President  
7505 NE Ambassador Place  
Suite R  
Portland, OR 97220

Please be prepared to conduct follow-up discussions upon submission of your Proposal.

#### **C.5 Proposal Waiver**

MC Initiative reserves the right to reject any and all proposals, to waive any of these procedures for submitting proposals, to waive any formality or informality in proposals received, to accept or reject any or all of the items in the proposal, and to award the contract in whole or in part or not at all if it is deemed in the MC Initiative's best interest to do so. The MC Initiative reserves the right to negotiate after proposals are opened with any Respondent, if such action is deemed in the best interest of the MC Initiative. The MC Initiative reserves the right to negotiate any of the terms and conditions as proposed, including the ability to require the Respondent to indemnify and hold harmless others and name others as additional insured on their general liability policy if it is deemed in the best interest of the MC Initiative. Respondents are responsible for any and all costs in conjunction with Respondents' participation in this solicitation.

#### **C.6 Pre-Offer Questions**

Pre-Offer questions should be e-mailed to [proposal@nwppmc.org](mailto:proposal@nwppmc.org) by no later than noon Pacific Time, November 10<sup>th</sup>, 2014. The MC Initiative will attempt to respond to submitted questions within two business days of receipt. To help ensure a fair and open process, the MC Initiative will e-mail a complete list of all submitted pre-Offer questions and corresponding responses by no later than November 17<sup>th</sup> to all persons designated to receive pre-Offer correspondence.

If, at the sole discretion of the MC Initiative, a conference is deemed necessary, the MC Initiative will provide notice to Respondents and host a conference. Conference information will be sent via e-mail to all persons that have provided Notice of Intent to Participate.

#### **C.7 Evaluation and Communications**

An evaluation committee will evaluate the written proposals. During this time, the MC Initiative may initiate discussions with Respondents who submit responses or who are potentially submitting responses for the purpose of clarifying aspects of the proposals. However, proposals may be evaluated without such discussions. Respondents shall not initiate such discussions. The MC Initiative will post all questions and answers.

#### **C.8 Post-Proposal Negotiations and Contracts**

The MC Initiative reserves the right to engage in post-proposal negotiation with one or more Respondents. During these negotiations, the MC Initiative may ask for additional information from one or

more Respondents. Although the MC Initiative will be evaluating the Respondents' Offers, the MC Initiative does not commit to enter into a contract with any Respondent.

### **C.9 Proposals Binding**

All proposals submitted shall be binding upon the Respondent, if accepted by the MC Initiative, for 180 calendar days from the proposal submission deadline. No proposals may be withdrawn during this 180-day period. Negligence on the part of the Respondent in preparing the proposal confers no right of withdrawal after the time fixed for the submission of proposals.

### **C.10 Corporate Structure and Governance**

To ensure proper market operation, it is necessary for the Market Operator to independently operate the SCED market. The MC Initiative needs to be aware of any potential lack of independence of prospective market operators.

Accordingly, in its response, Respondent must describe its corporate structure—including parents, subsidiaries, and affiliates—and its corporate governance. Respondent must certify that it is not—nor is any parent, subsidiary, or affiliate—affiliated with any MC Initiative member entity or potential participant in the proposed SCED market. If any such relationship exists, Respondent must disclose this potential conflict of interest. Respondent must also certify that it is not—nor is any parent, subsidiary, or affiliate—a purchaser or seller of electric energy or capacity.

If Respondent operates an adjacent or overlapping SCED, Respondent must describe how it will maintain complete governance, operational and administrative separation between the markets, including separation of structure, employees, software, records, business practices, operational protocols, regulatory requirements, and filings.

### **C.11 Signatures and Certifications**

The proposal must contain the signature of a duly authorized officer or agent of the organization submitting the proposal.

### **C.12 No Assignment**

Proposals must state that there will be no assignment of proposals during the evaluation and negotiation stage of the RFP absent the approval of the MC Initiative.

### **C.13 Credit Requirements**

The successful Respondent must have capacity to furnish a contract bond (performance and payment) or a letter of credit, as approved by the MC Initiative, in an amount equal to up to 100% of the contract price plus sales or use tax. The form required and the firm(s) that supply the contract bond and the letter of credit shall be mutually agreed upon.

The bond or letter of credit is required at the time the contract is signed and returned to the MC Initiative. The MC Initiative does not intend to execute the contract until the proper and approved form of the bond or letter of credit has been accepted by the MC Initiative.

## **C.14 Legal Agreements**

### **C.14.1 Respondents' Agreements**

Respondent must identify any standards, applicable licenses, or maintenance and support agreements that will be required to facilitate a final agreement.

### **C.14.2 Signed Documents**

Respondent must include a signed copy of the Nondisclosure Agreement, attached in Appendix E.2.

### **C.14.3 Contract Terms and Conditions**

MC Initiative will review the responses as part of its decision, currently planned for early 2015, regarding whether to proceed with the formation of the NW SCED. If there is a decision to form a SCED, the MC Initiative or designee would pursue contract negotiations with the most suitable Respondent.

## **C.15 References**

Respondent shall provide references upon request.

## **C.16 Conflicts of Interest**

Respondent must disclose in its proposal any relationship with the MC Initiative or any member of the MC Initiative that might create a conflict of interest (actual or perceived) with respect to the RFP process. The existence of such a conflict will not be disqualifying but could require additional investigation before Respondent can be awarded a contract through this RFP. If Respondent is awarded a contract through this RFP but did not disclose an actual or perceived conflict with any member of the MC Initiative, the contract may be terminated for default of this provision of the RFP.

## **C.17 Restriction on Commercial Advertising**

Respondent shall not use the names, visual representations, service marks, or trademarks of the MC Initiative or any of its member entities, or reveal the terms and conditions, specifications, or statement of work, in any manner, including, but not limited to, in any advertising, publicity release, or sales presentation without the MC Initiative's prior written consent. Respondent shall not state or imply that the MC Initiative endorses a product, project, or commercial endeavor.

## **C.18 Intellectual Property**

Respondent must have all necessary licenses for any protected intellectual property it intends to use to meet the requirements of this RFP, including any used for demonstrations or trial periods. Respondent is responsible for securing any additional licenses that may be necessary for the MC Initiative or SCED market participants.

Respondent shall indemnify the MC Initiative and its member entities against all losses or liabilities resulting from Respondent's use of protected intellectual property related to this RFP.

### **C.19 MC Initiative's Right to Amend, Supplement, Cancel or Disqualify**

Nothing herein prohibits the MC Initiative, at its sole option, from amending, supplementing, or cancelling this RFP. Furthermore, the MC Initiative may, at its sole discretion, disqualify Respondents. The MC Initiative at its sole discretion, retains the option to terminate negotiations and then negotiate with the Respondent with the next-highest ranked proposal.

### **C.20 Confidentiality**

Respondents and the MC Initiative agree not to disclose publicly any information provided to assist with developing a response to this solicitation or any information received in response to this solicitation, with the following exceptions:

- Information that is incorporated into the final contract, unless specifically excepted.
- Information required by a court of law or other Federal agencies.
- Information that is publicly available from other sources.

The Nondisclosure Agreement, attached in Appendix E.2, contains the full responsibilities of all parties regarding disclosure of information. Respondents must sign and return a copy of the Nondisclosure Agreement as soon as practicable.

### **C.21 Cost of Preparing Proposals**

The MC Initiative will not be liable for any costs incurred by the Respondent in the preparation and presentation of proposals submitted in response to this RFP including, but not limited to, costs incurred in connection with the Respondent's participation in demonstrations and the pre-proposal conference.

### **C.22 Other**

Respondents are expected to provide complete information in their original RFP responses. Failure to provide all of the requested information will not disqualify a Respondent, but may result in lower prioritization during the evaluation process. If the Respondent elects not to provide the requested information, the MC Initiative requests that an explanation be included in its Offer.

## D Proposal Content

The MC Initiative will use this RFP as guidance in its evaluation of the submitted proposals. Proposals, at a minimum, should address the following requirements and describe in detail the deliverables and services that will be produced from the Respondent's activities:

1. State the extent of the Respondent's experience as may be applicable to this RFP. Specifically, Respondent should address its experience in the planning, deployment, and operation of a SCED including the drafting and maintenance of FERC-approved tariffs, management of a regional stakeholder engagement process, and market design committees as appropriate.
2. Describe in detail the methodology and the approach the Respondent will use in the planning, design, development, integration, implementation, testing (including supported market trials with Market Participants), training, and deployment of a SCED according to the guidelines provided in this RFP. This is the Development Plan for the SCED.
3. Provide a high-level project plan, assuming a go-live date of October 1, 2017, that includes descriptions of key deliverables from each of the phases above.
4. Indicate the logistical details of Respondent's proposed Market Operation – physical location, organizational chart detailing the number of employees and their functions, governance structure (including Market Participant support), hardware/software requirements, and disaster recovery processes. This is the Operational Plan for the SCED.
5. Specify key employees and describe their qualifications, experience and duties related to this RFP.
6. Provide completed Pricing Proposal using template in Appendix E.4.
7. Describe the Respondent's corporate structure—including parents, subsidiaries, and affiliates—and its corporate governance. Respondent must certify that it is not—nor is any parent, subsidiary, or affiliate—affiliated with any MC Initiative member entity or potential participant in the proposed SCED market. If any such relationship exists, Respondent must disclose this potential conflict of interest. Respondent must also certify that it is not—nor is any parent, subsidiary, or affiliate—a purchaser or seller of electric energy or capacity.
8. Respondent must affirm it is not subject to any existing legal restrictions (contractual, regulatory, etc.) that would preclude it from performing the duties of a Market Operator as described in this RFP.
9. If the Proposal includes multiple vendors, clearly identify one vendor as the “prime contractor” and all others as subcontractors.
10. If Respondent operates an adjacent or overlapping SCED, describe how it will maintain operational and administrative separation between the markets, including separation of structure, employees, software, records, regulatory requirements, and filings.
11. The Proposal must contain the signature of a duly authorized officer or agent of the organization submitting the proposal.
12. Identify any standards, applicable licenses, or maintenance and support agreements that will be required to facilitate a final agreement.

13. Disclose in its proposal any relationship existing between the Respondent and the MC Initiative or any member of the MC Initiative that might create a conflict of interest (actual or perceived) with respect to the RFP process.
14. Describe the process and costs associated with the entrance of new Market Participants and/or new participating BAs after initial SCED implementation.
15. Provide the expected internal costs to Market Participants for their implementation of and participation in the Market.
16. Maintaining an information security and/or data security plan or program consistent with industry standards such as National Institute of Standards and Technology (NIST), as required by the E-Government Act (Public Law 107-347) of 2002, Title III Federal Information Security Management Act (FISMA).
17. Describe Respondent's previous experience, data requirements, processes and costs associated with administering market footprint diversity calculations. Describe how that experience informs the exploration of a NWPP footprint diversity calculation for Balancing Reserves under a voluntary market where all parties retain their current NERC functional roles. Please define what type of data or support systems and any other requirements (scheduling requirements, etc.) the respondent believes would be needed.

## **E Appendices**

**Appendix: NWPP MC Funding Organizations**

**Appendix: Nondisclosure Agreement**

**Appendix: Intent to Participate Form**

**Appendix: Pricing Proposal Template**

**Appendix: SCED RFP Market Summary**



## **Appendix E.1 – Phase 3 Funding Organizations**

1. Avista Corporation
2. Balancing Authority of Northern California (BANC)
3. Bonneville Power Administration
4. B.C. Hydro/Powerex
5. Eugene Water & Electric Board
6. Idaho Power Company
7. NaturEner
8. NorthWestern Energy
9. Puget Sound Energy
10. Chelan County PUD
11. PacifiCorp
12. Portland General Electric Company
13. Clark County PUD
14. Grant County PUD
15. Snohomish County PUD
16. Seattle City Light
17. Tacoma Power
18. Turlock Irrigation District
19. WAPA, Upper Great Plains

## Appendix E.2 – Nondisclosure Agreement

### NONDISCLOSURE AGREEMENT

This Nondisclosure Agreement is between the Northwest Power Pool, an Oregon nonprofit corporation (the “NWPP Corporation”), and \_\_\_\_\_ (the “Respondent”). This Agreement is effective as of \_\_\_\_\_, 2014 (the “Effective Date”).

#### RECITALS

- A. Utilities and other organizations in the Northwest Power Pool area are signatories to the General Services Agreement Individual Work Order for Phase 3 MC Initiative (the “Phase 3 Work Order”).
- B. The signatories to the Phase 3 Work Order (excluding the NWPP Corporation, the “Phase 3 MC Participants”) are exploring the creation of an organized, sub-hourly energy market in the Northwest Power Pool area.
- C. The Phase 3 MC Participants have issued a Request for Proposal (“RFP”), soliciting offers from organizations to act as a market operator should the Phase 3 MC Participants go forward with creating a sub-hourly security-constrained economic dispatch market.
- D. The Respondent is responding to the RFP, and as a result, may need to exchange confidential or proprietary information with the Phase 3 MC Participants.
- E. It is administratively less burdensome and more efficient for the NWPP Corporation to enter this Agreement on behalf of the Phase 3 MC Participants than to create a multilateral agreement to which the Respondent and all of the Phase 3 MC Participants would be parties.
- F. The NWPP Corporation and the Phase 3 MC Participants have existing confidentiality obligations under the Phase 3 Work Order, which can be incorporated to protect the Respondent.

Therefore, the NWPP Corporation and the Respondent agree as follows:

#### AGREEMENT

- 1. Term.** This Agreement will be effective from the Effective Date and remain in effect for a term of three years.
- 2. Confidentiality.**

**2.1 Designation of Confidential Information.** The parties may identify information to be protected under this Agreement by labeling it “confidential” or by submitting, along with the disclosure, written notice of confidentiality that describes the disclosed materials to be protected. Each party will identify as confidential only the information or materials that it believes in good faith require protection from disclosure; provided, however, that the NWPP Corporation will identify as “confidential” any information or materials that are “Confidential Information” pursuant to the confidentiality provisions in Section 9 of the Phase 3 Work Order (a copy of which is included as Attachment A to this Agreement).

**2.2 Protection of Confidential Information.** Each party will use commercially reasonable efforts, including at least the same efforts the party uses to protect its own confidential information, to protect the other party’s information or materials identified as confidential; provided, however, that the NWPP Corporation may provide the Respondent’s confidential information to Phase 3MC Participants, who are expressly made third-party beneficiaries to this Agreement (a list of whom is include as Attachment B to this Agreement). The NWPP Corporation will provide the Respondent’s confidential information to Phase 3 MC Participants only pursuant to the confidentiality provisions in Section 9 of the Phase 3 Work Order.

**2.3 Use Restrictions.** The Respondent will use any confidential information received from the NWPP Corporation for the sole purpose of developing or refining its offer of services in response to the RFP. The NWPP Corporation will provide confidential information received from the Respondent to Phase 3MC Participants for the sole purpose of enabling Phase 3 MC Participants to evaluate the Respondent’s offer of services in response to the RFP.

**2.4 Exclusions.** The provisions of **Sections 2.2** and **2.3** do not apply to information that is in, or subsequently enters, the public domain without any act or omission of the party receiving that information under this Agreement, or to information that is rightfully obtained from non-parties without any obligation of confidentiality.

**2.5 Compelled Disclosure.** If a party is requested or required by subpoena, oral deposition, interrogatory, request for production of documents, administrative order, or other nonconsensual, legally binding requirement to disclose any information designated as confidential, that party will provide the party disclosing the confidential information with prompt written notice following receipt of any such request(s) (and, to the extent permitted by law, before making any disclosure) so that the disclosing party may, at its expense, seek a protective order or other appropriate remedy or waive compliance with the terms of this **Section 2**. The party subject to the legally binding disclosure requirement will reasonably cooperate, at the disclosing party’s expense, with any efforts to minimize or eliminate any such disclosure requirement consistent with applicable law, and to obtain proprietary or confidential treatment of any confidential information that is ultimately required to be disclosed. If the disclosing party

does not seek or does not obtain a protective order or other remedy, or waives compliance with the provisions of this **Section 2**, the party subject to compelled disclosure will (a) furnish only that portion of the confidential information that it is legally required to furnish, and (b) make commercially reasonable efforts to obtain assurances that confidential treatment will be accorded to the confidential information so furnished.

**2.6 Intellectual Property Rights.** Nothing contained in this Agreement implies or effects the grant to any party of any intellectual property right (whether or not copyrighted or patented), including any related uses, and all confidential information of a party will remain the sole property of that party.

### **3. General Provisions.**

**3.1 Notices.** Any notice or other communication required or permitted under this Agreement will be deemed properly given if submitted in writing and delivered (a) in person, (b) delivered to a commonly recognized overnight courier service properly addressed and with delivery charges prepaid, (c) delivered to the United States Postal Service properly addressed and with proper postage prepaid, or (d) transmitted by facsimile with confirmation of successful transmission, to the intended recipient. Any notice or other communication related to this Agreement must be directed to the parties as specified in Attachment C. Either party may change the person, address, fax, e-mail address, or telephone number to which notices or other communications are to be directed under this Agreement by providing written notice to the other party in accordance with the provisions of this **Section 3.1**.

**3.2 Governing Law.** This Agreement will be interpreted and enforced in accordance with the laws of the state of Oregon, (exclusive of choice-of-law principles), except to the extent that such laws may be preempted by the laws of the United States.

**3.3 Independent Obligations.** The obligations of the parties contained in this Agreement are independent obligations. Accordingly, the obligation of any party to keep and perform all of the obligations assumed or imposed on it is not conditioned upon the performance by the other party of all or any of the obligations to be kept and performed by it.

**3.4 No Joint Venture, Etc.** Nothing in this Agreement will create an association, partnership, joint venture, trust, or other similar relationship among the parties.

**3.5 Injunctive Relief.** Each party acknowledges that a breach of its obligations will result in irreparable harm to the business of the other party, whose remedy at law will be inadequate. Accordingly, each party will be entitled, to the extent permitted by law, to both preliminary and permanent injunctions to prevent or halt a breach or threatened breach of any obligation under this Agreement. Under no circumstances will either party be entitled to lost profits, or any indirect, incidental, consequential, special, exemplary, or punitive damages.

**3.6 No Incidental Third-Party Beneficiaries.** Except as described in **Section 2.1**, this Agreement does not create any rights in, or grant any remedies to, any third party as a beneficiary of this Agreement or of any duty, obligation, or undertaking established in this Agreement.

**3.7 Integration; Amendment and Waiver.** This Agreement constitutes the entire agreement between the parties concerning its subject matter, and there are no agreements, understandings, representations, or warranties among the parties with respect to the subject matter of this Agreement other than those set forth in this Agreement. No provision of this Agreement may be amended except by a written instrument signed by authorized representatives of the NWPP Corporation and the Respondent. The failure of either party to insist upon or enforce the other party's strict performance of any provision of this Agreement or to exercise any right conferred by this Agreement will not be construed as a waiver or relinquishment to any extent of the party's right to assert or rely upon that provision or right on any future occasion.

**3.8 Execution in Counterparts.** This Agreement may be executed in counterparts, which, when taken together, will constitute a fully executed, original agreement.

**Northwest Power Pool Corporation**

\_\_\_\_\_  
Respondent

By: \_\_\_\_\_

By: \_\_\_\_\_

Jerry D. Rust  
Name

\_\_\_\_\_  
Name

President  
Title

\_\_\_\_\_  
Title

Date of Signature: \_\_\_\_\_

Date of Signature: \_\_\_\_\_

## ATTACHMENT A

### PROVISIONS OF SECTION 9 OF PHASE 3 MC INITIAIVE WORK ORDER

#### 9. CONFIDENTIALITY:

9.1 Definitions Related to Confidentiality. For purposes of this Phase 3 Work Order, the following terms have the meanings specified below.

9.1.1 Confidential Information. Subject to the provisions of **Section 9.6.1**, “Confidential Information” means (a) Designated Confidential Information, (b) Historical Operating Data (except as otherwise provided in **Section 9.2**), (c) Production Cost Data, or (d) any combination of the foregoing.

9.1.1 Designated Confidential Information. “Designated Confidential Information” means information designated by a Disclosing Party as confidential in accordance with the provisions of **Section 9.3** of this Phase 3 Work Order.

9.1.2 Disclosing Party. “Disclosing Party” means a Party delivering or granting access to Confidential Information in its possession or control for purposes of carrying out the terms of this Phase 3 Work Order.

9.1.3 Historical Operating Data. “Historical Operating Data” means (a) historical hourly load data, (b) historical information related to scheduled and actual energy flows over transmission facilities, outages of transmission facilities, and calculations of transfer capability (total, operating, and available), (c) historical information related to generator operating characteristics, generation dispatch schedules, actual generation dispatch, and outages of generation facilities, and (d) any other data related to regional power system operations during past periods that is required to be kept confidential to comply with data confidentiality policies or agreements of the North American Electric Reliability Corporation, the Western Electricity Coordinating Council, or applicable regulatory authorities.

9.1.4 Production Cost Data. “Production Cost Data” means information used to determine costs associated with producing electricity from a generating resource, which may include, without limitation, such information as costs of capital and financing, insurance, taxes, staffing, compliance with applicable laws and regulations, operation, fuel, and maintenance.

9.1.5 Receiving Party. “Receiving Party” means a Party to which Confidential Information of a Disclosing Party is delivered or made available in

connection with this Phase 3 Work Order.

- 9.2 Treatment of Historic Operating Data and Production Cost Data. Unless otherwise required by applicable state, federal, or provincial public disclosure laws, any Historic Operating Data and any Production Cost Data made available to any Receiving Party or MC Consultant in connection with this Phase 3 Work Order will constitute “Confidential Information,” except for any Historic Operating Data that has, as of the date it is made available, been disclosed in an unrestricted regulatory filing or other publicly accessible document.
- 9.3 Ability to Designate Other Information as Confidential. If, during the term of this Phase 3 Work Order, any Party requests that another Party (the Disclosing Party) provide any data or information that (a) does not fall within the descriptions contained in **Section 9.2** or **Section 9.6.1** and (b) the Disclosing Party believes in good faith is confidential, the Disclosing Party may, at its option, identify such data or information as Designated Confidential Information if the Disclosing Party elects to disclose it. A Disclosing Party may identify as Designated Confidential Information any tangible or electronic information and other materials by labeling them with the words “Confidential Information” or other words of similar meaning, or by transmitting with disclosure of Designated Confidential Information a written or electronic notice including a description of any information and other materials that are to be treated as Designated Confidential Information under this Phase 3 Work Order. A Disclosing Party may designate information conveyed verbally by indicating at the time of disclosure that it is Designated Confidential Information, followed by written confirmation.
- 9.4 Exchange, Nondisclosure, and Protection of Confidential Information.
- 9.4.1 Purpose of and Policies Governing Confidential Information Exchange. All Parties acknowledge and agree that Confidential Information may be exchanged among the Parties to facilitate the activities and carry out the intended purposes of the Phase 3 MC Initiative. The Phase 3 Executive Committee may establish policies to govern the exchange of Confidential Information, which may include timing, manner of exchange, and any additional restrictions applicable to the Confidential Information (such as measures to comply with applicable regulatory requirements). Approved policies governing Confidential Information may be modified from time to time by action of the Phase 3 Executive Committee, but, except with respect to data-sharing procedures adopted in accordance with **Section 5.5** of this Phase 3 Work Order, may not conflict with or modify the provisions of this **Section 9** without the express written consent of each Party. Each Party agrees that Confidential Information for which it is the Disclosing Party may be shared with any Receiving Party, subject to the terms set forth in this **Section 9** and any applicable information exchange procedures approved by the Phase 3 Executive Committee, and with any

MC Consultant that (a) needs to know the Confidential Information to perform its obligations under its Consulting Contract, and (b) has agreed in writing to maintain and protect the confidentiality of Confidential Information consistent with the provisions of this **Section 9**.

9.4.2 Nondisclosure and Protection. Except as permitted by **Section 9.6**, no Receiving Party will disclose any Confidential Information to any party other than another Receiving Party (or an MC Consultant as provided in the **Section 9.4.1**) without the express written consent of the Disclosing Party. Each Receiving Party will at all times exercise reasonable care to protect the confidentiality of all Confidential Information it receives in connection with this Phase 3 Work Order, and will use at least the same degree of care the Receiving Party uses to protect its own confidential information

9.5 General Use Restrictions. A Receiving Party will not knowingly use any Confidential Information obtained from a Disclosing Party in connection with this Phase 3 Work Order for any purpose other than to facilitate the activities and carry out the intended purposes of the Phase 3 MC Initiative.

9.6 Exceptions.

9.6.1 Exclusions from Definition of “Confidential Information.” For purposes of this Phase 3 Work Order, “Confidential Information” does not include information that (a) is in, as of effective date of this Phase 3 Work Order, or subsequently enters, the public domain without any act or omission of a Receiving Party, (b) is already known to a Receiving Party (on a non-confidential basis) as documented by written records that predate the execution of this Phase 3 Work Order or has been developed by a Receiving Party without violating any of its obligations under this **Section 9**, (c) the Receiving Party rightfully obtains from parties other than a Disclosing Party without any obligation of confidentiality, or (d) is aggregated in such a manner as to prevent ascertaining information about any specific Disclosing Party or the Disclosing Party’s generation facilities, transmission facilities, load characteristics, or operations.

9.6.2 Compelled Disclosure.

9.6.2.1 Right to Disclose. Notwithstanding the provisions of **Section 9.4**, a Receiving Party may, subject to the requirements of **Section 9.6.2.2** below, disclose Confidential Information that the Receiving Party is required to disclose by subpoena, oral deposition, interrogatory, request for production of documents, administrative order, or other nonconsensual, legally binding requirement.



9.6.2.2 Notice and Cooperation in Cases of Compelled Disclosure. If a Receiving Party is requested or required, by subpoena, oral deposition, interrogatory, request for production of documents, administrative order, or other nonconsensual, legally binding requirement, to disclose any Confidential Information, the Receiving Party will provide the Disclosing Party with prompt written notice following receipt of any such request(s) (and, to the extent permitted by law, before making any disclosure) so that the Disclosing Party may, at its expense, seek a protective order or other appropriate remedy or waive compliance with the terms of this **Section 9**. The Receiving Party will reasonably cooperate, at the Disclosing Party's expense, with any efforts by the Disclosing Party to minimize or eliminate any such disclosure requirement consistent with applicable law, and to obtain proprietary or confidential treatment of any Confidential Information that is ultimately required to be disclosed. If the Disclosing Party does not seek or does not obtain a protective order or other remedy, or if the Disclosing Party waives compliance with the provisions of this **Section 9**, the Receiving Party subject to compelled disclosure will (a) furnish only that portion of the Confidential Information that is legally required to be furnished, and (b) make commercially reasonable efforts to obtain assurances that confidential treatment will be accorded the Confidential Information so furnished.

9.7 Injunctive Relief. Each Receiving Party acknowledges that a breach of any of its obligations set forth in **Section 9** of this Phase 3 Work Order will result in irreparable harm to the business of the Disclosing Party and that the Disclosing Party's remedy at law will be inadequate. Accordingly, each Receiving Party agrees that a Disclosing Party will be entitled, to the extent permitted by law, to both preliminary and permanent injunctions to prevent or halt a breach or threatened breach of any Receiving Party obligation under **Section 9** of this Phase 3 Work Order.

9.8 Return of Confidential Information in Connection with Early Termination. If this Phase 3 Work Order is terminated pursuant to **Section 11** before its expiration date, and, as of the date of termination there are studies, analyses, or other investigative efforts that are not yet completed and for which one or more Disclosing Parties have provided Confidential Information, then each Receiving Party with any such Confidential Information in its possession or control will, to the extent permitted by law, make commercially reasonable efforts to purge its records of all Disclosing Parties' Confidential Information and will, in any case, not knowingly make any further use of any Disclosing Party's Confidential Information without the Disclosing Party's prior written consent.

9.9 Intellectual Property Rights. Nothing contained in this Phase 3 Work Order implies or effects the grant to any Party of any intellectual property right of a Disclosing Party (whether or not copyrighted or patented), including any related uses, and all Confidential Information of a Disclosing Party will remain the sole property of that Disclosing Party; *provided, however,* that nothing in this **Section 9.9** will limit the NWPP Corporation's ownership rights with respect to MC Consultants' work product or the license granted by the NWPP Corporation to the Phase 3 MC Participants as provided in **Section 6.3** of this Phase 3 Work Order.

## **ATTACHMENT B**

### **PHASE 3 MC PARTICIPANTS**

The following organizations are the “Phase 3 MC Participants” for purposes of the Phase 3 Work Order:

- Avista Corporation
- Balancing Authority of Northern California
- The Bonneville Power Administration
- British Columbia Hydro and Power Authority.
- Public Utility District No.1 of Chelan County, Washington
- Public Utility District No.2 of Grant County, Washington
- Idaho Power Company
- NaturEner Wind Holding, LLC
- NorthWestern Energy
- PacifiCorp
- Portland General Electric Company
- Puget Sound Energy, Inc.
- The City of Seattle, City Light Department
- Public Utility District No.1 of Snohomish County, Washington
- Tacoma Power
- Turlock Irrigation District
- Western Area Power Administration, Upper Great Plains
- Public Utility District No.1 of Clark County, Washington
- Eugene Water & Electric Board



## ATTACHMENT C

### CONTACT INFORMATION FOR NOTICES

#### **Northwest Power Pool**

Northwest Power Pool  
Attention: Jerry Rust, President  
7505 NE Ambassador Place  
Suite R  
Portland, OR 97220  
Telephone: (503) 445-1074  
Fax: (503) 445-1070  
E-mail: [jerry@nwpp.org](mailto:jerry@nwpp.org)

**Appendix E.3 – Intent to Participate Form**

This is to inform the MC Initiative that the company noted below intends to respond to the Northwest Power Pool Request for Proposal for Market Operator.

Company: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
Email: \_\_\_\_\_  
Contact Person: \_\_\_\_\_

Please send completed form by e-mail to [proposal@nwppmc.org](mailto:proposal@nwppmc.org).

## Appendix E.4 – Pricing Proposal Template

Use this template to provide details of the pricing associated with the Offer.

As a key qualification of the Respondent is experience, it is expected that the Respondent currently operates a SCED. Given that, the pricing should reflect the cost the Respondent expects to incur in configuring its existing SCED to operate in the NWPP region. Some items detailed in Appendix E.5 of this RFP may not correspond with the Respondent's existing SCED design and would be considered customizations. These items should be listed separately in the table with their associated marginal costs. If the Respondent can provide requested line-item functions without incurring additional costs, then please explain how and list those items as no cost or credits as appropriate in the gross Offer price provided.

The categories and functions, and their associated costs, may be listed in greater detail than what is in the template below. The costs must be presented for each of the functions listed in the template if possible.

The Initial Cost includes all development and implementation costs associated with the function. The Initial Cost is separated by the amount incurred in each year of 2015, 2016, and 2017. The total Initial Costs must be presented in the following two (2) options:

- 1) Provide in one Table: The Market Operator finances the implementation of the SCED and charges a subsequent fee to the Market Participants and/or participating BAs to recoup the costs;
- 2) Provide in a second Table: The Market Participants and/or participating BAs pay for the implementation of the SCED as costs are incurred.

The On-going Annual Cost refers to the costs associated with operating the associated function on an annual basis. Please include the expected annual percentage increase in operating costs.

Table

Market Operator Costs						
Category	Function	Initial Cost (\$K)			On-going Annual Cost (\$K)	Annual Cost Increase (%)
		2015	2016	2017		
Forward Function	Hourly Load Forecast by Settlement Area/Market Footprint					
Forward Function	Short Term Load Forecast (every 5 minutes for the next 15 minutes)					
Forward Function	Mid Term Load Forecast (every hour for the next 7 days)					
Forward Function	Supply Adequacy Analysis					
Forward Function	Resource Sufficiency					
Forward Function	Ancillary Service Plan Validation					
Forward Function	<Customizations>					
Real-Time Market	Security Constrained Economic Dispatch (SCED)					
Real-Time Market	<Customizations>					
Real-Time Market	Congestion Management Event Functionality					
Real-Time Market	Curtailment/Adjustment Tool					
Real-Time Market	Violation Relaxation Limits					
Real-Time Market	Energy Management System (EMS)					
Real-Time Market	Dispatch Instructions					
Real-Time Market	<Customizations>					
Back Office	Settlement Statement (5 min settlement) and Component Generation – base option					
Back Office	Settlement Statement (60 min settlement) and Component Generation – alternative option					
Back Office	Uninstructed Deviation Calculation					
Back Office	Energy Imbalance Calculation					
Back Office	Locational Imbalance Price Calculation					
Back Office	Revenue Neutrality Calculation					
Back Office	Invoice Generation					
Back Office	Settlement Dispute Processing					
Back Office	<Customizations>					
Back Office	Customer Relationship Management (CRM)					
Back Office	<Customizations>					
Tagging and Scheduling	Tagging and Scheduling					
Tagging and Scheduling	Net Scheduled Interchange Calculation					
Tagging and Scheduling	<Customizations>					
Data Exchange	Hourly Load Forecast by Settlement Area/Market Footprint (from MO)					
Data Exchange	Hourly Resource Plan (from MO to BA)					
Data Exchange	Ancillary Service Plan (from MO to BA)					
Data Exchange	Schedules (from MO to BA)					
Data Exchange	Energy Imbalance Calculation (from MO to BA)					
Data Exchange	Scheduled and Actual Settlement Area Load and/or Generation (from MO to BA)					
Data Exchange	Registration Information (from MO to BA)					
Data Exchange	Load Forecast (from MP and/or BA/delegate)					



Market Operator Costs						
Category	Function	Initial Cost (\$K)			On-going Annual Cost (\$K)	Annual Cost Increase (%)
		2015	2016	2017		
Data Exchange	Resource Plan (from MP and/or BA/delegate)					
Data Exchange	Ancillary Service Plan (from BA)					
Data Exchange	Balancing Notification (from MO)					
Data Exchange	Offer Curves (from MP)					
Data Exchange	Tagged Schedules (from MP)					
Data Exchange	Native Load and Portfolio Schedules (from MP/BA)					
Data Exchange	Dispatch Instructions (from MO)					
Data Exchange	Out of Merit Energy Notification (from MO)					
Data Exchange	Locational Imbalance Prices (from MO)					
Data Exchange	Net Scheduled Interchange (from MO)					
Data Exchange	Meter Data (from MP)					
Data Exchange	Settlement Statements and Components (from MO)					
Data Exchange	Weekly Invoices (from MO)					
Data Exchange	Settlement Disputes (from MP)					
Data Exchange	Market Flow Values for Coordinated and Reciprocal Coordinated Flowgates (from MO)					
Data Exchange	Commercial Model (from MO)					
Data Exchange	COS Entity Validation (SL to TSIN Mapping) (from MO)					
Data Exchange	Market Participant Registration (from MP)					
Data Exchange	Participating BA Registration (from BA)					
Data Exchange	<Customizations>					
Administration	Training					
Administration	<Customizations>					
Administration	Legal and Regulatory					
Administration	<Customizations>					
	<b>TOTAL</b>					

# NWPP-MC SCED Design

## RFP Market Summary – 10/31/2014

This document summarizes the technical and functional design elements for how a Security Constrained Economic Dispatch (SCED) within-hour energy only market is envisioned to work for the NWPP-MC. Desired outcomes include the leverage of diversity, economic optimization and improved reliability for participating Balancing Authorities (BAs). This summary has been prepared to promote a general understanding of the NWPP MC's proposed SCED design and to foster an ongoing dialogue regarding the policy and technical issues addressed below.

### DESIGN CORNERSTONES

1. The NWPP-MC SCED addresses within-hour energy dispatch actions only and is not intended to change the bilateral energy markets in place today.
2. The NWPP-MC SCED Market will need willing offerers of both incremental and decremental supply to provide sufficient liquidity to achieve market benefits for members.
3. The proposed NWPP-MC SCED design differs from those found in the former Southwest Power Pool (SPP) Energy Imbalance Service (EIS) market and the newly-formed California Independent System Operator (CAISO) Energy Imbalance Market (EIM) due to regional differences and specific member requirements, such as the prevalence of extensive coordinated hydro generating systems, the multiple transmission provider environment, the existing reserve sharing policies, the members' emphasis on voluntary participation, and the need for unique market power mitigation considerations.

### ORGANIZATION

4. The NWPP-MC SCED will be administered by an independent, non-profit entity serving the participating BAs and Market Participants, and will be governed by a Board of Directors. This may be the NWPP.
5. The NWPP-MC SCED will be provided, supported & operated by an independent Market Operator (MO) to be chosen through an open RFP process.
6. The Market Operator (MO) will file the market design with FERC for approval and the administration of the MO's tariff will be subject to FERC Jurisdiction.
7. The MO will be a market operator only and will not assume any NERC functional role.
8. To leverage existing capabilities, the NWPP-MC SCED will incorporate several key systems operated and supported by Peak Reliability including but not limited to their Energy

Management System, SCADA, State Estimator, Contingency Analysis, Short-Term Load Forecasts, and Mid-Term Load Forecasts.

## **GENERAL MARKET CHARACTERISTICS**

9. The SCED is designed around 5-minute dispatch cycles which calculate locational pricing and dispatch resources up or down and distribute corresponding adjustments to each participating BA's Net Scheduled Interchange (NSI).
10. Each 5-minute dispatch cycle will concurrently do two things: (a) compute composite imbalance of load and generation in the Market Footprint determining the optimal dispatch of the most economic resources to resolve that imbalance; and (b) displace more expensive resources with less expensive resources based on offer curves and Resource Plans.
11. All Energy Imbalance within the Market Footprint will be resolved through the 5-minute dispatches.
12. The MO will use a SCED algorithm to instruct the dispatch of offered resources within the real-time capability of the electric grid and to arrive at nodal clearing prices.
13. All data required from Market Footprint loads and generation are required to be provided to the MO no later than 30-minute prior to the hour.
14. SCED transactions will not be tagged (ie, they will not be scheduled on pre-arranged transmission using the eTag conventions).

## **BALANCING AUTHORITIES**

15. BA's in the NWPP have the option of joining the SCED or remaining independent.
16. If a BA joins the SCED, all generation and load within that Balancing Authority Area (BAA) are subject to SCED protocols.
17. The SCED "Market Footprint" is made up of the sum of all participating BAAs.
18. The governance structure for SCED will provide guidance for entry/exit to/from the Market Footprint by participating NWPP BAs.
19. Participating in the SCED will not change the reliability obligations of BAs, TSPs or TOPs.
20. Generation outside the Market Footprint can participate in the SCED by pseudo-tying the generator into a participating BA.
21. BAs will continue providing regulation (to maintain moment-to-moment balance within the BA's footprint).
22. The SCED design preserves the benefit of the NWPP Reserve Sharing Group (RSG) which will continue to facilitate the deployment of contingency reserves (spin and non-spin) as they do today.
23. SCED does not change any reliability responsibilities for the BA, TOP, TSP, or the RC during normal operation or during extreme events, like RC action or a congestion event. It is anticipated that the RC's Enhanced Curtailment Calculator (ECC) (when complete) will have the ability to distinguish the SCED flows from other flow on a constraint and treat them accordingly;

as well as facilitating the curtailment of e-tags and providing relevant congestion relief information and support to TSPs and TOPs.

## **MARKET PARTICIPANTS**

24. A Market Participant is any entity that takes on the contractual responsibility to provide data to and have financial settlement with the Market Operator.
25. Since all load and resource imbalances within the participating BAAs are settled by the market, all Load Service Entities (LSEs) and Generation Owner/Operators (GOPs) will have either a direct relationship with the Market Operator or an indirect relationship through their BA.
26. Load Service Entities (LSEs) and Generation Operators (GOPs) within the participating BA will have different options for how to interact with the Market Operator.

## **LOADS**

27. Load points can be configured in the market at a nodal granularity (nodal meaning at the point where the load interconnects with the high-voltage electric grid) or as aggregated load zones (where load zones are limited to loads in a single BAA).
28. The effect of grouping loads into a zone is the melding of load imbalance pricing in Market Settlement to the aggregated level.
29. Loads within a participating BAA will interact with the MO either directly or via a delegated entity such as an affiliated merchant, agent or another LSE or indirectly through their BA.
30. Loads within the Market Footprint will be required to provide (either directly or indirectly) a load forecast to the MO, which can be updated until the real time hour (subject to market gate closure timeline). The MO will also develop load forecasts for the loads in the footprint and will compare its forecast with that from the Load as a quality assurance check.
31. Loads in the Market Footprint will be required to submit Native Load Schedules (NLS) (either directly or indirectly) to the MO describing the anticipated generation to load energy delivery needs for Native Load or Network Integration Transmission Service (NITS) customers , which can be updated hourly (subject to market gate closure timeline).
32. The Market does not change the E-tagging/scheduling requirements for scheduling interchange transactions.
33. Native Load Schedules and E-tags combine to provide a complete picture of energy delivery schedules within, into and out of the Market Footprint prior to SCED – a requirement of the market design.

## **GENERATION**

34. Generators will be configured in the market at a nodal granularity (nodal meaning at the point where the generation interconnects with the high-voltage electric grid), except as noted below.
35. Accommodation will be provided to optionally group generators whose nodal impact on every flowgate defined within the footprint are electrically similar, within the bounds of the accuracy of Peak's network model and flow forecast tools.
36. Generation Owners, Operators (GOPs) within a participating BA will interact with the MO either directly or via a delegated entity such as an affiliated merchant, agent, or another GOP or indirectly through their BA.
37. GOPs in the Market Footprint are required to provide a Resource Plan for each of their generators to the MO (either directly or indirectly). This plan can be updated hourly (subject to market gate closure timeline).
38. The Resource Plan will indicate the status of the resource (for example: "Available" – indicating the resource has some MW band that is dispatchable by the market or "Self –Dispatched" – the resource is not at all dispatchable by the market) and the MW range available for market directed movements.
39. BAs in the Market Footprint are required to provide an Ancillary Service Plan (ASP) to the MO for the resources located within their BAA designated to provide regulation (moment-to-moment AGC response to BAA imbalance between 5-minute dispatches) or contingency reserves. This plan can be updated hourly (subject to market gate closure timeline).
40. The ASP will indicate which resources or portions of a resource are providing regulation and contingency reserves and how many MWs are allocated for each.
41. GOPs in the Market Footprint that are Market Participants are required to provide offer curves for each of their resources that are available for economic dispatch to the MO. These offer curves can be updated hourly (subject to market gate closure timeline)
42. Offer curves provide the economic input to the SCED dispatch calculation and include a monotonically increasing \$/MW for the full (designated dispatchable) generating range of the resource.
43. The NWPP-MC design will accommodate offer curves with 15, 30, 45, or 60 minute durations that all must be submitted prior to the market gate closure timeline. This granularity provides participants the opportunity to address load ramps in their pricing strategies.

## **RESOURCE SUFFICIENCY**

44. Resource Sufficiency (RS) (in the hour-ahead period at a minimum, and potentially at preschedule) is a core principle of the SCED architecture.
45. RS is intended to insure that all BAs come to the hour in balance – i.e., with sufficient energy, regulation, contingency and capacity necessary to meet their requirements including ramping.
46. The RS metric can be expressed as the following equation: Total Firm Resources  $\geq$  Total Firm Obligations. Where: Total Firm Resources = Generation Operating Capacity + Firm Purchases; Total Firm Obligations = Load Obligation + Reserve Requirements + Firm Sales and is captured via a Load and Capability Report submitted by the BA.

47. BAs are expected to be resource sufficient prior to the hour and the RS check will be conducted no later than the market's gate closure.
48. The BA will monitor RS compliance with regard to participation in SCED.
49. All resources and loads within a participating BAA can be expected to provide their share of the sufficiency requirements for the BA, as outlined in their BA's contractual or TSP-outlined rates and practices.
50. Failure to become RS will not likely translate to any change in SCED operations, but should result in corrective actions that are intended to modify behavior. The specifics in this area will be defined as the RS design progresses.

## **ENERGY DISPATCH**

51. The SCED dispatch will occur every 5 minutes to meet the collective load and obligations of the Market Footprint.
52. The Market Operator's SCED will only dispatch resources within the dispatchable range of resources identified as "Available" for Market dispatch as designated by the GOP in their Resource Plans.
53. The dispatch actions computed by the SCED will be based on actual load and generation, looking back to the start of the current 5-minute period and will be informed by the current state of the EMS model, the flow forecast and load forecasts produced at a 5-minute granularity.
54. The dispatch actions will have a ramp start time of the beginning of the next 5-minute period and a ramp end time of 5-minutes later to balance expected load determined from the load forecast.
55. Dispatch will be determined by the submitted offer curves and system limits.
56. The dispatch requests can be configured to be delivered directly to the generator and/or to a corresponding intermediary (like the TOP or GOP).
57. The implementation of the dispatches will result in generator(s) ramping to a new set-point and the BA receiving the corresponding new set-point and/or a market Net Scheduled Interchange adjustment – for use in their Area Control Error (ACE) equation.
58. With a SCED in place, "Inadvertent Interchange" no longer exists among BAs participating in the market. Inadvertent Interchange between the NWPP SCED footprint and adjacent BAAs or markets will occur and will need to be addressed.
59. A change from WECC's current way of handling Inadvertent accumulation and payback will need to be approved to manage collective inadvertent between the Market Footprint and the rest of WECC.

## **OPERATIONAL LIMITS**

60. TOPs can provide to the MO Variable Transfer Limits (VTLs) (thresholds to protect the grid from reliability risks due to rapid unexpected changes in flow) that are deemed necessary for

flowgates that require increased operational oversight. The SCED will use any active VTLs as a critical factor in the dispatch calculations.

61. TOPs can provide the MO specific “Min Gen” thresholds for generators whose output is being used to support enabled Remedial Action Schemes (Min Gen for RAS). The SCED will use any active “Min Gen for RAS” as a critical factor in the SCED engine’s dispatch calculations.
62. The NWPP SCED Market design assumes the Enhanced Curtailment Calculator (ECC) now under development by Peak Reliability will be in place prior to adoption of the SCED.
63. The SCED system will provide TOPs a mechanism to suspend the market’s 5-minute redispatches for the respective BA for cases when the Operators need greater control over the elements in the BAA to insure their ability to recover from reliability events or to prevent the risk of a reliability event. This is expected to be an infrequent occurrence and will not incur a penalty from the market.

## **SETTLEMENT**

64. The NWPP-MC SCED Market design will employ discrete 5-min financial settlements for occurrences between actual and schedule for all load and generation settlement locations within the Market Footprint.
65. For settlement locations that cannot be entirely supported by 5-minute revenue quality meters, the SCED will accommodate the use of SCADA or other instantaneous readings as the basis for settlements.
66. To accommodate for error, those 5-minute instantaneous values will be “calibrated” or “normalized” in the settlement system to hourly revenue quality meter values.
67. The SCED will calculate Location Imbalance Prices (LIPs) for each 5-minute dispatch based on the market clearing price of resources dispatched for that period.
68. The marginal losses associated with SCED dispatches are computed in the SCED calculations (ensuring SCED dispatches attain balance) and are included as a component in the LIP calculation.
69. These LIPs are used in the discrete 5-minute settlement calculations.
70. The MO will enforce Market Power Mitigation protocols designed to support a robust, liquid NWPP-MC SCED while protecting against unjust or unreasonable market outcomes

## **TRANSMISSION COMPENSATION**

71. A transmission compensation mechanism for market induced increase in grid utilization has been developed to mitigate the risk of a shift in revenue recovery among transmission providers and customer classes due to the SCED energy flows.

## **MARKET MONITORING**

72. To insure neutrality and enforceability, the Market Monitoring (MM) function will be carried out independent of the Market Operator functions.
73. Due to the abundance of hydro generating resources in the NWPP region, it is imperative that the MM design be reflective of the suite of factors that affect availability and pricing of hydroelectric generated energy.
74. A separate MM design effort is underway.



## **ADDITIONAL CONSIDERATIONS**

### **A. Voluntary Participation:**

The NWPP-MC has placed emphasis on the SCED Market design being voluntary at two levels.

#### **Voluntary for BAs to participate in the SCED Market:**

It is voluntary for each NWPP BA to decide whether to participate in the SCED Market. This is an up-front decision that commits the BA to participating in the market for an extended duration.

#### **Voluntary for resources to be made available for Market Operator dispatch:**

Resources within a participating BA will have the option to offer a self-defined dispatchable range to the Market Operator for economic dispatch through the SCED engine, subject to the rules of the market. Units within a participating BA that are identified when establishing a BAs ability to meet its Resource Sufficiency requirements can either be voluntarily offered to the MO for the MO to optimize through the market dispatch engine, or self-scheduled to meet its own load-resource balancing needs in isolation.

### **B. Primary Function of the SCED**

The core function of a within-hour market, as proposed for the NWPP area, is to seek incremental efficiencies within each real-time operating period. It does this through economic redispatch of available (voluntarily offered) resources, so that, when combined with all other resources serving load (that is, “self-dispatched” resources not offered into the market), the market instructed dispatch will provide a lower-cost solution to reliably meet all load in the market footprint through each dispatch interval.

The within-hour market does this by executing a security-constrained economic dispatch (SCED) process for every five-minute interval within the operating hour, taking into account (a) the capabilities and prices of committed generating resources that have been voluntarily offered into the market for redispatch, and (b) real-time capability of the transmission system to accommodate flows resulting from a central market-instructed redispatch.

The within-hour market is sometimes referred to as an “energy imbalance market.” This name would seem to imply a core function of the market is to manage intra-hour imbalances – whether resulting from load forecast error, generator station error (particularly from variable energy resources), or both. “Covering” load and generation imbalances is an integral part, but not the main objective of, the SCED’s overall economic optimization process. Even if all loads and resources for a given dispatch interval are in perfect balance, so long as there are (i) offered generation with capacity to increase output at a lower price than offered generation with capacity to decrease output, and (ii) sufficient real-time transmission capability to accommodate

corresponding adjustments to each of the generators' output levels while reliably serving load, then the Market Operator will issue instructions for those generators to adjust their dispatches – displacing the higher-cost generation with the lower-cost generation.

### **Captures Diversity Based on Market Liquidity**

The SCED solves for an aggregate feasible dispatch, rather than attempting to manage load and resource variability within the individual boundaries of separate balancing authority areas. This enables the SCED to provide resource ramping diversity. As long as there are sufficient resources offered into the market, the market-wide dispatch process allows more effective management of load and resource variability because the market operator's dispatch instructions are based on the net needs of the entire market footprint.

The liquidity of a voluntary market is critical to this ability to “capture” diversity in load and resource variability across the system, as well as to deploy the aggregate ramping capability of numerous generators. Over time, a consistently liquid market may allow the BAs within the Market Footprint to reduce the quantity of within-hour balancing reserves they maintain on their systems, according to their individual risk tolerances.

### **Use of Real-Time Physical Transmission Capability**

The SCED does not rely on reserved or pre-scheduled transmission service rights. Instead, the SCED treats the physically available transmission within its Market Footprint as a “hard constraint” on the economic displacement transactions it can implement at any given time. Use of transmission capability for SCED transactions is treated as the lowest of all transmission uses (often referred as “priority zero”). Thus, if all of a given transmission path's capability were consumed by transactions using pre-reserved transmission rights, the market operator would not issue any dispatch instructions that would increase flows on that transmission path. Conversely, where there is physical transfer capability available on a given transmission path for a particular dispatch interval, the SCED will consider this available for use in its optimization process, but only for so long as it remains available.

It is important to recognize that there is a distinction between a process designed to clear transmission congestion ahead of the operating hour (thereby increasing ATC and facilitating additional scheduled uses), and a process that takes congestion into account in arriving at a dispatch solution. The SCED, as envisioned for the NWPP area, will do the latter but not the former. Part of this is due to the fact that the SCED will not be a Transmission Service Provider or Transmission Operator.

## **C. WHAT THE NWPP SECURITY CONSTRAINED ECONOMIC DISPATCH (SCED) IS NOT:**

### **The SCED is Not an Energy or Capacity Supply Mechanism**

Because the SCED needs liquidity of offered resources to function effectively and efficiently, the SCED is not intended to serve as a supply mechanism for those who, ahead of the operating hour, might otherwise find themselves short of energy or capacity. The SCED optimizes the deployment of resources already committed at the start of the operating hour. But it is not designed to resolve supply deficits. Every BA is responsible for making sure it has sufficient resources to meet its needs and obligations before entering the operating hour. This is why the issue of resource sufficiency is so important to the proper operation of a SCED.

### **The SCED Will Not Perform Transmission Service Provider Functions**

The idea that the SCED serves a single function – performing intra-hour generation dispatch optimization – is sometimes stated in terms of “stand-alone” operation. The phrase “Stand-alone” is meant to convey that there are no additional functions assumed by the market operator apart from its real-time optimization function. Although operation of the SCED relies on real-time transmission availability, the SCED market operator does not serve as a Transmission Service Provider, and it does not exercise operational control over the transmission system or sell transmission service.

### **The SCED Will Not Assume Any Reliability Obligations**

Consistent with the idea of a stand-alone SCED, none of the reliability functions currently performed by entities in the NWPP area will be transferred away from those responsible entities and onto the SCED market operator. Likewise, the presence of a SCED will not shift reliability obligations among the organizations participating in the SCED. In the presence of a SCED, all NERC-registered entities within the Market Footprint will continue to have exactly the same reliability compliance responsibilities as they had without the SCED.