

CHAPTER 14 ACTION PLAN

Implementation and Next Steps

Moving Forward

Transitioning from planning to implementation requires the successful completion of additional tasks by NorthWestern. The 2015 Plan establishes target levels of additional electric generation resources in the Economically Optimal Portfolio to achieve minimum levels of resource adequacy. The analysis of resource alternatives and the selection of preferred resources leads us to the next steps to move from an analytical and planning framework to a set of specific activities intended to more fully inform resource procurement decisions and portfolio planning.

In addition to the information, analysis, and results presented in this planning document, NorthWestern identifies specific actions to address the issues and challenges facing the Supply Portfolio and the delivery of services to retail customers. This three-year action plan will address:

1. **Resource Optimization** – NorthWestern is committed to the efficient and cost-effective operation and management of the utility generation fleet. A testing program to determine the scope of operational capabilities at select hydroelectric facilities began in 2015 following the purchase and integration of the hydro assets. This high priority program will continue, and the results will be used to determine how alternative modes of operation can benefit the portfolio by reducing overall supply costs and improving the production and delivery of load-serving capacity and necessary services.

Prior to Northwestern taking ownership and operation of the hydroelectric facilities, previous owners assessed a number of potential facility upgrades including projects such as turbine replacements and generator rewinds. NorthWestern has already initiated work to update the results of these studies and anticipates completing a Phase 2 level of engineering and cost estimation by the end of 2016. This work will be considered in conjunction with the co-optimization initiative which addresses a combination of hydro and thermal resources providing regulation services and additional ancillary services to reduce total resource costs.

2. Gas-fired Resource Technology – Additional and detailed evaluation of gas-fired resources will be performed to inform and refine resource costs and the operational capabilities of the resource types identified in the 2015 Plan. The use of generic resources defined by certain manufacturer specifications helped to identify resource technology types; however, it does not represent a final model or manufacturer selection. Although internal combustion engine technology was identified in the Plan, the initial work will include an evaluation of a variety of highly flexible gas turbine technologies. NorthWestern intends to refine the analysis of costs and operating assumptions to enable more detailed planning leading to potential project identification and development. NorthWestern will issue a Request for Proposal (“RFP”) for the identified capacity need. In parallel with the RFP, a siting, technology, and cost study will be performed by an independent engineer for a utility-build option. The siting study will evaluate an optimal site or sites addressing the future needs of net capacity. The technology study will use multiple generation configurations as proxies for input into the PowerSimm model. The PowerSimm model results will be used to determine the potential capacity factor and operating profile of a proposed facility/facilities. Once a type of technology has been defined as the most appropriate for the desired application, multiple manufacturers of the

selected technology will be further evaluated to determine the final equipment to be utilized. The cost study will utilize the results of the siting and technology studies to develop a net present value financial model. The responses to the RFP will then be compared to the results of the siting, technology, and cost study to evaluate all of the alternatives. If the NorthWestern self-build option has the greatest long-term benefit to customers when compared to the responses to the RFP, NorthWestern will proceed with building the needed capacity. If the RFP results are more financially and commercially acceptable compared to a self-build option, NorthWestern's plan would be to negotiate for the requested capacity with a third party or parties.

3. Infrastructure Planning and Evaluation – Initial high level assessments of natural gas and electricity transmission infrastructure will be advanced through a more detailed evaluation of the Montana systems to support additional electric generation. The goal of this work will be the definition and refinement of infrastructure costs and feasibility, and it is expected to lead to the submission of project study requests to the NorthWestern transmission planning staff.

4. Clean Power Plan – The U.S. Supreme Court issued a stay of the implementation of the final CPP on February 9, 2016. The stay will remain in effect until the U.S. Court of Appeals enters a decision on the substantive challenges to the CPP and the Supreme Court either denies a petition for certiorari following that decision or enters a judgment following grant of a petition for certiorari. The D.C. Circuit has set an accelerated briefing schedule, with oral argument scheduled for June 2 and June 3, 2016. A final decision could come as early as mid-summer 2017 or as late as 2018. NorthWestern is included in the group of utilities, trade groups, coal producers, and labor and business organizations that filed a Petition for Review and requested a stay of the CPP. NorthWestern also filed an administrative Petition for

Reconsideration with EPA, requesting EPA reconsider the CPP on the grounds that the CO₂ reductions in the CPP were substantially greater in the final rule than in the proposed rule. At this time EPA has taken no action on the Petition for Reconsideration. The timeline for a final disposition of the CPP in Montana is difficult to forecast as it depends on which side prevails before the D.C. Circuit, the timing of that court's decision, the schedule for subsequent processes and appeals, and changes to compliance deadlines should the CPP survive the legal challenges in its entirety. NorthWestern will continue to monitor the situation closely and consider the impacts of the final Court decisions on our resource plan.

The EPA's emissions target for Montana is 1,305 lbs. CO₂/MWh in 2030. NorthWestern already out-performs that standard with 1,069 lbs. CO₂/MWh. Under the EOP scenario set out in this Plan, NorthWestern's emissions would further decline to 794 lbs. CO₂/MWh. Further, this Plan includes many steps such as evaluating the feasibility of adding carbon-free generation at existing hydro facilities with potential to reduce CO₂ emissions even further.

5. Utility Integration – Utility industry changes are demanding that NorthWestern plan for and adopt a higher level of operational integration by the Supply and Transmission business units. A current example of this is the adoption and implementation of RBC where generation resources under the control and management of the Supply Group must be available to respond to generation change requests from the Electric Transmission business unit. RBC will go into full effect on July 1, 2016, and NorthWestern is taking the steps necessary to accomplish the transition and conversion to the RBC standard.

During the period March through June 2016, NorthWestern is participating in the

RBC testing program in advance of the July 1, 2016 implementation deadline. The test period allows NorthWestern the opportunity to gain necessary operational experience in the RBC environment prior to July 1st. It will also enable Supply operations to establish the operational protocols to respond to requests for generation output changes.

6. EIM/ISO/Organized Market Planning & Participation – NorthWestern has formed an internal group to examine the potential benefits and costs of joining an organized market. We intend to contract with a third-party consultant to help evaluate the potential of joining the Western EIM as well as any other alternatives that might be identified. We expect the evaluation to include a gap analysis with regard to hardware, systems, and staffing as well as a detailed study of potential customer benefits that could be achieved with participation in a market. NorthWestern will also assess the risks that may be associated with continuing to operate outside organized markets while several neighboring utilities move toward organized market participation.

In South Dakota, NorthWestern conducted cost/benefit analysis prior to making the decision to join the Southwest Power Pool (“SPP”). That process and the operational knowledge gained from being an SPP member will help us make fully informed decisions concerning the organized market alternative that would be best suited to meet operational and portfolio needs in Montana.

7. Distributed Resource Integration & Planning – Based on projections of growth of roof top solar PV installations and utility-scale solar projects defined in the 2015 planning cycle, NorthWestern will monitor and refine its understanding and forecasting of the impacts of these resources on the utility. As penetration levels of

distributed resources increase over time, NorthWestern will observe and track changes to load net of solar production to understand and plan for the impacts to serving load based on empirical information acquired over time.

8. Long-Term RPS Planning – Estimates of production from current eligible renewable resources and volumes necessary to meet annual RPS requirements suggests NorthWestern will have adequate renewable energy credits through the mid-2020s. NorthWestern will continue to monitor renewable energy production and use the carry-over provisions of the Renewable Portfolio Standard to meet the 15% renewable standard.

NorthWestern will continue to work to secure additional CREP resource to meet the annual capacity requirement. Competitive solicitations will continue to be used as the primary mechanism to identify and evaluate CREP opportunities including the evaluation of costs and risks of securing eligible resources. If potential CREP resources are identified outside of competitive processes, NorthWestern will consider an appropriate course of action based on the specific circumstances at that time. This may include petitioning the Commission for a CREP eligibility determination in association with future hydro upgrade projects for owned assets.

9. DSM Electric Potential Assessment (“Assessment”) – In 2016, Nexant will complete an Assessment quantifying the remaining achievable cost-effective electric DSM potential in NorthWestern’s Montana service territory, based on avoided costs derived from the 2015 Plan. NorthWestern will use the Assessment results to inform program design, update individual measure costs and savings, identify new program measures, and determine DSM annual savings targets starting in the 2016/2017 program year. Nexant will also prepare an analysis comparing the

2016 Assessment results with the Northwest Power and Conservation Council's 7th Plan's electric conservation projections for Montana.

NorthWestern intends to use the capability of the PowerSimm long-term portfolio simulation model to determine avoided costs to be used in the evaluation and determination of future energy savings measures. The use of PowerSimm and the methodology of avoided cost calculation will produce results consistent for planning and regulatory filing purposes.

10. NorthWestern will follow up on the demand response survey of large key account customers to further develop the availability and cost of DR from these customers.
11. The results of the 2015 Plan will be communicated to customers and stakeholders including the Commission, the Montana Consumer Counsel, and other interested parties. The goal is to inform, educate, and use transparent processes so planning and actions are presented clearly and made easy to understand. The use of ETAC will continue, and it is NorthWestern's hope that members of the advisory committee will continue to participate and provide feedback and constructive advice on resource planning and energy supply matters.
12. Electric generation and energy storage technology advancements may produce economically viable resource alternatives for NorthWestern to consider in future planning cycles especially if technological improvements are made and costs decline. NorthWestern will continue to monitor and assess the potential application of developing technologies, their capabilities, and the costs to purchase, operate, and integrate them. Battery and solar demonstration projects installed and operating on the Montana electric system are already being evaluated by our staff.