

## MEMORANDUM

To: Commissioners, Advisory Staff, and Northern States Power Company  
Fr: Christopher Marohl, Advocacy Staff  
Da: June 12, 2012  
Re: NSP Manitoba Hydro ADP Case No. PU-12-70

On February 8, 2012 Northern States Power Company (NSP) filed with the Commission an application for an advance determination of prudence (ADP) for a package of three power purchase agreements (PPAs) with Manitoba Hydro (MH).

On February 29, 2012 the Commission issued a Notice of Opportunity for Hearing with petitions to intervene due by April 15, 2012 and comments and requests for a hearing due by April 22, 2012. No petitions, comments, or requests were received.

### ***Current MH PPA***

Currently NSP has a PPA for 500 MW that originated in 1984, was updated in 2002, and is now set to expire in 2015. NSP and MH also have in place a series of diversity exchange agreements whereby NSP provides capacity to MH during the winter season when its system peaks and MH provides capacity to NSP during the summer season when its system peaks; these diversity exchange agreements totaling 350 MW begin expiring in 2015. The current total summer season capacity from MH is now 850 MW.<sup>1</sup>

### ***New MH PPA***

The new MH PPA is made up of three agreements presented as a package since each agreement must be in place for the others to be in place. One is the 375/325 MW system power agreement whereby NSP purchases 375 MW of capacity during the summer and 325 MW during the winter. Another is the 350 MW diversity agreement whereby NSP receives 350 MW of capacity in the summer and provides 350 MW of capacity in the winter. Finally, the system power agreement may be increased by 125 MW in 2021 if MH follows through with plans to construct new hydro power plants. The package results in 725 MW of summer season capacity and 675 MW of winter season capacity beginning in the 2015 summer season with the potential of 850 MW of summer season capacity and 800 MW of winter season capacity beginning in 2021.

---

<sup>1</sup> See ADP Application, Feb. 8, 2012 p. 6.

There are three pieces in regards to energy in these agreements. One is that NSP must take and pay for energy under the system power agreement Monday through Friday from 7 am to 10 pm during the summer and Monday through Friday from 9 am to 8 pm during the winter (“fixed price energy”). The second is the “must offer energy” over the four peak hours, seven days per week, to meet MISO requirements to ensure capacity is available when needed most. The third is the “option energy” which allows the parties the flexibility to negotiate for the sale of additional energy. This provision allows MH, absent a negotiated agreement with NSP, the option to sell additional energy to NSP up to the transmission limits. Under this contract provision, safeguards are in place that ensures NSP and its customers “pay an advantageous price for all energy provided under MH’s option”. Lastly, NSP receives all environmental credits, including Renewable Energy Credits, from MH’s hydro and wind generating facilities.<sup>2</sup>

### **Consumer Advocacy Staff Position**

#### *Need*<sup>3</sup>

In anticipation of expected growth in peak demand and the expiration of 850 MW of capacity purchases from MH, NSP expects to have a capacity deficit of 669 MW in 2015 and a deficit of 1197 MW in 2016. Although there hasn’t been any significant economic recovery in the majority of NSP’s load zone, as demonstrated by an IRP update filed December 1, 2011,<sup>4</sup> it is not possible to predict with any certainty when the economy will rebound. The new PPA with MH essentially replaces the existing one however, leaving NSP’s projected deficits intact regardless of significant economic growth.

#### *Price*<sup>5</sup>

In evaluating the trade secret prices contained in the MH package of PPAs, Advocacy Staff compared its prices with generic resource alternatives, other projects in the area, and historic MISO market energy prices in NSP’s load zone. As with most electric power producers in the industry today, the analysis boiled down to comparing MH PPA with natural gas generating sources. With relatively low capital cost, forecasted low fuel price, and low regulated emissions there has been a “dash to gas”. In fact, an Energy Information Administration November 2011 release of planned generating capacity additions for 2011-2015 shows natural gas vastly outpacing any other source every year.<sup>6</sup>

The table below shows the net present value (NPV) of NSP’s total system cost for the 2010-2049 planning period based on NSP’s Strategist modeling under the base scenario with and without the MH PPA. As you can see the NSP optimized alternative, where capacity additions are largely NSP owned natural gas combustion turbines, is approximately \$2 million (0.002%) cheaper than the MH PPAs; this difference is relatively small.

---

<sup>2</sup> See ADP Application, Feb. 8, 2012 pp. 6-10.

<sup>3</sup> See ADP Application, Feb. 8, 2012 pp. 12-16.

<sup>4</sup> See Case No. PU-10-580, Letter update re slower economic growth, Dec. 1, 2011.

<sup>5</sup> See ADP Application, Feb. 8, 2012 pp. 10-12.

<sup>6</sup> See *Electric Power Annual 2010*, Table 1.4 (Energy Information Administration), Nov. 2011.

**Present Value Revenue Requirements (\$1,000's)**

| Scenario | Manitoba Hydro | Incremental Increase/Decrease vs. Manitoba Hydro |
|----------|----------------|--|
|          |                | Optimized Alternative                            |
| Base     | \$84,864,218   | (\$2,049) <sup>7</sup>                           |

The MH PPA was also subject to the Minnesota Public Utilities Commission's (MPUC) Track Two process where other power producers can submit alternative resource proposals.<sup>8</sup> The Track Two process has been used three times since it was established in May of 2006. The first was a Certificate of Need for 375 MW of base load generation, the second was the MH PPA before us today, and the third was a Certificate of Need for the Black Dog Repowering Project. The MH case is the only one that did not receive any competing proposals.<sup>9</sup> Since there have been proposals in other Track Two cases and no proposals in the MH case, Advocacy Staff and NSP believes market participants couldn't compete with the MH proposal.

Lastly, we looked at energy prices. In doing so, we analyzed MISO's historic Locational Marginal Pricing in NSP's load zone while considering the economic recession and the potentiality of many coal fired power plants in the MISO region coming offline.<sup>10</sup> We also examined the prices in the context of when NSP was negotiating these prices (i.e. current and forecasted fuel prices at that time). From that standpoint and the below discussion on risk, we find the prices contained in the MH PPA reasonable.

**Risk**

Another thing to do when selecting a new resource is to consider your existing resource portfolio. The table to the right indicates NSP's capacity mix in 2010 when the MH PPA was renewed;<sup>11</sup> there has been little change to date and it illustrates the extent to which NSP has gone to trade out coal facilities for natural gas facilities. The wind capacity numbers are very low because of MISO's low accreditation factor in 2010. NSP actually had 1,270 MW of nameplate wind capacity<sup>12</sup> meaning an accredited capacity factor of only 8.1%.

|                 |                  |               |
|-----------------|------------------|---------------|
| Natural Gas     | 3,362 MW         | 32.6%         |
| Coal            | 2,691 MW         | 26.1%         |
| Nuclear         | 1,604 MW         | 15.6%         |
| Load Management | 1,064 MW         | 10.3%         |
| Original MH     | 894 MW           | 8.7%          |
| Other           | 594 MW           | 5.8%          |
| Wind            | 103 MW           | 1.0%          |
| <b>Total</b>    | <b>10,312 MW</b> | <b>100.0%</b> |

<sup>7</sup> See ADP Application, Feb. 8, 2012, p. 21.

<sup>8</sup> See ADP Application, Feb. 8, 2012, pp. 22-23.

<sup>9</sup> See Data Request No. ND PSC 2-3.

<sup>10</sup> See *Supply Chain and Outage Analysis of MISO Coal Retrofits for MATS* (The Brattle Group), May 2012.

<sup>11</sup> See Data Request No. ND PSC 2-1.

<sup>12</sup> See Case No. PU-10-580, 2010 Resource Plan, Aug. 3, 2012, p. 5-1.

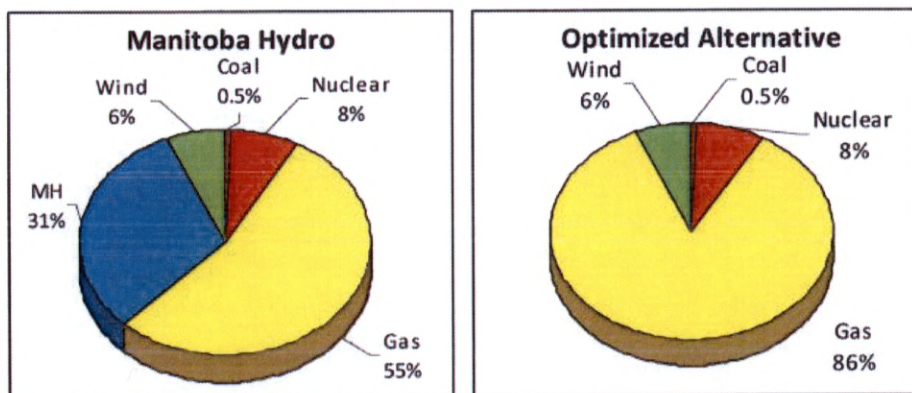
Given NSP's existing resource portfolio, staff looked at how the MH PPA would play out in comparison to the optimized case under different scenarios. The table below shows that the MH PPA provides some protection if natural gas prices are to rise above the base forecast<sup>13</sup>, but on the flip side if natural gas prices move lower than the base forecast some opportunity to take advantage of the lower natural gas prices is lost. Given NSP's significant existing natural gas resources the additional opportunity to take advantage of potentially lower natural gas prices is less desirable than the protection against potentially rising prices. Overall the MH PPA reduces NSP's exposure to the volatility of natural gas prices. The Figure 5 pie charts below illustrate the substantial amount of natural gas resources added in the optimized alternative from 2011 to 2025.

**Present Value Revenue Requirements (\$1,000's)**

| Scenario | Incremental Increase/Decrease vs. Manitoba Hydro |                       |
|----------|--|-----------------------|
|          | Manitoba Hydro                                   | Optimized Alternative |
| Base     | \$84,864,218                                     | (\$2,049)             |
| High Gas | \$86,352,900                                     | \$76,836              |
| Low Gas  | \$83,338,025                                     | (\$88,244)            |

14

**Figure 5: Mix of Resource Additions from 2011-25**



15

**Other Comments**

The affect new drilling techniques has on the natural gas market is still in its infancy. Drilling for natural gas is just now slowing as prices have reached unsustainable levels.<sup>16</sup> Utilities across

<sup>13</sup> See Case No. PU-10-580, 2010 Resource Plan, Aug. 3, 2010, Appendices B-6.

<sup>14</sup> See ADP Application, Feb. 8, 2012, p. 21.

<sup>15</sup> See ADP Application, Feb. 8, 2012, p. 24.

the nation are just now shutting down coal plants and building numerous natural gas plants as Environmental Protection Agency rules rollout. The Federal Energy Regulatory Commission is just now approving Liquefied Natural Gas export facilities.<sup>17</sup> The transportation industry is just now considering natural gas use in earnest.<sup>18</sup> These events will likely have impacts on the natural gas market to an extent that is largely unknown.

By converting its High Bridge and Riverside plants to natural gas and planning to entirely convert its Black Dog plant to natural gas,<sup>19</sup> NSP is becoming more dependent on this fuel source. Through the test of time these investments may prove to be wise for NSP ratepayers, but as economic regulators and consumer advocates we believe the Commission should take a hard look at any future expansions NSP proposes towards natural gas.

The MH PPA provides time for this new natural gas market to mature, a hedge against natural gas price volatility, and power at a reasonable price. Advocacy Staff recommends approval of NSP's application for an advance determination of prudence in Case No. PU-12-70.

---

<sup>16</sup> See Silha, Joe, *Gas-directed rig count falls to new 10-year low* (Reuters), May 11, 2012.

<sup>17</sup> See FERC Docket No. CP11-72-000, FERC Approves LNG Export Project, Apr. 16, 2012.

<sup>18</sup> See Smith, Rebecca, *Shale gas set to reshape trucking* (The Wall Street Journal), May 23, 2012.

<sup>19</sup> See Case No. PU-10-580, Letter update re slower economic growth, Dec. 1, 2011, pp. 6-7, 35-39.