

**Section XXI. Impact on the Adequacy Reliability or Efficiency of Energy Supply.**  
**Parties Replacement Findings**

**Invenergy**

For all of the reasons discussed above regarding the ALJ's inappropriate reversal of the Commission's determination of need, Invenergy respectfully requests that the Commission strike ALJ Findings 237 – 250 and replace them with the following:

- The bidders in this docket collectively propose three different types of resources to fill the need existing on the Xcel system in the 2017-2019 time frame: (1) “Capacity Resources,” in the form of combustion turbines, as proposed by both Invenergy and Xcel and providing principally peaking capacity; (2) “Energy Resources,” namely the Calpine proposal to add 345 MW of combined cycle intermediate resources, providing both capacity and energy; and (3) “Intermittent Resources,” in Geronimo’s solar energy proposal.<sup>1</sup>
- The Commission Order concluding Xcel’s 2010 IRP Docket informs the size, type and timing of resources necessary in this proceeding. In that Order, the Commission stated that: “Xcel will need an additional 150 MW in 2017, increasing up to 500 MW by 2019. . . . Xcel should invite proposals for adding peaking resources, intermediate resources, or a combination of the two.”<sup>2</sup>
- The record developed in this proceeding shows two significant developments since the Commission Order that must be considered in selecting an appropriate resource or resources to fill this need – the addition of significantly greater Intermittent Resources to the Xcel system and Xcel’s continually declining load factor.
- Xcel will add dramatically greater wind energy to its system than envisioned by the Commission at the time it initiated this proceeding.<sup>3</sup> At that time, the Commission and Xcel both anticipated that Xcel would add 200 MW of wind energy to its system through a wind acquisition proceeding.<sup>4</sup> Instead, Xcel ultimately petitioned the Commission to acquire 750 MW of wind, a change significant enough that the Commission required Xcel to file a Notice of Changed Circumstances in both the 2010 IRP Docket and in the current docket.<sup>5</sup>
- As a result of dramatically increasing its acquisition of wind resources, Xcel will have significantly more Intermittent Resources on its system in the 2017-2019 time frame than assumed at the time of the Commission Order. With such resources, Xcel must accept power deliveries except when curtailment issues arise.<sup>6</sup> Given wind’s unpredictable nature, Xcel must simultaneously maintain sufficient amounts of flexible and efficient quick-starting resources – Capacity Resources – to balance the system.<sup>7</sup>
- Calpine witness Mr. Hibbard testified that, “combustion turbines in particular can be used as fast-start, fast-ramp resources, and provide net-load-following capability in off-line and on-line mode.”<sup>8</sup> The Invenergy

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<sup>1</sup> GRE does not offer a “resource” that would add any physical capacity to the system. Rather, GRE offers to sell capacity credits.

<sup>2</sup> 2010 IRP Docket, Order Approving Plan, Finding Need, Establishing Filing Requirements, and Closing Docket, March 5, 2013, p. 6.

<sup>3</sup> See Transcript Vol. 2, p. 10 (Ewan).

<sup>4</sup> 2010 IRP Docket, Order Approving Plan, Finding Need, Establishing Filing Requirements, and Closing Docket, March 5, 2013, p. 4.

<sup>5</sup> MPUC Docket Nos. E-002/RP-10-825, E-002/CN-12-1240, E-002/M-13-603 and E-002/M-13-716, Order Requiring Notice of Changed Circumstances and Granting Intervention, October 4, 2013, p. 4.

<sup>6</sup> Ex. 65, p. 23, fn. 1 and p. 27 (Ewan Direct); Ex. 73, p. 4, fn. 4 and pp. 16–20 (Norman Rebuttal).

<sup>7</sup> Ex. 65, p. 27 (Ewan Direct); Ex. 73, pp. 16-20 (Norman Rebuttal).

<sup>8</sup> Transcript Vol. 1, pp. 62-63 (Hibbard); Ex. 93 (Hibbard presentation to Clean Energy Regulatory Forum, April 2012).

proposals provide Capacity Resources with the ability to start quickly (achieving minimum load within 20 minutes and full load within 30 minutes) and then can be ramped up and down to follow load as needed.<sup>9</sup>

- In addition to the dramatic increase in wind now planned for Xcel’s system, Xcel will be adding significant new solar energy resources. Minnesota enacted its first-ever solar energy mandate after the Order initiating this docket. Under that mandate, investor-owned utilities such as Xcel must provide one and one-half percent of their retail electric sales to retail customers in Minnesota with solar energy resources.<sup>10</sup>
- Xcel’s increasing levels of Intermittent Resources raise two specific concerns relevant to this resource selection proceeding – the need to manage for the variability of those resources and the need for quick-starting resources in the event of extreme and unexpected drop offs in generation.<sup>11</sup> These concerns typically lead utilities to add Capacity Resources in the form of peaking facilities as they add Intermittent Resources.<sup>12</sup>
- Xcel currently lags far behind its own subsidiary Public Service Company of Colorado (“PSCo”) with respect to the level of Capacity Resources on its system. PSCo has nearly twice as much peaking capacity as wind capacity – capacity that proved beneficial when PSCo experienced an unexpected wind ramp down of nearly 800 MW within 30 minutes last year.<sup>13</sup> In contrast, Xcel’s current peaking capacity fails to even match its existing wind capacity.<sup>14</sup> After the addition of another 750 MW of wind, Xcel’s peaking capacity will decrease to only two-thirds of its wind capacity,<sup>15</sup> leaving it particularly vulnerable to wind ramp down events.
- Capacity Resources of the type Invenegy proposes best complement the Intermittent Resources on Xcel’s system. Calpine witness Mr. Hibbard testified that combustion turbines provide “fast-start, fast-ramp resources, and provide net-load-following capability in off-line and on-line mode.”<sup>16</sup>
- In contrast, a combined cycle facility such as that proposed by Calpine can only provide balancing functions when on-line and requires “on the order of several hours” to come on-line from a cold start.<sup>17</sup> Such a facility is “often operated as close to the most efficient operational point, with a dispatch range that is narrow relative to its size, limiting ramp/flexibility potential.”<sup>18</sup>
- Prior Department modeling has also shown the impact of significant Intermittent Resources to the Xcel system. As Mr. Norman noted, previous Strategist modeling by the Department in the Black Dog Docket found that any need for combined cycle generation was typically delayed by the addition of large amounts of wind generation.<sup>19</sup> Specifically, the Department stated that its modeling showed that “addition of a combined cycle is delayed to 2020 or later under certain circumstances, usually involving large quantities of wind additions.”<sup>20</sup>

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<sup>9</sup> Ex. 65, p. 7 (Ewan Direct).

<sup>10</sup> Minn. Stat. § 216B.1691, subd. 2f; *see also* Transcript Vol. 2, p. 10 (Ewan).

<sup>11</sup> Ex. 73, pp. 16-17 (Norman Rebuttal).

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*, pp. 17-18.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.*, p. 19.

<sup>16</sup> Transcript Vol. 1, pp. 62-63 (Hibbard); Ex. 93 (Hibbard presentation to Clean Energy Regulatory Forum, April 2012).

<sup>17</sup> Transcript Vol. 1, pp. 42-43 (Hibbard).

<sup>18</sup> Transcript Vol. 1, pp. 62-63 (Hibbard); Ex. 93 (Hibbard presentation to Clean Energy Regulatory Forum, April 2012).

<sup>19</sup> Ex. 73, pp. 21-22 (Norman Rebuttal), citing MPUC Docket No. E-002/CN-11-184, Department of Commerce Letter, March 1, 2012, p. 2.

<sup>20</sup> MPUC Docket No. E-002/CN-11-184, Department of Commerce Letter, March 1, 2012, p. 2.

- The Department noted that Xcel's most recent forecast predicts that its load factor will decrease significantly over time, with customers demanding ever more from Xcel's peak while using less energy overall.<sup>21</sup>
- The potential need for greater capacity at peak, while requiring less energy overall, suggests that Capacity Resources, not Energy Resources, best fit Xcel's customers' needs and best ensure those customers a continued adequate electric supply.
- In assessing resource addition proposals, Minnesota rules require the Commission to consider more than simply ensuring that the utility has an adequate supply. The rules also require the Commission to consider the reliability and efficiency of that supply.<sup>22</sup>
- Invernergy's combustion turbine proposals offer superior reliability to the Xcel system. Invernergy proposes adding identical combustion turbines to those currently employed at the existing Cannon Falls site. Those turbines have shown very high reliability both in terms of their starting reliability and in terms of an extremely low forced outage rate of less than one percent over the last four years.<sup>23</sup>
- The Invernergy proposals assume interruptible gas supply to the facilities. The record demonstrates that interruptible supply saves ratepayers significant expense without jeopardizing reliability.<sup>24</sup> The Xcel system peaks in the summer when gas supply is readily available.<sup>25</sup> The existing Cannon Falls facility operated by Invernergy has historically seen the vast majority of its operating hours in the summer, to meet those peak needs, with only forty hours of operation in the past four winters combined.<sup>26</sup> In addition, both the Expansion and Hampton will have a back-up supply of fuel oil in the unlikely event that the facilities will be called upon when natural gas is not available.<sup>27</sup>
- Requiring a firm gas supply would add unnecessary costs to ratepayers, lessening the efficiency of the system while not increasing the reliability. The Department analyzed the cost savings of an interruptible gas supply for the Expansion and found a savings of approximately \$35 million compared to the use of firm supply.<sup>28</sup> In contrast, Xcel's modeling which assumed zero availability for the Expansion in the winter months added only \$1 million of cost compared to the Expansion being available (through use of firm gas).
- Consideration of the most efficient means of meeting Xcel's needs must also consider the characteristics of Xcel's system. A low load factor indicates a system where supply resources will sit idle for periods of time until higher load conditions occur.<sup>29</sup> On such systems, ratepayer costs are minimized with Capacity Resources, since a Capacity Resource such as a combustion turbine imposes significantly lower capacity costs on the system than an Energy Resource such as a combined cycle or coal plant.<sup>30</sup>
- Xcel's recent analyses of its system needs have shown a preference for the kind of Capacity Resource proposed by Invernergy. In the Black Dog Docket, Xcel withdrew its application for a certificate of need for a combined cycle facility, stating that the proposal was no longer in the best interest of ratepayers given the softening demand and lower energy forecasts now seen for its system.<sup>31</sup> Given those lower energy needs,

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<sup>21</sup> Ex. 76, p. 10 (Shah Direct).

<sup>22</sup> Minn. R. 7849.0120 (A).

<sup>23</sup> Transcript Vol. 2, pp. 9-10 (Ewan).

<sup>24</sup> Ex. 69, pp. 8-9 (Ewan Rebuttal); Ex. 47, p. 20 (Wishart Rebuttal).

<sup>25</sup> *Id.*; Ex. 47, p. 21 (Wishart Rebuttal).

<sup>26</sup> *Id.*

<sup>27</sup> Ex. 69, p. 9 (Ewan Rebuttal).

<sup>28</sup> Ex. 87, p. 10 (Rakow Rebuttal).

<sup>29</sup> *Id.*, p. 11.

<sup>30</sup> *Id.*

<sup>31</sup> MPUC Docket No. E-002/CN-11-184, Xcel Motion to Withdraw Application, p. 2.

which the record shows continues to hold true, Xcel stated that “it is more likely that the next resource should be a combustion turbine,”<sup>32</sup> rather than a combined cycle facility such as that proposed by Calpine.

- To summarize the adequacy, reliability and efficiency considerations relevant to this proceeding, the Commission has already established a need on the Xcel system of 150 MW of capacity in 2017 and up to 500 MW by 2019. Since that decision, Xcel has committed to adding significant new Intermittent Resources to its system. In addition, forecast updates suggest a need in 2017 possibly lower than the 150 MW identified by the Commission, with a continually decreasing load factor. Each of these factors indicates a need for lower capital cost, quick starting facilities in the form of peaking resources as proposed by Invenenergy and Xcel.

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<sup>32</sup> *Id.*

## **XXII - The Most Reasonable and Prudent Alternative. Parties Replacement Findings**

### **Calpine - Section XXII. The Most Reasonable and Prudent Alternative.**

Delete Findings 258, 259, 260, 261, 262, 267 and add:

- The record evidence supports a finding that Xcel may have a potential capacity need of 100-150 MW in 2017, that could increase up to 300-500 MW by 2019. However, due to changes in MISO's reserve margin calculations and other market factors, both the Department and Xcel Energy consider the need during that timeframe to be uncertain.
- In light of the uncertainty surrounding the level of need that will emerge in the 2017-2019 time period, both the Department and Xcel Energy recommended that the Commission require Xcel Energy to file updated need assessments in 2014 and 2015 of its capacity need in the 2017-2019 time period.

Add the additional following findings:

- Relying on its Strategist analysis, the Department initially recommended that the Commission approve Calpine's Expansion and Xcel's proposal for a unit at the Black Dog site with a 2019 in-service date.<sup>1</sup> Dr. Rakow tested 27 different scenarios for his eight preferred resource plans<sup>2</sup> varying inputs such as load forecast, fuel prices, CO<sub>2</sub> prices and externality values, market prices, and capital costs. The results show that the Calpine Expansion/Black Dog combination was the lowest-cost option across all 27 scenarios.<sup>3</sup>
- The Department noted that if Invenergy's Cannon Falls proposal is modeled on interruptible fuel and Invenergy's proposed in-service date is moved out from its original proposed in-service date,<sup>4</sup> the gap between Calpine's Proposal and Invenergy's proposal narrows. As the Department's Strategist analysis showed, a later in-service date for Invenergy's proposed Cannon Falls CT significantly reduces the difference between packages with Cannon Falls deferred and the packages with Cannon Falls' original in-service date – by about \$50 to \$55 million PVSC.<sup>5</sup>

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<sup>1</sup> Exhibit No. 83, Direct Testimony of Dr. Steve Rakow at p. 43, lines 3-6 ("Rakow Direct").

<sup>2</sup> Dr. Rakow's eight best resource plans were selected based upon his initial screening of resource plans in Strategist. Exhibit No. 83, Rakow Direct at p. 35, lines 9-20.

<sup>3</sup> Exhibit No. 81, Rakow Direct, Department Direct Testimony Attachment (SRR-5A), page 3 of 8.

<sup>4</sup> Exhibit No. 86, Rebuttal Testimony of Dr. Steve Rakow at p. 11, lines 11-14 ("Rakow Rebuttal").

<sup>5</sup> Exhibit No. 86, Rebuttal Testimony of Dr. Steve Rakow at p. 11, lines 11-14 ("Rakow Rebuttal").

- Even with these changes that benefit Invenergy’s Cannon Falls proposal, Under the Department’s Strategist analysis, Calpine’s Expansion along with Black Dog Unit 6 is still ranked first from a PVSC standpoint.<sup>6</sup>
- Based on its separate Strategist analyses, Xcel recommended that the Commission identify Black Dog 6 in combination with either Invenergy’s Cannon Falls proposal or Calpine’s Expansion Proposal as the least cost projects.<sup>7</sup>
- Table 9 of Xcel Witness Wishart’s Direct Testimony, however, shows that in (1) virtually every resource plan Calpine is the most robust across different sensitivity tests – that is – Calpine’s Expansion is even more favorable economically in scenarios involving higher gas costs, higher CO2 costs and increased capacity values, and (2) every plan involving Invenergy’s units fails relative to Calpine’s Expansion in particular – as well as all other plans – when all bids are compared consistently on the basis of firm natural gas transportation costs.<sup>8</sup>
- The ratepayer benefits of Calpine’s Expansion Proposal are strongly supported by the modeling analyses carried out by Xcel and the Department.
- The Department and Xcel’s Strategist analyses and recommendations understate the value of Calpine’s Expansion in several material respects, including (1) by failing to base their final recommendations on firm fuel requirements for all thermal resources; and (2) by failing to include the costs of selective catalytic reduction (“SCR”) technology on the CT resources proposed in the proceeding.
- Both Xcel and the Department’s recommendations assume that Invenergy’s pricing for natural gas at its proposed Cannon Falls CT will be based on interruptible natural gas transportation service, with no cost adjustment for sufficient alternative fuel storage capability needed to ensure reliable, year-round operations.<sup>9</sup>
- When modeled on a comparable basis, Invenergy’s Cannon Falls proposal is not economically competitive. Under Xcel’s Strategist analysis, the total PVSC for its top rated plan (Plan 1) that includes Invenergy’s Cannon Falls CT increases by about \$30 million with the addition of firm gas, “making it uncompetitive with the Calpine proposal.”<sup>10</sup> Under the Department’s Strategist analysis, the use of interruptible natural gas supply for Invenergy’s Cannon Falls facility significantly reduces the PVSC for Invenergy’s proposal and significantly reduces the difference between packages with Cannon Falls and the other packages by about \$35 million PVSC.<sup>11</sup>

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<sup>6</sup> Exhibit No. 86, Rakow Rebuttal at p. 12, lines 3-6.

<sup>7</sup> Exhibit No. 44, Wishart Direct at p. 43, line 16-18.

<sup>8</sup> Exhibit No. 44, Wishart Direct, Table 9 at page 39; *see also*, Exhibit No. 53, Hibbard Rebuttal at p. 9, line 18 through p. 10, line 2.

<sup>9</sup> Xcel Witness Wishart noted that “...the fuel tanks at the site are barely sufficient to support the operation of a single turbine. For reliable winter operation the amount of on-site fuel storage would need to be expanded. Invenergy has not included these costs in their bid and has not provided supplemental information on the issue.” Exhibit No. 44, Wishart Direct at p. 50, lines 1-5.

<sup>10</sup> Exhibit No. 47, Wishart Rebuttal at p. 22, lines 11-13.

<sup>11</sup> Exhibit No. 86, Rakow Rebuttal at p. 10, lines 21-23.

- Assuming a comparable firm-fuel transportation requirement for the proposed Invenergy Cannon Falls CT would cause the Strategist results to assign even greater value to the Calpine/Black Dog 6 combination as the highest-ranked resource combination under the Department’s analysis.
- If the Commission determines that it is appropriate to allow Invenergy’s proposed Cannon Falls CT to use interruptible rather than firm gas service, it is appropriate to ascribe greater value to Calpine’s and Xcel’s proposals from a reliability perspective. This is because a resource’s availability could impact its capacity accreditation by MISO.<sup>12</sup> If served by interruptible fuel, the proposed Cannon Falls CT will not be available on many winter days<sup>13</sup> potentially decreasing the value of the CT’s capacity.<sup>14</sup> The greater possibility that Cannon Falls will be interrupted in the winter would result in a lower level of certainty of service and other units on the system needing to pick up the slack.<sup>15</sup> In addition to the relative economics, such reliability considerations favor moving forward with Calpine’s Expansion.
- Calpine argued that the Commission should consider the value of mitigating the environmental impacts of CT capacity used to help manage net load variability by requiring the installation of state-of-the-art selective catalytic reduction (“SCR”) technology on Invenergy and Xcel’s proposed CT resources and that the costs of that equipment be included in the economic evaluation of the bids.<sup>16</sup>
- While Xcel and Invenergy argued that SCR is not required to permit the proposed CTs, Xcel Witness Ford and Invenergy Witness Ewan conceded that including SCR would reduce expected emissions at their proposed CT facilities.<sup>17</sup>
- In light of the state’s policy objectives as reflected in Minnesota’s renewable energy standards and other efforts to address power plant emissions, requiring SCR on Xcel and Invenergy’s proposed CTs creates a more level playing field from an emissions perspective for the resources under consideration and evaluation in this procurement. Based on the record in this case, the cost of SCR installations on the CTs proposed in this proceeding would be approximately \$15 million in 2017 dollars.<sup>18</sup> Including such costs for Invenergy and Xcel’s proposed CTs would further widen the gap between the cost-effectiveness of Calpine’s Expansion and Xcel and Invenergy’s proposed projects.
- Minnesota has adopted an aggressive renewable energy standard, which requires that eligible renewable electricity account for 31.5% of Xcel’s total retail electricity sales in Minnesota by 2020.<sup>19</sup> Z

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<sup>12</sup> Hearing Transcript, Volume 2 (October 23, 2013) at p. 21, lines 13-15.

<sup>13</sup> Exhibit No. 77, Attachments to the Direct Testimony of Mr. Sachin Shah at DOC Attachment \_\_\_ at (SS-5), pp. 30 and 31 of 32 (“Shah Direct Attachments”).

<sup>14</sup> Exhibit No. 44, Wishart Direct at p. 6, lines 10-14 (emphasis added).

<sup>15</sup> Hearing Transcript, Volume 1 (October 22, 2013) at p. 89, lines 4-19 and p. 91, lines 2-15.

<sup>16</sup> See e.g., Exhibit No. 55, Direct Testimony of Mr. Todd Thornton at p. 12, lines 12-22 (“Thornton Direct”).

<sup>17</sup> Hearing Transcript, Volume 1 (October 22, 2013) at p. 78, lines 2-9 and Volume 2 (October 23, 2013) at p. 12, lines 11-17.

<sup>18</sup> Exhibit No. 51, Hibbard Direct at p. 30, FN 35.

<sup>19</sup> See Minn. Stat. § 216B.1691.

- The record in this case shows that the CTs proposed by Xcel and Invenergy and Calpine's combined-cycle Expansion can be used to support the integration of renewable resources on Xcel's system.<sup>20</sup>
- The record shows, however, that the value of Calpine's Expansion to help integrate variable resources is likely higher because combined cycle resources can manage net load variability more efficiently, and at lower cost and lower emissions than CT capacity.<sup>21</sup>

**Invenergy - Section XXII. The Most Reasonable and Prudent Alternative.**

Again, for the reasons discussed above, the ALJ Recommendation determining the Geronimo proposal to be the most reasonable and prudent alternative cannot be sustained. The Geronimo proposal does not meet the need identified by the Commission with respect to either the size or type of resource required. Therefore, Invenergy respectfully requests that the Commission strike ALJ Findings 252 – 267 and replace with them with the findings already [provided by Invenergy] set forth in Sections IX, XV and XXI above, as well as the following:

- GRE offers to sell capacity credits for select years. As such, GRE offers no actual capacity or energy to the system and no longer-term solution to fill Xcel's need. Nonetheless, both Xcel and the Department included GRE in the Strategist modeling, to determine if this capacity credit offer had sufficient value to warrant consideration, for example, by delaying the need to actually add resources to the system. However, the value of delaying other resource additions was outweighed by the costs of the GRE proposal.<sup>22</sup> Thus, the record demonstrates that it is neither reasonable nor prudent for Xcel to pursue a capacity credit purchase from GRE.

**Xcel Energy - Section XXII. The Most Reasonable and Prudent Alternative.**

**Strike 252-267, Add new: 251-264**

252. Xcel recommended that Black Dog Unit 6 in combination with Calpine's Mankato project or Invenergy's Cannon Falls project be ultimately selected by the Commission to meet Xcel's range of potential need in the 2017-2019 timeframe.<sup>23</sup>

253. Xcel recommended that the Commission direct both Calpine and Invenergy to move forward to the negotiation phase of these proceedings to finalize the terms and conditions of their respective PPAs. This will incentivize Calpine and Invenergy to provide their best terms, and allow the Commission to select the PPA that provides the greatest benefits to Xcel's ratepayers.<sup>24</sup>

254. Xcel Energy also recommended that its Red River Valley Unit 1 serve as a contingency option in the event that both the Calpine and Invenergy PPAs do not move forward for any reason, since it was part of the third least cost plan identified by Strategist.<sup>25</sup>

255. Calpine recommended that its Mankato project be selected to meet Xcel Energy's need and be

<sup>20</sup> Exhibit No. 53, Hibbard Rebuttal at p. 17, lines 17-19.

<sup>21</sup> Exhibit No. 53, Hibbard Rebuttal at p. 18, line 19 through p. 19, line 2.

<sup>22</sup> Ex. 46, p. 24 (Wishart Direct).

<sup>23</sup> Ex. 46 at 23-24, 40-41 (Wishart Direct); Hearing Transcript, Vol. 1 at 124-125.

<sup>24</sup> Ex. 46 at 41-42 (Wishart Direct).

<sup>25</sup> *Id.* at 24, 41.



directed to engage in PPA negotiations with Xcel Energy.<sup>26</sup> Calpine opposed Invenergy's Cannon Falls project also being selected to proceed to the PPA negotiation phase on the grounds that it was not supported by the record.<sup>27</sup>

256. Invenergy recommended that both its Cannon Falls and Hampton Corners projects should be directed to engage in PPA negotiations with Xcel Energy to determine which in combination with Black Dog Unit 6 should meet Xcel's range of potential need.<sup>28</sup> Invenergy opposed Calpine's Mankato project also being selected to proceed to the PPA negotiation phase on the grounds that Xcel currently has underutilized combined cycle plants on its system and therefore does not need another one.<sup>29</sup>

257. The Department recommended that Black Dog Unit 6 be selected to move forward, and that Xcel pursue negotiations for a PPA with Invenergy's Cannon Falls and Calpine's Mankato projects.<sup>30</sup> The Department believed that if negative issues are identified with any of these three proposals, the Commission should then select the other two proposals.<sup>31</sup>

258. The Department agreed with Xcel Energy that it is important for multiple projects to proceed to PPA negotiations, as long as the projects are reasonably close in economic performance, to maintain competitive pressures on all of the proposed vendors and to protect ratepayers.<sup>32</sup>

259. Additionally, the Department recommended that the Commission consider requiring Xcel Energy to issue an all solar RFP in consideration with other information that is known in the context of Xcel Energy's next Integrated Resource Plan.<sup>33</sup>

260. Both the Department and Xcel Energy recommended that the negotiation process focus on arriving at a prudent and reasonable PPA that reflects the economic, operational, and reliability terms contained in the successful bid(s).<sup>34</sup> If the parties should reach an impasse during the negotiations, they would bring the issue(s) causing the impasse back to the Commission for direction on how to proceed.<sup>35</sup>

261. In addition, the Department recommended that any PPA brought to the Commission for approval should not only have pricing terms consistent with the prices that were used to evaluate the bid, but also should include appropriate ratepayer protections.<sup>36</sup> These protections should be similar to the protections typically included in proposed PPAs such as the security fund, appropriate milestones, and well-defined events of defaults and remedies, among other provisions.<sup>37</sup> The Department also recommended that the use of interruptible gas be discussed during negotiations with Invenergy,<sup>38</sup>

262. In addition, Xcel recommended that the Commission direct that the PPA negotiations address delay and cancellation options so that the Commission would have the flexibility to delay or cancel

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<sup>26</sup> Ex. 54 at 20-21 (Hibbard Rebuttal).

<sup>27</sup> Calpine Initial Brief at 31-32.

<sup>28</sup> Ex. 69 at 20 (Ewan Rebuttal),

<sup>29</sup> *Id.* at 19.

<sup>30</sup> Ex. 86 at 15 (Rakow Rebuttal); Hearing Transcript, Vol. 2 at 49-50.

<sup>31</sup> Ex. 86 at 15 (Rakow Rebuttal).

<sup>32</sup> *Id.*

<sup>33</sup> Ex. 83 at 43 (Rakow Direct).

<sup>34</sup> Ex. 46 at 45 (Wishart Direct); Ex. 82 at 4 (Shaw Rebuttal).

<sup>35</sup> Ex. 46 at 45 (Wishart Direct).

<sup>36</sup> Ex. 82 at 4-5 (Shaw Rebuttal).

<sup>37</sup> *Id.*

<sup>38</sup> Ex. 86 at 12 (Rakow Rebuttal).

implementation of a selected resource in the event changed circumstances warranted doing so.<sup>39</sup> Xcel Energy also recommended that the PPA negotiations address security fund, CO<sub>2</sub> emission costs and allowances, and capital lease accounting issues.<sup>40</sup>

263. Xcel Energy anticipates that the resulting PPAs will include the potential for cost reimbursement to the selected vendor(s) in the event that a selected project was delayed or cancelled, and upon Commission approval of those terms, all costs reasonably incurred under the PPA would be borne by Xcel's customers.<sup>41</sup>

264. The record evidence supports the following resource selections and directives in conducting the resulting PPA negotiations:

- Black Dog Unit 6 should be selected first to meet a portion of Xcel Energy's potential range of capacity need because it is the lowest cost resource option. Black Dog 6 is the most appropriate resource with the optimum flexibility for meeting the need that emerges in the 2017-2019 timeframe. The in-service date of Black Dog Unit 6 should be flexible and determined in conjunction with the PPA negotiations with the other selected project(s).
- Both Invenenergy's Cannon Falls and Calpine's Mankato are reasonably close in economic performance in the Strategist modeling. Because either Invenenergy's Cannon Falls or Calpine's Mankato expansion project could emerge from PPA negotiations as the better option to meet Xcel's need in combination with Black Dog Unit 6, both of these projects should proceed to the PPA negotiation stage of this proceeding.
- PPA negotiations should address important commercial issues such as (i) schedule; (ii) performance security; (iii) environmental considerations; (iv) gas supply considerations; (v) accounting considerations; (vi) delay and cancellation options, as well as (vii) all of the other PPA negotiation issues identified in the findings of this section.
- At the end of the negotiations, the Commission should select the PPA that offers the best value, security, and flexibility in conjunction with Black Dog Unit 6.
- The Red River Valley Unit 1 proposal should be held in reserve in the event that the PPAs negotiated for Invenenergy's Cannon Falls and Calpine's Mankato projects are unacceptable to the Commission.

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<sup>39</sup> Ex. 49 at 8 (Alders Direct).

<sup>40</sup> Ex. 46 at 47-49 (Wishart Direct).

<sup>41</sup> *Id.*

**Section XXIII. Compatibility with Our Socioeconomic and Natural  
Environments.  
Parties Replacement Findings**

**Calpine - Section XXIII. Compatibility with Our Socioeconomic and Natural  
Environments.**

34. Calpine argued that the emissions from the proposed Calpine Expansion are lower than from the CTs proposed in this procurement on a per unit of energy generated basis. The relative impact of CT versus CC technologies from an emission perspective was presented in Exhibit Nos. \_\_ (PJH-6a) and (PJH-6b) to Calpine Witness Hibbard's Direct Testimony, Exhibit No. 51.

35. Exhibit Nos. \_\_ (PJH-6a) and (PJH-6b) show emission rates from each unit proposed on a pounds per MWh (lbs/MWh) basis as well as the reductions in emissions resulting from the installation of SCR. Exhibit No. \_\_ (PJH-6a), reproduced below, shows emission rates by technology for nitrous oxide ("NO<sub>x</sub>"):

**[TRADE SECRET INFORMATION BEGINS:**

**TRADE SECRET INFORMATION ENDS]**

36. As shown in this Exhibit \_\_ (PJH-6a), the NO<sub>x</sub> emission rates for Calpine's Expansion are lower than the next-closest option by **[TRADE SECRET INFORMATION BEGINS** **TRADE SECRET INFORMATION ENDS]**.

37. Exhibit No. \_\_ (PJH-6b), reproduced below, shows emission rates by technology for carbon dioxide ("CO<sub>2</sub>"):

**[TRADE SECRET INFORMATION BEGINS:**

**TRADE SECRET INFORMATION ENDS]**

38. As shown in this Exhibit \_\_ (PJH-6b), the CO<sub>2</sub> emission rates for Calpine's Expansion are lower than the next-closest option by **[TRADE SECRET INFORMATION BEGINS** **TRADE SECRET INFORMATION ENDS]**.

39. The record shows that these emission rates are primarily a direct function of the relative energy efficiency (*i.e.*, heat rates) of the respective projects. With respect to NO<sub>x</sub>, the differential is also due to the fact that Calpine's Expansion includes back-end emission control technology, *i.e.*, SCR, that is not included in Invenergy and Xcel's proposed CT resources.<sup>1</sup>

40. Both Xcel and Invenergy argued that total annual emissions are likely to be lower for the CTs proposed by Invenergy and Xcel than Calpine's Expansion.<sup>2</sup> The record shows, however, that assessing the environmental impacts of the thermal projects in this procurement requires a

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<sup>1</sup> Exhibit No. 51, Hibbard Direct at p. 29, lines 13-17.

<sup>2</sup> See *e.g.*, Exhibit No. 43, Rebuttal Testimony of Xcel Witness Gregory Ford at p. 4, lines 18-22 (noting that Calpine's emissions could be higher on an annual basis due to the fact that combined cycle units commonly operate "at a capacity factor that is four times higher than the capacity factor for CTs.") ("Ford Rebuttal").

comparison not of total annual tonnage, but based on emissions per unit of energy produced.<sup>3</sup> Thus, assuming equal quantities of MWh produced, the Calpine Expansion would have lower total emissions than the CTs proposed.

41. To the extent that the Calpine Expansion operates more hours than the CTs due to its efficiency advantage, on a unit-to-unit comparison basis, the Calpine Expansion could have higher total annual emissions. However, for every hour of operation of Calpine's proposed combined cycle resource it is likely displacing generation from resources that also have a higher emission rate in lbs/MWh than the new combined cycle facility, and thus emissions are reduced.<sup>4</sup>

### **Invenergy - Section XXIII. Compatibility with Our Socioeconomic and Natural Environments.**

The ALJ Recommendation fails to reflect the record regarding the benefits of the Invenergy proposals and the strong local support for those proposals. Therefore, Invenergy requests that the Commission strike Findings 269-281 and replace them with the following:

- The Expansion and Hampton both bring significant benefits to the community, while protecting or enhancing the natural and socioeconomic environments.

- In assessing any project under this criterion, the Commission considers first “the relationship of the proposed facility, or a suitable modification thereof, to overall state energy needs.”<sup>5</sup> The Invenergy proposals provide necessary Capacity Resources to support both the influx of new renewable energy resources and the declining load factor experienced on Xcel's system. These facilities impose low capital costs, while having the ability to quickly provide power to the system to maintain reliability. Invenergy has built an impressive track record of reliable and efficient operation at its existing Cannon Falls facility and proposes employing the same technology at its new facilities, taking advantage of its substantial expertise and experience.

- The Expansion and Hampton projects also bring substantial socioeconomic benefits. The Expansion and Hampton projects will employ a peak labor force of approximately 100 and 150 workers, respectively, during their 12 month construction periods.<sup>6</sup> Once operational, the projects will provide an additional approximately \$500,000 per year in taxes and payments in lieu of taxes to the local economy in Cannon Falls and \$1,000,000 per year in Hampton assuming the installation of two generating units there.<sup>7</sup>

- Cannon Falls City Administrator Aaron Reeves stated that: “Invenergy has been an excellent business partner in Cannon Falls,” generating zero complaints from citizens or businesses while involving itself in the community and financially supporting the schools and other local projects. Given its experience with Invenergy, Cannon Falls views the Expansion as “an excellent economic development opportunity for the city” and that the city sees “no issue at all with providing the necessary local approvals that would move forward quickly.”<sup>8</sup>

- The Invenergy proposals also provide indirect benefits to the community and the business environment. By providing cost-effective and reliable energy supply to the Xcel system, the Invenergy proposals will minimize the financial impact to Xcel's business and residential ratepayers at a time when they face regular and significant rate increases.<sup>9</sup>

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<sup>3</sup> Exhibit No. 53, Hibbard Rebuttal at p. 19, lines 10-13.

<sup>4</sup> Exhibit No. 53, Hibbard Rebuttal at p. 20, lines 7-10.

<sup>5</sup> Minn. R. 7849.0120 C (1).

<sup>6</sup> Ex. 65, pp. 12-13 (Ewan Direct).

<sup>7</sup> *Id.*, p. 13.

<sup>8</sup> Public Hearing, October 15, 2013 Transcript, pp. 30-34; *see also* Ex. 70, Attachment 3 (Shield Direct).

<sup>9</sup> Ex. 70, p. 20 (Shield Direct).

- Invenergy’s facilities will take advantage of substantial existing infrastructure, minimizing the impacts on existing land use. In addition, Invenergy employs Environmental, Health and Safety staffs who work together with staff at its facilities to maintain compliance with local, state and federal regulations.<sup>10</sup> Each facility will implement a comprehensive compliance tracking program and to ensure ongoing compliance and to alert appropriate staff to upcoming requirements.<sup>11</sup>

- The Expansion and Hampton will fully comply with all applicable air quality regulations, including undergoing a Best Available Control Technology review.<sup>12</sup> Once operational, emissions from the facilities will be minimized through multiple means.<sup>13</sup> The Cannon Falls facility has operated well below its permitted emissions levels.<sup>14</sup>

- Regarding air emissions, Calpine contends that its combined cycle proposal is “a cleaner option” than the combustion turbines proposed by Invenergy.<sup>15</sup> However, Calpine’s combined cycle facility will not necessarily result in significantly lower emissions.<sup>16</sup> As Calpine acknowledged, combined cycle facilities have a longer start-up time than combustion turbines.<sup>17</sup> During that start-up time, combustion controls are not yet effective and emissions are higher than the “steady state” emissions from the facility.<sup>18</sup> Moreover, combined cycle facilities typically operate at a higher capacity factor than a combustion turbine, meaning significantly more total emissions.<sup>19</sup> Thus, it is not possible to state with any degree of certainty that the Calpine proposal will have less environmental impact than the Invenergy proposals.

### **Xcel Energy - Section XXIII. Compatibility with Our Socioeconomic and Natural Environments.**

Leave 268, strike ALJ FOF 269-281 and add:

- Each of the natural gas proposals is required to operate within the limits prescribed by their applicable permits. Based on the record in this proceeding, Black Dog Unit 6, and the Cannon Falls and Mankato expansion projects will operate within the requirements of their permits.

- Each of the proposals would result in creation of jobs for construction of and operation of the project. Each would contribute to the State’s economy. None of the proposals provides a significant benefit compared to the others as it pertains to the socioeconomic factors.

- Another socioeconomic question is whether Minnesota’s statutory preferences for renewable energy require Geronimo to be selected rather than Black Dog Unit 6, Cannon Falls, or Mankato. Minn. Stat. § 216B.243, subd. 3a calls for the Commission in a certificate of need proceeding to consider whether the Company has “explored the possibility of generating power by means of renewable energy resources and has demonstrated that the

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<sup>10</sup> Ex. 70, Attachment , p. 13 (Shield Direct).

<sup>11</sup> *Id.*

<sup>12</sup> Ex. 69, pp. 12, 18 (Ewan Rebuttal).

<sup>13</sup> Ex. 65, pp. 17-18 (Ewan Direct).

<sup>14</sup> Ex. 69, p. 5 (Ewan Rebuttal).

<sup>15</sup> Ex. 51, p. 30 (Hibbard Direct).

<sup>16</sup> Ex. 69, p. 12 (Ewan Rebuttal); Ex. 43, pp. 4-5 (Ford Rebuttal).

<sup>17</sup> Transcript Vol. 1, pp. 42-43, 62-63 (Hibbard); Ex. 93.

<sup>18</sup> Ex. 69, p. 12 (Ewan Rebuttal).

<sup>19</sup> Ex. 43, p. 4 (Ford Rebuttal).

alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source.” Thus to be favored over a nonrenewable resource Geronimo’s solar generation proposal had must be a least-cost alternative. The record demonstrates that Geronimo is not the least cost resource in comparison to Black Dog Unit 6, Calpine’s Mankato project, and Invenergy’s Cannon Falls project.<sup>20</sup>

- In addition, Minn. Stat. § 216B.2422, subd. 4 provides that the Commission shall not approve a nonrenewable resource unless the Company demonstrates that a renewable resource is not in the public interest. Under the SES, Xcel Energy is required to add approximately 290 MW of solar generation to its system by 2020, and the record evidence indicates that Geronimo’s 100 MW solar proposal is priced above the market for other solar resources.<sup>21</sup> It would contrary to the public interest to nevertheless select Geronimo’s 100 MW solar proposal to meet one third of our obligations under SES when there is no evidentiary support for a finding that the proposal is cost-effective in comparison to other solar options that could meet the requirements of the mandate.<sup>22</sup>

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<sup>20</sup> Ex. 46 at 25, 33-35 (Wishart Direct); Ex. 48 at 25-26 (Wishart Rebuttal); Ex. 83 at 13 (Rakow Direct).

<sup>21</sup> Ex. 46 at 22 (Wishart Direct); Hearing Transcript, Vol. 1 at 110.

<sup>22</sup> Ex. 46 (Wishart Direct) at 36; Ex. 83 (Rakow Direct) at 11.

## **Conclusions of Law and Recommendations Parties Replacement Findings**

### **Calpine - Conclusions of Law and Recommendations**

Delete Conclusion of Law 4, 7, 8, 9, 11, 17, 18 and add:

- A significant portion of Xcel's resource need should be met by combined cycle technology that can operate as an intermediate or baseload resource.
- If baseload coal-fired resources become uneconomic as a result of changes in the dispatch of resources due to low natural gas costs and/or existing and future environmental requirements, there may be a need to replace retiring resources with intermediate or baseload capacity, such as can be provided by Calpine's Expansion as proposed in this proceeding.<sup>1</sup>
- Installing cost-effective combined-cycle capacity can provide a valuable hedge against the risk of intermediate and baseload resource retirements in light of anticipated environmental regulation or unforeseen factors.<sup>2</sup>
- The ability of Calpine's Expansion to serve as a hedge against future market uncertainty is an important attribute from a public policy perspective. The records shows that selection of Calpine's Expansion is cost-effective and will provide the Commission with greater flexibility in making resource decisions in the future.
- The Commission is selecting resources in this procurement that will not only meet the projected capacity need in the 2017-2019 timeframe, but also in the decades to come.
- The record shows that this procurement will provide Xcel with the opportunity to add aggressively priced natural gas-fired generation resources to its resource portfolio. Delay in adding such resources could subject Xcel's customers to higher capacity costs in the future.
- Delaying the addition of natural gas-fired resources on Xcel's system is not in the best interests of ratepayers.

### **CONCLUSIONS**

1. The quantitative economic analyses outlining the objective merits of the proposed resources support the selection of Calpine's Expansion Proposal to meet all or a portion of Xcel's future resource needs. Calpine Witness Paul J. Hibbard demonstrated that Calpine's Expansion Proposal is the least expensive option among the thermal energy resources offered in this procurement by Xcel, Calpine, and Invenergy based on the LCOE as seen from the perspective of Xcel's ratepayers. The LCOE results show that the Calpine Expansion is the least cost resource over a broad range of differing

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<sup>1</sup> Exhibit No. 53, Hibbard Rebuttal at p. 16.

<sup>2</sup> Calpine Witness Todd Thornton testified that "[p]eaking units are often selected not because they provide greater value to the market in terms of energy production or operational flexibility, but simply because they typically require a lower capital investment than a combined-cycle unit." Exhibit No. 55, Thornton Direct at p. 11, lines 17-20.

scenarios, assumptions and contingencies – demonstrating that the Expansion can serve as a valuable hedge against foreseeable and unknown changing system conditions for years to come.

2. The Department and Xcel’s Strategist analyses, which analyzed the present value of societal costs (“PVSC”) of different combinations of bids, similarly support the selection of Calpine’s Expansion. No other party submitted a quantitative economic analysis. As a result, the Commission has before it three separate modeling exercises – conducted using similar inputs but slightly varying methods and assumptions – that conclude that Calpine’s Expansion should be viewed as the best (or in Xcel’s analysis, among the best) resource options available to the Commission from LCOE and PVSC perspectives.

3. In addition, the record demonstrates that the economic modeling performed understates the value of Calpine’s Expansion Proposal. Mr. Hibbard’s LCOE analysis purposefully used conservative assumptions that tended to disadvantage Calpine relative to its competition. Notwithstanding this purposeful approach, Calpine’s Expansion has the lowest LCOE among the thermal resource proposals by wide margin. The Strategist modeling relied on by the Department and Xcel in making their recommendations failed to ascribe certain fuel costs and costs related to environmental control technology to other thermal bids, the effect of which is to undervalue the relative cost-effectiveness of Calpine’s Expansion. These facts further support the selection of Calpine’s Expansion based on purely quantitative metrics.

4. From a qualitative standpoint, the economic modeling fails to fully reflect the significant “non-price” benefits related to the operation of Calpine’s proposed combined-cycle generation compared with simple-cycle generation proposed by Xcel and Invenergy. The Expansion’s environmental performance and the ability to serve as a hedge against future market uncertainty set Calpine’s Proposal apart from the CT resources proposed in this proceeding. Calpine’s Expansion Proposal also benefits from being an expansion of an existing facility that was planned and constructed with the Expansion in mind. While such planning allowed Calpine to price its proposal aggressively, the planning also reduces the Expansion’s impact on the environment and the community in which it operates. These are important qualitative attributes that also support the selection of Calpine’s Expansion Proposal.

5. The record in this case highlights the importance of adding combined cycle capacity through this procurement. The record shows that selecting only CT peaking capacity in this proceeding – compared to combined cycle capacity or a mix of CT and combined cycle capacity – would diminish the resilience of Xcel’s resource mix to respond to higher-than-expected load growth and future resource retirements, and would constrain the flexibility Xcel’s system has to integrate variable renewable resources in an economically- and environmentally-responsible manner.

6. Accordingly, based on the record developed in this proceeding, the Commission directs Xcel to enter into PPA negotiations with Calpine to secure the clear benefits of the Calpine Expansion for Xcel’s customers.

### **Geronimo - Conclusions of Law and Recommendations**

Add:

4. The Department of Commerce conducted an appropriate environmental analysis of the proposed projects for the purposes of this proceeding and produced an Environmental Report that satisfies Minnesota Rule 7849.1200

5. The Environmental Report addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for the process. Moreover, the



Environmental Report was prepared in compliance with the procedures in Minnesota Rule 7849.110 to Minnesota Rule 7849.2100.

6. A public hearing was conducted in St. Paul, Minnesota. Proper notice of the public hearing was provided, and the public was given the opportunity to speak at the hearing and to submit written comments. All procedural requirements have been satisfied.

### **GRE - Conclusions of Law and Recommendations**

11. If added capacity is needed beyond 200 MW, selection of GRE's proposal to meet the first 200 MW, supplemented by Geronimo's proposal for up to an additional 71 MW, will provide benefits to society, in a manner compatible with protecting the natural and socioeconomic environments, including public health.

12. Selection of Geronimo's proposal to supplement GRE's proposal is in accord with Minnesota's preference for new facilities with low-emission, renewable and distributed generation.

13. Among the proposals in this proceeding, GRE's and Geronimo's solutions represents the lowest risks of non-compliance with state and federal policies, rules, and regulations.

14. Minn. Stat. § 216B.243, subd. 3(a) prohibits the Commission from issuing a certificate of need for any new energy facility that uses nonrenewable fuels unless it can be demonstrated that: (a) the possibility of generating power by means of renewable energy resources was explored, and (b) selection of a renewable energy source to meet the stated need is not in the public interest.

15. The hearing record does not establish that selection of a new nonrenewable energy source to meet the first 200 MW ~~71 MW~~ is in the public interest.

16. Selection of GRE's and Geronimo's proposals further the public interest.

17. If added capacity beyond 200 MW ~~71 MW~~ is needed before the end of 2019, selection of Geronimo's GRE's proposal (or other proposal of the Commission's choice) is in the public interest.

#### *Recommendation*

19. Select GRE's ~~Geronimo's~~ proposal.

21. Select Geronimo's GRE's proposal (or other proposal of the Commission's choice) if added capacity beyond 200 MW ~~71 MW~~ is needed before the end of 2019.

### **Invenergy - Conclusions of Law and Recommendations**

Therefore, Invenergy recommends that the Commission not adopt the ALJ Conclusions and instead conclude that:

- The record in its totality demonstrates that the Invenergy Expansion and Hampton proposals most reasonably and prudently meet the need on Xcel's system in the 2017-2019 time frame and should be selected. Xcel and Invenergy should proceed to PPA negotiations and the final PPAs should be presented to the Commission for its review and approval.

### **Xcel - Conclusions of Law and Recommendations**

Leave 1-3, strike all and add:

4. The Department of Commerce conducted an appropriate environmental analysis of the proposed projects for the purposes of this proceeding and produced an Environmental Report that satisfies Minnesota Rule 7849.1200.

5. The Environmental Report addresses the issues and alternatives raised in scoping to a reasonable extent considering the availability of information and the time limitations for the process. Moreover, the Environmental Report was prepared in compliance with the procedures in Minnesota Rule 7849.110 to Minnesota Rule 7849.2100.

6. Public hearings were conducted in communities located near the proposed energy generation facilities. Applicants and the Department of Commerce gave proper notice of the public hearings, and the public was given the opportunity to speak at the hearings and to submit written comments. All procedural requirements have been satisfied.

7. The evidence in the record demonstrates that Xcel's Black Dog Unit 6 is the lowest cost resource. It also offers considerable flexibility because it can be placed into service in 2017, 2018, and 2019, and the Company has agreed that it may be cancelled provided the prudent and reasonable costs incurred prior to cancellation are recoverable.

8. The evidence in the record demonstrates that Invenergy's Cannon Falls and Calpine's Mankato proposals are the next least-cost proposals that could meet a portion of Xcel's potential capacity need, and would have essentially the same impact on Xcel's system costs. Consequently, both Invenergy's Cannon Falls and Calpine's Mankato facilities should proceed to PPA negotiations.

9. The evidence in the record demonstrates that Xcel, Invenergy, and Calpine should explore delay and cancellation options in the course of PPA negotiations to provide the Commission the flexibility to delay or cancel these projects if circumstances warrant doing so.

10. The evidence in the record demonstrates that at the end of the PPA negotiation process with Invenergy and Calpine, the Commission should select the PPA that offers best value, security, and flexibility for ratepayers.

11. The evidence in the record demonstrates that in the event that neither the Invenergy or Calpine PPA emerge from the negotiations are acceptable, the Commission should select Xcel Energy's Red River Valley Unit 1.