



## Legislative Fiscal Bureau

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Joint Committee on Finance

Paper #201

### UW-Madison Cogeneration Plant (Building Program)

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#### CURRENT LAW

Building program projects with a cost exceeding \$500,000 are required to be enumerated in the authorized state building program. To enumerate a project, the Legislature lists the project title and budget in a nonstatutory provision enacted as part of the biennial budget bill. In addition, the Legislature must authorize any new bonding or other monies needed to fund the project.

#### GOVERNOR

No provision.

#### DISCUSSION POINTS

1. The UW System, state, and numerous consultants have studied UW-Madison's utility needs over the next decade. Since 1999, the state and UW-Madison have been developing a plan to increase heating and cooling capacity on campus in conjunction with electric cogeneration. Under 2001 Act 109 (the 2001-03 budget adjustment bill), the Department of Administration (DOA) and the UW Board of Regents were required to negotiate an agreement with the public utility (or an affiliate) that provides electric service to the Madison campus to construct a centralized cogeneration facility with a nominal output of 150 MW, to provide electricity, along with steam and chilled water services, to the campus in a cost-effective and technically feasible manner, subject to PSC review and approval. In addition, Act 109 modified the UW's energy costs appropriation to permit its use to pay for the costs of purchasing electricity, steam and chilled water generated by the new facility.

2. In January 2001, a report was made to the State Building Commission regarding the intent of DOA and UW-Madison to enter into a Memorandum of Understanding (MOU) with

Madison Gas and Electric Company (MGE) and Alliant Energy to explore the possibility of constructing a cogeneration plant on the UW-Madison campus.

3. In May, 2002, the Building Commission approved locating a MGE cogeneration facility on University-owned land. Under current law, the Building Commission must approve the construction of non-state-owned facilities on state-owned land. The approval provided Building Commission authorization for the construction of a cogeneration facility by MGE on UW-Madison property under terms of operating agreements between MGE, the State of Wisconsin, and the Board of Regents, although PSC and legislative approval would still be required.

4. The Commission also authorized DOA, on behalf of the Board of Regents, to enter into a lease with MGE for University placement of state-owned equipment in a portion of the facility with an option to purchase. The Commission provided a waiver of s.16.855 to allow MGE to reconstruct two small UW-Madison structures that would be demolished as a result of the project. Finally, the Commission directed the UW System and Division of Facilities Development (DFD) to provide periodic updates to the Commission on the project.

5. In April, 2003, the Building Commission's 2003-05 capital budget recommendations were conveyed to the Joint Committee on Finance in accordance with the statutory requirement for submission by the first Tuesday in April. Those recommendations did not include a UW-Madison project to address the central and chilled water needs of the campus. Concurrent with the development of the 2003-05 capital budget, the UW System, UW-Madison, and the Department of Administration (DOA) were in the process of analyzing alternatives for meeting the future needs of the campus for central steam and chilled water.

6. Based on the review of the analysis of alternatives, public comments, and other information, the Secretary of DOA, in a letter to the Joint Committee on Finance Co-chairs dated May 9, 2003, recommends the enumeration of a 150 MW cogeneration facility in the 2003-05 capital budget using program revenue supported borrowing. The enumeration would be for \$90 million to pay for construction of the facility based on current estimates. The program revenue supported bonds would be paid for through charges to UW-Madison campus operations that receive utility services and to non-state agencies that receive services. DOA recommends the establishment of a PR continuing appropriation for the UW-System that would receive revenues from chargebacks from non-state entities, such as the Federal Forest Products Research Lab, UW Hospital and Clinics Authority, and the Veterans Administration Hospital, that currently receive utility services from the campus's central utility plants. In addition, a sum sufficient PR continuing appropriation would be established to receive payments from campus facilities through chargebacks and credits.

7. According to DOA, the charges would be set to generate revenues sufficient to pay debt service on bonds that will be issued to fund the construction of the cogeneration facility. Under the proposal, UW-Madison would be required to annually report to DOA on the chargebacks to campus operational units that would be assessed in the following year and the methodology used to generate the chargebacks. DOA would have to approve the proposed chargebacks before they could be assessed.

8. Because UW-Madison campus operations include both facilities and programs that are general purpose revenue funded and program revenue funded, a portion of the charges would be assessed to the UW-System GPR utilities appropriation. Based on the current mix for steam and chilled water, non-state facilities would be assessed through their steam and chilled water costs for approximately 5% of the bond payments. The GPR/Fee facility share of the bond payments would be approximately 85% (the GPR/Fee share of fuel and utilities is traditionally 73% GPR and 27% fee/tuition). Other PR-funded operations, including residence halls and student unions would account for the remaining 10% of the bond payment.

9. Under the current MOU, MGE would construct the facility to house electrical generating equipment, heat recovery equipment, and electric-driven chillers. Alliant Integrated Energy Services (AIES) would serve as construction manager. The UW Board of Regents would retain ownership of the land, and lease it to MGE at appraised market rates. According to UW System staff, the ground lease payment has been negotiated at \$172,000 per year and payment would commence once ground is broken for the facility.

10. Under the original January, 2001, MOU, the UW System would acquire equipment related to heating and cooling through the state master lease program. At the time, this equipment was valued at \$60 million. However, as recommended by the Governor, the UW System's share of the project would include \$80 million for construction, \$5 for a performance guarantee, and \$5 million contingency, funded through \$90 million in program revenue supported borrowing. The project costs would be distributed between the UW System and MGE, with MGE paying for the electricity generating components, the UW paying for chilled water components, and both MGE and the UW sharing common costs related to steam generation.

11. Operating costs would also be shared between MGE and the UW. Under the current MOU, MGE would pay for maintenance of the grounds; however, the UW and MGE would share in ongoing maintenance and operations and would purchase steam and electricity for heating and cooling purposes. All funds needed for UW participation in this project would need to be sought as an increase to the base utility budget starting in the 2005-07 biennium, when the facility is expected to be completed.

12. The total estimated cost of additional steam and chilled water capacity, and principal and interest related to the 150 MW cogeneration plant would be \$9.4 million in 2005-06 and \$11.9 million in 2006-07. Approximately 85% of this funding would need to come from the UW System's fuel and utility appropriation and related tuition funding. As a result, the UW System's fuel and utility appropriation would need to be increased upon completion of the plant to reflect the GPR and tuition share of these costs. The remaining 15% would be charged to non-state and PR-funded operations. The following table shows the additional debt service and utility cost forecast for the cogeneration facility beginning in 2005-06.

**Debt Service and Utility Costs Forecast  
for UW-Madison Cogeneration Facility  
(In Millions)**

|            | <u>2005-06</u> | <u>2006-07</u> | <u>Total</u> |
|------------|----------------|----------------|--------------|
| GPR        | \$5.8          | \$7.4          | \$13.2       |
| PR-Tuition | 2.2            | 2.7            | 4.9          |
| PR-Other   | <u>1.4</u>     | <u>1.8</u>     | <u>3.2</u>   |
| Total      | \$9.4          | \$11.9         | \$21.3       |

13. In April, 2003, a consultant report, by Sabesta-Blomberg, was released, the report focused on two primary options with regard to serving the future utility requirements of UW-Madison. The consultant report analyzed a 150 MW cogeneration facility jointly developed by UW System and MGE, as well as a smaller 45 MW cogeneration facility involving only the UW System.

14. According to the consultant report, the primary issue of utility development relates to the deficit of utility plant capacity necessary to serve the cooling and heating loads of UW-Madison. Based on an analysis of chilled water and steam load capacity needs and capacity at UW-Madison, the campus will exceed existing capacity beginning in 2004 with a capacity deficit growing in each year thereafter based on current construction, enumerated, and planned construction projects. In addition, UW-Madison has identified the need for reliable, uninterruptible electric power for the campus facilities.

15. Based on the consultant report, campus load growth projections indicate that new chiller capacity needs to be operational for the summer of 2005, with 20,000 tons needed through 2010. Additional steam capacity needs of 400,000 pounds per hour will need to be available to serve growing heating loads within the next five years. Either the 45 MW or the 150 MW option would serve UW-Madison's steam and chiller capacity needs.

16. The 150 MW option co-developed by MGE and UW-Madison would provide additional steam and chilled water to the UW, while providing MGE with additional electric generation capacity to meet its service obligation to its customer base. Upon completion of this project, the planned capacity of the facility would be available to the UW regardless of whether it needs it or not. As a result, the UW could be required to begin making debt service payments on capacity that may not be needed for several years.

17. While the 45 MW facility option would meet the steam and chilled water needs of the UW, the facility would not meet the entire electric load requirements of the UW or additional electric capacity for the local utility service area. A portion of the electric consumption (25% to 33% on an annual basis) would continue to be provided through the local electric utility. However, the smaller plant developed solely by the UW System could provide development flexibility. As a result, new capacity could be installed on a schedule based more closely to the needs of the UW,

which could reduce the initial capital costs and payments on debt in the initial years.

18. Based on the MOU with MGE, the state's share of the cost for the 150 MW option would be no greater than \$90.0 million. Thus, if cost for the plant exceeds the original estimate, MGE would cover any cost overruns. According to the consultant report, the state-owned 45 MW facility option would cost an estimated \$124.3 million based on a conceptual 45 MW cogeneration facility. The costs include allowances for contingency, design, and a management fee for the Department of Administration.

19. While the up-front costs of the 150 MW option may be less expensive to the state than the state-owned 45 MW facility, the present value of the capital costs, operating expenses, and variable costs related to the production or purchase of steam, chilled water, and electricity could be less expensive with the 45 MW state-owned facility than the MGE 150 MW facility. On April 25, 2003, the consultants submitted a report that calculated a significant saving in present value terms (\$61.2 million), for the 45 MW option compared to the 150 MW proposal that DOA recommends for inclusion in the 2003-05 building program. However, on April 28, an errata sheet was presented by the consultant that revised this estimated present value savings to \$51.2 million. Further, on May 6, 2003, another report was presented by the consultant, which indicates that the estimated present value savings associated with the 45 MW plant would be \$16.8 million. In a cover memorandum to DFD, the consultant indicates that when other factors (such as MGE assumption of certain risks by contract) are considered, the two proposals are essentially equal. Given the continued evolution of the cost analysis of these options, it is difficult to assess the comparative advantage of these proposals.

20. However, under the Public Service Commission (PSC) process for approving the plant, the PSC must certify both that the state is not subsidizing MGE and that MGE rate-payers are not subsidizing the state. Thus, both the interests of the state and MGE should be reviewed under the PSC certification of the project. Nonetheless, the cost of steam and chilled water may remain higher than they would in a state-owned facility.

21. UW-Madison and MGE have conducted several hearings with regard to the 150 MW proposal. Neighborhood and environmental concerns have focused on neighborhood impact, air pollution and water use of the larger plant. As a result of these meetings, UW-Madison and MGE have developed air and water mitigation agreements, and have worked with neighborhood groups to address noise concerns and establish a conflict resolution process for addressing concerns once the plant is built.

22. As previously mentioned, the 150 MW cogeneration project must also be reviewed by the PSC. The certificate of public convenience and necessity (CPCN) process for the facility is currently underway with a draft environmental analysis recently completed. The PSC will proceed with the CPCN hearing process this summer.

23. From one point of view, the Legislature has already approved the concept of the 150 MW cogeneration facility under the provisions of 2001 Act 109 cited above. The current proposal would provide the project enumeration and bonding authority needed to implement the facility

countenanced in 2001 Act 109. The Legislature commonly enumerates individual capital projects as part of the building program, and the amendment draft recommended for inclusion in the Committee's substitute amendment by DOA would represent the enabling legislation for this project.

24. On the other hand, there has been controversy over the location and size of this power plant. The administration itself withheld this project from the initial building program submission so that it would have additional time for public hearings and to review the matter. Opponents of this proposal argue that the Legislature should consider enumerating this project in separate legislation, which would provide an opportunity for public hearings before legislative standing committees.

25. Staff from the UW System argue that the potential delay caused by separate legislation could result in significant delays in the PSC process. This could delay project construction, and thus the project may not be completed in time for the service date requirements of new capacity by 2005. In addition, changes to the current project or implementation of a completely different project would cause further delays given the magnitude of work and documentation already completed with regards to the 150 MW facility.

**ALTERNATIVES**

1. Approve the 150 MW cogeneration facility at UW-Madison and provide \$90,000,000 in program revenue supported borrowing for this project enumeration in the 2003-05 building program. Establish a program revenue sum sufficient continuing appropriation for UW-System that would receive revenues from chargebacks to UW-Madison from non-state entities (Forest Products Research Lab, UW Hospital and Clinics Authority, and the Veterans Administration Hospital) that receive utility services from the campus's central utility plants. Establish a sum sufficient PR continuing appropriation to receive payments from campus facilities through chargebacks and credits. Require UW-Madison to report annually to DOA on utility charges in the following fiscal year to fund debt service related to this project and the methodology used to calculate those charges. Specify that these charges could not be assessed until approved by DOA.

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|---|--------------|
| <b>Alternative 1</b>                    | <b>BR</b>    |
| <b>2003-05 FUNDING</b> (Change to Bill) | \$90,000,000 |

2. Maintain current law and refer the proposal to the Legislature for consideration as separate legislation.

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