1. Agenda Item Title: TMCC/Wind Turbine Installation  
Meeting Date: Thursday, June 16, 2011

2. BACKGROUND & POLICY CONTEXT OF ISSUE:
In order to improve TMCC’s renewable energy curriculum the college is requesting authorization to install two wind turbines on the Dandini campus. It is proposed to erect the wind turbines, a 5kW and a 2.4kW, on TMCC’s Dandini campus. The turbines will be mounted on tilt-up mono poles approximately forty feet high and will be fitted with electronic monitoring equipment which will allow students to see real-time data from any computer with internet access. TMCC students will benefit from having two completely different turbine technologies experiencing the same wind characteristics at the same elevation, at the same time, students and professors alike will be able to compare the performance tradeoffs of different turbine design features such as blade configuration and geometry, generator design, over speed control and power conversion techniques. Students will also be involved in the normal maintenance of the two turbines. The Dandini campus and the specific location on the campus were selected because it has the highest available wind resource of any TMCC site and the area is relatively unobstructed by buildings or hilltops which could cause wind turbulence. Additionally, the site is in close proximity to electrical switchgear which the turbines must tie into. The proposed site is identified in TMCC’s facility master plan, approved by the Board of Regents in December of 2004, for future development of academic and student life space. The turbines, however, could be relocated with relative ease if future development is necessary in this location. Prior to placing this item on the Board of Regents meeting agenda the College’s Facilities Master Plan Committee and a representative from neighboring DRI reviewed the proposal to install the turbines and unanimously supported it. The site of the proposed wind turbines relative to the Facilities Master Plan is indicated on the attached map.

3. SPECIFIC ACTIONS BEING RECOMMENDED OR REQUESTED:
Approval to erect two wind turbines on TMCC land.

4. IMPETUS (WHY NOW?):
The wind turbine installation will be a valuable learning aid for TMCC’s maturing renewable energy program and funding has been provided in the form of a grants to complete the installation.

5. BULLET POINTS TO SUPPORT REQUEST/RECOMMENDATION:
- Grant and utility rebate funding from NV Energy and International Game Technology will cover the cost of the turbines and their installation which is not expected to exceed $76,000.
- The wind turbine installation will provide a hands-on, real-time learning experience for TMCC students.

6. POTENTIAL ARGUMENTS AGAINST THE REQUEST/RECOMMENDATION:
The college will have the responsibility for the project once completed. Post warranty maintenance obligations are expected to be $150 per year for inspections and $1600 every three to five years for preventive maintenance.

7. ALTERNATIVE(S) TO WHAT IS BEING REQUESTED/RECOMMENDED:
No alternative options are being considered.

8. COMPLIANCE WITH BOARD POLICY:
Consistent With Current Board Policy: Title #_____ Chapter #_____ Section #_____
Amends Current Board Policy: Title #_____ Chapter #_____ Section #_____
Amends Current Procedures & Guidelines Manual: Chapter #_____ Section #_____
Other:________________________________________________________________________
Fiscal Impact: Yes_____ No_____  
Explain: Equipment and installation costs of approximately $76,000 are being paid from grants from NV Energy and International Game Technology. Post-warranty maintenance and equipment replacement costs could impact the institution and result in future costs.
3-2 Illustrative of Campus Build-out (Horizon 2)

The concept for the facilities master plan incorporates:

- Buildings located to shelter outdoor spaces from northerly and westerly winds and to frame significant views
- Defined campus entries off of Dandini Boulevard and Raggio Parkway
- Direct access from perimeter roads into parking structures to reduce vehicular travel on campus
- Clearly defined separate circulation systems for vehicles and pedestrians to minimize conflicts
- Buildings connected by pedestrian paths, courtyards, quads, and sheltered arcade spaces
- Protected interior courtyards with open ground level connections into buildings
- A series of outdoor gathering spaces, connected by a hierarchy of pedestrian pathways, located to take advantage of distant vistas