In the spring term of this class the concept of using school buses equipped with electric drive and storage batteries as a source of storage to even out peaks in electric demand was explored. It was found to be a feasible approach for school districts based on electric savings and also with solar panels for charging.

This term we will explore this concept for use on campus at USM. USM has a modest need for transportation between its Gorham and Lewiston campuses that is not currently served by Metro buses. From an ethical perspective, there are two considerations for expanding bus or vanpool services to serve more riders. One ethical consideration is environmental, whereas a van that includes a number of riders emits less greenhouse gas emissions than a number of personal vehicles driven by individual riders. Another ethical consideration is socio-economic, in that mobility is privilege in our society that not everyone can afford. Personal vehicles are expensive to own and operate, whereas a shared service like a bus or a van can be less expensive for the individual riders, thus providing those riders an increase in mobility. If the University can offer increased opportunities for shared riders on buses or vans, they can help economically disadvantaged students and staff access classes and work opportunities on either the Gorham or Lewiston campuses.

Can an electric powered van be used in the EV to Grid technology to make this a more financially viable solution? Also does charging using solar panels mounted on a campus building make sense economically?

Two issues need to be evaluated:

1.0 Identify the cost and payback using an electric van to limit peak electric demand on the Gorham campus.

2.0 Utilize a solar panel as a van charging system to limit the cost of running the van.

We will have the assistance of USM Facilities in identifying the key elements that need to be explored. Some of the issues to think about are:

* When would the van be used during the year. How does this match the annual electric peak Is there a peak shaving opportunity?
* How does the daily electric peak match the daily van use ? The vans would be taking two trips, one early in the morning and another late in the afternoon, then they would have to be plugged in and charging in the middle of the day. The middle of the day is typically when our daily peak for electricity demand occurs.
* How would adding solar capacity help with electric peak demand and van charging?
* A report is available from Facilities which may answer some of these questions.