Proposal For Carbon Neutrality Policy At BSU

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ABSTRACT

This is a proposal to decrease Boise State University’s carbon footprint and diversify the University’s energy resources. This proposal aims to accomplish this goal through the implementation of conservation, efficiency practices, geothermal energy, solar power, hydroelectric power, offsets, biomass and wind power. This is a description of the components of the proposal and an evaluation of interest demonstrated by the student body.

What is carbon neutrality?

For a university to be “carbon neutral,” all of the activities of that university neither add nor remove carbon from the atmosphere.

The largest producer of carbon for a university is typically fossil fuel use but it could also include any other direct or indirect carbon emitting activities associated with the University such as faculty/staff commuting and athletic travel, and a campus transport fleet. Major steps toward carbon neutrality include but are not limited to:

- Conduct a greenhouse gas inventory (done)
- Establish and implement neutrality policy
- Establish emission measurement guidelines
- Invest in renewable alternative energy sources
- Invest in carbon offsets
- Plan for sustainable growth

Results of student survey

In order to establish the opinions of our peers on energy policy and usage and to determine the support level for carbon neutrality policy at BSU, a student survey was conducted. Of 1500, 101 randomly selected students responded with the following results:

- Over half of the students surveyed were either concerned or very concerned with current usage levels of non-renewable energy sources by the university.
- A large majority of students surveyed felt that energy inefficiencies were prevalent on campus (Figure 2).
- Over half of students surveyed would support a policy that set goals to reduce BSU’s carbon footprint even if it meant the imposition of a fee increase (Figure 3).
- 98% of survey respondents favored the use of alternative energy sources by the university. An overwhelming majority also favored the adoption of a University policy that would set out to reduce BSU’s carbon footprint (Figure 1).

Hydro and geothermal on campus

Boise State University receives energy from Idaho Power Company. Idaho Power Company has many diverse energy resources; hydropower is the largest of those resources. There are currently seventeen hydroelectric dams on the Snake River.

Those seventeen dams generate 79.6% of the energy created in Idaho and 59% of the total energy used on the Boise State campus, making carbon neutrality a viable long term goal for the university.

Geothermal at Boise State University is currently being installed. The first phase of the project is anticipated to come online in the spring of 2012. Phase 1 will connect the Morrison Center, the Multi Purpose Building, the Interactive Learning Center and the Math/Geosciences Building to direct use geothermal heating. Phase two will connect the Administration Building, the SUB and the Environmental Research Building as well.

Approximately 625,000 sq ft of building space will be heated upon completion of the project, eliminating cost and carbon from the use of natural gas. This will be a significant step that thwarts BSU even closer to attaining carbon neutrality.

Quick fixes on campus

Economical and simple steps to help reduce our carbon footprint here at BSU include:

- Install light motion sensors in every classroom on campus
- During low student census hours, combine classes into one or two buildings to reduce the number of buildings that need power
- Change all lights on campus to high efficiency lighting
- Retrofit buildings on campus for energy efficiency
- Expand geothermal heating and cooling to all buildings on campus
- Power all vending machines with solar
- Institute solar heating of water for dorms, apartments and kitchens on campus

Developing alternative energy

Idaho’s geographic location qualifies it as one of the best states for developing potential alternative energy. Boise State University has the opportunity to harness these bountiful, renewable and economical alternatives while fulfilling its responsibility to the region as a leader and innovator.

- Solar energy potential is very good in the region (Figure 4) and has a relatively short investment payback period for small installations such as hot water heating for the residence halls, an estimated payback of about 7 years.
- Geothermal potential for the region is also very high (Figure 4) and alongside current plans, could be a means of clean, renewable energy opportunities for the university.
- Wind power has been an alternative energy source for decades but with high costs and current laws that discourage wind farm development, it will have to be revisited in the future.
- Biomass as an energy source also shares a regional advantage and has a very high potential for future development on campus (Figure 5).
- Taking advantage of the multiple community education/outreach, educational benefits and internships that can be generated by a University sponsored, local carbon offset program is an innovative way to strive for carbon neutrality.

CONCLUSION

With a jumping off point of almost 60% of our energy consumption already coming from a carbon neutral hydroelectric source, BSU is uniquely poised to move forward with a definitive carbon neutrality policy.

Considerable support from the student body has been established and current trends in alternative energy development for sustainable energy coupled with more stringent carbon policies could be a step towards making carbon neutrality an official and tangible goal of the Boise campus.