**Bangor Hydro Kiosk**

**Presented to**

**Bangor Hydro Electric Company**

Proposed by

**ASAP Media Services**

University of Maine

May 29th, 2012

**Introduction**

Bangor Hydroelectric Company (Bangor Hydro) is engaged in educating its 100,000 customers in central and eastern Maine and the general public to the benefits of heat pump technology. Using digital kiosks and web portals, Bangor Hydro plans to communicate the greater efficiency and cost-effectiveness of air-source and geothermal heat pumps over traditional oil and gas systems. To promote adoption, Bangor Hydro has specifically targeted high-school students and tradeshow attendees as key audiences for promoting heat pump technology in the region. Bangor Hydro has approached ASAP Media Services (ASAP) as a potential creative collaborator who brings fresh ideas to its proposed three-phase project. In response, ASAP offers the following proposal brief to detail the scope and nature of an effective collaboration.

As future homeowners themselves, the group at ASAP is excited at the opportunity to work with Bangor Hydro to create tools that help customers develop a better understanding of alternative heating technologies. ASAP is eager to research heat pump technologies for this project not only because of the benefit to Bangor Hydro, but also because of the benefit this information will have more broadly. The variety of potential projects, from kiosks to web applications, will present ASAP with a chance to unleash many creative ideas and solutions to the same concepts and goals. ASAP also hares in Bangor Hydro’s forward thinking approach to the future of a cleaner, “greener” society and strives to become a leader in promoting this approach. The similarity in interests of both Bangor Hydro and ASAP will result in more dynamic discussions, a more concrete conceptual foundation, and, ultimately, more impactful and beneficial collaboration.

**Overview**

Bangor Hydro has approached ASAP to research, design and fabricate a three-phase project focused on communicating the benefits of heat pump technology to a variety of audiences:

*Phase 1* of the project will culminate in design and development of a portable, educational kiosk focusing on air source heat pump technology, divided into sections reflecting research categories. Each section will provide textual information and interactive activities. The kiosk will be used in multiple venues, e.g. high schools and trade shows, to stimulate interest and promote awareness. Phase 1 will provide the design foundation for Phase 2 and 3.

*Phase 2* includes design and development of a web-based application to reside on the Bangor Hydro website. While providing much of the information presented in the Phase 1 kiosk, the web application will further encourage users to learn about air source heat pumps. Unique features include tools empowering Bangor Hydro customers to estimate the costs of installing and maintaining an air source heat pump in their own home, both in the short term (installation) and long term (maintaining), compared side by side with the costs of their current heating method. The web application will provide a compelling view of the benefits of converting to heat pump technology.

*Phase 3* of the project will involve designing and developing a permanent kiosk to be located in the front lobby of a new Bangor-area building installed with geothermal heat pumps to control temperature. The kiosk will present comparative information about geothermal pumps; and unique, building-specific information using data from meters placed throughout the building for demonstrating energy usage and efficiency in real-time. Additional tools could be created based on data such as occupant information and floor plans, turning the kiosk into an incredible resource for both visitors and employees or occupants.

The proposed project requires a significant research component *prior to* all design and fabrication of any phase. Up-front work will include research to understand topics minimally including

* The *history of heat pump technology* in various contexts, e.g. within the history of dominant traditional fuel resources and emerging interest in alternative energy resources
* The *science of heat pump technology*, from extraction to building temperature modification, including the physics behind the technology and effective means for visually and interactively conveying the relevant scientific concepts
* The *economics of heat pump technology*, at micro- and more macroeconomic levels, including tools and strategies for effective analysis and assessment of associated costs (initial and ongoing, short- and long-term, individual and community, etc.)
* The *environmental impact of heat pump technology*, as and in terms of concepts of , with possibleimpact
* The *installation of heat pump technology* associated with air-source and geothermal systems, requirements for homes and industrial buildings, , integration issues, etc.

Such research is needed to accurately inform and mediate understanding of heat pump technology throughout all phases of the project. This research component may either be performed by ASAP to develop adequate content knowledge or may be conducted by Bangor Hydro and provided to ASAP. Project estimates reflect choice of option.

**Project Description**