

It is expected that a Quorum of the Personnel Committee, Board of Public Works, Plan Commission and Administration Committee will be attending this meeting: (although it is not expected that any official action of any of those bodies will be taken)

**CITY OF MENASHA  
SUSTAINABILITY BOARD  
Common Council Chambers  
140 Main Street, Menasha**

**Tuesday, November 15, 2011  
6:30 PM**

**AGENDA**

- A. CALL TO ORDER
- B. ROLL CALL/EXCUSED ABSENCES
- C. PUBLIC COMMENTS ON ANY MATTER OF CONCERN TO THE SUSTAINABILITY BOARD  
(five (5) minute time limit for each person)
- D. MINUTES TO APPROVE
  - 1. [September 20, 2011](#)
- E. COMMUNICATIONS
  - 1. Sustainable Communities Network meeting minutes
- F. REPORTS
  - 1. [River-Gen 1: Using Fox River flow for Off-Grid local EV charge stations – A Demonstration Project](#) (Ed Kassel)
  - 2. Energy Use by the City (Paul Van de Sand)
- G. ACTION ITEMS
  - 1. Endorsement of Regional Sustainability Grant
  - 2. Accept letter of resignation from Sadie Schroeder
- H. DISCUSSION
  - 1. Update on ECWRPC HUD Grant Application (Kathy Thunes)
  - 2. Potential Earth Week activities (Kathy Thunes)
- I. ADJOURNMENT

"Menasha is committed to its diverse population. Our Non-English speaking population and those with disabilities are invited to contact the Menasha City Clerk at 967-3603 24-hours in advance of the meeting for the City to arrange special accommodations."

**CITY OF MENASHA**  
**Sustainability Board**  
**Council Chambers, City Hall – 140 Main Street**  
**September 20, 2011**  
**DRAFT MINUTES**

---

**A. CALL TO ORDER**

The meeting was called to order at 6:35 p.m. by Linda Stoll.

**B. ROLL CALL/EXCUSED ABSENCES**

SUSTAINABILITY BOARD MEMBERS PRESENT: Paul Van de Sand, Chris Bohne, Kathy Thunes, Linda Stoll, Roger Kanitz, Mayor Merkes

SUSTAINABILITY BOARD MEMBERS EXCUSED: Becky Bauer, Ed Kassel

OTHERS PRESENT: CDD Keil, Dave Klumpp

**C. PUBLIC COMMENT ON ANY ITEM OF CONCERN ON THIS AGENDA**

1. No one spoke.

**D. MINUTES TO APPROVE**

1. Motion made by Kathy Thunes and seconded by Paul Van de Sand to approve the minutes of August 16, 2011. The motion carried.

**E. COMMUNICATIONS**

1. **Letter of resignation from Sadie Schroeder**

Motion made by Paul Van de Sand and seconded by Kathy Thunes to table the resignation letter until Chairperson Linda Stoll has an opportunity to speak with Sadie Schroeder.

**F. REPORTS**

1. **“River-Gen 1: Using Fox River flow for Off-Grid local EV charge stations – A Demonstration Project” (Ed Kassel)**

Paul Van de Sand reported on Ed Kassel’s pending report. There is potential for grant money through the Wis. Department of Administration. Paul also mentioned possible sources of funding for grant writing assistance and Federal money for industrial energy assessments.

**G. ACTION ITEMS**

1. **2011 – 2012 Sustainability Plan – Prioritizing Activities**

Baseline

- Energy consumption
- Preparation of Annual Report to the Common Council
- Preparation of an executive summary of energy consumption for building (Chris Bohne volunteered to prepare)
- Comparative assessment of energy consumption by building (Paul Van de Sand volunteered to prepare)

These items are to be completed by Complete by January 1, 2012

Environment – Vegetation Management

- Evaluation of vegetation management practices on city-owned properties.

## Government

- Create council member appointment to the Sustainability Board
- Procurement Policy to be incorporated into personnel policy(ongoing)
- Consideration of impacts of city operations on stormwater and groundwater

## Transportation

- Citizen engagement in bike/pedestrian planning & project implementation (Linda Stoll volunteered to coordinate)
- Transit/walkability (Roger Kanitz to consider initiatives)

## Waste

- City recycling practices

### 2. **Acceptance of baseline assessment electric consumption**

Paul Van de Sand made, and Chris Bohne seconded a motion to accept the baseline assessment for electrical consumption by city buildings and facilities. The motion carried

## H. **DISCUSSION**

### 1. **Potential partnership with City of Neenah & Town of Menasha Sustainability Boards**

Kathy Thunes stated that Catherine Neiswender was organizing a meeting of Fox Cities Sustainability Boards.

### 2. **Update on ECWRPC HUD Grant Application**

The consensus was that the Sustainability Board draft a letter in support of the grant. (Linda Stoll volunteered to do so).

### 3. **Walkability assessment**

Greg Keil presented the drawing that was assembled from the walkability assessment.

### 4. **Refuse and recycling trends**

Kathy Thunes volunteered to compare Menasha's recycling rates with other communities.

## I. **ADJOURNMENT**

Motion made by Paul Van de Sand and seconded by Chris Bohne to adjourn at 7:50 PM.  
The motion carried.

*Minutes respectfully submitted by Greg Keil, CDD.*

**White Paper**

Sustainable Community Development:  
**River-Flow Water Generation for Off-grid Electric  
Vehicle Charge Stations**

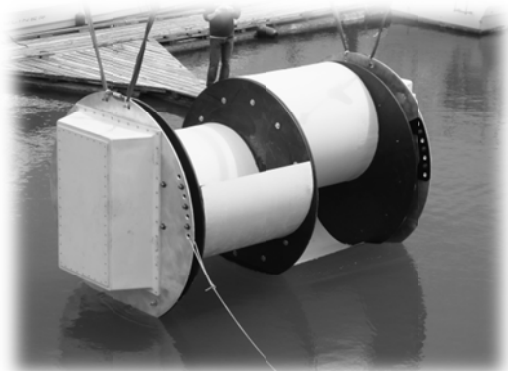
*By E.A Kassel  
Menasha Sustainability Board*

*Draft r.03*

September 2011

## Contents

Introduction .....	2
Fueling - The Problem .....	3
An Old Solution Revisited.....	3
Water to Electricity - Why Not? .....	4
Practicality–Yes Benefits –Many .....	4
Implementation.....	5
Summary.....	6



## Introduction

Electric vehicles (EVs), hold new promise as a significantly less-polluting form of general transportation – the number of electric vehicles on the road today is increasing and interest across the US and around the world is growing. With continuing advances in battery technology, innovative vehicle design is expanding – offering real choices from small personal transport types such as street-ready golf carts, to plug-in hybrids, to light duty utility vehicles - EVs are beginning to show potential as the next major mode of urban transportation.

In order for this new class of vehicles to fully integrate into society as more than just a novelty however, EVs will have to gain significant public acceptance and broader use; their success will depend on increased practicality and usability.

Often seen as EVs largest impediment towards mass acceptance, is the fact their “miles-per-charge” is considerably less than that of gasoline’s “miles-per-gallon”. With no shortage of electrical outlets in the U.S. to charge them up, once on the road, finding a friendly outlet becomes *the* challenge that makes most potential owners take pause. This means there needs to be places to plug them in where there weren’t any before; at least enough of them so EV owners can feel comfortable knowing they can get back to point A once they’ve arrived at point B. Further, those places need to be convenient - at least as convenient as today’s gas stations and probably more so.

For EVs to gain greater acceptance, they have to prove they can go somewhere or anywhere for that matter, without the fear

of running out of “fuel”. For now at least, the major hurdle is how to “fill er’ up”.

### **Fueling - The Problem**

Because gasoline has successfully defined transportation since the late 1800’s the mindset that alternatives are indeed even possible, needs to grow. Fossil fuel use has been pivotal in nearly every country’s overall economic growth. It has provided reliable transportation for nearly every use in normal modern life. It is entrenched.

The rising concern, however, is that increasing the pace of gasoline consumption is not sustainable and supplies are already on the decline. Additionally, with undeniable scientific proof, the continued use of fossil-fuels is quickly driving a global climate change that will likely lead to severe changes in the planet’s eco-system triggering changes beyond human comprehension and perhaps human limits.

Looking ahead to those dire probable events means it’s time for change and that moving towards alternative energy use – sooner, rather than later – is the smart thing to do.

So if moving toward electric vehicle use makes good environmental sense, how can it also make practical sense to gain quicker acceptance? Like the chicken and egg conundrum, which comes first, electric cars, or places to recharge them? What can be done to foster electric vehicle use and provide more places to plug them in? Like the common gas station, EV charging stations must become ubiquitous,

convenient and easy. Luckily, for towns and cities all along the Fox River, the solution is all around us – the Fox River itself.

### **An Old Solution Revisited**

Alternative energy creation via river water flow generation has been in existence for hundreds of years, way before the idea that one day we would run out of oil. A good example were the many mills and weaving plants that used river flow to convert brisk currents to mechanical energy to power the once crowded riverbanks in booming industrial towns crisscrossing the US from the 1800’s to mid-1900. Another more local example was Hearststone: the first electrically lit house in the world that used electricity generated from the currents of the Fox River and first turned on its lights Sept 30, 1882, in Appleton Wisconsin.

For many back then taking advantage of river-power made good sense; it was convenient, possible and “free”, a real practical way to get things done years before the advent of the industrial electric motor or the national electric power grid that spans our country today.

Generating power from water is called *hydrokinetics*. It is formally defined as: *utilizing the energy of water while it is in motion*<sup>1</sup>. It is the process of converting the water’s pushing force into another useful source of energy. For instance water flow can easily be converted to electricity by connecting a turbine to a generator and placing it in a moving stream. A significant flow of continuous electric power, even more stable than from derived from solar or wind, can be had considering the river flows 24/7, power can be produced all the time.

---

<sup>1</sup> EPRI - Electric Power Research Institute

The end result is energy able to be used for a useful purpose - one such purpose could be to charge electric vehicles, encourage their use – and a whole lot more.

### **Water to Electricity - Why Not?**

Why not consider using river energy generation to recharge electric vehicles?

For communities like the many who lay on the Fox River, utilizing hydrokinetic electric generation is entirely possible and practical; it is a resource just waiting for the right problem.

Implementing localized EV charging stations could be accomplished nearly anywhere river currents are constant and controllable. Improvements in technology have made it feasible for small locally placed generator units to be submerged in a running river flow. Kilowatts of power can be generated from a single unit. If more energy is needed, units can be placed in parallel yielding enough power to light a parking lot and charge the electric vehicles parked there – all without the need for standard utility power (off-grid).

### **Practicality–Yes Benefits –Many**

Improving the chances for increased EV usage depends on projecting how it makes economic sense as well as be a practical transportation solution. For sure electric vehicles have distance limitations right now. But battery technology is changing and coupled with engineering innovation, it's just a matter of time before continuing improvements reduce the mileage issues to manageable. Consider this:

As with gasoline vehicles, filling up the tank is convenient, but not essential. This is especially true when talking about local travel: like going to visit a friend or to a restaurant or shopping; it's like eating, ideal when done in small portions. The same holds true for electric vehicles: charge - go; stop - recharge. Because a full recharge is not always necessary, implementing places to stop-over and partially recharge can do the trick. So a stop at a store or restaurant or to take a stroll on the riverfront could also include plugging into a provided EV charging station, providing multiple levels of benefit, while even attracting a new layer of attendees, clientele and customers to an area. Would that in itself bring enough value for the investment of providing EV charging stations near local river sources? The answer is yes, with benefits for all.

### *Benefit 1- Public*

In the grand scheme of promoting the general use of electric vehicles, the plan has always included charging them at home. Counting that as a kind of “gas station” for EVs, to some extent it's like having millions fueling stations already in place, spread across the millions of homes fed by utility power. With the cost to charge electric vehicles already significantly lower than the cost of gasoline<sup>2</sup> the cost of a river-powered charging station's power is even less - \$0.

Installing river-powered charge stations for the public's use would perform a public service: generate goodwill, interest and local notoriety. It will be self-promoting, attract the curious and encourage use of other non-polluting forms of transportation. Perhaps even lead to changes in old regulations that only serve to limit participation and change.

---

<sup>2</sup> Kristen Hall-Geisler from *HowStuffWorks.com*.

### *Benefit 2- Community*

Providing off-grid charging where people park in public areas makes good community sense for several reasons; 1) it shows the public that local government is providing truly sustainable solutions by using alternative energy sources, off-the-grid, solely for the public's benefit; 2) It encourages the increased use of non-polluting vehicles that in the end keeps public spaces environmentally cleaner and healthier and; 3) it provides an additional way of attracting more diverse groups to city-centers while improving the chances for greater exposure to public resources, venues and local businesses.

### *Benefit 3- Business*

Like any investment the end goal is to see a return on investment that helps grow a business towards success.

Providing EV charging stations near downtown businesses gives those businesses a unique advantage by providing more reasons why customers should choose that business over others elsewhere. If a customer can recharge their vehicle while attending local merchants, it becomes an automatic incentive for customers and a win-win for a tax paying business.

If community-based EV recharging is provided for public parking, businesses will get direct benefit gaining exposure through yet a new venue of interest.

### *Benefit 4- Revenue*

Public recharging stations can, in the end, become be a revenue enhancer for city government. As acceptance and attendance grows, the long term might

include payment for the services provided, offsetting the costs of system maintenance, expansion or replacement - as part of a solid long-term revenue plan.

### **Implementation**

Anywhere that's close to a reliable flow of water can be considered. Hydrokinetic generators can be anchored at convenient near shore locations, near dams or at turns in the river out of the way of water traffic. Cabling to street or parking lot charging stations is not unlike running power for parking lot lights, very straight forward with all controls located at secure areas, not unlike what would be seen for traffic control.

Off the shelf charging stations are available for lease or purchase, from a number of companies already providing equipment to this market. Management of charge stations would be no different than that implemented for wireless parking meter revenue systems. Nearly any kind of parking arrangement could be accommodated; from parallel to slot, from diagonal to head to head.

As with any public or private project, good implementation depends on good planning. But the concept of river-flow generation is not really new at all and installs of like equipment, both domestic and international for similar power generation applications have a history of successful implementation.

What isn't as common about this proposed project is its purpose: to act as a resource specifically for spreading the availability of recharging stations for electric vehicles. And while the feat of electric power generation via river-flow has much past history in the



selling of power back to utilities - proving the core principles are solid and tested - this project is not about selling the energy. It is a demonstration project to show how using sustainable resources can be fully utilized for a focused purpose; for public off-grid only power generation for a public cause.

This project is intended to be totally under local control by each community choosing to implement it. With only necessary contact with regulatory agencies, it plans to minimize implementation delays and all unnecessary costs and obtain funding and grants, while adhering to all engineering best practices and DNR requirements.

### Summary

Electric vehicles are here today and have shown to be the next most promising method of transportation. The benefits are many but the road to acceptance and implementation are steep unless something is done to ease the transition from gasoline.

Comparatively few communities are lucky enough to be located along a river with claim to an endless source of energy available for its use. The choice to use that energy source to speed the transition to a new form of general transportation for future generations to use sends a powerful and progressive message. If electric car development follows the same trajectory as has happened in computers and electronics (entirely possible because so much of it is electronic), innovation will force this method of transport to evolve much faster than fossil fuel-driven vehicles

ever could, leapfrogging the need for improved gas mileage as the only possible method of achieving greater vehicle energy efficiency.

Implementing local EV charging stations using river-flow electric generation is an interesting and practical idea that can benefit the cause and the need for more places to charge electric vehicles, while providing many side benefits for any community choosing to implement it.

This proposal pulls from the past and enables the future while giving any community independence in managing its own power generation, encouraging change and enhancing its business climate, something that has been difficult in recent economic times.

Lastly, it gives communities a significant opportunity to implement sustainable practices - in their own backyards - benefiting many now while preparing the same for future generations to come: all while preserving the American way of living.



**Edward Kassel** is a Menasha Wisconsin resident, current member of the City of Menasha Sustainability Board and owner of Kelp, Inc. an international HVAC/ Energy Controls provider.

[ekassel@kelpinc.com](mailto:ekassel@kelpinc.com)