

## FINAL TECHNICAL/SCIENTIFIC REPORT

**Award Number:** DE- EE0002500.000

**Recipient:** Forest County Potawatomi Community

**Project Title:** Replacement of Lighting Fixtures with LED Energy Efficient Lights at the Parking Facility, Milwaukee, Wisconsin

**Project Location:** Potawatomi Bingo Casino Parking Facility, Milwaukee, WI

**Principal Investigator:** David Brien, Facilities Director and James Borgealt, Electrical Services Manager

### EXECUTIVE SUMMARY

The original scope of this project was to replace all the 1,720 205-Watt Metal Halide-type lights at the Forest County Potawatomi Community's (the "FCPC" or "Tribe") parking facilities located at the Potawatomi Milwaukee Bingo Casino, Milwaukee, Wisconsin, with state-of-the-art, energy efficient 55-Watt LED lights. The Tribe owns a six-story parking structure adjacent to its Milwaukee Potawatomi Bingo Casino operation (the "Casino") and a valet parking facility that is located under the Casino (collectively the "Parking Facilities"). Starting on August 30, 2010, the Tribe replaced a total 1,760 light fixtures in the Parking Facilities, 40 more fixtures than originally proposed, in two stages: first 1,664 lighting fixtures in the parking ramp areas of the 6-story structure and the valet parking area were replaced; then an additional 96 fixtures were replaced in the parking structure stairwells.

The energy efficiency objective of this project is to reduce the total electrical energy demand in the Parking Facilities by approximately 50% by upgrading the lighting fixtures. For safety reasons, most of the Parking Facility's lights are operated 24 hours per day, 7 days per week. Because of this safety requirement, lighting is the primary energy demand for the Parking Facilities. The Tribe tracks its energy use on a quarterly basis, and in the year preceding implementation of this project (July 1, 2009 to June 30, 2010) the total annual electrical load for the Parking Facilities was 4,216,000 kilowatt hours ("kWh").

Implementation of the project has resulted in an immediate average reduction in monthly peak demand of 238 kW over the fourth quarter of 2010. Seasonal variability makes the total annual reduction in electrical energy use hard to predict accurately at this time. Based on all 1,760 fixtures operating 24 hours per day, the energy savings would project to be 2,313,000 kWh per year. However, as an energy saving feature, the Casino already operates the fixtures located towards the periphery of the parking ramps and on the ramps' roofs only during night time. This energy saving feature, already implemented at the Parking Facilities, will lower the net reduction in electrical energy resulting from this project. The average reduction in monthly peak demand from October 1 through December 31, 2010 translates into a forecast annual electrical energy reduction of approximately 1,995,000 kWh or 47.3% of the pre-project demand. The Tribe will continue to track its energy use at the Parking Facilities through 2011 allowing the Tribe to calculate the actual on-going electrical energy savings at the Parking Facilities that result from this project.

This project was technically effective and economically feasible and beneficial to the public not only in terms of long-term energy efficiency and associated emissions reductions, but in the short-term jobs provided for the S.E. Wisconsin region. The project was implemented, from approval by U.S. Department of Energy ("DOE") to completion, in less than 6 months. The project utilized off-the-shelf

proven technologies that were fabricated locally and installed by local trade contractors. The results have been immediate (refer to Exhibit A). Already, results indicate that the project has reduced daily baseload electrical demand at this facility by almost one-quarter megawatt ("MW"). This means that there has been a direct reduction in baseload demand in S.E. Wisconsin as a result of this project. That baseload power is mostly supplied by coal-burning utility power plants so this reduction of one-quarter MW of demand equates to significant reductions in greenhouse gas emissions and emissions of other criteria pollutants such as nitrogen oxides, sulfur oxides, and mercury. Moreover, this project will likely result in an overall reduction in peak demand when combined with the use of day lighting by the Tribe of approximately 350 kW in the summer months. In addition, as is discussed below, this project and its beneficial results have been publicized in the Milwaukee press, at the DOE annual Tribal Energy Program Review, and on the Tribe's educational global warming web site.

## **COMPARISON OF THE ACTUAL ACCOMPLISHMENTS WITH THE GOALS AND OBJECTIVES OF THE PROJECT**

***Project Goals and Objectives.*** The objective of this project is to reduce the electricity demand in the Parking Facilities by upgrading the lighting over a proposed 6-month project period. The Statement Of Project Objectives ("SOPO") identifies that the Tribe's goal was to replace a total of 1,720 205-Watt Metal Halide-type lights with state-of-the-art, energy efficient 55-Watt LED lights. This activity was expected to result in a maximum annual reduction in energy demand of approximately 2,260,080 kWh or 7,714 MMBtu translating into annual reductions of approximately 1,912 tons of annual CO2 emissions based on the average carbon footprint of electrical energy in Wisconsin for 2007. Another objective for the Tribe was for this project to demonstrate the Tribe's continued leadership in implementing energy efficiency projects at its government and commercial facilities. This project was anticipated to be the largest LED lighting upgrade that has been completed in the Greater Milwaukee Area and the Tribe plans to highlight this significant energy-efficiency project to the almost 6 million annual visitors to the Casino as well as to tribes with similar facilities.

***Project Accomplishments.*** The Tribe initiated this project on July 26, 2010 and all fixtures were replaced by November 5, 2010, including 40 additional fixtures not anticipated in its original proposal. Therefore, the Tribe accomplished replacement of all the fixtures in just over 3 months, significantly faster than anticipated.

Energy savings accomplishments, based on electricity usage data from October 1 through December 31, 2010, indicate that the project has caused a total average reduction in peak demand of 238 kW. This is derived from an average 219 kW reduction in monthly peak electricity demand at the Casino parking structure and an additional 19 kW reduction at the valet parking area. Figures 1-3 provide a summary of monthly electrical use and savings at the parking structure for 2009 and 2010 with projections through December 2011. It is important to note that the metered energy use depicted in Figures 1-3 does not include electrical use in the valet parking area which is metered separately from the parking structure.

The reduction in demand outlined above translates into a projected annual savings of 1,994,623 kWh for the project or 47.3% of the pre-project electrical demand for the Parking Facilities. These savings are equivalent to a reduction of 1,850 tons of annual CO2 emissions based on the average carbon footprint of electrical energy in Wisconsin. However, the actual CO2 emissions reduction is likely much higher because the electrical energy for 24-hour lighting is likely derived from a significantly higher proportion of baseload operating plants which, in Wisconsin, are mostly coal-burning facilities. The actual CO2 emissions reductions could be as high as 2,290 tons per year. In addition, the reduction in use of electricity from coal-burning utility plants will result in significant reductions in emissions of criteria pollutants such as nitrogen oxides, sulfur oxides, and mercury.

Lastly, this project has already garnered publicity for the Tribe's leadership in promoting energy efficiency projects. The project was featured in a September 12, 2010 article in the *Milwaukee Journal Sentinel* that recognized the assistance of the DOE in bringing this project to fruition. Another article in the *Milwaukee Business Journal* highlights how the Parking Facilities' lighting project is a component of the Tribe's overall efforts to increase its energy efficiency at the Casino.<sup>1</sup> The Tribe has also written about this Project in its internal employee news letter and its 20th anniversary publication outlining the Casino's Social Responsibility activities. All media reports that mention the Parking Facilities project are provided in Exhibit B.

In addition, Mr. David Brien, Director of Facilities, attended DOE's annual Tribal Energy Program Review in Golden, Colorado on October 25-28, 2010 on behalf of the Tribe and presented preliminary results from implementation of the project.

## **PROJECT SUMMARY**

The Tribe initiated this project on July 26, 2010 by issuing a contract to its electrical contractor, Uihlein Electric Co., Inc. ("Uihlein"), to remove and recycle the existing lighting fixtures and to install 1,720 new Beta 55-watt LED fixtures. Uihlein mobilized to the project job site on August 30, 2010 and proceeded to first replace fixtures in the 5th, 4th, and 3rd floors of the east parking ramp. Uihlein then proceeded to replace the lighting fixtures in the belowground valet parking area, followed by the 2nd and 1st levels of the east parking ramp. Uihlein then installed the fixtures in each ramp floor of the west parking ramp starting on level 5 and working down to finish on the 1st level. All fixtures were replaced in the parking ramp areas and Uihlein completed the first demobilization from the site by September 30, 2010.

However, in the process of installing the new 55-Watt Beta LED light fixtures, the Tribe identified that parking ramps at the Parking Facilities only contained 1,664 light fixtures rather than the 1,720 originally anticipated in the proposal leaving 56 light fixtures unused. Therefore, on October 20, the Tribe amended Uihlein's contract to include replacing lighting in the eight stairwells of the six-story parking structure. There are a total of 96 lights in the stairwells, so this required amending Uihlein's contract to add 40 fixtures, bringing the total to be replaced to 1,760. The cost of installation of the additional fixtures was borne by the Tribe. All fixtures were replaced and Uihlein completed demobilizing from the site by November 5, 2010. See Exhibit C for photographs of the Parking Facility with the new lights installed.

## **PRODUCTS DEVELOPED**

This project's scope did not include development of products such as publications, web sites, or inventions.<sup>2</sup> Nor did this project develop new techniques or research collaboration. However, as discussed above, the project gained significant publicity in local papers during implementation. In addition, the Tribe is currently developing an Internet site that will focus on information and education about issues relating to energy efficiency, renewable energy, and global warming in Wisconsin. In addition to the Tribe's outreach efforts, this project is an extension of the on-going collaboration between

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<sup>1</sup> See, <http://www.bizjournals.com/milwaukee/stories/2009/12/21/focus1.html>. Note that this article contains some factual errors regarding funding for the Parking Facilities lighting project in that the article implies that the federal funding source was from so called stimulus money and that the funding amount was \$1.2 million.

<sup>2</sup> In fact, in a February 17, 2011 e-mail to Mr. Doug Huck, FCPC Legal Department, the DOE Project Manager, Lizana Pierce recognized that this project "does not involve any R&D patent or intellectual property concerns" and that only copyright requirements under 10 C.F.R. 600.234 applies. As such, Ms. Pierce indicated that the Tribe was not required to submit form DOE F 2050-11 "Patent Certification" on close out of the grant.

Wisconsin Focus on Energy and the Tribe in identifying and implementing potential energy efficiency projects at the Casino and in the Tribe's other government and commercial facilities.

In addition, the presentation provided by Mr. Brien at DOE's annual Tribal Energy Program Review in Golden, Colorado on October 25-28, 2010 is available online at DOE's Energy Efficiency and Renewable Energy web site.<sup>3</sup>

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<sup>3</sup> See, [http://apps1.eere.energy.gov/tribalenergy/pdfs/38\\_%20pdm\\_potawatomi\\_casino.pdf](http://apps1.eere.energy.gov/tribalenergy/pdfs/38_%20pdm_potawatomi_casino.pdf).

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**Forest County Potawatomi Community**

**Replacement of Lighting Fixtures with LED Energy Efficient Lights at the Parking  
Facility, Milwaukee, Wisconsin**

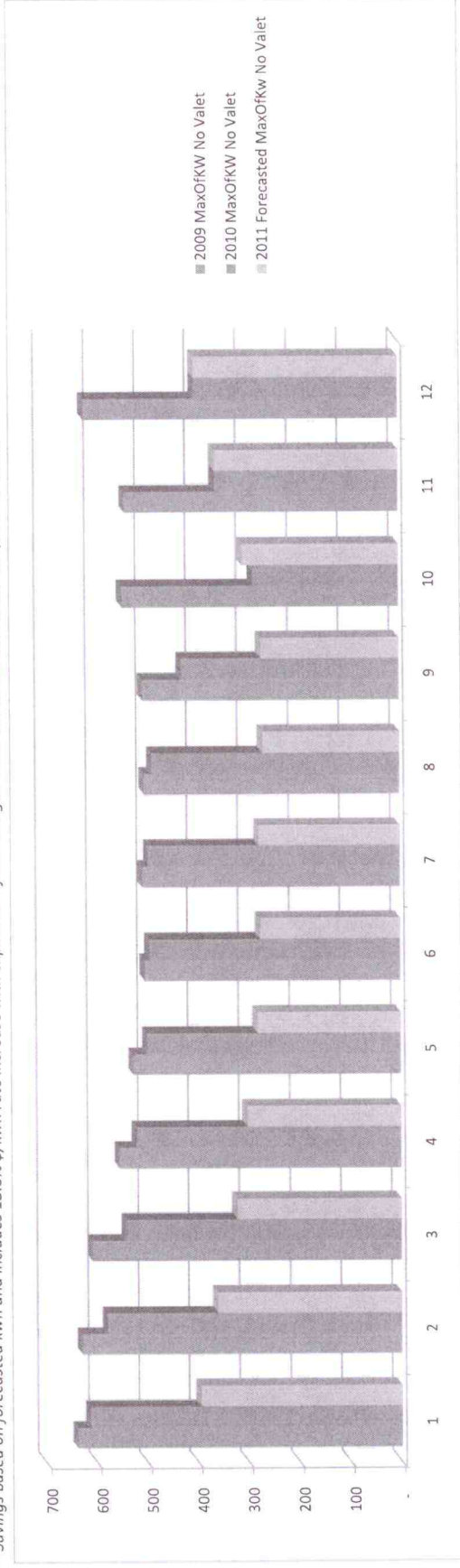
**EXHIBIT A**

**Casino Parking Facility Energy use: Preliminary Results from the Parking Facility  
Lighting Project**

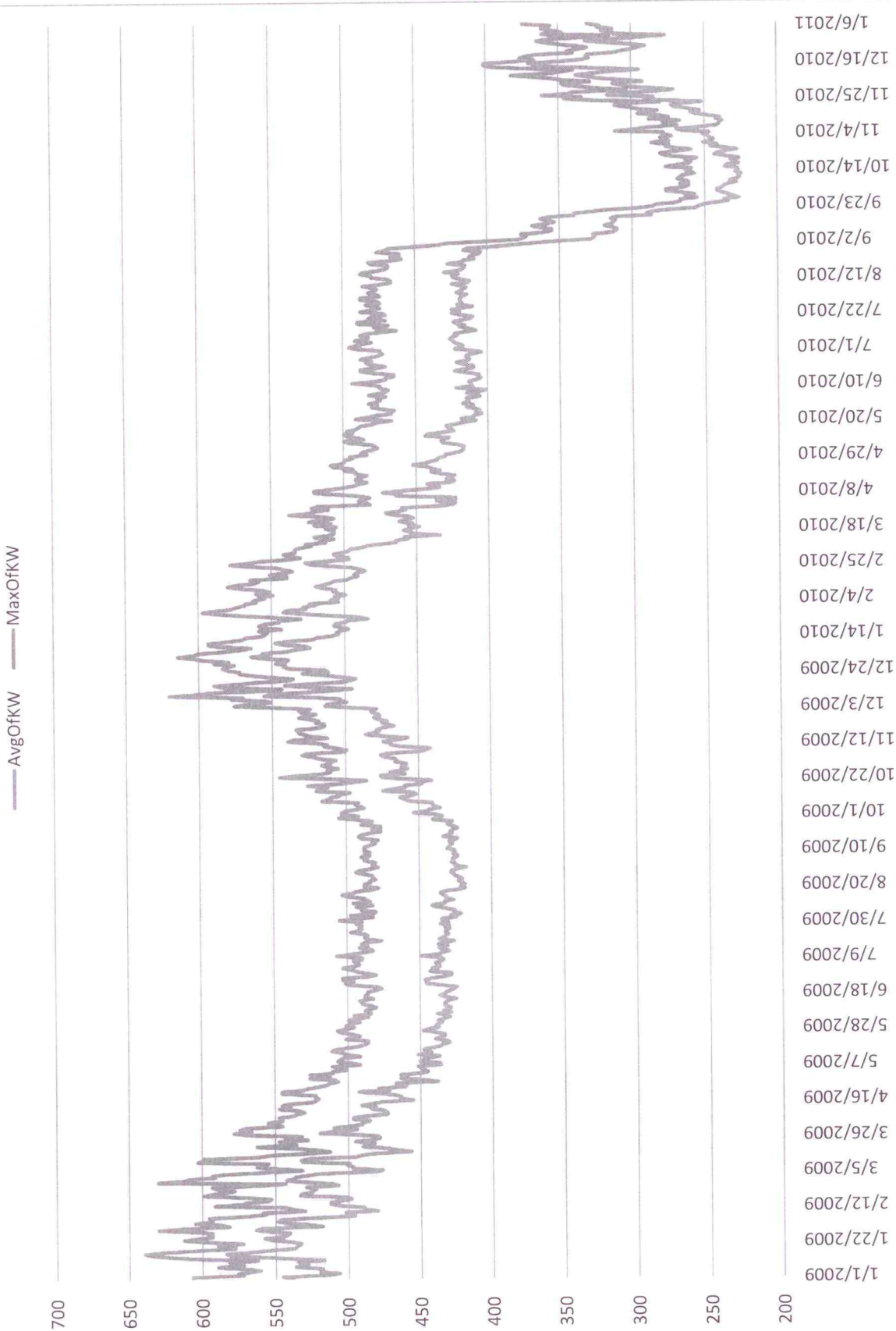
### Monthly FCPC Parking Structure 2009-2010 Electric Profile with 2011 Forecasted Savings

Mo	Days	2009		2010		2009-2010		2009		2010		2009-2010		Add Valet kw		Change in		Total kwh		Avg 2010		Calculated		2011		Forecasted	
		AvgOfKw		AvgOfKw		Change Avg		MaxOfKw		MaxOfKw		Change Max		Different		Max kw		Savings 2009-		\$ /kwh		2010 Cost		Forecasted		Forecasted	
		No Valet		No Valet		KW	No Valet	No Valet		No Valet		KW	No Valet	Meter	w/LED	2010 w/Valet	Savings No Valet	No Valet	Savings w/Valet*	No Valet		Savings w/Valet	No Valet	Savings w/Valet	No Valet	Savings w/Valet	
1	31	541	523	(19)	639	614	(25)											14,002	\$ 0.0703	\$ 985	395		169,406	\$ 13,557			
2	28	516	505	(11)	630	580	(50)											7,103	\$ 0.0764	\$ 543	361		153,012	\$ 13,312			
3	31	498	467	(31)	609	541	(67)											23,064	\$ 0.0757	\$ 1,745	322		169,406	\$ 14,585			
4	30	475	437	(37)	555	520	(35)											26,827	\$ 0.0760	\$ 2,038	301		163,942	\$ 14,171			
5	31	442	420	(22)	526	499	(27)											16,323	\$ 0.0767	\$ 1,251	280		169,406	\$ 14,780			
6	30	433	411	(22)	503	493	(10)											15,523	\$ 0.0783	\$ 1,216	274		163,942	\$ 14,617			
7	31	434	419	(16)	507	495	(12)											11,658	\$ 0.0777	\$ 906	276		169,406	\$ 14,979			
8	31	427	415	(12)	503	488	(15)											9,084	\$ 0.0793	\$ 721	269		169,406	\$ 15,296			
9	30	428	290	(138)	505	428	(77)											99,410	\$ 0.0763	\$ 7,588	271		163,942	\$ 14,241			
10	31	455	234	(221)	545	286	(259)							(19)		(278)		178,158	\$ 0.0840	\$ 14,957	308		169,406	\$ 16,185			
11	30	470	263	(207)	540	361	(179)							(19)		(197)		162,475	\$ 0.0825	\$ 13,407	361		163,942	\$ 15,395			
12	31	518	318	(199)	620	401	(219)							(19)		(238)		162,170	\$ 0.0799	\$ 12,959	401		169,406	\$ 15,406			
365	470	391		(209)	(3 Mo Avg Post Project)		(219)							(19)		(238)		725,799		\$ 58,317			1,994,623	\$ 176,524			

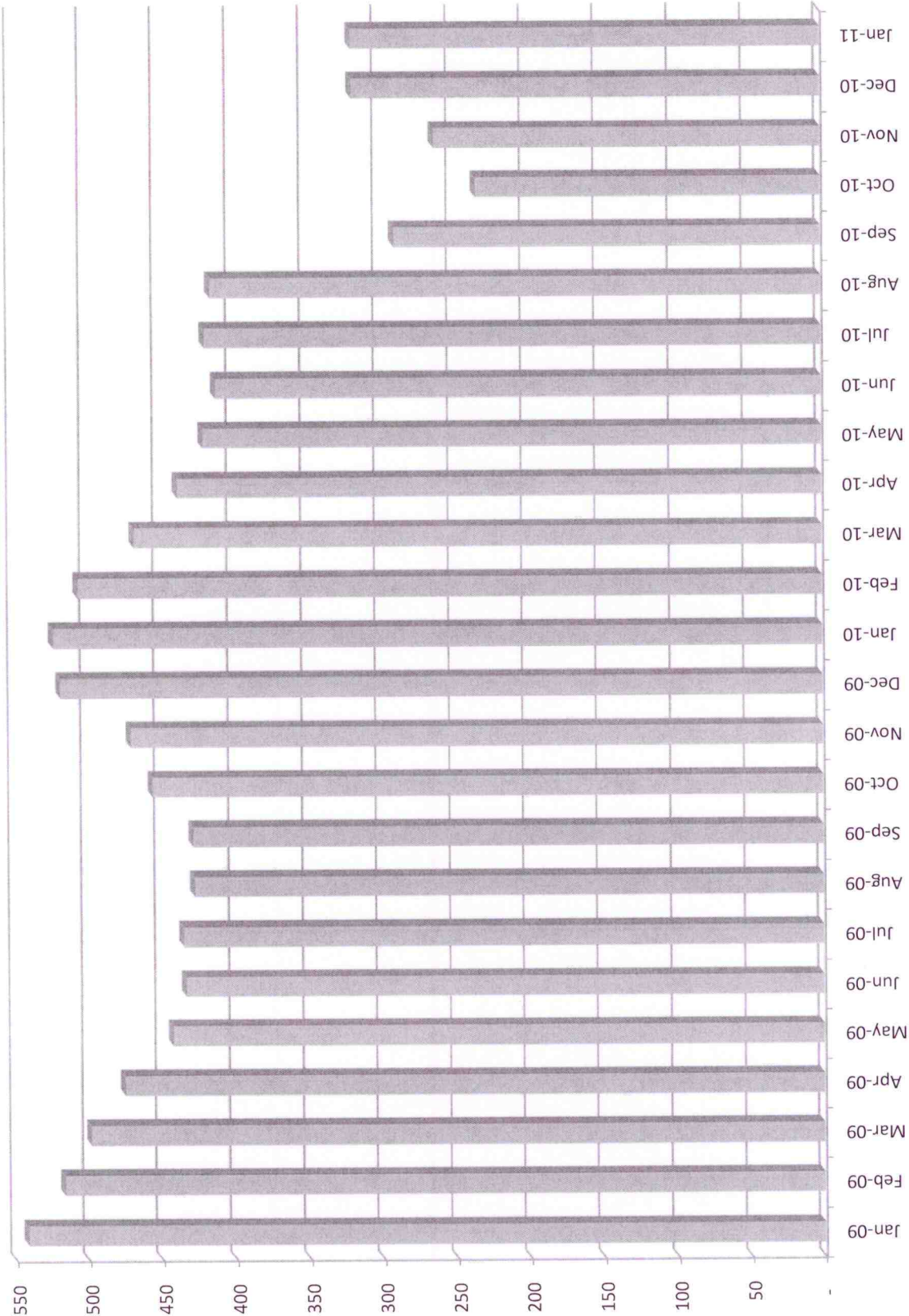
\* Savings based on forecasted kwh and includes 13.8% \$/kwh rate increase with expiration of WE Energies Point Beach Credit in 2011 compared to 2011.



### Parking Structure Daily Electric KW 2009-2010



### 2009-2010 Parking Structure Monthly Average Electric KW



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**Replacement of Lighting Fixtures with LED Energy Efficient Lights at the Parking**  
**Facility, Milwaukee, Wisconsin**

**EXHIBIT B**  
**Media Articles**

# BUSINESS

## LEDs light up saving in parking garages

Potawatomi, others shifting to lower-cost lighting source

By THOMAS CONTENT

tcontent@journalsentinel.com

Next-generation LED lighting is showing up across the city and the country amid amped-up interest in energy saving and going green.

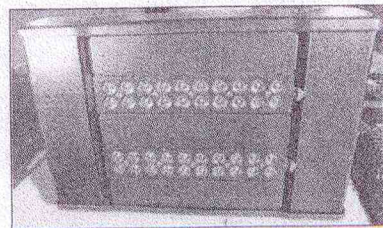
It was just two years ago that BetaLED rolled its first LED street-light off its assembly line at its 500,000-square-foot Sturtevant factory. BetaLED is a subsidiary of privately held Ruud Lighting.

Demand for outdoor lighting and parking garage lighting has led to expanded employment and an uptick in business for BetaLED, where shipments are more than twice last year's levels, said Kevin Orth, director of sales.

That includes work on gas stations in the United States and overseas, street-lighting initiatives including a \$57 million LED replacement program in Los Angeles and strong demand for LED lights in parking garages.

LED lighting is much more efficient than conventional technology, and that has led to bullish forecasts from market research firms. The consulting firm Databeans Inc. is projecting the global LED market will see growth of at least 20% a year through 2013, and the market research firm ElectroniCast Consulting forecast more than 30% growth for LED market in exterior lights. That segment of LED lights

Please see **LED, 3D**



MARK HOFFMAN / JOURNAL SENTINEL

This 49-watt two bar LED light will replace one 175-watt bulb in the parking garage at Potawatomi Bingo Casino.

## LED

# LEDs light up saving in garages

alone is expected to rise to \$1.3 billion in global sales by 2013, up from \$338 million in 2008.

At one of the largest parking garages in the state, the Potawatomi Bingo Casino in Milwaukee's Menomonee Valley, crews from Uihlein Electric are replacing metal halide fixtures with LED lights that are projected to trim energy use in the casino garage by more than 50%.

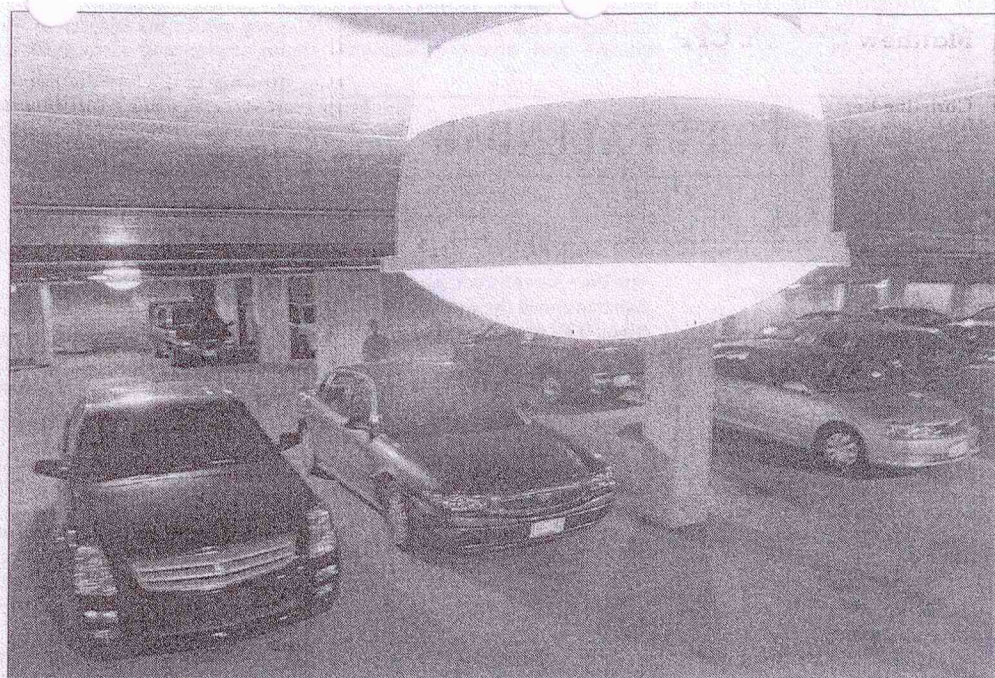
The \$918,000 project will produce saving of more than \$221,000 next year, said David Brien, the casino's facilities manager. That saving is about \$33,000 higher than the casino projected — given rising utility bills from Milwaukee utility We Energies, he said. In addition, because the LED lights are expected to last six times as long, maintenance costs will be trimmed by \$120,000.

"It's a win for everyone involved," Brien said. The project came together with the assistance of a U.S. Department of Energy financial incentives valued at \$500,000 and an energy-financing model developed with Uihlein Electric and Godfrey & Kahn, said Mark Holter, director of Uihlein's energy solutions group.

"It's a huge maintenance savings for us, as well as on the environmental side," he said. "Every year and a half I'd be replacing all those bulbs and supplying the labor to replace those bulbs and having to deal with the environmental waste from those bulbs."

Potawatomi, which saw its casino gambling winnings fall 5.4% in 2009, is investing in energy-saving technologies in other areas, with LED lighting in certain areas indoors.

Even slot-machine lighting has gone high-tech. The first shift was from incandescent to fluorescent bulbs, Brien said, adding, "Now they're coming out with LED strings that can go inside the ma-



This 175-watt light at Potawatomi Bingo Casino will be replaced with a two-bar 49-watt LED.

chines."

Two other local parking ramps, at The Brewery and Froedtert Hospital, recently revamped their lighting with an extra-efficient form of LED — LED lights coupled with motion sensors that can either dim the light or turn it off completely.

## LED plus motion sensors

The former Pabst brewery, now being redeveloped into a multi-use complex called The Brewery, was the first to deploy these sensors.

The use of occupancy sensors and dimmable LEDs as well as daylight sensors is what set the Pabst redevelopment parking garage apart, said Phil Rose of Roman Electric. Using those can potentially double the 100,000-hour expected life for the fixtures, he said.

"This is kind of taking energy efficiency to the maximum," Rose said. "How many times have you heard people get excited about a concrete parking deck? But this is really something."

For Uihlein Electric, LED retrofits have kept the company's crews busy, Holter said. It takes Uihlein's crew just a few minutes to replace one 170-watt fixture with a 49-watt LED panel, but replacing more than 1,700 fixtures at the casino is a project that will last for weeks.

A series of parking garages in the Milwaukee area already have had their lights replaced. One of the biggest

is the parking garage at Mitchell International Airport.

"There's a lot more to do," said Holter, whose crew will be finished installing LEDs at Potawatomi by the end of the month. "We're obviously chasing quite a few of them."

"Everybody wants LED as being the latest and greatest technology," Rose said.

The challenge, given the economy, remains the higher upfront cost associated with the newer and longer-lasting technology.

"What you find is everybody's interested in it, and they're averse to spending the capital," Holter said. "The big thing we're trying to help people understand is how to use creative financing, third-party financing, to pay for their projects."

As LED lighting technologies evolved, parking garage lights were among the first kind of lamps to develop, followed by streetlights and now lights for indoor applications, said Orth, of BetaLED.

One of the biggest projects for BetaLED has been the citywide street-lighting project launched one year ago in Los Angeles. BetaLED is one of two LED vendors nationally supplying LEDs for the \$57 million project.

## \$10 million annual saving

With an annual electric bill for its street lights of \$15 million, Los Angeles is forecasting saving of \$10 million per year from the proj-

ect, including \$7.5 million in electricity costs and \$2.5 million in maintenance, after the five-year project is completed.

Instead of tapping strapped city coffers for funding, the city is paying for the installation of 140,000 street lights through saving on its electricity bills.

After the first year, the city is seeing \$700,000 in electricity cost saving from installation of 20,000 fixtures, according to the Los Angeles Bureau of Street Lighting.

Interest in outdoor and parking garage lighting applications abounds, particularly in regions with high electricity costs per kilowatt-hour, Orth said.

"We're seeing it from coast to coast," Orth said, noting projects to retrofit garages at Logan International Airport in Boston and several campuses of the California college system.

"It's really driven by the fact that people are realizing better than 50% savings, reducing maintenance costs significantly and when you're in an 24 by 7 operation like a parking garage, it really becomes a quick payback."

The added features of motion sensors can increase energy saving to 80%, Orth said.

Other high-profile projects are in Racine and Milwaukee as well as Minneapolis, where the rebuilt I-35 bridge incorporates Ruud's BetaLED fixtures.



MARK HOFFMAN / MHOFFMAN@JOURNALSENTINEL.COM

Apprentice electrician Brad Arreola (left) is aided by foreman Vince Mandella while installing an LED light Wednesday at Potawatomi Bingo Casino. The casino is having its parking garage lights replaced with LED fixtures that use less energy and have lower maintenance costs.

From the The Business Journal:  
<http://www.bizjournals.com/milwaukee/stories/2009/12/21/focus1.html>

## Focus on Environment

# Igniting Project Greenfire: Tribe's energy plans could include 'green' roof, solar panels on Potawatomi Bingo Casino

Premium content from The Business Journal - by Pete Millard

Date: Sunday, December 20, 2009, 11:00pm CST

### Related:

[Media & Marketing](#), [Environment](#), [Energy](#)

Saving hundreds of thousands of dollars each year on energy costs is reason enough for the Forest County Potawatomi Community to implement energy conservation programs at the tribe's Milwaukee casino and government campus in Crandon.

Yet, the Potawatomi tribe's Project Greenfire is reaching beyond improving its internal energy management practices by raising public awareness on the importance of sustaining natural resources and maintaining clean air, water and land.

"Since we were young, our elders instilled in us the importance of protecting Mother Earth and the resources she provides," said former Potawatomi chairman Phil Shopodock in July 2009 when he unveiled plans for what would become Project Greenfire.

The Potawatomi tribe established Project Greenfire as an outgrowth of its representation on Gov. Jim Doyle's Task Force on Global Warming. The Potawatomi served as the only tribal representative on the task force to help ensure that it developed policies that reduce carbon emissions in Wisconsin, said Jeff Crawford, the attorney general for the tribe.

At the Potawatomi's 780,000-square-foot casino in Milwaukee's Menomonee Valley, the tribe is working with the state's Focus on Energy program to reduce its carbon footprint and its electricity and natural gas usage. Potawatomi Bingo Casino is the largest Indian gaming and entertainment facility in the world, according to Casino City, a gaming industry magazine. The 24-hour-a-day, seven-day-a-week casino ranks as one of We Energies' top 50 customers in the utility's eastern Wisconsin service territory.

"The casino is similar to a midsize manufacturer in terms of its usage," said Brian Manthey, a We Energies spokesman.

We Energies has been collaborating with the tribe's facilities management division for several years to lower energy demand. Manthey said We Energies connected the tribe with Focus on Energy, an energy management agency administered by the state and financed by Wisconsin utilities, to access federal and state grants that can be applied to heating, air conditioning and lighting upgrades.

Using 2007 as a base-line year, the casino used 10.2 percent less energy per square foot for the 12-month period ended June 30, 2009, and carbon emissions were 17.7 percent lower over the same period, said Crawford.

"We've made progress, but there's more we can do," said Crawford.

### Stimulus money

Through its affiliation with Focus on Energy, which has conducted energy audits at the Milwaukee casino and the tribe's government campus in Crandon, the Potawatomi Community was awarded \$1.2 million in federal stimulus money from the U.S. Department of Energy that will be used to upgrade its lighting systems in the Milwaukee casino parking ramps.

According to a Focus on Energy spokeswoman, the new lighting fixtures will lower the tribe's parking structure light bill by 25 percent or more and lower its carbon footprint by

about 4 percent. Through the Focus on Energy audits, the tribe has identified more than 100 energy-saving ideas in Milwaukee and Crandon, said Crawford.

In order to better track the tribe's energy usage and associated carbon footprint, as well as the results of its energy-efficiency measures, the tribe prepares quarterly energy and carbon reports. These reports provide a breakdown of its usage of electricity, natural gas and propane at all of its facilities.

When the Potawatomi's \$240 million casino expansion opened to visitors in the summer of 2008, it included the latest in lighting technology installed by Germantown's Creative Lighting Design & Engineering Inc. Creative Lighting Design incorporated colored lamps with LED, state-of-the-art lighting systems that dazzle visitors at the casino. Marty Peck, president of the firm, said the lighting systems are both functional and a form of art.

"Although we designed the lighting system to be energy efficient, technology changes monthly, opening up new opportunities for improvements and cost savings," said Peck.

#### **'Green' roof**

While energy consumption and a reduced carbon footprint are the primary goals of Project Greenfire, the Potawatomi Community is exploring other "green" innovations for the casino and government campus. Crawford said the tribe is considering an approximate's 200,000-square-foot green roof for the casino, which would be one of the largest green roofs in the Midwest.

Crawford said the tribe is also costing out the potential savings of adding solar panels to the casino and parking structure roofs. In the future, Crawford said there may be opportunities to save money at the casino by firing up its back-up generators during peak electricity demand periods in the summer and going off the We Energies grid. If the tribe can become an interruptible customer during peak demand periods, the casino will receive lower commercial rates for electricity.

In Forest County, the Potawatomi Community is examining additional renewable energy options to gain energy independence and further lower its carbon profile. For example, the tribe is working to lower its transportation emissions by switching to a four-day workweek for its government operations in Forest County. The switch has resulted in a reduction of approximately 170 tons of carbon dioxide emissions per year from avoided travel.

As part of Greenfire's statewide mission, the Potawatomi Community began a statewide media campaign last summer that included the establishment of a Web site, [www.endglobalwarmingwi.org](http://www.endglobalwarmingwi.org), that hopes to raise the public awareness of energy conservation and protecting the state's natural resources. The tribe produced three television ads that ran in every media market in Wisconsin.

#### **Project Greenfire**

The Forest County Potawatomi Community's renewable energy projects include the following efforts on its north woods reservation:

- Development of a biomass co-generation plant in Forest County
- Construction of a biomass district heating system for the government campus
- Development of a small wind farm on Sugar Bush Hill on the tribe's reservation
- Purchase of a biogas generator to produce electricity from the tribe's solid waste and sewage plants

*Source: Forest County Potawatomi Community*

From the The Business Journal:  
<http://www.bizjournals.com/milwaukee/news/2011/02/03/potawatomi-buys-green-energy-credits.html>

## Potawatomi buys green energy credits

**The Business Journal**

Date: Thursday, February 3, 2011, 11:46am CST

**Related:**

[Environment](#), [Energy](#)

The Forest County Potawatomi Community has purchased enough renewable energy credits to power all of its facilities, including Potawatomi Bingo Casino in Milwaukee, for 2010, 2011 and 2012, the tribe said Thursday in a news release.

The tribe has purchased the equivalent of 55 million kilowatt-hours per year from certified wind-energy facilities, enough to avoid the carbon dioxide emissions of 8,000 passenger vehicles per year or the amount of electricity used to power more than 5,000 homes, the release said.

With the purchase, the Forest County Potawatomi becomes a member of the U.S. Environmental Protection Agency Green Power Partnership, a voluntary program that encourages organizations to buy green power.

The tribe has been implementing several steps to reduce energy usage in recent years, including installing LED lights, using light occupancy sensors and upgrading the lighting in Potawatomi Bingo Casino's parking facility. Click [here](#) for a December 2009 story about Potawatomi's energy conservation efforts.



## **Forest County Potawatomi Community: Invests in sustainability**

2/4/2011

Contact: George Ermert: 414-405-0838

*Tribe acquires green power for all facilities, including casinos*

[Crandon, WI] The Forest County Potawatomi Community announced that it has purchased enough green power to meet 100% of the Tribe's electricity usage at all its facilities, including Potawatomi Bingo Casino (Milwaukee, WI) and Potawatomi Carter Casino & Hotel (Carter, WI).

The Tribe purchased Renewable Energy Credits equal to 100% of their electricity use for 2010, 2011 and 2012. With an annual purchase of nearly 55 million kilowatt-hours (kWh), the Potawatomi are able to provide green power for their operations in Forest County, Wisconsin and their gaming facilities in Milwaukee and Carter.

The green power comes from certified wind-energy facilities in the United States.

"As a people, the Potawatomi have been taught to protect the resources Mother Earth provides," said Potawatomi Chairman Gus Frank. "Ensuring that our facilities are powered by clean, renewable resources is another way we can reduce our own impact and decrease the amount of harmful emissions that are released into our air and water from burning coal."

The nearly 55 million kilowatt-hours (kWh) of green power purchased by the Tribe is equivalent to avoiding the carbon dioxide (CO<sub>2</sub>) emissions of over 8,000 passenger vehicles per year or the amount of electricity needed to power more than 5,000 homes annually.

With their purchase of renewable energy, the Forest County Potawatomi have also become a member of the U.S. Environmental Protection Agency (EPA) Green Power Partnership. The EPA Green Power Partnership is a voluntary program which works with leading organizations around the United States and encourages them to purchase green power as a way to reduce the environmental impacts associated with conventional electricity use.

The Forest County Potawatomi Community is one of only two tribes in the Green Power Partnership and is the only Native American tribe purchasing green power for 100% of its electricity use. The Forest County Potawatomi Community are also listed as No. 13 on the EPA's Top 20 Local Government list of green power purchasers.

The Forest County Potawatomi have long had a commitment to protecting natural resources and reducing the impacts of climate change. As part of that effort the Tribe, in partnership with Wisconsin Focus on Energy, conducted energy audits of the Tribe's major energy-using facilities. Based on the results of these audits, the Tribe has been investing in projects to make its facilities more energy efficient and reduce its carbon profile.

Since implementing these efficiency measures, the Potawatomi have been able to significantly lower

their energy usage and reduce their carbon emissions. In just three years, the Tribe has reduced their energy usage per gross square foot by nearly 12 percent and reduced their corresponding carbon emissions by almost 20 percent.

Some of the measures the Tribe has implemented include:

- Conversion of the work week, facilities and operations from 5 days to 4 days.
- Replacing incandescent lamps with CFL's and LED light sources
- Installing lighting system occupancy sensors, day-lighting controls and delamping multi-lamp fixtures
- Efficient scheduling of heating-ventilating-air conditioning (HVAC) systems operations
- Employee energy conservation efforts such as turning off lights and using computer sleep modes

In addition to these on-going efforts, the Forest County Potawatomi have already implemented several other significant energy efficiency projects. This includes an upgrade of the lighting in the parking facility at Potawatomi Bingo Casino in Milwaukee, WI. Completed in September 2010, the lighting upgrade is expected to reduce the parking facility's annual electricity use by 73% and avoid approximately 1,912 tons in CO2 emissions per year.

The Forest County Potawatomi Community is a federally recognized Native American tribe located in Northeastern Wisconsin with a membership of about 1,400. In addition to their work for the environment, the Potawatomi operate several tribal enterprises, including casinos in Milwaukee and Carter, Wisconsin, and a Health & Wellness Center in Crandon, Wisconsin. The tribe employs approximately 3,500 people in its government operations, casino operations, social services and additional business. For more information on the Potawatomi, please visit [www.fcpotawatomi.com](http://www.fcpotawatomi.com).



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Forest County Potawatomi Community invests in sustainability

Main NEWS Section - Environmental Events

**Tribe acquires green power for all facilities, including casinos**

*Crandon, Wisconsin (FCP) February 2011*

The Forest County Potawatomi Community announced that it has purchased enough green power to meet 100% of the Tribe's electricity usage at all its facilities, including Potawatomi Bingo Casino (Milwaukee, WI) and Potawatomi Carter Casino & Hotel (Carter, WI).

The Tribe purchased Renewable Energy Credits equal to 100% of their electricity use for 2010, 2011 and 2012. With an annual purchase of nearly 55 million kilowatt-hours (kWh), the Potawatomi are able to provide green power for their operations in Forest County, Wisconsin and their gaming facilities in Milwaukee and Carter.

The green power comes from certified wind-energy facilities in the United States.

As a people, the Potawatomi have been taught to protect the resources Mother Earth provides," said Potawatomi Chairman Gus Frank. "Ensuring that our facilities are powered by clean, renewable resources is another way we can reduce our own impact and decrease the amount of harmful emissions that are released into our air and water from burning coal."



*The Forest County Business Development Center in Milwaukee, Wisconsin, is one of many building the tribe now owns.*

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## MESSAGE FROM NANCY ZIOLKOWSKI

## Exciting Initiatives in Marketing

Busy, busy, busy. That describes the Marketing team's summer, and it looks like we'll continue that way into the fall! Several of the initiatives going on include: continued work on the branding campaign, reaping the benefits of our marketing offers from both the local and a few Chicago-area festivals, as well as kick-starting some new promotions and bringing back the popular Slot League in October. And, of course, we have the Northern Lights Theater renovation and grand re-opening this fall. (See cover story.)

Let's talk about branding first.

The branding campaign began with a few ads that introduced the Lady Luck concept. In the development of other advertisements, we continue to feature Lady Luck along with Vince Van Patten in order to continue to build Lady Luck's identity and recognition with the Casino. We recently held off-property focus groups to gauge our new campaign, which was moderated by a branding expert for casino



properties. He stated that he has never seen a branding campaign so well received by the group participants. The participants also said that they have found the ads interesting and that motivated them to want to know more about Potawatomi.

You'll continue to see new print, radio and TV ads introduced over the next few months. (See related story in *Casino Connection*.)

With our sponsorships, we've continued to build upon past efforts partnering with others to bring visitors to the area and showcase Milwaukee's amenities. This year we hit four festivals in Chicago and continued our sponsorships at many of the Milwaukee ethnic festivals, as well as Summerfest and the State Fair.

During the festivals we distribute coupons for various offers, and overall, we are seeing better results with higher redemption than past years. It is very important for us to track the redemptions of these offers so we can plan our marketing strategies for next year.

We're excited about the work our Promotions team is doing. During September and October, Fire Keeper's Club® players had the unique

opportunity to step up to the money n and participate in the "Grab the Dough" promotion. We have just rolled out the n improved Senior Days — which mean chances for Fire Keeper's Club members older to receive special offers every T. We believe our guests will respond po to this new promotion.

And, it's back, the next Slot League. W the Slot League was extremely popular our slot players so we've brought it ba fall, and even expanded our session to participation by more teams. The Slot J helps to create an atmosphere of fun, and importantly having these guests on pr creates the potential for increased revenue.

It's been both exciting and challengin I'm proud of my team's efforts, and for s focused on Marketing's strategic goals to revenue-generating opportunities. ■

Good work, Team!

*Nancy Ziolkowski*

Nancy Z., Marketing Director

## Reducing Costs and Energy

The latest in energy-saving lighting has just been installed in the Potawatomi Bingo Casino parking structure.

In September, all of the current metal halide light fixtures in the garage were replaced with new LED lights. These new lights are expected to save the Casino more than \$221,000 a year in utility costs through less energy consumption. In addition, the LED lights last six times longer so maintenance costs will also be reduced.

The energy saved by this new LED lighting technology could provide annual electricity to 340 average sized homes. Focus on Energy provides incentives to encourage businesses to use this type of high performance lighting.

The Casino has been working in cooperation with Focus on Energy and other service providers to secure grants to help fund this conversion and similar projects. To date, the Casino has received nearly \$500,000 in incentives from Focus On Energy to help implement energy reducing measures and another \$460,000 in incentives from the Department of Energy.

"Finding ways to reduce our energy use is an on-going process," said David Brien, facilities director. "It benefits everyone and there is no loss in illumination." ■

## Upcoming Elections and Their Impact on Tribal Gaming

Each year, elected leaders in Wisconsin make a number of decisions, which have a wide-of effects on tribal gaming. From approving gaming compacts to reviewing regulations relating to gaming, their decisions have lasting impacts on our business operations. Therefore, it is essential for all team members to understand the impact that statewide elections have on gaming in Wisconsin.

This November, Wisconsin voters will choose a new Governor and elect members to the legislature. These positions not only help set the direction of our state, but also play a key role in influencing gaming issues. In particular, Wisconsin's Governor plays an increasingly important role in shaping issues important to our industry.

In addition to overseeing all state departments, the Governor of Wisconsin also has the sole authority to authorize and amend gaming compacts with Wisconsin's tribes.

Since 1992, the Forest County Potawatomi have signed gaming compacts under two Wisconsin Governors. These compacts have given the Potawatomi the ability to expand their gaming business operations. With each expansion, Milwaukee residents have been able to take advantage of good jobs and career opportunities. At the same time, the Casino's growth has enabled build and strengthen the Milwaukee community supporting organizations that provide food, shelter, strengthen neighborhoods, and offer cultural and educational opportunities to children.

In 1992, Wisconsin Governor Tommy Thompson entered into the first gaming compact with the Potawatomi. That compact was valid for a term of five years. This compact allowed electronic games of chance, blackjack and pull-tabs.

The Potawatomi re-negotiated their compact with Governor Jim Doyle in 2003, following his election as Governor in 2002. This compact allowed the Tribe to expand the Milwaukee Casino and offer additional games, creating more opportunities for employment.

Candidates' positions on these issues can have a lasting effect. The bottom line: the person elected to serve as Governor of Wisconsin can have a tremendous impact on the future of tribal gaming in this state.

As team members employed at a Tribal Casino, it is important you are aware of the candidates and their positions on particular issues, so that you may vote to reflect the way you believe best for yourself and your community. ■

# + SOCIAL RESPONSIBILITY

AT POTAWATOMI BINGO CASINO

2010 ANNUAL  
REPORT

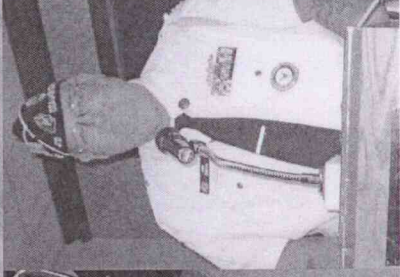
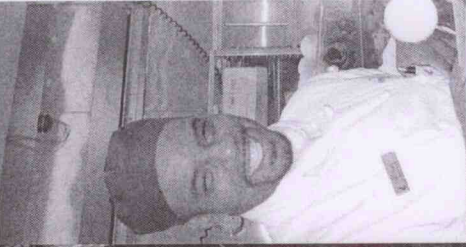
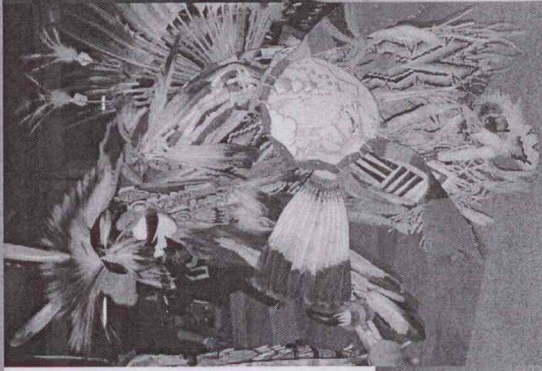
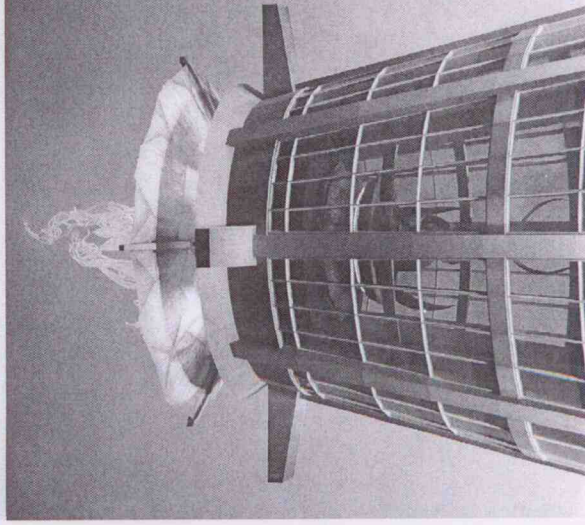
## BUILDING

*on a tradition of responsibility*

20TH ANNIVERSARY

POTAWATOMI

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*Lyde p̃e ñe ge men*

OUR RESPONSIBILITY





Protecting the resources  
of the earth is a key value of  
the Tribe and Casino's culture.

## SHARING OUR CULTURAL HERITAGE



*Potawatomi Bingo Casino hosted several Earth Day events for its team members in April 2010, including an e-recycling collection.*

### NEW LIGHTS LEAD TO ENERGY SAVINGS

Being a Native American-owned and operated business is one of the things that make Potawatomi Bingo Casino unique. This ownership brings with it an unspoken obligation to uphold the core beliefs and traditions of the Potawatomi people, and the opportunity to share this heritage with others in the community.

Establishing Potawatomi Bingo Casino as an environmentally sensitive business is critical because living a lifestyle in harmony with nature is one of the primary values of the Forest County Potawatomi. The Tribe has adopted an ecological mission that commits to reducing the environmental impact of all of its enterprises, which includes the Casino.

The Casino currently adheres to green cleaning practices, has installed sustainable landscaping, operates single-sort recycling and has replaced lighting inside the Casino to energy-efficient fixtures. Throughout 2010, Potawatomi Bingo Casino implemented several new changes that reduced its energy consumption and generation of materials that would need disposal.



*Air hand dryers were installed in all guest and team member restrooms to reduce paper towels being placed in landfills.*



*To reduce energy consumption, in 2010 Potawatomi Bingo Casino replaced all the lighting in its parking structure to energy saving LED lighting.*



*The 6th Annual Hunting Moon Pow Wow was held October 22-24, 2010 at the Casino. The public was invited to attend.*

In September 2010, energy-saving lighting was installed in Potawatomi Bingo Casino's 30-acre parking structure. Existing metal halide light fixtures in the garage were replaced with 1,700 new LED lights. It is estimated that the energy saved by this new LED lighting technology could provide annual electricity to 340 average-sized homes.

The Casino is always looking to reduce landfill waste when possible. In 2010, the Casino installed energy-efficient hand-dryers in all guest and team member restrooms. These effective and more hygienic dryers reduce the need for paper towels and offer people a more environmentally friendly solution.

Major strides were made at the Casino to reduce energy and landfill use.

**FINAL TECHNICAL/SCIENTIFIC REPORT**  
**DOE Award Number DE- EE0002500.000**  
**Forest County Potawatomi Community**  
**Replacement of Lighting Fixtures with LED Energy Efficient Lights at the Parking**  
**Facility, Milwaukee, Wisconsin**

**EXHIBIT C**  
**Photographs**

