



## MEMORANDUM

**TO:** Mayor Toland and City Council

**FROM:** Raymond French, Management Analyst

**DATE:** October 20, 2014

**TITLE:** **Hydroelectric Licensing Update: Preliminary Financial Analysis and Recommended Options Analysis**

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### RECOMMENDED ACTION

No action required. This information is provided for reference prior to the December 9, 2014, Council Workshop on this issue.

### BACKGROUND

The City of River Falls currently holds a 30-year license from the Federal Energy Regulatory Commission (FERC) to operate the hydroelectric facilities at the Junction Falls (Upper) and Powell Falls (Lower) Dams. The license expires on August 31, 2018, and the City is finishing the first-stage of consultation under the requirements for relicensing.

To continue on this path, the City would use input from stakeholders to determine the resource studies necessary to submit an adequate application. The deadline for submitting a draft license application is January 2016.

Conversations have also been ongoing between staff and stakeholder groups concerned with the environmental and financial costs of continuing to operate the hydroelectric facilities and maintain the dams.

Staff conducted a preliminary analysis of the financial position of the hydroelectric operations to identify some basic financial feasibility assumptions before continuing with the full relicensing process.

### DISCUSSION

#### Financial Analysis

The data collected for this analysis was from public sources, such as the Utility's annual report to the Public Service Commission, throughout the term of the license period that began on September 1, 1989. The primary scope of the analysis looked at the cost to generate hydropower per kilowatt hour (kWh) against the cost to purchase wholesale power from WPPI Energy, the

City's wholesale power provider. The retail energy charge is also included to show that even when the cost to generate is more than the wholesale rate, it is still more often less than the rate at which the power is sold.

A similar calculation was also made to compare the cost to generate hydropower per kWh to the cost to purchase wholesale green energy from WPPI Energy. The green energy block program was created in 2001, allowing customers to purchase green energy blocks at a cost of \$0.02 per kWh in addition to the wholesale rate. In 2008 that rate was reduced to only an additional \$0.01 per kWh. There is a slightly reduced rate for bulk purchases, but these are rates typical of a residential rate-payer.

<b>Historical Rates for the Purchase and Generation of Energy*</b>				
	<b>Retail Energy Charge**</b>	<b>Wholesale Green Rate</b>	<b>Wholesale Rate</b>	<b>Cost to Generate</b>
1989	0.0570	-	0.0268	0.0273
1990	<b>0.0565</b>	-	0.0288	0.0621
1991	<b>0.0565</b>	-	0.0368	0.0616
1992	<b>0.0565</b>	-	0.0376	0.1187
1993	0.0565	-	0.0381	0.0380
1994	0.0565	-	0.0385	0.0323
1995	0.0565	-	0.0369	0.0553
1996	0.0565	-	0.0346	0.0337
1997	0.0565	-	0.0357	0.0313
1998	0.0586	-	0.0374	0.0283
1999	0.0586	-	0.0374	0.0420
2000	0.0586	-	0.0379	0.0237
2001	<b>0.0586</b>	0.0597	0.0397	0.0605
2002	0.0670	0.0607	0.0407	0.0603
2003	0.0670	0.0615	0.0415	0.0345
2004	0.0670	0.0638	0.0438	0.0404
2005	0.0670	0.0722	0.0522	0.0538
2006	<b>0.0670</b>	0.0724	0.0524	0.1293
2007	<b>0.0670</b>	0.0787	0.0587	0.0722
2008	<b>0.0977</b>	0.0753	0.0653	0.0995
2009	0.0977	0.0794	0.0694	0.0787
2010	<b>0.0977</b>	0.0864	0.0764	0.1152
2011	0.0977	0.0889	0.0789	0.0627
2012	0.0977	0.0905	0.0805	0.0532
2013	0.0977	0.0901	0.0801	0.0542

\* The shaded numbers are the higher costs in each comparison.

\*\* The bolded numbers are for years that the retail charge was less than the cost to generate.

Over the license term, the cost to generate power at the hydroelectric facilities has been more expensive than the cost to purchase power in 14 of the 25 years. When comparing it to the cost to purchase green energy, the costs to generate are only more expensive in 4 of the 13 years of the program.

It is important to note that in 17 of the 25 years, the cost to generate hydropower was less than the price at which it was sold. Therefore, while the hydroelectric facilities did not lose money during the license term, they did not produce as high of revenue for the electric utility had the City purchased the equivalent amount of non-green power generated.

Looking at the previous data of rates per kWh shows that the City's purchased power costs are rising steadily, while the costs to generate vary widely on an annual basis. The following table shows the average costs to generate power at key intervals during the license term compared to the average wholesale and green energy rates. Using the average costs provides a comparison that smooths out some of the variability in annual expenses.

	<b>1989-2013 (25 years)</b>	<b>2004-2013 (last 10 years)</b>	<b>2009-2013 (last 5 years)</b>	<b>2012-2013 (last 2 years)</b>
<b>Average Cost per kWh to Generate</b>	0.0524	0.0706	0.0682	0.0536
<b>Average Wholesale Rate per kWh</b>	0.0482	0.0699	0.0770	0.0803
<b>Average Cost per kWh to Generate</b>	X	X	0.0682	0.0536
<b>Average Green Energy Rate (+\$0.01)</b>	X	X	0.0870	0.0903

The above data shows that the costs to generate hydropower and the costs to purchase are more comparable over the long-term. Additionally, the municipal hydroelectric facilities are, on average, a more affordable and local option than the bulk purchase of green energies.

A forecast was also prepared using the last 10 years of operating and maintenance expenses and the trend in wholesale power rates. The forecast includes \$100,000 for the relicensing process.

	<b>2014-2018 (next 5 years)</b>	<b>2014-2023 (next 10 years)</b>
<b>Average Cost per kWh to Generate</b>	0.0904	0.0830
<b>Average Wholesale Rate (est. 3%)</b>	0.0876	0.0946
<b>Average Cost per kWh to Generate</b>	0.0904	0.0830
<b>Average Green Energy Rate (+\$0.01)</b>	0.0976	0.1046

This preliminary analysis does not factor in any significant investment above the annual maintenance to the hydroelectric facilities or dams. However, wholesale electric rates have

doubled in the past ten years. If that trend continues and the costs of operating the hydroelectric facilities are contained, it is possible to operate the facilities at a net positive in the near future.

Another issue to note is that over the license term, the output of the hydroelectric facilities has decreased, showing up in the data as an increase in the cost per kWh generated. This is partly due to stricter procedures developed with stakeholder groups in the 1990s intended to preserve a smooth running Kinnickinnic River and comply with the run-of-the-river license requirement. A license amendment with the procedures was approved by FERC in 1999. Additionally, the costs of the hydroelectric facilities during 2012-2013 are a more accurate reflection of the current costs of operations. When the Municipal Power Plant was operated 24 hours per day prior to 2012, staff could more quickly respond to debris and changes in the flow of the river.

#### FERC Licensing Processes

In conjunction with a proposal received from the "Friends of the Kinni" organization, and because of the potential costs associated with relicensing and the ongoing operations of the hydroelectric facilities, staff began to research the additional processes available to current licensees provided for by FERC. Currently, the relicensing process is governed by:

- [18 U.S.C. Part 4](#). Licenses, Permits, Exemptions, and Determination of Project Costs.
  - This process would result in the relicensing of the hydroelectric facilities and their continued operation as the Council directs.

Other processes available to the City include:

- [18 U.S.C. Part 6](#). Surrender or Termination of License.
  - This process could lead to the decommissioning of the hydroelectric facilities and removal of the dams.
- [18 U.S.C. Part 9](#). Transfer of License or Lease of Project Property.
  - This process could lead to the transfer or lease of the hydroelectric facilities to another power provider.
- [18 U.S.C. §16.11](#). Nonpower Licenses.
  - This process could lead to the decommissioning of the hydroelectric facilities only.

#### Next Steps

Following a Request for Qualifications and evaluation, staff will be retaining TRC, a firm that specializes in hydroelectric licensing, to provide an analysis of the FERC licensing processes available the City, and their financial and environmental implications. This analysis will inform staff recommendations, which will be presented to the City Council at the December 9, 2014 workshop.

Staff continues to be mindful of the costs to residents and rate-payers, and the various impacts the presence of the hydroelectric facilities has on the community. Given the complexities of federal licensing requirements and its far-reaching consequences, it now makes sense to hire a consultant to guide us through the next steps and various processes available to the City. A

consultant was initially considered to assist in the first stage of consultation for relicensing. At the time, a proposal received from a qualified firm quoted \$66,350 for that stage, an amount the City saved by facilitating that stage of the process in-house. The City will be retaining TRC at a cost of about \$20,000.

## **CONCLUSION**

The preliminary financial analysis shows that the average costs of generation over the license term are more than the average cost to purchase wholesale power. The major factors impacting that comparison are the widely variable cost per kWh to generate hydropower and the steadily increasing wholesale power costs.

Despite this, when considered as a renewable resource, the municipal hydroelectric facilities are, on average, a more affordable and local option than the bulk purchase of green energies.

While the last few years of generation have been positive, the future costs to generate are unknown and wholesale electric rates are expected to continue to rise. Due to these factors, the question remains unanswered regarding the best financial option for residents and rate-payers.

Staff will be retaining TRC to provide an analysis of the options available to the City, to assist Council decision-making based on the real costs associated with each licensing option and the future of the hydroelectric facilities.