
Dallman Units 31/32: Retrofit or Retire?

CWLP Should Not Gamble with Ratepayer
Money

Prepared for Sierra Club

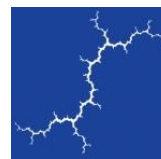
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CONTENTS

- 1. EXECUTIVE SUMMARY.....1**
- 2. INTRODUCTION.....2**
- 3. PAST FINANCIAL PERFORMANCE OF DALLMAN 31/324**
- 4. ECONOMIC ASSESSMENT OF DALLMAN 31/32.....7**
 - 4.1. Environmental Regulatory Assumptions 7**
 - 4.2. Accounting for CO₂ Restrictions 9**
 - 4.3. Coal Price Future at Dallman 11**
 - 4.4. Capacity Market in MISO LRZ 4 13**
 - 4.5. Results from Synapse Re-Analysis of Dallman 31/32 15**
 - Long-Term Benefit (or Liability) of Dallman 31/32 15
 - Expected Short-Term Cash Flow Losses from Dallman 31/32..... 18
 - Serving Springfield Load without Dallman 31/32 21
- 5. CWLP ELECTRIC’S REPRESENTATION OF DALLMAN 31/32 ECONOMICS23**
 - 5.1. Dallman 31/32 Do Not Produce Revenue..... 24**
 - 5.2. Market Price Forecast Inflated 26**
 - 5.3. Capital Outlay Required if Unit Continues or Retires 28**
- 6. CONCLUSION.....29**

1. EXECUTIVE SUMMARY

CWLP Electric and the Springfield City Council must decide on the future of coal-fired electric generating units Dallman 31/32. Their continued operation requires an immediate \$10 million investment to rebuild the turbines and convert the startup fuel from oil to natural gas. Their retirement requires an immediate \$11 million investment in transmission infrastructure and a heating system for the Dallman 33 unit.

The immediate capital investment requirements for the retrofit or retire scenarios are only part of the financial analysis. Expected future capital costs, expected future operating costs, and expected market prices for electricity are also critical to the financial model. Furthermore, the continued operation of small coal-fired generators in excess of 40 years of age increases risk, both because it exposes CWLP to more stringent future environmental regulations and because CWLP would be increasingly reliant on marketplace prices for the revenue necessary for ongoing fixed and operating costs of the plant.

The Sierra Club retained Synapse Energy Economics to conduct a financial review of CWLP's operations at Dallman 31/32. Synapse reviewed CWLP's financial documents and a December 2013 Environmental Compliance Study by consulting firm Burns & McDonnell that was commissioned by CWLP.

Synapse found that:

- CWLP does indeed face a retrofit or retire decision with respect to Dallman 31/32.
- Based on a review of costs vs. revenue, CWLP's operation of Units 31 & 32 lost the city at least \$41 million between 2008 and 2013.
- The Burns & McDonnell report, while generally a credible analysis of Dallman, failed to include costs associated with five upcoming environmental obligations, including the price of carbon emissions. It also relied on a wildly optimistic coal price forecast provided by CWLP, and failed to include the benefits of the MISO capacity market. Adjusting for these factors results in a decrease to the net present value of Dallman 31/32 upgrades from -\$40 million to -\$46 million (2014-2032).
- The immediate system upgrade costs necessary to allow the units to retire are nearly identical to the capital investments needed to keep them operating through 2020.
- Presentations made to the Springfield City Council and other organizations by CWLP Chief Utility Engineer Eric Hobbie have been error-prone and incomplete. Furthermore, it does not appear that CWLP has made any attempt to present rigorous analysis showing that its optimistic projections are valid and that the projections made by Burns & McDonnell, Synapse, the Energy Information Administration, and MISO are in error.
- Ceasing new investments in Dallman 31/32 and preparing for imminent retirement is the prudent course of action for CWLP; doing otherwise will ultimately force higher rates upon CWLP's customer owners.

2. INTRODUCTION

City Water, Light & Power (CWLP) is Springfield, Illinois', municipal electric and water utility. Shortly after its founding in 1911, CWLP successfully defended the right of municipal governments to produce and sell electricity to private consumers, eventually winning a unanimous 1921 U.S. Supreme Court decision defining the rights of municipal utilities.¹ CWLP is Illinois' largest municipal electric company,² and the 29th largest in the U.S.³

The City of Springfield currently faces a difficult situation with regard to CWLP Electric. Despite rates increasing by 23% since 2009, and CWLP headcount declining by 24% (or 140 workers) since FY10, the financial health of CWLP's Electric Division has steadily declined.^{4,5} Year End Debt Coverage, the ratio of net revenues available for debt service to actual debt service, fell to 0.94x in FY12. This was well short of the 1.25x required in the master bond agreement and resulted in a technical default. The projected FY15 year-end debt coverage is 1.01x, which will result in the utility's second technical default in four years.⁶ These technical defaults are typically accompanied by rating downgrades: on May 11, 2012, Moody's downgraded CWLP Electric's senior lien from A1 to A3. In November 2014, Eric Hobbie, chief utility engineer of CWLP Electric, stated that he expected the FY15 technical default will "likely get CWLP [Electric]'s credit rating downgraded to a B."^{7,8} The difficult financial situation facing CWLP Electric is affecting the other Springfield municipal departments – the money CWLP Electric owes to the rest of the Springfield government has grown from \$1.1 million in February 2009 to \$12.4 million in February 2014.^{9,10}

While CWLP Electric owns and operates two oil-burning peaking units and one dual-fuel peaking unit that provide a combined 146 MW of capacity, as well as three oil-fired diesel generators that provide 5

¹ Mitchell, Jennifer. 2011. "An Auspicious Centennial." *Public Power*, September 1. <http://publicpower.org/Media/magazine/ArticleDetail.cfm?ItemNumber=32976>

² CWLP, "About CWLP." <http://www.cwlp.com/index/aboutcwlp/about.html>

³ EIA Form 861, 2012. Municipals sorted by total MWh sales.

⁴ Office of Public Utilities, Continuing Disclosure Statement for the Fiscal Year Ended February 28, 2014, June 30, 2014, 2.

⁵ Hobbie, Eric. "The Power of Local Ownership." Presentation to the Citizens Club of Springfield, October 24, 2014, 15.

⁶ *Ibid.*, 10.

⁷ Global Credit Research. 2012. "Moody's Downgrades to A3 from A1 the City of Springfield's (IL) Senior Lien Electric Revenue Bond Rating, Concluding the Review for Possible Downgrade; Outlook is Negative," *Moody's*, May 11. https://www.moodys.com/research/MOODYS-DOWNGRADES-TO-A3-FROM-A1-THE-CITY-OF-SPRINGFIELDS--PR_245664

⁸ Yeagle, Patrick. 2014. "Gloomy Days for CWLP," *Illinois Times*, November 6. <http://illinoistimes.com/article-14657-gloomy-days-for-cwlp.html>

⁹ McGladrey & Pullen. 2010. Financial Statements and Independent Auditor's Report, City of Springfield, Illinois Electric Light and Power Fund, February 28. <http://www.cwlp.com/index/financialdata/ElecAuditFY10.pdf>

¹⁰ Sikich. 2014. Independent Auditor's Report, City of Springfield, Illinois Electric Light and Power Fund –, February 28. <http://www.cwlp.com/index/financialdata/ElecAuditFY14.pdf>

MW of capacity, the majority of CWLP Electric's capacity and energy comes from its Dallman Station. The four coal-fired Dallman units (Units 1 through 4, known as 31, 32, 33, and 4, respectively) have a combined 519 MW of tested capacity. Dallman 31 and 32 (collectively, Dallman 31/32) were built in 1968 and 1972, with nameplate capacities of 86 MW and 87 MW, respectively. Dallman 33 was built in 1978, with 199 MW of nameplate capacity. Finally, the 200 MW nameplate Dallman 4 was commissioned in 2009, coming on-line in conjunction with the retirement of the 1960s-era Lakeside Units 6 and 7.

Springfield faces another slate of investments necessary for Dallman Station to operate in the face of more stringent environmental regulations. Cognizant that it might cost ratepayers less to retire Dallman 31/32 than to retrofit the units, in 2013 CWLP commissioned Burns and McDonnell (BMCD) to evaluate Dallman's future environmental compliance obligations and determine the total costs associated with continuing to operate Dallman 31 and 32 as well as the costs associated with retirement. That study determined that retiring Dallman 31/32 will save ratepayers \$40 million over the next 17 years when compared to continued operation of the units.¹¹

Chief utility engineer Hobbie has represented to the City Council that the utility faces two choices with regard to Dallman 31/32: either continue operating the units with \$10.2 million of investments to rebuild the turbines and reduce emissions during startup/shutdown, or invest \$11.4 million to install transmission upgrades and building heating improvements necessary to allow the units to retire without harming system reliability. Under either circumstance, CWLP Electric is committed to a substantial, nearly equivalent capital outlay. The question that remains is whether the City of Springfield is better off maintaining and retrofitting Dallman, or ceasing investments in the units and moving toward a retirement schedule.

Because CWLP Electric has substantially more generating capacity than necessary to serve native load, Dallman 31/32 can be retired without building any new generation, all the while maintaining reliable electric service.¹² Nevertheless, the choice to retrofit or retire is complex. It is a decision that should be considered over the context of the next 20 or more years, and should be guided by rational expectations of the future, not speculation.

Over the last six years, Dallman has cost the city far more than it has returned in benefits and revenues. In fact, from the perspective of an independent power producer, Dallman Units 31 and 32 lost the city \$42 million between 2008 and 2013.¹³ The losses are not at an end. Based on a commissioned by CWLP Electric, Dallman 31/32 will continue to drain resources from the city over the next decade. Under CWLP Electric's most optimistic outlook, the units do not break even until 2027.

¹¹ Burns and McDonnell. 2013. Table 10-4. "20-Year NPV of Power Supply Costs." Base Case (i.e. continued operation of Dallman 31 & 32) = \$1,656,600,000; Base Case with Retirement of Units 31 & 32 = \$1,616,800,000.

¹² Burns and McDonnell. 2013. Environmental Compliance Study for Dallman Power Station, prepared for City Water Light & Power, Springfield, Illinois. Burns & McDonnell Engineering Company, Inc. No. 67834: 10-7: 131.

¹³ See Chapter 2 of this report.

The clear facts of Dallman 31/32's performance and future have been obfuscated by the leadership of CWLP's Electric Division. Mr. Hobbie recently reported to the City Council that Dallman 31/32 returns revenues to the city, presenting numbers that cannot be supported by current market conditions.¹⁴ All evidence suggests that these units are losing significant revenue. The 2013 BMcD report on the future of Dallman 31/32, commissioned by CWLP, provides a stark picture of Dallman's future. Unfortunately, Mr. Hobbie has dismissed the plain findings of the BMcD report, and has instead substituted his own unsupported projections for those in the report. Conditions today are not substantively different than a year ago – the BMcD evaluation that the units will fail to recover their own costs holds true today, CWLP optimism notwithstanding.

Synapse Energy Economics has been retained by Sierra Club to provide an independent assessment of the historic revenues from Dallman 31/32, review and comment on the BMcD report, and evaluate statements made by CWLP Electric personnel to the City Council regarding Dallman 31/32.

Overall, Synapse finds that Dallman 31/32 have presented a significant liability to the city since at least 2008, draining (on net) \$42 million from its taxpaying ratepayers. Further, the units will continue to consume resources, without a return to the city, at least through the next decade and likely beyond. These realities, presented in the BMcD report and independently verified, have not been presented to the Springfield City Council in a meaningful way. Synapse recommends that the city expediently examine retirement options and seek to reduce the liabilities from these units in the near future.

3. PAST FINANCIAL PERFORMANCE OF DALLMAN 31/32

Using publicly available data, Synapse was able to perform an analysis of the historic financial performance of the Dallman units. This analysis indicates that in recent years the ownership and operation of Dallman has not resulted in net benefits to the city—or citizens—of Springfield. Though the analysis does indicate that in 2008 the Dallman plant was able to generate more revenue than costs, the units have cost the city millions of dollars ever since. This conclusion is based on a detailed, hourly analysis of the units' performance between 2008 and 2013. See Table 1 for a summary of these results.

Over the course of the study period (2008 through 2013), our analysis indicates that Dallman 31/32 had a cumulative deficit of over \$41.6 million.

¹⁴ Eric Hobbie at November 18, 2014 presentation to City Council.

Table 1. Summary net revenues (deficit) of Dallman 31/32 from 2008 to 2013 (2013\$)

	Dallman 31 (\$ Million)	Dallman 32 (\$ Million)	Dallman 31/32 (\$ Million)
2008	(\$5.3)*	\$8.9	\$3.6
2009	(\$4.7)	(\$4.3)	(\$9.0)
2010	(\$3.4)	(\$3.7)	(\$7.1)
2011	(\$4.2)	(\$4.7)	(\$8.9)
2012	(\$5.2)	(\$5.0)	(\$10.3)
2013	(\$4.9)	(\$5.1)	(\$10.0)

**Dallman 31 was not operational (did not report operations to EPA); costs reflect estimated annual fixed costs of unit.*

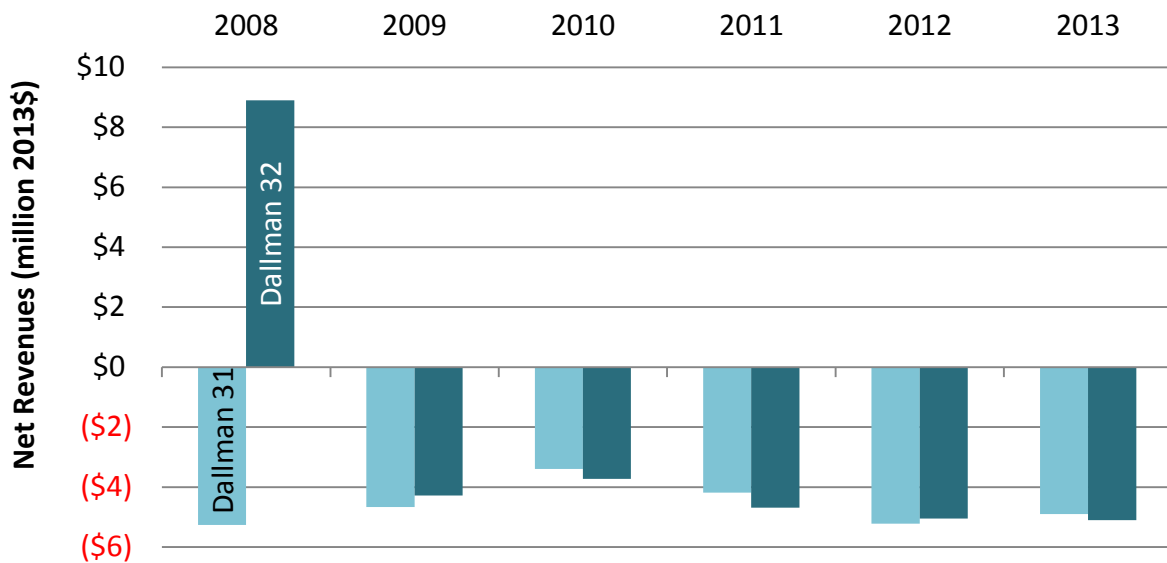
Source: Synapse calculations. Values reflect adjustment for inflation using BLS Consumer Price Index.

To evaluate the past economic performance of the Dallman units, Synapse used detailed historic data to calculate the revenues and costs of CWLP Electric’s coal units. Because CWLP Electric is within the MISO territory it can sell any excess energy on the MISO energy market and can buy any or all of its energy needs from the MISO market. Our analysis reflects the cash flow of the Dallman units as if they had been operating as a merchant plant, and that for every MWh they generated they received the market value as payment for that energy. In any given hour, the MISO market pays all generators the locational marginal price (LMP), which is the bid price of marginal (most expensive) resource selected in that hour, for each MW they produce in that hour. These hourly spot prices are reported at each load balancing authority, one of which is CWLP Electric. The hourly generation, emissions, and heat input of each of the Dallman units is submitted to, and retrievable from, the EPA air markets program database (AMPD). Historic revenue generation was calculated using hourly generation data from AMPD and multiplying it by the corresponding hourly MISO LMP at the CWLP Hub.

The various costs associated with the Dallman units—fuel, variable operations and maintenance (VOM), and fixed operations and maintenance (FOM)—were separately calculated. The Dallman plant’s historic monthly fuel costs come from the U.S. Energy Information Administration (EIA) Form 923 submitted by CWLP, from which Synapse derived a weighted average fuel cost for each year from 2008 through 2013. The weighted average fuel cost was then multiplied by the annual heat input, which was calculated from AMPD, to generate an annual fuel cost in total dollars. This analysis includes both the VOM and FOM costs presented in the BMcD report. For our analysis, we used the report’s base case 2013 values, deflated based on the Bureau of Labor and Statistics (BLS) inflation calculator. For each unit, each year’s costs were subtracted from that year’s market revenues to calculate the net revenues (or deficit).

Figure 1 illustrates the recent financial troubles of Dallman 31/32. Again, though Dallman 32 generated net revenue in 2008, neither 31 nor 32 have generated more revenues than costs since then. These deficits have steadily increased since 2010 and have accumulated to a net cost of \$42 million for Dallman 31/32 combined. More detailed revenue and costs information for years 2008 – 2013 can be found in Table 2 and Table 3.

Figure 1. Net revenues (deficits) for Dallman 31/32 (2013\$)



Source: Synapse calculation

Table 2. Costs and market revenues from Dallman 31 2008—2013 (million 2013\$)

	2008	2009	2010	2011	2012	2013
Revenue	--	\$6.6	\$13.4	\$13.0	\$5.2	\$9.0
Fuel Cost	--	(\$4.6)	(\$8.8)	(\$9.1)	(\$4.0)	(\$6.6)
Variable O&M	--	(\$1.4)	(\$2.7)	(\$2.8)	(\$1.2)	(\$2.1)
Fixed O&M	(\$5.3)	(\$5.3)	(\$5.3)	(\$5.3)	(\$5.3)	(\$5.3)
Net Revenues	(\$5.3)	(\$4.7)	(\$3.4)	(\$4.2)	(\$5.2)	(\$4.9)

Source: Synapse calculation

Table 3. Costs and market revenues from Dallman 32 2008—2013 (million 2013\$)

	2008	2009	2010	2011	2012	2013
Revenue	\$30.6	\$14.4	\$14.3	\$11.5	\$5.4	\$8.9
Fuel Cost	(\$12.4)	(\$10.3)	(\$9.7)	(\$8.3)	(\$3.9)	(\$6.6)
Variable O&M	(\$3.9)	(\$3.0)	(\$2.9)	(\$2.5)	(\$1.2)	(\$2.1)
Fixed O&M	(\$5.4)	(\$5.4)	(\$5.4)	(\$5.4)	(\$5.4)	(\$5.4)
Net Revenues	\$8.9	(\$4.3)	(\$3.7)	(\$4.7)	(\$5.0)	(\$5.1)

Source: Synapse calculation

4. ECONOMIC ASSESSMENT OF DALLMAN 31/32

The 2013 BMcD report commissioned by CWLP focused on addressing the retrofit or retire decision associated with Dallman 31/32. The report, published in December 2013, is a generally credible analysis of Dallman's current conditions, its compliance requirements under many of the existing and proposed environmental regulations known at the time, and the likely economic impact of maintaining or expediently retiring Dallman 31/32. The report describes a planning analysis which is structured appropriately for the question, and considers the right questions for the continuance or retirement of Dallman 31/32. However, the report falls short in ensuring that its model of Dallman is completely compliant with federal environmental regulations. In fact, the report clearly identifies at least five instances where Dallman is expected not to be in compliance with a known regulation, and yet provides no operational or capital cost for mitigation. In this way, the BMcD report significantly underestimates the cost of compliance with environmental regulations.

The report conducts an economic assessment of Dallman 31/32 from CWLP Electric's perspective and from a market view (i.e., a potential buyer's perspective). The report uses a dispatch model, populated with assumptions from BMcD and CWLP. The structure of the analysis is reasonable and consistent with planning practices amongst investor-owned utilities. However, the assumptions used to populate the assessment fail to capture the real risks and costs to Dallman. Some of these are errors of omission wherein BMcD acknowledges that its compliance model does not meet federal regulations (or does not discuss the regulation); other errors are imposed by CWLP Electric and either explicitly or implicitly disclaimed by BMcD.

The following text contains a Synapse review of some BMcD assumptions, and includes an evaluation of Dallman 31/32's economics with select assumptions modified to reflect appropriate values.

4.1. Environmental Regulatory Assumptions

BMcD summarizes a range of existing and proposed air, water, and solid waste regulations that impact power plants, including National Ambient Air Quality Standards (NAAQS) for sulfur dioxide (SO₂), ozone (O₃), and fine particulates (PM_{2.5}); the Cross-State Air Pollution Rule (CSAPR); the Coal Combustion Residuals Rule (CCR); Effluent Limitations Guidelines (ELG); and the cooling water intake rule under section 316(b) of the Clean Water Act.

While the BMcD report does address a number of environmental regulations, and technologies that may be used to test for or mitigate these regulations, it stops short of being a comprehensive estimate. In five key areas, the report simply states that various impending regulations are too unknown to estimate in the study. These include:

1. **Carbon Dioxide (CO₂) under 111(d).** The BMcD report does not explicitly address potential limits on carbon dioxide (CO₂) from existing sources under section 111(d) of the Clean Air Act, even though prior to the report’s publication, President Obama had announced a timeline for the rule announcement and implementation.¹⁵ The proposed rule, titled the Clean Power Plan, was released in June, 2014 and is widely seen as one of the most important impending rules in electric system planning. The report failed to consider that restrictions on CO₂ emissions would be imminent and therefore offers no cost or restrictions on the release of CO₂ from Dallman.¹⁶
2. **Ozone-Season NO_x Limit under CAIR.** The BMcD report indicates that “the ozone-season NO_x limits set by the CAIR [Clean Air Interstate Rule] will not be achieved.”¹⁷ Despite this finding, BMcD neither assumes an additional restriction nor cost for NO_x emissions in their compliance modeling case.
3. **One-hour SO₂ NAAQS.** The BMcD report briefly touches on NAAQS for SO₂, and notes specifically that concentrations in Sangamon County exceed the 75 ppb 1-hour SO₂ NAAQS set by EPA, and are expected to exceed the standard in 2020.¹⁸ While EPA has yet to designate the county in non-attainment, such a finding does not bode well for escaping regulatory scrutiny and requirements for additional SO₂ reductions. The BMcD study does not review options to reduce SO₂ in the “Regulatory Scenario,” despite the finding that Dallman may be found to be a significant contributing source.
4. **Ozone (O₃) NAAQS.** The BMcD report details that Sangamon County currently has a 66 ppb ambient ozone concentration and that EPA originally proposed an ozone standard in the range of 60 to 70 ppb. The report states, “Sangamon County may not meet the future revised [ozone] NAAQS... If Sangamon County is found to exceed one or more of these NAAQS, the state may require controls at sources like Dallman Station.”¹⁹ The report does not analyze the costs of different compliance options, one of which would be to close down one or more of the Dallman units.
5. **Regional Haze Rule.** The BMcD report identifies that, under Illinois’ state implementation plan (SIP), Dallman 31 & 32 were permitted to “construct and operate an emission reductions program” and set “decreasing SO₂ and NO_x emissions limits for 2012 through 2014, 2015 through 2016, and 2017 and beyond.”²⁰ The BMcD report

¹⁵ The White House. “Presidential Memorandum – Power Sector Carbon Pollution Standards.” June 25, 2013. <http://www.whitehouse.gov/the-press-office/2013/06/25/presidential-memorandum-power-sector-carbon-pollution-standards>

¹⁶ Burns and McDonnell. 2013. The report states that “as the NSPS for CO₂ and the Greenhouse Gas Tailoring Rule do not apply to the Dallman Station, they are not included in the regulatory scenario,” 5-18.

¹⁷ Burns and McDonnell. 2013. Section 11.2: 139.

¹⁸ Burns and McDonnell. 2013. Section 5.8: 62.

¹⁹ Burns and McDonnell. 2013. Section 5.8: 62.

²⁰ Burns and McDonnell. 2013. Section 4.4: 43.

indicates that converting units 31 and 32 to natural gas as a startup fuel *should* bring CWLP Electric within compliance.²¹

It is not clear if BMcD considers any of the costs associated with coming into compliance with the Clean Power Plan, the CAIR NO_x limits, either the SO₂ or ozone NAAQS, or the regional haze rule in the Dallman economic analysis. The analysis does not appear to account for line-item capital expenses, as would normally be expected in a cash-flow analysis meant to examine the impact of large, avoidable capital expenses. With the exception of the 111(d) modifications, Synapse did not attempt to modify the analysis to account for missing avoidable capital. However, if the capital expenses associated with ongoing operations (and transmission investments required to retire) are missing from the analysis, then Dallman 31/32 are even more uneconomic than determined in the BMcD study.

The following sections describe large deficiencies with the BMcD analysis that were reviewed and modified by Synapse.

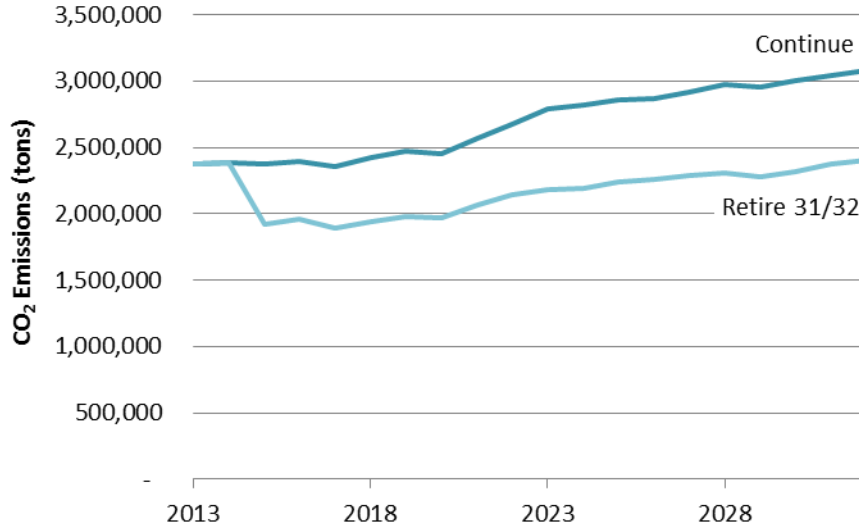
4.2. Accounting for CO₂ Restrictions

As of early 2013, it was widely known and acknowledged that while CO₂ NSPS for new sources would not apply to existing power plants, the EPA was required to promulgate restrictions on emissions from existing sources under section 111(d) of the Clean Air Act. In fact, as of December 23, 2010, EPA had entered into a settlement agreement wherein it agreed to start the rulemaking process for CO₂ restrictions at new power plants. Section 111(d) of the Clean Air Act provides that once a standard of performance is set for new sources, EPA shall prescribe regulations that establish standards of performance for existing plants as well. In March 2012, EPA released a first proposed CO₂ NSPS for new sources, setting in motion a process for the proposal and promulgation of CO₂ reductions for existing sources. In June of 2013, President Obama confirmed a schedule for the proposal and implementation of existing source CO₂ NSPS. At the time the BMcD report was published there were numerous independent proposals for regulating CO₂ from the electric sector, and this pollutant should have been accounted for in the study.

The current proposed Clean Power Plan offers a number of avenues for states to reach electric sector-wide compliance with carbon regulations, including through the implementation of energy efficiency, renewable energy, coal-to-gas dispatch switching, and regional cap-and-trade programs. States are afforded wide latitude in the implementation, and therefore determining an exact financial impact of the rule is difficult. However, it is clear that under this rule, the dispatch and output from coal-fired boilers would necessarily be reduced. In other words, the rule will impose an additional cost or operating restriction on coal-fired power plants, a regulation not accounted for in the BMcD study.

²¹ Burns and McDonnell. 2013. Section 7.3: 83.

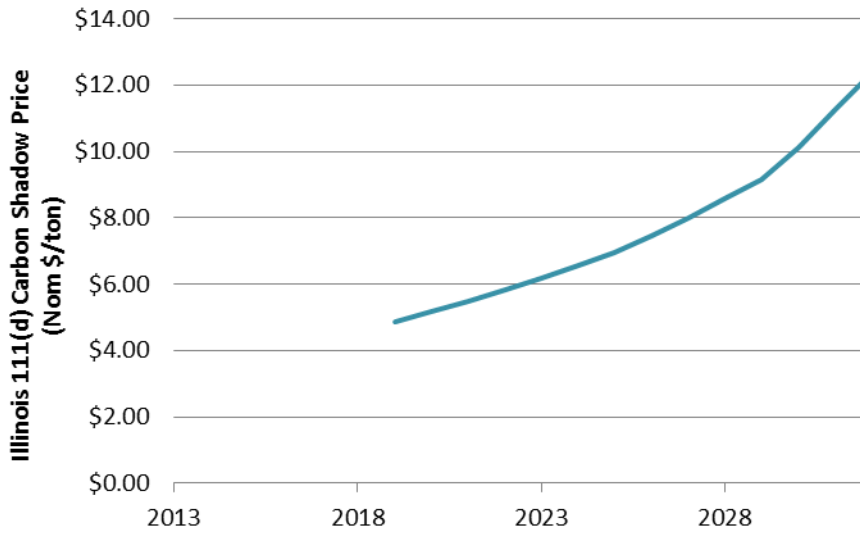
Figure 2. Total carbon emissions from Dallman Plant under continued operation and retirement scenarios



Source: Synapse calculations

To account for this restriction, Synapse reviewed model runs conducted by EPA in the Integrated Planning Model (IPM) to review compliance costs for the Clean Power Plan. The shadow price for CO₂ emissions in IPM assumes that states will work cooperatively to achieve compliance with Clean Power Plan targets but that each state maintains its own, separate goal. Synapse used the Illinois-specific shadow price for CO₂ under the Clean Power Plan and applied this price trajectory to all emissions from 2020 through the end of the analysis period in 2032. The carbon emissions from Dallman Plant under continued operation and retirement scenarios can be found in Figure 2; the carbon shadow price applicable to Illinois is shown in Figure 3.

Figure 3. Illinois 111(d) carbon shadow price from IPM run (nominal \$/ton)



Source: Synapse calculations

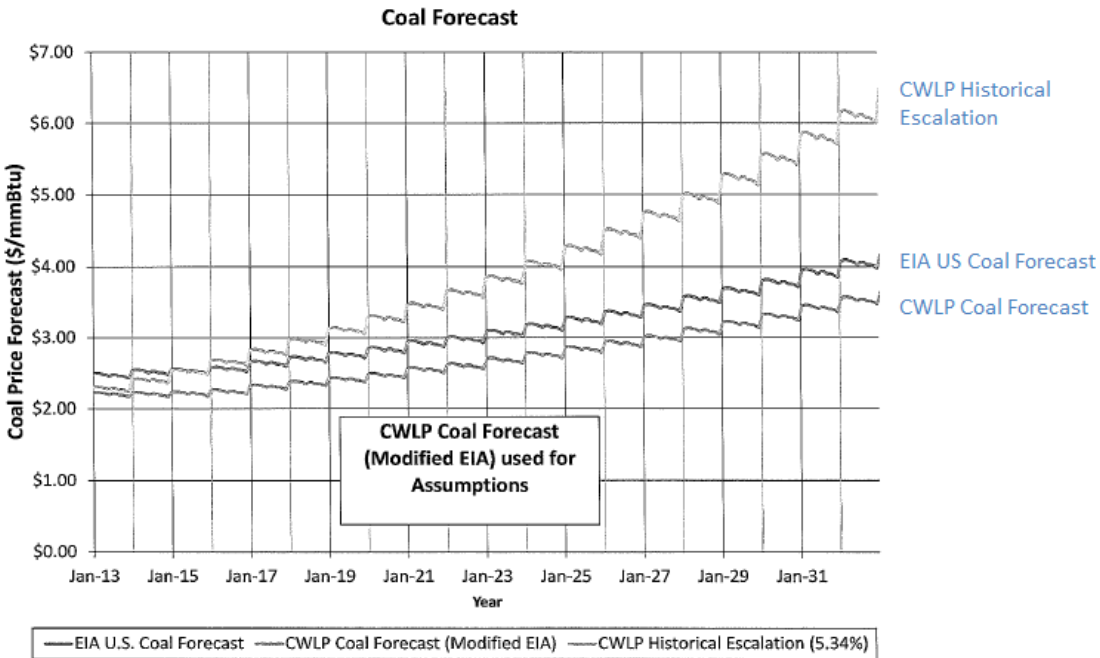
Market prices for energy were also adjusted in the carbon-price analyses, assuming a marginal CO₂ emissions rate of 0.55t/MWh, and Illinois emissions prices.

4.3. Coal Price Future at Dallman

The BMcD report indicates that “coal fuel pricing for the Dallman Units was assumed to be \$2.22/MMbtu in 2013 [and] was escalated throughout the study period.” The report provides no direct context for the basis of the starting price, or the escalation used in the study. However, in Appendix G, the report shows three sets of coal forecasts, labeled as the “CWLP Coal Forecast (Modified EIA) used for Assumptions.” Reviewing these prices, it appears that BMcD was instructed by CWLP to use a coal price forecast modified from a national estimate provided by the Energy Information Administration (EIA). The forecast used by BMcD is about 12% below the national estimate.

Also shown in Appendix G is a trajectory of coal prices labeled “CWLP Historical Escalation (5.34%)” (see Figure 4, below). While the scanned copy of this report made available to Synapse is not readily distinguishable, a review of the actual prices used and EIA’s projections indicates that the CWLP Electric projection is the lowest of those shown on this figure.

Figure 4. Coal prices used in the BMcD report, Appendix G (assumed nominal dollars).



Source: Burns & McDonnell Appendix G

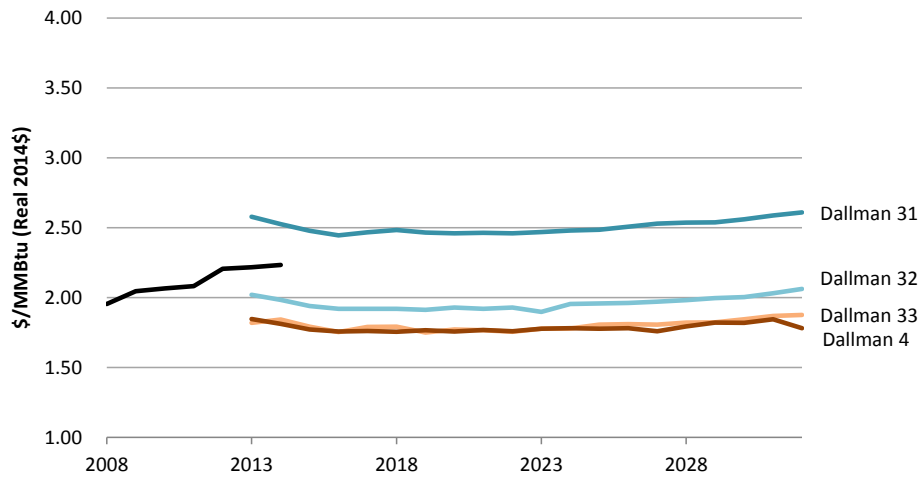
This coal price forecast is surprising, because it does not comport with coal prices paid by CWLP Electric over the last six years. EIA tracks delivered coal prices paid by most power plants in the U.S. Reviewing all deliveries to Dallman from 2008 through September 2014 indicates that prices at Dallman have steadily increased year on year. The idea that these prices might suddenly stabilize this year is unsupported and unprecedented in other utilities without long-term fixed price contracts.

Figure 5 shows coal prices used in the BMcD analysis, as derived from outputs provided in the base case in Appendix G.^{22,23}

²² Synapse manually copied values in the base case outputs from the low-quality PDF provided by CWLP. Values shown in this graph and others are derived from this copy. While values were double-checked for consistency, small anomalies may be due to scrivener errors.

²³ The far higher derived coal price for Dallman 31 is not explained in the BMcD report or by CWLP. One explanation for this high cost may be that Dallman 31/32 include startup fuel costs, which comprise a significant expense for these rarely operated units. Another explanation may be that some common fuel costs are allocated specifically to Dallman 31.

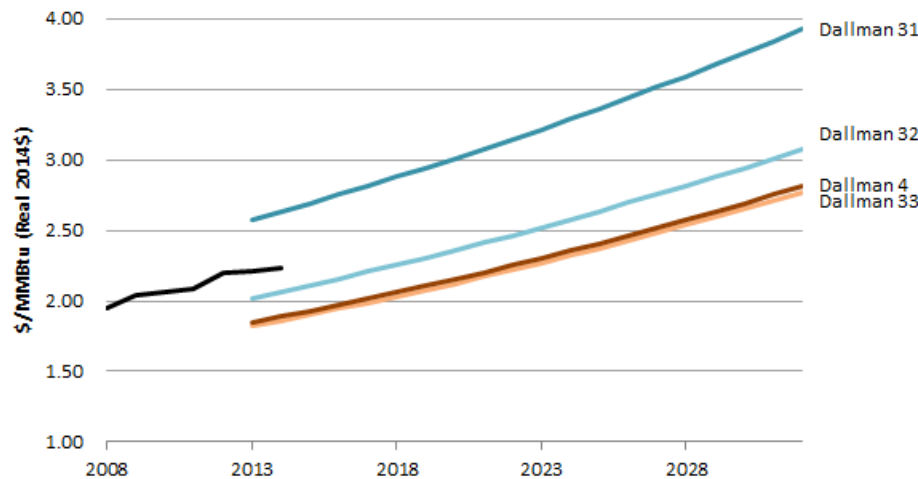
Figure 5. Coal prices used in the BMcD report and delivered coal prices received (in black) from EIA



Source: EIA and Burns and McDonnell Report

To adjust coal prices, Synapse calculated the cumulative average growth rate (in real terms) of coal prices paid at Dallman, and applied that growth rate (2.25%) to the 2013 coal prices in the model (see Figure 6).

Figure 6. Coal prices modified to match the 2.25% real growth rate of coal prices paid 2008-2014



Source: EIA and Synapse adjustments

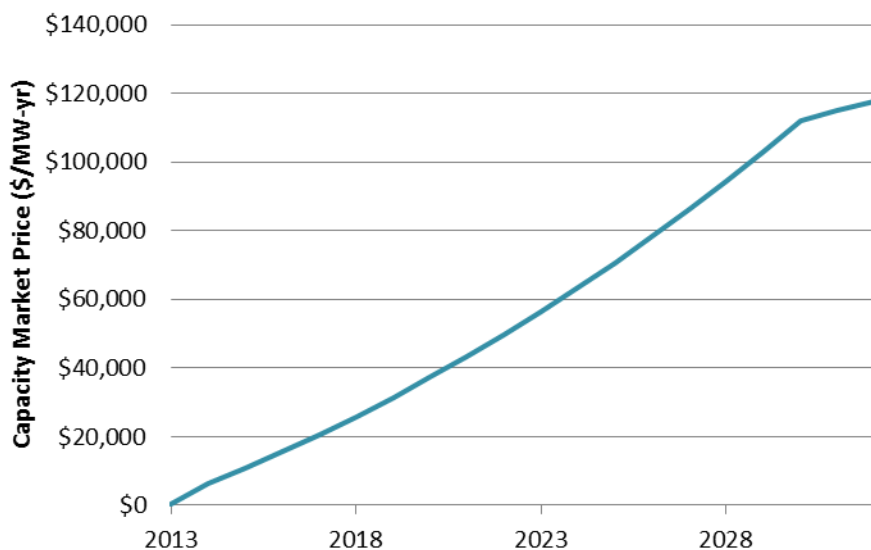
4.4. Capacity Market in MISO LRZ 4

The BMcD report did not account for the value of capacity on the MISO capacity market. MISO operates a one-year-ahead Planning Resource Auction (PRA) that determines payments for those resources that provide capacity needed for reliability. Historically, the MISO capacity market price has been suppressed by excess existing generating capacity. However, the 2014/2015 clearing price increased substantially, to

\$6,113/MW-yr. At the 2014/15 clearing price, the eligible capacity of each of Dallman 31 and Dallman 32 (70MW) would be worth \$728,000. Consequently, excluding the capacity revenues for the historical analysis would not materially change the results we presented.

MISO calculates a “cost of new entry” (CONE) price for each of the nine Local Resource Zones (LRZs). CONE is the price that the system operator expects that new capacity resources would need in order to remain financially solvent based on capacity market revenues alone. MISO LRZ 4, which is made up of the southern two-thirds of Illinois, is the representative locational resource zone for CWLP Electric. MISO has estimated that the LRZ 4 cost of new entry (CONE) is \$89,890/MW-yr.²⁴ Net CONE, the amount a new resource would need minus the revenues that that resource could expect in the energy market, is generally 10-26% less than gross CONE.²⁵ Based on a 16% mark down of gross CONE, Synapse estimates that net CONE in LRZ 4 is approximately \$75,500/MW-yr, in 2014 dollars.²⁶ For the Synapse analysis, a forecast of the MISO capacity market for planning purposes was generated in order to estimate the market value of Dallman 31/32. Synapse forecasted the MISO capacity market in 2014 to the calculated net CONE value over the 2014 to 2030 time frame using a linear interpolation technique (see Figure 7, below).

Figure 7. Assumed capacity market price in re-analysis



Source: Synapse calculations, nominal \$ value reflects assumed inflation rate of 2.5%

²⁴ Kessler, Michael L. MISO (FERC Docket No. ER13-____-000) Filing of Midcontinent Independent System Operator, Inc. Regarding LRZ CONE Calculation. September, 2013. https://www.misoenergy.org/Library/Repository/Tariff/FERC%20Filings/LRZ%20CONE%20Filing_3%20Sept%202013.pdf

²⁵ PJM Planning Period Parameters 2017-2018. <http://pjm.com/~media/markets-ops/rpm/rpm-auction-info/2017-2018-planning-period-parameters.ashx>

²⁶ Based on the average ratio of gross to net CONE for the RTO in the PJM Planning Period Parameters 2017-2018. <http://pjm.com/~media/markets-ops/rpm/rpm-auction-info/2017-2018-planning-period-parameters.ashx>

It has been postulated that many companies that own coal generating units assume that large amounts of coal capacity will soon retire due to the costs of compliance with Mercury and Air Toxins Standards (MATS), 111(d), and other EPA regulations. Recent analysis completed by ICF International, a major consulting firm in energy resource planning, indicates that, even after accounting for both announced and additional economic retirements, MISO will have ample capacity to meet reserve requirements in 2016.²⁷ However, other reports indicate that there is a discrepancy between MISO North and MISO South, with the Central/North region in shortage and the South territory having capacity in excess of the 14.8% reserve margin MISO is required to carry under federal tariff.²⁸ If significant amounts of coal retirements do occur then CWLP Electric might indeed enjoy increased capacity revenues. It seems reasonable to assume, however, that other owners of coal plants will pursue the same strategy, hanging onto otherwise unprofitable plants in hopes of a capacity market windfall. If that happens, the price for capacity will be lower than every utility had hoped for, for longer than every utility had hoped. The result could be a multi-state game of chicken, as every utility waits for others to retire their uneconomic units, finally allowing the price to rise for the remaining plants. CWLP's Electric Division does not have the financial resources to win such a game of outwaiting other utilities given CWLP's weak balance sheet and lack of full compliance with environmental regulations going forward.

4.5. Results from Synapse Re-Analysis of Dallman 31/32

Long-Term Benefit (or Liability) of Dallman 31/32

Synapse modified components of the BMcD analysis to account for carbon regulations under 111(d), with a coal price escalating at 2.25% (in real terms) in line with historic price increases, and with capacity market revenues. Table 4, below, shows the outcome of the BMcD base case, and alternatives reviewed by Synapse.²⁹ The first numeric column shows the total, 20-year cost of the CWLP electric generation system with Dallman 31/32 continuing to operate, while the second column shows the cost of the CWLP electric system without Dallman 31/32. The difference between these columns is the value (or cost) of Dallman 31/32 over a 20-year period. This is the value that might be offered by a third-party to acquire these two units on the open market.

²⁷ Fine, Steve, A. Saraf, K. Kumarawamy, A. Anich. 2014. "The True Value of Solar." ICF White Paper. October 21. <http://www.icfi.com/insights/white-papers/2014/true-value-of-solar>

²⁸ Watson, Mark. 2013. "MISO's existing footprint to be short of power by 2016: survey." *Platts*, December 5. <http://www.platts.com/latest-news/electric-power/houston/misos-existing-footprint-to-be-short-of-power-21914419>

²⁹ Synapse used Dallman dispatch as determined in the BMcD base case, and did not modify unit operations or market purchases based on variable price changes.

Table 4. Net Present Value (2013-2032) of scenarios with and without Dallman 31/32 (million 2013\$)

	NPV of Retrofitting Dallman 31/32	NPV of Retiring Dallman 31/32	Benefit of Retrofitting 31/32
BMcD Base Case³⁰	\$1,722	\$1,682	(\$40)
111(d) CO ₂ Price (EPA Illinois shadow price)	\$1,884	\$1,815	(\$69)
Escalating Coal Price (2.25% CAGR)	\$2,014	\$1,907	(\$107)
Capacity Market (Net CONE in 2030)	\$1,640	\$1,689	\$49
Capacity Market, Escalating Coal	\$1,932	\$1,914	(\$18)
Capacity Mrkt, Escalating Coal, & 111(d) CO ₂	\$2,094	\$2,047	(\$46)

In the BMcD base case, without any modifications, Dallman 31/32 are a net long-term liability to CWLP Electric, and the City of Springfield, ultimately costing the city about **\$40 million** (2013\$). While the city would not necessarily consider selling these units, even if they were a benefit, the “open market” valuation is a useful mechanism of understanding if these generators return value to customers, or if the city would be better off without the units in the portfolio. CWLP Electric’s December 2013 valuation reiterated the BMcD conclusion that, in the reference case, Dallman 31/32 do not offer a long-term benefit to the city.

The wholesale price of electricity is in constant flux, with a different price each hour. Dallman, like all generating units, seeks to operate only when the market price is higher than the cost of generating the electricity (i.e. the cost of fuel and variable operating costs). Because they are not particularly efficient units, Dallman 31/32 already dispatches at the margin in MISO in many hours of the year. That is, it doesn’t operate in many hours, and when it does run it is often just barely covering its costs. Imposing a cost on emissions and/or a higher cost of coal would increase the cost of the unit relative to the market, and therefore the unit would dispatch even less frequently than it does today. Synapse did not model these hourly dispatch decisions, as doing so would not result in a materially different outcome. While a choice to reduce the dispatch of Dallman would potentially save money, these units would still incur significant fixed costs each year – at some point the loss of annual revenue would become unequivocally clear (if it is not already today). Moreover, these BMcD projections do not appear to factor in additional environmental compliance costs, thus making these projections conservative.

Cost of carbon dioxide restrictions (EPA Illinois shadow price)

Carbon dioxide restrictions under the 111(d) rule will ultimately impose a cost on sources that emit CO₂,³¹ and therefore hinder the operations and revenues from CWLP Electric’s coal-fired units. Under

³⁰ Note that net present values of the BMcD study do not exactly match values shown here. This is due to (a) the poor quality of the scanned document available to Synapse, and (b) a different method of calculating net present value. BMcD’s net present value discounts the value in the base year (i.e., 2013), while the method used here uses the full value of the base year. The difference in valuation (i.e., difference) is negligible.

this circumstance, the 20-year value of Dallman 31/32 is reduced even further, sinking from a liability of \$40 million, to a liability of **\$69 million**.

Costs of escalating coal prices

If Dallman continues to pay a rising cost of coal (as it has since 2009), escalating at 2.25%, Dallman will increase in cost substantially relative to the market alternative, and ratepayers will continue to lose significant value year-on-year. We estimate that the 20-year liability of Dallman 31/32 with historically rising coal prices is **\$107 million**.

Dallman's contribution to MISO capacity market

In addition to over-valuing Dallman 31/32 by excluding carbon costs, rising coal costs, and the costs for compliance with environmental regulations, BMcD undervalued one component of Dallman – its contributions to the MISO capacity market. Historically, capacity in MISO has been flush and cheap. However, with retirements, it is estimated that this market may tighten – although the impact on capacity market prices is unclear in the face of rising energy efficiency and demand response programs and continually increasing Renewable Portfolio Standard requirements. Holding all other assumptions constant as the BMcD base case, simply allowing the price paid for excess capacity to rise toward net CONE in 2030 provides a long-term benefit to CWLP Electric. Only under the circumstances that capacity prices increase over 1,200% from their current prices and every other BMcD assumption is held constant including regulatory liability and coal prices, do Dallman 31/32 provide a long-term value (of **\$49 million**) to CWLP Electric.³² This extremely unlikely scenario is the only circumstance in which Dallman can be considered a long-term benefit to ratepayers.

Capacity market deficit combined with escalating coal prices and carbon regulations

The capacity market deficit, combined with the historically escalating coal price, results in a net loss of **\$18 million** to CWLP Electric by 2032. Finally, taking into account EPA's estimate of the impact of a carbon regulation drives the value to a liability of **\$46 million**.

³¹ The cost for carbon emissions does not necessarily need to be realized as a market cost of CO₂ as might be seen in a market-based mechanism (i.e., cap-and-trade) but may also be used to represent the cost of doing business with carbon emissions from covered sources – i.e., a shadow price or opportunity cost on CO₂ emissions.

³² 1,200% value is based on 2014/15 PRA clearing price of \$16.75/MW-day (or \$6,113/MW-yr) compared to the Synapse estimated LRZ 4 CONE of \$75,500/MW-yr. For MISO clearing price data, see <https://www.misoenergy.org/Library/Repository/Report/Resource%20Adequacy/AuctionResults/2014-2015%20PRA%20Summary.pdf>

Expected Short-Term Cash Flow Losses from Dallman 31/32

In investor-owned utilities, long-term decisions are judged on the basis of the net present value of revenue requirements – i.e., the total cost of a project, and all of its ramifications, in present value terms. Since power plants are long-lived resources, the performance on an annual basis – or even losses on a short term basis, may be overwhelmed by long-term performance expectations. In a municipal utility, however, short-term losses and negative cash flows may impede other city functions, particularly where a municipality doesn't have significant cash balances to draw down. One way this has manifested itself with CWLP Electric is in its net accounts payable to other Springfield government funds increasing from \$1.1 million in February 2009 to \$12.4 million in February 2014, including but not limited to over \$6.7 million owed to the Water Fund, \$2.6 million owed to the General Fund, and \$1.7 million owed to the Sewer Fund.^{33,34} Even in large investor-owned utilities, projects that aren't expected to produce reasonable returns to ratepayers over a reasonable period of time are viewed with skepticism. Fuel prices and the electricity markets are so uncertain over longer periods of time that projects which don't have profitable net present value until a decade or longer are considered very high risk – changes in fuel prices, environmental regulations, renewable energy penetration, customer habits, distributed generation, and energy efficiency programs may all erode the long-term benefit of even the most robust central generation projects, causing the future profits to evaporate.

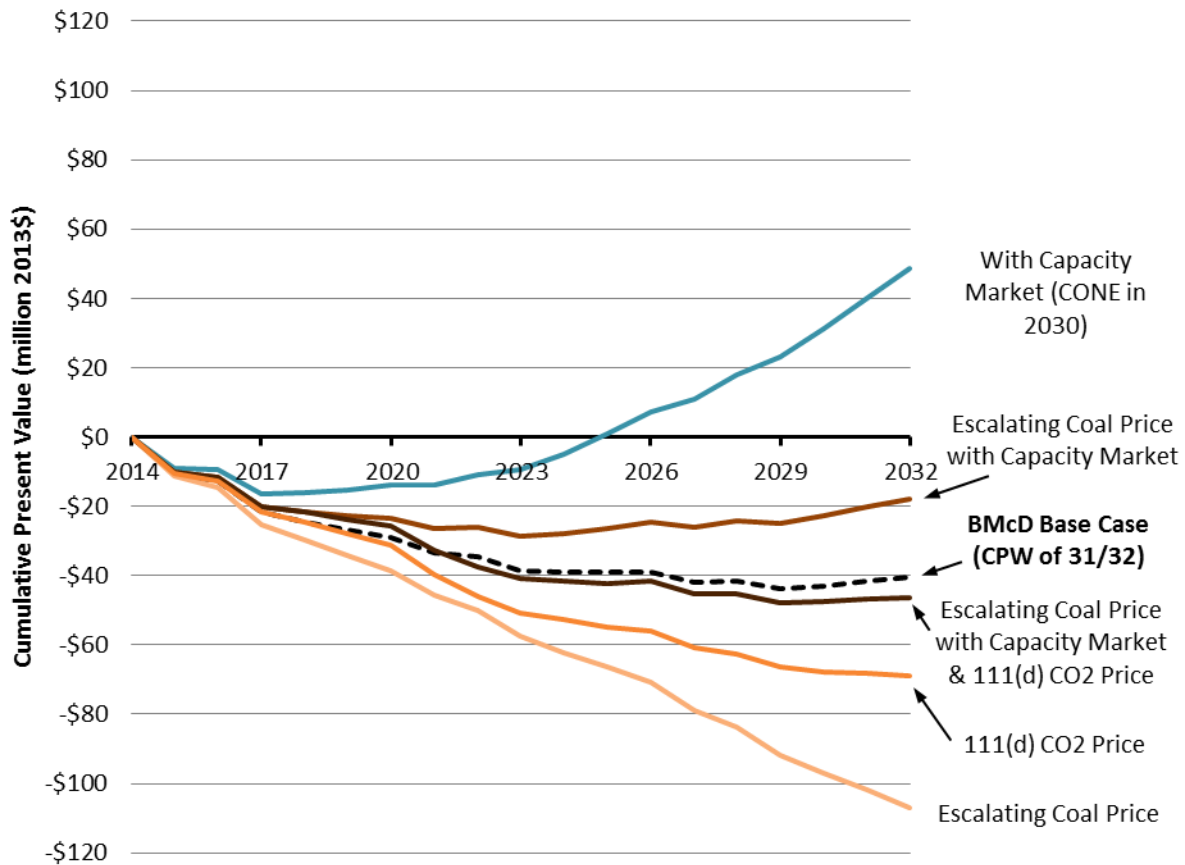
As shown previously, Dallman 31/32 are detrimental to Springfield over the long-term. These units also are expected to continue to deplete cash flows over the near term – even in the most optimistic scenarios. Figure 8, below, shows the cumulative present value of Dallman 31/32 from 2013 through 2032. The period of time that Dallman 31/32 spend below the zero line is the period in which CWLP's Electric Division continues investing in these units without an expectation of a net return to its balance sheet. In other words, until the projects break across the zero line, ratepayers spend more than the units are worth.³⁵

³³ McGladrey & Pullen. 2010. Financial Statements and Independent Auditor's Report, City of Springfield, Illinois Electric Light and Power Fund, February 28. <http://www.cwlp.com/index/financialdata/ElecAuditFY10.pdf>

³⁴ Sikich. 2014. Independent Auditor's Report, City of Springfield, Illinois Electric Light and Power Fund –, February 28. <http://www.cwlp.com/index/financialdata/ElecAuditFY14.pdf>

³⁵ Values below zero indicate a net liability from 2013 to the date; values above zero indicate net returns at a given date. Value streams are calculated as difference in discounted cash flows, pulled from BMCD report and modified as indicated from the BMCD report.

Figure 8. Cumulative present value of Dallman 31/32 from 2013 to 2032 under various scenarios



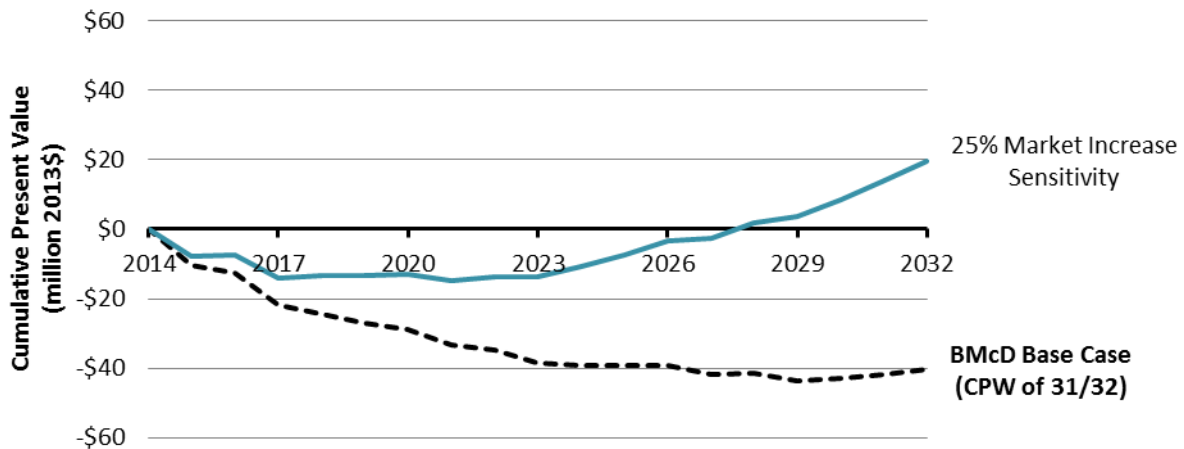
Source: Synapse calculations

The final end points for these graphs (in 2032) equal the values shown in Table 4, previously. As before, the base case from BMcD shows an overall net loss from Dallman 31/32 of approximately \$40 million. It's particularly notable that this scenario never breaks even – Dallman operates at a loss each year. Even the most optimistic scenario – the case with an unreasonably optimistic 1,200% increase in capacity prices provide revenues, CWLP doesn't face escalating coal prices, and CWLP need not comply with the EPA Clean Power Plan – does not break even until 2025, a decade from the retire/retrofit decision facing Springfield today. In that case, CWLP would have a net outlay of about \$16 million (in 2017), and would not recoup losses for another eight years. In all of the other scenarios where the reality of environmental regulations and increasing fuel costs are recognized, the units fail to earn a return for the city – ever.

On November 18, 2014, Mr. Hobbie presented materials to the City Council indicating that he believed the BMcD market values were too pessimistic, advocating for analysis results with market prices 25%

higher than presented by BMcD.³⁶ Synapse disputes Mr. Hobbie’s characterization and assumptions. The market price escalation that Mr. Hobbie substitutes for well-respected projections is wholly unsupported anywhere in the BMcD report or any of Mr. Hobbie’s presentations. Even assuming that this outlying assumption were true, Dallman 31/32 fail to produce returns to ratepayers until 2028, as shown in Figure 9, below.

Figure 9. Cumulative present value of Dallman 31/32 from 2013 to 2032, base case and 25% market increase

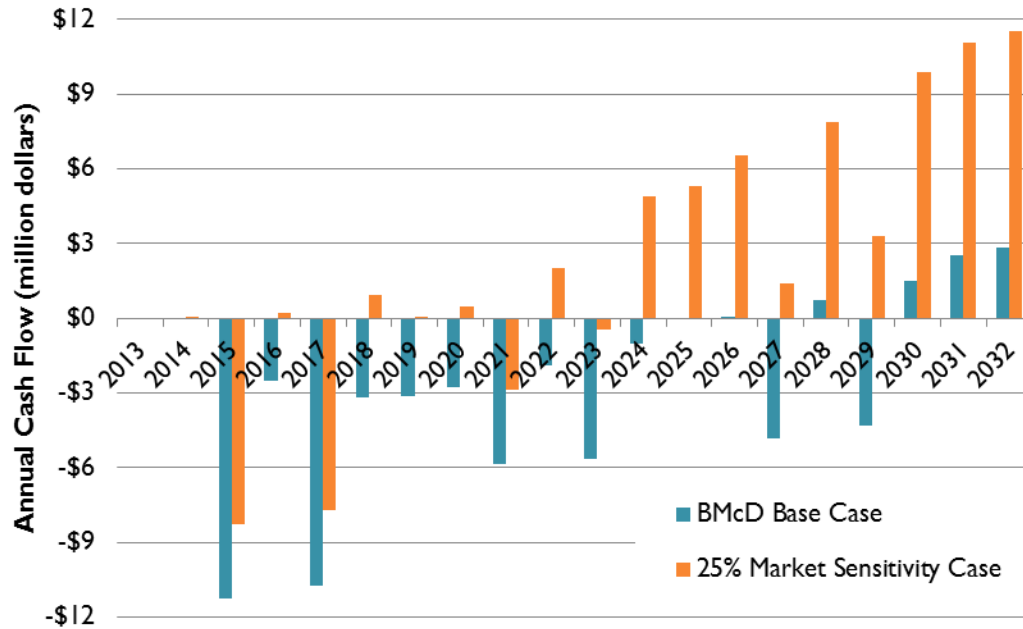


Source: Synapse calculations

Not only does Dallman not break even in net present value terms until 2028, the units produce moderate to significant negative cash flows in Mr. Hobbie’s scenario in most years through 2024, as shown in Figure 10. The figure shows that Dallman 31/32 simply cannot recover their fixed costs unless the market rises significantly.

³⁶ Eric Hobbie at November 18, 2014 presentation to City Council. “There are a lot of people who say, ‘Well those are very optimistic, those are high assumptions.’ We believe these are reasonable and conservative. If you look at what we just sold last week at the Illinois Hub for January and February, we sold it at \$53. That’s nearly the 25% increase price.” YouTube video at 46:13. <https://www.youtube.com/watch?v=-3zY9eUPRpc&feature=youtu.be&t=46m13s>

Figure 10. Annual cash flows from Dallman 31/32 relative to market scenario in base case, and 25% market increase sensitivity



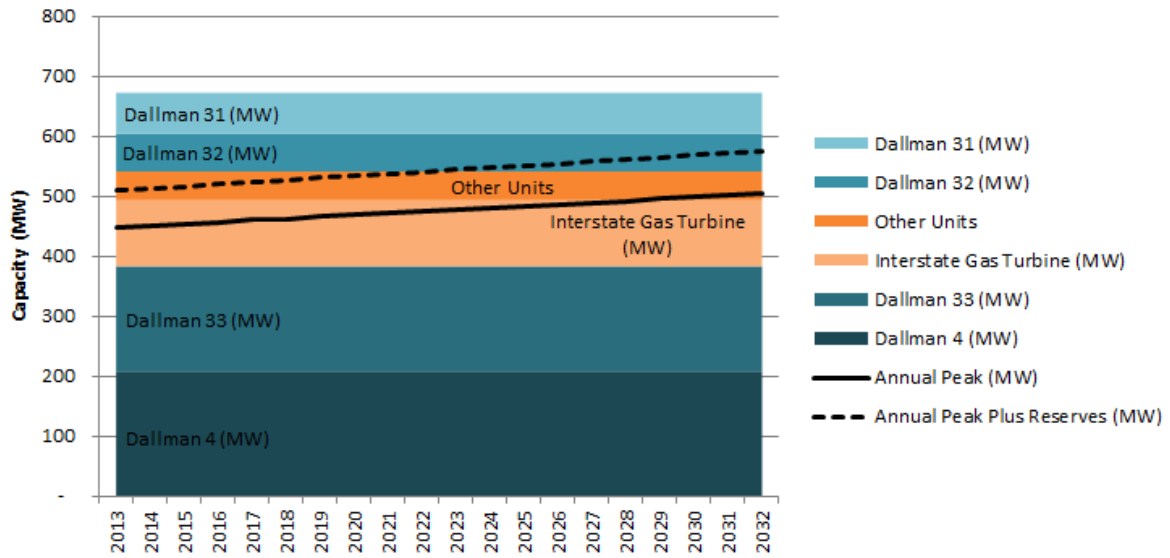
Source: Synapse calculations

Dallman 31/32 pose a significant long- and short-term risk to CWLP Electric and hence the City of Springfield’s electric ratepayers over the next 10 to 15 years.

Serving Springfield Load without Dallman 31/32

Dallman 31/32 are not critical to serve Springfield’s electricity requirements as stated in the BMcD report. According to CWLP’s documents, the city maintains sufficient capacity to serve its capacity requirements, plus the required planning reserve margin, through the next decade (see Figure 11, below). Using energy efficiency and demand response to drive down peak requirements could readily forestall any need for additional generating capacity well beyond the analysis period here.

Figure 11. CWLP capacity position (MW), base case with 31/32 continuing operation

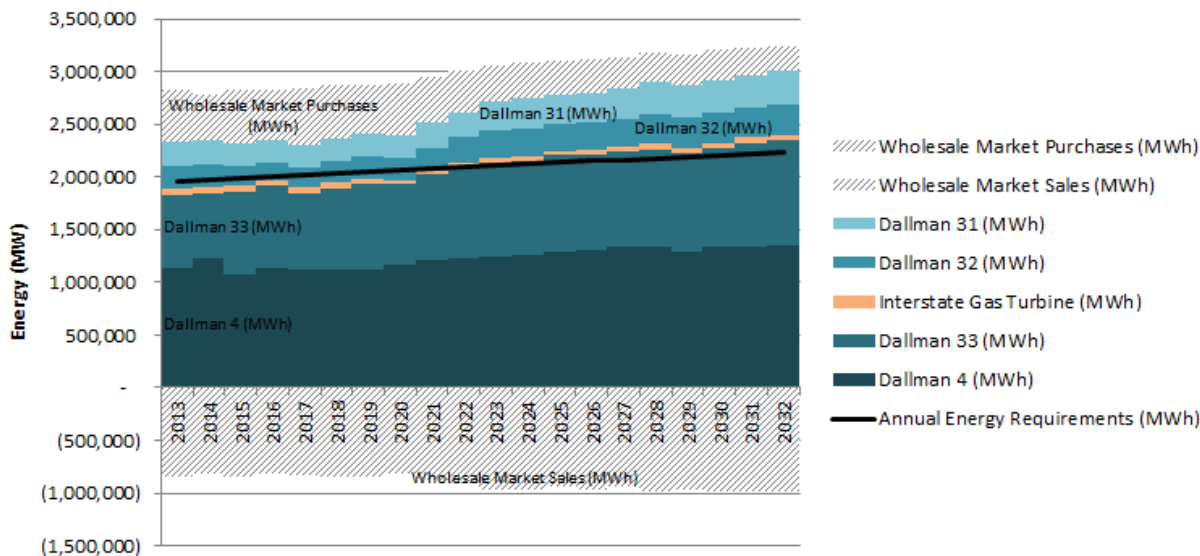


Source: Synapse calculations

Today, Dallman 31/32 serve the purpose of buffering local transmission reliability – a one-time value of \$8.9 million³⁷ – and selling energy to the wholesale regional energy market, rather than retail consumers. Figure 12, below, shows CWLP Electric’s energy position in the BMcD base case. Dallman 31/32 primarily operate above CWLP Electric’s requirements, and CWLP Electric uses a significant portion of its generation to serve the wholesale market.

³⁷ Hobbie, Eric. “Dallman 31 & 32 Financial Analysis of Operation vs. Closure.” Presentation to the Springfield City Council, November 18, 2014, 6. <http://www.springfieldcityclerk.com/cityCouncil/2014Presentations/111814Operation%20of%20Dallman%203132%20Final.pdf>

Figure 12. CWLP energy position (MWh), base case with 31/32 continuing operation



Source: Synapse calculations

Springfield should not be in the position of maintaining non-economic units simply to serve wholesale customers outside of CWLP’s service territory.

5. CWLP ELECTRIC’S REPRESENTATION OF DALLMAN 31/32 ECONOMICS

On November 18, 2014, Mr. Hobbie provided a presentation to the Springfield City Council titled “Dallman 31 & 32: Financial Analysis of Operation vs. Closure.” The presentation made the case for maintaining these two units, based primarily on an assertion of their current profitability and the costs of closure, concluding that the “upgrade of the units is by far the best option,”³⁸ a recommendation that directly contradicts the findings of the December 2013 BMcD report.

Mr. Hobbie’s presentation contains a number of misrepresentations that are not clear without a deeper dive into the supporting study and Mr. Hobbie’s assumptions and assertions. This section dissects particular assertions made during that presentation.

³⁸ Hobbie, Eric. “Dallman 31 & 32 Financial Analysis of Operation vs. Closure.” Presentation to the Springfield City Council, November 18, 2014, 18. <http://www.springfieldcityclerk.com/cityCouncil/2014Presentations/111814Operation%20of%20Dallman%203132%20Final.pdf>

5.1. Dallman 31/32 Do Not Produce Revenue

At the forefront of the presentation (page 4), Mr. Hobbie produces a financial breakdown of Dallman 31/32, entitled “Revenues and Costs.”

Figure 13. Slide from November 18, 2014 presentation given by CWLP to Springfield City Council

31/32 REVENUES	
Wholesale MISO Energy Revenue	\$ 11,530,000
MISO Capacity Revenue	\$ 2,520,000
TOTAL REVENUE	\$ 14,050,000

- Wholesale Energy & Capacity Revenues

31/32 EXPENSES	
Fuel Costs	\$ 6,770,000
Variable O&M	\$ 1,300,000
31/32 Direct Labor Costs	\$ 2,650,000
31/32 Direct Maintenance	\$ 2,900,000
TOTAL EXPENSES	\$ 13,620,000

- Fuel & Other Operating Expenses
- Expenses Not Incurred if 31/32 Closed

31/32 NET REVENUES	
1 Year of Net Revenue	\$ 430,000

- Net = Revenues – Expenses

Source: 2014 presentation by CWLP

The slide indicates wholesale energy and capacity market revenues produced by Dallman 31/32 and expenses from these units. The slide indicates a \$430,000 net revenue stream from the units. The slide contains a number of odd representations. While the slide indicates that these are revenues and costs from both Dallman 31 and 32, the costs and revenues represent only 65% of those units. We can calculate that energy revenues from Dallman 31/32 in 2013 were approximately twice that shown here – in 2013, Dallman 31/32 netted approximately \$18 million in wholesale MISO energy revenues (see Figure 13).³⁹ Fuel, variable and maintenance/labor costs are also about half of the costs incurred by Dallman 31/32, so it is unclear if this chart represents only one unit, or the net of costs and revenues made available to the MISO wholesale market. Regardless of this confusing representation, the numbers – but for one critical value – are generally consistent with recent and expected costs, or at least for one of the two units.

The “MISO Capacity Revenue” stream, a value of \$2.52 million in Mr. Hobbie’s representation, cannot be reasonable or correct. The MISO capacity market is currently very flush, and prices are extremely low. Even assuming this capacity price represents both Dallman 31/32 (inconsistent with the remainder of the slide), the cost is still off by millions of dollars. In 2014/2015, the MISO Planning Resource Auction

³⁹ 2013 Net Energy Revenues from 31 & 32 are calculated as \$9,042,562 and \$8,905,806, respectively, or \$17,948,368.

(PRA) cleared at \$16.75/MW-day,⁴⁰ meaning that excess capacity offered to the market would be offered approximately \$6,113 annually for each MW. Combined, Dallman 31/32 offer at most 152 MW of capacity to the market.⁴¹ Valued at \$6,113/MW, they would have produced revenue of \$929,290 in this year’s auction. Mr. Hobbie’s valuation is therefore overstated by at least \$1.59 million, and over \$2 million if the remainder of this chart represents one unit instead of two.

The slide in Figure 14, below, corrects Mr. Hobbie’s slide for the year 2013, substituting in calculated market revenues, capacity revenues, and fuel, and operations and maintenance costs for 100% of Dallman 31 and 32. Mr. Hobbie should have told the City Council that under current conditions, Dallman 31/32 cost CWLP over \$9 million per year.

Figure 14. Corrected slide representing 2013 annual net revenues and costs from Dallman 31 and 32, combined⁴²

31/32 REVENUE (2013)		
Wholesale MISO Energy Revenue	\$ 17,950,000	• Wholesale Energy & Capacity Revenues
MISO Capacity Revenue	\$ 930,000	
TOTAL REVENUE	\$ 18,880,000	
31/32 EXPENSES (2013)		
Fuel Costs	\$ 13,130,000	• Fuel & Other Operating Expenses
Variable O&M	\$ 4,160,000	
31/32 Direct Labor Costs	\$ 10,660,000	• Expenses Not Incurred if 31/32 Closed
31/32 Direct Maintenance	Included in labor costs	
TOTAL EXPENSES	\$ 27,950,000	
31/32 NET REVENUES		
1 Year of Net Cost (2013)	\$ (9,070,000)	• Net = Revenues – Expenses

Source: Synapse calculation

If Dallman 31/32 were highly economic and low-cost resources, the proposition of maintaining these units simply to make market sales might provide an extra stream of revenue to CWLP. Instead, for every month these units remain on the wholesale market, they cost the ratepayers. In fact, maintaining 31/32 subsidizes other MISO buyers, because Springfield pays for fixed costs that it does not recoup from the market.

⁴⁰ MISO. 2014/2015 Planning Resource Auction (PRA). <https://www.misoenergy.org/Library/Repository/Report/Resource%20Adequacy/AuctionResults/2014-2015%20PRA%20Summary.pdf>

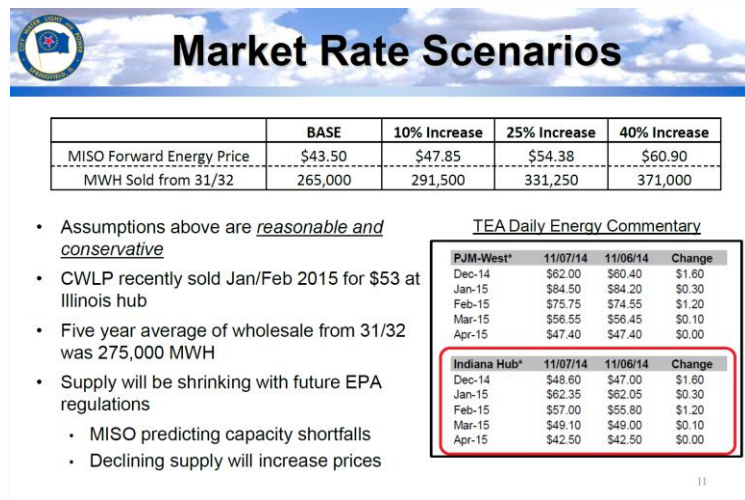
⁴¹ Burns and McDonnell. 2013. Table 3-1.

⁴² Variable and fixed O&M (including direct labor costs and direct maintenance) from BMcD, 2013 report (2013 data). Report does not differentiate fixed O&M categories. Therefore, \$10.7 million fixed O&M expense is listed under direct labor costs.

5.2. Market Price Forecast Inflated

Using the starting position that Dallman 31/32 are profitable, Mr. Hobbie represented a series of market price increase scenarios to the City Council, indicating that if wholesale market prices increased substantially, then Dallman 31/32 would net significant revenues to the city. Mr. Hobbie then moves to indicate that the favorable outcomes shown in the 25% market price increase category are reasonable, because the higher prices are comparable to forward market sales for January and February (of 2015).⁴³

Figure 15. Slide from November 18, 2014 presentation given by CWLP to Springfield City Council



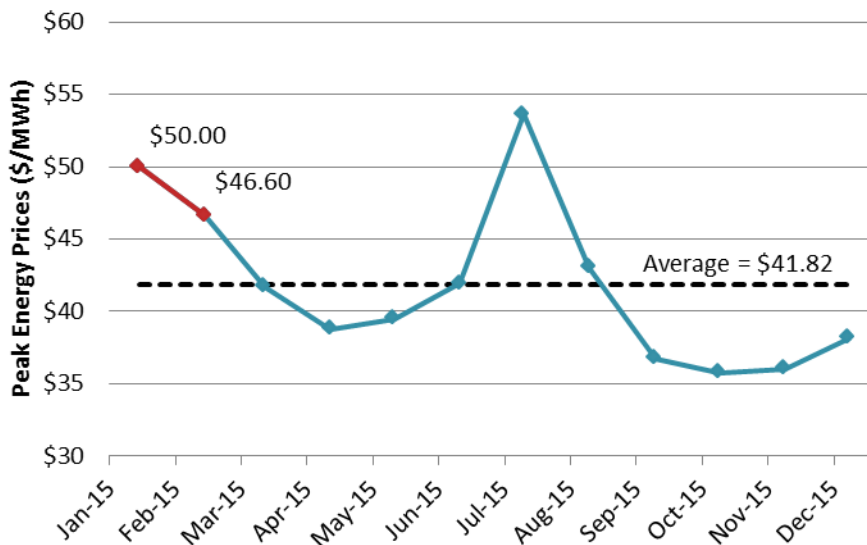
Source: 2014 presentation by CWLP

In this statement, Mr. Hobbie blurs the truth; Indeed, peak (not average) market prices for January and February are relatively high, but the single data point he draws on does not represent a market rebound, but rather the naturally higher costs in a winter-peaking electric system. Market prices in April, May, September, October, November, and December are all below \$40/MWh,⁴⁴ and on average the forward market price for peak energy is actually quite close to the base case assumption - \$41.82, versus \$43.50 – hardly the 25% increase touted by Mr. Hobbie (see Figure 16, below).

⁴³ Eric Hobbie at November 18, 2014 presentation to City Council. “There are a lot of people who say, well those are very optimistic, those are high assumptions, we believe these are reasonable and conservative. If you look at what we just sold last week at the Illinois Hub for January and February, we sold it at \$53. That’s nearly the 25% increase price.” YouTube video at 45:48 . <https://www.youtube.com/watch?v=-3zY9eUPRpc&feature=youtu.be&t=45m48s>

⁴⁴ Peak market prices at the Indiana MISO Hub collected from CME Group for Friday, December 5, 2014. (MISO Indiana Hub (formerly Cinergy Hub) Real-Time Peak Calendar-Month 2.5 MW Futures Settlements)

Figure 16. Forward market prices for 2015 for Indiana Hub. Red marks selectively high January and February prices



Mr. Hobbie includes other misrepresentations about the uncertain high prices in the market, versus Dallman’s low prices provided to customers. Towards the end of his presentation, Mr. Hobbie states the following:

Dallman 31/32 runs during the highest load, highest price times. During those times, it can make electricity cheaper by \$30-\$50/MWh cheaper than what we can buy it from the market. What this would amount to is a higher bill for every customer through the fuel adjustment. Closing it is an indirect rate adjustment for customers. They will pay more on every bill for purchased power, and where we’re estimating that would be one million to five million each year.⁴⁵

This statement contains numerous misleading statements.

“Dallman 31/32 runs during the highest load, highest price times.”

Indeed, Dallman 31/32 runs during the highest load and during the highest price times – because Dallman 31/32 are so expensive to run that they literally lose money every hour that they operate unless prices are extremely high. In 2013, market prices at the CWLP hub were below Dallman 31/32’s operating costs in 60% of all hours.⁴⁶ Economic dispatch demands that high-cost units do not run (if possible) when prices are below their variable cost. For Dallman 31/32, this is most of the time.

⁴⁵ Eric Hobbie at November 18, 2014 presentation to City Council. YouTube video at 52:13. <https://www.youtube.com/watch?v=-3zY9eUPRpc&feature=youtu.be&t=52m13s>

⁴⁶ Assuming a variable operating cost of \$31.04/MWh using coal prices received at Dallman in 2013 of \$2.17/MMBtu (EIA 923), VOM of \$7.52 (from BMcD study) and heat rate of 10,838 (from EPA Clean Air Markets Division). 2013 market prices at CWLP Hub from MISO.

“It can make electricity cheaper by \$30-\$50/MWh cheaper than what we can buy it from the market.”

At \$31/MWh of an operating cost for Dallman 31, there were exactly 100 (1.1%) and 15 hours (0.17%), respectively, where market prices in 2013 were in excess of \$30 or \$50/MWh higher than Dallman 31. Touting the cheap cost of the unit based on its cost relative to the highest 1% of hours represents poor finance and a deep stretch.

“Closing it is an indirect rate adjustment for customers. They will pay more on every bill for purchased power.”

Consumers will begin to save money immediately after the closure of Dallman 31/32. CWLP Electric’s ratepayers may purchase a slightly larger fraction of energy on the market than they do today,⁴⁷ but as indicated in Figure 12, Dallman 31/32 provide energy to the wholesale market – not CWLP Electric’s retail consumers. Even if CWLP Electric’s consumers had to rely on Dallman 31/32, a transfer to the market would still result in savings. Consumers would pay for market purchases and cease paying for the fixed and variable costs of operating Dallman 31/32, and avoid future capital expenses. All of these savings outweigh any costs, as shown decisively from the historic record and the BMCD report.

5.3. Capital Outlay Required if Unit Continues or Retires

Finally, Mr. Hobbie refers numerous times to the cost of closure – pinning it at \$11.4 million⁴⁸ to improve transmission and implement a heating system for Dallman 33 – but only once mentions the required upgrades to Dallman 31/32 to operate at a cost of \$10.2 million.⁴⁹ The clear message is that CWLP Electric is required to invest in Dallman 31/32 at a cost of about \$10-\$11 million, regardless of if the unit retires or continues in operation. Whether an upgrade or a retirement, these committed costs are effectively a sunk cost that will be borne by CWLP Electric. However, the transmission upgrades are required if Dallman 31/32 are retired at any time in the future. Therefore, investing \$10.2 million to simply keep the units online for another five to eight years does not avoid the \$11.4 million transmission and heating system investment – it merely defers this cost to another day. In the meantime, Dallman 31/32 will continue to be a net cost to the city on a year-by-year basis.

Finally, it appears that Mr. Hobbie’s representation of a \$10.2 million cost for the various upgrades at Dallman 31/32 does not comport with the BMCD report. Mr. Hobbie reports that natural gas conversion will cost approximately \$4 million, but the BMCD report indicates a cost of \$7.4 million.⁵⁰ It is not clear if the \$2.1 million approved by the City Council in Agenda #2014-403 (Nov 18, 2014) is restricted to

⁴⁷ Not because energy is required, but because CWLP’s fleet lacks intermediate units and overproduces baseload energy.

⁴⁸ Hobbie, Eric. “Dallman 31 & 32 Financial Analysis of Operation vs. Closure.” Presentation to the Springfield City Council, November 18, 2014; 6,8,17.
<http://www.springfieldcityclerk.com/cityCouncil/2014Presentations/111814Operation%20of%20Dallman%203132%20Final.pdf>

⁴⁹ Ibid., 8.

⁵⁰ Burns and McDonnell. 2013. Table 8.3, page 8-4.

engineering services to design the equipment (a cost estimated by BMcD at \$525,000, rather than \$2.1 million), or if it will actually result in changes at the units. If these costs are just for design services and engineering, it appears likely that the overall project costs will exceed the BMcD costs significantly.

6. CONCLUSION

The Springfield City Council must decide whether to invest in retrofitting Dallman 31/32 or to invest in retiring the units. This decision requires understanding the stream of all future costs and revenues associated with the units, so that the total value of those costs and revenues can be determined and compared. Unfortunately, the City Council has been presented with conflicting information. On the one hand, they have a detailed comprehensive analysis performed by Burns & McDonnell, a global engineering design firm ranked number one in electrical design.⁵¹ On the other hand, they have the advice of chief utility engineer Eric Hobbie who has not presented a detailed, thorough analysis of the like that would be required of an investor owned utility by the Illinois Commerce Commission and who, despite his best efforts and intentions, has not been able to articulate clearly why the City Council should ignore the analysis of the expert engineering design firm that the city hired.

Synapse reviewed the work of both Burns & McDonnell and the testimonies of Mr. Hobbie, in an attempt to determine which advice was prudent: should CWLP retire Dallman 31/32, or invest in operating the units for another decade or longer. Upon completing the analysis, Synapse concludes:

1. The Dallman 31/32 units are not needed for their generating capacity, as noted by the BMcD report. CWLP owns enough generation that it can meet its customers' needs without ever turning Dallman 31/32 on again. The specter of rolling blackouts is not relevant to this decision.
2. Contrary to slide decks presented by Mr. Hobbie, Dallman 31/32 have been losing money each and every year since 2009. The fixed costs associated with maintaining the plant swamp any benefits CWLP gains from suppressing its own exposure to the market and from sales to the market. An incomplete accounting of costs and revenues has been obscuring this fact for years.
3. Contrary to slide decks presented by Mr. Hobbie, Dallman 31/32 will continue to lose money each and every year for at least a decade, if not until 2030 and beyond. Reasonable experts can and do disagree about the details of the future – fuel prices, market prices, load growth, environmental regulations, etc. – but level-headed analysis makes it clear that Dallman 31/32, if not retired, will operate in the red for the foreseeable future.

⁵¹ Electrical Construction & Maintenance, "Announcing E&M's 2014 Top 10 Electrical Design Firms," April 18, 2014. http://ecmweb.com/design/announcing-ecms-2014-top-10-electrical-design-firms#slide-0-field_images-44421

4. Continuing to invest in Dallman 31/32 exposes CWLP to asymmetric risk. EPA may or may not continue to increase environmental standards related to air emissions, water intake, water effluent, and solid waste disposal. There is no expectation within the industry that regulations will be relaxed. The continued operation of Dallman 31/32 exposes CWLP to the risk of increasingly restrictive environmental regulations, each of which will, if history is our guide, require the further investment of even more millions of dollars to keep these two units operational.
5. The costs associated with retiring Dallman 31/32 – upgrading the transmission infrastructure and adding heating to Dallman 33 – will be faced by CWLP one way or another. If Dallman 31/32 is retired now, the \$11 million must be spent now. If Dallman 31/32 are retired in 10 or 15 years, the \$11 million (increased due to inflation) must be spent in 10 or 15 years. That cost is unavoidable. To use that cost as a reason to not retire Dallman 31/32 now is a distraction because that cost will be borne by CWLP under any scenario.
6. CWLP Electric has over \$260 million in annual revenue.⁵² It has been suggested that CWLP Electric simply doesn't have \$11 million for the equipment upgrades necessary for the retirement of Dallman 31/32, yet CWLP Electric proposes spending \$10 million necessary for the natural gas startup upgrades and major turbine overhauls on Dallman 31/32. The \$11 million represents investments in capital infrastructure, so to the extent that there is a cash flow problem, CWLP Electric should be able to use bonding or short term loans to bridge any financing gaps between the proposed near-term investments.

CWLP Electric is in the midst of challenging times. Its balance sheet is in shambles, with millions in debt to other city departments, repeated failure to meet its bond covenants, and a downgrading imminent. These challenging times are a direct result of CWLP attempting to suppress electric rates for retail customers by overbuilding its generating system and attempting to profit from the market.

Rather than retiring Dallman 31/32, CWLP is intent on incurring ongoing losses and betting \$10 million in new investments on dramatic wholesale market price increases not being forecasted by MISO, the very organization that runs the market. This represents a repetition of the very behavior that's led to significantly increasing customer bills while simultaneously being unable to pay its own bills. Mr. Hobbie is asking the City Council to allow him to gamble ratepayer money on the idea that he can outsmart a \$17 billion marketplace, with complete disregard for the ramifications of yet another bad bet.⁵³

CWLP Electric and the citizens of Springfield would be best served by a municipal electric company that focused on deliberate, prudent planning to meet the needs of customers, rather than speculative investments that ignore the professional advice CWLP paid to receive. The difference in immediate capital costs between retiring and retrofitting of approximately \$1 million dollars is insignificant when juxtaposed to CWLP's \$270 million annual operating budget, the \$42 million Dallman 31/32 has lost

⁵² CWLP, "FY2015 CWLP Budget Presentation." Presentation to the Springfield City Council, January 16, 2014, 13.
<http://www.cwlp.com/index/financialdata/BudgetPresentationFY2015.pdf>

⁵³ MISO, "MISO 2013 Annual Market Assessment Report, Information Delivery and Market Analysis," June 2014.

from 2008-2013, or the \$40 - \$46 million Dallman 31/32 is expected to lose over the next twenty years under base case BMcD and Synapse assumptions.

The conclusion could not be clearer: ceasing new investments in Dallman 31/32 and preparing for imminent retirement is the prudent course of action for CWLP.

