

ORDINANCE No. 121898

COUNCIL BILL No. 115343

AN ORDINANCE relating to the City Light Department; authorizing execution of Amendment One to the Power Purchase Agreement with the City of Klamath Falls, Oregon, allowing City Light to schedule operation of the project on a daily basis.

# The City of Seattle--Legislative Department

Date Reported and Adopted

## REPORT OF COMMITTEE

Honorable President:

Your Committee on \_\_\_\_\_

to which was referred the within Council Bill No. \_\_\_\_\_ report that we have considered the same and respectfully recommend that the same:

8/10/05 DO PASS - JG, JC, DD

8-15-05 Passed 8-0 (Absent: Licata)

COMPTROLLER FILE No. \_\_\_\_\_

Introduced: <u>AUG - 8 2005</u>	By: <u>GODDEN</u>
Referred: <u>AUG - 6 2005</u>	To: <u>Energy &amp; Environmental Policy Committee</u>
Referred:	To:
Referred:	To:
Reported: <u>8-15-05</u>	Second Reading:
Third Reading: <u>8-15-05</u>	Signed: <u>8-15-05</u>
Presented to Mayor: <u>8-15-05</u>	Approved: <u>8/22/05</u>
Returned to City Clerk: <u>8/23/05</u>	Published: <u>John 2 pp.</u>
Vetoed by Mayor:	Veto Published:
Passed over Veto:	Veto Sustained:

LAW DEPARTMENT

Committee Chair

ORDINANCE 121898

AN ORDINANCE relating to the City Light Department; authorizing execution of Amendment One to the Power Purchase Agreement with the City of Klamath Falls, Oregon, allowing City Light to schedule operation of the project on a daily basis.

WHEREAS, in Ordinance 120144, the City entered into a 5-year power purchase agreement associated with 100 MW of output from a natural gas-fired, cogeneration project owned by the City of Klamath Falls; and

WHEREAS, the Power Purchase Agreement provides for City Light to schedule the operation of the project on a monthly basis; and

WHEREAS, the City of Klamath Falls has offered to modify the contract to allow City Light to schedule operation of the project on a daily basis which, together with some other modifications would, on an aggregate basis, allow City Light to derive more value from the Agreement; NOW, THEREFORE,

**BE IT ORDAINED BY THE CITY OF SEATTLE AS FOLLOWS:**

Section 1. The Superintendent of the City Light Department, or his designee is hereby authorized to execute, for and on behalf of the City of Seattle Amendment One to the Power Purchase Agreement with the City of Klamath Falls, Oregon substantially in the form attached to this ordinance as Exhibit A.

The Amendment modifies City Light's ability to schedule the operation of the project from a monthly basis to a daily basis, but adds more potential cycling costs and a higher fuel charge. Overall, Amendment One should allow modest net benefits over the remaining term of the contract.

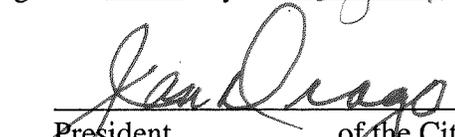
Section 2. Subsequent to adoption, but prior to its effective date, any acts taken in furtherance of this ordinance, are hereby ratified and confirmed.



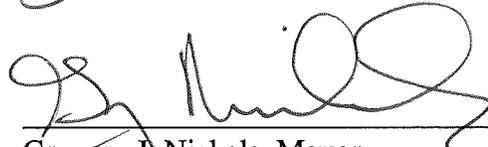
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Section 3. This ordinance shall take effect and be in force thirty (30) days from and after its approval by the Mayor, but if not approved and returned by the Mayor within ten (10) days after presentation, it shall take effect as provided by Municipal Code Section 1.04.020.

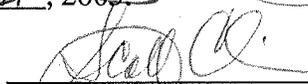
Passed by the City Council the 15<sup>th</sup> day of August, 2005, and signed by me in open session in authentication of its passage this 15<sup>th</sup> day of August, 2005.

  
\_\_\_\_\_  
President \_\_\_\_\_ of the City Council

Approved by me this 22<sup>nd</sup> day of August, 2005.

  
\_\_\_\_\_  
Gregory J. Nickels, Mayor

Filed by me this 23<sup>rd</sup> day of August, 2005.

  
\_\_\_\_\_  
City Clerk

(Seal)

Exhibit A: Amendment One to the Power Purchase Agreement





# City of Seattle

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Gregory J. Nickels, Mayor

## Office of the Mayor

August 2, 2005

Honorable Jan Drago  
President  
Seattle City Council  
City Hall, 2<sup>nd</sup> Floor

Dear Council President Drago:

The attached proposed Council Bill amends City Light's existing five-year contract associated with its purchase of power from a natural gas-fired, cogeneration project owned by the City of Klamath Falls, Oregon. This amendment will allow City Light to schedule operation of the project on a daily basis, as opposed to the current contract that allows only monthly scheduling, and is expected to provide the opportunity to increase the net benefit to the City by an average of approximately \$17,000 per month.

Much has changed within the energy markets since the original contract was negotiated in 2000. The modest changes proposed in this amendment will allow more flexibility in managing City Light's purchase of power from Klamath Falls.

Thank you for your consideration of this legislation. Should you have questions, please contact Bill Gaines, Power Management Executive, at (206) 684-3243.

Sincerely,

A handwritten signature in cursive script, appearing to read "Greg Nickels", written over a horizontal line.

GREG NICKELS  
Mayor of Seattle

cc: Honorable Members of the Seattle City Council



**AMENDMENT ONE  
TO THE  
POWER PURCHASE AGREEMENT**

Pursuant to the Power Purchase Agreement between the City of Klamath Falls (the "City"), Oregon and the City of Seattle, City Light Department ("Seattle"), dated November 7, 2000 (the "PPA"), and for good and valuable consideration, the parties agree to amend the PPA as follows, and only as follows, effective only for deliveries on and after September 1, 2005:

1. Contract Heat Rate. In **Article 1**, in the Contract Heat Rate definition, delete "6,910 Btu/kWh" and replace it with "7,050 Btu/kWh."
2. Gas Index. In **Article 1**, delete the Gas Index definition in its entirety and replace it with the following:

*"Gas Index: This term shall mean the "Daily Spot Gas Price at AECO C & NOVA Inventory Transfer, Avg. Price for Applicable Day (included in Line 5A Arithmetic Average), U.S.\$ per MMBtu" as reported in the Canadian Gas Price Reporter under the table "Canadian domestic gas price report," rounded to the nearest 0.001. See Attachment 1 hereto."*

3. Current Exchange Rate. In **Article 1**, delete the definition of "Current Exchange Rate" in its entirety.

4. New Definitions. In **Article 1**, add the following definitions:

*"PPT: This term shall mean Pacific Daylight Time or Pacific Standard Time, as applicable, on the Day in question."*

*"Prescheduling Day: This term shall mean the Day accepted and established as the common pre-scheduling day for power in the WECC."*

*"WECC: This term shall mean Western Electricity Coordinating Council or its successor."*

In **Article 1**, delete the following definitions:

*"Pipeline Loss Percentage".*

*"Variable Pipeline Charges".*

5. Alternative Delivery Rights. In **Article 3.4.1**, delete the first sentence in its entirety and replace it with the following:



*“Owner may, by providing written notice to Power Purchaser at least four (4) Business Days before the start of a Month, elect for such Month Mid-Columbia and/or Power Purchaser’s System as the alternative delivery point(s) for up to 50 MW (as specified in such notice).”*

6. Monthly Fuel Charge Formula. Delete **Article 4.5.2** in its entirety and replace it with a new Article 4.5.2, as follows:

*“ 4.5.2 Power Purchaser shall pay the Monthly Fuel Charge based on the following formula to be calculated daily and summed for the Month:*

*[daily electrical energy (in MWhs) delivered to Point of Delivery \* Contract Heat Rate/1000] \* [(Gas Index \* (1+ 3.83%)) + \$0.03]*

Delete **Article 4.5.3** in its entirety.

*Exhibit F sets forth a daily example of how the Monthly Fuel Charge is calculated.”*

7. Cycling Costs. Delete **Article 4.14 (Surcharges Pursuant to On Peak Schedule)** in its entirety and replace it with the following:

*“4.14 Cycling Costs. Power Purchaser shall be responsible for paying cycling costs, as set forth in Articles 6.2.2.”*

8. Daily Schedules. Delete **Article 6.2 (Monthly Schedules)** in its entirety and replace it with the following:

*“6.2 Daily Schedules.*

*6.2.1 Power Purchaser’s Daily Schedule. Power Purchaser may pre-schedule under this Agreement (as set forth in this Article 6.2) at the Contract Delivery Rate for all On-Peak hours and/or all Off-Peak hours. No later than 06:30 PPT on each Prescheduling Day, Power Purchaser shall provide Seller with a schedule or schedules of Power to be delivered to the Power Purchaser under this Agreement for the Day or Days being pre-scheduled. If Power Purchaser has not timely provided such a pre-schedule or pre-schedules to Owner as set forth above, a flat 100-MW schedule shall apply for the Day or Days being pre-scheduled. Except for Force Majeure events and Forced Outages that have not yet occurred, Seller shall notify Power Purchaser at the time of pre-scheduling if Seller is not making capacity available for the Day or Days being pre-scheduled for reasons of declared Force Majeure, Forced Outages, or Scheduled Maintenance Outages. If deliveries are changed by Force Majeure or as otherwise permitted herein, Seller and Power Purchaser shall adjust the pre-schedules to reflect actual deliveries. Such adjusted schedules and pre-schedules not needing to be adjusted shall collectively become final*



schedules ("Final Schedules") at the end of the active Day. These Final Schedules will be the basis for settlement. The Parties intend that scheduling hereunder shall follow the procedures established by the WECC. Once schedules are established, changes to schedules shall be made only as provided in this Article 6 or as agreed by the Parties. Power Purchaser shall have no rights to make hourly or intra-hourly schedule changes.

- 6.2.2. Cycling Costs. For flat 24-hour schedules, a cycling charge of \$5400 (100 MW \* 24 hours \* \$2.25/MWh) shall apply on any day in which the schedule increases from the previous day. No cycling charge shall apply on decreases in flat schedules or on flat schedules that are unchanged from the previous day's flat schedule. For example, if Power Purchaser elects a 0-MW flat 24-hour schedule on day one and a 100-MW flat 24-hour schedule on day two, a \$5400 cycling charge shall apply to day two. If Power Purchaser then elects a 100-MW flat 24-hour schedule on day three, no cycling charge shall apply on day three. If Power Purchaser then elects a 0-MW flat 24-hour schedule on day four, no cycling charge shall apply on day four.

On any day that Power Purchaser elects an On Peak-only schedule, a cycling charge of \$5600 (100 MW \* 16 hours \* \$3.50/MWh) shall apply on such day."

9. Billing and Payment. In **Article 8 (Billing and Payment)**, delete the following sentence (which is the second sentence of the second paragraph of Article 8): "Owner may use an estimate of the Current Exchange Rate in calculating the Monthly Fuel Charge included in each bill; *provided, however*, that Owner shall provide a retroactive adjustment in the next Month's invoice based on the actual Current Exchange Rate, with interest calculated pursuant to Article 17.7 hereto."

10. Scheduling Notices. In **Article 11.3 (Scheduling Notices)**, delete the word "monthly" and replace it with "daily".

11. Exhibit A. Delete **Exhibit A (Example of Publication Containing the Gas Index)** of the Agreement and replace it with attached **Exhibit A (Example of Publication Containing the Gas Index)**.

12. Exhibit C: Delete **Exhibit C (Monthly Capacity Charge)** of this Agreement and replace it with Attachment II hereto **Exhibit C (Monthly Capacity Charge)**.

13. Exhibit F. Delete **Exhibit F (Example Calculation of Monthly Fuel Charge for December, 2001)** in its entirety and replace with

"Daily Fuel Charge = [1600 MWh \* 7050/1000] \* [(\$3.072 \* (1 + .0383)) + .03]  
= \$36,317.74 totaled for all days in the month."

14. Exhibit G. Delete **Exhibit G (Pipeline Loss Percentage and Variable Pipeline Charges)** in its entirety.

15. Exhibit K. **Exhibit K (Example of Monthly Invoice Calculation for December, 2001)** is hereby revised as follows:

- (a) Delete “for December, 2001” from the heading;
- (b) Delete the calculation for “Article 4.5 Monthly Fuel Charge” and replace it with the following:

*“Article 4.5 Daily portion of Monthly Fuel Charge  
= [1600 MWh \* 7050/1000] \* [(\$3.072 \* (1 + .0383)) + .03] =  
\$36,317.74”*

- (c) Delete “Article 4.6 Hedging the Monthly Fuel Charge” in its entirety.

16. Exhibit M. In **Exhibit M (Owner’s Fax Number for Power Purchaser’s Monthly Schedule Request)** delete the word “monthly” and replace it with “daily”.

17. Exhibit O. Delete **Exhibit O (Cycling and Heat Rate Surcharges Associated with On-Peak Schedules)** in its entirety.

18. Exhibit P. Delete **Exhibit P (Example of Application of Cycling and Heat Rate Surcharges)** in its entirety.

19. Authority. Each Party represents that it has been duly authorized to execute and deliver this Amendment One to the PPA.

**City of Klamath Falls, Oregon**

By: \_\_\_\_\_  
Todd Kellstrom

Title: Mayor

Date: \_\_\_\_\_

**City of Seattle, City Light Department**

By: \_\_\_\_\_  
Jorge Carrasco

Title: Superintendent

Date: \_\_\_\_\_

*Attest:*

By: \_\_\_\_\_  
City Recorder, City of Klamath Falls  
Attachment A – Price Reference for Gas Index

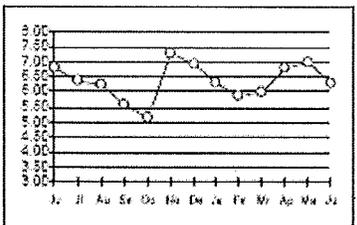
*Approved as to form:*

By: \_\_\_\_\_  
City Attorney, City of Klamath Falls



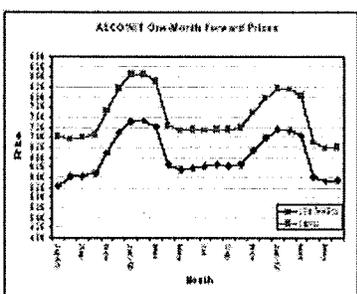
# Canadian domestic gas price report

Current	Last Month	Last Year
6.36	7.03	6.80



Month	US\$/MMBtu	C\$/GJ
Jul-05	5.78	7.03
Aug	6.01	6.97
Sep	6.05	7.01
Oct	6.11	7.06
Nov	6.62	7.67
Dec	7.10	8.23
Jan-06	7.40	8.57
Feb	7.41	8.58
Mar	7.26	8.40
Apr	6.32	7.31
May	6.20	7.17
Jun	6.24	7.21
Jul	6.28	7.16
Aug	6.32	7.22
Sep	6.31	7.21
Oct	6.35	7.23
Nov	6.60	7.64
Dec	6.90	7.98
Jan-07	7.21	8.23
Feb	7.18	8.20
Mar	7.05	8.05
Apr	6.02	6.96
May	6.01	6.74
Jun	6.04	6.76

Source: Canadian Enerdata Ltd.



## NATURAL GAS MARKET COMMENTARY

One-month spot prices at AECO/N.I.T. fell to \$6.6087/GJ, a decrease of 67¢ from May. Daily spot prices averaged \$6.6414/GJ at AECO/N.I.T. and \$6.7311/GJ at Empress for May. Bids & offers for Nov/2005 one-year fixed-price deals averaged \$7.5114/GJ and \$7.6573/GJ at AECO/NIT and Empress respectively. The average Empress-AECO/NIT one-month market differential for June

Month	Volume (TJ)	Number of Transactions	Price (\$/GJ)			Avg. Price US\$/MMBtu
			Low	High	Avg. <sup>1</sup>	
May 2005						
Weekend#	607.5	89	6.8500	6.9500	6.8901	6.7826
Sunday	122.3	32	6.7200	6.8500	6.7663	6.6796
Monday	1461.3	210	6.7200	6.9000	6.8012	6.7154
Tuesday	1828.8	236	6.7850	6.9550	6.8335	6.7882
Wednesday	1856.9	219	6.7300	6.9000	6.8311	6.7629
Thursday	2036.4	242	6.8200	6.9350	6.8603	6.8397
Friday	274.1	49	6.8400	6.9600	6.9152	6.8588
Weekend#	1613.3	214	6.8400	6.9500	6.9161	6.8286
Saturday	337.6	60	6.8500	6.7200	6.8285	6.8238
Sunday	308.3	45	6.4100	6.7400	6.5718	6.5774
Monday	1816.1	247	6.7150	6.8200	6.7610	6.7629
Tuesday	1791.5	235	6.8450	6.9500	6.8942	6.8709
Wednesday	1645.7	207	6.7600	6.9450	6.8560	6.8000
Thursday	2173.2	265	6.7100	6.8400	6.7678	6.7152
Friday	598.0	76	6.5500	6.6200	6.6258	6.5372
Weekend#	1582.6	224	6.5000	6.6000	6.6219	6.5340
Saturday	402.9	68	6.5400	6.6200	6.5834	6.5018
Sunday	141.9	32	6.5800	6.6450	6.6162	6.5292
Monday	1904.0	259	6.5000	6.6450	6.5920	6.4758
Tuesday	1944.2	274	6.4800	6.5500	6.4773	6.3961
Wednesday	1926.7	265	6.5500	6.6850	6.6343	6.5471
Thursday	1902.4	263	6.4200	6.5400	6.4657	6.4041
Friday	605.2	73	6.1000	6.3400	6.2312	6.2048
Weekend#	1410.5	179	6.1700	6.3200	6.2352	6.2500
Saturday	223.0	39	6.1000	6.3100	6.2224	6.1975
Sunday	233.6	46	6.2500	6.4500	6.3666	6.3179
Monday @	23	42	6.4500	6.6400	6.5584	6.4752
Tuesday	1840.8	229	6.5400	6.6500	6.6067	6.5278
Wednesday	1842.7	243	6.4750	6.6850	6.5355	6.4549
Thursday	1814.8	206	6.3000	6.4850	6.4309	6.2506
Friday	460.1	60	6.3100	6.5100	6.3662	6.2545
Weekend#	621.5	109	6.5000	6.4900	6.3589	6.3016
Saturday	222.8	42	6.4400	6.7500	6.5372	6.4811
Sunday	135.0	23	6.3450	6.4000	6.3560	6.3309
Monday	828.8	107	6.3200	6.4500	6.3815	6.3614
Tuesday	1866.2	233	6.3500	6.4900	6.4149	6.4104
1. Tot./Wtd. Avg. <sup>**</sup>	39484.1	5324	6.100	6.960	6.6414	5.5815
1A. Arithmetic Avg. <sup>**</sup>					6.5933	5.5386
2. Tot./Wtd. Avg. <sup>**</sup>	34247.2	4588	6.100	6.960	6.6492	5.5884
2A. Arithmetic Avg. <sup>**</sup>					6.5994	5.5441
3. Tot./Wtd. Avg. <sup>**</sup>	37906.4	5047	6.100	6.960	6.6519	5.5904
3A. Arithmetic Avg. <sup>**</sup>					6.6298	5.5702
4. Tot./Wtd. Avg. <sup>**</sup>	44306.0	5910	6.100	6.960	6.6334	5.5737
4A. Arithmetic Avg. <sup>**</sup>					6.6102	5.5533
5. Tot./Wtd. Avg. <sup>**</sup>	47605.5	6379	6.170	6.960	6.6346	5.5752
5A. Arithmetic Avg. <sup>**</sup>					6.6109	5.5539

<sup>1</sup> Weighted average price. <sup>2</sup> Arithmetic average of NGX W/ Instrument (Friday, Saturday & Sunday). <sup>3</sup> Includes Weekend deals.  
<sup>4</sup> Excludes Weekend deals. <sup>5</sup> Includes Weekend deals and excludes Saturday, Sunday and non-trading day deals determined by NGX.  
<sup>6</sup> Does not include day deals done during the weekend or on non-trading day deals determined by NGX but fall in conjunction with the weekend, the #Weekend number is used instead as a proxy for each of the weekend days and statutory holidays.  
<sup>7</sup> Does not include day deals done on Friday and during the weekend or on non-trading day deals determined by NGX that fall in conjunction with the weekend, the #Weekend number is used instead as a proxy for each of these days.  
<sup>8</sup> Denotes non-trading day determined by NGX. See applicable "Canadian Enerdata Notification".  
 Note: Weekend = NGX F3 (Fr, Sat, Sun) Instrument. On Long Weekends with a Holiday Monday, W4 (Fr, Sat, Sun & Mon) Instrument will be used. Source: Natural Gas Exchange, Exchange rates from Bank of Canada (noon day rate).

was 13.05¢/GJ down from 13.28¢ for May. Export prices were down at the major export points, falling 85¢ in the west and midwest and down 75¢ at Niagara, 70¢ at Iroquois and off 68¢ at Dawn. The June Henry Hub futures contract last 3-day average was \$6.262/MMBtu. Spot prices fell 66¢ to an average of \$5.96/MMBtu.

The outlook for daily Alberta spot gas prices is for prices at around \$7.00-\$7.25. One-month prices are expected to be around the \$7.00-10/GJ range for July. One-year prices are expected to be about \$7.75/GJ for November/2005 gas. U.S. spot prices are anticipated to be in the US\$7.25/MMBtu range as seasonal demand rises.

Attachment I to Exhibit A to Ordinance



**Exhibit C – Monthly Capacity Charge**

**Time Period**

**Monthly Capacity Charge (see Notes)**

Date of Commercial Operation through the last Day of the last Month in the fifth (5<sup>th</sup>) Operating Year

\$8.49 per kW-month



**FISCAL NOTE FOR NON-CAPITAL PROJECTS**

<b>Department:</b>	<b>Contact Person/Phone:</b>	<b>DOF Analyst/Phone:</b>
City Light	Marilynn Semro/386-4539	Thomas Dunlap/386-9120

**Legislation Title:** AN ORDINANCE relating to the City Light Department; authorizing execution of Amendment One to the Power Purchase Agreement with the City of Klamath Falls, Oregon, allowing City Light to schedule operation of the project on a daily basis.

• **Summary of the Legislation:**

This Amendment One to the Power Purchase Agreement will allow City Light to change from a monthly scheduling option to a daily scheduling option for the operation of the gas-fired combined cycle combustion turbine, that provides the potential to increase the value to City Light from such operations, on average, by about \$17,000 per month.

• **Background:**

In 2000, City Light negotiated a 5-year power purchase agreement with the City of Klamath Falls for a 100-MW purchase of the output from a natural gas-fired cogeneration project (Ordinance 120144, passed 10-30-2000). This agreement committed us to scheduling the project on a monthly basis. Since that time, natural gas prices have climbed, the regional power supply has gone from a deficit position to a surplus position, and generally there is surplus power in the market, all of which make it more difficult to determine the economics of running the project on a monthly basis. The proposed amendment will provide us the ability to decide on a daily basis whether to schedule output from the project. However, the ability to schedule daily also adds more potential cycling costs and a higher fuel charge. The additional potential cost increase reduces the potential net benefits to an average of \$17,000 per month.

- **This legislation has financial implications.** The net revenues are greater with the amendment approved by this legislation that provides for daily scheduling, as opposed to the current contract that allows only monthly scheduling. This will be included in City Light's 2006 Budget.
- **What is the financial cost of not implementing the legislation?** We expect the cost of not implementing this change to be about \$200,000 through the term of the contract (July 2006). This is a budgeted expense in the Purchased Power Budget.



- **What are the possible alternatives to the legislation that could achieve the same or similar objectives?** We could leave the original agreement unchanged; however, we expect it would cost at least \$200,000 more to do so over the remaining months of the Agreement.
- **Is the legislation subject to public hearing requirements:** No, but the ordinance may be discussed in public sessions of the City Council's Energy and Environmental Policy Committee and City Council.
- **Other Issues:** None.

**Please list attachments to the fiscal note below:**

Attachment: Economic Analysis



## ECONOMIC ANALYSIS

Seattle  
City Light

## Memorandum



DATE: June 15, 2005  
TO: Bill Gaines  
FROM: Steven Dadashi  
SUBJECT: Economic Analysis for "Amendment One" to the Klamath Cogeneration Power Purchase Agreement

### Summary

Over the past several months we have been negotiating with PPM Energy (representing the City of Klamath Falls) to revise the existing 5-year power purchase agreement that would allow Seattle City Light ("SCL") to improve the contract's value. The proposed "Amendment One" would provide on average a net revenue increase of about \$17,000 per month through the term of the contract (July 2006). Principally "Amendment One" changes the scheduling decision (to run or not run the project) from the current monthly option to a daily option. The right to submit a daily schedule increases the potential for cycling costs (\$5,400 for ramping up if requested by SCL) and SCL would pay a higher fuel charge of 140 heat rate (increase from 6,910 to 7,050).

### Economic Analysis

This analysis estimates the differences between the value of the current contract (monthly option) and the proposed amended contract (daily option). Based on my analysis, the daily option with its new heat rate and cycling cost has a higher value of about \$17,000 per month over the current monthly option on average. However, the net gain varies each month from -\$70,000 to \$228,000 which means the daily decision to run or not run has to be carefully evaluated to realize the net gain. With a daily option, we would expect to run the project over all hours about 59% of the time, run on-peak hours only about 1% of the time, and about 40% of the time we will not run the project.

### Assumptions and Methodology

This analysis calculates the margins between the value of the two options. The margins are defined as the marginal revenue ("MR") per MWh minus the marginal cost ("MC") per MWh. If the margin is greater than zero, then the plant will run otherwise the plant will not run. For the monthly option the margin is calculated for the month based on 100-MW capacity and for the daily option the margin is calculated per day and added for the month. The result of this analysis is follows.

Page 2

Assumptions: The marginal cost is calculated for the fuel cost (based on a formula defined in the attached Amendment One), the cost of reserves and the cost of greenhouse gas mitigation. The marginal revenue is the price of power at the Mid-Columbia trading hub. The calculation is done for the 2002-March 2005 historical period based on actual prices and for future periods (April 2005-June 2006) based on forward prices and included a simulation for daily volatility. The daily volatility is based on the historical daily volatility of heat rate. The economics of this analysis is based on the proposed "Amendment One".

CC: Marilyn Semro

Attachment:  
Economic analysis



## Klamath 's Daily Option VS monthly Options

Month	Number of Days	Monthly					Daily		Differences (Margins) Daily-Monthly
		Marginal Cost (MC)	Marginal Revenue (MR)	Dollar Margins	Run/No Run	Number of Days Run	Dollar Margins	Number of Days Run	
Jan-02	31	18.06	18.70	47,895	RUN	31	53,399	19	5,504
Feb-02	28	18.26	20.28	135,470	RUN	28	116,110	26	-19,360
Mar-02	31	23.67	34.31	791,395	RUN	31	761,406	31	-29,989
Apr-02	30	24.37	19.42	0	No-RUN	0	50,637	9	50,637
May-02	31	26.90	19.08	0	No-RUN	0	4,494	2	4,494
Jun-02	30	18.83	7.64	0	No-RUN	0	0	0	0
Jul-02	31	14.03	9.82	0	No-RUN	0	26,040	8	26,040
Aug-02	31	18.38	17.60	0	No-RUN	0	33,788	9	33,788
Sep-02	30	23.16	24.58	102,429	RUN	30	135,762	15	33,333
Oct-02	31	28.10	28.48	28,235	RUN	31	57,943	14	29,708
Nov-02	30	29.01	30.44	102,434	RUN	30	156,358	15	53,924
Dec-02	31	32.28	37.12	360,308	RUN	31	328,173	29	-32,136
Jan-03	31	36.39	36.22	0	No-RUN	0	78,390	14	78,390
Feb-03	28	44.90	49.86	333,123	RUN	28	324,478	23	-8,645
Mar-03	31	46.24	45.70	0	No-RUN	0	228,158	20	228,158
Apr-03	30	37.30	31.66	0	No-RUN	0	696	2	696
May-03	31	39.51	28.98	0	No-RUN	0	0	0	0
Jun-03	30	39.65	31.94	0	No-RUN	0	75,875	8	75,875
Jul-03	31	34.68	44.66	742,547	RUN	31	697,614	30	-44,934
Aug-03	31	34.55	40.00	405,556	RUN	31	389,826	27	-15,730
Sep-03	30	33.90	39.26	385,912	RUN	30	341,974	30	-43,938
Oct-03	31	34.16	35.01	63,345	RUN	31	81,324	20	17,978
Nov-03	30	33.00	35.37	170,814	RUN	30	141,995	22	-28,819
Dec-03	31	40.03	39.21	0	No-RUN	0	47,988	12	47,988
Jan-04	31	41.89	44.53	196,250	RUN	31	186,646	23	-9,604
Feb-04	29	37.33	40.87	246,781	RUN	29	199,472	29	-47,309
Mar-04	31	37.49	36.89	0	No-RUN	0	23,761	11	23,761
Apr-04	30	39.30	40.14	60,545	RUN	30	86,525	12	25,980
May-04	31	42.42	43.93	112,099	RUN	31	184,834	20	72,735
Jun-04	30	41.07	31.63	0	No-RUN	0	25,871	6	25,871
Jul-04	31	40.95	47.78	508,291	RUN	31	516,931	23	8,640
Aug-04	31	38.48	47.83	695,485	RUN	31	659,120	26	-36,364
Sep-04	30	33.48	37.37	279,729	RUN	30	244,946	28	-34,783
Oct-04	31	41.47	43.16	126,023	RUN	31	158,185	18	32,161
Nov-04	30	42.43	46.46	290,182	RUN	30	242,637	27	-47,545
Dec-04	31	44.14	48.12	296,320	RUN	31	297,845	23	1,525
Jan-05	31	42.28	46.63	323,678	RUN	31	330,727	18	7,049
Feb-05	28	42.02	45.79	253,487	RUN	28	204,732	23	-48,755
Mar-05	31	47.94	49.92	147,660	RUN	31	108,858	19	-38,802
Apr-05	30	47.89	48.13	17,347	RUN	30	148,030	13	130,683
May-05	31	48.48	47.61	0	No-RUN	0	94,575	13	94,575
Jun-05	30	49.54	50.18	46,469	RUN	30	215,058	14	168,588
Jul-05	31	49.93	58.85	664,173	RUN	31	723,107	24	58,934
Aug-05	31	50.59	65.53	1,111,706	RUN	31	1,059,880	30	-51,827
Sep-05	30	50.80	59.15	601,235	RUN	30	586,097	28	-15,139
Oct-05	31	50.43	56.66	463,171	RUN	31	405,618	30	-57,553



Month	Monthly					Daily		Differences (Margins) Daily- Monthly	
	Number of Days	Marginal Cost (MC)	Marginal Revenue (MR)	Dollar Margins	Run/No Run	Number of Days Run	Dollar Margins		Number of Days Run
Nov-05	30	54.38	58.88	323,981	RUN	30	340,049	19	16,068
Dec-05	31	55.72	64.04	619,383	RUN	31	549,120	28	-70,263
Jan-06	31	58.19	66.97	653,245	RUN	31	593,200	27	-60,045
Feb-06	28	57.25	61.89	311,782	RUN	28	310,765	20	-1,017
Mar-06	31	57.88	58.97	80,876	RUN	31	269,285	18	188,409
Apr-06	30	49.07	43.99	0	No-RUN	0	40,061	6	40,061
May-06	31	48.18	41.35	0	No-RUN	0	25,261	3	25,261
Jun-06	30	48.75	43.74	0	No-RUN	0	101,697	14	101,697
<b>Historical</b>				<b>184,769</b>		<b>20</b>	<b>194,962</b>	<b>18</b>	<b>10,193</b>
<b>Future</b>				<b>326,225</b>		<b>22</b>	<b>364,120</b>	<b>19</b>	<b>37,895</b>
<b>All</b>				<b>224,062</b>		<b>21</b>	<b>241,950</b>	<b>18</b>	<b>17,888</b>
Average Number of days run daily when monthly is no-run								<b>8</b>	

**Explanation of the methodology**

Monthly Options are based on 6,910 heat rate

Daily Options are based on 7050 heat rate and \$5,400 ramp up cycling charge for one generator

Method of calculation:

Daily option:

Daily run if daily margin is greater than zero

Total margin per month is the sum of these daily margins

Daily margin=24\*100\*(MR-MC) - CyCost

Where,

MR is marginal revenue (flat market price)

MC is marginal cost (Fuel cost+Variable O&M cost + Greenhouse Gas mitigation + reserve cost)

Fuel cost based on 7050 Heat rate and formula defined in the attached amendment

Variable O&M= \$2.61/MWh

Greenhouse Gas mitigation= \$.80/MWh

Reserve cost = about \$.37/Mwh (depending on the power prices)

CyCost is cycling cost if applicable \$5400 otherwise zero

Monthly margins are calculated like daily but one number for entire month

Monthly margin=30\*24\*100\*(MR-MC)

Monthly will run if the margin is greater than zero



STATE OF WASHINGTON – KING COUNTY

--SS.

189424  
CITY OF SEATTLE, CLERKS OFFICE

No. TITLE ONLY

Affidavit of Publication

The undersigned, on oath states that he is an authorized representative of The Daily Journal of Commerce, a daily newspaper, which newspaper is a legal newspaper of general circulation and it is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a daily newspaper in Seattle, King County, Washington, and it is now and during all of said time was printed in an office maintained at the aforesaid place of publication of this newspaper. The Daily Journal of Commerce was on the 12<sup>th</sup> day of June, 1941, approved as a legal newspaper by the Superior Court of King County.

The notice in the exact form annexed, was published in regular issues of The Daily Journal of Commerce, which was regularly distributed to its subscribers during the below stated period. The annexed notice, a

CT:121892-121901

was published on

08/25/05

The amount of the fee charged for the foregoing publication is the sum of \$ 92.75, which amount has been paid in full.

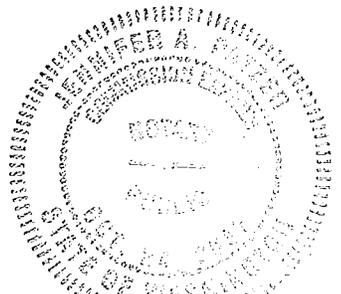
*[Handwritten signature]*

Subscribed and sworn to before me on

08/25/05

*[Handwritten signature]*

Notary public for the State of Washington,  
residing in Seattle



Affidavit of Publication

# State of Washington, King County

## City of Seattle

### TITLE-ONLY PUBLICATION

The full text of the following ordinances, passed by the City Council on August 15, 2005, and published here by title only, will be mailed upon request, or can be accessed electronically at <http://clerk.ci.seattle.wa.us>. For further information, contact the Seattle City Clerk at 684-8344.

#### ORDINANCE NO. 121901

AN ORDINANCE appropriating money to pay certain audited claims and ordering the payment thereof.

#### ORDINANCE NO. 121899

AN ORDINANCE authorizing Seattle Public Utilities to acquire by negotiation or condemnation land and all improvements thereon situated on Lots 1,2,3,4,5 and 6 of Block 71 and Lots 6 and 7 of Block 62, all in the Lake Union Addition to Seattle, Washington and generally bordered by 34th Street North, 36th Street North, Carr Place North and Densmore Avenue North, for solid waste system and other utility and general municipal purposes.

#### ORDINANCE NO. 121898

AN ORDINANCE relating to the City Light Department; authorizing execution of Amendment One to the Power Purchase Agreement with the City of Klamath Falls, Oregon, allowing City Light to schedule operation of the project on a daily basis.

#### ORDINANCE NO. 121896

AN ORDINANCE relating to transferable development rights; authorizing the sale by the City of transferable development rights acquired from a low-income housing site to a developer of a project at 1400 6th Avenue; authorizing related agreements and deeds; and ratifying and confirming prior acts.

#### ORDINANCE NO. 121895

AN ORDINANCE relating to the City Light Department, removing a restriction that limits spending of its Purchased Power Budget Control Level appropriation in the 2005 Adopted Budget.

#### ORDINANCE NO. 121894

AN ORDINANCE relating to Seattle Department of Transportation; granting a non-exclusive easement over and across real property in King County, Washington, for the installation, operation, and maintenance of a railroad spur track in connection with the State Route 519 Phase I Project.

#### ORDINANCE NO. 121892

AN ORDINANCE relating to the Purchase and Sale Agreement (P&SA) between the City of Seattle and City Investors Inc. as authorized in Ordinance Number 120411 and authorizing the amendment of section 6.5 of said P&SA extending the deadline for development application.

Publication ordered by JUDITH PIPPIN, City Clerk.

Date of publication in the Seattle Daily Journal of Commerce, August 25, 2005.

8/25(189424)