

BP-20-E-JP01-02

Attachment 4 (AT04)

VARIABLES	(1)	midchprice
bpahourlytransmissionrate	-0.863** (0.405)	
midtemperature	-0.0697 (0.174)	
midbuyerconcentration	35.79*** (12.28)	
midcsellerconcentration	-4.385 (3.983)	
midcotcacdc	0.000561 (0.000699)	
midcwindsolaretc	-0.000188*** (7.06e-05)	
midcelevationcoulee	0.101* (0.0524)	
midhydroflowsdalles	0.00109 (0.00146)	
henryhub	-4.364 (2.905)	
cobtemperature	0.0207 (0.0889)	
cobbuyerconcentration	-11.48 (15.09)	
cobsellerconcentration	11.78 (15.69)	
cobotcac	0.000289 (0.00132)	
cobwindsolaretc	3.74e-05 (5.82e-05)	
nobtemperature	0.512***	

Price significantly decreased

nobbuyerconcentration	(0.163)
	13.08
nobsellerconcentration	(20.74)
	-14.07
	(20.66)
nobwindsolaretc	-1.28e-05
	(2.06e-05)
californiact	5.584**
	(1.436)
np15elevationsum	-0.0435*
	(0.0235)
np15hydroflowsdallesnocal	-0.00107
	(0.00146)
np15ngpricemalincitygate	2.639*
	(1.550)
sp15ngpriceneedles	4.666
	(3.647)
powerexeimentry	11.34***
	(3.429)
weekday	2.831***
	(0.696)
anomaly	85.17***
	(3.276)
Constant	-149.9**
	(70.29)

Observations	620
R-squared	0.430

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	midcdamprice
bpahourlytransmissionrate	-1.312**	
	(0.584)	
midctemperature	-0.174	
	(0.234)	
midcbuyerconcentration	-0.216	
	(19.38)	
midcsellerconcentration	-7.772	
	(5.595)	
midcotcacdc	0.00131*	
	(0.000745)	
midcwindsolaretc	-0.000314***	
	(8.58e-05)	
midcelevationcoulee	0.201**	
	(0.0942)	
midchydroflowsdalles	0.00257	
	(0.00239)	
henryhub	-4.530	
	(3.935)	
cobtemperature	0.0749	
	(0.136)	
cobbuyerconcentration	-8.340	
	(15.78)	
cobsellerconcentration	13.33	
	(16.23)	
cobotcac	-0.000664	
	(0.00165)	
cobwindsolaretc	0.000160*	
	(8.76e-05)	
nobtemperature	0.697**	

Price significantly decreased

nobbuyerconcentration	(0.282) 50.33* (27.34)
nobsellerconcentration	-51.60* (27.31)
nobwindsolaretc	-4.30e-05 (2.87e-05)
californiact	6.739*** (2.277)
np15elevationsum	0.00567 (0.0500)
np15hydroflowsdallesnocal	-0.00256 (0.00240)
np15ngpricemalincitygate	2.883 (2.406)
sp15ngpriceneedles	4.625 (4.876)
powerexeimentry	15.77** (7.249)
weekday	2.620*** (0.775)
anomaly	-3.875 (17.11)
Constant	-345.2*** (128.4)
Observations	620
R-squared	0.189

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	cobhaprice
bpahourlytransmissionrate	0.0575 (0.495)	Not significant
midctemperature	-0.799*** (0.250)	
midcbuyerconcentration	-9.903 (18.55)	
midcsellerconcentration	0.911 (3.137)	
midcotcacdc	0.00173** (0.000750)	
midcwindsolaretc	-0.000288*** (9.68e-05)	
midcelevationcoulee	0.0563 (0.0443)	
midchydroflowsdalles	0.00390 (0.00253)	
henryhub	-10.46* (5.828)	
cobtemperature	0.145 (0.176)	
cobbuyerconcentration	16.45 (18.07)	
cobsellerconcentration	-22.09 (18.69)	
cobotcac	-0.00128 (0.00182)	
cobwindsolaretc	0.000132 (9.26e-05)	
nobtemperature	0.930***	

nobbuyerconcentration	(0.351) 17.33 (24.98)
nobsellerconcentration	-17.42 (25.00)
nobwindsolaretc	-1.53e-05 (2.35e-05)
californiact	4.838** (2.071)
np15elevationsum	-0.0443 (0.0536)
np15hydroflowsdallesnocal	-0.00388 (0.00254)
np15ngpricemalincitygate	0.766 (2.623)
sp15ngpriceneedles	13.05* (7.764)
powerexeimentry	6.729* (3.712)
weekday	3.116*** (0.718)
anomaly	16.11 (10.66)
Constant	-71.28 (70.41)

Observations	620
R-squared	0.266

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	cobdamprice
bpahourlytransmissionrate	-0.898 (0.727)	
midtemperature	-0.508** (0.209)	
midcbuyerconcentration	-11.28 (12.41)	
midcsellerconcentration	-1.299 (4.151)	
midcotcacdc	0.000899 (0.000736)	
midwindsolaretc	-0.000230** (8.96e-05)	
midcelevationcoulee	0.0261 (0.0871)	
midhydroflowsdalles	0.00212 (0.00167)	
henryhub	-13.35 (8.569)	
cobtemperature	0.313** (0.139)	
cobbuyerconcentration	7.581 (20.58)	
cobsellerconcentration	-8.036 (22.41)	
cobotcac	-0.00139 (0.00244)	
cobwindsolaretc	0.000166** (7.85e-05)	
nobtemperature	0.408*	

Not significant

nobbuyerconcentration	(0.238) 52.57** (25.18)
nobsellerconcentration	-52.65** (25.10)
nobwindsolaretc	-6.47e-05** (2.74e-05)
californiact	8.749*** (2.699)
np15elevationsum	-0.0538 (0.0332)
np15hydroflowsdallesnocal	-0.00212 (0.00167)
np15ngpricemalincitygate	1.789 (2.609)
sp15ngpriceneedles	15.89 (10.33)
powerexeimentry	12.95** (5.727)
weekday	-0.0769 (0.762)
anomaly	2.139 (8.801)
Constant	-65.60 (109.4)
Observations	620
R-squared	0.198

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	nobhaprice
bpahourlytransmissionrate	-0.360 (0.809)	
midctemperature	-0.714 (0.453)	
midcbuyerconcentration	-5.184 (17.47)	
midcsellerconcentration	0.260 (4.813)	
midcotcacdc	0.00153 (0.00118)	
midcwindsolaretc	-0.000411*** (0.000105)	
midcelevationcoulee	0.266** (0.121)	
midhydroflowsdalles	0.00471 (0.00304)	
henryhub	-8.075 (9.454)	
cobtemperature	0.204 (0.159)	
cobbuyerconcentration	1.588 (23.23)	
cobsellerconcentration	-7.872 (24.99)	
cobotcac	-0.00579* (0.00323)	
cobwindsolaretc	0.000174 (0.000108)	
nobtemperature	1.090**	

Not significant

nobbuyerconcentration	(0.434)
	57.33
nobsellerconcentration	(39.99)
	-59.01
	(39.97)
nobwindsolaretc	1.01e-05
	(3.47e-05)
californiact	6.518*
	(3.562)
np15elevationsum	0.0153
	(0.0875)
np15hydroflowsdallesnocal	-0.00468
	(0.00305)
np15ngpricemalincitygate	-0.592
	(3.469)
sp15ngpriceneedles	10.17
	(11.83)
powerexeimentry	17.28*
	(9.068)
weekday	3.757**
	(1.503)
anomaly	72.10***
	(3.032)
Constant	-406.4**
	(174.7)

Observations	620
R-squared	0.198

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	nobdamprice
bpahourlytransmissionrate	-0.806 (0.738)	
midctemperature	-0.628*** (0.184)	Not significant
midcbuyerconcentration	10.28 (8.313)	
midcsellerconcentration	-0.0255 (2.205)	
midcotcacdc	0.000526 (0.000874)	
midcwindsolaretc	-0.000223*** (6.50e-05)	
midcelevationcoulee	0.131** (0.0597)	
midhydroflowsdalles	0.00271* (0.00162)	
henryhub	-4.103 (5.356)	
cobtemperature	0.210* (0.124)	
cobbuyerconcentration	-3.873 (10.26)	
cobsellerconcentration	-0.0787 (10.71)	
cobotcac	-0.00220 (0.00165)	
cobwindsolaretc	0.000158** (6.53e-05)	
nobtemperature	0.775***	

nobbuyerconcentration	(0.193) 26.77 (22.69)
nobsellerconcentration	-26.50 (22.66)
nobwindsolaretc	-6.26e-05*** (2.08e-05)
californiact	7.708*** (2.401)
np15elevationsum	-0.0642** (0.0305)
np15hydroflowsdallesnocal	-0.00270* (0.00162)
np15ngpricemalincitygate	2.577 (2.009)
sp15ngpriceneedles	4.786 (6.652)
powerexeimentry	13.04*** (4.363)
weekday	2.066*** (0.485)
anomaly	25.20 (19.79)
Constant	-177.6** (82.15)

Observations	618
R-squared	0.261

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	nobhaquantity
bpahourlytransmissionrate	140.7 (144.5)	
midctemperature	-164.7*** (60.67)	
midcbuyerconcentration	-3,568 (2,993)	
midcsellerconcentration	-1,993*** (698.5)	
midcotcacdc	2.538*** (0.323)	
midcwindsolaretc	0.0402* (0.0233)	
midcelevationcoulee	0.763 (17.98)	
midchydroflowsdalles	0.429 (0.474)	
henryhub	451.1 (695.4)	
cobtemperature	80.94** (34.33)	
cobbuyerconcentration	930.3 (1,857)	
cobsellerconcentration	350.9 (1,658)	
cobotcac	-2.567*** (0.442)	
cobwindsolaretc	0.00397 (0.0216)	
nobtemperature	-34.33	

Not significant

nobbuyerconcentration	(46.39)
	-8,135
nobsellerconcentration	(12,524)
	7,163
nobwindsolaretc	(12,440)
	-0.0306***
californiact	(0.00694)
	329.6
np15elevationsum	(521.3)
	-29.52**
np15hydroflowsdallesnocal	(12.15)
	-0.425
np15ngpricemalincitygate	(0.474)
	-2,084***
sp15ngpriceneedles	(518.1)
	438.7
powerexeimentry	(770.5)
	-221.0
weekday	(825.9)
	824.2***
anomaly	(215.0)
	-3,332***
Constant	(452.7)
	41,438
	(27,293)
Observations	620
R-squared	0.250

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	nobdamquantity
bpahourlytransmissionrate	5,675***	
	(1,505)	
midctemperature	22.94	
	(231.3)	
midcbuyerconcentration	-89,279	
	(126,979)	
midcsellerconcentration	12,119	
	(20,384)	
midcotcacdc	-0.106	
	(0.679)	
midcwindsolaretc	-0.119	
	(0.139)	
midcelevationcoulee	-40.27	
	(63.04)	
midchydroflowsdalles	-3.927	
	(2.964)	
henryhub	-10,449*	
	(6,280)	
cobtemperature	-236.6*	
	(141.4)	
cobbuyerconcentration	14,170	
	(15,042)	
cobsellerconcentration	-1,188	
	(4,813)	
cobotcac	0.555	
	(2.230)	
cobwindsolaretc	-0.0442	
	(0.144)	
nobtemperature	51.93	

Significant

nobbuyerconcentration	(213.0)
	-74,385
nobsellerconcentration	(128,701)
	75,566
nobwindsolaretc	(129,463)
	0.0765
	(0.0580)
californiact	-10,651**
	(4,831)
np15elevationsum	146.8
	(92.75)
np15hydroflowsdallesnocal	3.912
	(2.963)
np15ngpricemalincitygate	5,973
	(4,363)
sp15ngpriceneedles	91.42
	(3,706)
powerexeimentry	-24,848***
	(6,101)
weekday	987.0
	(834.1)
Constant	13,271
	(77,203)
Observations	242
R-squared	0.279

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	midchaquantity
bpahourlytransmissionrate	352.5** (160.0)	
midctemperature	-16.35 (62.52)	
midcbuyerconcentration	-8,249 (6,911)	
midcsellerconcentration	-6,541*** (1,901)	
midcotcacdc	-0.279 (0.379)	
midcwindsolaretc	-0.0177 (0.0294)	
midcelevationcoulee	-28.66** (14.22)	
midchydroflowsdalles	0.0468 (0.602)	
henryhub	-882.5 (787.2)	
cobtemperature	-31.35 (43.13)	
cobbuyerconcentration	6,349** (2,582)	
cobsellerconcentration	-2,622* (1,505)	
cobotcac	-0.482 (0.594)	
cobwindsolaretc	0.0243 (0.0294)	
nobtemperature	6.523	

Significant

nobbuyerconcentration	(47.25) -29,911* (15,917)
nobsellerconcentration	28,914* (15,864)
nobwindsolaretc	0.0150* (0.00829)
californiact	-1,237** (602.6)
np15elevationsum	1.940 (12.55)
np15hydroflowsdallesnocal	-0.0549 (0.602)
np15ngpricemalincitygate	203.6 (497.1)
sp15ngpriceneedles	1,056 (885.5)
powerexeimentry	-1,997** (880.8)
weekday	376.7 (300.8)
anomaly	-519.9 (721.9)
Constant	57,884** (23,462)

Observations	620
R-squared	0.129

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	midcdamquantity
bpahourlytransmissionrate	562.9 (495.2)	
midctemperature	-853.5*** (233.8)	
midcbuyerconcentration	34,661 (56,704)	
midcsellerconcentration	2,530 (11,119)	
midcotcacdc	-3.258 (2.428)	
midcwindsolaretc	-0.0282 (0.126)	
midcelevationcoulee	-57.82 (51.39)	
midchydroflowsdalles	2.496 (3.270)	
henryhub	926.3 (2,888)	
cobtemperature	438.9*** (152.5)	
cobbuyerconcentration	6,108 (12,925)	
cobsellerconcentration	-14,797* (7,862)	
cobotcac	1.684 (2.734)	
cobwindsolaretc	0.303*** (0.132)	
nobtemperature	132.5	

Not significant

nobbuyerconcentration	(183.7) -190,520**
nobsellerconcentration	(83,532) 181,412**
nobwindsolaretc	(83,284) -0.0469 (0.0418)
californiact	-3,764* (1,989)
np15elevationsum	-39.11 (47.68)
np15hydroflowsdallesnocal	-2.501 (3.272)
np15ngpricemalincitygate	-5,856*** (1,553)
sp15ngpriceneedles	-1,758 (2,943)
powerexeimentry	-889.9 (2,753)
weekday	-1,937 (1,494)
anomaly	1,611 (3,385)
Constant	230,354*** (82,287)

Observations	620
R-squared	0.312

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	cobhaquantity
bpahourlytransmissionrate	332.9** (162.6)	
midctemperature	-39.66 (56.39)	
midcbuyerconcentration	6,119 (5,371)	
midcsellerconcentration	-1,578 (1,030)	
midcotcacdc	-0.147 (0.235)	
midcwindsolaretc	0.0721*** (0.0240)	
midcelevationcoulee	0.483 (17.63)	
midchydroflowsdalles	-0.545 (0.498)	
henryhub	874.6 (858.5)	
cobtemperature	-53.84 (35.74)	
cobbuyerconcentration	2,670 (2,172)	
cobsellerconcentration	-932.0 (1,214)	
cobotcac	1.777*** (0.393)	
cobwindsolaretc	-0.0293 (0.0221)	
nobtemperature	-5.052	

Significant

nobbuyerconcentration	(42.26)
	49.75
nobsellerconcentration	(7,267)
	265.2
	(7,207)
nobwindsolaretc	-0.0176**
	(0.00694)
californiact	-1,634**
	(644.2)
np15elevationsum	-16.20
	(16.68)
np15hydroflowsdallesnocal	0.541
	(0.499)
np15ngpricemalincitygate	-663.8
	(477.2)
sp15ngpriceneedles	213.6
	(702.4)
powerexeimentry	1,520*
	(830.6)
weekday	1,231***
	(214.6)
anomaly	-2,408***
	(870.4)
Constant	43,916
	(29,195)
Observations	620
R-squared	0.250

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1)	cobdamquantity
bpahourlytransmissionrate	447.4* (238.6)	
midctemperature	-413.0*** (95.59)	
midcbuyerconcentration	20,934 (13,144)	
midcsellerconcentration	-1,825 (3,156)	
midcotcacdc	-0.347 (0.636)	
midcwindsolaretc	-0.0149 (0.0406)	
midcelevationcoulee	-8.070 (19.83)	
midchydroflowsdalles	0.180 (1.013)	
henryhub	913.4 (1,133)	
cobtemperature	101.0* (59.87)	
cobbuyerconcentration	1,597 (4,635)	
cobsellerconcentration	-245.2 (3,138)	
cobotcac	3.047*** (0.794)	
cobwindsolaretc	0.0581 (0.0435)	
nobtemperature	64.43	

Significant

nobbuyerconcentration	(73.23)
	-22,065
	(17,002)
nobsellerconcentration	20,031
	(16,924)
nobwindsolaretc	-0.0311**
	(0.0133)
californiact	-39.03
	(1,018)
np15elevationsum	-45.09*
	(25.29)
np15hydroflowsdallesnocal	-0.173
	(1.014)
np15ngpricemalincitygate	-790.5
	(606.7)
sp15ngpriceneedles	-42.98
	(1,177)
powerexeimentry	-6,570***
	(971.4)
weekday	2,357***
	(486.7)
anomaly	7,884***
	(1,109)
Constant	65,252*
	(36,526)

Observations	620
R-squared	0.299

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1