

**Exh. JL-6**  
**Docket UG-181053**  
**Witness: Jing Liu**

**BEFORE THE WASHINGTON  
UTILITIES AND TRANSPORTATION COMMISSION**

**WASHINGTON UTILITIES AND  
TRANSPORTATION COMMISSION,**

**Complainant,**

**v.**

**NORTHWEST NATURAL GAS  
COMPANY, d/b/a NW NATURAL,**

**Respondent.**

**DOCKET UG-181053**


**EXHIBIT OF**

**Jing Liu**

**STAFF OF WASHINGTON UTILITIES  
AND TRANSPORTATION COMMISSION**

*NW Natural's Revised Estimate on Incremental Cost of Serving New Customers*

**July 18, 2019**

 NW Natural®  
**Rates & Regulatory Affairs**  
UG-181053  
2018 WA General Rate Revision  
**Data Request Response**

DR Request: May 21, 2019  
Date of Amended Response: July 12, 2019  
Responder: Kyle T. Walker  
Telephone: (503) 226-4211 ext. 5858  
Email: kyle.walker@nwnatural.com  
Witness: Kyle Walker

**Request No.:** UG-181053 WUTC DR 202

Does the Company have any internal cost estimates for serving new residential or commercial customers, including capital expenditures and annualized expenses? If so, please provide the cost estimate and any relevant analyses. The cost estimate can include but is not limited to general budget guidelines, recent business case analyses associated with serving a particular new development, or cost information based on historical records. To the extent that the Company analyzed the future revenue associated with such new customers, please provide revenue projection, as well.

**Response:**

Please see “UG-181053 WUTC DR 202 Attachment 1 - Amended.xlsx” for the Company’s most up to date analysis related to new residential meter sets in Washington. We have been able to isolate the residential data and remove commercial capital costs for a more precise estimate. This analysis focuses on the capital expenditures needed to add new residential customers onto our system. The final costs are net of customer contributions received. Our current internal analysis combines industrial and commercial new customers. Under the Company’s initial filing and the Partial Multi-Party Settlement Agreement on Decoupling, industrial customers are not subject to Decoupling. Therefore, for the purpose of this data request relating to Decoupling, we have removed those figures from the analysis.

See “UG-181053 WUTC DR 202 Attachment 2 - Amended.xlsx” for the cost of service for a new residential customer which includes the average capital investment from 2018 found in Attachment 1. The cost of service for a newly added residential customer in year one is \$508<sup>1</sup>.

Last, see previously submitted “UG-181053 WUTC DR 202 Attachment 3.xlsx” for a per customer revenue projection for newly added customers. The revenue per year

---

<sup>1</sup> This analysis uses the capital structure and cost of capital from the all-party settlement in UG-181053

amounts to \$225.93 and \$411.55 for rate schedule 1 and 2, respectively, per newly added residential customer.

**Number of Meter Sets - Washington**

	2013	2014	2015	2016	2017	2018
Total Residential Meter Sets (Washington Only)	1,809	1,527	1,869	2,141	2,487	2,660

**Number of Orders - Washington**

	2013	2014	2015	2016	2017	2018	
Washington SM01	MX SYSTEM EXPANSION	62	84	110	116	156	159
Washington SM01	MX RESIDENTIAL MAIN	14	11	14	8	30	20
Washington SM02	NEW RESIDENTIAL SERVICE	1,252	1,296	1,527	1,885	2,181	2,355
Washington SM03	NEW RESIDENTIAL SERVICE	87	19	26	22	33	43
Washington SM02	CONVERSION RESIDENTIAL SERVICE	142	131	138	154	176	144
Washington SM03	CONVERSION RESIDENTIAL SERVICE	9	9	82	3	15	9
Total SM01		76	95	124	124	186	179
Total SM02		1,394	1,427	1,665	2,039	2,357	2,499
Total SM03		96	28	108	25	48	52
Addsets Meter Sets - (Total SM02+SM03)		319	72	96	77	82	109

**Total Cost of Service Line, Meter, Permit, Indirect Materials (Including Add Sets Only) - Washington**

	2013	2014	2015	2016	2017	2018		
Washington SM01	MX SYSTEM EXPANSION	\$563,396	\$664,396	\$1,024,378	\$1,463,417	\$1,728,780	\$2,191,880	
Washington SM01	MX RESIDENTIAL MAIN	\$116,522	\$163,181	\$228,429	\$209,634	\$638,111	\$1,203,996	
Washington SM02	NEW RESIDENTIAL SERVICE	\$1,362,392	\$1,529,851	\$1,762,505	\$2,228,036	\$2,619,402	\$2,856,288	
Washington SM03	NEW RESIDENTIAL SERVICE	\$171,610	\$35,237	\$40,046	\$28,623	\$66,046	\$70,364	
Washington SM02	CONVERSION RESIDENTIAL SERVICE	\$373,446	\$353,405	\$398,991	\$390,985	\$513,658	\$535,323	
Washington SM03	CONVERSION RESIDENTIAL SERVICE	\$25,813	\$19,312	\$139,681	\$7,216	\$40,081	\$53,041	
Total SM01		\$679,918	\$827,577	\$1,252,807	\$1,673,051	\$2,366,891	\$3,395,876	
Total SM02		\$1,735,838	\$1,883,256	\$2,161,496	\$2,619,021	\$3,133,060	\$3,391,611	
Total SM03		\$197,424	\$54,549	\$179,727	\$35,839	\$106,128	\$123,405	
Total Addset Costs		\$72,094	\$16,272	\$21,696	\$17,402	\$18,532	\$24,634	
							<b>Meter Add Set Costs</b>	\$226

**Total Customer Contribution - Washington**

	2013	2014	2015	2016	2017	2018	
Washington SM01	MX SYSTEM EXPANSION	\$0	\$0	\$0	\$0	\$0	\$0
Washington SM01	MX RESIDENTIAL MAIN	\$0	\$0	\$0	\$0	\$0	\$0
Washington SM02	NEW RESIDENTIAL SERVICE	\$1,343	\$9,696	\$7,228	\$16,259	\$14,037	\$25,212
Washington SM03	NEW RESIDENTIAL SERVICE	\$11,492	\$1,355	\$1,380	\$0	\$5,378	\$21,049
Washington SM02	CONVERSION RESIDENTIAL SERVICE	\$51,558	\$51,241	\$78,904	\$93,007	\$110,961	\$130,051
Washington SM03	CONVERSION RESIDENTIAL SERVICE	\$16,192	\$4,061	\$5,042	\$2,434	\$2,830	\$0
Total SM01		\$0	\$0	\$0	\$0	\$0	\$0
Total SM02		\$52,901	\$60,937	\$86,132	\$109,266	\$124,998	\$155,263
Total SM03		\$27,684	\$5,416	\$6,422	\$2,434	\$8,208	\$21,049

**Total Cost Net of Contribution - Washington**

	2013	2014	2015	2016	2017	2018		
Washington SM01	MX SYSTEM EXPANSION	\$563,396	\$664,396	\$1,024,378	\$1,463,417	\$1,728,780	\$2,191,880	
Washington SM01	MX RESIDENTIAL MAIN	\$116,522	\$163,181	\$228,429	\$209,634	\$638,111	\$1,203,996	
Washington SM02	NEW RESIDENTIAL SERVICE	\$1,361,049	\$1,520,155	\$1,755,277	\$2,211,777	\$2,605,365	\$2,831,076	
Washington SM03	NEW RESIDENTIAL SERVICE	\$160,118	\$33,882	\$38,666	\$28,623	\$60,668	\$49,315	
Washington SM02	CONVERSION RESIDENTIAL SERVICE	\$321,888	\$302,164	\$320,087	\$297,978	\$402,697	\$405,272	
Washington SM03	CONVERSION RESIDENTIAL SERVICE	\$9,621	\$15,251	\$134,639	\$4,782	\$37,251	\$53,041	
Total SM01		\$679,918	\$827,577	\$1,252,807	\$1,673,051	\$2,366,891	\$3,395,876	
Total SM02		\$1,682,937	\$1,822,319	\$2,075,364	\$2,509,755	\$3,008,062	\$3,236,348	
Total SM03		\$169,740	\$49,133	\$173,305	\$33,405	\$97,920	\$102,356	
Total		\$2,532,595	\$2,699,029	\$3,501,477	\$4,216,211	\$5,472,873	\$6,734,579	
Addsets		\$72,094	\$16,272	\$21,696	\$17,402	\$18,532	\$24,634	
Total Costs (Washington)		\$2,604,689	\$2,715,301	\$3,523,173	\$4,233,613	\$5,491,405	\$6,759,213	
							<b>Total Meter Sets - Washington</b>	2,660
							<b>Total Construction Cost/Customer</b>	\$2,541
							<b>Overhead Rate Est.</b>	38%
							<b>Total Cost per New Meter Set</b>	\$3,507





**Number of Meter Sets - Washington**

	2013	2014	2015	2016	2017	2018
Total Residential Meter Sets (Washington Only)	1,809	1,527	1,869	2,141	2,487	2,660

**Number of Orders - Washington**

	2013	2014	2015	2016	2017	2018	
Washington SM01	MX SYSTEM EXPANSION	62	84	110	116	156	159
Washington SM01	MX RESIDENTIAL MAIN	14	11	14	8	30	20
Washington SM02	NEW RESIDENTIAL SERVICE	1,252	1,296	1,527	1,885	2,181	2,355
Washington SM03	NEW RESIDENTIAL SERVICE	87	19	26	22	33	43
Washington SM02	CONVERSION RESIDENTIAL SERVICE	142	131	138	154	176	144
Washington SM03	CONVERSION RESIDENTIAL SERVICE	9	9	82	3	15	9
Total SM01		76	95	124	124	186	179
Total SM02		1,394	1,427	1,665	2,039	2,357	2,499
Total SM03		96	28	108	25	48	52
Addsets Meter Sets - (Total SM02+SM03)		319	72	96	77	82	109

**Total Cost of Service Line, Meter, Permit, Indirect Materials (Including Add Sets Only) - Washington**

	2013	2014	2015	2016	2017	2018		
Washington SM01	MX SYSTEM EXPANSION	\$563,396	\$664,396	\$1,024,378	\$1,463,417	\$1,728,780	\$2,191,880	
Washington SM01	MX RESIDENTIAL MAIN	\$116,522	\$163,181	\$228,429	\$209,634	\$638,111	\$1,203,996	
Washington SM02	NEW RESIDENTIAL SERVICE	\$1,362,392	\$1,529,851	\$1,762,505	\$2,228,036	\$2,619,402	\$2,856,288	
Washington SM03	NEW RESIDENTIAL SERVICE	\$171,610	\$35,237	\$40,046	\$28,623	\$66,046	\$70,364	
Washington SM02	CONVERSION RESIDENTIAL SERVICE	\$373,446	\$353,405	\$398,991	\$390,985	\$513,658	\$535,323	
Washington SM03	CONVERSION RESIDENTIAL SERVICE	\$25,813	\$19,312	\$139,681	\$7,216	\$40,081	\$53,041	
Total SM01		\$679,918	\$827,577	\$1,252,807	\$1,673,051	\$2,366,891	\$3,395,876	
Total SM02		\$1,735,838	\$1,883,256	\$2,161,496	\$2,619,021	\$3,133,060	\$3,391,611	
Total SM03		\$197,424	\$54,549	\$179,727	\$35,839	\$106,128	\$123,405	
Total Addset Costs		\$72,094	\$16,272	\$21,696	\$17,402	\$18,532	\$24,634	
							<b>Meter Add Set Costs</b>	\$226

**Total Customer Contribution - Washington**

	2013	2014	2015	2016	2017	2018	
Washington SM01	MX SYSTEM EXPANSION	\$0	\$0	\$0	\$0	\$0	
Washington SM01	MX RESIDENTIAL MAIN	\$0	\$0	\$0	\$0	\$0	
Washington SM02	NEW RESIDENTIAL SERVICE	\$1,343	\$9,696	\$7,228	\$16,259	\$14,037	\$25,212
Washington SM03	NEW RESIDENTIAL SERVICE	\$11,492	\$1,355	\$1,380	\$0	\$5,378	\$21,049
Washington SM02	CONVERSION RESIDENTIAL SERVICE	\$51,558	\$51,241	\$78,904	\$93,007	\$110,961	\$130,051
Washington SM03	CONVERSION RESIDENTIAL SERVICE	\$16,192	\$4,061	\$5,042	\$2,434	\$2,830	\$0
Total SM01		\$0	\$0	\$0	\$0	\$0	\$0
Total SM02		\$52,901	\$60,937	\$86,132	\$109,266	\$124,998	\$155,263
Total SM03		\$27,684	\$5,416	\$6,422	\$2,434	\$8,208	\$21,049

**Total Cost Net of Contribution - Washington**

	2013	2014	2015	2016	2017	2018	
Washington SM01	MX SYSTEM EXPANSION	\$563,396	\$664,396	\$1,024,378	\$1,463,417	\$1,728,780	\$2,191,880
Washington SM01	MX RESIDENTIAL MAIN	\$116,522	\$163,181	\$228,429	\$209,634	\$638,111	\$1,203,996
Washington SM02	NEW RESIDENTIAL SERVICE	\$1,361,049	\$1,520,155	\$1,755,277	\$2,211,777	\$2,605,365	\$2,831,076
Washington SM03	NEW RESIDENTIAL SERVICE	\$160,118	\$33,882	\$38,666	\$28,623	\$60,668	\$49,315
Washington SM02	CONVERSION RESIDENTIAL SERVICE	\$321,888	\$302,164	\$320,087	\$297,978	\$402,697	\$405,272
Washington SM03	CONVERSION RESIDENTIAL SERVICE	\$9,621	\$15,251	\$134,639	\$4,782	\$37,251	\$53,041
Total SM01		\$679,918	\$827,577	\$1,252,807	\$1,673,051	\$2,366,891	\$3,395,876
Total SM02		\$1,682,937	\$1,822,319	\$2,075,364	\$2,509,755	\$3,008,062	\$3,236,348
Total SM03		\$169,740	\$49,133	\$173,305	\$33,405	\$97,920	\$102,356
Total		\$2,532,595	\$2,699,029	\$3,501,477	\$4,216,211	\$5,472,873	\$6,734,579
Addsets		\$72,094	\$16,272	\$21,696	\$17,402	\$18,532	\$24,634
Total Costs (Washington)		\$2,604,689	\$2,715,301	\$3,523,173	\$4,233,613	\$5,491,405	\$6,759,213
Total Meter Sets - Washington		1,809	1,527	1,869	2,141	2,487	2,660
Total Construction Cost/Customer		\$1,440	\$1,778	\$1,885	\$1,977	\$2,208	\$2,541
Overhead Rate Est.							38%
<b>Total Cost per New Meter Set</b>		<b>\$1,987</b>	<b>\$2,454</b>	<b>\$2,601</b>	<b>\$2,729</b>	<b>\$3,047</b>	<b>\$3,507</b>





