

Bill Analysis Model

UG-060518 Exhibit No. __ (DJR-2)

Bill Analysis Model Assumptions.docx

The Bill Analysis Model can be used to identify differences in various rate designs and impacts on customer incentive to conserve as well as company recovery of fixed costs. It is based on the rates currently in effect and on the bill determinants from the company proposal. It is not intended to represent revenues under the staff proposal.

The customer impacts tab of the model compares three typical customers with different use patterns. Customer 1 uses the average amount of natural gas every month based on the company's actual sales. Customer 2 has low usage, which is generally typical of customers with natural gas water heating only. Customer 3 has seasonal use, which is generally typical of customers with natural gas water heating and space heating. To simplify the model, it includes six months of summer usage and six months of winter usage, relying on the averaging of those two amounts to represent the shoulder months.

The model applies three different rate designs to each of the three customers. The Current Tariff rate design is based on the company's currently tariffed rates, and includes the decoupling surcharge. The Straight Fixed Variable rate design calculates a new customer charge that includes all costs currently recovered through the current tariff customer charge, margin rate and decoupling surcharge. The Staff Proposed rate design removes the decoupling surcharge and assigns fixed costs equal to about ten percent of an average customer bill to the customer charge and calculates a volumetric rate based on the remaining costs. The model includes the surcharges from Schedules 150, 155, 156, 159 and 191. The percent change in each customer's annual bill from the current tariff is shown in the yellow part of the spreadsheet.

The model applies two different conservation scenarios to the customers and rate designs described above. The first scenario is a ten percent reduction in use. The second scenario is a fifty percent reduction in use. This large a reduction is highly unlikely in the near term. The purpose of including this scenario is to evaluate the long term sustainability of the various rate designs if use per customer continues to decline. The percent change in each customer's annual bill under each rate design is shown for the two scenarios in the orange parts of the spreadsheet.

The model includes a Decoupling Worst Case analysis of the Current Tariff rate design. In the Worst Case Decoupling analysis, the model calculates a new decoupling surcharge for both conservation scenarios, based on the assumption that the conservation reductions occur across all customers. The decoupling surcharge calculated here is not limited to a two percent increase like the company's mechanism because the model is intended to look further out into the future.

The margin impacts tab of the model starts with the customer impacts tab of the model and compares the proportion of margin paid by each customer against the Straight Fixed Variable rate design. This is shown in the blue parts of the spreadsheet. The model also adds the revenue from the three customers together under each rate design to present a thumbnail of overall company impact of each rate design. This should be used carefully, however, because the proportion of customers with usage characteristics that match these hypothetical customers is not known. Staff assumes that water-heat-only and other low-use customers probably account for less than ten percent of the Schedule 101 customers. These numbers are shown in the pink areas of the spreadsheet.

Bill Analysis Model Results

Annual bill comparison by customer

	Current Tariff			Worst Case Decoupling			Straight Fixed Variable			Staff Proposed		
	cust 1*	cust 2**	cust 3***	cust 1*	cust 2**	cust 3***	cust 1	cust 2	cust 3	cust 1	cust 2	cust 3
cust charge	\$ 69	\$ 69	\$ 69	\$ 69	\$ 69	\$ 69	\$ 273	\$ 273	\$ 273	\$ 120	\$ 120	\$ 120
usage Sch 101	\$ 956	\$ 246	\$ 1,092	\$ 956	\$ 246	\$ 1,092	\$ 757	\$ 195	\$ 865	\$ 924	\$ 237	\$ 1,056
DSM Sch 191	\$ 28	\$ 7	\$ 32	\$ 28	\$ 7	\$ 32	\$ 28	\$ 7	\$ 32	\$ 28	\$ 7	\$ 32
LIRAP Sch 191	\$ 8	\$ 2	\$ 9	\$ 8	\$ 2	\$ 9	\$ 8	\$ 2	\$ 9	\$ 8	\$ 2	\$ 9
Decoupling Sch 159	\$ 5	\$ 1	\$ 6	\$ 5	\$ 1	\$ 6	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 953	\$ 296	\$ 1,079	\$ 953	\$ 296	\$ 1,079	\$ 953	\$ 448	\$ 1,050	\$ 967	\$ 338	\$ 1,088

* average (flat) annual usage ** water heat only (low and flat usage) *** seasonal usage (low summer, high winter)

Rate Design Bill Change

0% 51% -3% 1% 14% 1%

Annual bill comparison after 10% conservation effect

	Current Tariff			Worst Case Decoupling			Straight Fixed Variable			Staff Proposed		
	cust 1	cust 2	cust 3	cust 1	cust 2	cust 3	cust 1	cust 2	cust 3	cust 1	cust 2	cust 3
cust charge	\$ 69	\$ 69	\$ 69	\$ 69	\$ 69	\$ 69	\$ 273	\$ 273	\$ 273	\$ 120	\$ 120	\$ 120
usage Sch 101	\$ 860	\$ 221	\$ 983	\$ 860	\$ 221	\$ 983	\$ 681	\$ 175	\$ 778	\$ 831	\$ 214	\$ 950
DSM Sch 191	\$ 25	\$ 7	\$ 29	\$ 25	\$ 7	\$ 29	\$ 25	\$ 7	\$ 29	\$ 25	\$ 7	\$ 29
LIRAP Sch 191	\$ 7	\$ 2	\$ 8	\$ 7	\$ 2	\$ 8	\$ 7	\$ 2	\$ 8	\$ 7	\$ 2	\$ 8
Decoupling Sch 159	\$ 11	\$ 3	\$ 12	\$ 20	\$ 5	\$ 23	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 871	\$ 275	\$ 986	\$ 881	\$ 278	\$ 997	\$ 885	\$ 430	\$ 972	\$ 882	\$ 316	\$ 991

Bill reduction (10%) 9% 7% 9% 8% 6% 8% 7% 4% 7% 9% 6% 9%

Annual bill comparison after 50% conservation effect

	Current Tariff			Worst Case Decoupling			Straight Fixed Variable			Staff Proposed		
	cust 1	cust 2	cust 3	cust 1	cust 2	cust 3	cust 1	cust 2	cust 3	cust 1	cust 2	cust 3
cust charge	\$ 69	\$ 69	\$ 69	\$ 69	\$ 69	\$ 69	\$ 273	\$ 273	\$ 273	\$ 120	\$ 120	\$ 120
usage Sch 101	\$ 478	\$ 123	\$ 546	\$ 478	\$ 123	\$ 546	\$ 378	\$ 97	\$ 432	\$ 462	\$ 119	\$ 528
DSM Sch 191	\$ 14	\$ 4	\$ 16	\$ 14	\$ 4	\$ 16	\$ 14	\$ 4	\$ 16	\$ 14	\$ 4	\$ 16
LIRAP Sch 191	\$ 4	\$ 1	\$ 5	\$ 4	\$ 1	\$ 5	\$ 4	\$ 1	\$ 5	\$ 4	\$ 1	\$ 5
Decoupling Sch 159	\$ 11	\$ 3	\$ 12	\$ 102	\$ 26	\$ 116	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Total	\$ 519	\$ 185	\$ 584	\$ 610	\$ 208	\$ 688	\$ 613	\$ 360	\$ 662	\$ 543	\$ 229	\$ 604

Bill reduction (50%) 46% 38% 46% 36% 30% 36% 36% 20% 37% 44% 32% 44%