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## Revenue Regulation and Decoupling

When you flip the switch, the lights go on. Electricity powers every aspect of modern life, yet we rarely consider the millions of details and dollars involved in the generation, distribution, regulation, and cost of selling—and buying—electricity. Electric utilities are responsible for delivering electricity to every home, business, and public building in the United States. It's no easy task, especially when outside forces—technology, innovation, policy and economic changes—make the old ways of doing business obsolete.

Utilities are facing this dilemma today. The old business model—one based on selling more and more electricity—doesn't work anymore. As demand for energy declines, the appropriate public policies and business tools are required to keep utilities financially healthy and dependable—and able to provide safe, reliable, and cost effective utility services for consumers.

More and more, policymakers and regulators are realizing that the conventional utility business model, based on revenues (which includes profits) that are tied to sales, may not be in the long-run interest of utilities, their customers, and society.

Historically, sales from incremental load growth helped cover incremental utility costs between rate filings. However, that is no longer the case. Economic and environmental imperatives require that utilities reshape their energy portfolios to make greater use of end-use efficiency, demand response and clean distributed energy resources, and rely less on central utility supplies.

The following is a brief synopsis describing how Montana's current regulation establishes utility rates and subsequently revenues, and an alternative revenue regulation approach now used around the country to address the issues described above.

### Revenue Regulation

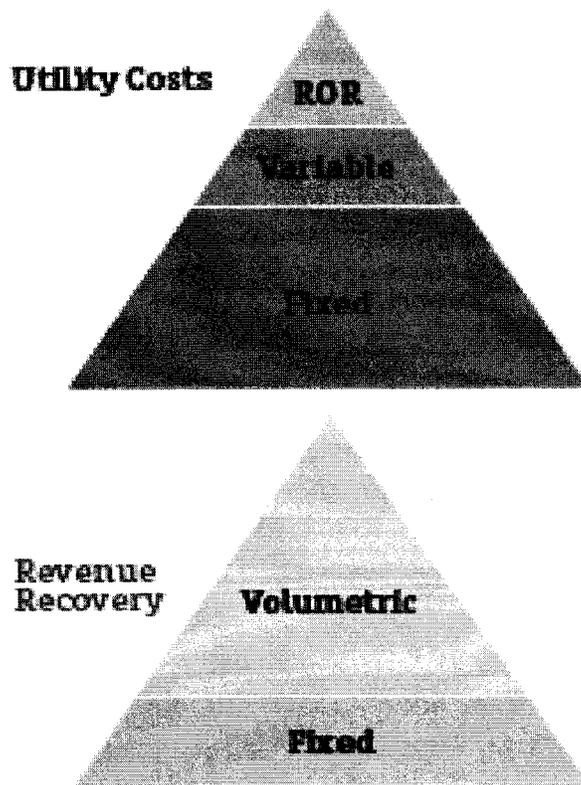
The regulation process used to determine a public utility's cost of service and customer rates is a very detailed, technically oriented, and arduous process. Revenue regulation focusses on the way in which a utility's authorized revenues are derived, in order to

provide the utility with an opportunity to cover its costs of providing electric and natural gas service to its customers, including a return on its investments.

Traditional revenue regulatory mechanisms keep prices constant between rate cases, but actual revenues float up or down as a function of actual electricity and natural gas sales. Sales fluctuations result for various reasons including: demand-side management and energy conservation (whether implemented through utility programs or independently by customers), economic events, weather, and the use of customer self-generation.

As illustrated below, a utility's costs to provide customers service are largely fixed. Fixed costs include, for example, facilities used to transport and distribute electric power and natural gas, electric generation and natural gas production facilities, and much of the labor required to maintain and operate them. In contrast, utility rates are structured such that most revenues are collected through volumetric rates – i.e. energy usage-based rates. As discussed above, many factors can impact the level of energy usage.

Variable costs include fuel costs for generation of electricity and the market costs of electricity and natural gas commodities. Most utilities pass their variable electric and natural gas commodity costs to customers as monthly electric/natural gas variable supply cost adjustments, and the costs are fully recovered with no profit.



A utility's revenue requirement determines the amount of revenues a utility will actually collect, only if it experiences the sales volumes assumed for purposes of rate-setting. Furthermore, only if the utility incurs exactly the expenses, receives exactly the revenues, and operates under precisely the financial conditions that were assumed in the rate case will it earn the allowed rate of return ("ROR") on its rate base (i.e., the allowed investment in facilities providing utility service) that the regulators determined was appropriate.

The following is a summary of NorthWestern Energy's current electric residential delivery and supply rates:

<b>Residential Electric Rates At-A-Glance</b>	<b>Links To Tariff Sheets</b>	<b>Supply as of January 1, 2016</b>
Residential Supply-Energy	ESS-1	\$0.066250 /kWh ←
Residential Supply Deferred Costs	ESS-1	\$0.000960 /kWh
Residential Transmission Energy	ESS-1	\$0.009312 /kWh
Residential Distribution Energy	REDS-1	\$0.028987 /kWh ←
Residential BPA Exchange Credit	REDS-1	(\$0.002685)/kWh
Residential CTC-QF	CTC-QF-1	\$0.003265 /kWh
Residential USBC	E-USBC-1	\$0.001334 /kWh
Residential Distribution Service Charge	REDS-1	\$5.30 /Month ←

Note:

- ← Recovers Fixed and Variable Costs
- ← Recovers Fixed Costs

See attachment for actual Residential Rate Schedule.

Utilities typically recover a tiny fraction of their fixed costs through fixed monthly service charges and recoup the majority of the remainder through consumption-based rates (per kWh in above table).

That means a decline in sales hinders a utility's ability to recover its fixed costs, and because fixed costs remain relatively stable regardless of incremental energy use, it is unlikely the utility can maintain its financial health and profitability by reducing those costs.

The following is an illustrative example of the development of a traditional electric utility revenue requirement and rates:

Traditional Regulation Example Revenue Requirement Calculation	
Expenses .....	100,000,000
Net Equity Investment.....	100,000,000
Allowed Rate of Return.....	10.00%
Allowed Return.....	\$10,000,000
Taxes (35% tax rate).....	\$5,384,615
Total Return & Taxes.....	\$15,384,615
Total Revenue Requirement.....	\$115,384,615

Price Calculation	
Revenue Requirement	\$115,384,615
Test Year Sales (kWh)	1,000,000,000
Rate Case Price (\$/kWh)	\$0.1154

Traditional Ratemaking Equation	
Unit Price =	$\frac{\text{Allowed Revenue Requirement}}{\text{Expected Units of Consumption}}$
Actual Revenue =	Unit × Actual Units Price of Consumption

In theory, a utility's revenue requirement is sufficient to cover its cost of service — based on the information used at the time rates are set, but the actual amount of revenue is determined by the calculation which sets the rates and by actual sales (i.e., billing determinants). It is highly unlikely that actual sales will ever exactly match the expected sales used to set prices in a rate case. As a result, during a multiyear span between ratemaking processes, a utility could realize more or less than its allowed revenue, and customers could pay more or less than they should for the services provided.

A Decoupling revenue adjustment mechanism breaks the link between the volume of energy a utility sells and the revenue it collects to cover its fixed costs of providing utility service. This ensures that a utility's revenue attributable to fixed costs remains at the level regulators determine to be fair and reasonable, including a fair return on investment.

While Decoupling does not alter the traditional rate case process, it redefines allowed revenues between rate cases.

There are three distinct steps used in Decoupling:

- The determination of the utility's allowed revenues and determination of the rates necessary to collect those allowed revenues. This step is the same as that used in the conventional regulation process.
- Monthly/annual calculation of the amount that actual revenues are over or under the amount of allowed revenues.
- Prospective annual recovery or giveback of adjustments from/to customers to true-up revenues to the allowed level of revenues.

The following is a Decoupling revenue example:

<b>Decoupling Example Revenue Requirement Calculation</b>	
Expenses .....	100,000,000
Net Equity Investment.....	100,000,000
Allowed Rate of Return.....	10.00%
Allowed Return.....	\$10,000,000
Taxes (35% tax rate).....	\$5,384,615
Total Return & Taxes.....	\$15,384,615
Total Revenue Requirement.....	\$115,384,615
<b>Price Calculation</b>	
Allowed Revenues	\$115,384,615
Actual Sales (kWh)	990,000,000
Rate Case Price (\$/kWh)	\$0.1154
Actual Revenues	\$114,246,000
Revenue +/- Difference	(\$1,138,615)
Allowed Revenues +/- Difference	\$116,523,230
Expected Sales (kWh)	990,000,000
Decoupling Price (\$/kWh)	\$0.1177

<b>Ratemaking Equation With Decoupling True-up</b>	
<b>Allowed Revenue = Last Rate Case Revenue Requirement</b>	
<b>Prior Period Over or Under Collection = Allowed Revenue – Actual Revenue</b>	
<b>Unit Price</b>	<b>= <math>\frac{\text{Allowed Revenue} + \text{or} - \text{Prior Period Over or Under Collection}}{\text{Expected Units of Consumption}}</math></b>

Additionally, the direction of Decoupling rate true-ups is always opposite the direction of changes in overall consumption, which dampens the volatility of customer bills on average.

Therefore, as shown above, traditional revenue regulation sets rates, then lets revenues float up or down with consumption; Decoupling sets revenues, then lets rates float down or up with consumption to realize the established revenues.

### **The Role of Policy Makers, Regulators, and Utilities**

Public utilities provide an essential service that is at the foundation of the economic well-being of the State of Montana, its communities, and citizens. Policymakers, regulators and utilities all have a role in providing safe and reliable utility services to customers, while supporting the financial health and stability of the utility company.

So as we focus on and transition to “The Utility of the Future”, including the emergence of new technologies, business innovations, and various environmental imperatives, all stakeholders are charged with ensuring public policies that are fair and equitable to utilities and customers alike.

Decoupling is a plausible option. A well-designed decoupling policy that helps stabilize customers’ bills and their utility’s financial health, and better aligns utility interests with societal interests, may be worth pursuing.

***“When you come to a fork in the road, take it!***

## **Disclosures and Attachments**

Material from various articles or publications were used to assemble this overview, including:

- Article – Decoupling - A key tool for change, by Will Nissen
- Publication – Revenue Regulation and Decoupling, by The Regulatory Assistance Project
- Article – Decoupling Policies: Options to Encourage Energy Efficiency Policies for Utilities, by The National Renewable Energy Labs



ELECTRIC TARIFF

Canceling 44<sup>th</sup> Revised Sheet No. 10.1  
43<sup>rd</sup> Revised Sheet No. 10.1

Schedule No. REDS-1

RESIDENTIAL ELECTRIC DELIVERY SERVICE

APPLICABILITY: Applicable to all domestic purposes in single private dwellings and individual family apartments for Customers receiving electric supply under Electricity Supply Service or through a Contract with a Competitive Electric Supplier (Electric Supplier).

TYPE OF SERVICE: Single-phase, 120 volts, 2 wire, or 120/240 volts, 3 wire, through one meter at one point of delivery.

RATES: Monthly Bill:

Electric Supply Charge: In Accordance with the Electricity Supply Service Tariff or with a Contract Between the Customer and an Electric Supplier.

PLUS:

Transmission Charges: In Accordance with the Electricity Supply Service Tariff if receiving supply under Electricity Supply Service; or In Accordance with Utility's FERC Approved Transmission Tariff if receiving supply from an Electric Supplier.

PLUS:

Delivery Service Charge (DSC): Customer specific DSC resulting from the sum of the following:

Monthly Customer Charge: \$ 5.25  
Monthly Employee Customer Charge: \$ 3.15

Plus:

Energy (Monthly \$/kWh):  
Regular Customer All kWh @ \$ 0.028648  
Employee All kWh @ \$ 0.017189

PLUS:

BPA Residential Exchange Credit:  
Energy (Monthly \$/kWh):  
Regular Customer All kWh @ \$ (0.002685) (I)  
Employee All kWh @ \$ (0.001611) (I)

PLUS:

Other Applicable Charges: All charges contained on other applicable rate schedules approved by the Public Service Commission of Montana.

(continued)

ELECTRIC TARIFF

NorthWestern  
Energy

Canceling 6<sup>th</sup> Revised Sheet No. 10.2  
5<sup>th</sup> Revised Sheet No. 10.2

Schedule No. REDS-1

RESIDENTIAL ELECTRIC DELIVERY SERVICE

Low Income Discount: Customers who have satisfied the requirements for and are receiving energy assistance through the LIEAP program administered by the State of Montana, Department of Health and Human Services (Income-Qualified Customer) shall obtain a discount on their DSC bill. The DSC discount shall be an amount equal to (15%) from May 1<sup>st</sup> to October 31<sup>st</sup> and (25%) from November 1<sup>st</sup> to April 30<sup>th</sup> of total electric bill (Electric Supply, Transmission, all Delivery Charges, any Competitive Transition Charges (CTCs), universal system benefits programs (USBC) and any other applicable electric charges contained on other applicable rate schedules approved by the Public Service Commission of Montana) as if the customer were receiving electricity supply service, regardless of whether the customer is receiving electricity supply service or competitive electric supply service. This discount shall be adjusted with changes in any regulated rates.

APPLICATION OF RATES:

Monthly Bill Components: Each month, Customers' bills shall include an Electric Supply Charge; a Transmission & Ancillary Services Charge(s); all relevant charges contained on other applicable rate schedules including, but not limited to, competitive transition charges (CTC) and universal systems benefits programs (USBC); and Delivery Services Charge(s) (DSC). Customers may be billed either entirely by the Utility, or in part by the Electric Supplier, in accordance with the Contract between the Utility and Electric Supplier, or the Electric Supplier and its Customer.

SPECIAL TERMS AND CONDITIONS:

1. Definitions:

- A. BPA Residential Exchange Credit: Credit from the Bonneville Power Administration in settlement of the Residential Exchange rights of regional residential and small farm customers to benefit from the Federal Columbia River Power System per the Northwest Power Act.
- B. Electric Delivery Service: Service provided to Customer to deliver electricity through the local electric distribution wires to the Customer's point of service.
- C. Electric Energy: The amount of electricity used measured in kilowatt hours (kWh).

(continued)

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January 17, 2012

PUBLIC SERVICE COMMISSION

*Aleisha Solim* Secretary

Schedule No. REDS-1

RESIDENTIAL ELECTRIC DELIVERY SERVICE

- D. Electric Supply Service: Service provided to Customer receiving electric supply either from the Utility as Electricity Supplier or a Competitive Electric Supplier.  
(See also BSS-1, CESGTC-1 and ECCGP-1.)
2. Two or More Apartments: Where two or more apartments or residential dwelling units are wired to receive service through one meter, and the expected demand exceeds 10 kW, General Service -1 Rates shall be applicable.
  3. Common Areas: Halls, basements, or other common use portions of an apartment building or multiple dwelling building shall be served under General Service - 1 Rates.
  4. Nonresidential Uses: Where a portion of a residential dwelling unit is used for nonresidential purposes; General Service - 1 Rates shall apply to all service used for nonresidential purposes. If installation of a separate meter is impracticable, all service rendered will be billed under the rate schedule applicable to the predominate usage of the premise.
  5. Single-Phase Motors: Incidental single-phase motors of not larger than three horsepower may be served under this Rate Schedule when used for domestic purposes.
  6. Three-Phase Service: Customers requiring larger than three horsepower motors for domestic purposes may be served under this Rate Schedule with three-phase power when such service is available. If an underground three-phase extension or conversion is required, the additional cost over an overhead three-phase extension or conversion shall be contributed as a nonrefundable contribution by the Customer(s).
  7. Surcharge on Advances or Contributions: Whenever, under the provisions of this Rate Schedule, an advance or contribution is required, the current surcharge as required by Utility operations shall be applied to such advance or contribution. This is to offset the effect caused by the Utility's delayed tax depreciation reimbursement of the current year tax on this advance or contribution. This surcharge is not applicable where such advances or contributions are the result of highway relocations or any government directed relocations that benefit the public and the government is not receiving utility service.

SERVICE AND RATES SUBJECT TO COMMISSION JURISDICTION: All rates and service conditions under this Rate Schedule are governed by the rules and regulations of the Public Service Commission of Montana and are subject to revision as the Commission may duly authorize in the exercise of its jurisdiction.