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# Energy Efficiency Program Proposal

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## ThermWise<sup>®</sup> Business Rebates Program

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# Program Overview

## Description

The ThermWise® Business Rebate program is a comprehensive program that offers rebates to Questar Gas Company (Questar Gas or the Company) GS commercial customers, through a contracted program administrator, Nexant, Inc. (Nexant). However, qualifying boilers over 300,000 Btu's installed in a residential unit will also be rebated through this program. Otherwise, rebates are available for purchasing and installing qualifying natural gas-efficiency measures in commercial units. Qualifying measures include those that target cost-effective natural gas savings including retrofits of existing systems and first time installations. Rebates will be paid directly to participating customers.

Program measures include high-efficiency space and water-heating applications, high-efficiency clothes washers, high-efficiency gas unit heaters, gas infrared heaters, boiler controls and tune-ups, food service equipment, building shell and weatherization measures.

Customers interested in installing rebate qualifying Business insulation measures must use a contractor with a current and valid general contractor's license or a member (in good standing) on the Authorized Contractor list. (See Section 2.17).

The program is designed to leverage the marketing access and existing delivery channels of local businesses, wholesalers and retailers. Primary program delivery functions have been contracted to Nexant. Questar Gas will support the program delivery by identifying customer installation opportunities, marketing activities and assisting customers with program requirements where applicable.

# Program Design

## Program Measures

### Qualifying Customers

Commercial customers in Questar Gas' Utah service territory and billed on a GS rate schedule are eligible to participate in the ThermWise® Business Rebates program.

### Measure Eligibility

Table 1 lists the ThermWise® Business Rebates program's energy-efficiency measures and the related size and eligibility requirements for each.

**Table 1. Business Energy Efficiency Measures**

Measure	Size Category	Minimum Efficiency Requirements
High-Efficiency Storage Gas Water Heater Tier 1	≤ 75,000 Btu/hr input	≥ 0.62 EF
High-Efficiency Storage Gas Water Heater Tier 2	≤ 75,000 Btu/hr input	≥ 0.67 EF
High-Efficiency Storage Gas Water Heater	≥ 75,000 Btu/hr input	Thermal Efficiency ≥ 82%
High-Efficiency Tankless Gas Water Heater	< 200,000 Btu/hr input	≥ 0.82 EF
	≥200,000 Btu/hr input	Thermal Efficiency ≥ 82%
High-Efficiency Clothes Washer	Residential Clothes Washer Used in a Business.	MEF of 2.6 or greater
	ENERGYSTAR Commercial High Efficiency Clothes Washer (Coin-op/Laundromat)	MEF of 2.0 or greater, and WF of 6.0 or less
Low Flow Pre-Rinse Spray Valve	-	1.6 GPM (retrofit only)
High-Efficiency Gas Furnaces	≤ 300,000 Btu/hr input	AFUE of 90% or greater
		AFUE of 92% or greater
		AFUE of 95% or greater
Gas Boilers (hot water)	< 300,000 Btu/hr input	AFUE ≥ 85%
	≥ 300,000 Btu/hr input	Thermal Efficiency ≥ 90%
Gas Boilers (steam)	< 300,000 Btu/hr input	AFUE ≥ 85%
	≥ 300,000 Btu/hr input	Thermal Efficiency ≥ 82%
Direct Contact Gas Water Heater	All	Thermal Efficiency ≥ 90%
High-Efficiency Gas Unit Heater (Non Condensing)	N/A	Thermal Efficiency 83% - 89%
High-Efficiency Gas Unit Heater (Condensing)		Thermal Efficiency ≥ 90%
Gas Infrared Heating System	-	Infrared Heating System (must replace existing natural gas non-infrared heating systems or be installed as part of new construction project)
Boiler Outside Air Reset Control	-	Boiler Outside Air Reset Control
Gas Boiler Tune-up	Existing natural gas boiler	Perform a qualifying tune-up

Measure	Size Category	Minimum Efficiency Requirements
		that complies with the boiler tune-up program requirements and yields an improvement in combustion efficiency (Only one tune-up rebate per boiler within a 2-year period)
Gas Commercial Fryer	-	ENERGY STAR Qualified
Gas Steam Cooker	-	ENERGY STAR Qualified
High Efficiency Gas Convection Oven	-	ENERGY STAR Qualified
High Efficiency Gas Combination Oven	-	40% Efficiency Cooking
High Efficiency Gas Griddle	-	ENERGY STAR Qualified
Building Shell (New Construction) Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)
Building Shell (New Construction) – Roof Insulation	-	Incremental addition of R-5 or higher above code
Building Shell (New Construction) - Wall Insulation	-	Incremental addition of R-3.7 continuous insulation or higher above code
Building Shell (Retrofit) - Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)
Building Shell (Retrofit) – Roof Insulation	-	Incremental addition of R-10
Building Shell (Retrofit) - Wall Insulation	-	Incremental addition of R-10
High-Efficiency Condensing Gas Storage Water Heater	≥100,000 Btu/hr input	EF of 0.9 or greater
Hybrid Gas Storage Water Heater	≥ 75,000 Btu/hr input	Thermal Efficiency of 90% or greater

## Program Rebates

Table 2 lists the ThermWise® Business Rebate program’s incentive levels and estimated incremental customer costs for each energy-efficiency measure. Incentive levels and incremental customer costs are shown by either unit or per connected-equipment input shown in terms of kBtu to allow for a more customized offering per customer application.

**Table 2. Energy Efficiency Measure Incentives and Incremental Customer Costs**

Measure	Size Category	Minimum efficiency requirements	Unit	Rebate (\$/unit)	Incremental customer cost (\$/unit)
High-Efficiency Storage Gas Water Heater Tier 1	≤ 75,000 Btu/hr input	≥ 0.62 EF	unit	\$50	\$100
High-Efficiency Storage Gas Water Heater Tier 2	≤ 75,000 Btu/hr input	≥ 0.67 EF	Unit	\$100	\$400
High-Efficiency Storage Gas Water Heater	≥ 75,000 Btu/hr input	≥ 82% Thermal Efficiency	kBtu/hr Input	\$2	\$6.78
High-Efficiency Tankless Gas Water Heater	< 200,000 Btu/hr input	≥ 0.82 EF	kBtu/hr Input	\$2	\$4.24
High-Efficiency Tankless Gas Water Heater	≥ 200,000 Btu/hr input	≥ 82% Thermal Efficiency	kBtu/hr Input	\$2	\$4.24
High-Efficiency Clothes Washer	Residential Clothes Washer Used in a Business.	MEF of 2.6 or greater	unit	\$50	\$120
	ENERGYSTAR Commercial High Efficiency Clothes Washer (Coin-op/Laundromat)	MEF of 2.0 or greater, and WF of 6.0 or less	unit	\$75	\$300
Low Flow Pre-Rinse Spray Valve	-	1.6 GPM (retrofit only)	unit	\$25	\$50
High-Efficiency Gas Furnaces	≤ 300,000 Btu/hr input	AFUE of 90% or greater	unit	\$200	\$675
		AFUE of 92% or greater	unit	\$300	\$777
		AFUE of 95% or greater	unit	\$400	\$876
Gas Boilers (hot water)	< 300,000 Btu/hr input	AFUE ≥ 85%	kBtu/hr Input	\$2	\$5.08
	≥ 300,000 Btu/hr input	Thermal Efficiency ≥ 90%	kBtu/hr Input	\$3.25	\$6.50
Gas Boilers (steam)	< 300,000 Btu/hr input	AFUE ≥ 85%	kBtu/hr Input	\$2	\$5.08
	≥ 300,000 Btu/hr input	Thermal Efficiency ≥ 82%	kBtu/hr Input	\$2	\$5.08
Direct Contact Gas Water Heater	All	Thermal Efficiency ≥ 90%	kBtu/hr Input	\$1.10	\$2.17
High-Efficiency Gas Unit Heater	N/A	Thermal Efficiency 83% - 89%	kBtu/hr Input	\$1.25	\$2.50
		Thermal Efficiency ≥ 90%	kBtu/hr Input	\$6	\$12
Gas Infrared Heating System	-	Infrared Heating System (must replace existing natural gas non-infrared heating systems or be installed as part of new construction project)	kBtu/hr Input	\$5	\$11.43
Boiler Outside Air Reset Control	-	Boiler Outside Air Reset Control	Unit	\$250	\$ 835

Measure	Size Category	Minimum efficiency requirements	Unit	Rebate (\$/unit)	Incremental customer cost (\$/unit)
Boiler Tune-up	Existing natural gas boiler	Perform a qualifying tune-up that complies with the boiler tune-up program requirements and yields an improvement in combustion efficiency (Only one tune-up rebate per boiler within a 2-year period)	Unit	Up to \$300	\$600
Gas Commercial Fryer	-	ENERGY STAR Qualified	Unit	\$500 per vat	\$3,796
Gas Steam Cooker	-	ENERGY STAR Qualified	Unit	\$1,000 per unit	\$6,221
High Efficiency Gas Convection Oven	-	ENERGY STAR Qualified	Unit	\$500 per cavity	\$3,144
High-Efficiency Gas Combination Oven	-	40% Efficiency cooking	Unit	\$1,000 per unit	\$21,797
High Efficiency Gas Griddle	-	ENERGY STAR Qualified	Unit	\$300 per unit	\$4,575
Building Shell (New Construction) Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)	Sq. Ft.	\$0.28	\$0.55
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)	Sq. Ft.	\$0.28	\$0.55
Building Shell (New Construction) Attic Insulation	-	Incremental addition of R-5 or higher above code	Sq. Ft.	\$0.04	\$0.07
Building Shell (New Construction) Wall Insulation	-	Incremental addition of R-3.7 continuous insulation or higher above code	Sq. Ft.	\$0.03	\$0.06
Building Shell (Retrofit) Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)	Sq. Ft.	\$0.37	\$0.55
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)	Sq. Ft.	\$0.37	\$0.55
Building Shell (Retrofit) Attic Insulation	-	Incremental addition of R-10	Sq. Ft.	\$0.12	\$0.40
Building Shell (Retrofit) Wall Insulation	-	Incremental addition of R-10	Sq. Ft.	\$0.08	\$0.64
High-Efficiency Condensing Gas Storage Water Heater	≥100,000 Btu/hr input	EF of 0.90 or greater	Unit	\$350 per unit	\$1,150
Hybrid Gas Storage Water Heater	≥ 75,000 Btu/hr input	Thermal Efficiency of 90% or greater	Unit	\$350 per unit	\$1,238

## Rebate Limitation

The following requirements apply to rebate application payments for the program:

- Customers may receive only one (1) boiler tune-up rebate per boiler for the period of two years.

- Measures which are required by code are not eligible for rebates through the Business Rebates Program. Customers may be required to document that their installation exceeds code requirements prior to receiving a rebate.
- Rebates for infrared heating systems must replace existing natural gas non-infrared heating systems or be installed as part of a new construction project.
- Energy performance of window assemblies and glazing products must be rated in accordance with NFRC. Skylights are not eligible to receive incentives. Site-built window systems must have a non-metal frame or include a thermal break within the frame to qualify for rebates.
- Rebates for Retrofit Installations of Wall and Roof insulation apply only to the first increment of R-10 insulation added to the wall or floor. Additional increments of R-10 beyond the first are not eligible to receive an incentive.
- Qualifying measures receiving rebates under the program may not receive equipment purchase and installation rebates under any other Questar Gas energy efficiency program.
- Business units must be located in Questar Gas' Utah service territory and be a Questar Gas commercial GS customer (i.e. meter set or account activated).
- Each rebate will be mailed the mailing address listed on the Questar Gas customer account.

Each rebate check will be made payable to the Questar Gas customer account name on record, not necessarily the name provided by the customer in the rebate application.

## Projected Participants

Table 3 summarizes the ThermWise® Business Rebate program's expected customer participation for each measure.

**Table 3. Program Participants**

Measure	Size Category	Minimum efficiency requirements	Participation 2011
High-Efficiency Storage Gas Water Heater Tier 1	≤ 75,000 Btu/hr input	≥ 0.62 EF	5
High-Efficiency Storage Gas Water Heater Tier 2	≤ 75,000 Btu/hr input	≥ 0.67 EF	5
High-Efficiency Storage Gas Water Heater	≥ 75,000 Btu/hr input	Thermal Efficiency ≥ 82%	35
High-Efficiency Tankless Gas Tankless Water Heater	< 200,000 Btu/hr input	EF of 0.82 or greater	22
	≥ 200,000 Btu/hr input	Thermal Efficiency ≥ 82%	8
High-Efficiency Clothes Washer	Residential Clothes Washer Used in a Business.	MEF of 2.6 or greater	100
	ENERGY STAR Commercial High Efficiency Clothes Washer (Coin-op/Laundromat)	MEF of 2.0 or greater, and WF of 6.0 or less	12
Low Flow Pre-Rinse Spray Valve	-	1.6 GPM (retrofit only)	0
High-Efficiency Gas Furnaces	≤ 300,000 Btu/hr input	AFUE of 90% or greater	3
		AFUE of 92% or greater	61
		AFUE of 94% or greater	112

Measure	Size Category	Minimum efficiency requirements	Participation 2011
Gas Boilers (hot water)	≤ 300,000 Btu/hr input	AFUE ≥ 85%	10
		Thermal Efficiency ≥ 90%	50
Gas Boilers (steam)	≤ 300,000 Btu/hr input	AFUE ≥ 85%	0
		Thermal Efficiency ≥ 82%	0
Direct Contact Gas Water Heater	N/A	Thermal Efficiency ≥ 90%	3
High-Efficiency Gas Unit Heater	N/A	Thermal Efficiency 83% - 89%	80
		Thermal Efficiency ≥ 90%	40
Gas Infrared Heating System	-	Infrared Heating System (must replace existing natural gas non-infrared heating systems or be installed as part of new construction project)	200
Boiler Outside Air Reset Control	-	Boiler Outside Air Reset Control	10
Boiler Tune Up	Existing natural gas boiler	Perform a qualifying tune-up that complies with the boiler tune-up program requirements and yields an improvement in combustion efficiency (Only one tune-up rebate per boiler within a 2-year period)	120
Gas Commercial Fryer	-	ENERGY STAR Qualified	20
Gas Steam Cooker	-	ENERGY STAR Qualified	4
High-Efficiency Gas Convection Oven	-	ENERGY STAR Qualified	12
High-Efficiency Gas Combination Oven	-	40% Efficiency Cooking	10
High-Efficiency Gas Griddle	-	38% Combustion Efficiency	10
Building Shell (New Construction) Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)	10
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)	10
Building Shell (New Construction) Attic Insulation	-	Incremental addition of R-5 or higher above code	10
Building Shell (New Construction) Wall Insulation	-	Incremental addition of R-3.7 continuous insulation or higher above code	10
Building Shell (Retrofit) Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)	10
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)	10
Building Shell (Retrofit) Attic Insulation	-	Incremental addition of R-10	35
Building Shell (Retrofit) Wall Insulation	-	Incremental addition of R-10	2
High-Efficiency Condensing Gas Storage Water Heater	≥100,000 Btu/hr input	EF of 0.90 or greater	5
Hybrid Gas Storage Water Heater	≥ 75,000 Btu/hr input	Thermal Efficiency of 90% or greater	5
<b>Total</b>			<b>1,039</b>



## Customer Application Process

### Process Overview

**Purchase Equipment** – Customer purchases qualified appliance and receives a rebate form.

**Equipment Installation** – Qualifying measure is installed according to program guidelines.

**Submittal** – Customer submits the completed rebate form along with a copy of proof of purchase and documentation that the equipment meets the program’s minimum efficiency requirements (if applicable).

- **Receipt and Data Entry** – Program staff date, stamp, and enter data into the program database.
- **Internal Checklist Review** – Data is reviewed for accuracy and qualification.
- **Copy of Invoice/Proof of Payment** - A copy of the customer invoice or proof of payment is required to verify the validity of the sale and purchase information.
- **Qualifying equipment** – The qualifying equipment must meet or exceed the minimum efficiency requirements in Table 1. Questar will require appropriate documentation to confirm eligibility of the measure.
- **Date sold** – The sale date must be within the valid dates of the program.
- **Quantity** – Customer must provide valid documentation of the quantity (e.g. square footage, kBtu input, and number of units) of each eligible measure.

**Correction** – If incomplete rebate forms or faulty information is received, customer will be contacted in order to correct the application and to advance the application to the approval stage. The rebate will not be processed until appropriate information and/or documentation is provided.

**Approval** – Payment for the customer is approved after all information is received, entered, and the project passes the internal checklist review.

**Payment** – Payment is issued and sent to the customer and the database is updated with payment information.

## Projected Savings

Table 4 presents the ThermWise® Business Rebate program deemed annual savings per measure and the estimated total program savings (based on participation) for each measure.

**Table 4. Business Measure Savings Estimates (Dth/yr)**

Measure	Size Category	Minimum Efficiency Requirement	Deemed Annual Savings (Dth/installation)	Total Savings (Annual Dth)
High-Efficiency Storage Gas Water Heater Tier 1	≤ 75,000 Btu/hr input	≥ 0.62 EF	1.23	6
High-Efficiency Storage Gas Water Heater Tier 2	≤ 75,000 Btu/hr input	≥ 0.67 EF	3.70	19
High-Efficiency Storage Gas Water Heater	≥ 75,000 Btu/hr input	Thermal Efficiency ≥ 82%	.175 kBtu/hr	460
High-Efficiency Tankless Gas Water Heater	< 200,000 Btu/hr input	Efficiency Factor of 0.82 or greater	.141 kBtu/hr	621
	≥ 200,000 Btu/hr input	Efficiency ≥ 82%	.141 kBtu/hr	271
High-Efficiency Clothes Washer	Residential Clothes Washer Used in a Business.	MEF of 2.6 or greater	1.74	174
	ENERGY STAR Commercial High Efficiency Clothes Washer (Coin-op/Laundromat)	MEF of 2.0 or greater, and WF of 6.0 or less	2.6	31
Low Flow Pre-Rinse Spray Valve	-	1.6 GPM (retrofit only)	33.60	0
High-Efficiency Gas Furnaces	≤ 300,000 Btu/hr input	AFUE of 90% or greater	14.20	43
		AFUE of 92% or greater	16.20	988
		AFUE of 94% or greater	18.10	2,027
Gas Boilers (hot water)	< 300,000 Btu/hr input	AFUE ≥ 85%	.18 kBtu/hr	180
	≥ 300,000 Btu/hr input	Thermal Efficiency ≥ 90%	.339 kBtu/hr	25,425
Gas Boilers (steam)	< 300,000 Btu/hr input	AFUE ≥ 85%	.18 kBtu/hr	0.0
	≥ 300,000 Btu/hr input	Thermal Efficiency ≥ 82%	.074 kBtu/hr	0.0
Direct Contact Gas Water Heater	N/A	Thermal Efficiency >90%	.23 kBtu/hr	4,830
High-Efficiency Gas Unit Heater	N/A	83% ≤ Thermal Efficiency < 90%	.06 kBtu/hr	528
		Thermal Efficiency ≥ 90%	.17 kBtu/hr	2,992
Gas Infrared Heating System	-	Infrared Heating System (must replace existing natural gas non-infrared heating systems or be installed as part of new construction project)	.48 kBtu/hr	5760
Boiler Outside Air Reset Control	-	Boiler Outside Air Reset Control	74.10	741
Boiler Tune Up	Existing natural gas boiler	Perform a qualifying tune-up that complies with the boiler tune-up program requirements and yields an improvement in combustion efficiency (Only one tune-up rebate per boiler within a 2-year period)	48.86	5,863
Gas Commercial Fryer	-	ENERGY STAR Qualified	40.40	808
Gas Steam Cooker	-	ENERGY STAR Qualified	35.30	141
High-Efficiency Gas Convection Oven	-	ENERGY STAR Qualified	32.30	388
High-Efficiency Gas	-	40% Efficiency Cooking	40.30	403

Measure	Size Category	Minimum Efficiency Requirement	Deemed Annual Savings (Dth/installation)	Total Savings (Annual Dth)
Combination Oven				
High-Efficiency Gas Griddle	-	ENERGY STAR Qualified	8.80	88
Building Shell (New Construction)- Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)	.0124 per sq. ft.	744
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)	.0208 per sq. ft.	1,248
Building Shell (New Construction)- Attic Insulation	-	Incremental addition of R-5 or higher above code	.0013 per sq. ft.	195
Building Shell (New Construction)- Wall Insulation	-	Incremental addition of R-3.7 continuous insulation or higher above code	.0006 per sq. ft.	51
Building Shell (Retrofit)- Windows	Site-Built Window	U-value of 0.30 or less (Glazing Only Rating)	.0267 per sq. ft.	1602
	Pre-fabricated Window Assembly	U-value of 0.30 or less (Entire Window Assembly Rating)	.0344 per sq. ft.	2064
Building Shell (Retrofit)- Attic Insulation	-	Incremental addition of R-10	.0031 per sq. ft.	1627
Building Shell (Retrofit)- Wall Insulation	-	Incremental addition of R-10	.004 per sq. ft.	68
High-Efficiency Condensing Gas Storage Water Heater	≥100,000 Btu/hr input	EF of 0.90 or greater	9.2	46
Hybrid Gas Storage Water Heater	≥ 75,000 Btu/hr input	Thermal Efficiency of 90% or greater	10.2	51
<b>Total</b>				<b>60,483</b>

## Implementation

The program is currently in the marketplace so all existing implementation activities will continue without delay upon Commission approval effective January 1, 2011.

## Administration

The program administration represents the on-going delivery of the program. All internal systems, processes and procedures have been created and are in place. Some modifications may be required due to program changes for 2011.

## Tracking & Measurement

All pertinent ThermWise® Business Rebates program rebate information will be tracked in a database developed for the program. The database will provide a near-real time listing of current customer applications, customer information, equipment information, customer costs, savings, and rebates by technology.

Moreover, program related information will be tracked and available for reporting, including number of program participants and measure participation.

Due-diligence application review activities will include, at a minimum, verification of the following items:

- Customer account number.
- Installation address for submitted account number.
- Valid equipment installation date.
- Equipment eligibility.
- Equipment capacity and efficiency ratings, where applicable.
- Requested incentive amount.

Questar Gas will augment the application process quality control measures with random telephone and field inspections to ensure program integrity. These verification activities will serve to verify the following information:

- Installation address.
- Equipment make and manufacturer.
- Equipment model number.
- Equipment size.

The verification process will balance the need for randomness, the need to maintain a robust sample size, and the need to verify the compliance of multiple equipment installers. Nexant will target these additional quality assurance and quality control measures on approximately 5% of all submitted applications.