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# Energy Efficiency Program Proposal

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

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# Program Overview

## Description

The ThermWise® Business Custom Program is a rebate opportunity offered by Questar Gas with the goal of obtaining verifiable, cost-effective, and long-term natural gas savings. Program participants submit project proposals for a firm quantity of natural gas reduction through the installation of energy-efficiency measures after review and approval by Questar Gas. The program is designed to provide rebates to those business customers who do not qualify through the ThermWise® Business Rebates Program.

The ThermWise® Business Custom Rebates Program requires customers to submit specific information for each project and to conduct energy engineering and commissioning at their own cost. This project information will be provided in two reports: the Pre-Installation Report and Post-Installation Report. Rebates will be paid directly to participating customers who meet the program requirements.

The Business Custom Rebates program also includes supplemental Customer Technical Services, including Commercial Benchmarking, Recommissioning, and Strategic Energy Management, available to targeted customers with particular energy usage parameters.

Questar Gas will support the program delivery by identifying customer installation opportunities and assisting customers with program requirements where applicable.

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# Program Design

## Custom Program and Simplified-Analysis Measures

### Qualifying Customers

To participate in the ThermWise® Business Custom Rebates Program, a customer must be served by Questar Gas in the State of Utah and install a qualifying measure in a separately-metered commercial facility on a Commercial GS rate schedule.

### Qualifying Standard-Analysis Measures

Qualifying measures include those that target cost-effective natural gas savings, including retrofits of existing systems, improvements to existing systems, and first-time installations where the system's efficiency exceeds Utah Energy Code or standard industry practice. The program does not explicitly specify eligible measures to provide program participants maximum flexibility in identifying potential projects. Participants may propose the inclusion of any measure that:

- Produces a verifiable natural gas usage reduction;
- Is installed in either existing or new construction applications;
- Has a minimum useful life of seven years; and
- Meets at least minimum cost-effectiveness requirements for the utility cost test.

Measures that are excluded from consideration in this program include those that:

- Receive a rebate through any other energy efficiency program offered by Questar Gas;
- Rely solely on changes in customer behavior;
- Merely terminate existing processes, facilities, or operations;
- Involve fuel-switching; or
- Are required by state or federal law, building or other codes, or are standard industry practice.

### Qualifying Simplified-Analysis Measures

A defined list of measures will be eligible for rebates utilizing a Simplified Analysis approach.

These measures include:

- Air-to-Air Heat Exchangers
- Steam/Hot Water Pipe Insulation
- Boiler Controls
- Steam Traps

Customers must contact the Program Administrator to determine if a measure qualifies for the Simplified Analysis approach.

## Simplified Analysis Measures - Project Reviews

Project-specific review procedures will be determined by the Program Administrator based on the measure submitted. Rather than completing the Pre-Installation Report in full, projects that qualify under the Simplified Analysis approach will instead need to submit a measure specific application, including the following:

- Identification of the project site and account information, including contact information.
- Measure specific parameters necessary to complete energy savings calculations.

A Simplified Analysis Pre-Installation Report (PIR) Application is not required for the Air-to-Air Heat Exchanger, Steam/Hot Water Pipe Insulation, or Steam Trap measures. Customers may submit these measures for Post-Installation Report (POR) review only.

The Simplified Analysis approach will require customers to submit measure specific parameters to allow for calculation of energy savings using a standard calculation methodology. Key parameters to be included in the analysis for each measure are identified in the table below.

Air to Air Heat Exchanger	Pipe Insulation	Boiler Controls	Steam Traps
Discharge Air Temperature Setpoint (°F)	Nominal Pipe Size/Diameter (inches)	Boiler Size (kBtu/hr)	Total quantity of steam traps in system
Space Temperature Setpoint (°F)	Pipe Material (i.e. steel, iron)	Boiler Efficiency (%)	Quantity of steam traps being replaced
Space Type	Bare Pipe Surface Temperature (°F)	Building Type/Space Type	Steam Traps being replaced have been verified as failed (Yes/No)
Space Type Occupied Hours (hrs/yr)	Insulated Pipe Surface Temperature (°F)	Supply Water Temperature Setpoint (°F)	Time since last steam trap testing and maintenance (Years)
Heat Exchanger Effectiveness (%)	Insulated Area (sq. ft.)	Boiler High/Low Limits (°F)	Steam Trap orifice size (Diameter-Inches)
Heat Exchanger Location	Insulation Layers (Type, Thickness)	Historical Gas Consumption (Dth/yr)	Steam system operating pressure (PSI)
Supply Air Volume (cfm)	System application (hot water, steam, hot oil)		Hours of operation for the system
Exhaust Air Volume (cfm)	System run time (hrs/yr)		Boiler Efficiency (%)

Additional Eligibility Requirements may apply for Boiler Controls:

- No facility with more than one boiler shall be eligible for the simplified analysis approach.
- The annual gas consumption for any boiler approved must be 90% or more of the facilities' total gas usage.
- Installation must occur after a boiler tune up.
- Only boilers that serve space heating applications shall qualify for a streamlined rebate.

Upon approval of the Simplified Analysis application, a site visit may be scheduled to verify the submitted values and information associated with the project. The customer will be apprised of the approved rebate amount and a

rebate will be paid when project completion is verified and all requested information has been submitted and approved by the program administrator.

## Eligible Project Costs

Eligible measure costs are based upon the actual incremental expenses incurred by the customer in connection with the construction, installation or implementation, and commissioning of an eligible project. Costs may include equipment costs, engineering and consulting expenses, and internal labor costs. Expenses are subject to approval by the program administrator. For new construction or expansion of existing facilities, eligible expenses are those that are additional and necessary to achieve energy-efficiency levels that exceed standard industry practice.

Customers shall provide cooperation and access as is reasonably required for the program administrator to make a determination of eligible costs. Acceptable documentation of eligible costs may include invoices, work orders, cancelled checks, and accounting system reports.

## Baselines for Energy Savings and Incremental Costs

The ThermWise® Business Custom Rebates Program is designed to encourage customers to implement energy-efficiency improvements that result in systems that exceed standard industry practices or Utah State Energy Code requirements. Consequently, energy savings and eligible costs are calculated in comparison to an approved baseline: either specified by equipment inventory and operation prior to implementing qualified projects, requirements listed in the Utah State Energy Code, or standard industry practice.

The Company may adjust baseline natural gas consumption and costs during the submittal review to reflect any of the following: energy codes, standard practice, changes in capacity, equipment operation, changes in production or facility use, and equipment at the end of its useful life.

## Rebate Structure

The ThermWise® Business Custom Rebates' levels will be made by the Company for the installation of measures pursuant to the Program Agreement, as shown in the following table:

Measure Category	Rebate*	Measure Cost Cap**
Custom Analysis	\$10/Dth	50%
Simplified Analysis	\$10/Dth	50%

\*The rebate is determined by first year annual decatherm savings as determined solely by the Company

\*\*The project cost cap is based on the eligible project costs as detailed in the ThermWise® Business Custom Rebates program manual

*Commissioning Opt-Out.* If the customer chooses to not conduct the commissioning activities approved in the Pre-installation report stage, the annual natural gas savings and the eligible measure costs will all be reduced by 20% and the rebate will be re-calculated using the provisions specified above. Measures for which the customer has “opted-out” of commissioning and are later commissioned are not eligible for additional rebates at a later date.

## Projected Participants

During 2015, Questar Gas anticipates receiving approximately 10-20 pre-installation project applications to the ThermWise® Business Custom Rebates program. Additionally, the Company anticipates that 1-3 large customers will participate in the Strategic Energy Management service.

## Project Participation Process

### Project Identification (Pre-Installation Report) – Custom Projects

The first report required prior to project installation is titled the Pre-Installation Report (PIR). To assess projects for eligibility and program approval, the customer must submit the following information:

- Identification of the project site and account information.
- Brief summary of the anticipated project timeline.
- Energy engineering analysis of the proposed project (and supporting documentation) adhering to industry standard practice, including but not limited to the following:
  - Descriptions of the proposed set of energy-efficiency measures;
  - Summary of the energy savings and eligible project costs;
  - Existing equipment specifications, baseline operational conditions and energy consumption data supported by spot or short-term measurements, trended data, or accepted engineering practices for each proposed measure;
  - A description of the calculations and methodologies that support the baseline, proposed operation, natural gas savings, and eligible costs;
  - Supporting documentation for the estimated eligible measure costs;
  - Any additional information necessary for the review of the project such as calculation spreadsheets, simulation models, vendor quotes, and equipment specifications; and
  - Commissioning plan for verifying the proposed measure operation and energy savings.

Following the submittal of a PIR and prior to project installation, the Company will conduct any site inspection activities necessary to confirm the baseline conditions and anticipated project scope. Once the initial application has been reviewed and approved, the Company will prepare and send an approval letter to the customer to notify them of their project review results and anticipated rebate amount. If the project does not meet the eligibility requirements, the PIR is not complete, or of sufficient quality, the PIR will be rejected. The customer may address deficiencies in the PIR and resubmit it for program consideration.

The customer is responsible for submitting the Pre-Installation Report and allowing time for the appropriate review prior to purchasing equipment. Projects that have been purchased or installed prior to Pre-Installation Approval may not be eligible for rebates under the ThermWise® Business Custom Rebates program.

To assist customers with the Pre-Installation Report, the Company may provide a limited budget for conducting technical energy audits for eligible customers. Customers will be eligible to apply for technical energy audit funds through an application process administered by the Company. The Company will have sole discretion for the approval of each customer application for technical energy audit funds. Criteria for funding approval will be based upon but not limited to: funding availability, the customer's ability to complete identified energy efficiency measures, potential energy efficiency opportunities at the customer's site, and technical feasibility of the measure. The Company may limit the funding amount for each project at its sole discretion.

## Project Commissioning – Custom Projects

For purposes of this program, commissioning includes verification of the project savings and confirmation that the measures are operating as intended. This step insures that the predicted energy savings are being achieved and that the system's operation and performance has been optimized. Commissioning is the responsibility of the building owner and can be completed by internal staff or contracting with the installing contractor. Commissioning is required to receive a full rebate.

Project-specific commissioning procedures may be classified according to three distinct approaches that represent increasing levels of detail and rigor.

- Deemed savings: Savings values are stipulated based on engineering calculations using typical equipment characteristics and operating schedules developed for particular applications, without on-site testing or metering.
- Simple Measurement and Verification (M&V): Savings values are based on engineering calculations using typical equipment characteristics and operating schedules developed for particular applications, with some short-term testing or simple long-term metering.
- Full M&V: Savings are estimated using a higher level of rigor than in the deemed savings or simple M&V approaches through the application of metering, billing analysis, or computer simulation.

The commissioning plan will be required to be submitted for each project with the Pre-Installation Report. Commissioning procedures will vary in detail and rigor depending on the measures installed. The level of detail and rigor of the commissioning plan is subject to the project size and risk to rebates and project savings. The program administrator will specify the approach required in the commissioning plan.

If the customer and program administrator agree to pursue the "Full M&V" or "Simple M&V" options, it must follow the International Performance Measurement and Verification Protocol.

Commissioning is required to be completed when the building is fully occupied and when the system's operation can be verified. Some measures may require operation during the cooling or heating seasons and the time required to complete commissioning activities will range from a few days up to a few months.

## Project Installation (Post-Installation Report) – Custom Projects

After receiving approval of the PIR from the Company, customers may install the identified measures. Upon completion of installation or construction activities for each approved project, customers should commence with the commissioning phase of the project. Upon completion of commissioning, the customer must submit a post-installation report (POR) that identifies the following:

- A report summarizing the results of the commissioning activities and as-installed operation of the measures;
- Additional information necessary for the review of the project such as final calculation spreadsheets, simulation models, invoices, and equipment specifications;
- Verified natural gas reduction;
- Verified eligible project costs; and
- Estimated rebate amount.

Note: The customer may elect to opt-out of commissioning in the Pre-Installation Report (PIR) phase of the project. The Commissioning Opt-Out decision must be documented in writing to the Program Administrator during the PIR review phase. If the customer elects not to conduct commissioning for the qualifying project, the annual natural gas savings and the eligible measure costs will be reduced by 20% and the rebate will be re-calculated using the provisions specified in the "Custom Program and Simplified Analysis Measures Program Rebates" section above. Measures that are commissioned after the customer has "opted-out" of commissioning

are not eligible for additional rebates at a later date. Commissioning and Commissioning Opt-Out do not apply to Simplified Analysis Measure projects.

Once the POR has been reviewed and approved, the Company will prepare and send an approval letter to the customer to notify them of their project final review results and approved rebate amount.

If the project does not meet the eligibility requirements, the POR is not complete, or of sufficient quality; the POR will be rejected. The customer may address deficiencies in the POR and resubmit for program consideration.

## Additional Service Offerings

### Commercial Benchmarking

The Commercial Benchmarking service will provide customers on a Commercial GS rate schedule with technical guidance to identify natural-gas saving opportunities and provide recommendations on the appropriate ThermWise® for Business Rebates program to pursue. This service will ensure that eligible customers with a potential for savings are actualizing the benefits offered by the natural-gas savings measures and ThermWise® for Business Rebates program, resulting in savings for both the customer and the Company. In particular, Commercial Benchmarking will be a targeted customer outreach service, focused on customers with significant savings potential that do not otherwise have the in-house technical resources to determine and/or pursue such opportunities. The Commercial Benchmarking service will actualize these savings and benefits for both the customer and the Company.

The Commercial Benchmarking service provides customers with an assessment of their facility's energy consumption and benchmarks the energy use relative to the national population of similar buildings, based on the Commercial Building Energy Consumption Survey (CBECS) data. CBECS data is collected through a survey conducted by the U.S. Department of Energy. It consists of the energy performance of buildings across a wide spectrum of space types. The benchmarking service entails a utility data review and preliminary facility audit. The utility bill data will be compared to CBECS data to determine whether the building is more or less efficient than the average, comparable building. Based on the initial findings of the utility data review and facility audit, in addition to the customer's load and complexity of systems, the Consultant will either align the customer with a Trade Ally or Preferred Contractor to pursue prescriptive measures, or recommend a "Lite Audit" or "Heavy Audit". The Consultant will also work with the Company to provide recommendations to the customer regarding natural-gas saving measures to consider and the correlating ThermWise® Business Rebates program/s to pursue.

The Lite Audit, or Assessment, is intentioned for small and medium commercial businesses. The audit will utilize a tablet-based tool preconfigured with prescriptive measures and other custom recommendations. The Consultant has already designed and effectively implemented similar tools for other utility DSM programs. The audit tool will generate a benchmarking report for the customer, including the natural-gas saving opportunities identified. The Consultant's existing tablet-based audit tool will be reconfigured to align with the specific measures and metrics of the Company's ThermWise® for Business Rebates Programs.

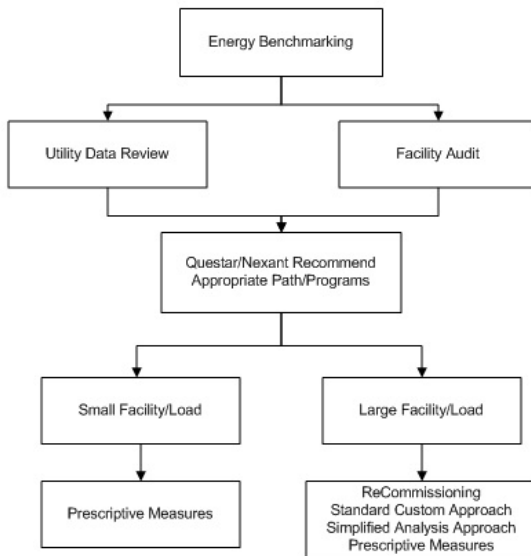
The Heavy Audit, or Assessment, is intentioned for large customers on the GS commercial rate schedule. The Consultant will perform a custom on-site assessment intended to recommend capital improvements and/or recommissioning measures. Following a Heavy Audit, the Consultant will also recommend the appropriate path for the customer to pursue for Prescriptive, Standard Custom, and Simplified Analysis measures identified.

To assess projects for eligibility for the Commercial Benchmarking Service, the customer must submit the following information:

- Identification of the project site and account information, including most recent utility bill
- A description of the facility and its energy-using systems



## ThermWise for Business Programs Energy Benchmarking



## Strategic Energy Management

The Strategic Energy Management service will engage business customers with a large portfolio of buildings and savings opportunities as identified in the 2012 Commercial Customer Segmentation Study. This service is specifically designed to offer business customers detailed instruction on how to reduce their energy consumption and lower their utility bills. The budget of this service will be no more than \$50,000 in 2015. Similar to the residential ThermWise® Home Energy Plan program, this service will include a site visit, or commercial energy plan, conducted by a qualified energy expert from the Company's Business Custom program administrator, Nexant. In contrast to the residential Home Energy Plan, the commercial energy plan will be a much more technical evaluation of the buildings performance. This is primarily due to the complex and diverse nature present throughout the business industry, which includes a wide range of complex and highly technical equipment, varying occupancy rates, seasonality, and varying levels of usage depending on the purpose of the business. As part of the strategic energy management service and commercial energy plan a detailed analysis and informational report will generated from a tablet based audit tool. Additionally, customers will be provided with technical and administrative guidance through facility assessments and ThermWise® for Business program support. The Consultant will collaborate with Questar Account Managers for appropriate customer introductions and management of customer expectations. The level of customer engagement in the Strategic Energy Management service will be in relation to the customer's needs, commitment to savings, and available capital. Customers will be responsible for funding and implementing identified energy savings measures. Ultimately, the Strategic Energy Management service seeks to create a culture of energy efficiency throughout a customer's building portfolio.

## Projected Savings

Table 1 presents the estimated annual savings per project for the ThermWise® Business Custom Rebates program and the estimated net total program savings (based on participation).

**Table 1. Business Custom Program Participation and Savings Estimates (Dth/yr)**

<b>2015 Program Year</b>	<b>Business Custom Program</b>
Projected Participants	20
Estimated Project Savings (Dth/project/yr)	1,150
Total Savings	23,000

## Implementation

The Program is currently in the marketplace and will continue without delay upon Commission approval effective January 1, 2015.

## Administration

The program administration represents the on-going delivery of the program. All internal systems, processes and procedures have been developed and are in place and operating under the existing Custom and Prescriptive programs. Some program administration modifications may be required due to potential program changes for 2015.