INVESTMENT GRADE AUDIT PRICING GUIDELINES

1. Overview

Pricing for an investment grade audit (IGA) can vary significantly between energy service providers. Some providers use the IGA as a marketing tool, charging a lower fee than competitors. The difference is often added later to the price of the energy performance contract (EPC). Some states have initiated IGA pricing standards using cost per square foot to establish a level of parity between energy service providers (ESPs). Although this may establish a more equitable approach to IGA price, it does not address all of the factors involved with the IGA.

The Montana Energy Performance Contracting Program (EPCP) does not set prices for the IGA. The price is to be negotiated between the governmental entity and the energy service provider. This document provides guidelines that may be used in the negotiation process to ensure that the price for the IGA is reasonable.

2. Factors

The price or cost of the IGA is based on a variety of factors, the more significant of which are as follows:

2.1 Base Cost and Location

The base cost may be considered as the basic cost for preparing for the audit and completing the report. This cost, typically between $3,000 and $6,000, generally covers the cost of assembling the data, writing the report, attending meetings and other communications. Other factors may add to this cost, most notably location as the travel costs increase as the distance from major population centers increases. The availability of specialized personnel to assist in the audit also increases the cost for rural facilities.

2.2 Facility Size

The price associated with facility size is typically based on square footage, where larger buildings cost less per square foot than smaller buildings. Much of this is the result of the base cost, but larger facilities may also benefit from repetitive rooms.

2.3 Facility Type

The type of facility impacts the IGA cost in a variety of ways. Warehouses, shops and garages are often on the lower end of the cost per square foot range. The large, open spaces and simple systems tend to keep the time required to audit the facility down. Schools and office buildings are generally in the mid-range, particularly when the facility has less complex systems. Hospitals are typically at the high end for audit costs due to their multiple systems and complexity.

2.4 Facility Age

The age of the facility impacts the audit cost several ways, particularly if no major renovations or upgrades have been completed. Facilities constructed before 1960 typically have simple systems – perimeter heat, central ventilation, often low technology controls. These would generally lead to lower cost per square foot for the audit. Facilities constructed between 1960 and roughly 1985 often have central systems that are more complex in configuration as well as control, although the controls are typically low tech such as pneumatic and/or electric. These facilities often have higher audit costs due to the complexity of the systems and challenges to determine how equipment is actually operating. Facilities constructed after 1985 often have the complex systems with the addition of electronic controls through a central system often referred to as direct digital controls (DDC) or an energy management system (EMS). Although the systems may be more complex, the operation is often easier to diagnose.

2.5 Availability of Documents

Often linked with the age of the facility is the availability of documents. Older facilities are often missing the original construction documents. It is important for the owner to make available all documentation for the facility including:

- Original drawings and specifications
- Documents regarding additions, remodels and renovations
- Temperature control drawings
- Equipment inventory, particularly for HVAC systems
- Utility data for at least the most recent 36 months including kWh, kW demand, fuel units (DKT or therms for gas, gallons for fuel oil and propane, tons for coal, CCF or gallons for water, etc.) and the cost for each commodity. Copies of the invoices are often helpful.

2.6 Number of Buildings on Site

The number of buildings on a site may decrease the overall cost of an audit, much like the building size. A site could be a school with two or three buildings at one location, a larger campus, such as a college or a community as in the case of a city or county audit. The ESP will require less time travelling and potentially less time in the field if there are more than one building at a site. Combining facilities into a single report will also cost less than requiring individual reports for each facility.

Where there are multiple buildings on a single meter, it is often beneficial to include all of the buildings in the audit. Exceptions would be buildings that would consume less than 5% of the total energy for the site.

2.7 Complexity of Systems

Some facilities have relatively simple systems – perimeter heat or gas furnaces. The controls for these systems may also be simple – a thermostat that controls a valve or the furnace to maintain the space temperature. There is relatively little time involved in auditing these simple systems.

Other systems may be much more complex including VAV boxes with or without reheat coils, pressure relationships between adjoining spaces (such as laboratories and corridors or offices), ventilation and exhaust, heat recovery, temperature resets and a host of other options. Although the controls on some older systems may be pneumatic, more often the controls are DDC with a computer interface.

2.8 Security or Accessibility

Security and accessibility issues will affect the price of the audit. Security requirements, such as those for prisons and other detention facilities, will increase the cost through check-in/check-out procedures, escorts, clearance checks, and other factors.

Access to facilities or parts of facilities may also affect the cost of the audit. Often the audit will require off-hour (nights/weekends) inspections to determine how systems are operating. Access to data centers and similar secure areas is necessary, but may also increase audit time for similar reasons as identified in security above.

2.9 Depth of Analysis

EPC is intended to be an in-depth evaluation and implementation process that reduces utility and O&M costs. The IGA is the major tool that identifies and evaluates the means by which these costs are reduced. The IGA offers the opportunity to look at all aspects of a facility to determine the optimum level of operation for the facility.

Some energy service providers may focus on a single aspect of a facility, such as lighting, or the boiler, or controls. Although this is permissible under EPC legislation, it may not be the best approach. EPC allows for using the savings for measures that have relatively short paybacks to help pay for measures that may be needed, but have longer payback periods. For this reason it is important to take a more holistic approach.

The methods used for the audit and analysis may also vary. There is a reason why the audit is called an Investment Grade Audit – it is something you should be able to take to the bank for financing purposes. Assumptions should be kept to a minimum. Field measurements and verification of equipment operation are important factors toward understanding how energy is used in a facility. There information gathered during the

audit is used not only for the IGA, but also for the design and implementation of the measures as well as the measurement and verification of the savings.

Often computer models are developed to estimate how the energy is used in a facility. These models are capable of analyzing the interaction between various systems and measures. Other measures may use simplified calculations. For example, street or other exterior lighting is based solely on the connected load (watts) and number of hours of operation.

3. Summary

In reviewing the factors associated with pricing the Investment Grade Audit, it is clear that there is no such thing as a single price cost per square foot approach. The cost of the audit can vary widely, even within categories, such as facility type or facility size. The following table provides typical costs for the IGA.

	Size (Sq. Ft.)	Cost ($ / Sq. Ft)	Total Cost Range
Elementary School	Less than 10,000	$0.70 - $1.00	$5,000 - $7,000
	10,000 – 25,000	$0.35 - $0.65	$6,500 - $8,750
	25,000 – 50,000	$0.25 - $0.35	$8,750 - $12,500
	More than 50,000	$0.15 - $0.25	$12,500 - $30,000
Middle/High School	Less than 20,000	$0.45 - $0.75	$7,500 - $9,000
	20,000 – 50,000	$0.30 - $0.50	$10,000 - $15,000
	50,000 – 100,000	$0.20 - $0.30	$15,000 - $20,000
	More than 100,000	$0.10 - $0.20	$20,000 – 40,000
Vocational Shop	Less than 5,000	$0.90 - $1.50	$3,750 - $4,500
	5,000 – 10,000	$0.60 - $1.00	$5,000 - $6,000
	More than 10,000	$0.25 - $0.70	$7,000 – $10,000
Office Buildings	Less than 10,000	$0.65 - $1.10	$5,500 - $6,500
	10,000 – 50,000	$0.30 - $0.75	$7,500 - $15,000
	50,000 – 100,000	$0.20 - $0.30	$15,000 - $20,000
	More than 100,000	$0.10 - $0.20	$20,000 - $40,000
Nursing Homes	Less than 10,000	$0.65 - $1.00	$5,000 - $6,500
	10,000 – 30,000	$0.35 - $0.70	$7,000 - $10,500
	More than 30,000	$0.20 - $0.35	$10,500 - $24,000
Hospitals	Less than 100,000	$0.30 - $0.75	$18,750 - $30,000
	100,000 – 200,000	$0.25 - $0.30	$30,000 - $50,000
	More than 200,000	$0.15 - $0.25	$50,000 - $120,000

This is only a guideline range for the IGA price assuming typical impacts of the factors listed in Section 2 above. There is some overlap in the cost per square foot for various building

sizes to allow for differences particularly in age and complexity. Where the factors increase the complexity associated with the audit, the cost may increase by up to 50%.