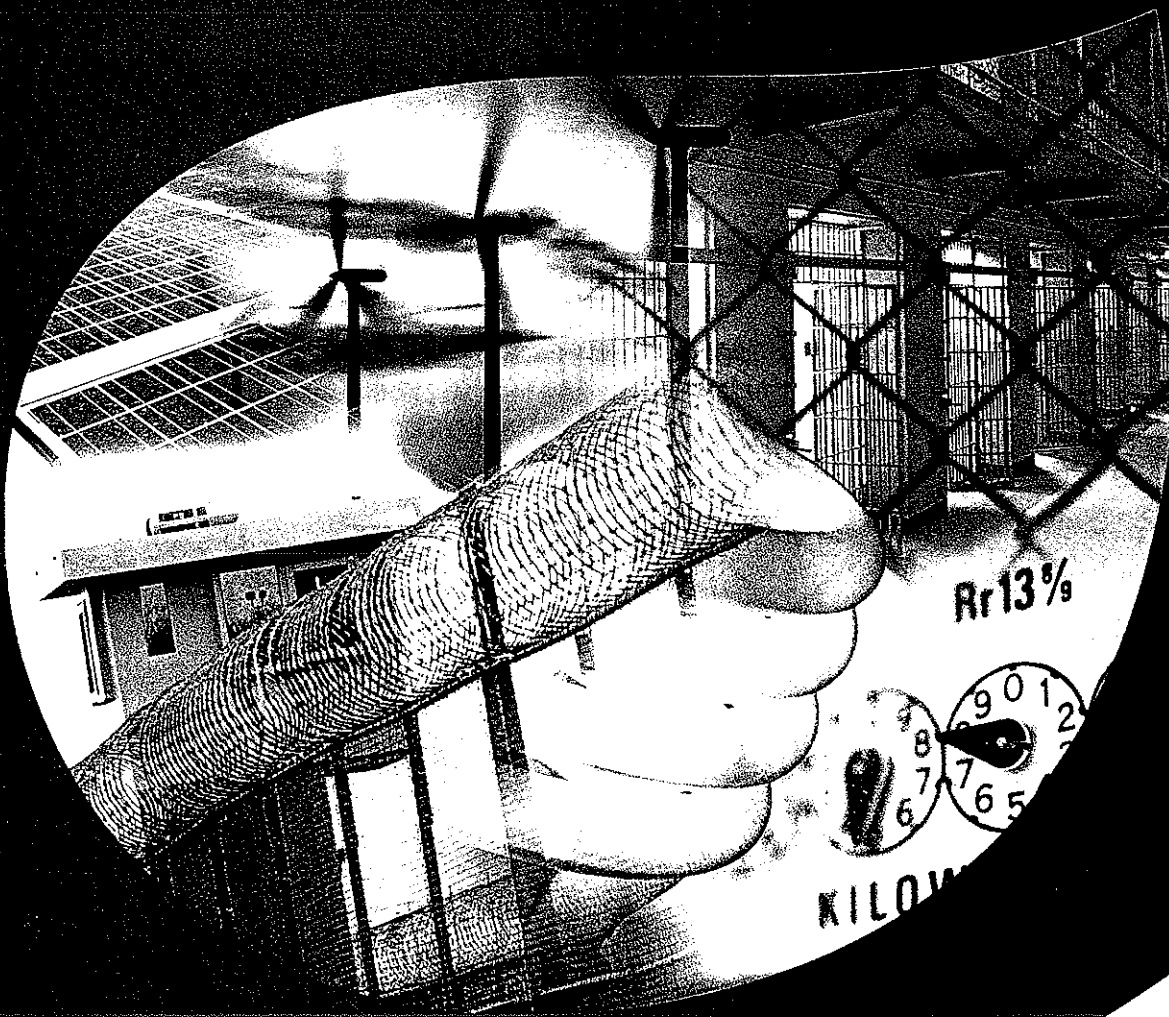


Request for Proposal to Provide Energy Savings Performance Contract Services for the West Virginia Division of Corrections Project COR61431



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Original

Johnson
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5. FINANCIAL ANALYSIS (COST PROPOSAL)

A. Financial Analysis Project Model

Provide a financial analysis to model the project in this proposal over a 15 year term incorporating energy, and operational savings; turnkey project costs for implementation; service including, monitoring and measurement and verification; and financial transaction costs. Identify all escalations on energy and operational savings and service costs.

Complete the B-1 Financial Cash Flow Table as Attachment to this section only. Only use energy cost savings in this cash flow. Do not estimate or include operational savings, as they will only be analyzed and considered after completion of the Investment Grade Audit.

We developed two different projects for your review. We are presenting these projects as samples to illustrate the types of energy conservation measures (ECMs) that could be part of the performance contract. Project #1 ARRA Base, includes only ARRA funding for the project. Project #2 ARRA Leveraging, includes improvements at all four facilities and demonstrates how leveraging the ARRA funding and energy savings can exponentially increase the improvements at all four facilities. Both Projects #1 and #2 use the rate information provided in the RFP and addendums.

Please keep in mind that the parameters (scope, term, etc.) of these projects were selected based solely on the needs observed by Johnson Controls. In order to have a successful project, we will need input from WV DOC. We have developed many different ECMs for the project and will work with WV DOC to build the right project at each facility that will meet WV DOC's needs. We will do this in a series of workshops with the WV DOC executive management and the staff from each facility.

Please note that these projects are representative only and not intended to be final and absolute recommendations on the part of Johnson Controls. We look forward to incorporating WV DOC's input to determine the best project for the Division after selection.



Project # 1 ARRA Base

The following scope matrix defines the ECMs that are included in Project #1. The ECMs included in Project #1 are denoted with a "X" under each facility. This project is presented to show WV DOC the potential scope of work that can be included if WV DOC elects only to use the ARRA funding. There is no work projected for Denmark because it was not originally included in the ARRA grant request.

We have limited the scope of work to energy saving ECMs only. For example, water conservation is not included in Project #1.

The scope of work for Project #1 provides some much needed improvements to the WV DOC facilities, but does not address all of the facility needs at any one facility. The financial information for the project is contained in the Attachments section and it is in the format provided in the RFP. Project #1 has an installed cost of \$4,497,279 and a net benefit of \$6,297,928 over the 15 year term.

Since this project is funded solely out of ARRA funding and there is not any financing, the project term does not require the full 15 years. A 15 year term was selected for this project to provide an accurate comparison to Project #2 which leverages the ARRA funding. The term of this project can be any length, between 1 and 15 years, that WV DOC feels it is in its best interest.

Please note, for Project #1, there is enough excess savings to increase the scope of the project. Since this base project is solely financed with ARRA funding, however, we limited the scope to adhere with the total amount of funding.

	Mt Olive	Huttonsville	Pruntytown	Denmar
Lighting Retrofit	X	X	X	
Lighting Upgrade	X	X	X	
Vending Machine Power Management	X	X	X	
Building Envelope Improvements			X	
Window Replacement			X	
Domestic Water Conservation				
Waste Management Compactor Retrofit				
Steam Trap Replacement / Repair		X		
Heating Hot Water and Steam Boiler Replacements	X		X	
Piping, Tank and Large Valve Insulation			X	
Domestic Hot Water Heater and Converter Replacements	X		X	
Solar Thermal Domestic Hot Water Systems for Cell Blocks & Kitchens				



	Mt Olive	Huttonsville	Pruntytown	Denmar
Direct Expansion (DX) Controllers	X	X	X	
Air Handling Unit Replacements				
Pump and Fan Motor Replacements	X	X	X	
Kitchen Hood Exhaust Replacement				
Dishwasher Replacement			X	
Maximicer - Ice Machine Retrofit	X	X		
Primary Variable Flow Pumping	X	X		
Energy Management System	X	X	X	
Walk-In Box Controls/Temperature Monitoring			X	
Window Film Installation				
Transportation Asset Management				
Perimeter Security System Installation				
Utility Rate Analysis and Demand Response				
Computer Power Management		X		
Intelli-Hood Kitchen Hood Control System				
Laundry System Upgrades				
Kitchen Equipment Replacement				
High Efficiency Transformer Installation Pruntytown only				
Solar Photovoltaic System - 100 kW				
Convert Constant Volume to Variable Flow Systems				
Hydrokinetic Turbine Array				
Wind Turbine - 100 kW				
Embedded Piezoelectric Energy Harvesting				



Project # 2- ARRA Leveraging

Project #2 demonstrates the impact of leveraging the ARRA funding and maximizes the improvements that can be made at the WV DOC facilities. ARRA legislation encourages entities to leverage ARRA funding through performance contracting.

The scope of work, as shown in the following scope matrix, includes the scope from Project #1 plus much more needed improvements at the WV DOC facilities. The ECMs included in Project #2 are denoted with a "X" under each facility.

Project #2 also includes ECMs at Denmar. Water conservation and waste management are also included in this project (excluding Mt. Olive since waste management information was not provided in the RFP). This is a much more comprehensive project that addresses the needs in the facilities. This project uses the utility rates provided in the RFP and addendums. Project #2 has an installed cost of \$18,602,891 and a net benefit of \$1,943,164 over the 15 year term. The financial information for the project is contained in the Attachments section and it is in the format provided in the RFP.

	Mt Olive	Huttonsville	Pruntytown	Denmar
Lighting Retrofit	X	X	X	X
Lighting Upgrade	X	X	X	X
Vending Machine Power Management	X	X	X	X
Building Envelope Improvements	X	X	X	X
Window Replacement		X	X	
Domestic Water Conservation	X	X	X	X
Waste Management Compactor Retrofit		X	X	X
Steam Trap Replacement / Repair		X	X	X
Heating Hot Water and Steam Boiler Replacements	X		X	X
Piping, Tank and Large Valve Insulation		X	X	X
Domestic Hot Water Heater and Converter Replacements	X	X	X	X
Solar Thermal Domestic Hot Water Systems for Cell Blocks & Kitchens	X	X	X	X
Direct Expansion (DX) Controllers	X	X	X	X
Air Handling Unit Replacements				
Pump and Fan Motor Replacements	X	X	X	X
Kitchen Hood Exhaust Replacement		X	X	



	Mt Olive	Huttonsville	Pruntytown	Denmar
Dishwasher Replacement	X	X	X	X
Maximicer - Ice Machine Retrofit	X	X	X	X
Primary Variable Flow Pumping	X	X		
Energy Management System	X	X	X	X
Walk-In Box Controls/Temperature Monitoring	X	X	X	X
Window Film Installation	X	X	X	X
Transportation Asset Management				
Perimeter Security System Installation				
Utility Rate Analysis and Demand Response				
Computer Power Management	X	X		X
Intelli-Hood Kitchen Hood Control System	X	X	X	X
Laundry System Upgrades	X	X	X	X
Kitchen Equipment Replacement		X	X	X
High Efficiency Transformer Installation Pruntytown only		X	X	
Solar Photovoltaic System - 100 kW	X	X		X
Convert Constant Volume to Variable Flow Systems	X	X	X	X
Hydrokinetic Turbine Array				
Wind Turbine - 100 kW				
Embedded Piezoelectric Energy Harvesting				



B. Other Costs

Describe other costs such as maintenance and monitoring agreements and describe how they will be applied. Also slate whether these are annual costs and if they are required each year of the contract.

Maintenance and monitoring agreements are optional portions of a performance contract. WV DOC can elect to perform all of the maintenance in house, elect Johnson Controls to perform all of the maintenance, or elect any combination of the two. The most important factor is that the maintenance tasks are accomplished to preserve the energy efficiency of the equipment. The monitoring (measurement & verification) portion must be performed by Johnson Controls in order to provide the guarantee of savings.

The maintenance and monitoring agreements are paid on an annual basis. The cost of these contracts is paid for by the savings generated through the project. There is no out-of-pocket expense for WV DOC. The maintenance and monitoring services are renewed annually and can be cancelled with a 30-day written notice



C. Financing Options

Describe alternative financing options for portions of the project that may not be funded via ARRA funding. Denmark Correctional Center is currently not ARRA funded.

Financing is not a profit center for Johnson Controls. We will work with the Division to develop the most advantageous financing package available and work with the financial institutions to present the option to the Division. Our experience in negotiating financing for projects is unmatched in the industry. We have worked with large national financing companies, and local banks to finance these types of projects.

We will have two central objectives when it comes to securing project financing for the State of West Virginia:

- 1) Identify the best possible finance rate, and overall package that is deemed most advantageous to WV DOC.
- 2) Work with a stable and reputable finance partner that has in-depth experience in energy performance contracting so that there are no surprises and WV DOC is comfortable and confident in the finance package we, together, ultimately secure.

There are several alternative financing options available for portions of the project that are not funded with ARRA funding. The Division can make more improvements, well beyond the ARRA funding amount, to Denmark Correctional Center and the other facilities by leveraging the savings generated through the project. A brief description of each alternative financing option is below. We will work together to determine the best financing options for the project not funded by ARRA.

Alternative A - Fixed Lease Payment with Fixed-Rate Financing

Johnson Controls has historically supplied capital lease financing for its customers in two fashions. Johnson Controls has either served as Lessor in these arrangements or has facilitated the financial contracts directly between the Customer and the Lender. When Johnson Controls serves as Lessor, Johnson Controls immediately assigns the Lease Payments to a Lender of its choice (through Johnson Controls' trust structure) even though it may bill and collect such payments. The remaining elements of the structure remain the same whether or not Johnson Controls serves as Lessor or bills and collects.

Under a capital lease structure, title to the equipment transfers to the customer upon acceptance and the Lender retains a security interest in that equipment throughout the term of the lease. The customer enjoys the benefits of ownership from the time of acceptance and at the end of the term, owns the equipment free and clear.

With tax-exempt entities, payments are subject to annual appropriations and pertinent non-appropriation clauses are included.

This is the most common financing method for performance contracts. It is the easiest and simplest way to finance a project. The lease purchase has very competitive interest rates and very flexible terms. The monthly payment is fixed based on the term of the contract.



Alternative B – Energy Services Agreement (ESA)

Johnson Controls is currently exploring an alternative financing structure for certain ESCM that could benefit from applicable Federal, State and local tax incentives. Among others, these ESCM's include the renewable energy ESCM's including Biomass Generation, Biomass thermal energy, solar water heating and solar photovoltaic systems. Under an Energy Services Agreement (ESA), the systems would be designed, build, owned and potentially operated by a third-party entity who would sell energy production to WV DOC. Johnson Controls would be responsible for installing the systems, maintaining the systems, and guaranteeing performance. Under the ESA, WV DOC would sign a long-term contract with the system owner agreeing to purchase all energy generated by the systems as measured by the energy meters for a pre-determined price. WV DOC would only be responsible for purchasing actual energy production; if the systems do not perform, WV DOC is not responsible for any payments.

The ESA provides a structure whereby the renewable energy systems are, at a minimum, able to take advantage of Federal tax and depreciation incentives that would not be available if the systems were owned by the WV DOC. The two primary financial incentives currently available and applicable are the 30% Federal Investment Tax Credit (ITC) and the Modified Accelerated Cost Recovery System (MACRS) for faster depreciation. For other renewable energy systems, the Federal Production Tax Credit (PTC) may be preferred. A third-party ownership structure facilitates procurement of these incentives by providing a corporate ownership structure for the systems.

The ESA offers a low-risk solution to WV DOC. There are no up-front capital requirements and no O&M requirements throughout the life of the contract. The price paid by WV DOC for renewable energy production would be pre-negotiated for each year of the contract, typically with an energy escalator. This structure allows WV DOC to significantly reduce exposure to the volatile energy markets and predict with certainty future energy costs.

Alternative Financing C – Bonds

In most cases, bonds would be considered conventional financing. Because they are not often used to fund a performance contract, they would be considered an alternative. Bonds offer the lowest interest rate, but the fees associated with bonds bring the actual cost near the cost of a traditional lease purchase for smaller projects (less than \$30M).

Summary

While the final decision is up to the State and WV DOC, Johnson Controls can provide turnkey financing management as part of our overall performance contracting service by:

- Leveraging our relationships with local and national financial institutions
- Soliciting at least three competitive financing offers
- Arranging the initiation of a third party, neutral escrow agent
- Providing the lowest interest rate possible is always our goal on every PC project
- **We charge NO administrative fee for this valuable service**



D. Cost of the Investment Grade Audit

Provide an estimate of the cost of the investment grade audit that will be conducted after ESCO selection. The cost shall be broken down into fixed cost and cost per square foot for the Investment Grade Audit.

Our approach to auditing a facility is quite comprehensive particularly in correctional facilities. During the IGA the Johnson Controls team will strive to eliminate potential problems that could arise during the installation and measurement and verification phase of the project. The selected development team will include professional engineers, certified energy managers, the best possible engineering and design teams and various subject matter experts. This IGA will assemble the best engineering and technical resources to develop energy conservation measures of the highest reliability, lowest cost and greatest energy reduction for WV DOC.

The cost of the investment grade audit will vary based on the facilities included in the scope of work and the Energy Conservation Measures selected by WV DOC to for further development. Our Investment Grade Audit Square Footage Cost for a correction facility is between- \$0.10-\$0.12 per square foot. Based on \$0.11 per square foot, the estimated cost of the Investment Grade Audit would be \$137,093

IGA Cost Component	Unit Cost	Total
Fixed Cost for Investment Grade Audit	\$0.00	\$0.00
Per Square foot Cost for Investment Grade Audit	\$0.11	\$137,093
Total	N/A	\$137,093



E. Attachments for "Financial Analysis" Section

Label Attachments and list here including Attachment Name, Description and Location in RFP Response. Insert attachments here at the end of this section or include elsewhere in a clearly marked location for easy reference.

1. **Section 5 (A), Financial Analysis Project Models**
Completed B-1 Financial Cash Flow Tables (financial analysis models for two project options)



Project # 1 ARRA Base

Project Cost	\$4,497,279	Escalation Rates by Utility & Fuel	
ARRA Fund	\$4,500,000	Electric:	3.0%
Financed Project Cost (1)	\$0	Natural Gas	2.5%
Financed Term (months)	180	Fuel Oil:	2.5%
Annualized Interest Rate:	4.25%	Steam:	3.0%
		Water:	3.0%
		Coal:	3.0%
Escalation Rates for Annual Fees:	2.0%		

Year	Electric Cost Savings	Gas Cost Savings	Fuel Oil Cost Savings	Steam Cost Savings	Water Cost Savings	Other Cost Savings	Total Cost Savings	Guaranteed Cost Savings	Annual Service Fees	Financing Payment	Net Savings
1	\$168,267	\$128,812	\$70,210	\$0	\$0	\$0	\$367,289	\$367,289	\$23,156	N/A	\$344,133
2	\$173,315	\$132,032	\$71,965	\$0	\$0	\$0	\$377,312	\$377,312	\$23,619	N/A	\$353,693
3	\$178,515	\$135,333	\$73,764	\$0	\$0	\$0	\$387,612	\$387,612	\$24,092	N/A	\$363,520
4	\$183,870	\$138,716	\$75,608	\$0	\$0	\$0	\$398,195	\$398,195	\$24,573	N/A	\$373,621
5	\$189,386	\$142,184	\$77,498	\$0	\$0	\$0	\$409,069	\$409,069	\$25,065	N/A	\$384,004
6	\$195,068	\$145,739	\$79,436	\$0	\$0	\$0	\$420,243	\$420,243	\$25,566	N/A	\$394,676
7	\$200,920	\$149,382	\$81,422	\$0	\$0	\$0	\$431,724	\$431,724	\$26,077	N/A	\$405,647
8	\$206,948	\$153,117	\$83,457	\$0	\$0	\$0	\$443,522	\$443,522	\$26,599	N/A	\$416,923
9	\$213,156	\$156,945	\$85,544	\$0	\$0	\$0	\$455,644	\$455,644	\$27,131	N/A	\$428,513
10	\$219,551	\$160,868	\$87,682	\$0	\$0	\$0	\$468,101	\$468,101	\$27,674	N/A	\$440,428
11	\$226,137	\$164,890	\$89,874	\$0	\$0	\$0	\$480,902	\$480,902	\$28,227	N/A	\$452,675
12	\$232,921	\$169,012	\$92,121	\$0	\$0	\$0	\$494,055	\$494,055	\$28,792	N/A	\$465,263
13	\$239,909	\$173,237	\$94,424	\$0	\$0	\$0	\$507,571	\$507,571	\$29,367	N/A	\$478,203
14	\$247,106	\$177,568	\$96,785	\$0	\$0	\$0	\$521,460	\$521,460	\$29,955	N/A	\$491,505
15	\$254,520	\$182,008	\$99,205	\$0	\$0	\$0	\$535,732	\$535,732	\$30,554	N/A	\$505,178
TOTAL	\$3,129,591	\$2,309,842	\$1,258,996	\$0	\$0	\$0	\$6,698,429	\$6,698,429	\$400,446	N/A	\$6,297,982



Project # 2-ARRA Leveraging

Project Cost	\$18,602,891
ARRA Fund	\$4,500,000
Financed Project Cost (1)	\$14,102,891
Financed Term (months)	180
Annualized Interest Rate:	4.25%
Escalation Rates for Annual Fees:	2.0%

Electric:	3.0%
Natural Gas	2.5%
Fuel Oil:	2.5%
Steam:	3.0%
Water:	3.0%
Coal:	3.0%

Year	Electric Cost Savings	Gas Cost Savings	Fuel Oil Cost Savings	Steam Cost Savings	Water Cost Savings	Other Cost Savings*	Total Cost Savings	Guaranteed Cost Savings	Annual Service Fees	Financing Payment	Net Savings
1	\$275,655	\$404,133	\$461,776	\$0	\$85,979	\$54,938	\$1,282,481	\$1,282,481	\$64,250	\$1,217,281	\$950
2	\$283,924	\$414,236	\$473,321	\$0	\$88,558	\$56,037	\$1,316,076	\$1,316,076	\$65,535	\$1,248,281	\$2,260
3	\$292,442	\$424,592	\$485,154	\$0	\$91,215	\$57,158	\$1,350,561	\$1,350,561	\$66,846	\$1,280,281	\$3,434
4	\$301,215	\$435,207	\$497,283	\$0	\$93,951	\$58,301	\$1,385,957	\$1,385,957	\$68,183	\$1,313,281	\$4,494
5	\$310,252	\$446,087	\$509,715	\$0	\$96,770	\$59,467	\$1,422,290	\$1,422,290	\$69,546	\$1,347,281	\$5,463
6	\$319,559	\$457,239	\$522,458	\$0	\$99,673	\$60,656	\$1,459,585	\$1,459,585	\$70,937	\$1,378,281	\$10,367
7	\$329,146	\$468,670	\$535,519	\$0	\$102,663	\$61,869	\$1,497,868	\$1,497,868	\$72,356	\$1,398,281	\$27,231
8	\$339,021	\$480,387	\$548,907	\$0	\$105,743	\$63,107	\$1,537,164	\$1,537,164	\$73,803	\$1,423,281	\$40,080
9	\$349,191	\$492,397	\$562,630	\$0	\$108,915	\$64,369	\$1,577,502	\$1,577,502	\$75,279	\$1,433,281	\$68,942
10	\$359,667	\$504,707	\$576,695	\$0	\$112,183	\$65,656	\$1,618,908	\$1,618,908	\$76,785	\$1,393,281	\$148,842
11	\$370,457	\$517,324	\$591,113	\$0	\$115,548	\$66,969	\$1,661,412	\$1,661,412	\$78,320	\$1,343,281	\$239,810
12	\$381,571	\$530,257	\$605,891	\$0	\$119,015	\$68,309	\$1,705,042	\$1,705,042	\$79,887	\$1,343,281	\$281,874
13	\$393,018	\$543,514	\$621,038	\$0	\$122,585	\$69,675	\$1,749,830	\$1,749,830	\$81,485	\$1,343,281	\$325,064
14	\$404,808	\$557,102	\$636,564	\$0	\$126,263	\$71,068	\$1,795,805	\$1,795,805	\$83,114	\$1,343,281	\$369,410
15	\$416,953	\$571,029	\$652,478	\$0	\$130,051	\$72,490	\$1,843,000	\$1,843,000	\$84,777	\$1,343,281	\$414,943
TOTAL	\$5,126,879	\$7,246,883	\$8,280,541	\$0	\$1,599,112	\$950,067	\$23,203,482	\$23,203,482	\$1,111,102	\$20,149,215	\$1,943,164

*Waste management savings are based on data provided on the RFP Document