



Performance Contract for Operational Savings at TMCWRF

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ESCO Projects

- Energy Service Performance Contracting Projects allowed for by NRS 332 for public entities
 - Evaluate energy and operational savings potential
 - Construct improvements to realize those savings
- Guaranteed Maximum construction pricing
 - Any savings from construction is retained by the cities

ESCO Projects

- Minimum Annual Savings guaranteed by ESCO company for 15 years
 - Any savings in excess of guarantee are owned by the Cities
 - ESCO company is financially responsible to the Cities if realized savings are less than the guaranteed amount
 - Each year is separate – no averaging of savings year to year
 - Projected savings must be validated by an independent 3rd party review

Operational Audit

- Through a City of Reno RFP process, Ameresco was selected to audit TMWRF in August 2012
 - Seven ESCO Companies initially participated
 - Two interviewed
- Operational Audit Completed January, 2014
- Examined most of TMWRF's processes

Operational Audit

- \pm 20 different Energy Conservation Measures (ECM) were evaluated
- Numerous site visits with TMWRF staff and contractors to evaluate options
- The results of the audit produced the project before you today

Proposed ECMs

- ECM 2 – Centrate Nutrient Recovery
- ECM 4A – Biogas Co-generation
- ECM 4B – Digester Dome Repair
- ECM 6 - Dewatering Upgrades
- ECM 7 – Lighting Upgrades
- ECM 9 – Near term dewatering improvements
- ECM 10 – MyEnergy Pro Monitoring System

ECM Costs and Savings

TMWRF Energy/Chemical Savings Project: Summary of Cost and Savings					
Measure #	Conservation Measure	Total Annual Savings	Energy/Chemical Savings Project Cost	Capital Repair Items	Total Project Pricing
2	Centrate Nutrient Recovery (Ostara)	\$ 675,985	\$ 6,760,860		\$ 6,760,860
4A	Biogas Cogeneration (850 kW)	\$ 215,514		\$ 5,116,967	\$ 5,116,967
4B	Digester Domes Rehabilitation	\$ -		\$ 3,121,795	\$ 3,121,795
6	Dewatering System Upgrade	\$ 200,954	\$ 6,066,614		\$ 6,066,614
7	Lighting System Upgrade	\$ 30,434	\$ 428,761		\$ 428,761
9	Near Term Dewatering Improvement	\$ -		\$ 3,005,202	\$ 3,005,202
10	MyEnergy Pro	\$ -	\$ 50,625		\$ 50,625
	Bonds, Permits, Audit Costs				\$ 360,765
	TOTAL	\$ 1,122,887	\$ 13,306,860	\$ 11,243,964	\$ 24,911,589
	Construction Period Savings	\$ 1,060,417			
	Ameresco Payback (Years) w/o Cogen				13.5
	Total Ameresco Project plus Cogen payback				15.4
	Total Project Payback				21.2

Costs and Savings

- \$24,911,589 in projects
 - City of Sparks' share is \$7,814,765.47
- \$1,122,887 per year guaranteed savings
- 5.8 million kWh/year energy savings
- 29,000 gallons methanol reduction
- 1,155 dry tons alum reduced
- Reduced biosolids hauling and disposal

Operational Reliability

- Dewatering Operation
 - Dewatering Upgrades (ECM 6)
 - Near-term Dewatering Improvements (ECM 9)
 - Digester Lids (ECM 4B)
- Ostara nutrient recovery
 - 93% Phosphorus removal from centrate
 - 7% Nitrogen removal from centrate
- Electrical Co-Generation

Project Benefits

- Path to Energy independence: Plant will be nearly 50% net energy and provide renewable energy to NV Energy portfolio standard.
- Local Jobs and Economic Support: Local equipment distributors, local subcontractors, and local labor are 75%.
- Leverage Capital Expenditures: Use reserves to fund additional CIP projects beyond the approved 5 year CIP to yield lower operating costs.

Next Steps

- 2-year construction for total project
 - Lighting upgrades can proceed immediately
 - Final design needed for Dewatering improvements (ECM 4B, 6 and 9)
 - Limited review for Co-generation
- Commissioning period
- 15-year Measurement and Verification