2009 SWANA Landfill Gas Utilization Excellence Award Nomination
Granger Electric of South Jordan

Submitted by:
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Executive Summary

The Granger Electric South Jordan Generating Station began generating 4.8 megawatts (MW) of green power in March 2009. The landfill gas is collected from the Trans-Jordan Landfill, a publicly owned landfill comprised of seven member cities, located just south of Salt Lake City in South Jordan, Utah. The generating station is powered by the electricity it produces with the remaining 4.5 MW sold to Murray City Power.

Murray City is one of the seven member cities sharing ownership in the landfill, making a unique partnership between the Trans-Jordan Landfill, Granger Electric and Murray City. This distinctive public-private partnership was an excellent opportunity for all parties, and construction of the project began in 2007. Murray City Power first purchased electricity generated from landfill gas in 2006 from the Salt Lake County Landfill, making Murray one of few cities in the country to acquire electricity from two separate landfill gas electric generating projects.

The Generating Station project will expand over time as the landfill continues to accept additional solid waste. The electricity is transmitted via PacifiCorp’s utility grid through a Utah Associated Municipal Power Systems agreement. The electricity generated is equivalent to powering 3,000 homes or offsetting the use of 120 railcars of coal each year.

Photo: Granger Electric of South Jordan’s recently completed generating station.
Granger – 30+ Years Landfill & Landfill Gas Utilization Experience

Granger, a third generation family-owned business started in the solid waste industry over 30 years ago. Considered one of the largest private waste-hauling companies in the Midwest, Granger has extensive knowledge and experience in the landfill industry. Granger is a successful owner and operator of two sanitary landfills in Michigan. They developed the first medium Btu landfill gas utilization project in Michigan on one of their own sites in 1985. This project provided fuel via a 2.5-mile pipeline to a nearby industrial plant.

After successfully building the first landfill gas utilization project in Michigan, Granger successfully negotiated 30-year contracts with the local utility, Consumers Energy. Granger then partnered with other landfill owners and developed an additional six landfill gas Generating Facilities that began supplying electricity to the grid in 1990. Shortly thereafter, Granger began developing direct-use or medium Btu projects - all of which sell landfill gas directly to industry partners. The industrial customers then utilize the landfill gas as an alternative fuel source to natural gas or fuel oil. With over 23 years of development experience and a total of 17 projects developed in six states (MI, IN, OH, PA, AL, & UT), Granger has a proven track record of success.

Trans-Jordan Landfill Background

Trans-Jordan Landfill is located at the south end of the Salt Lake Valley. The landfill began accepting solid waste for disposal in 1958 from residents of Sandy and West Jordan. Since its inception, the landfill has incorporated five more member cities; Midvale, Murray City, South Jordan City, Draper City and Riverton City. These member cities have all played a significant role in implementing the mission of Trans-Jordan Landfill to dispose of solid waste in an economical and environmentally beneficial manner. Their methods have included RCRA Subtitled Lined disposal cells D, an on-site residential transfer station, a Greenwaste diversion partnership with SVWRF, a Household Hazardous Waste drop off facility, free recycling, environmental education and community outreach and most recently, a methane recovery project in partnership with Granger Electric.
**Design & Construction**

**Site Design & Preparation**

The site was designed so that the electric generating station is located near a pre-existing flare. The close proximity between the station and the flare allows for minimal pressure loss. It is also an ideal location due to its proximity to the Trans-Jordan Landfill's administrative building, which strengthens and compliments Trans-Jordan’s established educational and community outreach programs. Furthermore, the location is outside of waste limits, which permitted the reuse of excavated materials.

The facility was designed and constructed to be self-contained. Therefore, there are no floor drains. Instead, all liquid systems are a closed loop, in which back-up reservoirs contain any spills or overfill of tanks. In addition to this precaution, all storage tanks have high level alarms to mitigate overfill situations. The self-containment of the facility is intended to prevent any adverse impact to the surrounding natural environment.

The building itself is a pre-engineered metal material designed to fulfill multiple functions including protecting the LFG processing equipment and engine generators from the elements, absorbing noise, providing the space and equipment to properly maintain the unit, providing proper ventilation, and creating a “clean space” to place the engine control instrumentation and monitor the entire facility. The building is sized at approximately 40'x122', but could be easily expandable on one side of the building to accommodate future growth.

**Site Soils / Drainage / Erosion & Sedimentation Control**

Native soils are primarily silt gravel with some sand and cobbles, which had suitable bearing capacity to support the electric generation facility. Groundwater is located more than 100 feet deep and was not a determining factor for the construction of this facility. The site was graded to take advantage of existing storm water management systems, thus resulting in less disturbance of the existing natural environment.

**Merits of Design for Environmental Protection – “State of the Art” Operation**

Granger designed the Facility with the following objectives in mind: (1) Ensure that the gas being produced at the landfill is being properly managed at all times; (2) ensure that the maximum amount of energy is being utilized rather than wasted; (3) ensure the customer can be reliably supplied an alternative electric source.

These objectives were successfully met by incorporating the following provisions:

The LFG Processing/Generating Facility is integrated with the LFG Management System (flare) such that the blower-flare system can automatically compensate for variations in gas demand for electrical production. The synergy between the facility and flare ensures maximum environmental protection.

The LFG Processing/Generating Facility itself has been designed and constructed with multiple redundancies in equipment and the ability to bypass certain equipment to perform maintenance without interrupting the delivery of electricity to Murray City Power. Additionally, the facility has been constructed considering future expansion, so additional electricity can be produced as gas production increases.
Overall Planning and End-Use Planning

Granger Energy began negotiations with the Trans-Jordan Landfill for rights to the gas produced at their site in South Jordan, Utah. In 2004, Trans-Jordan Landfill and Granger began a partnership to develop a landfill gas utilization project, in which responsibility and risk were equally divided. While Granger was responsible for design and project management, the Trans-Jordan Landfill installed and operated a landfill gas collection system.

Granger’s original intention was to acquire rights with options including a medium Btu pipeline project or an electrical generation project. In the medium Btu option, the methane gas from the landfill was proposed to be treated in a facility at the site then transmitted via pipeline to a nearby potential industry partner where the gas could be used to fuel equipment such as boilers or process heat applications. This option seemed viable, but after a year of negotiations with a nearby brick manufacturer, this potential customer opted to withdraw from the project. Months later, negotiations with two other potential customers also fell through.

After medium Btu pipeline options were exhausted Granger contacted a local municipality and member of the Trans-Jordan Cities organization, Murray City. Murray City Power, a local, community-owned electric utility serving 26,200 customers, was already purchasing electricity produced from landfill gas fueled electric generators. Their success with the first project had them excited to consider a similar project with Granger. By purchasing electricity from Granger Electric of South Jordan, Murray City Power would be providing power from waste generated by their community.

Granger eventually negotiated an agreement with Murray City to purchase all of the electricity that could be generated from the methane gas. Once development began, it was decided that the 1,500 scfm of gas being produced was sufficient to fuel three Caterpillar 3520 engine gen-sets each generating 1,600 kilowatts. The total generating output of the initial plant construction of 4,800 kilowatts was completed and commissioned in December 2008 and deliveries to Murray City through the Rocky Mountain Power Transmission system commenced in late March 2009.
Groundwater

Trans-Jordan Landfill and Kennecott Utah Copper share a common area above a large aquifer. At one time this aquifer sat 400 feet below the deepest excavated area within the Trans-Jordan property; an insufficient recharging of this resource due to a large increase in development in the area coupled with drought conditions in the last four years has decreased the size of the aquifer until it no longer is below the landfill site. Trans-Jordan continues to monitor for the presence of water on a biannual basis. If water is again found beneath the landfill, it will be monitored on the same schedule to ensure that the landfill is not leaching into this aquifer.

Trans-Jordan is a Class A lined municipal solid waste facility. The landfill lines each new cell with three separate layers for the protection of the groundwater:

1. Bentomat® DN clay liner
2. GSE® Geomembrane
3. Skaps® Transnet

Landfill Gas

The landfill gas collection system has been constructed in three phases of 44, 23 and 19 wells. The first phase was constructed in 2004. The second phase was constructed in 2005. The third phase was completed this past fall. Average landfill flows are approximately 1500 scfm. Gas is controlled by Granger’s gas processing system and engines or a MRW open flare. Gas quality is measured in the field using a GEM 2000 hand held analyzer and in the plant using a Siemen’s ULTRAMAT 23 gas analyzer.

Leachate Monitoring

Trans-Jordan is engineered at a 2% grade so that all leachate naturally collects at the lowest end of the landfill where a leachate pond is situated. Salt Lake County, Utah is a semi-arid area so water is not generally a problem.

The collected leachate is allowed to evaporate. If there is a time where leachate levels begin to rise the Trans-Jordan Landfill has a pump truck to remove leachate where it is either taken, by permission, to a local POTW drop off or redistributed atop the open cell.

In 2008, a leachate pump was installed at the bottom of the newest cell. The pump is self regulating so that it pumps when a measurable amount of leachate is detected. This should minimize the need to pump leachate out of the collection pond.
POLLUTION PREVENTION:

Prevent landfill gas emissions

Municipal solid waste landfills are the second largest human-generated source of methane emissions in the United States, accounting for 34% of all methane emission. Given that all landfills generate methane, it makes sense to use the gas for the beneficial purpose of energy generation rather than emitting it into the atmosphere. Methane is a very potent greenhouse gas that is a key contributor to global climate change (over 21 times stronger than CO2). Methane also has a short (10-year) atmospheric life. Because methane is both potent and short-lived, reducing methane emissions from MSW landfills is one of the best ways to achieve a near-term beneficial impact in mitigating global climate change.

Recovering landfill gas and utilizing it to produce electricity not only reduces harmful emissions but also produces renewable energy. By substituting landfill gas for coal, oil or natural gas, depletion of natural resources and dependence upon foreign oil are avoided. In essence, utilizing landfill gas takes a resource that would otherwise go to waste and uses it to create dependable, renewable energy.

Utilization Project is Self-sufficient

Granger Electric of South Jordan operates off of its own generated electricity, making it completely self-sufficient. The station produces 4.8 MW of electricity, about .3 MW are used on-site to run the station itself. Granger does not purchase power from the local grid, thereby displacing coal-generated power. Granger Electric of South Jordan is truly a "renewable energy project", where landfill gas provides the electrical energy to create the renewable power sold to its customer.

RESOURCE CONSERVATION:

Producing energy from LFG avoids the need to use non-renewable resources such as coal, oil, or natural gas to produce the same amount of energy. This can avoid gas end-user and power plant emissions of CO2 and criteria pollutants such as sulfur dioxide (which is a major contributor to acid rain), particulate matter (a respiratory health concern), nitrogen oxides (NOx), and trace hazardous air pollutants. Below are the environmental benefits of the direct-use (medium Btu) pipeline project.

Environmental Benefits (4.8 Megawatts of electricity per year)

• Reduction of Air Emissions:
  • Equivalent Emissions Reduced
    • .1822 million metric tons of carbon dioxide
    • 9,562 tons of methane per year
  • Equivalent Emissions Avoided
    • .0238 million metric tons of carbon dioxide
    • 26,269 tons of carbon dioxide per year

• Removing Emissions Equivalent to:
  • Preventing the use of 1,076 railcar's worth of coal, or
  • Removing emissions of 37,728 cars, or
  • Planting 46,818 acres of forest, or
  • Heating 3,052 homes per year
COMMUNITY INVOLVEMENT AND AWARDS

Role in Community’s Integrated Solid Waste Management System

Trans-Jordan Landfill’s involvement in the local community is extensive. Tours and presentations of their facilities reach the following groups:

• School Groups (Kindergarten through university)
• Cub scouts
• Girl scouts
• Businesses
• Senior Fairs
• Health Fairs
• City anniversary celebrations

Besides inviting the community to their facilities, Trans-Jordan’s staff members are also highly involved in the surrounding community. Dwayne Woolley, the general manager of the landfill, is the international director of the Utah Beehive chapter of SWANA, an advisory board member of Workers Compensation Utah and a current Boy Scouts leader. He is a Past club President, Past Assistant District Governor and Current Chief Of Staff for the District Governor of the Rotary Club International, as well as a Charter South Jordan Board Member, member of the Government affairs committee, and Western Growth Coalition council member. Esther Davis, the compliance coordinator of the landfill is the Environmental Technology PAC president at Salt Lake Community College and a Board member of the Recycling Coalition of Utah. Also, each year, the landfill sponsors and creates a float entered in multiple cities’ July 4th parades. This float is educational and carries the theme of recycling, household hazardous waste or their recent LFG to energy project.

Landfill Compliance

The Landfill is in environmental compliance with all local, state, and federal requirements.

Facility Inspection Data

Trans-Jordan Landfill received has received the Top Safety Award from the Utah Safety Council, as well as Risk Manager of The Year from the Utah Local Government Trust.
**OPERATIONS**

**Operation Program to Meet Design & Operational Objectives**

The Generating Station is staffed with two full-time employees, that are on call 24/7. The Facility was designed for automated callouts for both warning and alarm conditions. The warning and alarm conditions monitor the vacuum, temperature, gas pressure, flow, customer operating conditions, gas quality and equipment performance. Standard operating procedures have been developed to ensure the safety of our operations and compliance with all applicable environmental regulations, federal pipeline safety regulations, and applicable state and federal occupational health and safety regulations. Additionally, remote monitoring provisions were incorporated to allow the operators to observe the current status of the Facility, the LFG Management System, and the customers from their home.

**Employee Health & Safety Programs / Training**

Granger has an established health and safety program. Granger uses state of the art technology to provide associates with safety training via the internet. This training entails a series of education and evaluation programs as well as interactive involvement in establishing standard operating procedures and work practices that ensure a safe working environment (http://www.grangersafety.com). In addition, all Granger associates are provided first aid and CPR training. All of Granger’s Utilization Facilities are smoke-free and have strict alcohol and drug screening programs.

**Landfill Gas Collection and Management Facility Expansion – New Programs for Future**

The Landfill Gas Management System continues to grow as the Landfill takes in solid waste from the area. In 2008, twenty-six new gas wells were added and future additions will accommodate the growth of gas production. The Landfill Gas Processing and Electric Generating facilities are designed in such a way that as the gas production and collection increases so will the processing and generating facilities. The gas compression side of the electric plant will add compression and filtering equipment to take in more fuel which can all be accommodated by the building’s current footprint. As landfill gas fuel is collected at increased volumes, the electric generating side of the plant can be expanded at one end. This expand-ability allows a fourth, fifth and six engine to be added in future years generating more renewable electric supplies, and off-setting more carbon-based electric generation in the Salt Lake Valley.
The following equipment is utilized in the approved treatment system at the Processing Facility:

• Scrubber tank with scrubber pad for gas dewatering

• One Model 19LE rotary vane Ro Flo compressor with 250 HP motor

• One GEA radiator style aftercooler

• One Anderson vane separator

• Coalescing filter with 0.3-micron fibeross cartridges for removing particulate from the gas

• Pnuematech refrigerant dryer for final moisture removal from fuel, and temperature control for optimum combustion

The following equipment is utilized in the generation of FERC approved renewable electric power:

• Three Caterpillar G3520C engine generators, each rated at 1600 KW

• Three GT# 3210H radiators for cooling the engines and tempering the engine room

• Two AS-600 Dynapure / crankcase vent fans for evacuating each engine's crankcase of exhaust and combustion products

• Three SMS brand vertical exhaust silencers for sound attenuation and emissions control

• 18 wall and roof louvers and dampers operate in concert to manage room temperature, air balance, and combustion air.

Each piece of equipment provides a specific function in the treatment process and Granger monitors various parameters at each piece of equipment on a scheduled basis to determine that the equipment is performing its intended function properly.

Granger operations staff observe and document the operation of the treatment system on regular intervals. If an operator observes that equipment is operating abnormally, or if an operator observes/documents that an operating parameter is out of its recommended/normal range, a maintenance action will be taken. In general, if any part of the treatment system is out of service or operating out of tolerable ranges, Granger will take immediate steps to bring the equipment back into service or tolerable ranges within 24-72 hours. If a piece of equipment in the treatment system is observed operating within tolerable ranges, but in need of preventative maintenance, then Granger will schedule maintenance activities within 60 days.

Documentation of all maintenance activities on the treatment system are kept on–site including, at a minimum, the equipment description, the type of maintenance performed and the duration of time required to complete the maintenance.

Granger monitors various parameters at each piece of equipment on a scheduled basis to determine that the equipment is performing its intended function properly.
**Condensate Knockout Tank**

This vessel functions very similarly to a civil engineering designed manhole/pump station. Wet gas flows via headers pipes into this tank. Due to the diameter of the tank, the gas slows down and condensate droplets form and fall to the bottom of the tank. Collected condensate in the tank is pumped by one of two pneumatic pumps to the landfill leachate collection system. Pressurized air for the pneumatic pumps is directed from the Processing Facility. On a weekly basis, Granger staff observes that the regulators for the pumps are indicating that air pressure is available to the pumps. They observe that the counters on the pneumatic pumps indicate that the pumps are cycling and note that the condensate is being pumped from the knockout tank to the leachate collection system.

**42-inch diameter carbon steel scrubber tank with mist pack** – This vessel has the same function as the condensate knockout tank—liquid removal. Wet gas flows from the plant header pipe under vacuum into the scrubber vessel. Due to the diameter of the tank, the gas slows down and condensate droplets form and fall to the bottom of the tank. Additionally, a fiber mist pack is installed horizontally at approximately ¾ the height of the tank. As the wet gas flows through the fiber mist pack, smaller droplets are forced into contact with larger droplets and eventually the droplets reach a size where they fall to the bottom of the tank. Condensate collected in the bottom of the tank is automatically drained directly to the Landfill leachate collection system. On a daily basis, Granger staff observes the differential pressure across the scrubber tank. They also observe liquid levels in the scrubber tank via a site glass to verify that auto-drains are functioning properly.
**EQUIPMENT UTILIZED**

**1 Sliding Vane Compressor**

*Ro-Flo sliding vane compressor, 250 HP* The rotary vane compressor moves the gas. It applies a vacuum to the wellfield and provides pressure for the landfill gas treatment system and end uses. The compressor is powered by an explosion proof 250 horsepower electric motor. It has a lubricating device which is shieved off the compressor shaft that lubricates the compressor vanes and the bearings. Granger uses a rotary vane compressor because it is mechanically simple and extremely reliable. If the electric motor is running and the lubricator is working, the compressor operates. On a daily basis, Granger staff observes and documents the differential pressure drop across the vane separators. An operator also observes the operation of the electric motors and compressors, listens for sounds that are out of the ordinary and feels bearings for significant changes in vibration or temperature. An operator records vacuum and pressure readings on both sides of either compressor as part of the daily routine.

**Anderson vane separator for removal of compressor lube oil and liquids** – The separator removes water droplets and oil from vanes from the gas. Gas enters a separator through one flange, passes through and is redirected by vanes in the vessel to a second flange where it exits. Liquids collect in the bottom of a vane separator and are automatically drained to the oil/water separator vessel. On a daily basis Granger staff observes and documents the differential pressure drop across the vane separators. Also daily, Granger staff observes liquid levels accumulated in the vane separator vessel via a site glass.

**1 Vane Separator**
Compressor aftercooler provided by GEA Rainey – The purpose of the aftercoolers is to cool the gas. The gas flows through the aftercooler tubes. While the gas is flowing through the tubes, a fan blows air over the tubes. On a daily basis, Granger staff observes and documents the temperature and pressure drops across the aftercoolers. An operator observes the operation of the fan motor, fan and drive belts documenting abnormal sounds or operating conditions.

1 Compressor Aftercooler

Pneumatech coalescing filter with 0.3 - micron coalescing filters for filtering the gas
The coalescing filter removes moisture from the gas. Gas enters the coalescing filter through one flange, passes through filters and exits though a second flange. Liquids collect in the bottom of the coalescing filter and are automatically drained to the oil/water separator vessel. On a daily basis, Granger staff observes and documents the differential pressure drop across the coalescing filter. Also daily, Granger staff observes liquid levels accumulated in the coalescing filter vessel via a site glass.

LFG Filtration Equipment
Pnuematech refrigerant fuel gas dryer – The dryer is the most technically elaborate piece of equipment in the treatment process. The purpose of the dryer is to cool the landfill gas below the dew point of any moisture carried in the gas and then return the gas to its approximate original temperature. Like most cooling systems, the dryer has compressed refrigerant that needs to be operating within pressure and temperature ranges. On a daily basis, Granger staff monitors and documents refrigerant temperature and pressure in the dryer as well as gas temperature and pressure prior to and after the dryer. Additionally, an operator visually observes and listens to the dryer compressors documenting abnormal sounds and vibration.

Oil / Water Separator Vessel – The vessel automatically separates entrained oil that is carried over from the compressors from the condensate being removed from the gas stream. The vessel separates oil and water by retention times and a baffle. Two level controls, one on the water port and the other on the oil port, are set to dump at a specific gravity, allowing the appropriate fluids to exit. This operation ensures that the wasted oil can be recycled and that it is not improperly discharged to the leachate treatment facility.
Utilization of Equipment / Systems & Technologies

EQUIPMENT UTILIZED

Metering Equipment

“State of the Art” Communication, Monitoring, & Control Equipment

Engine

Three Caterpillar 3520 Engine Generators – This unit consumes the compressed gas and drives an electric generator that produces power. The engine is similar to a diesel engine, but the timing, cams, manifold and fuel deliveries are changed in order to accept landfill gas as its primary fuel. The electric generator converts this engines’ mechanical energy into electrical energy that is sent to a transformer and then plugged into “the grid” as useable power. Each engine produces 1.6 megawatts worth of electrical power.
EQUIPMENT UTILIZED

**Engine Radiator**

*Three General Thermodynamics Engine Radiators* – This unit functions similarly to an automobile radiator, on a larger scale. The radiator is connected to the engine cylinder head where water glycol coolant is pumped directly. The radiator removes the fluid heat by cooling it with a large, 15HP fan.

**Silencers**

*Three SMS Model SM2 Silencers* – The silencers take the exhaust air from the engines and slow it down to reduce noise. The silencers do this by utilizing multi-chambers and non-resonant tube arrangements that allow the exhaust gases travel between them. This creates a reversal of flow and develops a calculated amount of backpressure.
Overall Site Appearance – Exterior

Beautiful views of the Rocky Mountains rise above the Generating Station. The landscaping and exterior building designs of the facility take inspiration from the surrounding natural beauty. The exterior of the building has a commercial rather than industrial appearance and complements the existing landfill building structures. This was accomplished by matching primary and accent colors to existing buildings and utilizing aesthetically pleasing materials such as split-face masonry, aluminum trim and floor-to-ceiling windows. Site landscaping is consistent with the desert climate and Salt Lake Valley species. A local landscape architect selected indigenous plants to achieve the desire for commercial frontage, while balancing the nature of the region.

Photos: (From top left) The front of the station, the front entrance of the facility, and a view of the facility and surrounding natural beauty.
**Overall Site Appearance – Interior**

The appearance and design of the interior of the facility were also taken into great consideration. The facility is divided into different areas designed to perform particular functions. These areas include: LFG Processing Room, Control Room, Engine Room, Storage Room, Work Room, Rest Room, Office and Conference Room. This specific building design caters to community outreach by allowing ample space for tour groups and community education. In particular, the Conference Room was constructed within the landfill gas processing building for use by community groups, schools, churches, and professional organizations that promote sustainability and environmental stewardship. The Trans-Jordan Landfill has taken advantage of this building design to continue its active promotion of community training and outreach; a core value of Granger as well.

*Top: The design of Granger Electric of South Jordan.*

*Right: Facility Conference Room.*
OUTSTANDING PROJECT ATTRIBUTES:

Overcoming Project Barriers

Project barriers were frequent throughout the length of this project’s development and construction. These barriers included lengthy negotiations that resulted in dead ends, as well as negotiating with a large scale utility to transmit power to a municipal utility. In the end, Granger and its partners were able to overcome these barriers through determination and the creativity to seek out alternative solutions.

Air Permitting and Emission Offset Credits

In Utah’s non-attainment area, Granger was expected to pay $500,000 - $750,000 worth of emission offsets due to the installation of the three engine generators at the Generating Station. Granger & Trans-Jordan worked together with the support of Utah’s government, to set operational limits with aggressive emission factors, that resulted in a combined landfill and generating station permit without a requirement to pay for any emission offset credits.

Community Outreach

Granger and Trans-Jordan Landfill both highly value community outreach and public education. Subsequently, the Generating Facility has been designed and built to incorporate unique opportunities for the surrounding community. The building is suitable for tour groups, and the conference room is open for the use of community groups, schools, churches and professional organizations that promote sustainability and environmental stewardship.

Public Private Partnership

Murray City Power, a government entity, saw the environmental benefits and long-term cost viability of the power and used this insight to purchase electricity from a second landfill gas recovery project. Through the determined partnership between a landfill owner, a landfill gas developer, and a locally owned utility a successful project was developed.
Murray is plugged into renewable energy

By Rebecca Palmer
Deseret Morning News

Published: January 27, 2008

MURRAY — The mayor of this east-side city of about 46,000 calls himself a closet environmentalist.

Dan Snarr has quietly pushed for renewable energy sources for Murray's municipal power corporation during his 11-year tenure and plans to look for additional environmentally friendly sources of power in the future, he said.

His reasons are two-fold: First, Snarr is concerned about pollution and global climate change, he said.

"Everybody who has an opportunity to be a better environmental steward should step up and do what they can in their own little way," said Snarr, who has headed Murray for the past 11 years. "If everybody stepped up and tried to do just a little bit we would have a better environment to live in."

Second, Snarr believes that soon, municipalities will be required to use renewable energy sources by either state or federal mandate. The mayor believes getting ahead of the curve and investing in renewable resources now will save his residents money in the future.

"We've stepped up and tried to go green more than any other municipal power department in the state of Utah," Snarr said.

Cities will one day be scrambling to get their hands on existing renewable energy sources, predicts the mayor, a one-time Utah Power employee. When the mandates are in place, Murray will be set.

Based on the "supply and demand" principle, Snarr has called Murray's $550,000 investment in a landfill methane electricity generation facility near Bingham Copper Mine a wise investment. Murray's money will go for interconnection lines, and the city will buy some of the power created by the plant, Snarr said.

"Even if it costs a little bit more, over the long haul it will be a good price," he said.

Murray is already getting power from a landfill methane power plant at the Salt Lake County landfill. If the methane were not burned in order to create electricity, the methane would simply be flared or would rise into the environment, said Murray Power general manager Blaine Haacke.

"I think Murray has kind of set the standard," Haacke said. "We're proactive on this."

The mayor has had the support of a "green" City Council and has relied on the progressive thinking of officials in the power corporation to get ahead of the curve, he said during a recent State of the City speech.

By November, 36 percent of Murray's power will come from renewable resources, Snarr bragged. By then the city will be getting about 10 percent of its power from methane.

The other 30 to 40 percent will come from hydropower facilities in Big Cottonwood Canyon and the Colorado River Basin, Haacke said.

Besides helping the environment and driving down long-term costs of electricity from renewable energy for residents, Murray is getting money from corporations by selling them so-called "Green Tags."

The city owns the renewable energy certificates because of its investment in renewable energy, Snarr explained. Companies can buy the tags at $3 a pop to show that they want to support environmental energy policies.

"Whatever we can do to make our world a better place, let us step up and do it," Snarr said.

E-mail: RPalmer@desnews.com

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The power of green
Murray City Power chief nurtures eco-friendly mind-set

By Jeremiah Stettler
The Salt Lake Tribune
Salt Lake Tribune

Politically, he is cut from conservative cloth. But Blaine Haacke seems liberal green when it comes to power - Murray City Power, that is.

The newly appointed manager of Murray City Power is shepherding his suburb toward a greener power supply - garbage.

Murray soon will harvest 4 percent of its electricity from methane gas discharged from the TransJordan Landfill.

The city already has inked the deal and now awaits the power plant’s completion in December 2008.

Haacke is following his predecessor’s footsteps. Former manager Gary Merrill championed the city’s first methane contract at the Salt Lake County landfill, which now generates about 3 percent of Murray’s electricity.

But Haacke - who allied with Murray City Power’s Dan Stireman to negotiate the latest methane contract - said green power has become a personal passion.

That means solar power, windmills and geothermal energy will get more than a passing glance under Haacke’s administration, the manager said.

That mind-set - shared by municipal leaders like Mayor Dan Snarr, who described himself as a "closet-green guy" - has won plenty of kudos from environmental groups such as the Sierra Club, which has applauded Murray as one of Utah’s most progressive power suppliers.

"They are way out in front of everybody on this issue," said Tim Wagner, director of the Sierra Club’s Utah Smart Energy Campaign.

Haacke’s beginnings in municipal power came from the treetops, trimming tree limbs for Bountiful’s power department. It was a part-time job, working for the same power company as his father.

But the young Haacke’s long-term aspirations lay in teaching. He earned a bachelor’s degree in secondary education at the University of Utah and student-taught math and English at Kearns Junior High.

That’s as far as Haacke’s teaching career went. He discovered a more enticing career - with better pay - as a power purchaser at Bountiful City Light & Power.

Haacke spent 11 years in Bountiful before migrating south to Murray. In June, after eight years with Murray City Power, he was named department head.

"He is a very humble, but very brilliant manager of Murray City Power," Snarr said. "He knows the business."

Haacke, a Republican, hopes to introduce even more renewable energy during his tenure - a position he believes shouldn’t be defined by political affiliation. Rather, he said, environment-friendly energy is broadly supported by residents.

A recent survey showed 49 percent of Murray customers would support a rate boost to bolster the city’s reliance on renewable energy.

While methane-fueled electricity costs more than traditional coal-fired resources - about 7 cents per kilowatt hour compared with 5 cents per kilowatt hour - Snarr believes the demand only is rising.

Nearly two-dozen states already require utilities to rely on renewable energy for a portion of their power.

"The only thing I learned from ECON101 is supply and demand," Snarr said. "If demand is high and supply is low, the price goes up. At some point, there is going to be a scramble for renewable resources."
When it happens, Murray will be "miles ahead of everyone else," the mayor said.
"You've got to have the environmental mind-set," Haacke said, "the willingness to do the abnormal."

jstettler@sltrib.com