Gundersen’s Envision® Program: A Vision for Energy and Environmental Stewardship

HISTORY

Gundersen Health System is a comprehensive not-for-profit healthcare system including one of the nation’s largest multi-specialty group medical practices, a teaching hospital, regional community hospitals and clinics, behavioral health services, vision centers, pharmacies, and air and ground ambulances.

“We did not set out to be the greenest health system. We set out to make the air better for our patients to breathe, control our rising energy costs and help our local economy. We believe we have made more progress on all three than anyone else in the country.”

Jeff Thompson, MD
Chief Executive Officer, Gundersen Health System

Today, the Gundersen System comprises a 325-bed tertiary care hospital, 27 medical clinics, 830 providers, and 7,600 employees. Facilities are located throughout western Wisconsin, northeastern Iowa and southeastern Minnesota caring for patients in 19 counties.

Gundersen has been named among the Top 100 in the nation time and time again.

THE ENVISION PROGRAM

In 2008, CEO Jeff Thompson and his management team, facing a number of factors including demand for new facilities, an energy bill of $5.3m with energy use increasing at about 4% per year, and demand for affordable healthcare, set a series of goals to reach energy independence while supporting the Gundersen mission. The result was the Envision Program, which was established with the following objectives:
• Energy independence by 2014
  - Produce more power than they consume from fossil fuel sources
  - Improve the environment
  - Benefit human health
  - Reduce energy costs, which translates to more affordable healthcare delivery
  - Rely on local resources and support the local economy

In order to achieve these goals, CEO Thompson assembled a technical staff led by several ex-Trane employees including program Executive Director Jeff Rich to launch the Envision Program, which comprises the following plan:

**THE PLAN**

1. Energy Management
   A. The first phase of the Energy Management program consisted of energy conservation projects which provide the best returns, with many opportunities for quick successes, and builds credibility for investment to expand other phases of the plan. Gundersen engineers conducted audits of all facilities and identified the largest opportunities, 90% of which existed in six buildings.

   The goals of this phase were to:
   - Support their mission: reduce emissions to improve the environment and improve health
   - Purchase Biogas locally to support the local economy
   - Save money
   - Build employee pride
   - Make healthcare more affordable
   - Reduce waste

   Projects included new data center design to reduce cooling loads, lighting retrofits reducing energy costs by $265,000 per year, boiler economizers and AHU duty scheduling.

   However, they quickly learned that “you can't reduce your way to zero”. In other words, they realized they had to undertake more innovative projects to focus on renewable resources.

B. The second phase of the Energy Management plan consisted of a range of Renewable Resource Projects based on the following principals:
   - Renewable Projects can have longer paybacks
   - Utilize partnerships to optimize paybacks and take advantage of available tax credits
   - Use LLC's and wholly owned or joint ventures to reduce risks, increase the value experience, take advantage of tax opportunities and meet regulatory requirements
   - Diversify risks through multiple projects utilizing proven technologies in multiple locations including wind, landfill gas, biomass boiler, geothermal and biogas dairy (See specific examples later in this report)

   In 2009 Gundersen formed GL Envision, LLC, a for-profit LLC to own and manage their renewable partnership projects.

2. Waste Management and Control
   Gundersen challenged staff in all segments of their operations to identify waste management opportunities. Projects included:
   - **Food waste reduction.** Reduced food waste by 80%, with $34,000 annual savings
   - **Hazardous pharmaceutical waste reduction.** Reduced pharmaceutical waste at a ratio of 14:1 from the baseline set in 2010

3. Recycling/Reuse/Remanufacture
   Gundersen has proven it pays to recycle. They save more than $36,000 on waste hauling costs annually. Their recycling projects include:
   - **Paper and cardboard recycling.** Recycle 477 tons of paper and cardboard in 2012
   - **Cans, bottles, batteries, x-ray film, surgical blue wrap, metals and pallets**
   - **Toner cartridges remanufactured and resused saves the organization more than $130,000 annually**
   - **Waste stream management operations and construction.** Recycling saves $70,000 annually. Construction waste reduction programs diverted 90% of construction waste from landfills
   - **Remanufacturing/Reuse of devices saves $419,000 annually**
4. Sustainable Design and Commissioning

Having completed a number of new construction and remodeling projects in recent years, Envision program staff and facility engineers have learned they can’t assume new buildings are efficient. In fact, some of their newest buildings were the most inefficient. They learned the owner has to take an active role in:

- Aligning incentives for designers and contractors
- Focusing on the new facility commissioning process

RENEWABLE ENERGY PROJECTS

Following is an overview of the important renewable projects completed by Gundersen and their partners since 2008.

Solar Projects
La Crosse campus underground parking ramp. Leed certified lighting for parking garage.

Day care center La Crosse supplies 85% of hot water needs.

The Renal Dialysis center in Onalaska produces hot water for dialysis center reducing natural gas consumption.

Wind Projects
13MkWh in Cashton, Wisconsin and Lewiston, Minnesota. (2 x 2.5 MW turbines at each site).

Biomass Boiler
Wood chip boiler on La Crosse hospital campus. Uses locally sourced wood chips. Produces 2,250,000 kWh annually and 1,500,000 therms of heat. Payment for wood chip fuel to local mills is $800,000.

Geoxchange/heat pump
156 400-foot deep wells under the parking lot at main campus to heat and cool new hospital building at main campus.

Landfill Gas Project
In partnership with La Crosse County, piped methane gas under highway I-90 to north campus. Produces 8,000,000 kWh annually. Payment for gas to the county is $250,000 annually and 115,000 therms of heat.

Dairy Manure Digester projects
Partnered with dairies in Middleton and Sun Prairie, Wisconsin on 16MkWh and 5MkWh projects respectively. Removes phosphorus from groundwater, generates power to the grid, composted fiber byproducts are used as animal bedding or soil amendment.

Envision Service
Gundersen’s Envision team has amassed years of professional experience with successful healthcare project implementation. They are now offering their expertise to other building owners through outreach services comprising new facility energy design reviews, renewable energy planning, energy six sigma training, leadership workshops and seminars.
LESSONS LEARNED

- Focus on energy efficiency first
- Each renewable technology has pros and cons, so diversify your investments
- Use local resources wherever possible (wood chips, manure, and landfill methane)
- Take time to conduct due diligence and feasibility analysis, they are worth the investment
- Sometimes you can do more with partners than by yourself

REFERENCES

Jeff Rich
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Energy service outreach.

What does SUSTAINABILITY mean to businesses?

The most commonly used definition of Sustainability incorporates the precept of "meeting the needs of the present without compromising the ability of future generations to meet their own needs." This is a pretty far reaching statement and is not particularly helpful to businesses driven by production goals, quality improvement, increased efficiency and cost cutting. As we talk to those business leaders already engaged in sustainability efforts, the terms they tell us include:

(1) consider the entire life cycle of the product and of physical assets;
(2) consider the effect on the community infrastructure;
(3) environmental solutions must have a business purpose and bring value to the business;
(4) you must have passion for it and enable staff to be innovative.

We've found sustainability is a very broad subject incorporating product design, procurement, production, packaging, logistics, facilities design and operation, safety, health, leadership, employee involvement and community support. We've also learned that while companies exhibiting best practices may not hit every one of those marks, they get pretty close. So choose a definition that best suits your business, but know that the companies we've talked with are successful partly because of their passion for sustainability, not in spite of it.