Changing Corporate Energy Culture: The Corning, Inc. and NYSERDA Partnership

Peter Garforth, Garforth International[1]
Joanna Gomez, Scott Smith, and Miriam Pye, NYSERDA
Patrick Jackson, Corning, Inc.[2]

ABSTRACT

The New York State Energy Research and Development Authority (NYSERDA) and Corning Incorporated (Corning), a major multinational corporation headquartered in Corning, New York, have a partnership that dates back over eight years. NYSERDA and Corning have coordinated on a growing range of energy-efficiency projects including lighting system retrofits, ventilation upgrades, HVAC upgrades, and high performance building design. The latest NYSERDA/Corning collaboration is GEM, a Global Energy Management initiative. This initiative is focused on managing energy use and costs, and reducing greenhouse gas emissions across Corning's facilities. NYSERDA is helping Corning create a more focused approach to managing energy use and costs through the GEM initiative at Corning's New York State facilities. This initiative is being achieved by coordinating energy procurement, investing in energy related capital projects, and implementing multiple low-cost energy efficiency programs, along with new management processes that ensure long-term continuous improvement.

This paper will discuss NYSERDA and Corning's eight-year relationship and update the progress of the New York State pilot of GEM. The overall GEM approach will be outlined along with specific "keys to success" that have been uncovered as Corning attempts to change its corporate energy culture and create strategies to reduce greenhouse gas emissions and water usage.

Summary

Corning established a formal energy policy that outlines a commitment to energy management through reducing cost, optimizing returns for energy efficiency investments, reducing greenhouse gas emissions, minimizing environmental impacts and conserving natural resources. The "energy" includes electricity, natural gas, fuel oils, combustion gases such as nitrogen and oxygen, water and waste water. The productivity goal for 2007 has been set; Corning hopes to save 134,000 MMBtu in energy which would represent about $2 million in cost savings. This will be achieved by updating the efficiency of a number of buildings, rehabilitating parts of the existing heating distribution system, eliminating inefficient boilers and installing a one megawatt combined heat and power system that will provide base load heating.

As implementation widens from the New York State Pilot to the worldwide facilities, the GEM initiative will create substantial reductions in total energy use. The wider deployment of combined heat and power, heat recovery and the implementation of renewable energy supply strategies will result in a significant greenhouse gas reduction throughout Corning's facilities.

[1]Senior Consultant to Corning GEM Program
[2] Global Energy Manager, Corning Inc

The Corning GEM initiative is focused on managing energy use and costs across Corning's facilities. NYSERDA is helping Corning pilot GEM at its New York State facilities. Corning's New York State facilities account for around 25% of the company's total energy usage worldwide. These facilities include a global research center, manufacturing plants, and corporate support operations. One goal of GEM is to reduce Corning's energy use 20% to 30%, resulting in an overall annual savings of $10 to $15 million dollars. In addition to energy savings, GEM will incorporate strategies to reduce and manage greenhouse gas emissions and water usage.

NYSERDA's partnership with Corning dates back over eight years. Since 2002, Corning has participated in four NYSERDA energy efficiency programs, on a total of 19 projects. Corning has received over $600,000 in incentives over the past four years. To date, Corning installed high efficiency HVAC systems, motors, and lighting, VSDs, controls, and industrial process improvements. This has saved Corning 2 MWh and $193,000 annually over 18 sites. Corning has the potential to save an additional 3.4 MWh if they fully implement all recommended improvements from several completed studies. This would save them an additional $586,000 annually. Paybacks vary by project as low as one year and rarely exceeded five years.

Background

Corning is a major multinational corporation headquartered in Corning, New York for over 100 years with total sales in 2006 of about $5.0 Billion. Corning is noted for materials innovation, historically heavily focused in glass, but more recently on a wide range of materials. They manufacture many products, which include a wide range of –specialty ceramic filters for both gasoline and diesel exhausts, glass panels for LCD screens, fiber optic cables and scientific and laboratory glass products.[3]

Starting in late 2004 there was growing awareness of the potential competitive benefits of a more focused approach to managing energy use and costs across the corporation. Many of the businesses within Corning have high energy use in their processes and could be vulnerable to cost fluctuations or increases, reliability issues and environmental concerns regarding energy. The increasing awareness of the direct link between human use of energy, the creation of greenhouse gases, and the resultant problems of climate change clearly factored into the overall assessment of risks avoided and benefits gained. Any reduction in energy use is generally accompanied by an equivalent percentage reduction in carbon-dioxide. In many cases, where strategies include fuel switching, cogeneration or heat recovery, the reduction of carbon emissions can be an even greater percentage reduction than that of energy.

Carbon emissions were a particularly important issue in New York State where Corning has significant facilities and is a major employer. About a quarter of Corning's total 2005 global energy use was in New York. It was natural for Corning to work collaboratively with NYSERDA to develop a world class corporate energy management approach.

Just about every analysis of successful corporate energy management programs emphasizes the importance of changing the culture around energy productivity[4]. The Corning/NYSERDA partnership strives not only to ensure the competitiveness of a major New

[3] For further background see www.corning.com

[4] Multiple sources including EPA Energy Star Industries case histories and process assessment and Garforth International Owens Corning case study.

York employer, but also to be a role model and educational opportunity for other industries in New York and elsewhere in the USA.

Designing the Energy Management Process

Corning senior management chartered a multi-disciplinary team, led by a respected senior manager to prepare a White Paper summarizing various aspects of global energy and how these could impact Corning both positively and negatively in the future. Based on this initial assessment, in June 2005 Corning launched a new initiative aimed at achieving breakthrough energy productivity gains, entitled Global Energy Management Initiative (GEM). Unlike many new Corporate Energy Management programs that start with small scale projects that may or may not blossom into company wide programs, Corning decided to commit time and resources to design and deploy a rigorous company-wide process. This was developed using the DESGN Six-Sigma process design tool. This standardized approach to designing near-zero defect (so-called Six-Sigma) business processes maximizes the quality and scalability of the GEM initiative.

Building the Business Case for Global Energy Management

The GEM team assessed the internal and external opportunities and risks surrounding energy management. A key part of this initial assessment was to understand how other companies viewed energy in their overall strategic management. This benchmarking, which included companies such as Toyota, Owens Corning, BASF and others, was a key factor in helping leadership realize the potential benefits of a more rigorous approach to energy management. The following list of opportunities and challenges were identified during the benchmarking process and from today's perspective, most have become ever more relevant.

Energy related challenges

- Rising energy prices and high levels of volatility, in some cases already challenging the viability of certain facilities
- Growing awareness of climate change risks, differing regulatory frameworks around the world, and uncertainty surrounding future regulation
- Changes in global availability and demand of energy largely as a result of the rising needs of China and India
- Supply reliability and quality at a number of locations, giving rise to concerns over ancillary costs, impacts and disturbances
- Rapid growth of Ceramic Filter and Liquid Crystal Display businesses which have high energy processes which focused attention on energy cost and energy reliability
- Major customers probing the company's approach to energy management and climate change policies
- Increasing interest from board members, shareholders and other stakeholders around the management of environmental, cost and other risks of energy use

Potential energy related opportunities

- A program that could improve energy reliability and quality would reduce production defects and overall costs
- Benchmarking indicated that breakthrough (20% or more) productivity gains were possible, a crucial aspect to gain resources and long-term leadership and support
- Systematic energy management spawns multiple projects that qualify for various energy efficiency and related support programs such as those administered by NYSERDA
- Depending on future regulation and country of operation, greenhouse gas emissions trading can become a viable added value to a sound energy management program
- Benchmarking also highlighted that successful energy management programs often had a wide definition of "energy" and frequently included water, waste water, transportation fuels, and combustion gases to extend the productivity benefits

Critical Self Assessment

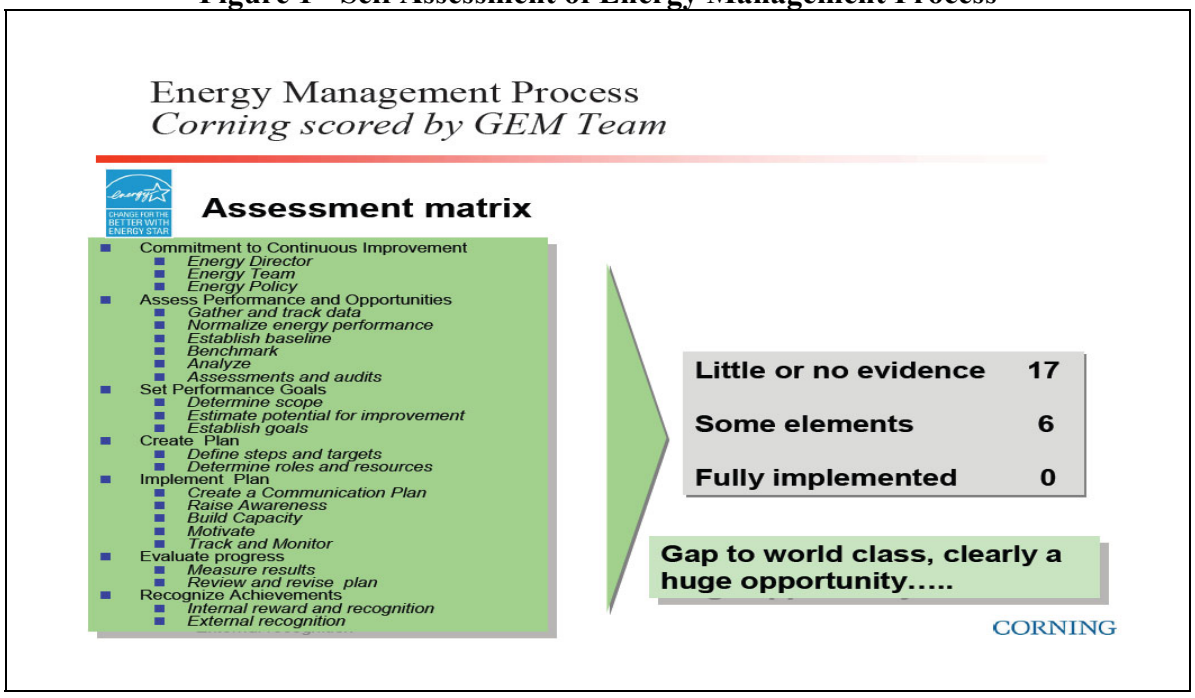
Benchmarking many successful corporate energy management programs revealed common features. Most of these are well captured in the Energy Star Assessment Matrix available from EPA's website:

(http://www.energystar.gov/index.cfm?c=tools_resources.bus_energy_management_tools_resources)

The GEM team scored themselves against this and despite pockets of excellence, the overall low score indicated there were greater opportunities to be had from high-quality energy management. The results of this self-assessment are shown in Figure 1.

From a company cultural standpoint, the importance of this critical self assessment carried out by a team representing many parts of the company's activities, from finance, R&D, energy procurement, manufacturing and facilities management, cannot be overstated. It opened up a very constructive approach to formally developing the GEM process.

Figure 1 - Self Assessment of Energy Management Process



Developing and Launching Energy Management Process

The framework for GEM was to holistically address energy reliability and costs with a clear goal to achieve breakthrough levels of energy productivity gains of 20 to 30% within three to five years. This could only be achieved by simultaneously coordinating improved energy procurement, investing in energy related capital projects, and implementing multiple low-cost and no-cost energy efficiency programs, along with new management processes that ensure long-term continuous improvement. This would clearly entail putting in place a coordinated process throughout the organization. The steps were many and detailed and only a brief summary can be included in this paper. Throughout the process design and deployment, senior management, including members of the CEO's staff, were regularly involved in reviews. This not only gave the design team the benefit of management guidance, it also ensured there was a high level of senior understanding and ownership.

A formal energy policy was established as a guiding framework for the entire corporation. The full text of the final version is given in Figure 2. Like many of the other aspects of GEM, a number of energy policies from other benchmark companies were assessed and the best elements adopted and adapted.

With a policy in place, supported by broad strategic productivity goals, the immediate key next steps were to establish basic structure, goals and action plans along with multiple other processes to ensure a successful roll-out of GEM. All of the key processes have been designed prior to the launch of GEM, allowing for a speedy deployment across a large part of the company.

Figure 2 - Corning Inc. Energy Policy

CORNING INCORPORTATED (CORNING) ENERGY POLICY

- **Applicability**
  - *This Policy applies to all the Corning worldwide operations.*
- **Mission Statement**
  - *Corning recognizes that the effective use of energy, and the resulting greenhouse gas reductions, are key factors to achieving its strategic objectives.*
- **Commitment to Energy Management**
  - *Corning is committed to be world-class in using and purchasing energy in the most productive, cost effective, and environmentally responsible manner possible.*
  - *This commitment will reduce cost, optimize returns for energy efficiency investments, reduce greenhouse gas emissions, minimize environmental impacts and conserve natural resources.*
- **Policy Guidelines**
  - *Continuously improve energy productivity through effective energy management programs that support manufacturing capabilities while providing a healthy work environment*
  - *Encourage ongoing energy conservation by all employees*
  - *Implement plans to protect operations from energy supply interruptions*
  - *Secure adequate and reliable energy supplies at the most advantageous rates*
  - *Manage energy supplies to reduce greenhouse gas content*
  - *Incorporate energy productivity in new product design, development, and manufacturing processes*
  - *Emphasize energy productivity in the selection of all equipment, goods and services*
  - *Drive further development and investment in innovative energy technologies*
  - *Engage governmental agencies and utility companies to utilize and develop effective energy productivity incentives*
  - *Support national and local energy productivity and climate change actions*
- **Policy Approval**
  - *President and CEO*

Establish Basic Organization

A senior management position, Global Energy Manger, was created and filled with a respected senior manager, Patrick Jackson, who has the explicit support of senior corporate sponsors. This high level of visibility and support was seen as an essential prerequisite to encourage the needed culture change to ensure that outstanding energy productivity management would become a corporate way of life.

The core team also includes a small staff accountable for energy data integrity, education and training, environmental aspects, especially greenhouse gas reporting, and energy commodity procurement. This team also provides many of the tools for sharing and celebrating GEM successes across the entire global company. An early GEM decision was to keep the central energy management team small to ensure the highest possible sense of divisional and site ownership.

As GEM was rolled out to each Division an individual was identified who would act as the Divisional Energy Manager, with the accountability to work with the Division's operations to develop and implement a Divisional Energy Plan that met or exceeded the corporate goals. Likewise, each site identified a local energy manager responsible for coordinating with a small local working group to create local energy actions plans. As of February 2007, all of Corning's major business units and the vast majority of sites worldwide have this basic structure in place.

An additional critical role of the central team is to provide expertise and liaison with NYSERDA resources to ensure that as projects and programs are identified that fall within the scope of the wider goals of the State, there is a seamless linkage between the site energy teams, their potential projects and the technical assistance and other support that is available through NYSERDA.

New York State as a Pilot

One of the early decisions in the GEM process was to select all the New York Facilities of the company as a major part of the Pilot Phase. Collectively they made an excellent pilot for a variety of reasons. The range of types of facilities represented a good cross-section of administrative, scientific and manufacturing locations. Table 1 identifies each division, along with its name, location and primary function.

Table 1-GEM Pilot Sites in New York State

Division	Name/Location	Description
BSD	Sullivan Park, Painted Post	Corporate central research laboratories
BSD	Corning City Campus	Corporate headquarters facilities
CET	Automotive, Painted Post	Manufacture of automotive ceramic filters
CET	Diesel, Painted Post	Manufacture of diesel ceramic filters
CET	Integrated Die Manufacturing, Painted Post	Manufacture of precision ceramic dies
CLS	Big Flats	Manufacture of laboratory devices
CLS	Oneonta	Manufacture of laboratory devices
CSM	Canton	Manufacture of specialty materials
	Steuben Glass, Corning	Manufacture of decorative glassware

The pilot sites also represent three different businesses, Corning Environmental Technologies, Corning Life Sciences and Corning Speciality Materials and the organization supporting corporate facilities, Business Services Division. These facilities are also responsible for a quarter of the company's energy use. Thus the New York Pilot not only had scale and technical diversity, it also engaged many different management teams.

Establishing Energy Baselines

One of the critical prerequisites for a successful energy management program is establishing a detailed baseline of all the energy types that are to be included. During the design of GEM, the team decided that "Energy" would include electricity, natural gas, fuel oils, combustion gases such as nitrogen and oxygen, water and waste water. Corning is a complex multi-national corporation that has traditionally adopted a decentralized and somewhat fragmented approach to energy management. As a result, establishing accurate baselines, along with an ongoing data collection and reporting system, is a major task and some degree of data validation and refinement is still in process approximately one year after the launch of GEM. This time frame is common in the experience of many of the benchmark companies.

In the case of the New York State Pilot, detailed data was established for each site, which is confidential to Corning. Table 2 presents a roll-up of Corning's energy use in New York State.

Table 2-Gas and Electricity Use in New York State

Site	Elect MWh	Gas MMBtu	Total MMBtu	Estimated Cost
All NYS	255,119	1,802,453	2,672,919	$39 M

The overall use of gas and electricity alone in the New York in 2005 was about $39M, with a further $2M of energy costs associated with other commodities including water. Since the initial launch of GEM, the 2005 energy baseline has been established for the entire company. Maintaining and updating the worldwide energy consumption is critical to success and the entire process is supported by dedicated inside resources and a professional third-party energy services company.

In 2007, some further information system investments will be made to ensure there is absolute reliability in the energy baselines and ongoing reports. Data integrity is one of the keys to ensuring corporate energy management program credibility.

Setting Operational Goals

As GEM launched, there were few detailed energy productivity actions in the pilot sites, so the challenge of goal setting immediately came to the surface. The decision was made that, in the absence of detailed goals, the initial goals would be set at 5% productivity gain for the first full year. The commitment was made by senior management that these initial directional goals would be realigned in the second and subsequent years, based on specific action plans and investments.

This approach can be controversial in an engineering-oriented company, and represented a significant cultural challenge. The role of the benchmarking data from other respected market-leading companies was crucial to gain credibility and acceptance of these initial goals. In addition, each site was assigned process goals to establish basic organizational and training structures for energy management and to develop the first action plans.

Thus in the case of the New York facilities, the overall productivity goal for the full year of 2007 will be an energy efficiency gain of about 134,000 MMBtu representing savings of about 5% savings in the $2M range referenced to 2005.

Establishing Site Action Plans

Through a variety of auditing approaches, each site has developed an action plan in a standardized format that covers the three main dimensions of energy productivity – improved procurement, capital projects in efficiency and low-cost programs involving changes of management practice.

Figure 3 shows an edited example of a site action plan and status report for Corning Life Sciences Big Flats Factory, one of the New York Pilot Facilities. It is not Corning's policy to publish energy usage and project details for individual sites; however a small amount of data was left in to give a flavor of a typical site action plan summary. This one-page overview includes the Site and Divisional energy costs savings targets for the year. It lists projects that are in the implementation phase with an indication of progress. The pipeline of projects (Approved, Proposed and Possible) are summarized, the Low-Costs/No-Costs programs are summarized again with an indication of deployment status.

Figure 3-Typical Format for Site Action Plan

GEM Site Status Report

	Area (Sq Ft)
Division: CLS	266,766
Site: Big Flats	
DEM: Joe Doe	
SEM: Jane Doe	
Site Team: *Members*	

Corporate Goal: 20-30% productivity improvement in 3-5 years		
Site Target (MMBtu) =	2,248	**$ 60,040**
Division Target (2007) (MMbtu):	11,242	
Div/Site Target (2008) (MMbtu):	5% : 7,635 / 2,097	

Project Active	**Status** (R./Y/G)	**Comments**
Install Prime Air heat exchanger for CHW free cooling	Y	
Remove one Bowman Lehr	Y	
Add onto Tracer Control System	Y	
Design & Install control system on Bowman lehr	Y	
Install controls on BF Plant exhaust fans	Y	

Productivity - Goal vs Actual ($/USOP ie pieces)	**Status** (R./Y/G)
	G
Productivity - Goal vs Actual ($/Sq Ft)	G

	2006	***2007 YTD***
$ of Energy	$ 895,234	$ 60,892
USOP	$ 58,135,051	$ 4,839,196
Productivity	*0.0154*	*0.0126*

	2006	***2007 YTD***
$ of Energy	$ 895,234	$ 60,892
Bldg Area	266,766	266,766
Productivity	*3.3559*	*2.7391*

	Status			
GEM Capital Projects (approved)	**Dollars Requested**	**Forecast Spend**	**Variance**	**Comments**
Project A	$	$	#VALUE!	
Project B	$	$	#VALUE!	
			$0	
GEM Capital Proposed	**- What's In the Works**			
Project C			$0	
Project D			$0	
GEM Capital Proposed - Possibilities				
Project E		TBD	#VALUE!	
Project F			$0	

Low Costs/No Costs	**Status** (R./Y/G)	**Estimated Savings**
Operational Programme 1	G	$ 10,000
Correct Billing Mistake	G	$ 2,416
Operational Programme 2	Y	
Raised ambient low temperature cutout from 25 to 40 degrees	G	1000

Utilities Supplier (electricity, natural gas, water, waste water, propane, etc.)	Third Party Supplier	Who from Plant Handles This/These Vendor(s)	Contract in Place?
NYSEG (Electric)	Constellation	Jane Doe II	Y
NYSEG (Natural Gas)	Sprague	Jane Doe II	Y
Town of Big Flats (Water)		Jane Doe II	
Well			
Town of Big Flats (Sewer)		Jane Doe II	

P&T Comments

Overall Comments

Need more Low Costs/No Costs Projects. DEM/SEM/to establish stretch objectives for productivity goal.

The overall energy productivity indexes are also summarized, in this example as energy cost per unit of saleable product (UoSP) and energy costs per square foot of facility. In GEM each major Business Unit defined a relevant productivity measure. The utility relationships are summarized along with any specific actions around improving the contractual or billing relationships either for cost or reliability reasons.

Create Adequate Capital Resources

There is a wealth of data going back years proving that well designed investments in energy productivity consistently deliver financial returns that meet or even far exceed most companies' investment hurdles rates. Further, they do this with far less risk than many other business investments. Despite this, probably the most commonly heard barrier to the successful implementation of corporate energy management programs is the lack of available capital.

GEM recognized this risk from the external benchmarking studies, and included a significant amount of capital at the start of the pilot centrally managed by the Global Energy Manager's Team. This is dedicated specifically to energy productivity projects. The major purpose is to ensure early projects identified by site teams can be funded in order to encourage active and rapid engagement in GEM.

In the pilot year of 2006, this fund approved requests for a little over $2.5M for projects that will deliver over $2M of annual energy cost saving or a return on investment (RoI) in excess of 80%. The investments also included some projects that were primarily aimed at improving reliability or were to gather more precise energy data. These latter projects do not immediately yield energy savings, so the real returns on the saving projects alone were probably closer to 100%. The majority of these were in the New York State Pilot, though even at this early stage, sites that were not formally in the pilot were enthusiastic about becoming involved. Most projects have been completed and are already delivering their energy cost savings, reliability and environmental improvement.

The quality of the returns and the active engagement of the pilot teams encouraged Corning to double the size of the GEM capital pool for 2007 to $5M. A third of this has already been allocated, about a half has requests pending and 20% remains to be allocated. The RoI on the 2007 projects are expected to be as attractive as those in 2006. Deploying this focused pool of capital is being termed "Spend for Efficiency" and is becoming a visible symbol of the value of investing money and effort in energy productivity.

This GEM capital pool was put in place to ensure projects that might not have been funded in the normal course of business would proceed. The GEM process is also launching other projects that are being assessed as "normal" business investments. Among many moving forward early in the GEM process, one is the complete rehabilitation of the aging steam heating system that supplies a number of buildings on Corning's Headquarter Campus in New York.

This project will update the efficiency of a number of buildings, rehabilitate parts of the existing heating distribution system, eliminate inefficient boilers and include a one megawatt combined heat and power installation that will provide base load heating. This project will reduce annual energy costs by about $600,000, improve both heating and electrical reliability on the headquarters campus and reduce 980 metric tons of greenhouse gases per year. Investment for this single GEM project is less than $5M with very attractive returns. If, in the future, the greenhouse gas reductions can be monetized, the returns are further enhanced.

Creating the Basis for Greenhouse Gas Management

As implementation widens from the New York State Pilot to the worldwide facilities, GEM will create substantial energy productivity gains and improvements in supply reliability. The reductions in total energy use, and the wider deployment of combined heat and power, heat recovery and the implementation of renewable energy supply strategies will also reduce the overall greenhouse gas footprint of Corning. To ensure this is accurately and credibly tracked, Corning became a member of the California Climate Action Registry during 2006 with the aim to register an externally audited baseline for all global emissions.

The 2005 world-wide inventory was developed using the California Registry Protocol which follows the principles of "The Greenhouse Gas Protocol" published by the World Resource Institute/World Business Council for Sustainable Development. This company-wide inventory includes emissions from the following sources:

- Direct emissions of carbon dioxide from stationary combustion of fossil fuels;
- Indirect emissions of carbon dioxide from the use of electricity;
- Direct emissions from manufacturing or processing of chemicals and raw materials;
- Fugitive emissions resulting from the intentional and unintentional releases of hydrofluorcarbons (HFCs and PFCs);
- Direct mobile emissions resulting from aviation fleet.

The report covers 2005 GHG emissions under Corning's management control from both direct and indirect emissions for six greenhouse gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6). These emissions have been independently verified by third party. The total baseline is 1,002,457 Metric Tons, of which 721,532 Metric Tons are indirect.

At a minimum, the percentage reduction in greenhouse gases will be the same as the overall reduction in energy use. However, the high percentage of indirect emissions underlines the need to consider the entire energy value chain which significantly changes the perspectives around strategies such as cogeneration, heat recovery and renewable electricity sourcing.

Teaming with NYSERDA

As has been touched on throughout this paper, the partnership between NYSERDA and Corning has been an ongoing element of the development and early deployment of the GEM process. NYSERDA has an interest in ensuring Corning makes positive contributions to the overall energy efficiency of New York State, that they remain a competitive employer, and that their experiences are available to other New York companies wrestling with the same issues of energy efficiency. Corning has similar interests, and additionally clearly sees NYSERDA as a world-class source of technical assistance, networking to other energy related resources and, where appropriate, specific project support.

As mentioned earlier, the GEM team has assigned some resources to ensuring there is good expertise available for all the GEM sites to gain access to the potential resources of NYSERDA. NYSERDA has two people who act as the main points of contact to the agency. In this way, NYSERDA will always be up to date on the growing range of energy efficiency projects expertise and management learning coming from the deployment of GEM.

Since the start of this more structured teaming relationship, Corning, with NYSERDA's support, has agreed to provide full documentation of the GEM process design, deployment, learnings and results to assist other companies in New York design and develop their own programs. As part of this transfer of knowledge, a detailed narrative report in 5 parts will cover the first two to three years of the deployment of GEM.

In addition, NYSERDA and Corning have cooperated on a growing range of specific efficiency projects including:

- Efficient Fan Control – a two phase project to achieve major energy saving at the central research facility
- Efficient lighting system retrofits
- Energy efficiency renovation of the Decker Headquarters building – a sub-project that is a part of the totally integrated approach to the Corning campus energy system referred to

earlier. The aim is for the renovated building to meet the levels needed for LEED certification.

- Occupancy sensor projects in Corporate Research centers
- Efficient ventilation upgrades in the headquarters building
- Assisting in the design of an efficient new childcare centre for employees
- Assisting Big Flats in making smart equipment choices for lighting and HVAC systems

Most recently, Corning and NYSERDA teamed to define the content of a high visibility global energy summit that will be held in New York State for senior managers from throughout the world. As a result of the teaming relationship, the summit will now include an extra day where the community will be invited to join a broad program of information on successful approaches to implement energy efficiency. Approaches like this are a great example of how effective public/probate teaming can support both parties achieve their goals more efficiently and can learn from each other.

Effective management of energy is turning into a key element of the competitiveness of companies, cities, states and entire countries. It will be through teaming such as we see between NYSERDA and Corning that the USA will be able to remain a world leader and that states will continue to attract new employment opportunities.

Conclusion

In conclusion, the Corning/NYSERDA partnership is set up to deliver the kind of breakthrough environmental and economic performance around energy that will be essential for all market leaders in the coming decades. The bi-directional transfer of expertise and learning will not only ensure that Corning will thrive as a global innovator, but that the experiences will be available to a wider base of US companies, contributing to the competitiveness of the State of New York and Nation as a whole.

Corning's commitment to energy management and efficiency gives them the potential to reduce significant amounts of energy and emissions. Based on the overall goal of 20% energy reduction, Corning hopes to reduce their energy use in New York State by 535,000 MMBtu, as well as reduce greenhouse gas emissions by as much as 200,000 metric tons. The multi-year partnership between Corning/NYSERDA is aimed at realizing these goals.

The effective management of energy by major corporations will be key to humanity meeting its global challenge around climate change. The work of Corning and NYSERDA illustrates how the private and public sector can partner to deliver these benefits.