



Climate Change Strategy

**The Business Council of NY State
2008 Fall Environment Conference
Saratoga Springs, NY
October 16, 2008**



Environmental Resources Management (ERM) is the world's largest all-environmental consulting firm with over 120 offices in 42 countries and 3,300 staff. And 6 offices in NY. ERM has global experience in all technical, economic, and policy environmental areas.

Why Develop a Climate Change (CC) Program?

There are Many Business (Non-regulatory) Reasons

1. \$\$\$\$. The growing cost of energy

- Actions that reduce energy usage also reduce GHG emissions
- Given the price of energy these days, much \$\$\$ saved!
- **Example.** DuPont claims they invested \$120 million in Climate Change (energy efficiency) programs in the 1990's and as a result today save \$240 million *per year* in energy cost savings.

2. \$\$\$\$. GHG emission reductions can become sellable credits

- **Example.** Blue Heron Paper Co. (OR) improved energy efficiency by 25% (191,000 metric tons GHGs/yr). They received financial incentives and tax credits to initiate the project and received a promise to buy any and all verified GHG emission reduction credits.

3. Climate Change shareholder resolutions

- **Example.** Ford and GM were faced with Climate Change shareholder resolutions. Neither had enough votes to pass. However, the CEO of Ford ordered a CC program with goals. Ford resolution was withdrawn, while GM is spending more time addressing this at annual meetings.

Why Develop a Climate Change (CC) Program?

There are Many Business (Non-regulatory) Reasons

4. Pressure from financial market, insurance, accounting bodies

- **Example.** The Equator Principles gives financial institutions social and environmental benchmarks to finance a project. >60 firms have signed.

5. CC risk - Usually, we are concerned with how a plant impacts the environment. Now, we are worried about how the environment will impact plant's operations!

- **Example.** A major tobacco company used Climate Change modeling to adjust business forecasts in terms of where to grow tobacco.

6. Pleasing customers. More firms are asking about the “carbon footprint” of the products they sell. Life Cycle Analysis (LCA)

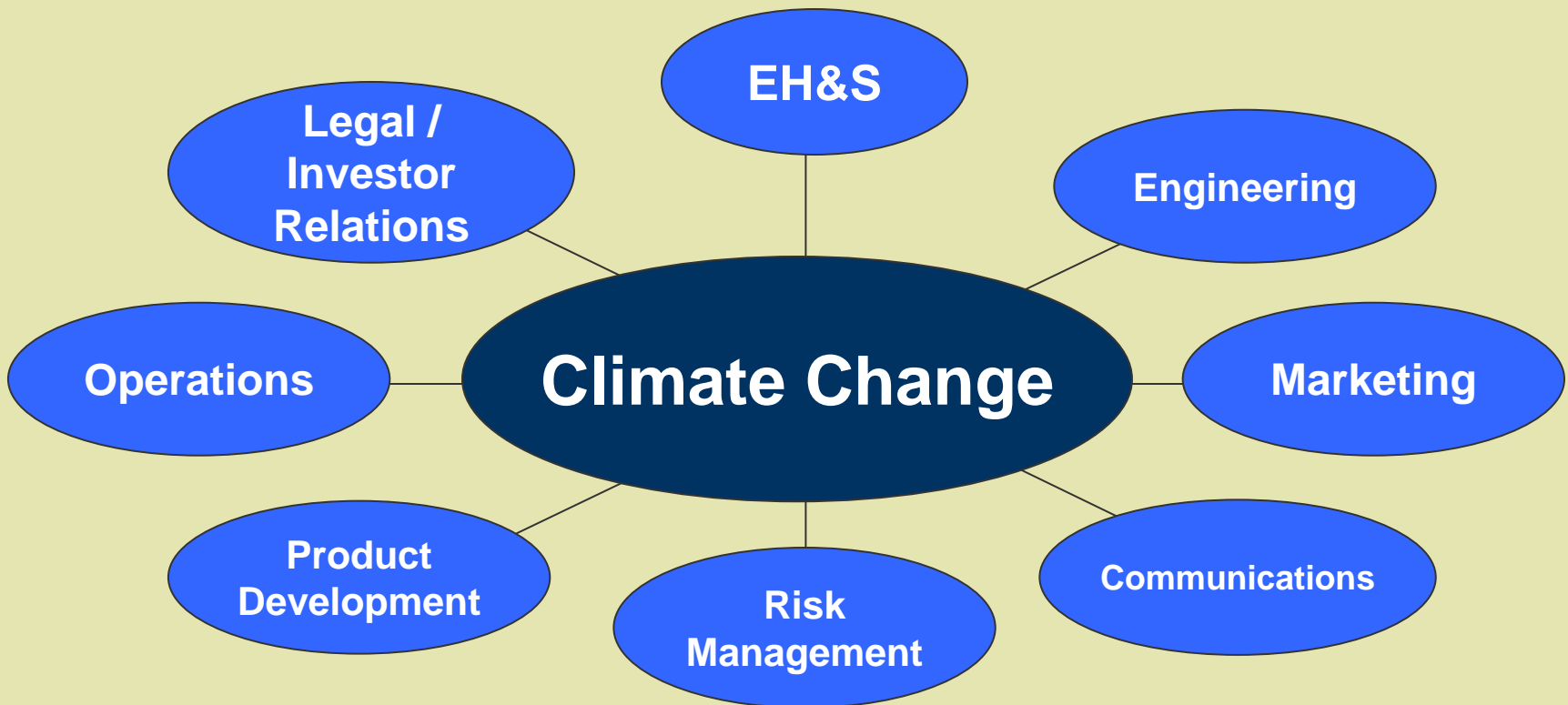
- **Example.** Major retailers Wal-Mart and Tesco are beginning to request of its suppliers' GHG information throughout its life cycle entering local store.

7. Public relations and product development

- Just say “Climate Change” to Toyota and GE!

Effects on Business

- Climate Change is a multifaceted issue that affects every area of a firm's business

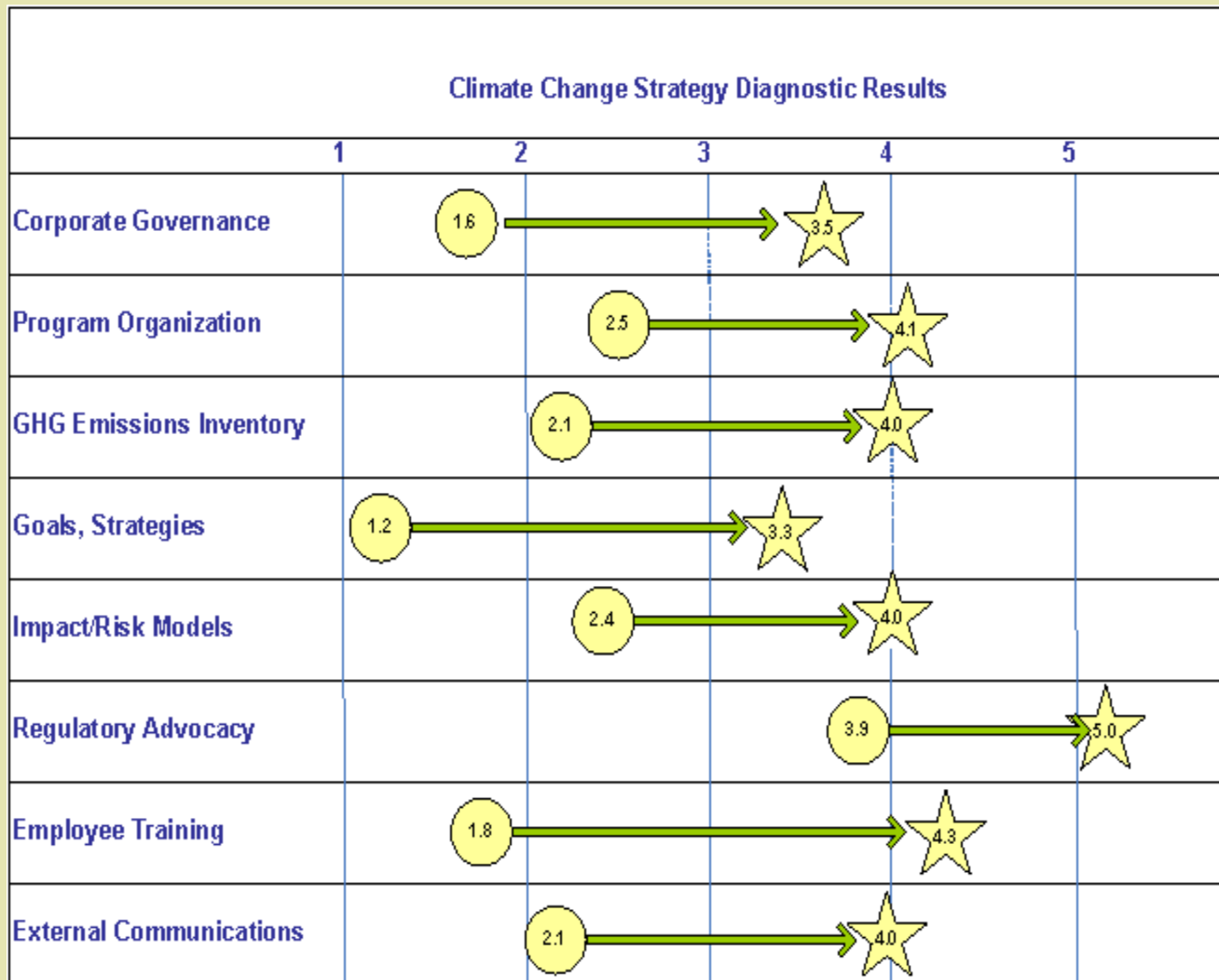


The First Step: Develop a Climate Change Infrastructure

- **Develop a Group focused on Climate Change issues**
- **Should have participation from the many groups impacted by Climate Change:**
 - EH&S
 - Product Development
 - Communications
 - Engineering
 - Finance/Procurement
 - Operations and Maintenance
 - Legal
- **Need leadership from the top – from the CEO**

Climate Change Planning

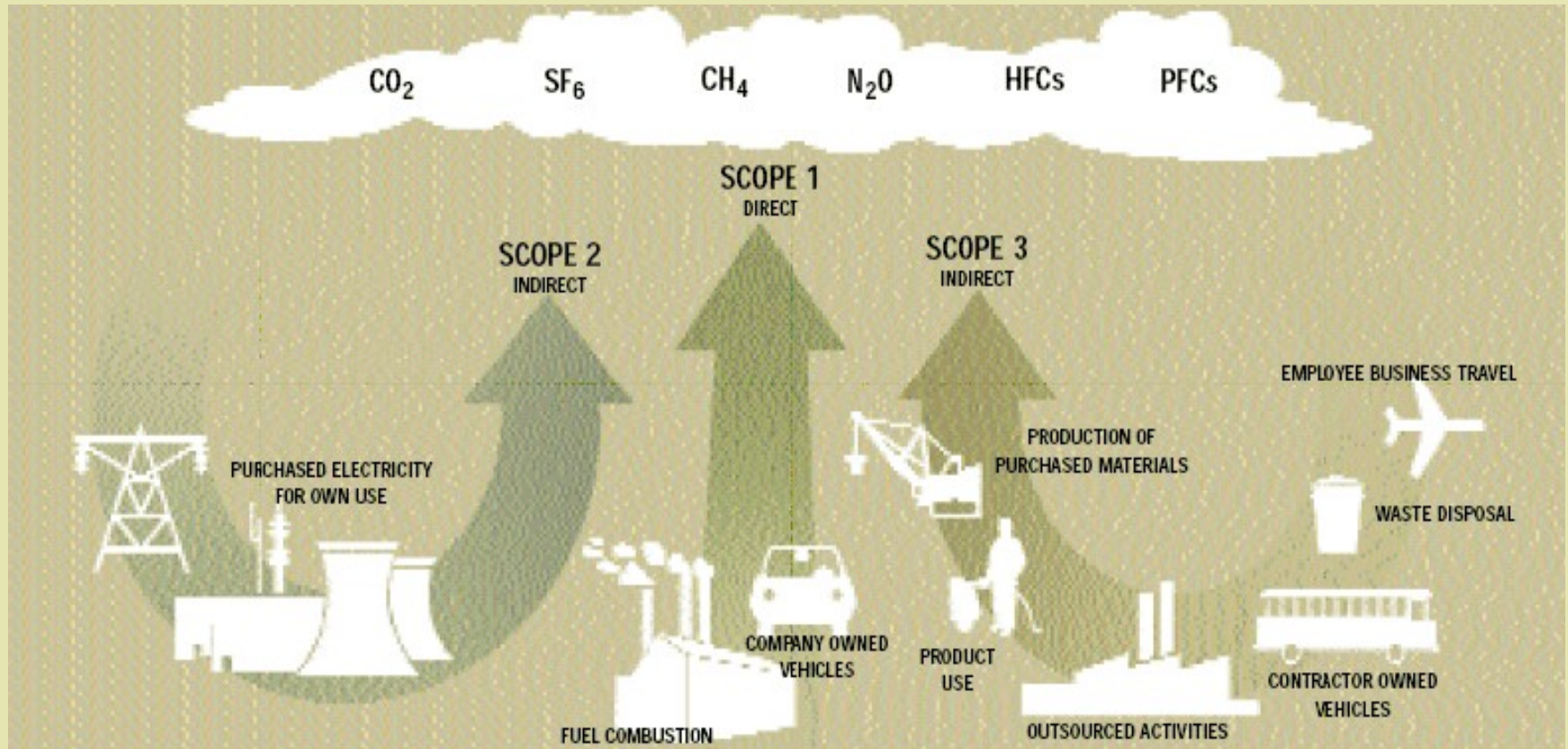
- **Benefits of doing this? Business opportunity, to enhance your reputation, reduce costs, in response to stakeholder's requests?**
- **Perform an initial evaluation of where you are vs. desired position in terms of a “Green” Climate Change program**
 - Do you want to be a leader in your industry, a follower, or in the middle of the pack?
- **Define the elements of a Climate Change program and assess what your company's culture is or willingness to spend resources to progress. Diagnostics exist.**



Now You're Ready To Perform a Baseline GHG Emissions Inventory

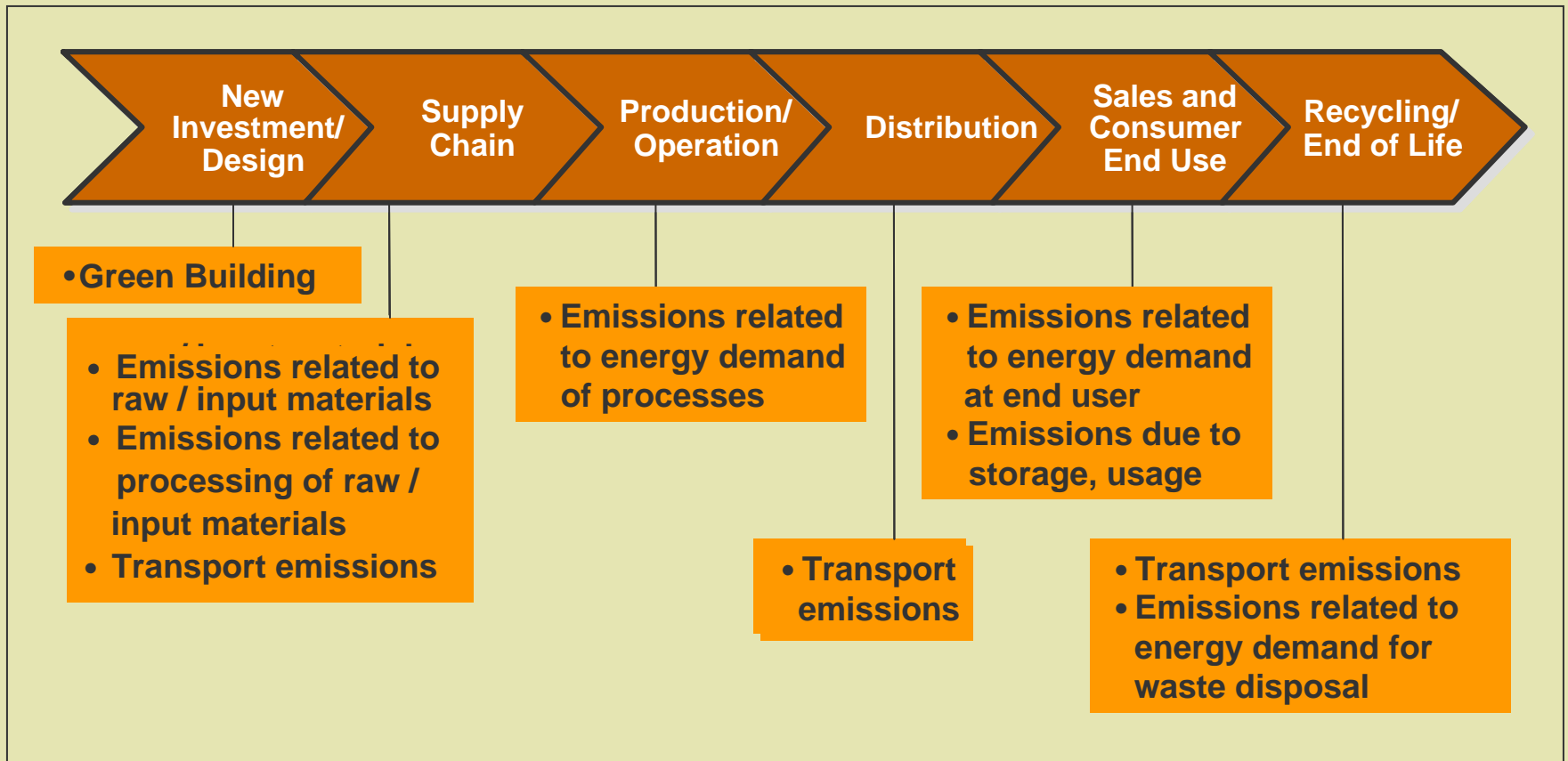
- **Roles and responsibilities**
- **Which operations at your facilities emit GHGs?**
 - Manufacturing
 - Combustion
 - Transportation
 - Electricity usage (indirect GHG emissions)
- **Inventory of GHG-emitting equipment/processes**
- **Begin to gather data**
 - Records of historic operations
 - Changes, trends

Determine Your Boundary



- **WBCSD / WRI GHG Accounting Protocol defines associated emissions in terms of GHGs**

GHG Emissions Along Product Life Cycle



Carbon Footprinting is Not So Easy!

- **Data Quality is Job 1**

- Collect plant data, such as electricity and fuel usage, transportation, process data
- Be very careful(!) to check on quality of data – a lot of data is misunderstood, not applicable, or incomplete
- Firm may invest a lot based on results; worth spending extra resources to check the accuracy!

Computing GHG Emissions

- **GHG Emission Factors – many sources now exist**
 - More manufacturers are aware and test and publish their factors
 - WRI/WBCSD “The GHG Protocol” is internationally accepted and contains more developed emission factors
- **Normalize emissions to operational or output data to give it relevancy and allow easy benchmarking of facilities.**
 - Examples, lb CO₂/ton chemical produced; lb/widget; lb/kWh; lb/sq. ft. of space
- **Need to devote resources to verify accuracy, minimize uncertainties, assure integrity. Investments are riding on this.**
- **Third party verification**

GHG Data Management

- **While many initial inventories are done on Excel, consider specialized GHG software as your program grows and becomes more complex.**
- **3 phases:**
 - Strategic planning and design
 - Identify goals, functional requirements
 - Software selection
 - Identify commercially-available software to meet your goals and can interact with existing systems
 - Implementation
 - Transfer data, integrate into existing systems, maintenance

How to Reduce Your Carbon Footprint

Energy Reduction Assessment

- **A great return on your investment!**
- **Evaluate where the facility uses energy**
- **Collect data**
- **Prioritize potential energy and \$\$\$ savings opportunities**
- **Rank order of projects (i.e., low hanging fruit)**
- **Quantify energy and \$\$\$ savings and additional environmental benefits in terms of GHG reductions**
- **And green buildings for long-term savings**

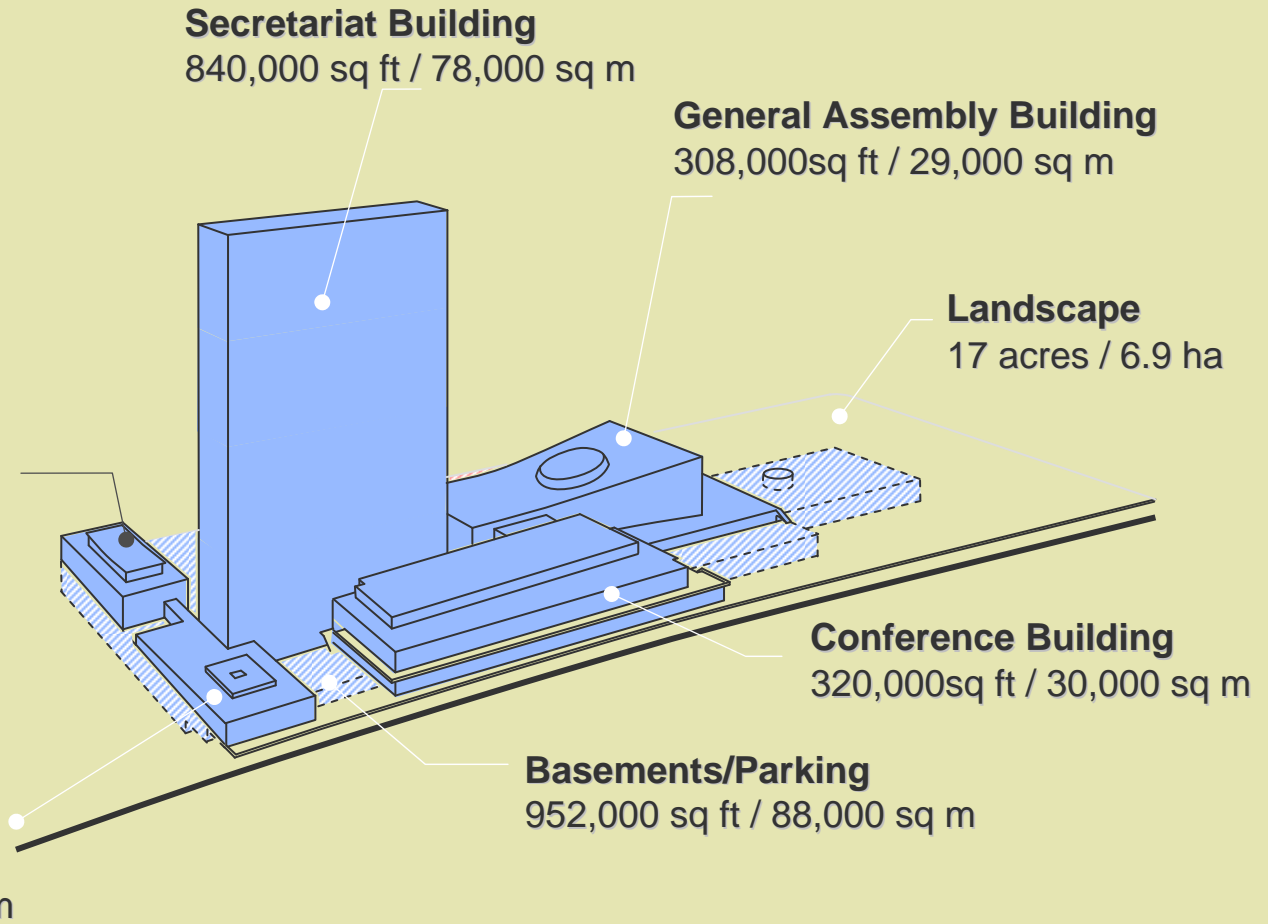
Importance of Green Buildings

- One of the major sources of GHG emissions is buildings.
 - **30% of CO₂ emissions**
 - **65% of electricity consumption in the US**
- **Leadership in Energy & Environmental Design (LEED)**
- **Purpose:** to promote sustainability and minimize the energy and environmental footprints in building design
- LEED certification is a useful metric for your company – transparent, verified standards, with quantitative, measurable achievements. No “greenwashing”.

Green Building Benefits

- **Economic and business benefits**
 - Reduce operating costs
 - Enhance asset value and rental opportunity
 - Improve employee productivity and satisfaction (reduced turnover)
 - Optimize economic performance
- **Environmental benefits**
 - Improve air and water quality
 - Reduce waste
 - Conserve natural resources
- **Energy benefits**
 - Encourage energy efficiency and reduction of energy demand
 - Encourage using alternative fuels and technologies
- **Health and community benefits**
 - Improve air, thermal, traffic, and acoustic environments
 - Minimize strain on local infrastructure
 - Show you are a “good neighbor”

Case Study – United Nations Renovation



UN HQ renovation into high performing Green buildings

Photovoltaics
Combined Green Roof with
High Albedo membranes

Urban wind
turbines

Double-glazed windows
plus film

Rain harvesting

Fuel Cell power
generators running
on biofuel from wastes

Superior insulation,
and using low VOC,
renewable, high
recycled content
materials

Sustainable Urban
Drainage System
(SUDs)



Tracking skylights &
light pipes

HVAC: upgrade chillers,
use dehumidification
system

Energy recovery
using heat exchange

Sensors, sensors,
sensors

Low water
consumption fixtures

Increased daylighting &
high efficiency lighting

Radiant cooling

External GHG Emission Reduction Projects

- Global nature of GHG emissions, investing in GHG reductions - even outside your facility. **“Offsets”**
- **Buy emission reductions?** Doesn't sound good. But, if cost estimate to upgrade your boilers is \$20/ton GHG, but offsets can be bought for \$5/ton, which makes more sense? What if estimate is off and cost is really \$25/ton?
- **Buyer beware.** This market is currently unregulated. More firms are demanding proof, associate the credits with a “good looking” project, and ensure no double counting.

What To Do Once GHG Emissions Are Reduced

- **Register as certifiably reducing GHG emissions:**
 - USDOE “1605b” program
 - USEPA Climate Leaders Program
 - The Climate Registry
- **Opportunity to obtain sellable credits on the voluntary market? 3rd party verification**
- **Document your success in reducing GHG emissions on your website, in your Annual Statement and other financial and legal documents**

Why Should a Firm Invest in Carbon Management?

- **Reduce exposure to future rules and carbon trading**
- **Direct economic benefits of GHG reductions**
 - Can be a moneymaker
- **Carbon management should be part of overall planning**
- **Integrate GHG metrics into EH&S and other reporting**
- **Respond to stakeholders**
- **Social benefits of doing the “right” thing before being required to do so**
- **Carbon management as VALUE, not LIABILITY, as pollution is normally considered.**

“Few things are impossible to diligence and skill. Great works are performed not by strength, but perseverance.”

-Samuel Johnson (1709-1784)

Thank you. Questions?

Marc Karell, P.E.

ERM, Inc.

235 Park Ave. South, 4th Floor

New York, NY 10003

212-447-1902

Marc.Karell@ERM.com