

The Importance of Energy Efficiency

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Global Energy Efficiency Leader
The Dow Chemical Company

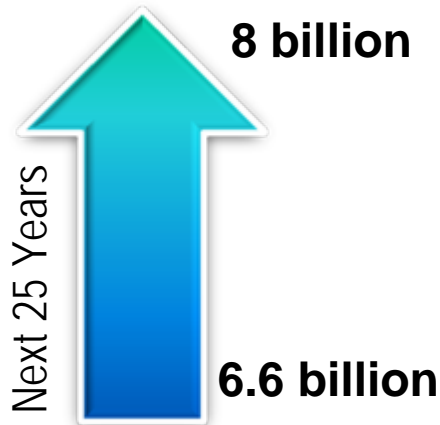


About Dow

- Largest diversified chemical company in the world
- Founded in Midland, Michigan in **1897**
- Supplies more than **5,000 products** to customers in **160 countries**
- **50,000 employees** worldwide
- One of the world's largest industrial **energy** consumers
- Dow is a company committed to being part of the sustainable energy solution

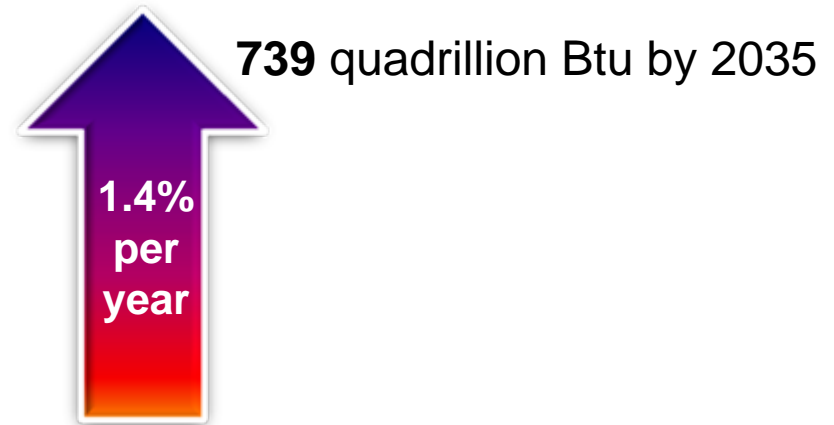


The Growing Demand for Energy



Global Population Growth

*According to the World Economic Forum



Energy Demand

*EIA predicts

Energy Efficiency is the **quickest, most affordable** and **easiest** way to improve the world's energy situation



Industrial Sector

The Need

- Manufacturing employs nearly **13 million people** in the U.S.
- **25%** of U.S. energy consumption is associated with industrial uses
- Almost entirely derived from the use of fossil fuels



Industrial Sector

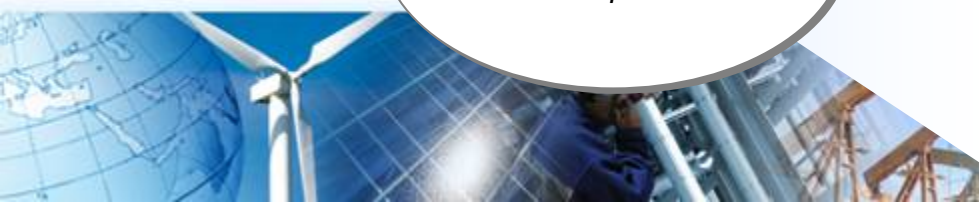
For Dow Oil & Gas = Energy & Feedstock

Feedstock
Ethane, Propane
Butane, Naphtha

Oil & Gas

850,000 Barrels/day

Energy
Steam, Heat
Power, Water



Dow is Committed

Dow's commitment to EE is demonstrated in its 2015 Sustainability Goals:

To:

- Further reduce global manufacturing energy intensity by 25% from 2005 to 2015
- Reduce GHG emissions intensity by 2.5 % per year thru 2015
- Aspire to reduce absolute emissions within the company by 2025



Dow is Committed

“No one in the world is more intensely aware of the need, ultimately, to reinvent our dependency on oil and natural gas than we are... We will lead the way on energy transformation because we have to. And we have taken important steps already.”

Andrew Liveris
Chairman, CEO & President
The Dow Chemical Company



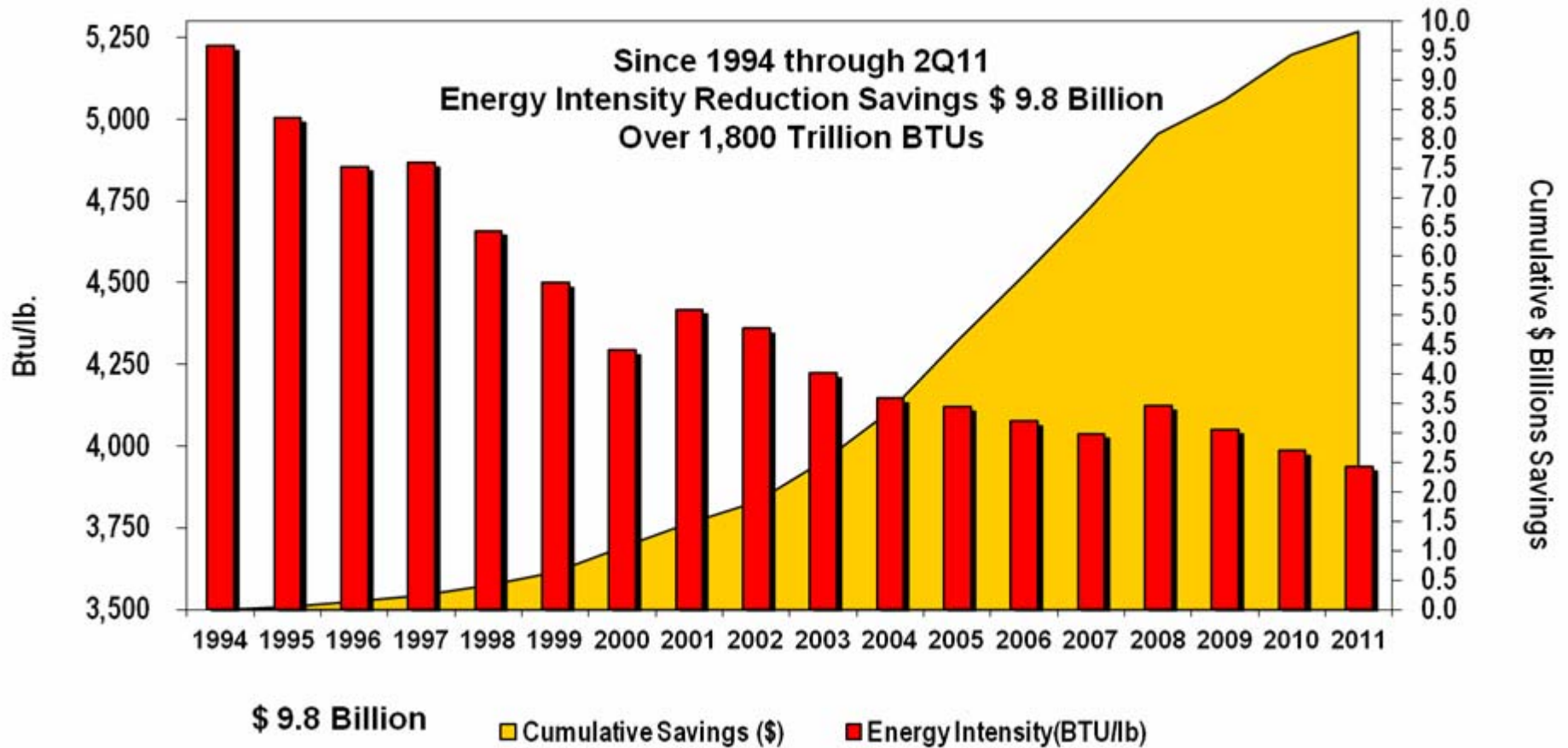
Industrial Sector

The Solution

- Energy efficiency pays
- Since 1994 Dow has saved **1,800 trillion Btu** of energy that has saved the company **\$9.8 billion**
- Since 1990 Dow has improved its own energy intensity by **38%**



Energy Intensity Performance



Industrial Sector

What is Dow Doing?

- A recognized Leader in EE: Numerous awards...Energy Star, DoE, ASE, etc.
- 4 American Chemistry Council Responsible Care Energy Efficiency Awards in 2010 and 2 more in 2011
- Texas City Operations plants received Superior Energy Performance **Certification by D.O.E**
- Freeport, Texas - plant optimization to save an estimated **\$12 million** annually



Industrial Sector

What is Dow Doing?

- Seadrift, Texas - EO-EG plant replaced an inefficient compressor to save **\$3.2 million** annually
- Terneuzen, Netherlands site - recycles **9.9 million liters** of wastewater daily
- Freeport, Texas - replaced 10 aging ethane/propane crackers to reduce energy use by **10.5%**
- Advanced amine CO2 capture technology, capturing **1,800 tons** of CO2 annually



Building Sector

The Need

- The buildings sector is the **LARGEST** consumer of energy in the U.S.
- Responsible for **48%** of the energy use in the U.S.



Building Sector

What is Dow Doing?



- Dow insulating and air-sealing products can save up to **20%** on heating and cooling costs
- STYROFOAM Insulation products save **\$10 billion/yr.** in energy costs globally
- Collaborated on **first net zero home** in the U.S. within the avg. new home selling price \$250,000



Transportation Sector

The Need

- The transportation sector accounts for **27%** of energy consumed in the U.S.
- Transportation contributes to a **third** of U.S. GHG emissions annually



Transportation Sector

What is Dow Doing?

- BETAFOAM can save **36lbs** per vehicle, improving fuel efficiency
- BETAMATE can replace metal mechanical fasteners to reduce weight by **20%**



Conclusion



We believe that Energy Efficiency:

- Is good for business; reduces costs
- Is good for our community and strengthens our economy
- Is good for the environment

