March 10, 2010 Northeast Sustainable Energy Association Conference

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# Net Global Warming Due To Insulating Foams



## **Global Warming**

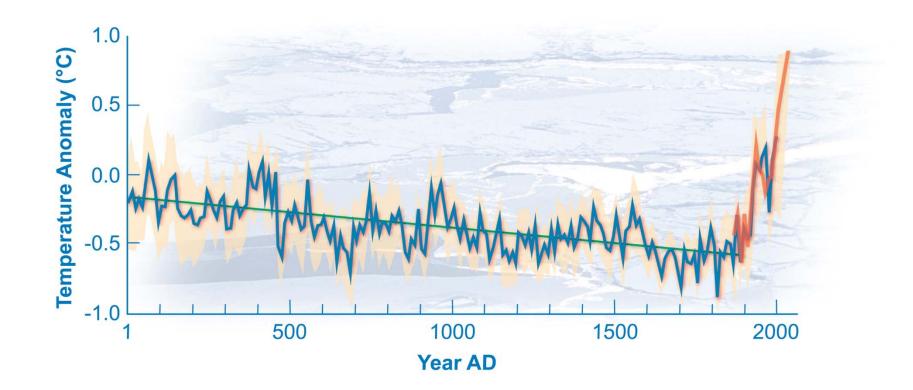
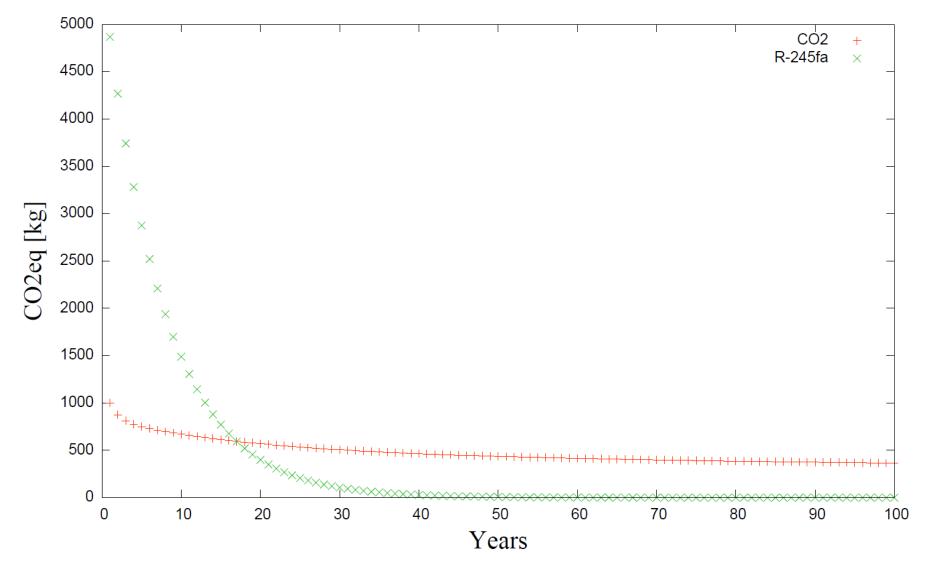
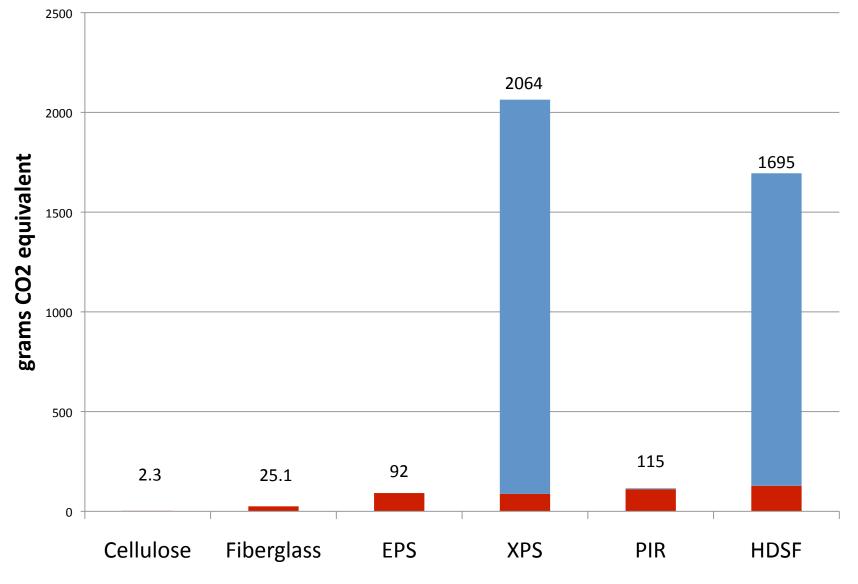


Image by National Center for Atmospheric Research (NCAR)

## Global Warming Potential Blowing Agents

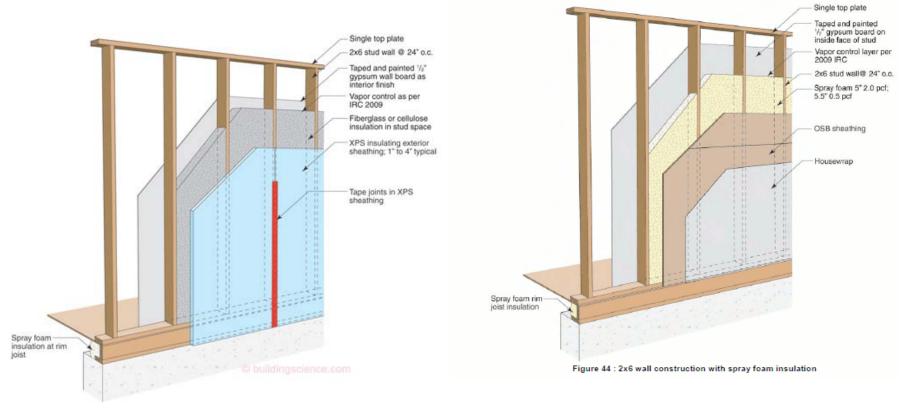


#### Embodied GWP (per sf R)



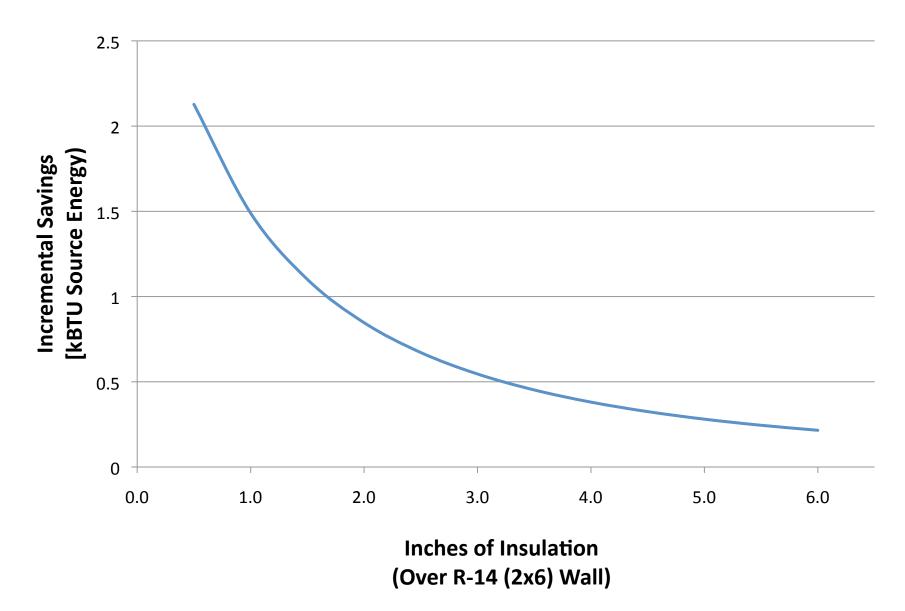
Energy Blowing Agent

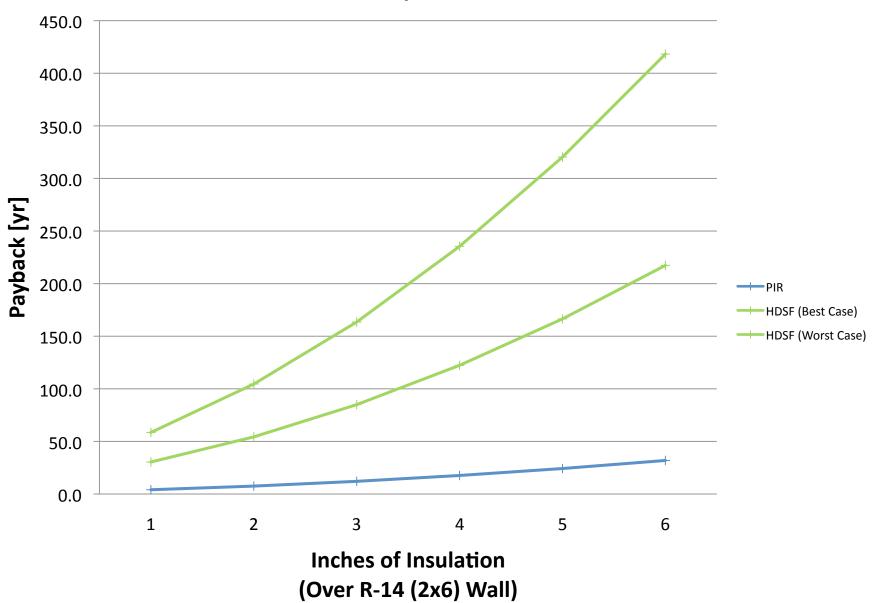
### High-R Wall Assemblies



Images by Building Science Corporation

#### **Incremental Savings**





#### **GWP Payback: Boston**

- If we only cared about embodied energy, we would use cellulose everywhere
- Durability matters
- Make decisions case by case:
  - Foundations
  - Air Barriers
  - Retrofits
  - Water Resistance
  - Hurricane Resistance