



Spray-Foam in the

Department of Defense

17 February 2010

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Before and After Tent and Plywood (SWA) Hut

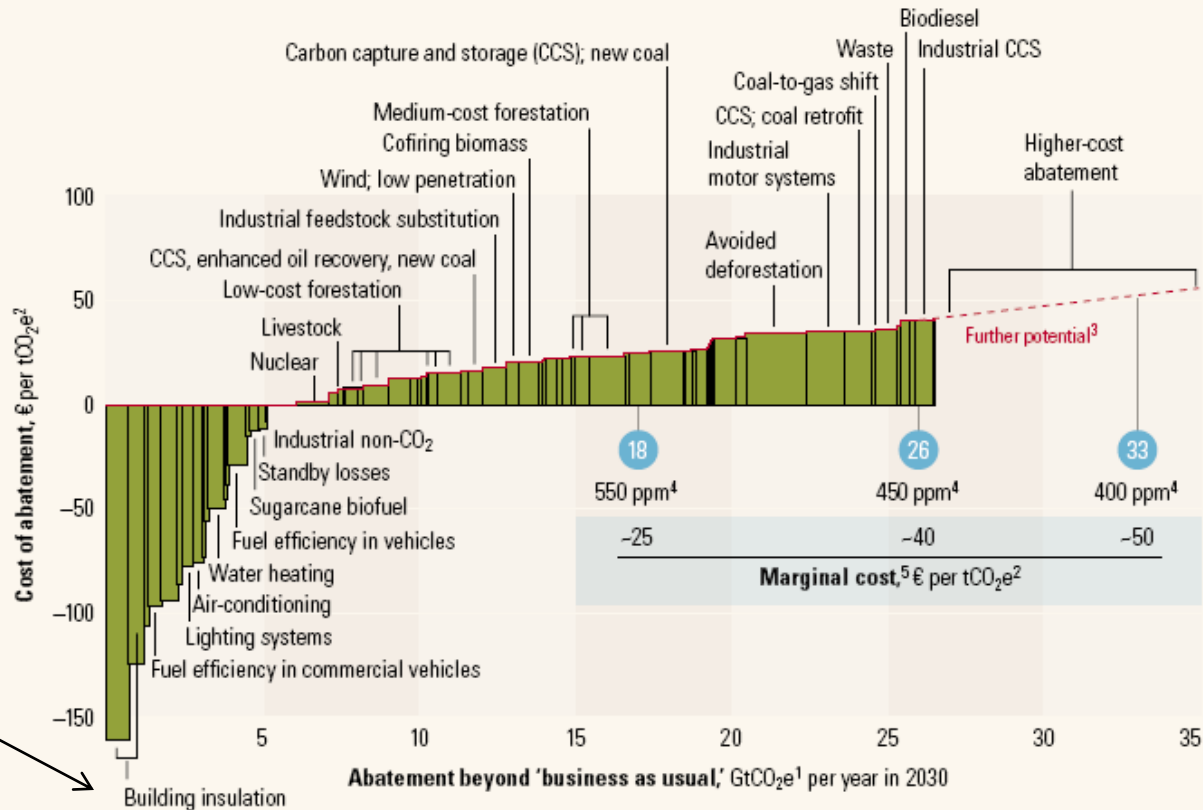


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There is no lower fruit...

Global cost curve for greenhouse gas abatement measures beyond 'business as usual'; greenhouse gases measured in GtCO₂e¹

● Approximate abatement required beyond 'business as usual,' 2030



¹GtCO₂e = gigaton of carbon dioxide equivalent; "business as usual" based on emissions growth driven mainly by increasing demand for energy and transport around the world and by tropical deforestation.

²tCO₂e = ton of carbon dioxide equivalent.

³Measures costing more than €40 a ton were not the focus of this study.

⁴Atmospheric concentration of all greenhouse gases recalculated into CO₂ equivalents; ppm = parts per million.

⁵Marginal cost of avoiding emissions of 1 ton of CO₂ equivalents in each abatement demand scenario.

Source:

The McKinsey Quarterly, 05 2007
A Cost Curve for Greenhouse Gas Reduction
Enkvist, Naucler, Rosander



What We've Done

- 25 July 06 “free us from the tether of fuel” needs statement
- After energy audit in Djibouti and further mission analysis, we took a broader view → demand reduction (insulating tents) became top priority
- 20 Dec 06 First tent trial
- 17 Jan 07 First military tent completed. Data loggers showed up to 90% energy savings
 - Army Safety Confirmation, Toxicity Clearance and air exchange requirements (IAW ASHRAE) all approved before any tents foamed (incorporated into contracts)
 - User Manual written and distributed before any tents foamed
- May 07 Kuwait demo
- July 07 Iraq & Djibouti demo
- Oct 07 Afghan demo
- Dec 07 \$95M Iraq solicitation released
- Jan 08 National Training Center (NTC), Fort Irwin, CA demo
- Late Apr 08 \$95M Iraq contract awarded
- Nov 08 \$29M Afghan contract awarded
- Spring 09 \$22M NTC contract awarded
- \$146M contracts (over 11M sqft, all 2lb closed cell foam) → *this saves lives!*
 - 14 July 09 Govt survey confirmed > 50% fuel savings and BEP of ~ 75 days in Iraq (size HVAC correctly, install efficient lighting to increase savings)
- Aug-Sep 09 detailed fire testing completed
- 3 Nov 09 Safety of Use Message (SOM) distributed world-wide



Potential Way Ahead

- DoD may, I say again, may assign a National Stock Number (NSN) to spray foam and buy the raw materials like any commodity (fuel)
- Will involve firm, detailed requirements and would insure safety, QC and certifications are met → this is a good thing for the US foam industry
- Services are starting to get on-board...demand will likely increase in theater and back here at US training bases...
- ...Policies and Regulations should follow
- Spray-Foam in an operational/tactical scenario has gotten lots of visibility (to include in Congress) and should become institutionalized
- Even bigger than deployed units are DoD installations
- FACT: There are plenty of mandates (statutes and Executive Orders) that tell the Govt to make their buildings more energy-efficient
- FACT: DoD owns 2/3 of the floor space in the Govt
- Given the above two facts, draw your own conclusions...
- Other Govt Agencies (OGA) are learning about the benefits of spray foam
- Potential in disasters (Katrina, Haiti)
- International demand for demand reduction is growing...fast
- But...reality of doing business with the Govt is that the Govt is decentralized, and sometimes uncoordinated. Not a slam, just reality. Much of the potential way ahead will attempt to add efficiencies...some perhaps *enterprise-wide*...



What Can Industry Do?

- **Write clear MSDS. Cured-foam disposal instructions are mandatory**
- **Get behind SPFA. Edison Electric Institute (EEI) is a great model**
- **Quit letting the status quo compare prices and call you “expensive” ...they are still “winning” the price war**
- **Compare holistic construction costs for new buildings and roof repairs...and have succinct data available. Send it to me, if you have it...I’ll use your slides so you get the credit**
- **Too many caveats (status quo wins again): have consistent, documented, official answers (opinions don’t count) to FAQ (Void my roof warranty? Foam under eaves or attic floor? Need a spacer?). Let me role play...**
- **More foam-only case studies with real data → most case studies have a dozen initiatives and only compare bottom line...is spray-foam insulation the driver, or not? Send it to me...**
- **Do you have any Govt endorsements of your foam, especially with actual data? Send it to me...**
- **If your foam is competing, push all your documentation (lab tests, etc) the Govt’s way...and explain it...don’t make us ask the exact right questions**
- **You want to see requirements included? Send it to me, and justify. Do NOT send me product specific info...send me capabilities**
- **Work w/i the current authorities (ESPC, ECIP, PPA, etc) or with an ESCO...until we can get more streamlined authorities**
- **Check FedBizOpns**



Questions?