Red Butte Creek Oil Spill Working Group
Future Prevention Team

Recommendations and Perspective

In recognition of Members: Robert Bell, Dan Brinton, Jen Colby, Tom Finch, Peter Hayes, Brian King, Roi Maufus, Dan McLaughlin, Terry Marasco, Jeff Niemeyer, Annie Payne, Norm Peterson, Brad Steward, Tim Wagner
Oil Spill Work Group

Recommendations
An Existential Crisis

In the condiments section of the supermarket...

If I buy organic mustard, I’ll be supporting progressive farming... but it’s so expensive! The store brand is the cheapest but it’s got polysorbate 80. The French mustard tastes great but I’d be contributing to the trade deficit if I bought it. The name brand exploits migrant labor and who knows where this other brand comes from?! Wow, what am I going to buy?!
Goal: No Injuries, No Fatalities, No Environmental Releases - Thinking Beyond Pipelines
From Pipeline Safety to Climate Safety

- In 1978, CO₂ was about 335 ppm
- In 2008, CO₂ 380 ppm
- World average daily carbon emissions per person = 2.7Kg C/d
- USA and Canada ~15
- EU ~ 5 to 12
- In 50 poorest countries daily per person C ~0.5

Earth's Surface Temperature
Past - Present - Future

Proxy Recon.
- Esper et al. (2002)
- Mann and Jones (2003)
- Moberg et al. (2005)
- Oerlemans (2005)
- Hegerl et al. (2006)

Borehole Temperatures
- Huang et al. (2000)

Borehole + SAT Obs.
- Harris and Chapman (2001)

IPCC Projections
- A2
- A1B
- B1
- B3

Temperature Anomaly (°C)

Year

1000 1200 1400 1600 1800 2000

1.1 °C

Instrumental Record
Radiative Forcing: 1750 to 2005 (or, why is the Earth warming?)
Climate Change: A Super-Wicked Problem

- Science now well understood, high consensus among atmospheric researchers (97.4%) of anthropogenic climate forcing
- Public understanding poor, being undermined by systematic PR campaigns to raise doubt
- Coupled human-natural systems are complex
- Systems non-linear
- Inertia of social, economic systems
- Those most likely to suffer consequences often least responsible for causation
The Carbon Cycle
Climate Disruption Detection System
Alarms Are Ringing

- Atmospheric
  - CO2, Temperature
- Meteorologic
  - Extreme Weather Event Intensity and Frequency
- Biologic
  - Plant bloom dates earlier
  - Species distribution shifting
  - Biodiversity declining
- Oceanic
  - Acidification
  - Temperature rise
  - Sea level rise
  - Shifts in current patterns
  - Coral bleaching
Four Charts

- World Energy Consumption
- Per Capita Energy Consumption
- World per Capita Energy Consumption
- US Median Wage Based on Soc Security Data
What Does This Graph Tell Us About Global Oil Supplies?

http://www.theoildrum.com/files/world-oil-supply-and-brent-oil-price.png
Peak Oil: The Other Side of the Current Carbon Conundrum
The First Step is to Admit You Have A Problem: “America is Addicted to Oil”
Future Prevention: Transition

Blueprint to the new energy era

Business can become more competitive, profitable, and resilient by leading the transformation from fossil fuel to efficiency and renewables. This transition will build a stronger economy, a more secure nation, and a healthier environment.

TODAY

America gets 90% of its energy from oil, natural gas, coal and nuclear. Our aging infrastructure demands refurbishment to meet 21st century needs.

- Oil: 35%
- Natural Gas: 26%
- Coal: 22%
- Nuclear: 9%
- Biomass: 5%
- Hydro: 3%
- Other Renewables: 1%

SHARE OF U.S. PRIMARY ENERGY CONSUMPTION EXCLUDING FEEDSTOCKS. TOTAL ADDS TO 101% DUE TO ROUNDING.
2050

Efficiency and renewables can end our addiction to fossil fuels, create the core industries of the new energy era, generate $5 trillion in new economic value, and enhance resilience and security.

4% HYDRO
4% HYDROGEN
23% NON-CROPLAND BIOFUELS
26% NATURAL GAS
43% WIND, SOLAR, AND OTHER RENEWABLES

SHARE OF U.S. PRIMARY ENERGY CONSUMPTION.

TRANSPORTATION
$3.8 trillion not spent on oil will be pumped into the economy. Autos will reach an average of 125–240 mpg-equivalent.

BUILDINGS*
The average square foot would use 1/2 to 3/4 less energy than today and save $0.7 trillion net.

INDUSTRY*
Industry will have greater production, use 9–13% less energy, and save $0.5 trillion net.

ELECTRICITY
Necding no oil, coal, or nuclear power, at least 80% of our electricity will come reliably from renewable energy.