

# Sustainability, Logistics, and Mission Fulfillment

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SAINT LOUIS  
UNIVERSITY



# Center Goals and Members

- Professional education program development and delivery
- Applied research
- Academic program support
  - MBA - SCM concentration
  - MSc in SCM
  - Post MBA - certificate program
- AEP River Operations
- Ameren Services
- Asynchrony Solutions
- Anheuser-Busch, Inc.
- The Boeing Company
- Cassidy Turley
- Emerson Company
- Energizer Holdings Company
- Monsanto Company
- Nordyne, Inc.
- Novus International, Inc.
- Nestle Purina Pet Care Company
- Ozburn-Hessey Logistics)
- Sara Lee Bakery Group
- Solutia, Inc.
- Saint Louis University
- UniGroup, Inc.
- World Wide Technology
- USTRANSCOM (guest member)

# Realities

- Sustainability defined
- Key drivers of sustainability
- Private sector
- What is the military doing?
- What can be done now?

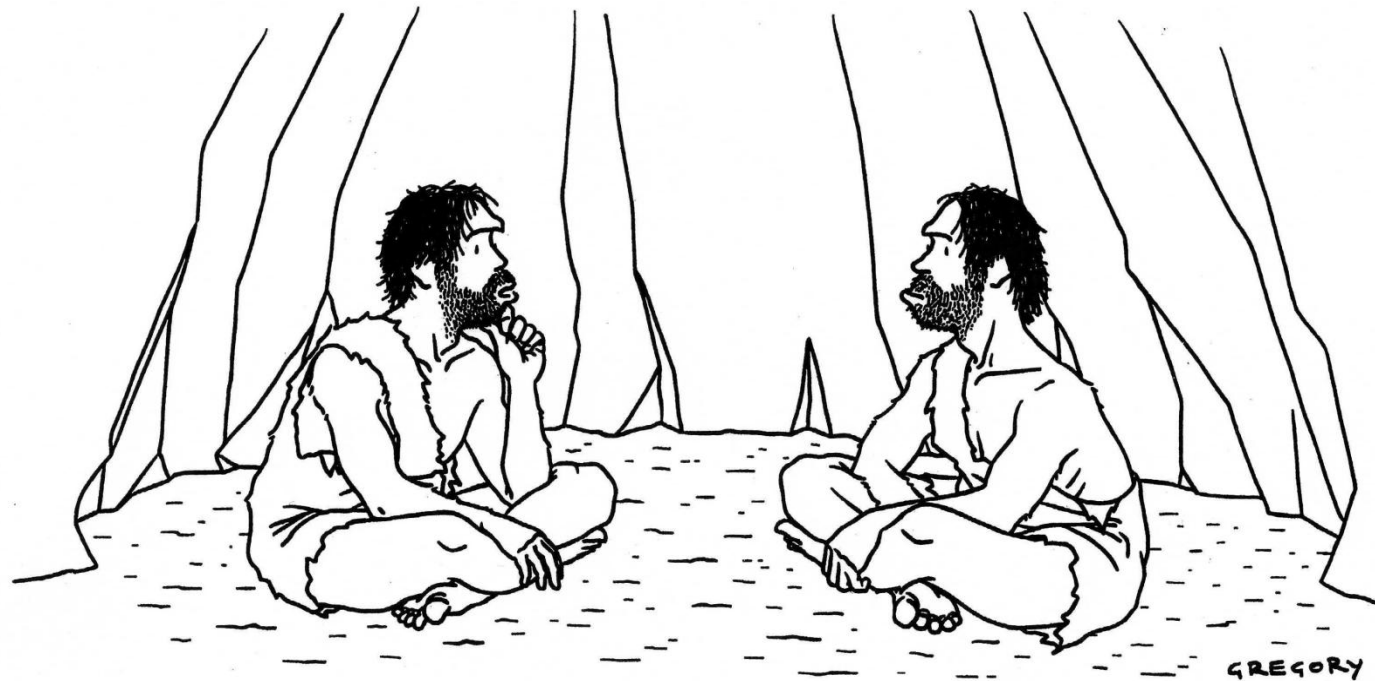
# Sustainability defined

**Brundtland Commission – UN 1987:**

**“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs”**

**A sustainable economic system is one that conserves the resources on which it depends in such a way that they will still be available to support it in the future.**

**Sustainability is about using resources in the most efficient manner possible.**



*“Something’s just not right—our air is clean, our water is pure, we all get plenty of exercise, everything we eat is organic and free-range, and yet nobody lives past thirty.”*

**A utopian environmentalist view**

# Key drivers of sustainability



# Growing global resource demand



## Resource impact

**By 2035 China's SOL will be similar to US now**

**Grain consumption: 2/3 of current world total production**

**Paper consumption: 2 X world's current total production**

**1.1 billion cars: nearly 4 X current US total, 40% above world current total**

**99 million bbl/day: current world production of 85 million**

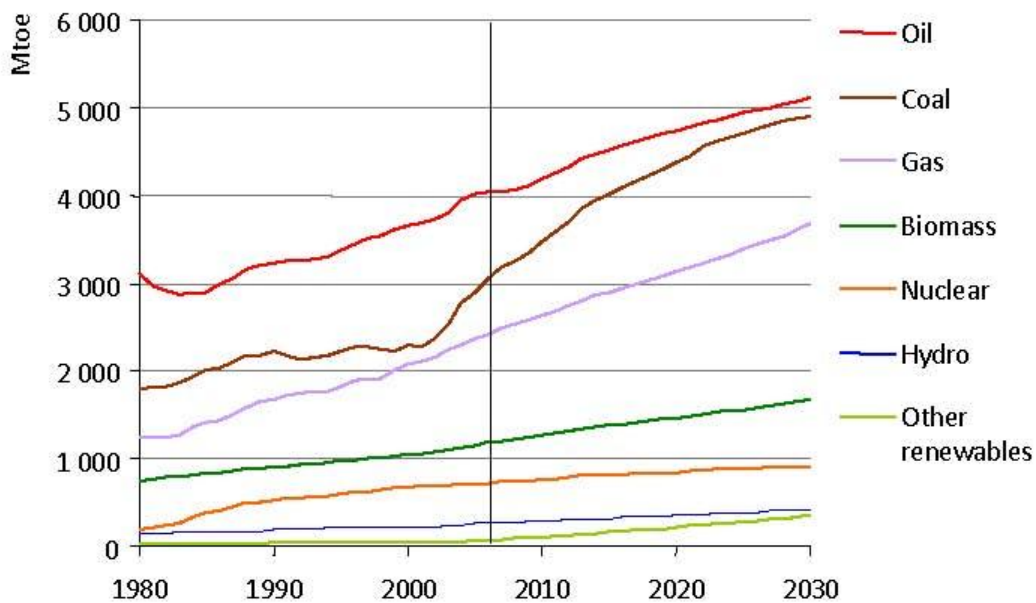
**Paved area equivalent to current area planted under rice**

# **Sustainability Is an Imperative for the World**

- **\$150 per barrel oil**
- **Annual doubling of iron ore prices**
- **Rising food prices**
- **Water resource depletion**
- **Maybe even climate change!**

# World primary energy demand in the Reference Scenario

World Energy Outlook 2008



*World energy demand expands by 45% between now and 2030 – an average rate of increase of 1.6% per year – with coal accounting for more than a third of the overall rise*

# Challenges

- **Climate change and politics**
- **Short term thinking - no instant gratification**
- **It's all about technology / renewable energy / clean tech etc.**
- **Competition for commodities**
- **Rising world living standards**

# Business Opportunities

- 1. A sustainable global economy is NOT inevitable!!**
- 2. If it happens, innovation and business will be the drivers**
- 3. The next 10 –20 years will see one of the biggest financial opportunities in decades**
- 4. Competitive advantage will belong to companies that:**
  - Build green and sustainability thinking into the very heart of their strategic thinking and planning**
  - Consciously consider how they can contribute to the quality of life of future generations**

## Why Sustainability Is Now the Key Driver of Innovation

by Ram Nidumolu, C.K. Prahalad, and  
M.R. Rangaswami

Included with this full-text *Harvard Business Review* article:

- 1 **Article Summary**  
The Idea in Brief—*the core idea*
- 3 **Why Sustainability Is Now the Key Driver of Innovation**



# Private sector

# Wal-Mart Sustainability Commitment



## **Be supplied 100% by renewable energy**

- Double our fleet efficiency in the U.S. by 2015 from 2005 levels
- Reduce GHG emissions from existing stores, clubs and distribution centers by 20% by 2012



## **Create zero waste**

- Send zero waste to landfill in the U.S. by 2025
- Reduce global plastic shopping bag waste by an average of 33% by 2013
- 5% packaging reduction by 2013



## **Sell products that sustain our resources and the environment**

- Make the most energy intensive products 25% more efficient by 2011
- All wild-caught fresh and frozen fish for the U.S. market to be MSC certified by 2011

# Sustainability begins with efficiency

- **UPS has the largest private alternative-fuel fleet in the package industry — 1,819 vehicles.**
  - UPS Firsts:
    - Electric vehicle deployed in 1935; 14 total in 2009
    - UPS Canada converted 764 vehicles to propane in the 1970s; 139 new in 2008; and 624 in 2009
    - First adopted CNG in 1985 — 1,082 CNG vehicles in 2009
    - First Hybrid Electric Vehicle (HEV) in 2001; 250 in 2009; expect 30 percent+ MPG over conventional diesel
    - Tested and deployed hybrid hydraulic vehicle in 2005; expect 40 percent+ MPG
  - More than one-third of our alternative fuel/technology vehicles operate outside the U.S. (Canada, France, United Kingdom, Germany, Brazil, China and Mexico).

# Sustainability begins with efficiency

- **On-board wireless Telematics technology helps manage driver safety, routing and fuel efficiency.**
  - Map and review route sequence.
    - Reduces idle time 15 min./day/driver
  - Electronic miles per gallon (MPG) monitoring.
    - Manages fuel-efficiency performance
  - GPS accuracy for miles traveled.
    - Trigger for optimal maintenance
  - Notification before critical failure.
    - Decreases breakdowns and inefficiencies
  - Comprehensive maintenance.
    - Optimizes MPG



# Sustainable Opportunities

## **Deliver competitive advantage in 3 ways**

- **Cost savings, risk mitigation & improved operating efficiency**
- **Superior products and services, enhanced brand image, market reputation & incremental revenue generation**
- **Creative, innovative, productive people environment**

# What is the military doing?

- USMC – lighten the load
- Army Sustainability Campaign Plan
- Battle Field Renewable Energy – a JF Force Enabler
- DLA Sustainable Design and Development Implementation Direction
- Air Force - A Guide to Sustainable Operations
- FAR dated 31 May 2011 Interim Rule for Sustainability (contractors affected)



## What can be done now?

- **Eliminate waste (lean)**
- **Improve resource productivity (recycle / reuse)**
- **Lower upstream and downstream costs (shorter supply chains)**
- **Reduce package weight and materials (lower costs)**



Thank you and any questions?

# Information Sources

- International Conference on Energy, Logistics and the Environment – Oct 2010
- USMC Expeditionary Power & Energy Symposium - Jan 2010
- Battlefield Renewable Energy – A key Joint Force Enabler – 2Q 2010
- Army Sustainably Campaign Plan – May 2010
- Air Force Guide to Sustainable Operations – May 2004
- DLA Headquarters Memorandum SDD Implementation and Direction– Feb 2010