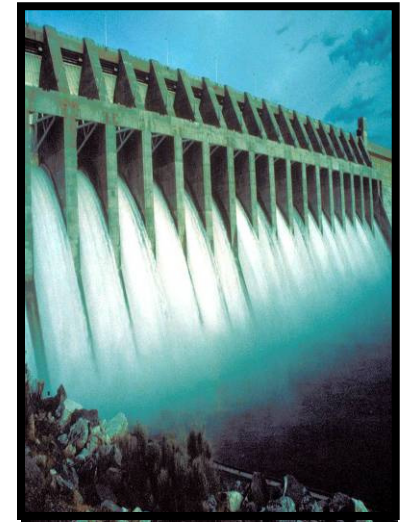




Wind

Army Installation Renewable Energy Program



Hydro

Solar



Biomass



Geothermal

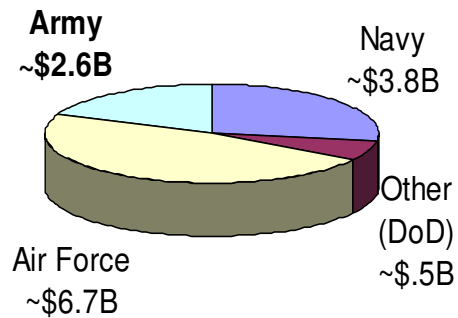


13 Jun 2007

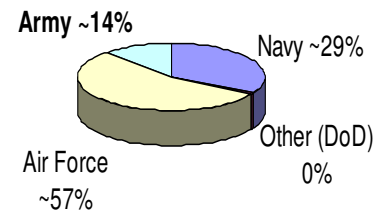
Andy Valentine
Asst for Engineering Mgmt
ODASA(I&H)

Army Energy Consumption

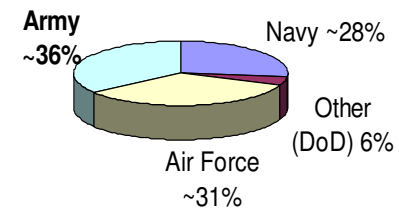
DoD TOTAL ENERGY \$13.6B for 832.5 trillion BTUs



DoD FUEL CONSUMPTION ~ \$10.1B



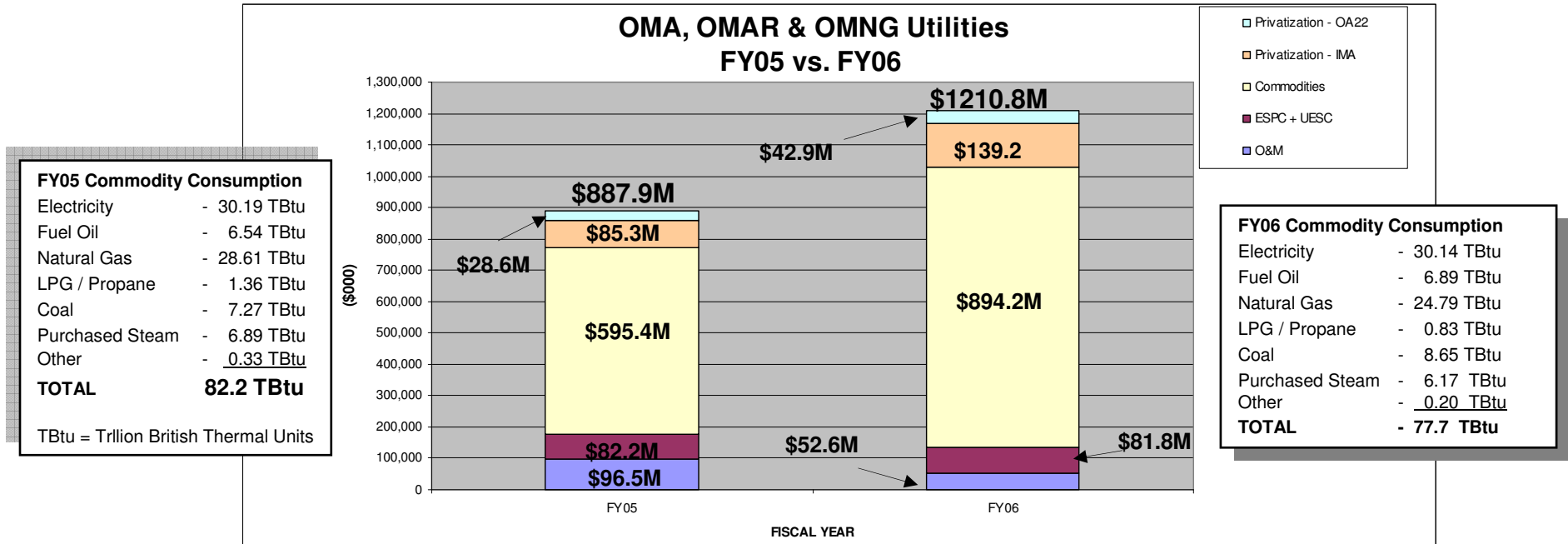
DoD INSTALLATION UTILITIES ~\$3.3B



FY06 Army fuel and utility consumption:

- 412 M gallons of jet and multi-purpose mobility fuel at cost of \$940 M
- 59 M gallons of diesel at cost of \$123 M
- 20 M gallons of gasoline at cost of \$45 M
- 330,000 gallons of biodiesel fuel at cost of \$775 K
- \$1.211 B annual utility cost for 77.3 BBtu

Annual Energy Obligations



OMA, OMAR & OMNG Utility Obligations (\$000)						
	Privatization OA22-Funded	Privatization IMA-Funded	Commodities	ESPC + UESC	O&M	TOTAL
FY05	\$28,591	\$85,300	\$595,367	\$82,244	\$96,477	\$887,979
FY06	\$42,947	\$139,200	\$894,261	\$81,754	\$52,600	\$1,210,762
Change	\$14,356	\$53,900	\$298,894	-\$490	-\$43,877	\$322,783
Percent	50.2%	63.2%	50.2%	-0.6%	-45.5%	36.4%

EPAct 2005

Sec 203: Of the total amount of electric energy the Federal Government consumes during any fiscal year, the following amounts shall be renewable energy:

- (1) Not less than 3 percent in fiscal years 2007 through 2009
- (2) Not less than 5 percent in fiscal years 2010 through 2012
- (3) Not less than 7.5 percent in fiscal year 2013 and each fiscal year thereafter

Notes: (1) DOD guidance says 25% by 2025 [DUSD(I&E) Memo, 18 Nov 05]

(2) 7.8% of Army electrical consumption was from renewable sources in FY06

EO 13423

Sec 2 (b): Ensure that at least half of the statutorily required renewable energy consumed by the agency in a fiscal year comes from new renewable sources and to the extent feasible, the agency implements renewable energy generation projects on agency property for agency use;

Sec 8 (g): “new renewable sources” means sources of renewable energy placed into service after January 1, 1999;

Sec 8 (h): “renewable energy” means energy produced by solar, wind, biomass, landfill gas, ocean (including tidal, wave, current and thermal), geothermal, municipal solid waste, or new hydroelectric generation capacity achieved from increased efficiency or additions of new capacity at an existing hydroelectric project;

The U. S. Army Energy Strategy for Installations

Strategy is based on five major initiatives over 25 years:

- 1) Eliminate energy waste in existing facilities
- 2) Increase energy efficiency in renovation and new construction
- 3) Reduce dependence on fossil fuels > *by increasing the use of clean, renewable energy, reducing waste, increasing efficiencies and optimizing environmental benefits.*

Action Items in the Army Energy and Water Campaign Plan for Installations in support of the Strategy:

3.1 Substitute renewable resources for purchases of electricity from fossil fuel sources when life-cycle cost-effective.

3.2: Develop all cost-effective on-site renewable power generation consistent with mission requirements.

- 4) Conserve water resources
- 5) Improve energy security

Army Installation Renewable Energy Program

Renewable projects accomplished through:

- Energy Conservation Investment Program
 - Priority for renewable projects beginning in FY09
- Military Construction, Army Program
 - High Performance Buildings
- Energy Savings Performance Contract
 - Partnerships with the private sector companies (ESCOs) for projects with 10-25 year payback through energy savings
- Enhanced Use Leasing Program
 - Leverages private sector's expertise and financial resources to build and/or redevelop existing land, buildings and other real estate assets
 - <http://eul.army.mil>

Existing Army Renewable Energy Projects

Geothermal Heat Pumps	- 12 Installations
Photovoltaics	- 13 Installations
Wind Generation	- 3 Installations
Solar Hot Water	- 4 Installations
Hydropower	- 1 Installation
Biomass (Wood Chips)	- 1 Installation