

NDIA Environmental & Energy Symposium

New laws governing biobased,
environmentally preferable lubricants and
fuels



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Terresolve - The Company

- Leader in environmentally safe fluid technology
- Leading supplier of biodegradable products to underwater contractors
- Exclusive supplier to the Naval Diving and Salvage Training Center (NDSTC)
- Key supplier to offshore drilling and exploration
- Major supplier to the deep foundation industry
- Key supplier to federal, state and municipal agencies
- Supplying key OEM's and major oil marketers
- Developing new products for United Soybean Board, USDA, DOE, and the Army Corps of Engineers

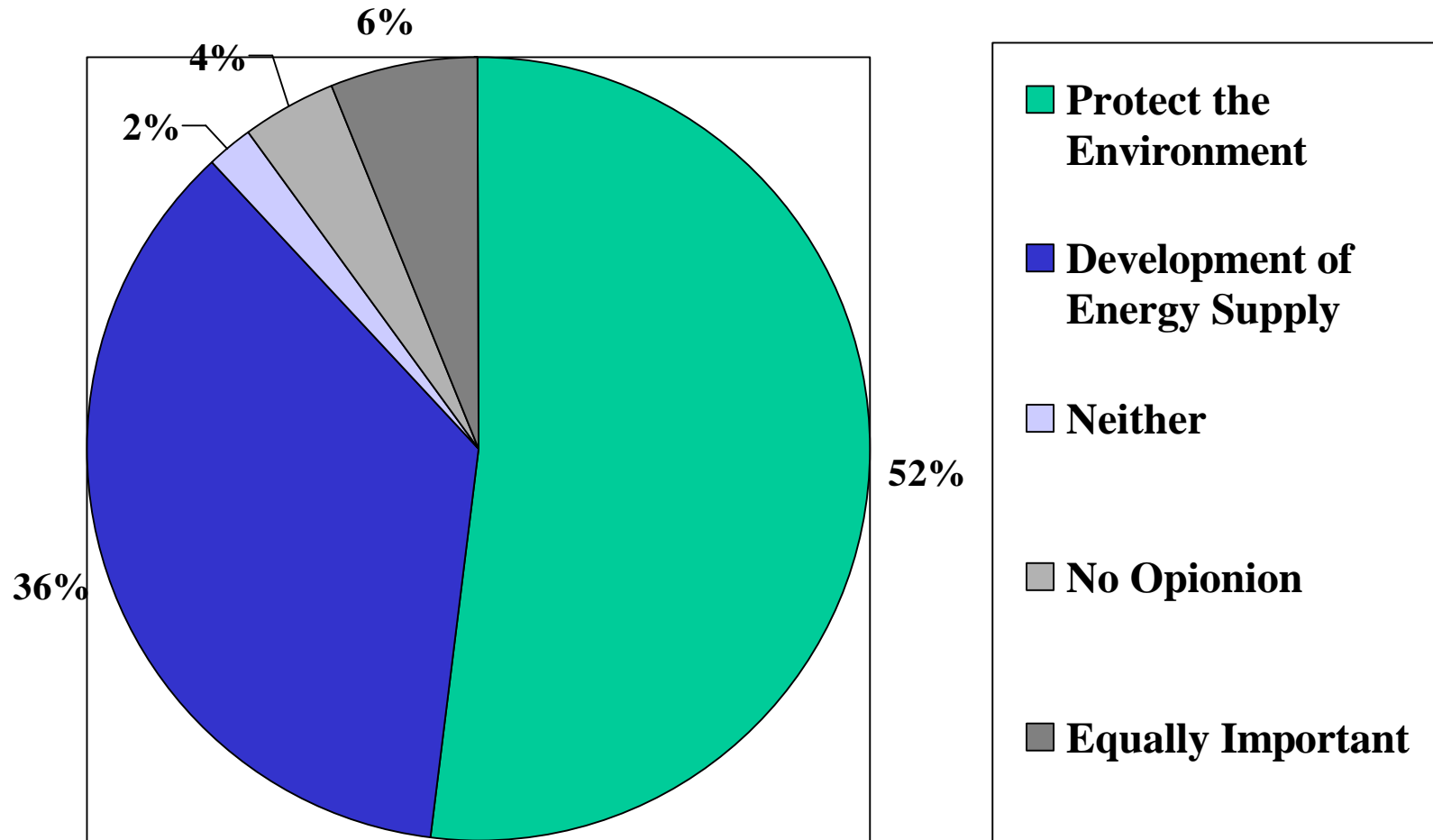
Bio Truths

- The Coast Guard does not approve, recommend or endorse any fluids
- Inherently biodegradable products damage the environment
- Food grade (white oil) lubricants are NOT for industrial usage
- NOT all biodegradable products are the same
- Some biodegradable products are better for your equipment

How important is the protection
of



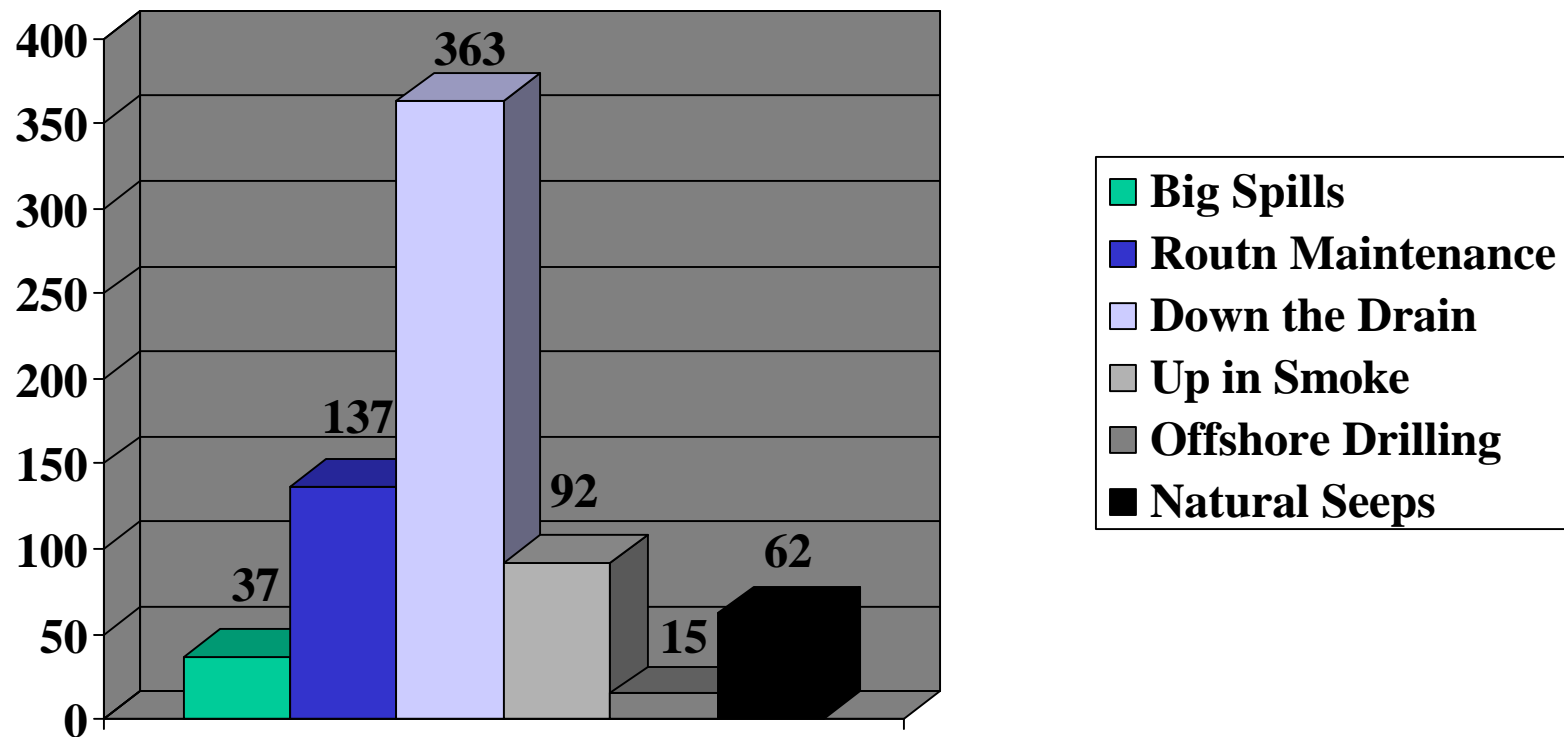
Environment First*



*Source: Gallup Poll 1060 Adults March 3-5, 2001

Oil Lost To The Ecosystem

706 Million Gallons Per Year*



*Source: NOAA

Loss From Oil Leaks



Leakage	Loss in 1 Day (gallons)	Loss in 1 Month(gallons)	Loss in 1 Year (gallons)
1 drop/10 sec	0.1	304.0	40.3
1 drop/sec	1.1	33.8	405.0
3 drops/sec	3.7	112.5	1,350.0
Stream of drops	24.0	720.0	8,640.0

Why Environmentally Safe Fluids ?

- The law.
- Reduced clean-up costs.
- Reduced fines.
- Improved performance.
- Community relations.
- Protects environment.

Farm Security and Rural Investment Act of Title IX Energy

- Creates new set of programs
- Appropriates action required to implement provisions
- New opportunities for biobased products, power, fuels

Farm Security and Rural Investment Act of Title IX Energy

- Promotes technology transfer of public investment in R&D to address environmental and agricultural issues
 - New emphasis on agricultural research
 - Create market pull
- Addresses obstacles to new products entering the marketplace
 - Market acceptance/awareness biobased products list
 - Cost competitiveness – procurement preference
 - Validate performance

Title IX Energy

- Section 9002 – federal procurement of biobased products
- Section 9003 – bio-refinery grants competitive grant program to convert biomass into multiple products
- Section 9004 – energy audit and renewable energy program competitive grant program

Title IX Energy

- Section 9006 – renewable energy systems and energy efficiency improvements
- Section 9007 – hydrogen and fuel cell technology
- Section 9008 – biomass research and development
- Section 9009 – cooperative research - greenhouse gases from agriculture

Title IX Energy

- Section 9010 - continuation of bio-energy program

Biobased Industrial Products

- Comprehensive approach to technical
 - Value-added
 - Life cycle costing
 - Marketing
 - Environmental attributes

Federal Procurement

Federal agencies will:

- Give preference to highest biobased content
- Ensure “biobased” is incorporated as procurement specification
- Develop a procurement preference program that will ensure biobased products are purchased to the maximum extent possible
- Develop an agency promotion program
- Annually review and monitor effectiveness

Section 9002 - Federal Procurement of Biobased Products

- To stimulate production of new biobased products and to energize markets for those products
- USDA will designate items
- Provide information about availability, price, performance, environmental health benefits
- USDA will develop criteria for “USDA certified biobased product” label

Criteria f

- Biobased content
 - Must be manufactured with raw material or wastes from domestic agricultural production
 - Minimum content
 - By category
 - Verified by ASTM C₁₄ dating
- Performance and manufacturing specifications
- Environmental performance/life cycle
 - National institute of standards and technology “building for environmental and economic Sustainability (BEES)

Biobased Products List

- Inks
- Sorbents
- Adhesives
- Construction material
- Fuel additives
- Lubricants and functional fluids
- Fibers, paper, packaging
- Solvent, cleaners
- Plastics
- Landscaping material
- Paints, coatings

Section 9006

- Loan guarantee and grant program
- Assist purchasing renewable system
- Guidelines being developed

Section 9008

Biomass R&D

- Conversion of biomass into industrial products and bio-energy benefits the national interest
 - Improve strategic security
 - Healthier rural economics
 - Improved environment quality
 - Near zero greenhouse emissions
 - Technology export
 - Sustainable resource supply

Executive Order 13101 (10/98)

- Environmentally Preferable means products or services that have *reduced effect on human health and the environment* when compared with competing products or services. The comparison may consider any or *all phases of the products life cycle*.
- Specifically calls out the use of “*biobased products*”

Executive Order # 13101

Sec. 401

In developing ... product descriptions, agencies shall consider, as appropriate, a broad range of factors including:

- elimination of virgin material requirements
- use of biobased products*
- use of recovered materials
- reuse of product
- life cycle cost*
- Recyclability
- use of *environmentally preferable products*
- waste prevention (including *toxicity reduction or elimination*)
- and ultimate disposal.

These factors should be considered in acquisition planning for all procurement and in the evaluation and award of contracts, as appropriate. Program and acquisition managers should take an active role in these activities.

Executive Order # 13101

Sec. 402

Affirmative Procurement Programs

- The head of each executive agency shall develop and *implement affirmative procurement programs* in accordance with section 6002 of RCRA (42 U.S.C. 6962) and this order and consider use of the procurement tools and methods.
- Agencies *shall establish affirmative procurement programs* for all EPA-designated guideline items purchased by their agency.

Environmental Impact/life Cycle Assessment ISO 14040

Life Cycle Assessment - Quantitative determination of a lubricants environment impact from cradle to grave.

- * Research and Development
 - * Manufacturing
 - * Blending, storage and distribution
 - * Packaging
 - * Safety and Handling Issues
 - * Impacts During Use
 - * Collection of Used Oil and Packaging
 - * Recycling or Disposal
- * Comprehensive LCA for complex products like lubricants are not yet available so government and industry are focusing attention on the environmental impact of the “use” phase of a lubricants life cycle.

Public Law 104-55 (11/95)

Edible Oil Regulatory Reform Act

To require the head of any Federal Agency to *differentiate* between fats, oils and greases of *animal, marine or vegetable* origin, and other oils and greases in issuing certain regulations and for other purposes.

Executive Order 12852 (6/93)

Sustainable Development

Is broadly defined as *economic growth* that will benefit present and future generations *without detrimentally affecting the resources* or biological systems of the planet.

Oth

- Clean Water Initiative (2/98)
 - Restoring and protecting America's waterGreat Lakes Water Quality Initiative
- (GLWQI)
 - Minimum water quality standard
 - Applied consistently throughout the Great Lakes Basin
 - Will maintain, protect and restore the unique Great Lakes Resource

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“Do The Right Thing”



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