

LOYD WILSON

Missouri Department of Agriculture

Ag Communication and Advocacy

Loyd Wilson
Missouri Department of Agriculture

The Need for Advocacy

- World Population Growth
 - Expected to be between 9-10 Billion by 2050.
 - Will require nearly double the food we produce now – 100% more.
 - Public Policy must be designed to allow it.

The Moral Imperative to Overproduce

- "It is our moral duty to ensure that we continue to develop the means to overproduce food, because in the real world this is the best way to improve the chance that the poor and the destitute can receive enough. The question before us in the coming decades is not whether we will be able to feed a growing world population with increasing food intake. We will. The question is where the additional needs will arise, who will fill them, and by what means." *Willy De Greef, Secretary General, EuropaBio*
- Are we willing to develop policies that allow us to manage that overcapacity?

The Role of Public Policy

- "As we look down the road 40 years from now, we are less worried about achieving an increase in production of 100 percent than **we are concerned about how to manage all of this potential.** For you see, we think it is important that we always have the proven potential to produce far more food than we need at any one time. We just don't need to use all of it all of the time. Then, if a crisis comes we can bring the additional capacity online." *Dr. Daryll Ray, University of Tennessee, April 2011*

Advocacy Shapes Public Policy

- Many non ag examples throughout history:
 - Slavery, Civil Rights, Government Social Programs, Affirmative Action, Voting Rights, etc.
- Key Ag Advocacy and Communication Issues:
 - Environment
 - Animal Welfare
 - Food Safety

- Environment -
 - People who care about food production want to know about the effects of farming on soil conservation, hypoxia, and global warming.
- Animal Welfare –
 - People who care about food production want to know that animals are comfortable, not abused and "happy".
- Food Safety –
 - Everyone wants assurance that the food they buy will be safe and free from pathogens, unhealthy contaminants and additives.

PAMELA ROSE

Canadian Consulate



US-Canada Agriculture Partnership: Inquiring Minds Want to Know

Consulate General of Canada in Denver
October 17, 2012

Canada: A Trading Nation ...and a word about NAFTA

- Exports of goods and services: 29% GDP
- Canada and the US are major agri-food traders
 - Canada is the 5th largest agri-food exporter in the world
- Over half of Canadian agricultural goods are exported
- 95% of the world's consumers live outside our borders
- ... NAFTA ... value of US agricultural exports worldwide climbed 65%; to NAFTA increased 156% (1992-2007)



Canada

US-Canada Trade: Unique & Mutually-Beneficial

- Canada is largest US export market, by far
 - Goods and services trade more than \$689 billion/year
 - \$1 million/minute!
 - US sells more to Canada than UK, Germany, Japan and China combined
- Top export market for 35 states, including Wyoming
 - Wyoming sells more to Canada than next top 3 countries combined!



Canada

US-Canada Trade: Beneficial for Jobs

- Over 8 million net jobs in US depend on trade and investment with Canada
- 16,800 jobs in Wyoming (about 2.3% of employment)



Canada

Inputs from Canada: Safe, Secure, Reliable Energy

U.S. imports of crude oil

Country	Imports (Thousands of)
Angola*	0.4
Algeria*	0.4
Iraq*	0.5
Russia	0.6
Nigeria*	0.8
Venezuela*	0.9
Saudi Arabia*	1.2
Mexico	1.2
Canada	2.7

Canada

US-Canada Trade: Beneficial for Wyoming

- Wyoming exports to Canada: \$305 million
 - Energy (51%), Chemicals (15%), Machinery (12%), Minerals (9%), Agriculture (3%), Metals (3%),
- Wyoming imports from Canada: \$1.5 billion
 - Energy (74%), Chemicals (5%), Machinery (5%), Equipment (3%), Metals (3%), Transportation (3%)
- 16 Canadian-owned companies in Wyoming employ 305 people



Canada



- ### We Make Things Together
- 1/3 of all US-Canada trade within same company
 - Supply chain efficiencies make both countries more competitive
 - Keeps more jobs in North America
 - Agriculture trade is complementary & we depend on each other for inputs
 - Canada imports farm machinery from US
 - U.S. imports energy & fertilizers from Canada
 - Trade in plant varieties, genetics, livestock & meat
-
- Canada



- ### Improving Trade and Competitiveness
- Address "thickening" of the border (growing list of regulations, procedures, inspections, fees)
 - Examples: APHIS user fees, mandatory country of origin labelling
 - Respond to misperceptions about trade
 - Avoid protectionism
-
- Canada

- ### Moving Forward
- Trade not zero-sum
 - US and Canada make things together
 - Identify measures unnecessarily burdening industry and seek workable solutions
 - Cooperation to address barriers in third countries
 - Seize opportunities of the relationship to grow together
-
- Canada

GREGOR GERTZ

USDA - Farm Service of America

Where do we go from here?

I will cover some options young producers have to start an Agriculture operation.

1. Develop a network-

- a. other producers (neighbor example)
- b. relatives (Uncles-no family members interested)
- c. Associations- local, state – gain knowledge

2. Buy livestock

Operating loan from FSA up to \$300,000, 1-7 years at 1 & 1/8% (1.125), our processing goal is to 30 days. Meaning after a complete application is turned in FSA will either approve or deny it in that time frame. What do you do next?

- i. Come up with a plan—extension---UW---Mentor
- ii. Obtain access to land
 1. Lease—3 years or more
 2. Winter feed supply
 - a. Use part of funding for machinery?
 - i. Lease or rent
 1. Better equipment no repairs
 2. Do custom work
 - a. Makes additional contacts for future leases
 - b. Do quality work they are watching
 - ii. Purchase
 1. Gain equity (tough with a depreciable asset like iron)
 - b. Buy feed and spend extra time on outside job, ----create some diversity and flexibility.
 - iii. Obtain loan packet from either FSA Office or on Line
 - iv. Good Luck

3. Buy land

a. Farm Ownership loans of up to \$300,000 1-40 years at 3%

b. Example:

i. Borrow	\$1 Million	Payment
1.	\$250,000 FSA FO 40 years at 3%	10,818
2.	750,000 State of WY B.F. 10 years @2% & 20 @ 8%	33,488
3.	First 10 years	Total Payment 44,306
4.	Second 10 years jumps to a payment of \$66,594	

- a. Annualize at that time and possibly refinance
- b. FSA takes a second position behind State of WY

5. Problems with example?

- a. What can you purchase for 1 mill?
 - i. 250 acres irrigated @ \$4,000 per acre
 1. Payment \$177 per acre
 2. 1 ton hay what happens when value drops to \$80 then have a short water year
 - ii. 2,500 acres dryland at \$400 per acre

1. 1,250 acres wheat at 28 ¼ share is 7 bushels or 8,750 total bushels payment requires \$5 bushel wheat. Great it is at \$8.00 today. Will it stay above \$5 for the next 10 years?

2. Hail storm, drought

iii. 2,500 acres grass land @ \$400 per acre

1. 25 acres per cow unit so can run 100 cows

2. \$443 per cow unit for land payment

3. Cow payment on 100 cows about \$23,000

a. \$230 per cow

4. \$673 per cow then need 5% death loss requires \$706 per calf and have not even added in operating costs, winter feed and depreciation on cow.

ii. Borrow money utilizing other lending agencies.

1. Guaranteed loan at bank

a. FSA guarantees up to 1.3 million

b. Rate determined by lender

c. 1-7 years on operating up to 40 on Farm Ownership

d. 1.5% guarantee fee

iii. Contract for deed with seller:

1. Make your best deal

a. Win Win, Seller obtains higher interest rate, buyer may obtain lower rate.

2. FSA Land Contract guarantee program—up to \$500,000—Beginning farmer.

3. Examples—(sell portion and lease back)—walk away if it doesn't feel good.

4. THINK OUT OF THE BOX

4. Lease Land

a. Leases hard to come by so you have to be the best operator out there and leases will come to you.

b. Livestock numbers are down when drought breaks there may be possibility to pick up leases. Cattle will be high priced.

c. Work with absentee land owners, more the norm now, Recreation, Mineral development, older producer slowing down.

i. Successful producers that never owned any land and had an excellent reputation as a good farmer. Retired well.

5. Lease livestock

a. Operation in Texas

i. Required you take 500 head

ii. 40% of calf crop as payment

b. Over stocked rancher building herd and equity for future expansion.

6. Wrap it up

a. Young producers have a lot of options out there.

i. Be creative

a. Be aggressive follow your instincts.

ii. Don't burn bridges

b. Older producers give the young ones some room to move

i. They need to make mistakes on their own that they will remember

c. Again develop your network you are doing that by attending this function

JAMES R. FISCHER, PH.D., P.E.

J.R. Fischer & Associates

ENERGY AND AGRICULTURE – BACK TO THE FUTURE

AGRI FUTURE CONFERENCE
OCTOBER 16-18, 2012
LARAMIE, WYOMING
HILTON GARDEN INN

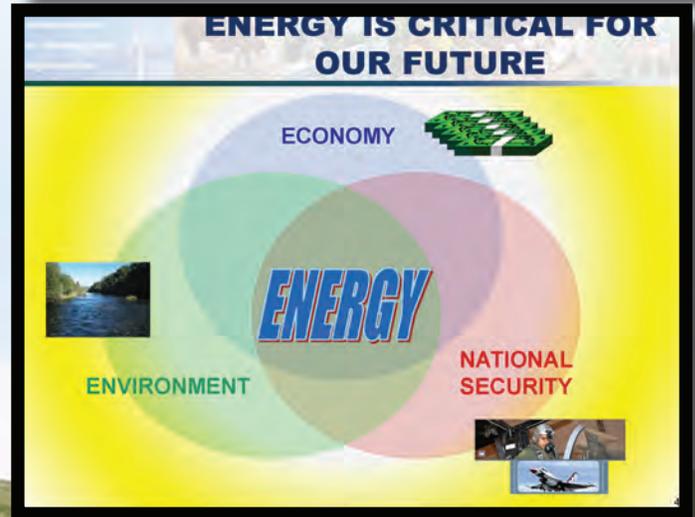
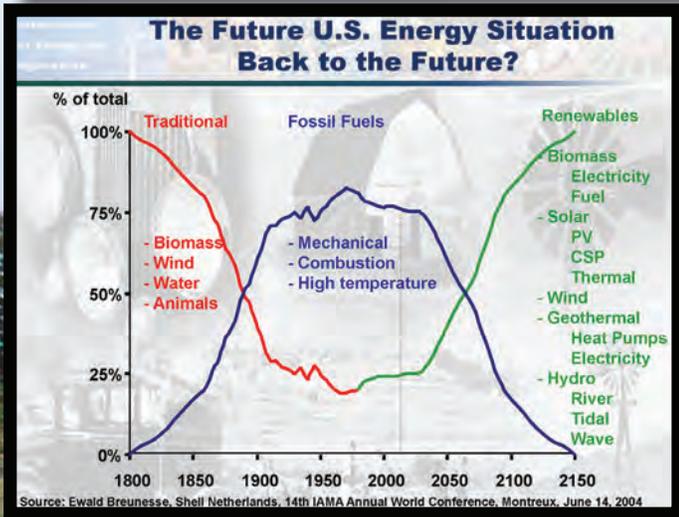
James R. Fischer, Professional Engineer, PhD
Principal – Fischer & Associates LLC
"Intersection of Energy and Agriculture"

Former:
Member DOE Board of Directors
Clemson University – Dean
Michigan State University – Associate Dean
USDA/University of Missouri – Renewable Energy Research Engineer

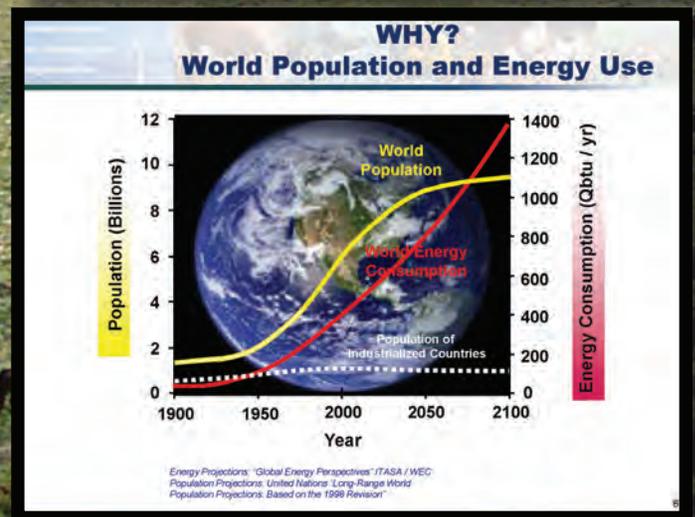
INTERSECTION OF SOCIETY & ENERGY

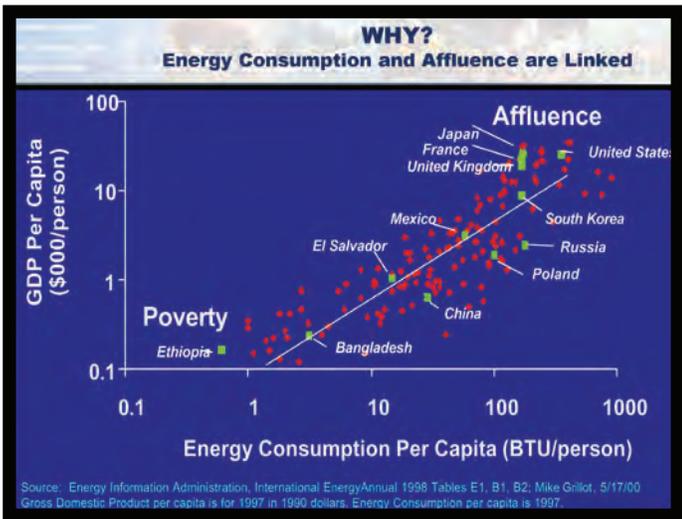
FISCHER & ASSOCIATES

- OUR PURPOSE:
 - Facilitate the development, management and implementation of:
 - energy efficiency
 - renewable energy
 - intersections of energy, agriculture, environment
- What we do:
 - Build **synergy** in public/private sector partnerships
 - Provide an **understanding** of renewable energy & efficiency
 - Develop creative energy **business** opportunities
 - Deliver **keynotes**
 - Publish relevant **reports**
 - Lead interactive **discussions**
 - Conduct focused energy **meetings**



We should fish for a sustainable supply of energy --- or --- We could have a whale of a problem!

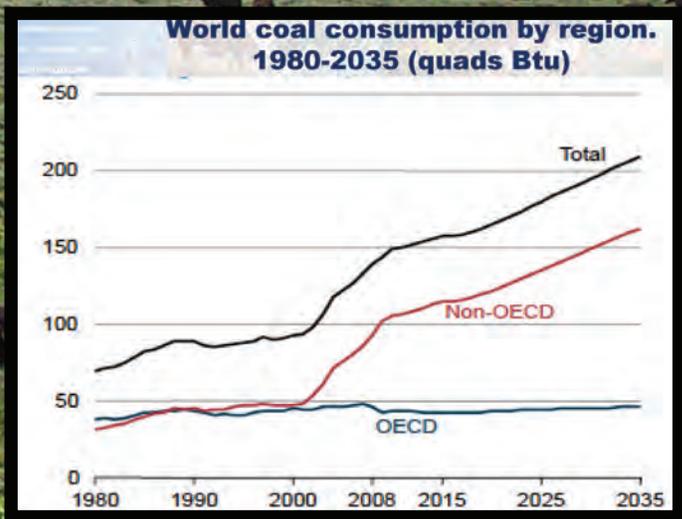
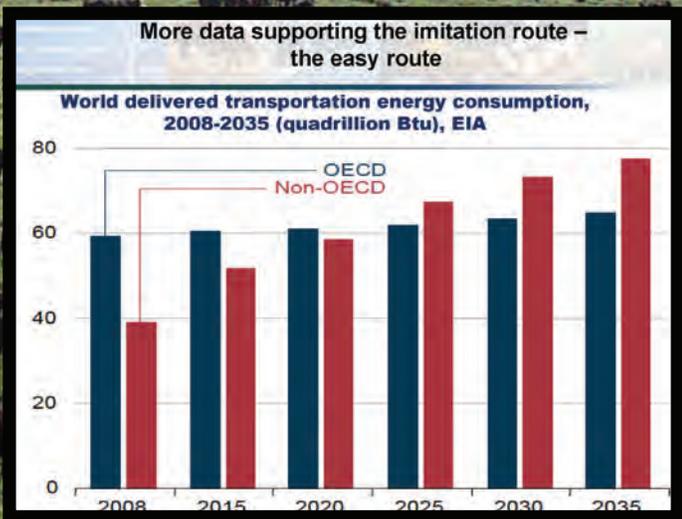
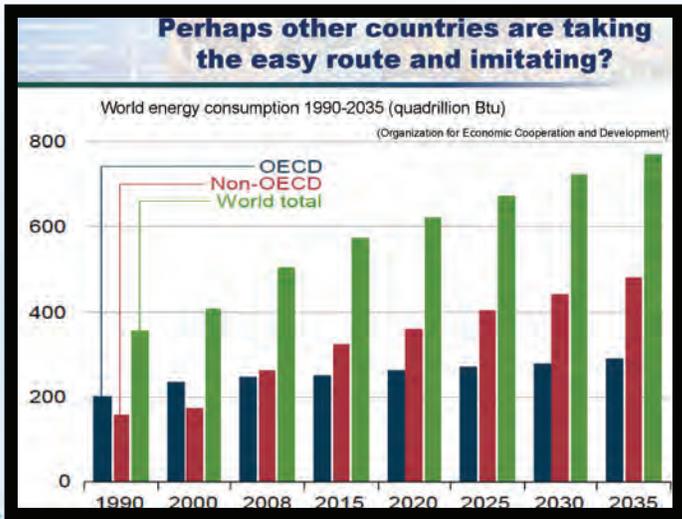
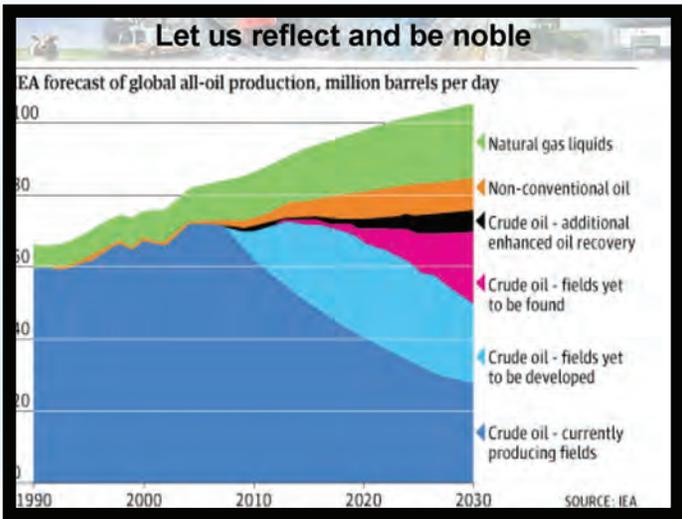


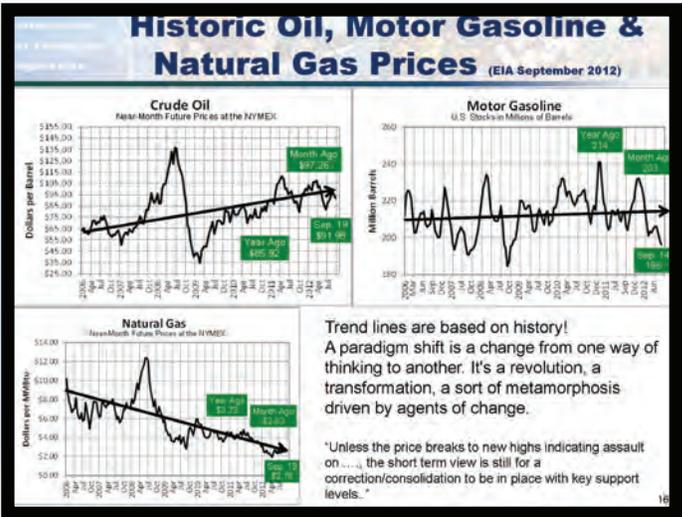
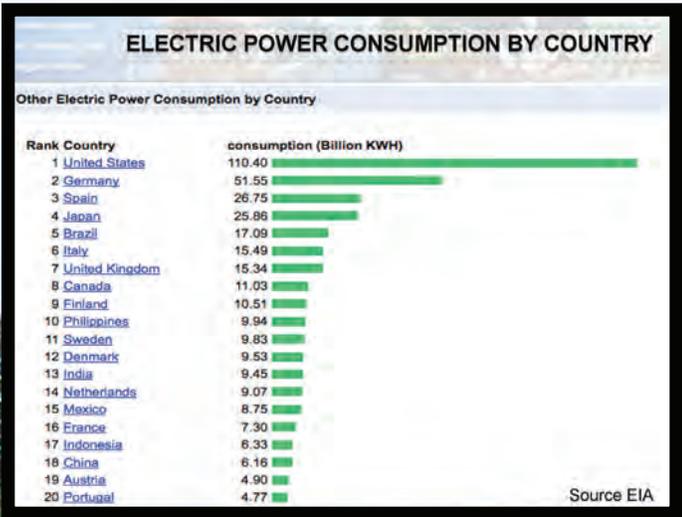
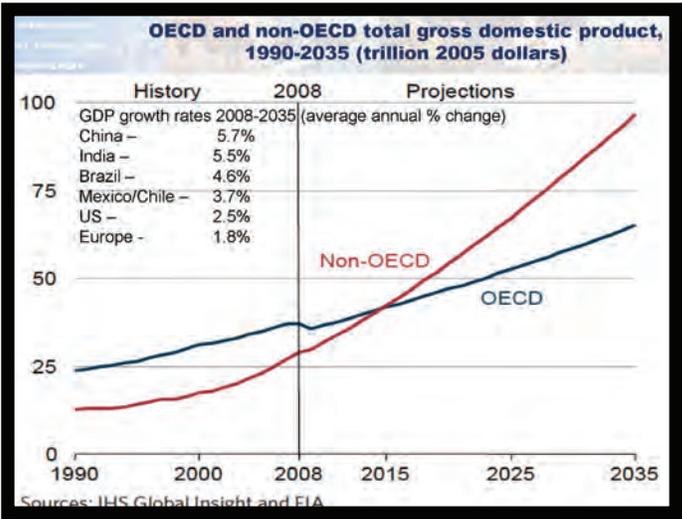
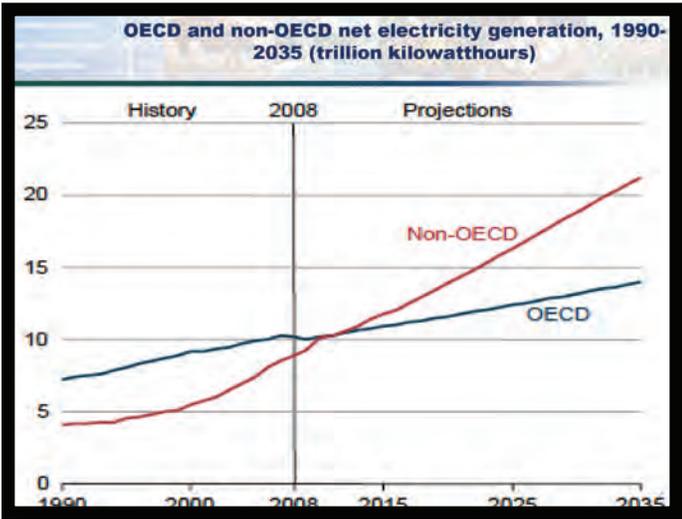


By three methods we may gain wisdom:
Confucius

First, by reflection - which is noble;
Second, by imitation - which is easy;
Third, by experience - which can be bitter.

OPPORTUNITIES ARE CREATED BY WISE PEOPLE





WHAT IS OUR VISION FOR THE FUTURE?

Our Energy future should be more

than hoping something will drop into our laps?

WHAT IS AT STAKE for the US – Population 310+ Million?

"Best-case" scenario is that in the future a number of technologies will be in place that will allow the U.S. to transition from heavy reliance on petroleum to relying more on domestic and renewable resources

A "worse case" could mean supply disruptions like we experienced in the 1970s, although we are buffered "somewhat" by Strategic Petroleum Reserve -

- approximately 4.1 billion barrels in reserve
- we use 19 million barrels/day -
- Is a 7 month supply sufficient ???

United Nations "SE4ALL"



2012 "International Year of Sustainable Energy for All" (SE4ALL)



Currently,

- 1.3 billion people worldwide are without access to electricity
- 1 billion more have only intermittent access
- 2.8 billion people lack access to clean cooking solutions

UN SE4ALL campaign to reach three goals by 2030:

- ensuring universal access to modern energy services,
- doubling the global rate of improvement in energy efficiency
- doubling the share of renewable energy in the global energy mix.

Richenda Van Leeuwen, executive director, energy and climate for the United Nations Foundation

Lindsay Morris, Associate Editor, Power Engineering Magazine

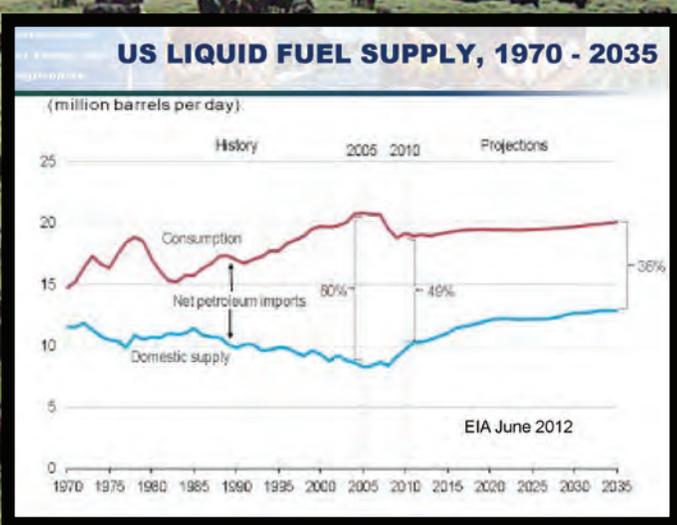
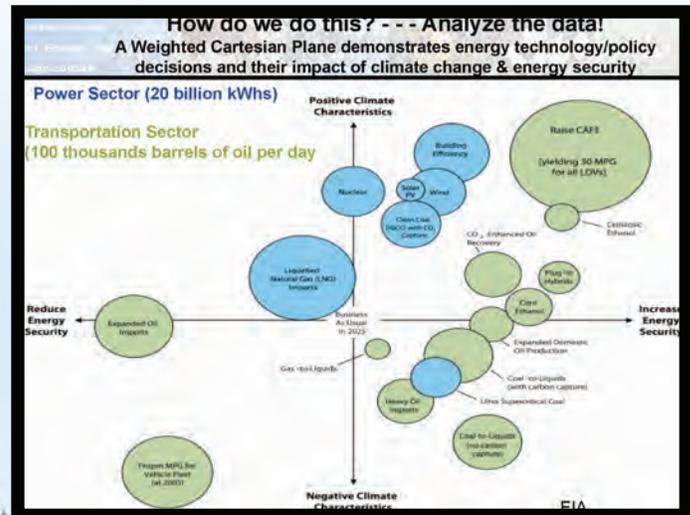
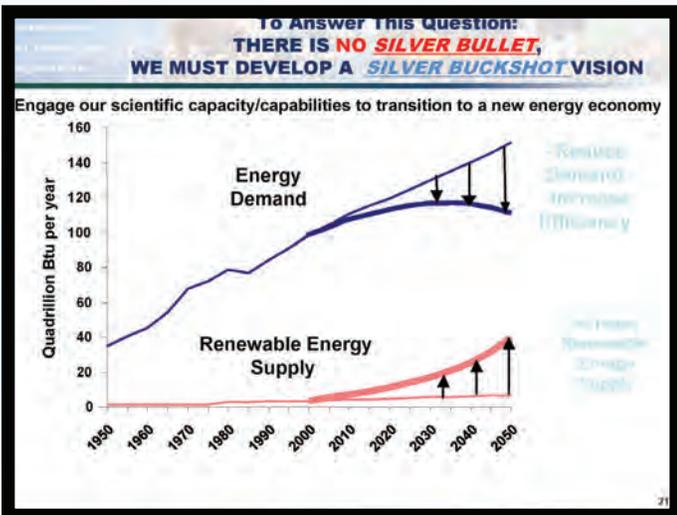


The Question Becomes - - How Much Time Do We Have?



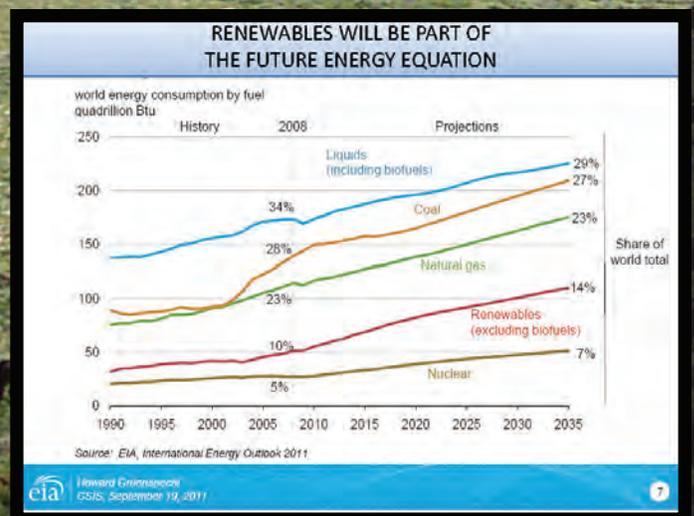
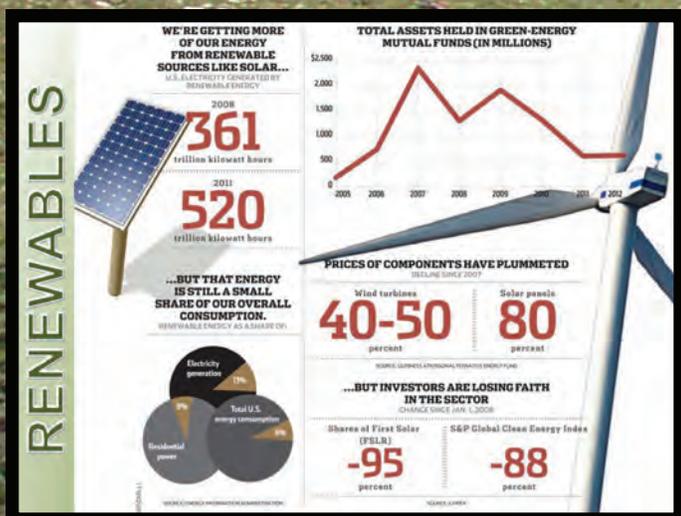
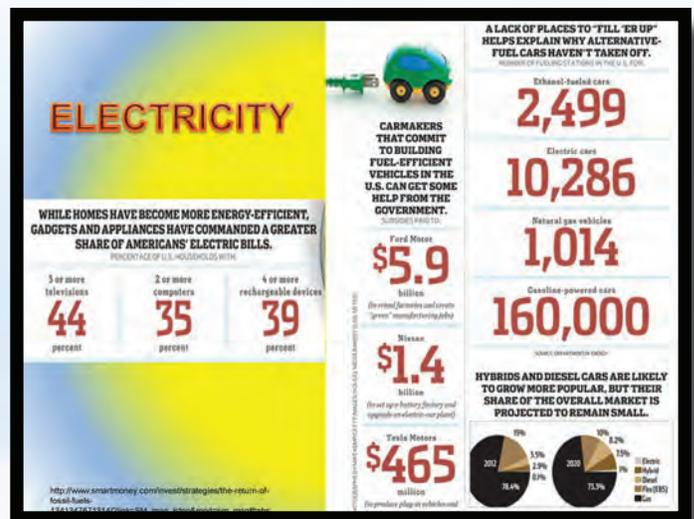
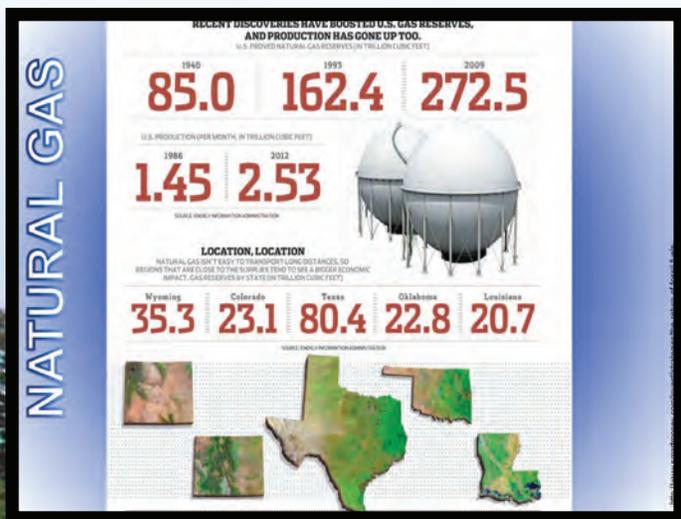
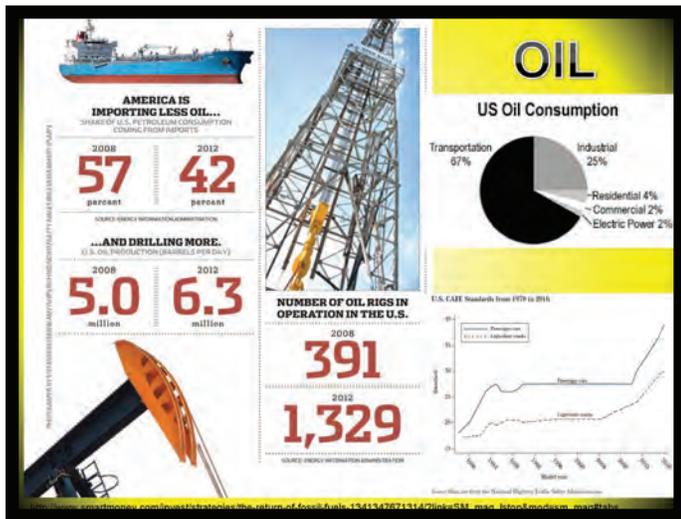
- Political consensus building ~ 3-20+ years
- Technical R&D ~ 10+
- Production model ~ 4+
- Financial ~ 2++
- Market penetration ~ 10++
- Capital stock turnover ~ 10-100
 - Cars ~ 15
 - Appliances ~ 10-20
 - Industrial Equipment ~ 10-30/40+
 - Power plants ~ 40
 - Buildings ~ 80
 - Urban form ~ 100s
- Lifetime of Greenhouse Gases ~ 100s-1000s
- Reversal of Land Use Change ~ 100s
- Reversal of Extinctions Never





Achieving sustainable energy future ain't an easy job

BUT IF WE ARE SUCCESSFUL "THERE IS NOT A FEELING LIKE IT"



Increasing Role for Agriculture in Energy

The Energy Foundation
 Toward a Sustainable Energy Future

THE NEW HARVEST: Biofuels and Windpower for Rural Revitalization and National Energy Security

<http://climatesolutions.org/resources/reports/harvesting-clean-energy>

- Let Us Reflect On Agriculture & Energy Connections -

Agriculture/
 Energy Nexus
 Energy Nexus

Energy and Agriculture

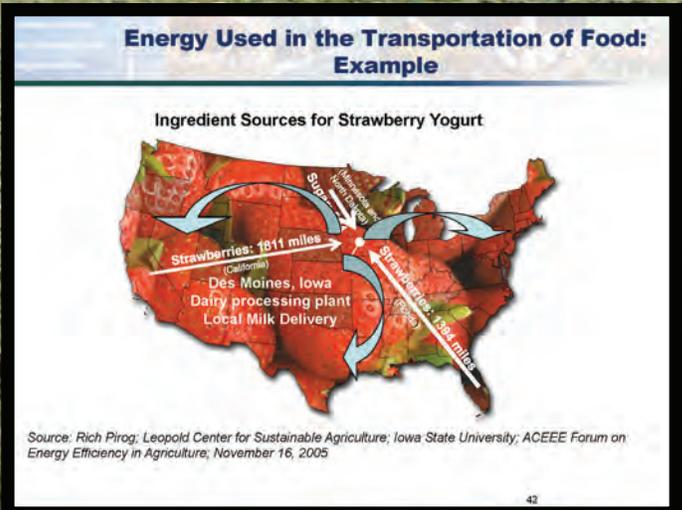
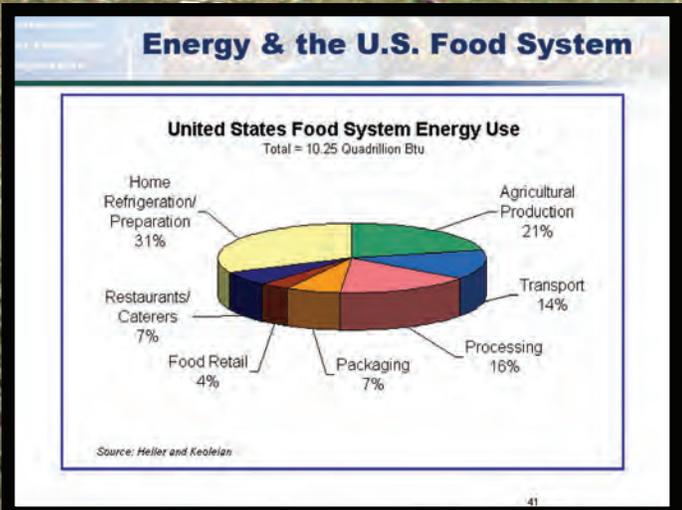
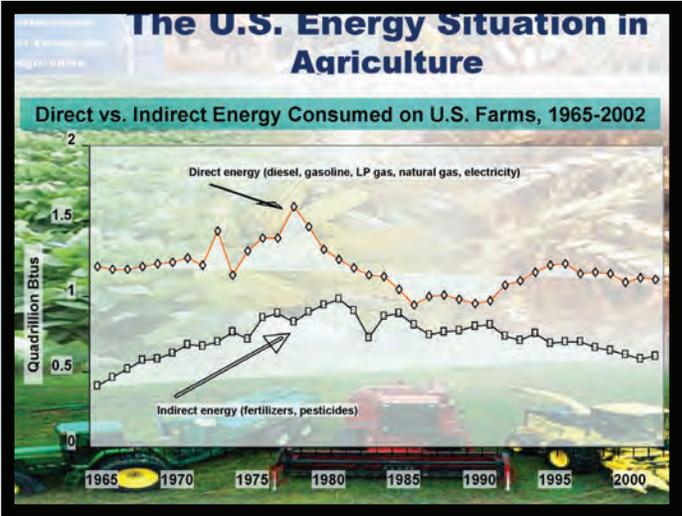
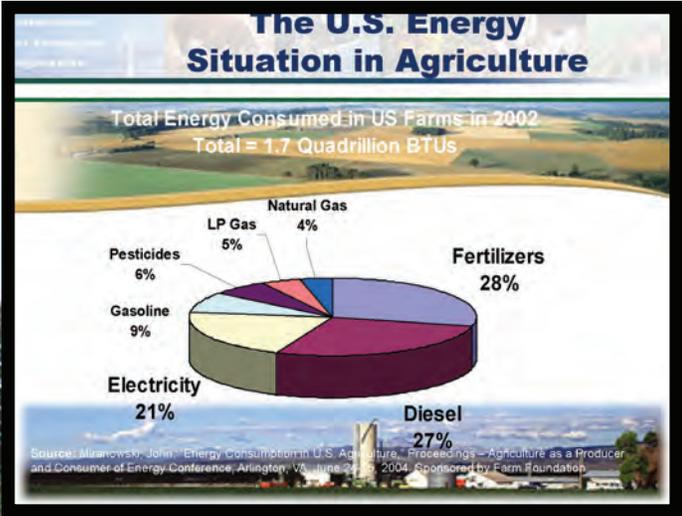
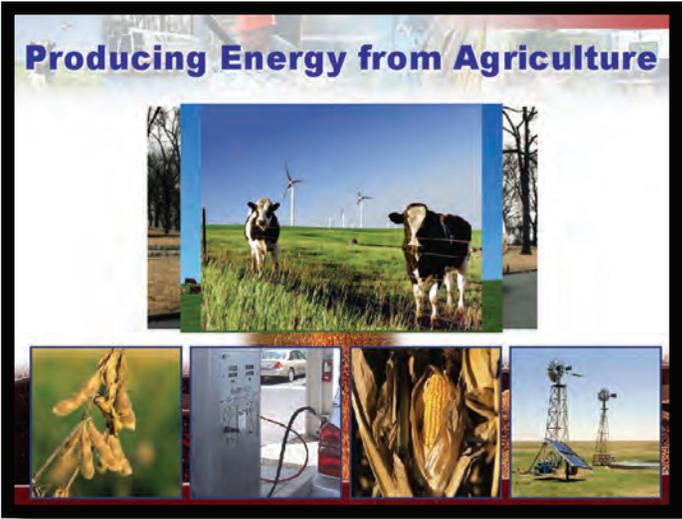
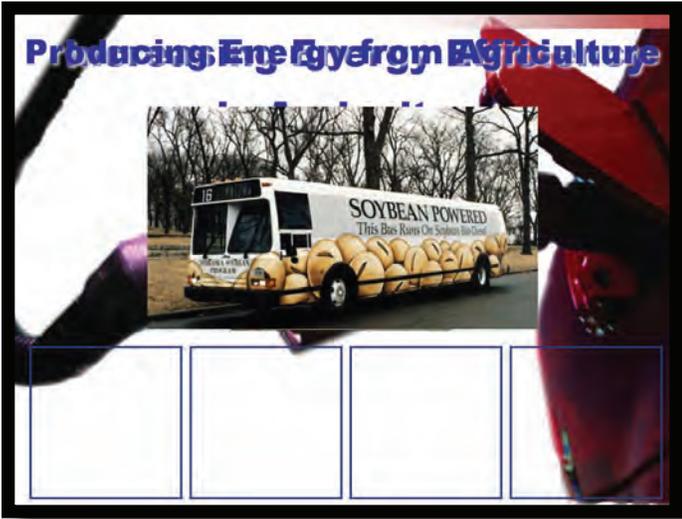
... Imagine ...

A Working Toward a Future

In

A Prosperous Energy Future

A Prosperous Energy Future in Agriculture



The Changing U.S. Energy Situation

The Only Constant Is Change - Inevitable Transition to New Energy Technologies

19 th Century 1800s	20 th Century 1900s	21 st Century 2000 & beyond
Direct, wood, wind, water, animals	Steam Engine - Coal 1830-1940	Fuel Cell Hydrogen
	Electric Dynamo - Coal 1900-1940	Direct Electric Solar
	Internal Combustion Engine-Oil 1910-1970	Advanced Biobased Technologies
	Nuclear 1970-1990	Zero Energy Homes
	Combined-Cycle Gas Turbine 1990	

Energy Plan

ACTION ITEMS

- Reduce Petroleum Dependence
- Develop Cleaner Energy Sources
- Address Aging Electric Grid and Security Concerns
- Increase Energy Efficiency
- Create New Bioindustry
- Lead by Example

Opportunities for:

Responsibility of:

- The Nation
- The States
- Industries
- Universities
- Farmers/Ranchers
- People

Government, Industry & Business Should Set The Vision of Our Prosperous Energy Future

- The U.S. will have in place a number of renewable and energy efficient technologies
- We will also be transitioning to a carbohydrate-based economy where many of our products and fuels will be produced in biorefineries
- We will be leaders in exporting these technologies to other countries

Agriculture Becomes Involved in Renewable Energy Technologies

- Wind
- Solar
- Geothermal
- Bioenergy and Bioproducts
- Hydrogen
- Hybrid Generation Systems

Today is Different than the 1970's - WHY? Agriculture & Society have an Increased Energy Awareness

Google Renewable Energy Organizations and you will have over 100 organizations

More Examples of Increased Energy Awareness & Activity

Agriculture Involved in Energy Efficiency Technologies

Zero Energy Buildings
(Lighting, windows, refrigeration)

Materials Handling/Electric Motors

Fuel and Inputs
Field equipment (tractors)/vehicles
Fertilizers
Chemicals

Food System Continuum
Transportation
Food processing

People get serious about ENERGY EFFICIENT HOMES

An Energy Efficient House Requires System Integration

CONSTRUCTION

INSULATION

COMPREHENSIVE AIR BARRIERS

EFFICIENT AIR DISTRIBUTION

HIGH PERFORMANCE WINDOWS

EFFICIENT EQUIPMENT

EFFICIENT LIGHTING

HOW DID WE MEASURE UP Energy Use?

HERS

Home Energy Rating System

Existing "Typical" Home (Red arrow pointing to 150)

American Standard New Home (2006) (Orange arrow pointing to 100)

ENERGY STAR New Home (Yellow arrow pointing to 80)

Our Home \$168/mo avg (Green arrow pointing to 74)

Net Zero Energy Home (ZEH) (Light green arrow pointing to 0)

The HERS Index is a relative energy use index

ENERGY STAR Home Energy Yardstick

YOUR SCORE

Energy Star Yardstick compares household's energy use to similar homes in area. (10 is most energy efficient - 5 is average for our area)

Yardstick Score: 7.4*

Home and Energy Use for:

Address: 1307 Stablestone Lane, Columbia MO
Zip Code: 65201
People living in your home: 3
Square Footage: 4400
Energy Use from 01-Jan-2009 to 31-Dec-2009

Use (Natural Gas)	Bill Amount (Natural Gas)	Use (Electricity)	Bill Amount (Electricity)
494 CCF	\$676	13,200 kWh	\$1,205

Economics:

\$3,617 - Comparable Home Energy Costs for our location in 2009

\$1,881 - Our Home Energy Costs in 2009

\$4,000 - Our Investment in Energy Efficiency Upgrades

2.3 years to Payoff efficiency investment compared to average home.

Office is in our home - occupied 24/7

Energy Challenges

Security

- Secure supply
- Reliable Infrastructure

Economy

- Economic Development
- Energy price volatility
- Affordability

All three imperatives must be simultaneously addressed

Environment

- Carbon mitigation
- Land and water use

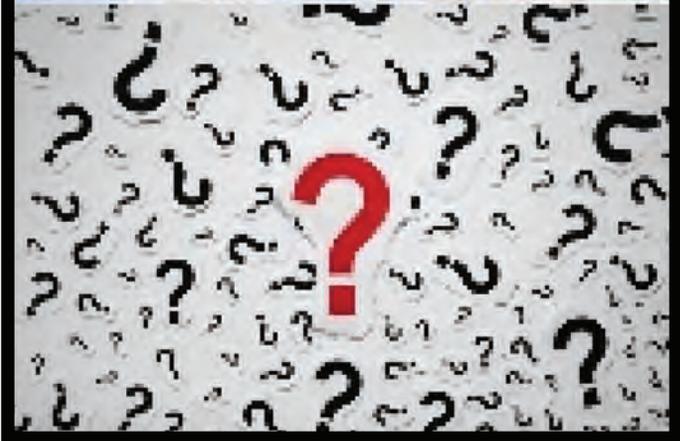
Challenges to a sustainable energy future

When you are challenged -



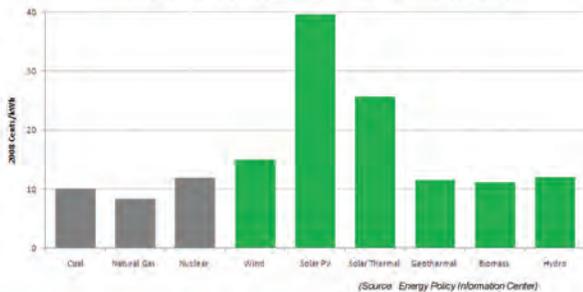
SOLVE THE PROBLEM

WHAT ARE THE CHALLENGES FACING A NEW ENERGY FUTURE?

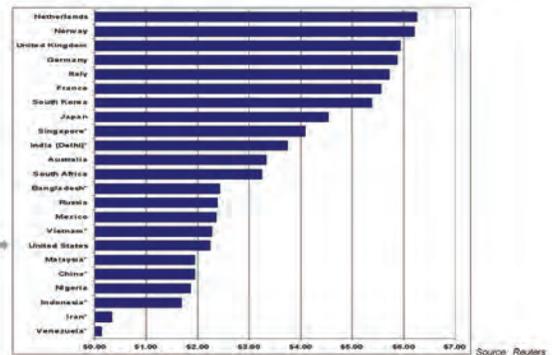


Challenge #1: Relative Cost of Renewables

Estimated Levelized Cost of New Generation Resources, 2016

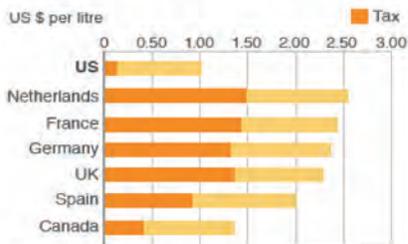


Gas Prices Around the World (2009)



U.S. Policies and the Price of Gas

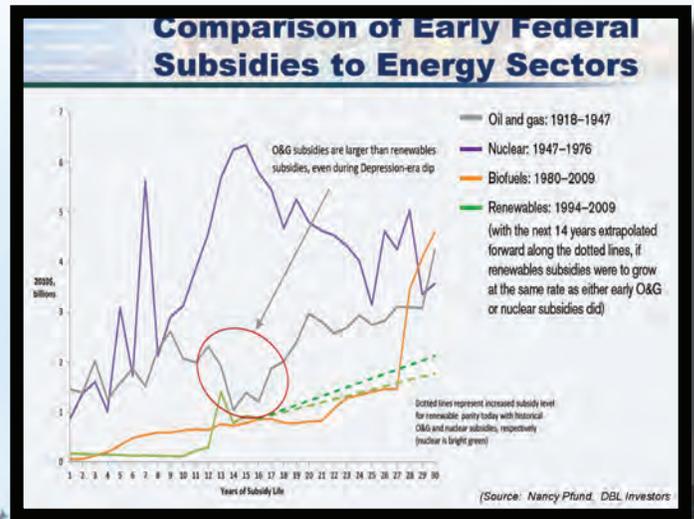
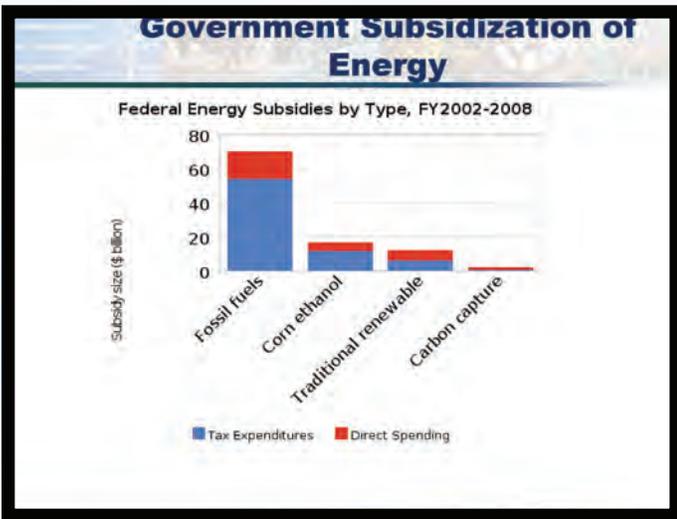
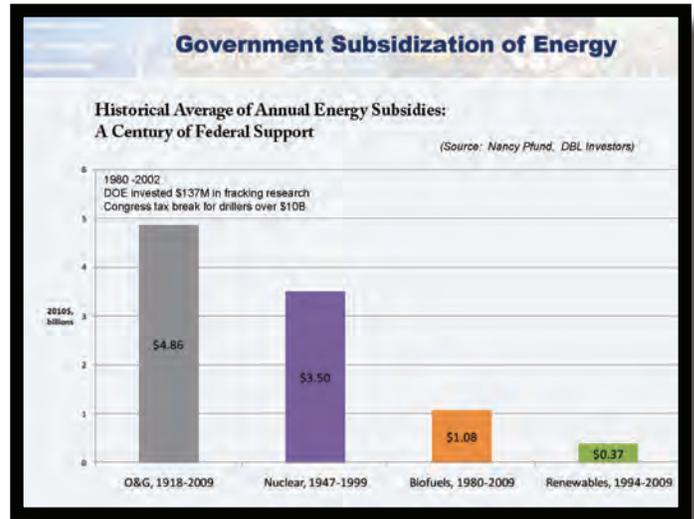
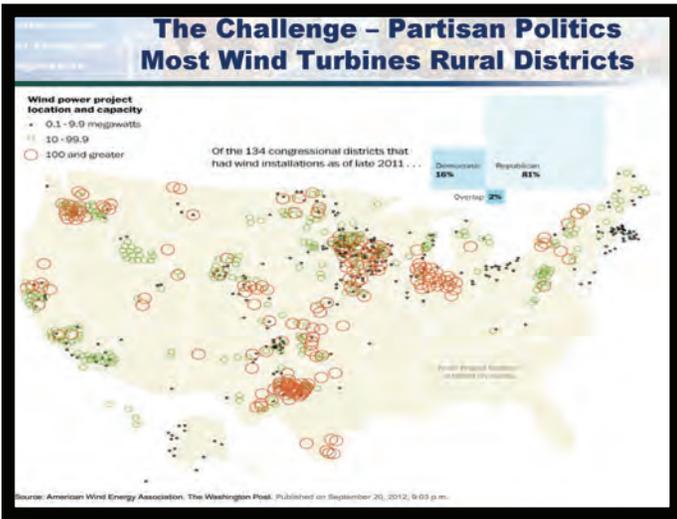
Petrol prices at the pumps, April and May, 2011



Challenge #2: Entrenched Interests

Top Ten Largest Companies by Market Capitalization:

Apple Inc	648.01
Exxon Mobil Corp.	426.05
Microsoft Corporation	261.65
Wal-Mart Stores, Inc.	250.43
International Business Machines Corp.	236.34
General Electric Co	233.46
Google Inc	232.10
Chevron Corporation	230.06
Berkshire Hathaway Inc.	220.10
AT&T Inc	214.95



DOD Major Impetus for Nuclear Energy Will DOD Function In Like Manner for Renewables?

Dennis V. McGinn, Vice Admiral (U.S. Navy, retired)

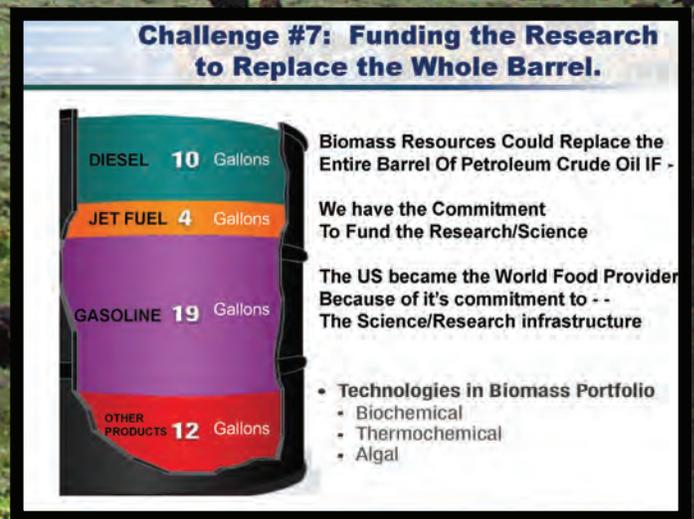
Great Green Fleet

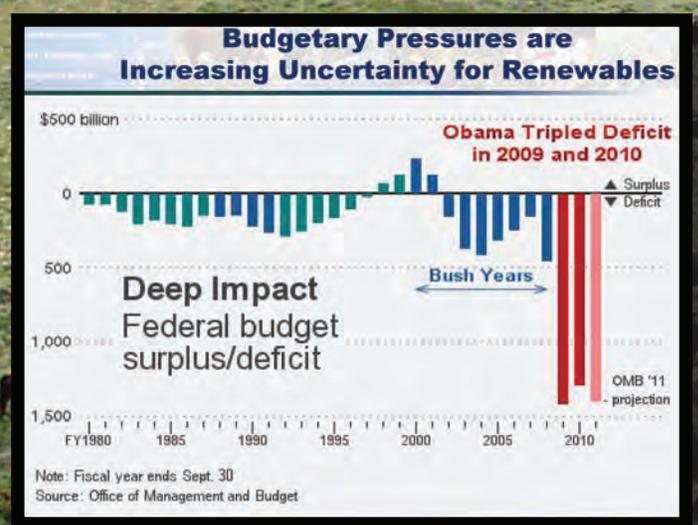
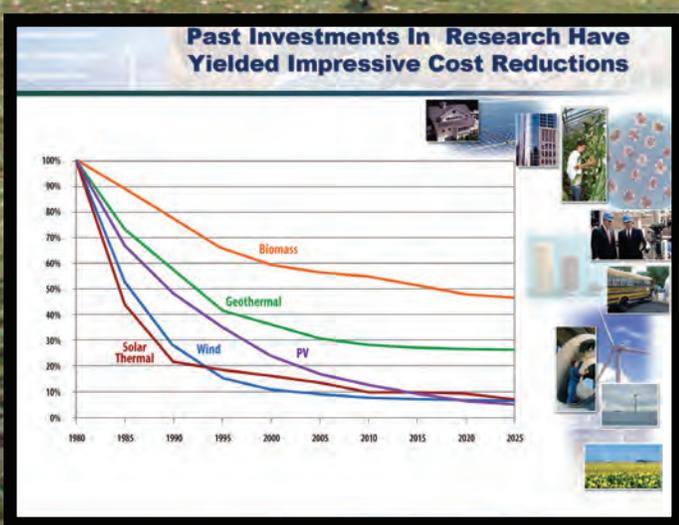
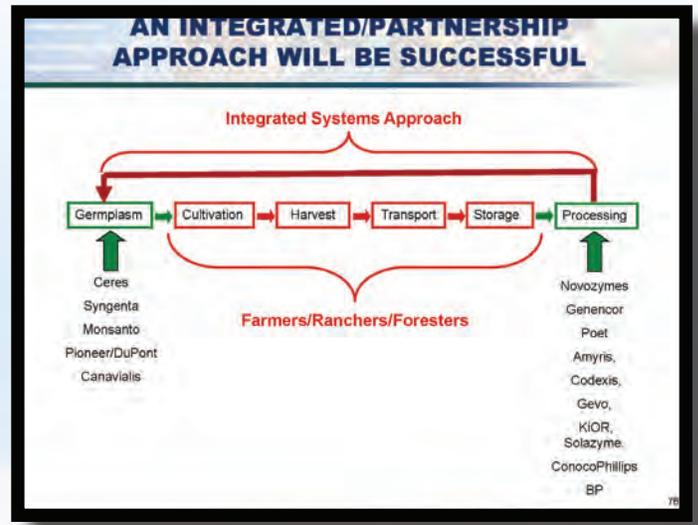
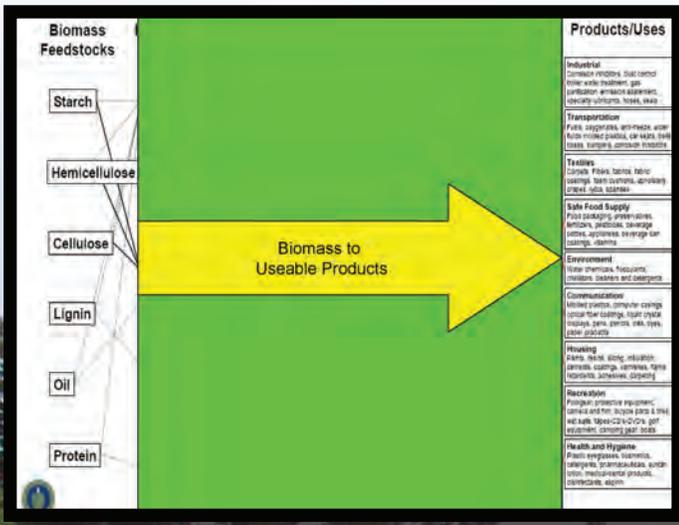
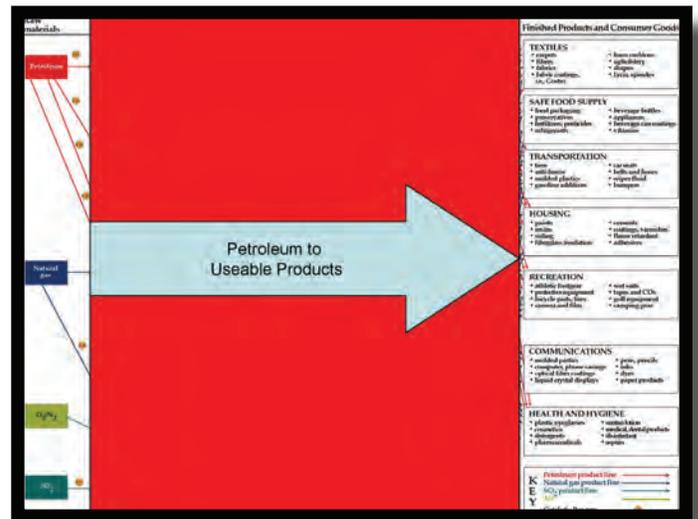
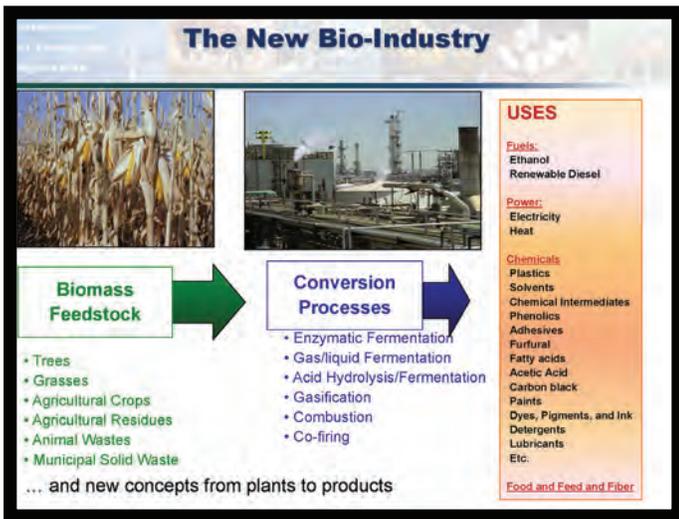
We do not have an easy solution in the US to break our addiction to oil unless we improve our energy efficiency and expanding the portfolio of energy beyond petroleum and that is what biofuels is all about.

The great green fleet using less than 50% of the petroleum to power the ships, the planes and the helicopters and ground equipment. Goes directly to the heart of national security

Government must continue RFS. It is unfortunate that we have misinformation. Energy is an American issue

Tell the story to citizens and elected officials





The SUN

Why should we pinpoint the Sun?

First - the sun will be with us for a long time - estimated to be around for another 4.5 billion years

Second - the sun is a very powerful source of energy - provide just to the solid part of the earth, more than 7,500 times the energy we need this year to meet ALL of the global energy needs!!!

Third - the sun is a ubiquitous source of energy. It is available to all nations - no need for conflicts over land-based fossil energy sources

Photosynthesis

An elegant biochemical process in which green plants in the presence of sunlight, carbon dioxide and water yield organic compounds - glucose and oxygen.

Energy yield is approximately 100 terawatts on an annual basis. That is about 6 times the energy needed by all humans on the planet

Energy captured by green plants in seeds and biomass can be the feedstock for liquid fuels, thermal energy or converted into useful bio-products

We Can Develop the Next Generation of Biofuels if - We Coordinate Our Efforts

Feedstock Development & Production

Biofuels

It starts with the end in mind

Supply Chain Systems Approach

USDA & DOE

USDA

USDA risk & DoD & DOE

FAA & DoD Q/C

USDA & DOE

Industry & DLA fuel

Feedstock Development

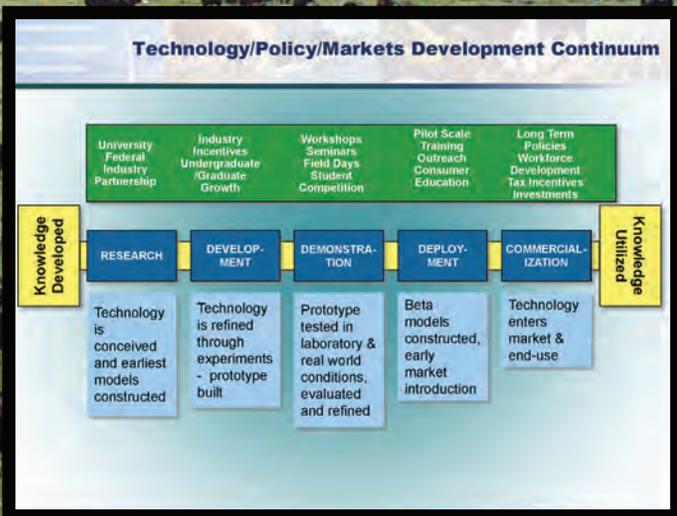
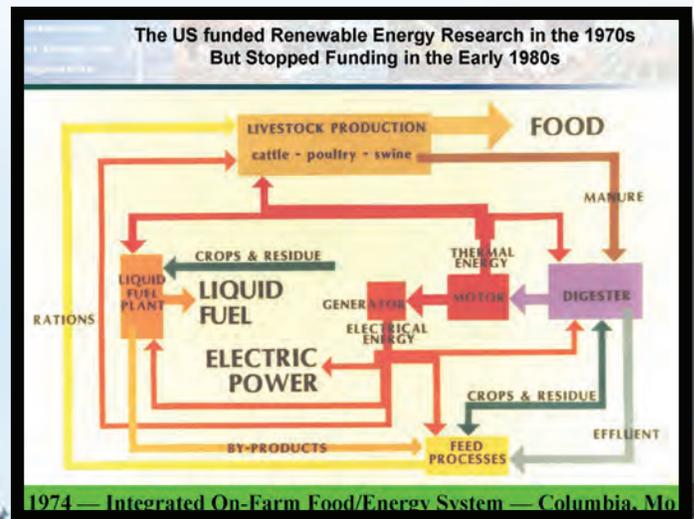
Feedstock Production

Feedstock Logistics

Biofuels Conversion

Fuel Testing & Approval

Large Scale Deployment



THE LAND!

Henry Ford – June 18, 1932 Literary Digest

That is where our roots are.
There is the basis of our physical life.
The farther we get away from the land, the greater our insecurity.
From the land comes everything that supports life.
The land is waiting to honor all the labor we are willing to invest in it, and
The land is able to tide us across any dislocation of economic conditions.

Introduction of Energy and Agriculture

Searching for the Total Picture

Introduction of Energy and Agriculture

THE TOTAL PICTURE COULD BE A FRESHING CHANGE IF WE ARE OPEN TO OUTCOME !!!

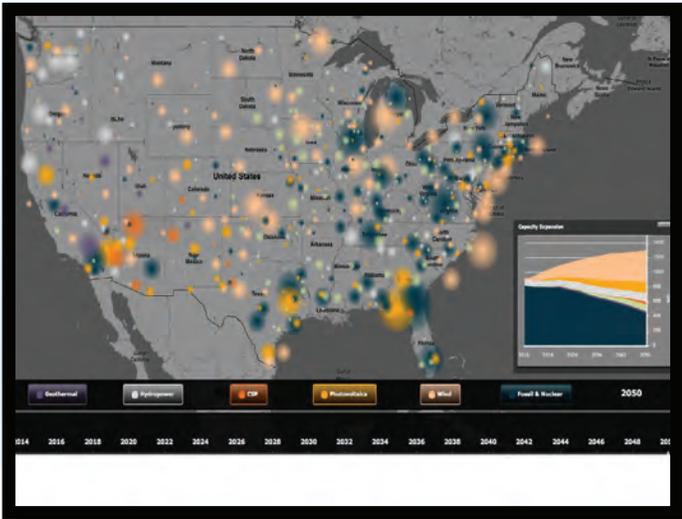
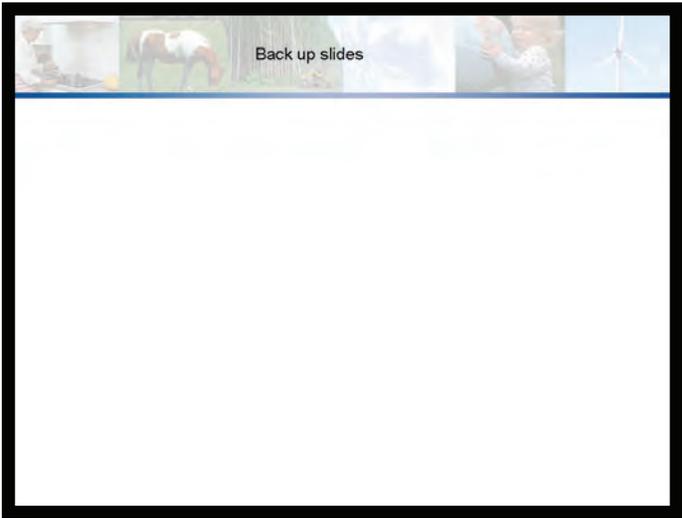
To Get the Total Picture This is what you and I can do

Together – we will build a prosperous future

where energy is clean, abundant, reliable and affordable

where energy is clean, abundant, reliable and affordable

Sharing Horizons that are new to us – What will we find along the way?

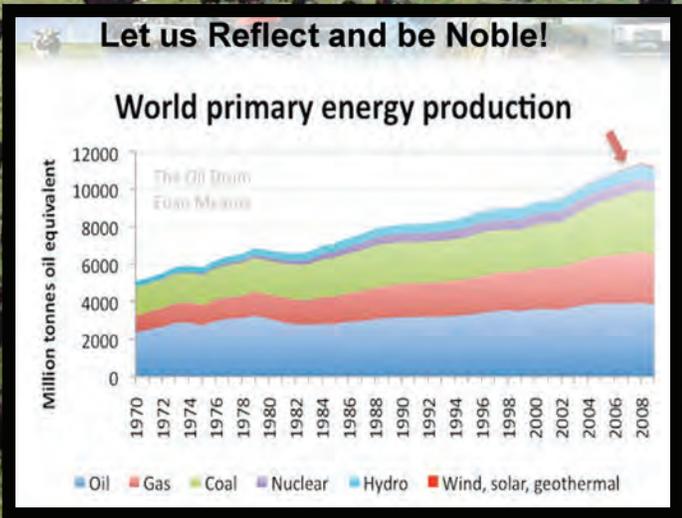


Renewable Energy Technology Resource Maps and Technical Potential for the United States

For more information go to the NREL
website:
http://www.nrel.gov/gis/re_potential.html

Updated July 2012

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.



AGRI-FUTURE FEEDBACK

It gave me the motivation needed to “keep on keepin on” in being an “agvocate” Agriculture is my passion and with the knowledge I gained from this conference I can take it home to share with my peers and community