



AG ENERGY WORK GROUP

25 x '25

America's
Energy

Future
Presented to

BioOpportunities
NDSU

May 17, 2007





Energy: Lynchpin of Our Economy

- Fundamental to our prosperity
- Contributes to our quality of life
- Historically has been abundant and affordable



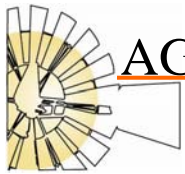


Fossil based energy systems are not sustainable.

World oil reserves:

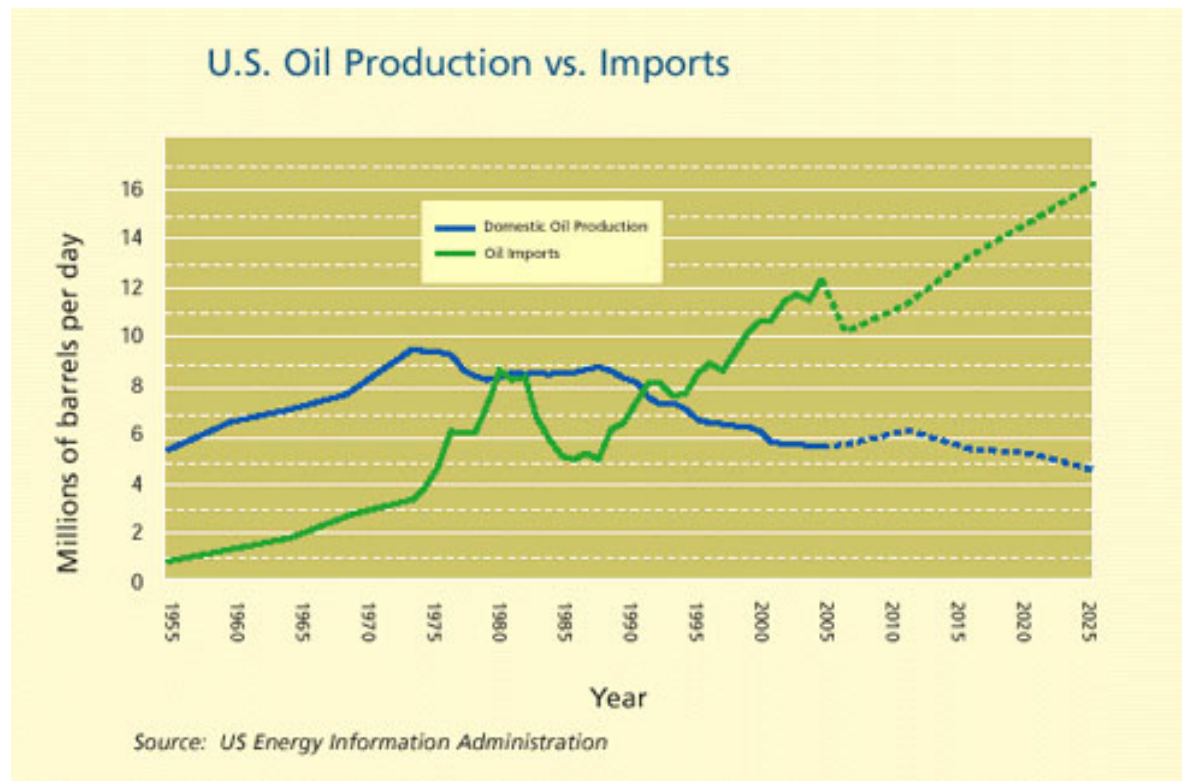
- Limited in supply
- Located in volatile parts of the world
- Can be affected by natural disasters





Dependence on Foreign Oil Is Increasing

- Compromises economic and national security



Costs of oil, natural gas and electricity are skyrocketing, driven by \$60+/barrel oil.

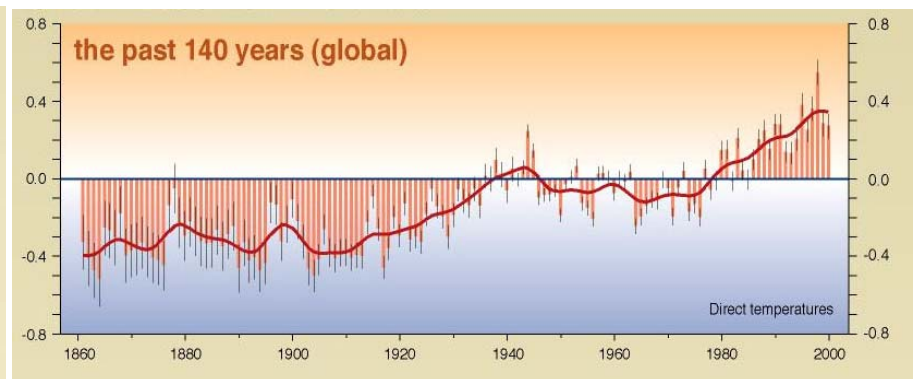
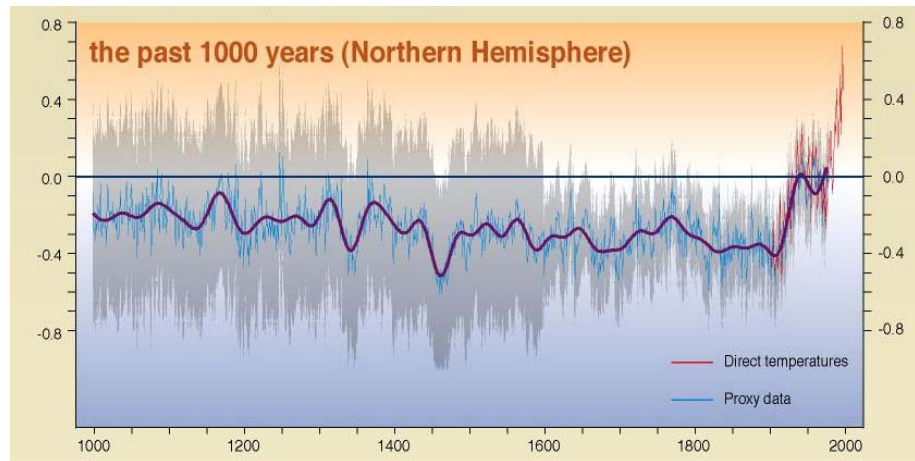
- Affects vitality of U.S. and world economies





Emissions from burning of fossil fuels
theoretically impact the environment.

Variations of the earth's surface temperature
[Departures in temperature in °C (from 1961-1990 average)]



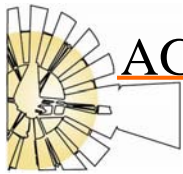


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Three Central Challenges:

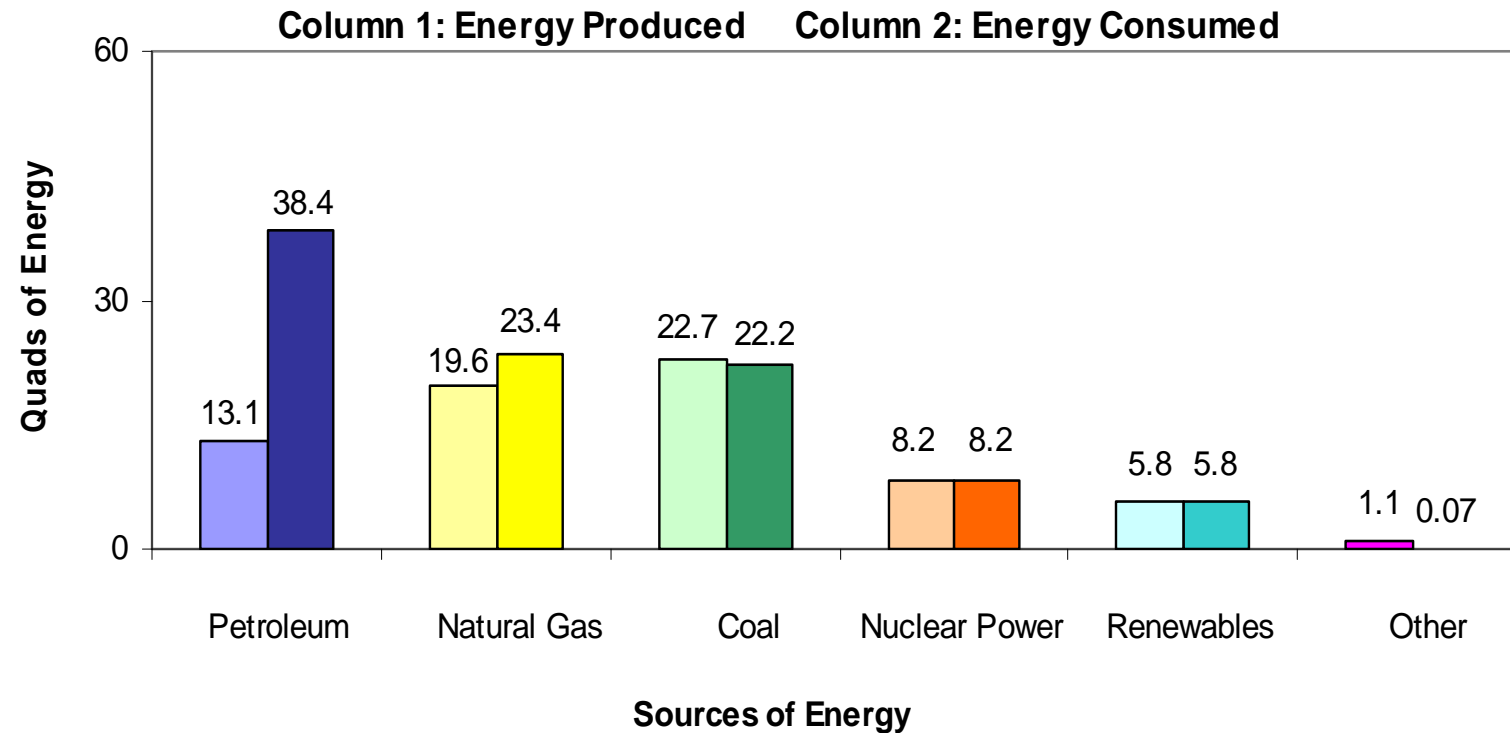
- National security
- Economic security
- Environmental protection

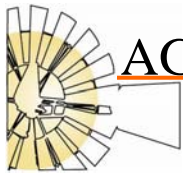




Current Energy Status

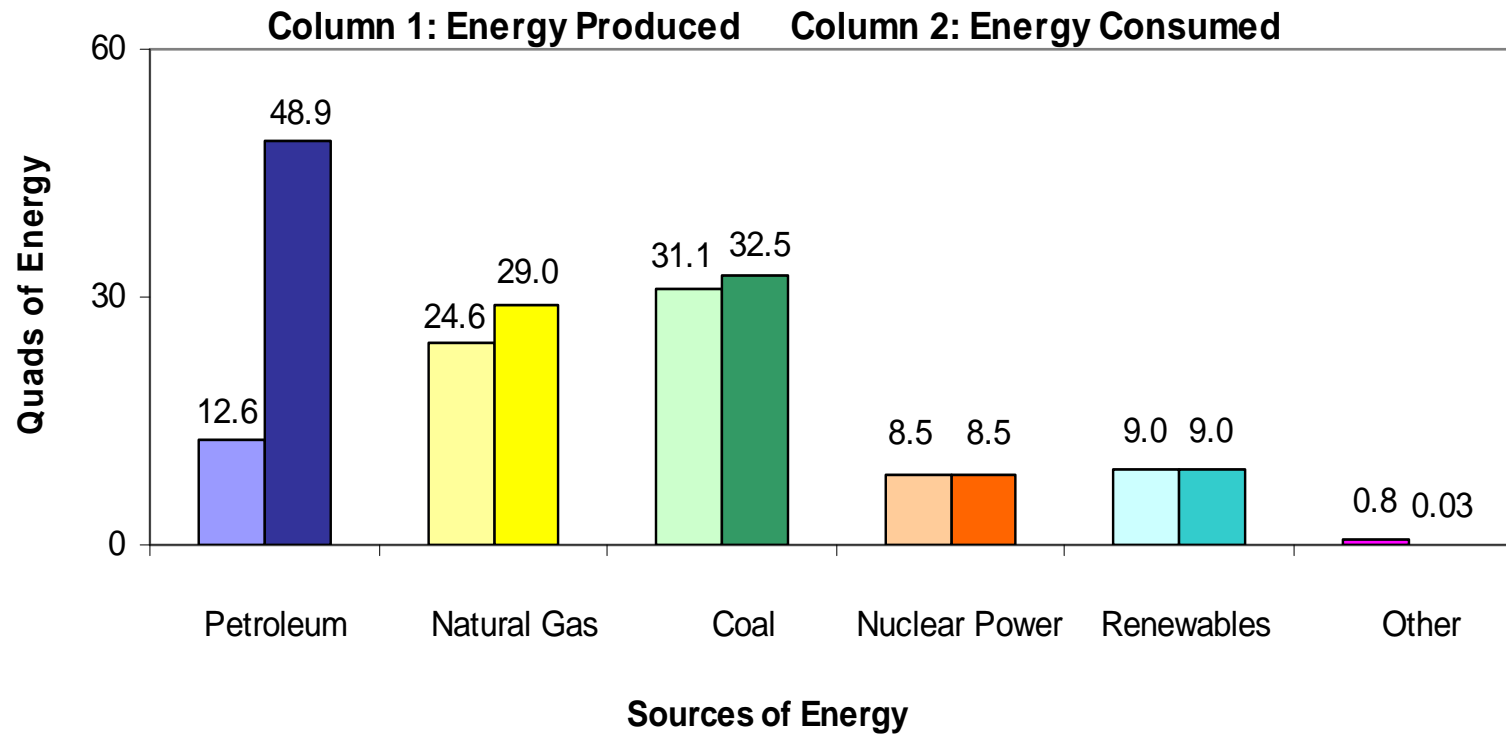
2003 Actual

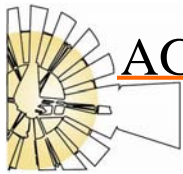




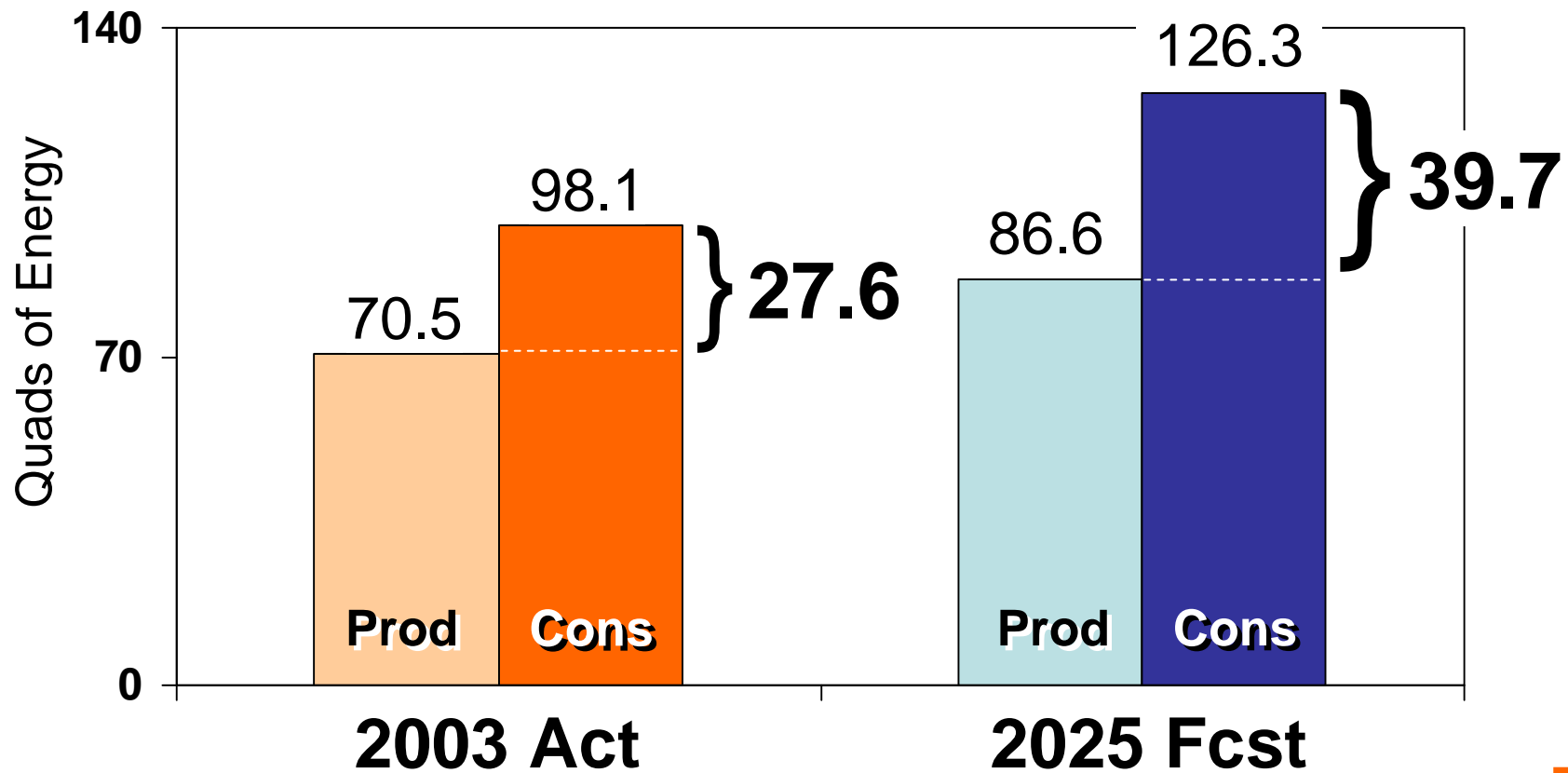
A Growing Challenge

2025 Forecast





Total Domestic Energy Production and Consumption





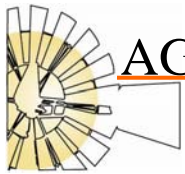
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Vision:

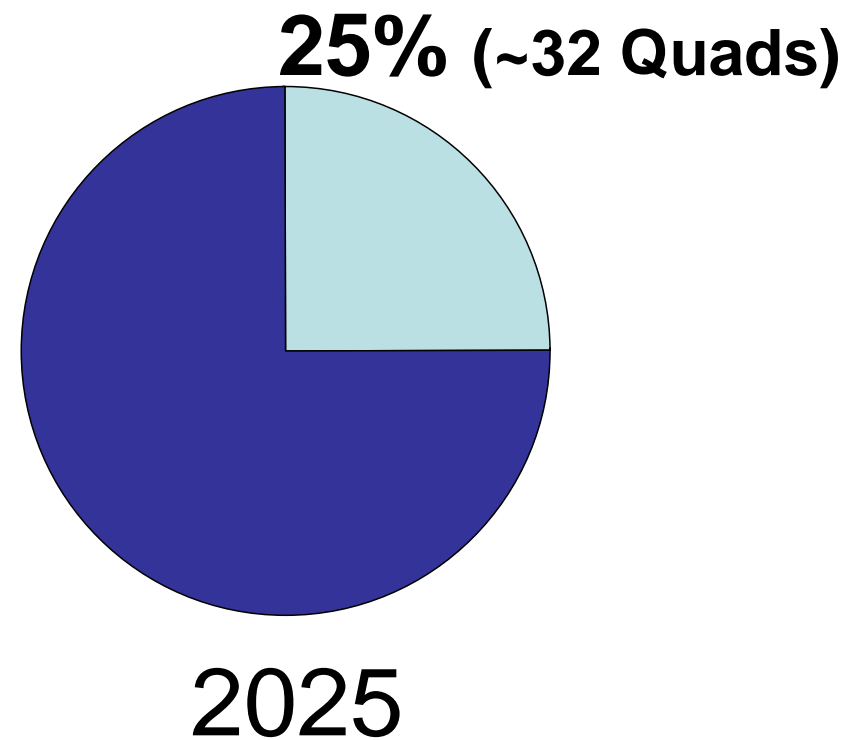
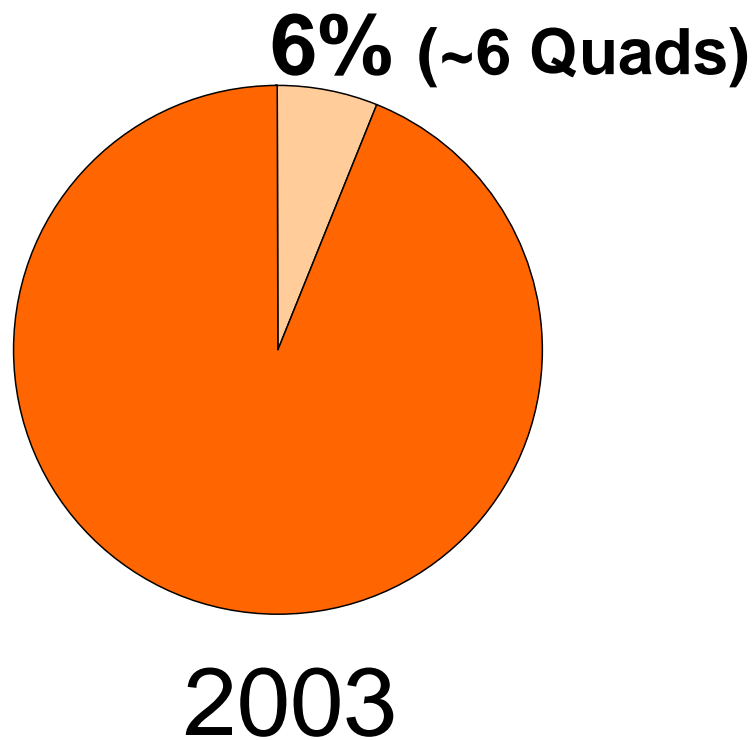
By the year 2025, 25 percent of the total energy consumed in the U.S. will come from agriculture, agricultural and public lands, and related enterprises.

25 x '25





Renewable Energy Production





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We will meet this goal by:

- Producing transportation fuels
 - Harnessing wind energy
 - Converting biogas emissions
 - Capturing solar energy
 - Providing biomass for generating heat and power
 - Promoting conservation
-



This is a food, feed, fiber, energy and bio-product vision, that is economically viable for our society.

With emerging technology we can produce multiple commodities.





University of Tennessee Economic Analysis

- 25 x '25 is doable
- Positive impact on rural America
- Reduced dependency on government payments
- Cropping patterns will change

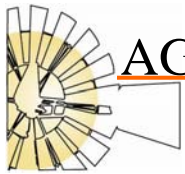




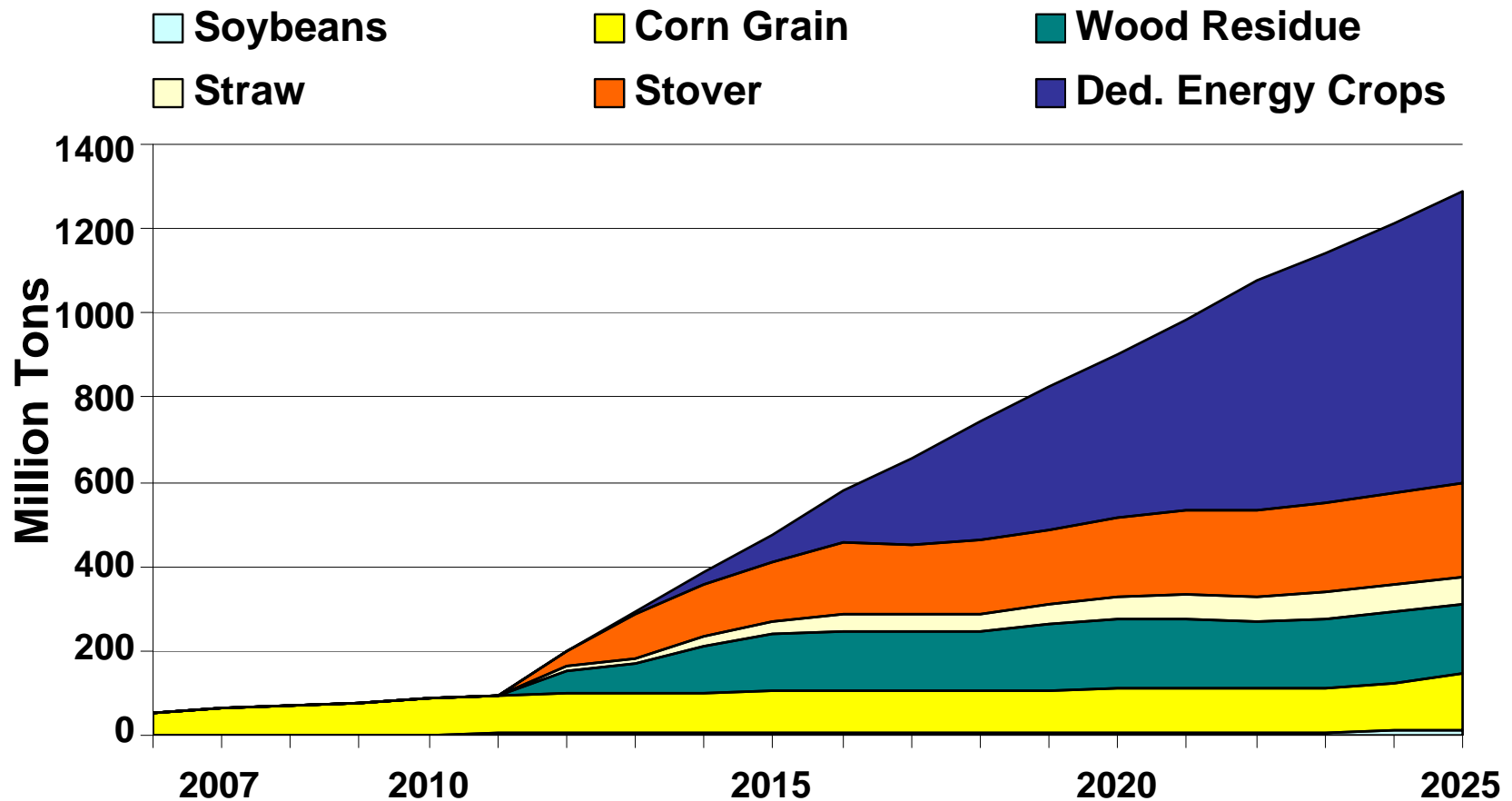
By 2025, Farms, Ranches, and Forests Will Produce from Biomass Annually:

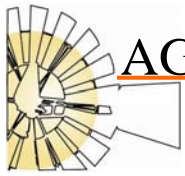
- 86 Million gallons of ethanol
- 1.1 Million gallons of biodiesel
- 932 Billion KWH of electricity





Energy Feedstock Quantities





Cropping Patterns

- ↓ Grain: 32 million acres reduction
- ↓ Pasture: 172 million acres reduction
- ↑ Hay: 105 million acres increase
- ↑ Dedicated energy crops: 106 million acres





National Impacts of 25 x '25

- Economy – \$700 billion
- Employment – 5.1 million jobs



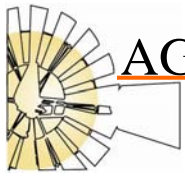


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Congratulations!

- Governor endorsed
- State legislature endorsed
- U.S. senators and congressman are co-sponsors of resolutions





North Dakota Opportunity

- Annual revenue over \$11 billion
- Over 67,000 jobs





Capitalizing on the Opportunity

- State legislation
- Public research
- Private enterprises
- Strong agricultural base
- Plentiful natural resources





Recommendations

- Form a broad-based alliance
- Create a vision
- Define an implementation strategy





Why Now?

- Current fossil fuel-based energy system is no longer sustainable.
- Our nation and the world are looking for new energy solutions.
- Decision makers are taking a closer look at the opportunity to increase our utilization of renewable energy and production of other bio-products.



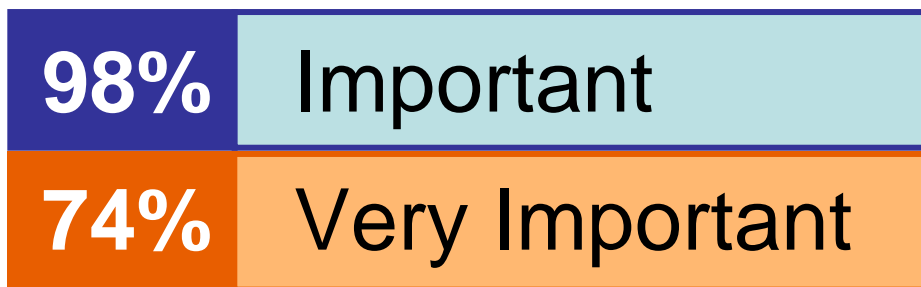


Public Opinion Survey

- Is 25 x '25 achievable?



- Is 25 x '25 an important domestic goal?





Public Opinion Survey

- Do voters support a new energy policy even if it costs billions more?

91%	Yes
9%	No





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With Your:

- Involvement
- Insight
- Expertise
- Leadership skills



North Dakota has all the elements
for an expanded bio-base economy.





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Conclusion:

You have the technology,
capacity and leadership to
fully expand the bio-based economy.





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25 x '25 America's Energy Future

