

Visioning 2026 Energy Session 1
8/23/06, 11:30 am

Attendees: Bill Woepfel, Brian Nordby, Charles Kathrima, Fred Aufdembrink, John Johnson, Julie Lingenfelter, Kathy Nordby, Mark Hall, Mike Nolan, Monica Melcher, Rick Tomjack, Stan Staab, Stephanie Mieth, Steve Morton, Terry Rasmussen, Tom Higginbotham
Facilitators: Larry Wentz, Greg Heineman, Pam Carlson

The group was given an explanation of the goal of a dialogue session, that there is no set agenda, not wrong answers, just a desire for dialogue on future trends for technology, global economy and the internet. A definition of what dialogue means was also given.

A handout of icebreaker questions were distributed to the group and everyone was asked to find someone in the group that matched to the items listed. Group was asked how many of the items listed where around 10-years ago.

The group identified the following key energy factors/sources/trends for future research and dialogue at the next meeting set for **Wednesday, August 30, 2006, at the Chamber Office located at 405 Madison Ave. starting at 11:30 am**

Price of fuel (gas at the pump) and the price differences between cities
Politics
Ethanol Facilities (Nebraska was the 1st in the nation to have an Ethanol Board) by product use
Ethanol from switch grass
Bio Fuels, Bio Mass, Bio Diesel
Wind/Solar
Hydrogen (trend map was provided and reviewed by group)
Atomic/Nuclear
Alternative Fuel
Renewable, Recyclable
Efficiency, Conservation, Comfort
China/India and other developing nations
Incentives
Research and Development
Water, directly and connected
CRP Land – Energy Production

-Energy-

Fixed Based Fuels

Nuclear
Coal and Coal Gas production
Electricity
Diesel
Wind
Methane
Oil Shale
Geo Thermal
Water
Hydro-Electrical

Motor Vehicle Fuels

Hydrogen Fuel Cells
Gasoline/Oil
Diesel

Electricity – Hybrid batteries
(Using Hybrid adds energy back to the grid creating
mini generator system throughout the community,
less need for one or two large facilities)

Ideas to consider:

Nano Diesel production using waste from landfills

UNL working w/ pig confinements to create methane production to fuel homes

How do we clean them up (Smell)?

Acceptability

Government policy concerning energy

Population growth increases energy consumption

Technology and its increases in energy consumption

Centralized processor

Group asked to read the book Hydrogen Economy, Larry read to the group excerpts from the book.

Visioning 2026 Dialogue Group Session 2

Energy August 30, 2006

Attendees: Bill Woepfel, Brian Nordby, Julie Lingenfelter, Kathy Nordby, Mark Hall, Monica Melcher, Rick Tomjack, Stephanie Mieth, Steve Morton, Joe Ferguson, Dan Mauk

Facilitators: Larry Wentz, Greg Heineman, Pam Carlson

Larry gave a verbal review of the minutes of what was discussed at the last meeting. The group was asked if anyone would like to bring / share anything new they may have read/found during the last week.

Joe informed the group that NECC has submitted a grant application to develop an Ethanol Training Center to be held on campus giving hands on training. This would also fund future R&D. Mark brought to the discussion a need for a standardizing the industry of ethanol production and shared with the group the viability of consumable ethanol products such as mouthwash and alcoholic beverages.

56 Top trends that could affect Norfolk and the area handouts were passed around the group. Three smaller groups were formed and each had 2-3 trends to dialogue about. Greg asked the group to consider that energy usage will increase and there will be a need for new sources of energy production. Group was also asked to consider the possibility of using E-85 fuel exclusively for our area to reduce the dependency for NE Nebraska on oil production, and if so, how would this impact the area.

Group 1 gave the following key ideas for consideration:

Transportation – transportation technology must remain viable.

Areas of expansion or improvement could include:

- 1) Air Traffic/Air Taxi Service (can this be cost effective? / Convenient?)
- 2) Rail (ethanol and other plant expansions could increase rail traffic thru city)
- 3) 4-lane expressway (a must for economic development)
- 4) Education – keeping and finding skilled workforce (lifestyle considerations, online classes, more economical)

Terrorism – What does the Norfolk area need to consider as possible targets?

- 1) Security may include RFID system of identification/monitoring of food chain.
- 2) Bio-Terrorism (Ethanol production plants, positive/negatives as non-target/targets)
- 3) Vulnerability to attack (unconventional introduction of animal diseases)

Group 2 gave the following key ideas for consideration:

World Population

- 1) Aging populous
- 2) Shift in political clout, (encourage youth to vote, they will have a longer, larger impact on future policy)
- 3) Reduction of fuel prices/Alternative fuel sources for transportation such as bicycle routes along side road system

Water Shortages – Ethanol production consumes 1-gal of water to make 1-gal of ethanol.

- 1) Water is ample for our area now, may not be in twenty years
- 2) Take advantage of our water resources, maintain current levels
- 3) Anticipate impact of lack of water in production of energy/ethanol
- 4) Global Warming – all burning fuels create CO₂, exceptions are; Nuclear, wind, solar and Hydrogen does not create CO₂

Group 3 gave the following for consideration;

Create Norfolk as the hub for new innovations in byproducts of the ethanol fuel production. This would create new businesses, need for new skills, new jobs.