

**SOUTH DAKOTA CLIMATE CHALLENGE CONFERENCE
STRATEGIES FOR THE FUTURE**

September 28, 29, 30, 2007
Sioux Falls, South Dakota

Breakout Sessions - Draft Summaries

BREAKOUT SESSIONS - OBJECTIVES

- Draft problem statements for the four Breakout Session topics: Agriculture; Energy; Fish and Wildlife, and Tribal Initiatives.
- Identify, explore, and recommend to the full conference, a priority range of actions as steps to solutions for individual topic areas.

GENERAL PRINCIPLES

The Conference supports the development of local, state, regional, and national programs to reduce greenhouse gas emissions in a manner that:

- Is consistent with the findings of scientific research;
- Will generate new jobs and increased economic activity and not adversely impact the US economy over the long term;
- Will end our dependence on imported energy;
- Will enhance the quality of our environment;
- Will encourage comparable action by other nations that are major trading partners and key contributors to global emissions.

PRODUCTS OF BREAKOUT SESSIONS IN 4 AREAS OF EMPHASIS (Energy, Fish and Wildlife, Agriculture, Tribal Initiatives)

1. ENERGY

(Moderator: Elizabeth Burleson, Law Professor at the University of South Dakota)

Problem Statement: The lack of a legal framework with which to address climate change has prevented a smooth transition to environmentally sustainable, renewable energy.

Vision and Preamble

South Dakota is uniquely positioned to supply abundant wind energy. Manufacturing, building, and maintaining renewable energy infrastructure will provide South Dakotans with quality green collar jobs. Both broad and specific policies are necessary to achieve South Dakota climate stabilization. It is feasible to commit to R&D, financial transfers, carbon taxes, efficiency standards, and domestic emissions reduction targets. Carbon taxes offer certainty regarding abatement costs but uncertainty about environmental outcome. Market-based emission trading is optimal for large emitters while a cross-sectoral carbon tax should be directed towards smaller emitters since many sectors will

not achieve necessary carbon reductions based upon a carbon tax. Publicly listed organizations and large public sector entities should be required to report annual greenhouse gas audits. Enacting efficiency standards can push clean technologies into the marketplace. In addition to R&D and technology standards, South Dakota should augment pushing strategies with pulling renewable technologies across the threshold of cost-effectiveness into mass production. The latter can be accomplished via a carbon tax or emission regulation. The transportation sector must become a priority since motor vehicles emissions are increasing more rapidly than any other sector. As the largest source of greenhouse gas emissions, the energy sector must also take precedence. Cap-and-trade programs should be established, linked, and sustained in an equitable and transparent manner. In a carbon-trading system, companies that exceed an allocated pollution level must buy pollution permits from companies that pollute less than their allowance. Carefully designed tradable permit systems can allocate permits in an equitable manner and lower the overall cost of climate stabilization. George H. W. Bush authorized the sulfur dioxide emissions trading system that has substantially reduced acid rain. Emission trading allows players to choose the most cost effective approach, comparing investing in low carbon equipment, increasing energy efficiency, or buying carbon credits from a source that has lower emission reduction costs. By establishing a price for carbon, a cap-and-trade program helps individuals and organizations internalize the cost of emissions.

An economy-wide cap-and-trade program for greenhouse gases can facilitate a smooth transition to clean energy. Wind, solar, and geothermal operations can be combined with hydro-storage and other innovative co-generation approaches to achieve stable energy supplies. South Dakota must compare the varying environmental impacts of the energy sources used to produce electricity. Traditional fossil fuel sources should play a limited transitional role in South Dakota's economy. Energy efficiency, wind, solar, geothermal, and cellulosic ethanol can provide diversified energy with minimal environmental and public health impacts. Environmentally clean technology should be supported through the enactment of governmental subsidies for renewable energy and the removal of subsidies for energy generation that poses high risks to human health and the environment. South Dakota renewable energy leadership will strengthen local energy generation, creating rural jobs and enhancing the reliability of electrical supply. Decentralizing control over power, solar and small-scale wind can help sustain good governance. Decision-making should be representative, transparent, timely and involve civil society. Individuals holding public office need to show political leadership by raising public awareness about the advantages and disadvantages of competing energy strategies. Civil society needs to be able to make informed decisions. Subsidies supporting fossil fuel intensive activities and high-risk operations should be replaced with sustainable low and no-greenhouse gas incentives and governments should enact renewable portfolio standards to increase use of renewable energy. South Dakota should play a leadership role in climate change mitigation.

Consensus points

- Energy efficiency is a core concern in South Dakota. Understanding energy use through energy audits and enacting reasonable and equitable economic incentives to conserve energy remain high priorities for South Dakota.
- Sustainable and stable energy for transportation is crucial for South Dakota. Battery storage, plug-in hybrid vehicle, and electric vehicle development is of critical importance.
- New and existing electrical generation infrastructure that exposes South Dakotans to pollution and that exports environmental externalities to other jurisdictions is of grave concern.
- While energy choice and independence are viable, continued oil supply shocks compromise the economy of South Dakota. The renewable energy sector has experienced unnecessary fluctuation in tax credits, leading to alternating periods of investment followed by instability when the federal credit terminates. Growth in renewable capacity has been significantly impacted by this political inertia and future uncertainty.

Recommended Steps for South Dakota (unranked)

- Join a regional carbon cap and trade program that auctions initial allocations of carbon in a reasonable and equitable manner. South Dakota should also work towards the enactment of a national greenhouse gas emissions trading system that can be linked to comparable systems.
- Pass legislation that creates economic incentives to conserve energy across all sectors (e.g. state and national Renewable Portfolio Standards).
- Pass legislation that facilitates small-scale renewable energy production (e.g. net metering programs requiring all utilities, including cooperative utilities, to pay net power prices for individuals and entities that contribute wind, solar, etc. electricity back into the grid). Title XII, section 1251 of the Energy Policy Act of 2005 mandates that utilities offer net metering, reimbursing customers for renewable energy that can be fed back into the grid. Similarly, South Dakota should enact peak-pricing legislation for all utilities.
- Support reasonable, equitable, and environmentally sustainable transboundary energy transmission. South Dakota should enact legislation supporting tribal initiatives to supply renewable energy to the grid by establishing reasonable and equitable price per KW of power. South Dakota should support broad enforcement of the Clean Air Act so that there is a monetary value placed upon

pollution. Tribes can supply wind energy to offset water fluxuations due to climate change as river systems alter unpredictable ways.

- Pass legislation committing South Dakota to 25x25 (25% renewables by 2025) and to reduce greenhouse gasses by 50% lower than 2007 levels by 2020. South Dakota should increase research, development, and demonstration of low and no-greenhouse gas renewable energy as well as enacting legislation that facilitates widespread deployment of existing low and no-greenhouse gas technologies. South Dakota should prevent new fossil fuel projects. Heavy industry should be restricted to existing Brownfield sites and genuine environmental monitoring/regulating should be carried out.
- Pass legislation establishing public education programs and ensuring access to information (e.g. mandatory labeling of the environmental impact of competing energy sources).
- Enact energy generation and transportation performance standards in South Dakota. Urban planning should facilitate safe, economically feasible public transport. In addition to energy efficient municipal modes of transportation, governments should subsidize hybrid car purchases that maximize environmental preservation and create viable bicycle path networks. Further battery research and development should be a high priority.
- Enact tax credits for production and use of renewable energy technologies (e.g. geothermal technologies such as ground source heat pumps).
- Fund energy audits across all sectors and facilitate greenhouse gas reduction targets.
- Enact an effective state energy code that facilitates energy efficiency through sustainable building practices. South Dakota should facilitate demonstration building designs suitable to South Dakota. These mobile and stationary demonstration projects should also serve as clearing houses for efficient energy information. South Dakota should fund information dissemination regarding energy savings and clean energy options.
- Enact regulatory interventions such as appliance energy efficiency standards and labeling systems that can reduce energy demand.
- Enact legislation that facilitates mass production of such clean technologies as light-emitting diodes ("LEDs") and solar PV systems.
- Enact legislation mandating reasonable and equitable water management since water efficiency reduces the energy needed to treat and deliver water.
- Prevent sod busting of native range and pass comprehensive legislation supporting drip irrigation, organic and no-till farming practices. Plants such as jajoba should be used to produce cellulosic ethanol. South Dakota should support R&D to determine the net carbon footprint of manufacturing and burning biofuels. Methane and other greenhouse gasses should be factored into decisions and non-green house gas environmental issues should be assessed when making energy decisions.

- Enact an efficient, statewide recycling program.

FISH AND WILDLIFE

Moderators: Shelly Deisch (Wildlife Biologist, South Dakota Department of Game, Fish, and Parks) and **Curt Robertson** (Hunter Education Coordinator, South Dakota Department of Game, Fish and Parks)

Problem Statement

We who are involved in Fish and Wildlife are concerned about climate challenge in South Dakota because government (State, Federal and Tribal), as the elected representatives of the people, have a public trust responsibility for fish, wildlife and habitat. The environment and its inhabitants are a barometer for what is to come. Humans, as an integral part of the environment, could suffer severe socio-economic and cultural impacts with climate change.

Continued climate change will cause accelerated declines in biodiversity and changes in flora and fauna abundance through the mechanism of habitat changes. Research conducted at South Dakota State University has confirmed the negative impacts on South Dakota wetlands critical to waterfowl, water quality and aquifer regeneration. In western South Dakota, catastrophic fire and unprecedented outbreaks of bark beetles have impacted the Black Hills economy. Rapid climate change will exacerbate both of these problems in South Dakota.

South Dakota citizens and leaders need to take action to avoid adverse consequences of climate change. Continued rapid climate change will:

- Negatively affect fish and wildlife abundance and diversity.
- Reduce revenues from hunting, angling and other outdoor recreation.
- Increase conflicts between natural resource managers and landowners.
- Exacerbate the spread of undesirable and invasive species.
- Increase the number of threatened and endangered species.
- Further reduce water quantity, degrade water quality, and increase conflicts over water uses.

Criteria for Prioritizing Recommended Steps Toward Solutions

- Consider the target audience for this product, their core values as South Dakota publics, and leadership at this time to motivate change.
- Recognize that humans are an integral part of the environment.
- Look at the diversity of stakeholders and transcend traditional categorization of groups.
- Use a “yes... if” approach to problem solving rather than a “yeah...but.”

Priority Recommended Steps Toward Solutions Regarding Fish and Wildlife

1. Promote public education and awareness, at all age levels, about climate change impacts on fish, and wildlife and habitats.
2. Support and fully fund existing and future State, Federal and Tribal conservation programs.

3. Support and fully fund research for science-based solutions to climate change.
4. Land management and conservation should be proactive, not just reactive. However, within the context of reaction, facilitate and support legislative action for habitat restoration and rehabilitation.
5. Find ways to increase revenue streams for non-game species.
6. Work to increase partnerships among diverse stakeholders and State, Federal and Tribal agencies.
7. Implement strategies that balance surface water use and conservation among stakeholders.
8. Address the water transfer situation that could leave South Dakota with diminished water supplies.

Fish and Wildlife Working Group - Preliminary Brainstorming and Discussion

Notes

Thoughts/Comments about the Problem

- Reduced habitat (e.g., plains grass); loss of seasonal/temporary wetlands
- Migration corridor fragmentation
- Drought effects on fisheries – water temperatures and water levels
- Loss of economic development based on hunting and angling revenues
- Loss of recreation opportunities – also associated with economic development
- Catastrophic fire; exotic species spread
- Increase in disease and pests
- Negative impacts of monoculture – lack of bio-diversity
- Disrupted life cycles (birth, food production, etc.)
- Native species' range changes
- Loss of migratory habitat, breeding habitat
- Cost burden of wildlife restoration versus loss prevention
- Increase in endangered species
- Increase public/private friction, conflict
- Over-nitrification due to domestic chemical use in yards
- Changes in abundance and decline in bio-diversity caused by changes in habitat

Possible Solutions

- Expand wildlife enhancement incentives for landowners.
- Green Tag all Agriculture products.
- Do a bigger wetland restoration effort with carbon credits for restored wetlands.
- Consider tile drainage as a point source.
- Increase partnerships and “strange bedfellows”.
- Encourage Legislative action including regulations and funding.
- Find strategies to increase energy efficiency.
- Consider how school curriculum might be used.
- Push, lobby, advocate – public engagement is inevitable.
- Increase collaboration/collaborative leadership among agencies.
- Increase revenue streams for non-game species; expand the funding base.
- Target natural resource majors in higher education institutions.

- Do programs like CRP and Sodsaver – find others.
- Improve planning for water use and species management.
- Do research on wildlife and plant species loss including Tribal medicine plants.
- Maintain natural stream flows and guaranteed minimum flows for wildlife.
- Improve grazing lands management to prevent overgrazing and erosion due to drought conditions.
- Connect people to the land by a media campaign.
- Use resources in a sustainable manner.
- Provide incentives to landowners to farm “marginal” ground.
- Preserve public natural green corridors.
- Implement programs to restore and rehabilitate wetlands on a micro level.

3. AGRICULTURE

Moderator: Norm Tofflemire (Coop & Membership Director, South Dakota Farmers Union)

Problem Statement

We who are involved in **Agriculture** are concerned about climate challenge in South Dakota because global warming threatens South Dakota agriculture with:

- More intensive and more frequent droughts;
- Greater temperature swings and heat waves;
- New invasive species and agricultural pests;
- Losses of farm revenue which will impact other businesses and the tax base;
- The depletion of aquifers and wetlands;
- Disruption of existing markets as competition increases;
- More regulations;
- Changes in what crops are being planted, where crops are being planted, and when crops are planted.

Global warming will also affect international markets and that will impact South Dakota agriculture. We believe that the impacts and problems of global warming can be solved and/or mitigated and opportunities realized.

Criteria for Prioritizing Recommended Steps Toward Solutions

- Greenhouse gas (GHG) impact
- General social acceptability
- Willingness from farmers
- Economic viability
- Technical and scientific viability

Recommended Steps Toward Solutions Regarding Agriculture (not in rank order)

- Enhance education and outreach so farmers understand the problems and the solutions.

- Provide incentives for increased use of wind power including construction of necessary infrastructure. Enhance opportunities for local control and ownership. Net metering needs to be fair.
- Increase and fund more research on how biomass and cellulosic ethanol can be produced and used in an environmentally and economically effective way. Provide credits for farmers and ranchers for sequestering carbon through conservation tillage and sustainably managed grasslands.
- Require a minimum renewable energy percentage in state and national energy portfolios.

Agriculture Working Group - Preliminary Brainstorming and Discussion Notes

Initial Thoughts/Comments about the Problem

- Impacts of drought and temperatures on agriculture in South Dakota
- Depletion of aquifers
- Competition between food and bio-fuel production
- Higher prices for farm products
- Impacts of new rules on agriculture
- Solutions are complex so good education is essential
- Some farmers don't believe it's happening
- Need for the right message for the right audience
- Changes in what's being planted and where
- New invasive species threaten crops
- Heat waves
- Need to get the solutions right (i.e., corn-based fuel is probably not right for the long term)

Possible Solutions

- Enhance education/outreach so farmers understand the problems and solutions
- Incentives for increased use of wind power including construction of necessary infrastructure.
- Opportunities for local control and ownership
- Fair net metering
- Increased funding and research on how biomass and cellulosic ethanol can be produced and used in an environmentally and economically effective way.
- Subsidize cellulosic ethanol
- Wind power for individual operations
- Carbon sequestration especially in wetlands to compliment grasslands
- Renewable energy portfolio standard both State and national
- Science-base education
- Drip irrigation – no till
- Locally grown food and farmers markets; food miles education
- Feedlots should capture methane (but we don't know enough about technology or economics to say how)

- Credits for farmers and ranchers for sequestering carbon through conservation and tillage in grasslands
- Fine-tune markets and work for a federal Cap and trade system to make markets more robust
- Education to farmers and ranchers on the benefits of carbon sequestration practices with help
- Recognize farm practices that minimize carbon emission and sequestering of carbon as benefits, in every Farm Bill program
- Create a South Dakota commission to develop a comprehensive policy to address global warming – maybe a sub-committee of the existing Conservation Commission
- Require a minimum renewable energy percentage in state and national energy portfolios.
- Establishment of Federal fuel efficiency standards for farm equipment
- Support for sod saver provisions in the 2007 Farm Bill
- Stop draining and tiling wetlands
- Increase energy efficiency of animal feeds versus animal waster (ratio)
- Eat locally
- Recycle human and animal food waste
- Review use of chemical fertilizers, pesticides
- More efficient irrigation
- More efficient farm machinery
- Bring issues to State legislators
- Find agriculture incentives cognizant of global warming concerns versus business as usual
- Find ways to increase and augment carbon dioxide credits for greater producer incentives

4. TRIBAL INITIATIVES

Moderator: Patrick Spears (Co-founder and President of the Intertribal Council on Utility Policy (COUP))

Problem Statement

We who are involved in Tribal Initiatives are concerned about climate challenge in South Dakota because Tribes are the most vulnerable to the most damaging effects of climate change (economically, culturally, environmentally and socially) especially from coal generation. Tribes have the fewest resources, including political and economic marginalization, to address the impacts.

Criteria for Prioritizing Recommended Steps Toward Solutions

- Self-determination, leadership and Tribal sovereignty
- Urgency – what can happen practically and soon?
- Existing Treaty obligations – access, trade, right-of-way land, etc.
- Sustainability economically, socially, culturally

- Choice – opportunities to “democratize” energy

Recommended Steps Toward Solutions Regarding Tribal Initiatives (not in rank order)

Supplement dwindling hydropower with Tribal wind and give it preference on the grid through power purchase agreements (purchased by WAPA).

- Support national and State renewable portfolio standards (RPS) – especially Federal.
- Create net metering laws at the State and Federal level.
- Provide education on net metering laws and South Dakota potential for renewable energy issues.
- Change Co-op policy (high demand charge for supplemented power).
- Establish no new coal facilities (may not be the most practical but it needs to be said)
- Facilitate State and Federal recognition of Tribal environmental codes and regulations.
- Support wildlife funding for Tribes.

Tribal Initiatives Working Group - Preliminary Brainstorming and Discussion Notes

Thoughts/Comments about the Problem

- Lack of trust
- Loss of revenues/going out of business for Tribal owners due to drought
- Existing, new and planned coal plants and South Dakota and associated impacts
- Need for environmental justice – renewable energy as economic and environmental justice and cultural preservation
- Economic emergency that exists that could be improved by renewable energy
- Need to harness wind resource and get on board so not to be left behind the rest of the nation
- Golden opportunity to become a leader in wind energy through Tribal and inter-government alliances
- Loss of bio-diversity in medicine plants and in animals because of lost water resource
- Continuing drought conditions
- Inter-basin water transfers

Possible Solutions

- Build coalitions with other groups
- Golden opportunity to become a leader in wind energy through Tribal and inter-government alliances
- Wind should supplement dwindling hydropower purchased by WAPA
- Net metering law
- RPA
- Federal disaster payments for Tribal farmers
- Support for programs that help keep Tribal land owners in operation

- Fairness and equity in distribution of public funds
- Change Co-op policy on high demand supplemental power
- Temporary moratorium on new coal plants
- Statewide education
- Media involvement
- Statewide education on Tribal initiatives regarding energy, water, other natural resources, and economic issues
- Advocacy from State representatives for Tribes on a national basis (Cap and trade, carbon tax, revenue for Tribes)
- Invest in infrastructure
- Explore other renewable energy such as solar
- Improve Tribal economic status
- Encourage Tribal, State, and Federal cooperation in legal jurisdiction
- Exchange programs – educational and expertise