Who is SEDC Inc?

- Founded by Saskatchewan Agrivision Corporation (SAC) and the Agricultural Producers Association of Saskatchewan (APAS)
- Coalition of rural, academic, governments (Federal and Provincial) First Nations and business leaders (SARM, SUMA, Ag-West Bio, SCFA, U of S)
- Aim: “to encourage and foster the rapid development of a Saskatchewan and Western Canadian ethanol industry
- Main purpose:
  - to act as a catalyst, bringing key value-chain stakeholders together.
  - Develop vision and an integrated plan of action
The Global Ethanol Industry
United States of America

Current Situation

• As of Sept. 1st, 2006, 101 Plants in operation (48 Producer Owned)

• A further 33 plants and 7 major expansions are under construction.

• As of July 1st estimated 150 outstanding business plans.

• August 7th, 2005, President Bush signs 7.5 B gal. RFS

• January 31st, 2006, President Bush’s “State of the Union” address- “America is addicted to oil”
The Global Ethanol Industry

The Rest of the World

Global Outlook

- South Africa announces 1 Billion litres of new capacity
- Sweden announces 100% Free of Fossil Fuel by 2020-SAAb 9.5 Aero
- Japan signs deal with Brazil-3% RFS
- Progress is being made in India, Thailand, Australia,
- European Union-RFS of 5.75% developing to slowly (7 point plan)-1 B bushels of wheat by 2010
- China announces plans to be at 6.25B litres/year by 2010-Sept.19/06
- No large-scale cellulose plant - YET
The Global Ethanol Industry

Canada

Canadian Federal Government’s
“Ethanol Expansion Program”

$118 Million Dollars
Round 1: October 20, – November 19, 2003
Approximately $68 Million awarded to seven plants
Round 2: December 6, 2004-February 22, 2005
Approximately $50 Million Awarded to five plants

What Happened?
Potential Results of EEP Program

• A total of 14---existing, expanded and/or new plants will be operational, producing 1.4 Billion Litres of ethanol annually (370 US gals)
• 13% of National capacity will be producer-owned facilities (50% in the USA)
• 70% of National capacity is owned by 3 companies
• Ontario with 9% of the arable land is a net importer of feed grain. (3.6 Railcars of grain = 1 railcar of ethanol)
• Trade challenges by the Ontario, Quebec and Manitoba Corn Growers Associations may change everything.

Where are we today?

• 11 plants were to receive funding
• New Plants Operational (3)
  – Weyburn Sask.-25 ml
  – Lloydminster Sask.-130 ml
  – Sarnia Ont.-200 ml
  – 8 plants operating today-3-corn based 5-wheat based
• Plants under construction (3)
  – Varennes Que.-120 ml
  – Minnedosa Man.-130 ml
  – Collingwood Ont.-50 ml
• Five other plants remain in limbo
The Agricultural Economics of Western Canada

THE REALITY

What are the financial realities today?

- Last three years worst net farm income in Western Canadian history
  - Large acreage farmers suffered the most
- Last three years best net farm income in American History
- Last three years most profitable for value added agriculture multi-national corporations
Everyone Should know Western Canada Needs more Value-Add from the Land Base

<table>
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<tr>
<th>Region</th>
<th>Share of Canadian Agricultural Land</th>
<th>Share of Canadian Primary Agricultural GDP</th>
<th>Share of Canadian Food Industry GDP</th>
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<td>1.0% 2.0%</td>
<td>7.0% 27.0%</td>
<td>51.0%</td>
</tr>
</tbody>
</table>

0% 10% 20% 30% 40% 50% 60%

Everyone Should Know the Global Price Trends for Commodity Wheat (from 1868 to 1998)
Everyone Should Know Western Canada Needs more Gross Revenue per Acre (Yr 2002-04)

The SEDC Vision

Energy Sector
Crop Research & Production
Livestock Industry
Pharmaceutical & Nutriceutical
Forestry Industry

Ethanol
Science & Technology
WHAT COULD THIS MEAN?

– A National Renewable Fuel Standard of 10% means:
  – 6 Billion Litres of capacity required (40B & 23B)
  – 600 million bushels of grain and oil seeds
  – 20 Million Acres of land
  – 8.4M tonnes of GHG Reduction ($126M)

– With 86% of the farm land in Canada, Western Canada should be the centre of this industry
– 3 Billion Litres of Production from Saskatchewan alone will consume 10 Million acres and create ..........10,000 direct and indirect jobs (NRCanada Report)

AND
THIS IS THE INITIAL VOLUME REQUIREMENT
THE FLOOR--NOT THE CEILING
Benefits at the Farm Gate

1. Redeployment of existing cereal varieties that are high yielding with high starch content.
2. Significant reduction in freight costs.
3. Remarkable benefits to “risk management” issues specifically related to weather issues.

OVERALL BENEFIT-HIGHER GROSS AND NET INCOME PER ACRE

Barriers to Entry

- Finance-Finance-Finance
  - Considerable Capital Cost
    - Grain based $0.75-1.00 per litre
    - Cellulose $2.00-3.00 per litre
    - Best finance consideration 60/40 debt to equity ratio- (e.g. 100 ml plant = $75M, $40M mortgage, $35M equity)
  - American Finance Tools ( Preferential Bias to Producers)
    - USDA- Mortgage Guarantee (2% Fee)
    - USDA- Equity Guarantee (2% Fee ) (State Supported)
    - USDA- Commodity Credit (1/3 of feedstock 1st yr)
    - IRS- $1.5M ITC
Ethanol Myth Buster’s

1. It takes more energy to produce ethanol than what it delivers. TRUE OR FALSE
   • *LIFE CYCLE ENERGY ANALYSIS CONCLUDES THAT FOR CORN BASED ETHANOL PLANTS THE YIELD IS 1 TO 1.87---------WHEAT BASED PLANTS ARE 1 TO 2---------WHEAT BASED INTEGRATED PLANTS ARE 1 TO 2.5*
   • *TAR SANDS CRUDE OIL PRODUCTION LIFE CYCLE ANALYSIS IS 1 TO 1.5*
   • *ALL CONSUMER OIL PRODUCTS ARE A NEGATIVE YIELD*

Ethanol Myth Buster’s

2. Burning ethanol will give you poorer gas economy. TRUE OR FALSE
   • *EXTENSIVE STUDIES OF E10 BLENDS HAVE SHOWN NOMINAL DIFFERENCES IN TERMS OF FUEL ECONOMY (KILOMETERS PER LITRE)*
   • **E 85 BLENDS WILL ON AVERAGE ACROSS THE BROAD SPECTRUM OF VEHICLES HAVE APPROXIMATELY A 15% DROP IN FUEL EFFICIENCY. HOWEVER E85 FUEL IS TRADITIONALLY PRICED 15-20% LESS……..THEREFORE FUEL ECONOMY (DOLLARS/MILE) WILL BE BETTER.*
   • *WHY INDY CARS-NASCAR-SAAB*
   • *GHG BENEFITS ARE SIGNIFICANT*
Ethanol Myth Buster’s

3. The global production of biofuels will make people go hungry. TRUE OR FALSE
   • FARMERS HAVE BEEN GROWING CROPS FOR NON-FOOD USE FOR YEARS---COTTON-FLAX
   • ACCORDING TO THE FAO/UN-DEVELOPING COUNTRIES FOOD PRODUCTION SURPASSED THE DEVELOPED WORLDS FOOD PRODUCTION CAPACITY IN 2000
   • A 2005 REPORT FROM THE UNIVERSITY OF THE NETHERLANDS SUGGESTED THAT GLOBALLY WE COULD DEVOTE 45% OF ALL ARABLE LAND TO BIOFUELS PRODUCTION AND HUMAN HEALTH/HUNGER WOULD NOT BE AFFECTED------WE USE LESS THAN 2% GLOBALLY TODAY.

Ethanol Myth Buster’s

4. Ethanol production is a heavily subsidized industry that creates no value for tax payers. TRUE OR FALSE
   • WHEN DOES A SUBSIDY BECOME AN INITIATIVE ?
   • SASK-FIRST 50,000 BARRELS OF OIL IS ROYALTY FREE
   • TARSANDS HAVE RECEIVED $44B IN FED/PROV TAX BENEFITS SINCE 1970
   • OIL INDUSTRY TODAY RECEIVES $2B/YR IN GOVERNMENT TAX CONCESSIONS
   • THE AUTOMOTIVE INDUSTRY IN ONTARIO IS LINED UP FOR FEDERAL/PROVINCIAL GOVERNMENT INCENTIVES
   • WOULD THE RAILROAD IN CANADA EXIST TODAY WITHOUT GOVERNMENT?
   • WOULD BOMBARDIER EXIST TODAY WITHOUT GOVERNMENT?
   • Gasoline consumption in Canada is expected to rise 10% to 44b litres by 2010--------The requested government support will still allow government coffers to increase overall gasoline tax revenues over the same period.
Remember Iowa

#1 in Ethanol and Biodiesel Production in the U.S.A.

Remember:
- Iowa sowed 24.9 million acres in 2005

Saskatchewan sowed 35 million acres
Ethanol Plant Designs

1. Free Standing Facility  80-400 M litres (grain based)

2. Integrated Facility 15-25 M litres c/w cattle feedlot 20-25K head static (50-60K head annually)

3. Cellulose Facility- 200 M litre (straw based)

4. Syn-Gas Facility- 80 M litre (forestry waste)
WHAT MUST THE FEDERAL GOVERNMENT DO?

1. BE PROACTIVE- TARGET 10% RFS BY 2015
   1. ELIMINATE ALL INTER-PROVINCIAL TRADE BARRIERS
      1. Common Standards (Current Quality testing outlandish)
      2. Common Pooled Tax Incentive ($0.15-17 per litre)

2. ACKNOWLEDGE AND FINANCIALLY SUPPORT
   1. RURAL BASED OWNERSHIP (Finance Tools) (Tax Tools)
   2. RURAL PLANT LOCATION
      1. INTRODUCE POLICIES NOT PROGRAMS (e.g. US Commodity Credit Program)

3. BE CANADIANS FIRST AND ACKNOWLEDGE
   1. THAT ETHANOL CAPACITY MUST BE BUILT WHERE BIOMASS FEEDSTOCK IS ABUNDANT
   2. THAT ALL PUBLIC DOLLARS MUST GO WHERE THE MOST BENEFIT WILL BE ACHIEVED IN REVITALIZING A REGION.

4. ACKNOWLEDGE AND FINANCIALLY SUPPORT FFV AND E85

We Believe

- Western Canada can be Canada’s largest producer of renewable energy in Canada.

- We can become the centre of excellence for research and technology.
Why Do We Believe This?
Because Western Canada has…

- 86% of all farmland in Canada (.5% CORN)
- The most efficient producers in the world
- The largest resource of biomass material in Canada
- A belief in a completely integrated ethanol industry
- Strong Knowledge based sector, access to the Energy corridor and natural advantages relating to the Rural economy, Economies of scale and logistics

Thank You

Lionel La Belle
Saskatchewan Ethanol Development Council Inc.
www.saskethanol.com