

Renewable Energy Commodity Trading Educational Program

Report 8: Contracting Interface Activity

Date: March 2018¹

Report of Activities: The primary activities were reported in the previous Reports 1-6.² Notable among these include briefly the below primary activities:

- 1) **New Hires:** We have now hired Dr. David Bullock on this project. He comes from AgriBank and has extensive experience working in ethanol.

In addition, we have a MS student working on his MS Thesis on financial management in ethanol.

Both are full time.

- 2) **Educational seminars:** We hosted our first educational seminar at NDSU in June 2015. In addition, we developed several case studies, and these have been included in Dr. Wilsons' courses in commodity trading (AE 444 and AE 711).

These were reported on in detail in Report 6.

We re-organized now to have annual seminars, typically in June of each year. These commenced in June 2015 and have been conducted each year in June since then.

These include seminars in

¹ This report covers material "through March 2018" building on information in previous reports.

² These include:

- Report 1: Initial detailed work plan outlining key performance benchmarks and timeline
- Report 2: Final Report for State of Practice Activity
- Report 3: Interim Reports for Dataset Development and Curriculum Alternatives Activities
- Report 4: Interim Reports for Teaching models & Simulation Modeling & Infrastructure/Technology Installation Activities
- Report 5: Final Reports for Dataset Development, Curriculum Alternatives, Teaching Models, Simulation Modeling & Infrastructure/Technology Installation Activities
- Report 6: : Interim Report on Program Delivery Activity Oct 2015
- Report 7: Final Report on all Exhibit A Activities

- a. June 2015 (first program)
- b. June 2016 seminar (which was previously summarized for the IC) and it built on the June 2015 seminar with revisions. It was held on June 14-15, 2016 in the NDSU Commodity Trading Room;
- c. June 27, 2017. This focused on contracting strategies for corn. Number of participants was 13. Materials from this seminar were distributed on June 20, 2017.

Topics covered in the seminar were:

- Agenda
- 9 am Welcome
- 9.10 Corn merchandising, corn-ethanol, and risk.
- 10.00 Break
- **10.15 Contract Alternatives/Basis – Bill**
- 11.30-12:15 Trading
- 12:15-1:30 Lunch on own
- 1.30 pm Review & Exercise – Dave
- 2:30 pm Ethanol outlook (Dave)
- 3 pm Wrap-up

- d. A Seminar on corn marketing held in February 20-21, 2018. This was well attended, was organized with the ND Corn Council, and we had speakers from the ethanol industry.

We are now planning our next seminar which is scheduled for June 6, 2018. The scope of this seminar will be on

- 1) financial modeling and margins,
- 2) ethanol contracting,
- 3) risk management and risk policy, and an
- 4) update on policies impacting ethanol.

3) ***Ethanol Management/Trading Game***³

The game is being testing this week and will be used during next week's Ethanol Risk Workshop.

The game which was initially planned to be developed with assistance with the Department of Computer Science, was brought back to the Department of Agribusiness & Applied Economics.

The Corn Merchandiser game is a sequential game where players purchase corn to meet the operational needs of an ethanol refinery. Prices and other conditions are random, making each time the game is played unique. Players set cash corn bids using current and futures prices and need to make sure they have priced enough corn for delivery each month.

4) ***Contracting***: Two models were developed for this project. These are summarized below.

For purposes here, an earlier version was developed and presented in last year's seminar and are available in ppt form.

- 1) Wilson 7: *Contracting Strategies, June 2016*
- 2) Wilson 444: Corn/Ethanol crushing II

These have been revised and updated in xls form for presentation in the June 2018 seminar.

5) ***Research Papers Completed***: These were previously summarized, and we currently have a number of academic papers and industry reports published and/or under review. Notably, these include papers on:

Hedging and risk management in ethanol

Logistics strategy, and risks in ethanol firm management

³ This effort was led by Dr. Ripplinger.

References:

- 1) Iddrisu, Awudu, and W. Wilson "Hedging Strategy for Ethanol Processing with Copula Distributions" *Energy Economics*, November 2014. Ms. Ref. No.: ENEECO-D-14-00939. Resubmitted, May 8 2015; Resubmitted July 27 2015

Papers below are at varying stages of completion, though, in all cases, the analytical work has been completed, each will be published as an AgEcon research report, and submitted to an academic journal:

- 2) Kristopher Skadberg, William Wilson, Iddrisu Awudu, and Bruce Dahl, "Optimal hedging in commodities for an agribusiness processing plant"
- 3) Wilson, W. and A. Iddrisu, "Logistics, risks and ethanol firm strategies."
- 4) William Wilson*, William Nganje†, Indranil SenGupta‡, Semere Gebresilasie. Barndorff-Nielsen and Shephard Model for Hedging Energy with Quantity Risk, to Risk Analysis, Manuscript No. RA-00204-2018 25th April, 2018
- 5) "Barndorff-Nielsen and Shephard model- hedging of Bakken oil commodity in North Dakota with variance swap and option" by Indranil SenGupta, William Wilson, and William Nganje to Energy Efficiency, Dec 3, 2017
- 6) Iddrusu, Wilson and Dahl, "Optimal Hedging in Ethanol Production. Energy Journal. submitted April 11, 2017. Ref: ESD_2017_357 May 16, 2017.