

Homework 9 (25 Points Total)  
DUE: Wednesday, November 30, 11:00am

L. Tesfatsion  
EE/Econ 458, Fall 2011

**\*\* PLEASE NOTE: Late assignments will not be accepted – No exceptions.**

**REAL-WORLD CASE STUDY OF A  
NORTH AMERICAN RESTRUCTURED ENERGY REGION**

**References for Exercise 1:**

- [1 ] **\*\* Energy region assignments ATTACHED AT END OF THIS HOMEWORK.**
- [2 ] **\*\* Kirschen/Strbac (textbook), Problem 3.1, page 67.**
- [3 ] This Homework 9 is also posted on-line at  
[www.econ.iastate.edu/classes/econ458/tesfatsion/458Ex9.F11.pdf](http://www.econ.iastate.edu/classes/econ458/tesfatsion/458Ex9.F11.pdf)

As indicated in Ref.[1] above, each registered 458 student has been assigned to a North American energy region that has undergone restructuring in recent years. **Please contact Dr. Tesfatsion as soon as possible if you have not been assigned an energy region and you are taking this course for credit.**

This homework is a modified version of Problems 3.1 (p. 67) from Ref.[2]. Each student is asked to write a short report (no more than five typed pages) that addresses the question given below. Students can work with other students assigned to their same energy region. **However, each student should turn in an individually prepared report. Also, students should make an extra copy of their report for use in class discussion on the due date.**

Please note that all of the North American restructured energy regions are continuously evolving their rules of operation. Consequently, **all claims included in your report should be supported by complete up-to-date references from 2011 if at all possible**, and these references should come from reliable print/Internet sources (e.g., not blogs).

Last but not least, be very careful not to “plagiarize,” i.e., avoid the use of other people’s ideas/materials without proper attribution. Quoted materials should be given in quotes, with the source of the quoted material cited at the point the quoted materials are used. Similarly, paraphrased materials should be identified as such, and the source of the paraphrased materials should also be cited at the point of use.

**QUESTION: (25 Points Total)**

**Part A: (1 Point)** Referring to the energy assignments in [1], provide an up-to-date map of *your assigned energy region*.

**Part B: (24 Points Total)** Carefully summarize how wholesale energy trading takes place in *your assigned energy region*. Be sure to include in your summary a discussion of the following four aspects *for your assigned energy region*:

**B.1: (8 Points)** Which of the following four possible forms of wholesale energy trading are used in your energy region:

- (1) negotiated (customized) bilateral trades between buyers and sellers;
- (2) matching of demand bids and supply offers posted at some form of power exchange;
- (3) demand bids and supply offers submitted to (and cleared by) an ISO/RTO managing a *forward* pool-type market for day-ahead trading;
- (4) supply offers submitted to (and cleared by) an ISO/RTO managing a *spot* pool-type market for real-time trading.

**B.2: (4 Points)** Determine approximately (to the extent permitted by documentation) the particular (possibly zero) percentage of wholesale energy trades that take place in your energy region, on an average day, through each of the forms (1), (2), (3), and (4) in Part B.1.

**B.3: (4 Points)** Carefully identify the key types of entities that participate in wholesale energy trading in your energy region through one or more of the forms (1), (2), (3), and (4) in Part B.1.

**B.4: (8 Points)** Explain briefly but carefully how prices are determined for wholesale energy trades conducted through each of the trading forms (1), (2), (3), and/or (4) in Part B.1 that are used in your energy region.

## ENERGY REGION ASSIGNMENTS FOR HOMEWORK 9:

### CAISO:

Rodriguez Aguilar (ga1), Nate Backhaus (natebackhaus@gmail.com), Justin Batcheler (justinb), Vanessa Chan (vychan), Brent Cornelius, and William Elliott (welliott)

### ERCOT:

Mickael Healy (mhealy), John Henderson (johnh169), Mike Johnson (michaelj), Wanning Li (wanningl), Drew Lietz (dalietz), and Chenlu Lou (clou)

### ISO-NE:

John Majzner (jmajzner), David Mindham (dmindham), Jonas Miranda Neto (jonas-dmn), Spenser Mussmann (spenserm), Bo Peng (iambo), and Nick Phillips (nlp61)

### MISO:

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### NYISO:

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