

Homework 8 (12 Points)
Due: Monday, November 14, 11:00am

Leigh Tesfatsion
EE/Econ 458, Fall 2011

Settlement of Contracts in Wholesale Electric Power Markets

Basic References for Homework 8: EE/Econ 458 Syllabus Section V.B

- [1] ** L. Tesfatsion, *Lecture Notes on Kirschen/Strbac, Chapter 3*, ON-LINE
www.econ.iastate.edu/classes/econ458/tesfatsion/OrganizationOfMarkets.KSChapter3.pdf
[2] ** D. Kirschen and G. Strbac, *Power System Economics*, Required Textbook, Chapter 3

General Exercise Instructions:

- (a) This exercise consists of ONE MULTI-PART QUESTION to be discussed in detail in class on the due date.
- (b) The question covers key aspects of the K/S Chapter 3 materials.
- (c) Make an extra copy of your answer sheets for use in class discussion on the due date. Individuals will be called upon to report their findings.
- (d) **Recall that late assignments cannot be accepted – no exceptions!**

QUESTION (12 Points, 2 Points Each Part)

Carry out Problem 3.3 (p. 67) of Chapter 3 for the Kirschen/Strbac (K/S) textbook, as follows.

A **six-part answer** for Problem 3.3 is provided in the K/S Appendix (p. 267): namely, company “profit” (actually, company net earnings = revenue minus expenses) are listed for each of six companies. **Your** task is to *carefully derive, explain, and present* a table for each of the six companies (with columns giving energy amounts bought and sold, prices, revenue, and expenses) that establishes the correctness of the net earnings outcome listed for each of the six companies on K/S p. 267. *HINT:* See the table given in K/S (p. 268) for the Syldavian Power and Light Company as the answer to K/S Problem 3.5(a) (p. 70).

Important: In the statement of Problem 3.3, replace “profit or loss” by “revenue minus expenses” (i.e., net earnings). In the answer provided for Problem 3.3 on p. 267, replace “profit” by “revenue minus expenses” (i.e., net earnings). Also, assume the hour between 1-2pm on Feb 29, 2016, is a PEAK HOUR.