

## **CREATING AND REFERENCING GRAPHICS**

### **Telling an Energy Story**

**Background:** You are a technical writer for a non-profit group that advocates for a coherent national energy policy. Periodically this organization publishes one-page informational pieces aimed at the general public. (Typically, the organization buys newspaper space for the pieces and also places them on their website. They are produced camera-ready in desk-top-published format, usually two columns that wrap around one or more inserted visuals.) The purpose of these short, easy-to-read pieces is to increase public understanding of energy issues. You have been asked to write one of these one-page pieces on some meaningful “story” related to energy production and consumption as shown in the Table 895, “Energy Supply and Disposition by Type of Fuel: 1960-2004” from the U.S. Census Bureau, Statistical Abstract of the United States: 2007.

**Task:** Write a one-page informative piece, based on Table 895, that explains to the general public a meaningful “story” contained in the table. Format your piece to look like a NYT advocacy ad of the kind we have discussed in class (two-column desk-top-published appearance in which the text wraps around the figures).

**Purpose:** The purpose of this short skill-building assignment is to help you develop the following skills:

- (1) finding a meaningful story in a table
- (2) creating graphics that highlight that meaningful story
- (3) creating titles and labels for your graphics so that they can be easily read
- (4) telling the story in words as well as graphics
- (5) properly referencing the graphics in your text

These last two purposes are particularly important. See out textbook, page 264, on “Incorporating Graphics into Your Research Report”—particularly the paragraph about “independent redundancy.” In popular articles graphics are typically not labeled, but nevertheless referenced. In formal technical writing, label your graphs Figure 1, Figure 2, and so forth.

#### **Warming Up: Individual or Small Group Exercises for Class Discussion**

1. Create a pie chart showing what percentage of total consumed energy in 2004 came from petroleum, natural gas, and the other sources identified in the table. Give your pie chart an effective title and label it clearly.
2. Create a line graph showing the change in net energy imports from 1960-2004. Title your graph and create effective labels.
3. What is an example of a story in the table that might be best told with a bar graph? Make the graph.

## **Peer Review of Assignments**

### *Instructor:*

- Explain how the assignment connects to your learning goals for the course
- Explain the specific goals of your assignment
- Explain its context (where it fits in the course, whether it is a major or minor assignment, and so forth)
- Explain how you intend it to involve your students in a “rich encounter with data” or otherwise connect to writing with numbers
- Explain to your peer reviewers some of the specific questions or concerns you have about this draft

### *Peer reviewers:*

- Read the assignment handout from two perspectives—(1) your collegial perspective as a peer reviewer and (2) your perspective role-playing a “median” Carleton student (arranged, say, by passion for learning).
- If feasible (depends on the assignment), actually begin doing the assignment as a student. Role play being a student and actually immerse yourself into the thought process of the assignment. See if you can anticipate where students will have problems. The deeper you get into the assignment, the more you can offer helpful insights to the instructor. Talk through your experiences role-playing a student.
- Respond to the assignment guided by the “Questions for Peer Review of an Assignment Draft” on page 4 of the workshop packet. Talk through your reactions to each other’s assignments going bullet by bullet through the peer review questions.
- Help the instructor explore possible ways that the assignment might be tweaked or revised.

## **Revise Your Assignment and Consider Making a Scoring Rubric**

- Make notes on how you intend to revise your assignment incorporating the suggestions you found useful
- Consider designing a scoring rubric for your assignment, perhaps using the template presented earlier in the morning. Articulate the criteria you expect for a strong paper.

## **Presentation/Sharing of Different Kinds of Assignments**

**GRADING RUBRIC FOR ASSIGNMENT ON “TELLING AN ENERGY STORY”**

<b>Quality of content (tells a significant energy story)</b>	10 9 8	7 6 5 4	3 2 1 0
<ul style="list-style-type: none"> <li>• Tries to change reader’s original view about some aspect of energy production or consumption</li> <li>• Has a clear informative purpose</li> <li>• Increases reader’s understanding of an energy issue</li> <li>• Shows significance of issue</li> </ul>	Meets all criteria at high level; clear and easy to follow	Meets some criteria; uneven or has some lapses in clarity or development	Meets few criteria; often unclear or undeveloped
<b>Quality of graphic(s)</b>	10 9 8	7 6 5 4	3 2 1 0
<ul style="list-style-type: none"> <li>• Graphics are visually appealing and easy to read</li> <li>• Graphics have effective titles that refer to all pertinent dimensions of the graphic (both axes, legends)</li> <li>• Graphics have effective labels, legends</li> <li>• Graphics are effectively referenced in text</li> </ul>	Meets all criteria at high level; clear and developed	Meets some criteria; uneven; take too much reader time to comprehend	Meets few criteria; often unclear or undeveloped
<b>Quality of the interrelationship between graphics and words</b>	10 9 8	7 6 5 4	3 2 1 0
<ul style="list-style-type: none"> <li>• Follows principle of “independent redundancy” (tells in words the same story told by the graphic)</li> <li>• Chooses effective details from the graphic to highlight the graphics’ message</li> <li>• Is easy to follow—reader readily sees how graphic supports story and story supports graphic</li> </ul>	Meets all criteria at high level; clear, easy to follow;	Meets some criteria; uneven or has some lapses in clarity	Meets few criteria; often unclear or undeveloped; graphic doesn’t match text
<b>Has strong overall effectiveness (professional appearance, clarity, impact)</b>	10 9 8	7 6 5 4	3 2 1 0
<ul style="list-style-type: none"> <li>• Is camera-ready formatted to look like a magazine page</li> <li>• Effectively integrates graphics into the page design</li> <li>• Is clear, well-organized, concise, adequately developed, and graceful</li> <li>• Is well-edited without errors in grammar, punctuation, usage, or spelling (see separate reduction below for editing errors)</li> </ul>	Meets all criteria at high level	Meets some criteria; uneven	Meets few criteria

**Deductions for rule-based errors in grammar, punctuation, usage, or spelling**

POSITIVE ETHOS	ANNOYING NOISE	ERRORS DESTROY ETHOS
+5      0    -3	-5    -8    -10	-12    -15

Table 895. Energy Supply and Disposition by Type of Fuel: 1960 to 2004

[In quadrillion British thermal units (Btu) (42.80 represents 42,800,000,000,000). For Btu conversion factors, see source and text, this section]

Year	Production									Net imports, total <sup>5</sup>	Consumption					
	Total <sup>1</sup>	Crude oil <sup>2</sup>	Natural gas	Coal	Nuclear power	Renewable energy <sup>3</sup>					Total <sup>1</sup>	Petroleum <sup>6,7</sup>	Natural gas <sup>8</sup>	Coal	Nuclear power	Renewable energy <sup>3</sup> , total
						Total <sup>1</sup>	Hydro-electric power	Biofuel <sup>4</sup>	Solar energy							
1960	42.80	14.93	12.66	10.82	(Z)	2.93	1.61	1.32	(NA)	2.71	45.09	19.92	12.39	9.84	(Z)	2.93
1970	63.50	20.40	21.67	14.61	0.24	4.08	2.63	1.43	(NA)	5.71	67.84	29.52	21.79	12.26	0.24	4.08
1974	62.37	18.57	21.21	14.07	1.27	4.77	3.18	1.54	(NA)	12.10	73.99	33.45	21.73	12.66	1.27	4.77
1975	61.36	17.73	19.64	14.99	1.90	4.72	3.15	1.50	(NA)	11.71	72.00	32.73	19.95	12.66	1.90	4.72
1976	61.60	17.26	19.48	15.65	2.11	4.77	2.98	1.71	(NA)	14.59	76.01	35.17	20.35	13.58	2.11	4.77
1977	62.05	17.45	19.57	15.75	2.70	4.25	2.33	1.84	(NA)	17.90	78.00	37.12	19.93	13.92	2.70	4.25
1978	63.14	18.43	19.49	14.91	3.02	5.04	2.94	2.04	(NA)	17.19	79.99	37.97	20.00	13.77	3.02	5.04
1979	65.95	18.10	20.08	17.54	2.78	5.17	2.93	2.15	(NA)	16.60	80.90	37.12	20.67	15.04	2.78	5.17
1980	67.24	18.25	19.91	18.60	2.74	5.49	2.90	2.48	(NA)	12.10	78.29	34.20	20.39	15.42	2.74	5.49
1981	67.01	18.15	19.70	18.38	3.01	5.47	2.76	2.59	(NA)	9.41	76.34	31.93	19.93	15.91	3.01	5.47
1982	66.57	18.31	18.32	18.64	3.13	5.99	3.27	2.62	(NA)	7.25	73.25	30.23	18.51	15.32	3.13	5.99
1983	64.11	18.39	16.59	17.25	3.20	6.49	3.53	2.83	(NA)	8.06	73.10	30.05	17.36	15.89	3.20	6.49
1984	68.83	18.85	18.01	19.72	3.55	6.43	3.39	2.88	(Z)	8.68	76.74	31.05	18.51	17.07	3.55	6.43
1985	67.65	18.99	16.98	19.33	4.08	6.03	2.97	2.86	(Z)	7.58	76.47	30.92	17.83	17.48	4.08	6.03
1986	67.09	18.38	16.54	19.51	4.38	6.13	3.07	2.84	(Z)	10.13	76.78	32.20	16.71	17.26	4.38	6.13
1987	67.61	17.67	17.14	20.14	4.75	5.69	2.63	2.82	(Z)	11.59	79.23	32.87	17.74	18.01	4.75	5.69
1988	68.95	17.28	17.60	20.74	5.59	5.49	2.33	2.94	(Z)	12.93	82.84	34.22	18.55	18.85	5.59	5.49
1989	69.36	16.12	17.85	21.35	5.60	6.29	2.84	3.06	0.06	14.11	84.96	34.21	19.71	19.07	5.60	6.29
1990	70.77	15.57	18.33	22.46	6.10	6.13	3.05	2.66	0.06	14.06	84.70	33.55	19.73	19.17	6.10	6.13
1991	70.41	15.70	18.23	21.59	6.42	6.16	3.02	2.70	0.06	13.19	84.64	32.85	20.15	18.99	6.42	6.16
1992	69.98	15.22	18.38	21.63	6.48	5.91	2.62	2.85	0.06	14.44	85.99	33.53	20.84	19.12	6.48	5.91
1993	68.30	14.49	18.58	20.25	6.41	6.16	2.89	2.80	0.07	17.01	87.62	33.84	21.35	19.84	6.41	6.16
1994	70.71	14.10	19.35	22.11	6.69	6.06	2.68	2.94	0.07	18.33	89.28	34.67	21.84	19.91	6.69	6.06
1995	71.18	13.89	19.08	22.03	7.08	6.67	3.21	3.07	0.07	17.75	91.25	34.55	22.78	20.09	7.08	6.67
1996	72.50	13.72	19.34	22.68	7.09	7.14	3.59	3.13	0.07	19.07	94.26	35.76	23.20	21.00	7.09	7.14
1997	72.43	13.66	19.39	23.21	6.60	7.08	3.64	3.01	0.07	20.70	94.77	36.27	23.33	21.45	6.60	7.08
1998	72.83	13.24	19.61	23.94	7.07	6.56	3.30	2.83	0.07	22.28	95.19	36.93	22.94	21.66	7.07	6.56
1999	71.71	12.45	19.34	23.19	7.61	6.60	3.27	2.89	0.07	23.54	96.84	37.96	23.01	21.62	7.61	6.60
2000	71.27	12.36	19.66	22.62	7.86	6.16	2.81	2.91	0.07	24.97	98.96	38.40	23.92	22.58	7.86	6.16
2001	71.88	12.28	20.20	23.49	8.03	5.33	2.24	2.64	0.07	26.39	96.47	38.33	22.91	21.91	8.03	5.33
2002	70.76	12.16	19.44	22.62	8.14	5.84	2.69	2.65	0.06	25.74	97.88	38.40	23.63	21.90	8.14	5.84
2003	70.01	12.03	19.63	21.97	7.96	6.08	2.82	2.74	0.06	27.05	98.31	39.05	23.07	22.32	7.96	6.08
2004 <sup>10</sup>	70.37	11.53	19.34	22.69	8.23	6.12	2.73	2.85	0.06	28.57	99.74	40.13	22.99	22.39	8.23	6.12

NA Not available. Z Less than 5 trillion. <sup>1</sup> Includes types of fuel not shown separately. <sup>2</sup> Includes lease condensate. <sup>3</sup> Electricity net generation from conventional hydroelectric power, geothermal, solar, and wind; consumption of wood, waste, and alcohol fuels; geothermal heat pump and direct use energy; and solar thermal direct use energy. <sup>4</sup> Wood, waste, and alcohol (ethanol blended into motor gasoline). <sup>5</sup> Imports minus exports. <sup>6</sup> Beginning in 1993, ethanol blended into motor gasoline is included in Petroleum. <sup>7</sup> Petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel. <sup>8</sup> Includes supplemental gaseous fuels. <sup>9</sup> There is a discontinuity in this time series between 1989 and 1990. <sup>10</sup> Preliminary.

Source: U.S. Energy Information Administration, *Annual Energy Review 2004*. See also <<http://www.eia.doe.gov/emeu/aer/overview.html>> (released August 2005).