

APPENDIX A

MINUTES

SENATE INTERIM COMMITTEE ON ELECTRIC UTILITY RESTRUCTURING

Friday, September 26, 1997

9:30 am

Senate Chamber

Pursuant to a notice posted in accordance with Senate Rule 11.11, the organizational meeting of the Senate Interim Committee on Electric Utility Restructuring was held on Friday, September 26, 1997 in the Senate Chamber at Austin, Texas.

MEMBERS PRESENT:

Senator David Sibley
Senator Kenneth Armbrister
Senator Gonzalo Barricento
Senator Teel Bivins
Senator David Cain
Senator Jane Nelson

MEMBER ABSENT:

Senator Troy Fraser

The Chairman called the meeting to order at 9:40 am. There being a quorum present, the following business was transacted.

Chairman Sibley discussed the interim charge for the Committee, and laid out the proposed schedule of hearings. Senator Bivins will host the next meeting in Amarillo; a date for the meeting will be set as soon as possible.

The Chair advised that the hearing would begin with a background of the electric industry and a regulatory update to be presented by Pat Wood, Chairman, and Judy Walsh, Commissioner, Public Utility Commission.

Following Chairman Wood and Commissioner Walsh's testimony and response to members' questions, Chairman Sibley advised that invited testimony on electric utility restructuring issues would commence. The following invited witnesses testified and responded to members' questions:

Julie Moore, and Ron Lanclus, representing Texas Coalition for Competitive Electricity, and
Milton Ramsey, representing Chevron
Bob Reilly, representing Enron Corporation

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Curtis Seidlitz, representing Association of Electric Companies of Texas, Robert M. Fillmore, Texas Utilities Electric Company, and Steve Schaeffer, Houston Industries, Inc.
Suzi Ray McClellan, representing Office of Public Utility Counsel
Mike Williams, representing Texas Electric Cooperatives
Mark Zion, representing Texas Public Power Association
Monte Akers, representing Texas Municipal League
Michael R. Moore, representing Texas Retailers Association
Dr. Ramon Alvarez, representing the Environmental Defense Fund
Janee Briesemeister, representing the Consumers Union

Upon completion of the invited witnesses' testimony and response to members' questions, Chairman Sibley advised that public testimony would be heard. The following witnesses testified and responded to members' questions:

James Fitzpatrick, representing American Association of Retired Persons
Lora Williams, representing Consumers Alliance of the Southeast
Peggy Venable, representing Texas Citizens for a Sound Economy
Carol Biedrzycki, representing Texas Rose, Texas Legal Services Center
Tom Smith, representing Public Citizen
Randy Entinger, representing the Center for Energy and Economic Development
Susan Pitman, representing the American Lung Association
Jim Jeffrey, representing himself and the Goose Creek School District
John A. Monus, Jr., representing himself

Those shown below registered for electric utility restructuring but did not wish to testify:

Robert Wright, consultant for Union Carbide
Carol Jones, representing herself

There being no further business, at 3:10 pm Chairman Sibley moved that the Committee stand recessed subject to the call of the Chair. Without objection, it was so ordered.


Senator David Sibley, Chairman


Barbara Henderson, Clerk

WITNESS LIST

Electric Utility Restructuring (Interim) Committee
September 26, 1997-9:30A

Electric Utility Restructuring

For: Biedrzycki, Carol (TX Rose, Legal Services), Austin
Fillmore, Robert (TX Utility Electric Co.), Dallas
Jeffrey, Jim (self / school district), Houston
Lanclos, Ron (TCCE), Houston
Monus, John A. (self), Georgetown
Moore, Julie (TCCE), Austin
Moore, Michael R. (TX Retailers Assoc.), Austin
Ramsey, Milton (Chevron), Houston
Reilley, Bob (Enron Corp.), Austin
Schaeffer, Steve (Houston Industries Inc), Houston
Smith, Tom "Smitty" (Public Citizens), Austin
Venable, Peggy (TXCSE), Austin
On: Akers, Monte (TX Municipal League), Austin
Alvarez, Ramon (Enviro. Defense Fund), Austin
Briesemeister, Janee (Consumers Union), Austin
Eminger, Randy (Center for Energy), Amarillo
Fitzpatrick, James M. (AARP), Austin
McClellan, Suzi (OPOC), Austin
Pitman, Susan (American Lung Assoc.), Austin
Seidlits, Curt (ARCT), Austin
Walsh, Judy (PUC, Commissioner), Austin
Williams, Lora H. (Consumers Alliance), Austin
Williams, Mike (TX Electric Corp.), Austin
Wood, Pat (PUC, Chairman), Austin
Zior, Mark (TX Public Power Assoc.), Austin

Registering, but not testifying:

For: Jones, Carol (self), Marble Falls

Wright, Robert (Union Carbide), Victoria

MINUTES

SENATE INTERIM COMMITTEE ON ELECTRIC UTILITY RESTRUCTURING

Friday, December 12, 1997

10:00 am

Amarillo, Texas

Pursuant to a notice posted in accordance with Senate Rule 11.11, a public hearing of the Senate Interim Committee on Electric Utility Restructuring was held on Friday, December 12, 1997 in Amarillo, Texas.

MEMBERS PRESENT:

Senator David Sibley
Senator Kenneth Ambrister
Senator Teel Bivins
Senator David Cain
Senator Troy Fraser
Senator Jane Nelson

MEMBER ABSENT:

Senator Gonzalo Barrientos

Chairman Sibley called the meeting to order at 10:05 am. There being a quorum present, the following business was transacted.

The Chairman expressed his appreciation to Mayor Seliger and to Senator Bivins for hosting the hearing in Amarillo, and Senator Bivins welcomed the Committee to his district. Chairman Sibley explained the issues the Committee would focus on at this hearing and called the first invited panel to address market power and structure of retail market. The panelists were:

Steve Schaeffer, Houston Industries
Bob Reilly, Enron Corporation
Bob Bryant, Golden Spread Electric Cooperative
Suzi Ray McClellan, Texas Public Utility Counsel
Judy Walsh, Texas Public Utility Commission
Stephanie Kroger, Texas Coalition for Competitive Electricity

The panelists presented their testimony and responded to questions from the Committee members.

At 12:40 p.m. Chairman Sibley recessed the hearing for a thirty minute break.

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The Committee reconvened at 1:15 pm, and the Chairman called the second invited panel to address the issues of transmission and distribution system; and metering, billing and collection. The panelists were:

Tom Baker, Texas Utilities
Jim Collins, LG&E Energy Marketing
Chris King, CellNet Data Systems
Brady Belk, LCRA
Pat Wood, Texas Public Utility Commission
Arthur van Rosenberg, Texas Public Power Association.

Following testimony, the panelists responded to members' questions.

Upon completion of the invited testimony, Chairman Sibley advised that public testimony would begin and called the first witness. The following witnesses testified and responded to the Committee members' questions:

Ty Cooke, Mayor Pro-Tem, Lubbock, Texas
T. J. Miller, Mayor, Plains, Texas
John Stauffacher, representing NGC Corp., Houston, Texas
Lois Wales, representing herself, Dimmit, Texas
Clayton White, representing International Brotherhood of Electrical Workers, Amarillo, Texas
Robert Goodrich, representing himself, Amarillo, Texas
Matt Griffith, representing Texas Panhandle Builders Association, Amarillo, Texas
Benny Nixon, representing S.P.E.C. and Texas Electric Cooperative, Lubbock, Texas
Vick Christian, farmer and rancher, Farwell, Texas
Robert Caudle, representing Lea County Electric Co-op, Midland, Texas
Brenda Patterson, representing herself, Lubbock, Texas
Jesse D. Martin, representing himself, Amarillo, Texas
Clayton Spears, representing himself, Amarillo, Texas

The following persons registered but did not testify:

Tom Smith, representing Public Citizen, Austin, Texas
Joann Harwell, representing herself, Vega, Texas
Robert Little, representing himself, Dallas, Texas
Johnny Richmond, representing the elderly and low income, Amarillo, Texas
Vaughn Nelson, representing Texas Energy Coordination Council, Canyon, Texas

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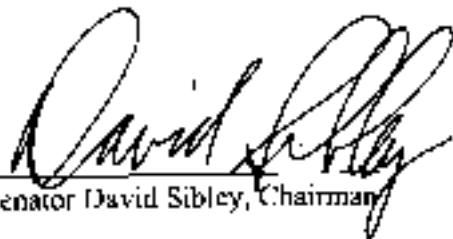
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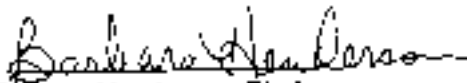
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Robert King, representing National Association of Energy Service Companies, Austin, Texas

Upon completion of testimony and members' questions, at 3:50 pm Chairman Sibley moved that the Committee stand recessed subject to the call of the Chairman. Without objection, it was so ordered.



Senator David Sibley, Chairman



Barbara Henderson, Clerk

WITNESS LIST

Electric Utility Restructuring (Interim) Committee
December 12, 1997-10:00A

Electric Utility Restructuring

For: Harwell, Joann (self), Vega
Martin, Jesse (self), Lubbock
Patterson, Brenda (self), Lubbock
Raymond, Johnny (Elderly - Low Income), Amarillo
Spears, Clayton (self), Amarillo
Stauffacher, John (NGC Corp), Houston

Against: Wales, Lois (self), Dimmitt
White, Clayton (IBEW), Fannin

On: Caudle, Robert (Lea County Electric), Midland
Christian, Vick (Farmers), Farwell
Cooke, Ty (TX Public Power Assn.), Lubbock
Goodrich, Robert (self), Amarillo
Griffith, Matt (Furniture Builders Assn.), Bell
Miller, T.J. (City of Plains - TPPA), Plains
Nelson, Vaughn (Coordination Council), Canyon
Nixon, Benny (SPEC), Lubbock

Registering, but not testifying:

On: King, Robert (Energy Service Co.), Austin
Little, Robert (self), Dallas
Smith, Tom "Smitty" (Public Citizen/Members), Austin

Market Power & Structure of Retail

For: Reilly, Bob (Enron Corporation), Houston
Schaeffer, Steve (AECT), Houston
On: Bryant, Robert (Golden Spread Electric), Amarillo
Kroger, Stephanie (Competitive Electricity), Austin

McClellan, Suzi (OPUC), Austin

walah, Judy (POC), Austin

Transmission & Metering

Cr: Baker, Tom (AECT), Dallas

Belk, Brady (LCRA), Austin

Collins, Jim (LG&E Energy Marketing), Dallas

King, Chris (CellNet Data Systems), San Carlos

Rosenberg, Arthur von (TX Public Power Assn.), San Antonio

Wood, Pat (PUC), Austin

MINUTES

SENATE INTERIM COMMITTEE ON ELECTRIC UTILITY RESTRUCTURING

Wednesday, February 4, 1998

9:00 am

Senate Chamber

Pursuant to a notice posted in accordance with Senate Rule 11.11, a public hearing of the Senate Interim Committee on Electric Utility Restructuring was held on Wednesday, February 4, 1998 in the Senate Chamber at Austin, Texas.

MEMBERS PRESENT:

Senator David Sibley, Chairman
Senator Kenneth Armbrister
Senator Gonzalo Barrantos
Senator Teel Bivins
Senator David Cain
Senator Troy Fraser
Senator Jane Nelson

MEMBERS ABSENT:

None

Chairman Sibley called the meeting to order at 9:15 am. There being a quorum present, the following business was transacted.

The Chairman advised that the Committee would focus first on customer protection and called the invited panel to address this issue. The panelists were:

Barbara Alexander, Consumer Affairs Consultant
Suzi McClellan, Office of Public Utility Counsel
David Mintz, Texas Coalition for Competitive Electricity
Bob Reilly, Enron Corporation
Tom Baker, Association of Electric Companies of Texas
Janee Briesemeister, Consumers Union

Upon completion of the panelists' presentations and response to members' questions, Chairman Sibley called the second panel to address environmental and renewable energy issues. These panelists were:

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Jeffrey A. Saitas, Office of Air Quality, Texas Natural Resource Conservation Commission
John Hoffner, Texas Renewable Energy Industries Association
Tom "Smitty" Smith, Public Citizen's Texas Office
Ed Feith, Association of Electric Companies of Texas
Karl Rabago, Environmental Defense Fund
Randy Eminger, Center for Energy and Economic Development
Jane Pulaski, State Energy Conservation Office

At 12:40 p.m. Senator Armbrister assumed the Chair, and at 1:00 p.m., Senator Sibley resumed the Chair.

Following the second panelists' testimony and response to members' questions, Chairman Sibley advised that public testimony would commence. Due to the number of public witnesses registering to speak, the Chairman moved that each person limit testimony to three minutes; without objection, it was so ordered. Chairman Sibley then called the first witness. All witnesses, including panelists, are listed in order of their testimony.

Barbara Harwood, representing herself, Carrollton, Texas
Ron Purpora, representing American Lung Association of Texas, Austin, Texas
Susan Pitman, representing American Lung Association of Texas, Austin, Texas
Roland Duty, representing himself, Waco, Texas
Mary Duty, representing Children's Advocacy Center, Waco, Texas

The next witness, Johnette Hicks, representing Equal Opportunity Action Committee, Waco, Texas, submitted a petition Supporting Universal Electricity Service. The petition was circulated by Texas Association of Community Action Agencies and requested that all Texas households have affordable electricity; and that all utilities should offer a special low-income rate for customers living in poverty, a low-income weatherization program, and other programs to help low-income customers prevent termination of electricity service. Public testimony then resumed.

Boyce Vardiman, representing himself, West, Texas
Bruce Allen, representing himself, Waco, Texas
W. F. Barrett, representing himself, Valley Mills, Texas
Randall Chapman, representing himself, Austin, Texas

At 3:25 p.m. Senator Burrientos assumed the Chair, and at 3:45 p.m. Senator Sibley resumed the Chair while public testimony continued.

James Fitzpatrick, representing American Association of Retired Persons, Austin, Texas

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Alan Rose, representing JC Penney Company & Texas Retailers Association, Dallas, Texas
Jerome Vacek, representing consumers, Corsicana, Texas
Carol Biedrzycki, representing Texas Ratepayers Organization to Save Energy, Austin, Texas
Karen Swenson, representing low income households, Nacogdoches, Texas
Peter Altman, representing the SEED Coalition, Austin, Texas
Dwayne Anderson, representing Clean Water Action, Austin, Texas
Robert King, representing National Association of Energy Service Companies, Austin, Texas
Chris Strand, representing himself, Austin, Texas
Ju Vega, representing Sheltering Arms Senior Services, Houston, Texas
Marjorie Wood, representing herself, Abilene, Texas
Bob Manning, representing HEH Grocery Company, San Antonio, Texas
Brooks Hickerson, representing himself, Austin, Texas

Chairman Sibley commended the next witness, Kirtley Wienbroer, representing Students for Earth Awareness at UT, Austin, Texas, for keeping his testimony under three minutes. Public testimony then resumed as follows:

Bill Medaille, representing himself, Austin, Texas
Tommy Benavides, representing himself, Austin, Texas
Kim Phillips, representing herself and the Texas PTA, Austin, Texas
Karin Ascot, representing herself, Austin, Texas
Mike Sloan, representing himself, Austin, Texas
Todd Cyper, representing himself, Meadow, Texas
Michael Aaron, representing himself, Austin, Texas
Dr. Bob Farmer, representing himself, Gatesville, Texas
Nancy Lockhoof, representing herself, Austin, Texas
C. C. Bowman, representing himself, Marshall, Texas
Tim Curtis, representing himself, Dale, Texas

The following persons registered to testify but were unable to remain at the hearing until they were called:

Herb Williams, representing Texas Natural Resource Conservation Commission, Austin, Texas
Bill Tilney, representing himself, Austin, Texas
Leonard McLaughlin, representing himself and Lost Creek MUD, Austin, Texas
Frank Arredondo, representing Texas Association of Community Action Agencies, San Marcos, Texas
Karen Heikkala, representing herself, Austin, Texas

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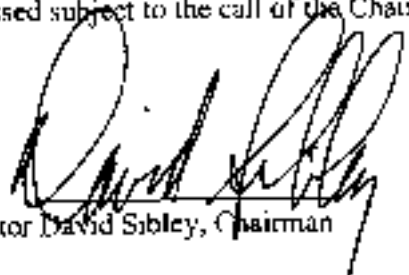
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J. D. Porter, representing himself, Austin, Texas
Enrique Valdivia, representing himself, San Antonio, Texas
Tara Tune, representing Public Citizens members, Austin, Texas
Linn Romberg, representing Texas Air Conditioning Contractors Association, Austin, Texas
Kevorn Joyce, representing TNP Enterprises and Texas New Mexico Power Company, Fort Worth, Texas

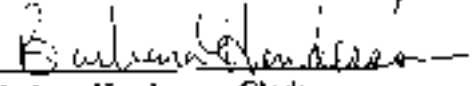
The following persons registered but did not wish to testify:

Adan Martinez, representing Texas General Land Office, Austin, Texas
Richard Walker, representing Central & South West Corp. & AECT, Tulsa, Oklahoma
Robert L. Wright, representing Texas Energy Coordination Council & Union Carbide, Victoria, Texas
Jim Walker, representing himself as a member of the Sustainable Building Coalition, Austin, Texas
Dr. Yvonne M. Hansen, representing herself, Austin, Texas

There being no further business, at 5:50 pm Chairman Sibley moved that the Committee stand recessed subject to the call of the Chair. Without objection, it was so ordered.



Senator David Sibley, Chairman



Barbara Henderson, Clerk

WITNESS LIST

Electric Utility Restructuring (Interim) Committee
February 4, 1998-9:00A

Customer Protection Issues

For: Miniz, David (TCCE), Austin
Reilley, Bob (Enron Corp.), Houston

On: Alexander, Barbara (Consumer Affairs), Winthrop, Maine
Baker, Tom (ARCT), Dallas
Hricsemeister, Janee (Consumers Union), Austin
McClellan, Suzi (OPUC), Austin

Electric Utility Restructuring

For: Barrett, W.F. (Five Oaks Ranch (self)), Valley Mills
Bowman, C.G. (Buddy) (self), Marshall
Curtis, Tim (self), Dale
Cybert, Todd (self), Meadow
Duty, Mary (Children's Advocacy), Waco
Hicks, Johnette (BOAC), Waco
Vardiman, Boyce (self), West

Against: Vega, Ju (SASS), Houston

On: Aaron, Michael (self), Austin
Allen, Bruce (self), Waco
Altman, Peter (The SEED Coalition), Austin
Anderson, Dwayne (Clean Water Action), Austin
Ascot, Karin E.S. (self), Austin
Benavidez, Tommy (self), Austin
Biedrzycki, Carol (Texas Rose), Austin
Chapman, Randall (self), Austin
Duty, Roland B. (self), Waco
Farmer, Dr. Bob (self), Gatesville

Fitzpatrick, James (AARP & self), Austin
Harwood, Barbara (self), Carrollton
Hickerson, Brooks (self), Austin
King, Robert J. (Energy Service Company), Austin
Lockhoof, Nancy (self), Austin
Manning, Bob (HEB Grocery Co.), San Antonio
Medaille, Bill (self), Austin
Phillips, Kim (Texas PTA & self), Austin
Pitman, Susan (American Lung Assn.), Austin
Purpora, Ron (American Lung Assn.), Austin
Rose, Alan (JC Penny & TX Retailers), Dallas
Sloan, Mike (self), Austin
Strand, Chris (self), Austin
Swenson, Karen M. (Low Income Households), Nacogdoches
Vacek, Jerome (Consumers!), Corsicana
Wienbroer, Kirtley (UT Earth Awareness Grp.), Austin
Wood, Marjorie N. (self), Abilene

Registering, but not testifying:

For: Joyce, Kevern (TNP Enterprises), Ft. Worth
McLaughlin, Leonard (Lost Creek MUD), Austin
Tilney, Bill (self), Austin
Tune, Tara (Public Citizen), Austin
On: Arredondo, Frank (TACAA), San Marcos
Hansen, Dr. Yvonne M. (self), Austin
Heikkala, Karen (self), Austin
Martinez, Adan (TX General Land Office), Austin

Porter, J.D. (self), Austin
Romberg, Tom (AC Contractors Assn.), Austin
Valdivia, Enrique (self), San Antonio
Walker, Jim (self), Austin
Walker, Richard P. (AECT, Central & SW Corp), Tulsa, OK
Williams, Herb (TNRCC), Austin
Wright, Robert L. (TECC & Union Carbide), Victoria

Environmental & Renewable Energy

For: Smith, Tom "Smitty" (Public Citizen), Austin
On: Eminger, Randy (CEED), Amarillo
Feith, Ed (AECT), Houston
Hoffner, John (TREIA), Austin
Pulaski, Jane (SECO), Austin
Rabago, Karl (EDF), Austin
Saitas, Jeff (TNRCC), Austin

MINUTES

SENATE INTERIM COMMITTEE ON ELECTRIC UTILITY RESTRUCTURING

Wednesday, March 25, 1998

9:30 am

Grapevine, Texas

Pursuant to a notice posted in accordance with Senate Rule 11.11, a public hearing of the Senate Interim Committee on Electric Utility Restructuring was held on Wednesday, March 25, 1998 in the Grapevine Convention Center, Grapevine, Texas.

MEMBERS PRESENT:

Senator David Sibley
Senator Kenneth Armbrister
Senator Gonzalo Barrientos
Senator Icel Bivins
Senator David Cain
Senator Troy Fraser
Senator Jane Nelson

MEMBERS ABSENT:

None

The Chair called the meeting to order at 9:35 am. There being a quorum present, the following business was transacted.

Chairman Sibley expressed his appreciation to Senator Nelson for hosting the Committee in Grapevine; Senator Nelson welcomed the Committee to her district and thanked the City of Grapevine for their assistance.

The Chairman announced that 90 minutes had been set aside for each of the two panels to make their presentations and respond to members' questions. Chairman Sibley then called the first panel to address electric cooperative issues. The panelists were:

Mike Williams, Texas Electric Cooperatives
Edd Hargett, Houston County Electric Cooperative
Libby Linsbarger, Padernales Electric Cooperative
Debbie Robinson, Wood County Electric Cooperative
Michael Moore, C. H. Guernsey & Co.

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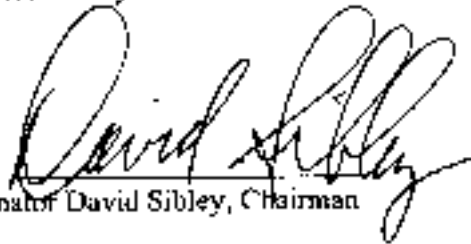
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Michael J. Marz, representing himself, Dallas, Texas, submitted written testimony and registered to testify but was unable to remain at the hearing until he was called.

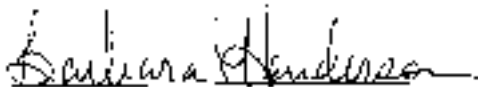
The following witnesses registered but did not wish to testify:

Francis E. "Frank" Parks, City Manager, City of Weimar, Weimar, Texas
Grady C. Singletary, Cherokee County REC, representing himself, Rusk, Texas
Donald R. Postell, representing the City of Grand Prairie, Grand Prairie, Texas

There being no further business, at 3:50 pm Chairman Sibley moved that the Committee stand recessed subject to the call of the Chairman. Without objection, it was so ordered.



Senator David Sibley, Chairman



Barbara Henderson, Clerk

WITNESS LIST

Electric Utility Restructuring (Interim) Committee
March 25, 1998-9:30A

Electric Cooperative Issues

On: Hargett, Edd (Houston County Electric), Crockett
Linebarger, Libby (Padernales Electric), Manchaca
Moore, Michael (C H. Guernsey & Co.), Oklahoma City
Robinson, Debbie (Wood County Electric), Quitman
Williams, Mike (TX Electric Cooperative), Austin

Electric Utility Restructuring

For: Flurry, David (self), Blanket
Goodson, Dessie (self), Denton
Hart, Kristi (self), Murchison
Tirk, Kerry (self), Colleyville
On: Baker, Roy O. (AARP), Greenville
Beck, Paula C. (West TX Opportunities), Lamasa
Bray, Debra A. (self), Burleson
Ebner, Calvin (self), Deweyville
Foutz, Kim (City of Midlothian), Midlothian
Goodson, Dessie (self), Denton
Harting, Sue Ann (Mayor, Greenville), Greenville
Little, Frances (Hill Country Community), San Saba
Osborn, Maurice (Mayor, Midlothian), Midlothian
Ouchley, Don (FUB), Brownsville
Payne, Emmett (Central TX Opp.), Coleman
Pridgen, Marcus W. (Guadalupe Valley Elec.), Gonzalez
Ratliff, James (Mayor, Garland), Garland
Smith, Tom "Smitty" (Public Citizen), Austin
Swenson, Karen (CAP Agencies), Nacogdoches

Whiteside, Charles H. (self), Kilgore

Wood, John (Mayor Pro Tem, Brownsvl), Brownsville

Registering, but not testifying:

For: Marz, Michael J. (self), Dallas

Against: Parks, Francis "Frank" (City of Weimar), Weimar

On: Postell, Donald R. (City of Grand Prairie), Grand Prairie

Singletary, Grady C. (self), Rusk

Municipal Utility Issues

On: Cooke, Alex "Ty" (Mayor Pro Tem, Lubbock), Lubbock

Rose, Mark (LCRA), Austin

Taylor, Bill (Kerrville PUB), Kerrville

Wilkinson, Dan (Elec. Utility Services), Bryan

Zion, Mark (TX Public Power Assoc.), Austin

MINUTES

SENATE INTERIM COMMITTEE ON ELECTRIC UTILITY RESTRUCTURING

Thursday, May 28, 1998

9:30 am

Victoria, Texas

Pursuant to a notice posted in accordance with Senate Rule 11.11, a public hearing of the Senate Interim Committee on Electric Utility Restructuring was held on Thursday, May 28, 1998 at the Johnson Symposium Center, Victoria College, in Victoria, Texas.

MEMBERS PRESENT:

Senator David Sibley, Chairman
Senator Kenneth Armbrister
Senator Gonzalo Barrientos
Senator Teel Bivins
Senator David Cain
Senator Troy Fraser
Senator Jane Nelson

MEMBERS ABSENT:

None

The Chairman called the meeting to order at 9:40 am. There being a quorum present, the following business was transacted.

Chairman Sibley advised that the Committee would focus on stranded costs at this meeting, and thanked Senator Armbrister for hosting the Committee in Victoria. Senator Armbrister welcomed the members to Victoria and expressed his appreciation to Dr. Jimmy Goodson, President of Victoria College, and Dr. Marylyn Fletcher, Auditoriums Manager, for making it possible for the Committee to meet at Victoria College.

Chairman Sibley called the first invited witness, Eric Hirst of Oak Ridge National Laboratory in Oak Ridge, Tennessee, to speak to the members concerning stranded costs. Following Mr. Hirst's testimony and response to members' questions, the Chairman called the next invited witness, Pat Wood, Chairman of the Public Utility Commission of Texas, to discuss the 1998 update report on Potentially Strandable Investment (ECOM).

At 12:00 Noon, upon completion of Chairman Wood's testimony and response to Committee members' questions, Chairman Sibley recessed the hearing for thirty minutes.

SENATE INTERIM COMMITTEE ON ELECTRIC UTILITY RESTRUCTURING

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At 12:45 p.m. the Committee reconvened, and the Chairman called the next invited witnesses. Steve Schaeffer and Marc Moseley, representing the Association of Electric Utilities of Texas, to testify and respond to members' questions.

Chairman Sibley advised that some of the Committee members would be leaving the hearing early and any witness unable to remain at the hearing today would have an opportunity to testify at a future Committee meeting. However, Senator Armbrister would remain at this meeting to hear any witness wishing to be heard.

Invited testimony continued with Mark Zion, representing Texas Public Power Association.

Robert Bryant, replacing scheduled invited witness, Mike Williams, representing the Association of Texas Electric Cooperatives, advised that he would defer his testimony until a future hearing.

The next invited witnesses were:

Suzi Ray McClellan, Office of Public Utility Counsel
Hub Reilly, Enron Corporation
Stephanie Kroger, Texas Coalition for Competitive Electricity
Janee Breisemeister, Consumers Union

At 3:15 p.m. Senator Armbrister assumed the Chair and invited testimony continued:

Mark White, Alliance for Consumer Choice of Energy Supply Sources
Chris Albrecht, Texas Retailers Association

Invited witnesses, Joseph Kearney, representing PG&E Corporation, and Tom "Smitty" Smith, representing Public Citizen's Texas office, were unable to remain at the hearing until called. Mr. Kearney submitted written testimony.

Following the invited witnesses' testimony and response to members' questions, the Chairman called for public testimony. James A. Wingu, rancher, representing himself, Sweet Home, Texas, testified.

The following public witnesses were unable to remain at the hearing until called:

Hub Bolen, representing T. U. Shareholders Alliance, Fort Worth, Texas
Chip Deuce, representing Victoria Association of Builders, Victoria, Texas

Leroy Wieting, Wieting Consulting, representing himself, Portland, Texas, registered but did not wish to testify.

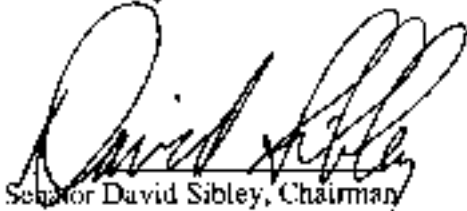
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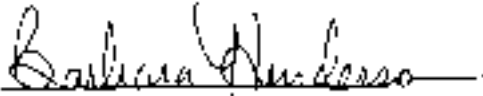
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There being no further business, at 4:00 pm Senator Armbrister moved that the Committee stand recessed subject to the call of the Chairman. Without objection, it was so ordered.



Senator David Sibley, Chairman



Barbara Henderson, Clerk

WITNESS LIST

Electric Utility Restructuring (Interim) Committee
May 28, 1998-9:30A

Stranded Costs

For: Reilly, Bob (Exxon Corp.), Austin
Schaeffer, Steve (AECT), Houston
Wingo, James A. (self), Sweet Water

On: Albrecht, Chris (TX Retailers Assoc.), St. Louis, MO
Brickmeister, Jane (Consumers Union), Austin
Bryant, Robert (AECT, GSEC), Amarillo
Hirst, Eric (self), Oak Ridge, TN
Kroger, Stephanie A. (TCCE), Austin
McClellan, Suzi (OPUC), Austin
Moseley, Marc D. (AECT), Dallas
White, Mark (ACCESS), Houston
Wood, Patrick H. (Chairman, PUC), Austin
Zion, Mark (TPPA), Austin

Registering, but not testifying:

On: Bolen, Bob (TU Shareholders Assoc.), Ft. Worth
Dence, Chip (Victoria Assn of Eldrs.), Victoria
Kearney, Joseph P. (PG&E Corp.), San Francisco
Smith, Tom "Smitty" (Public Citizen), Austin
Wieting, Leroy (self), Portland

MINUTES

SENATE INTERIM COMMITTEE ON ELECTRIC UTILITY RESTRUCTURING

Tuesday, September 29, 1998

9:30 am

College Station, Texas

Pursuant to a notice posted in accordance with Senate Rule 11.11, a public hearing of the Senate Interim Committee on Electric Utility Restructuring was held on Tuesday, September 29, 1998 in the Presidential Conference Center, Bush Presidential Library, College Station, Texas.

MEMBERS PRESENT:

Senator David Sibley, Chairman

Senator Kenneth Armbrister

Senator Teel Bivins

Senator Troy Fraser

Senator Jane Nelson

MEMBERS ABSENT:

Senator Gonzalo Barrientos

Senator David Cain

The Chairman called the meeting to order at 9:35 am. There being a quorum present, the following business was transacted.

Chairman Sibley thanked Senator Steve Ogden for hosting the Committee hearing in College Station. Senator Ogden welcomed the Committee and thanked the Chairman and members for holding the hearing in College Station.

The Chairman advised that no further hearings are planned to take testimony, although a Committee meeting may be held later for discussion purposes only.

Chairman Sibley then advised that the Committee would hear some hold-over testimony on Stranded Costs from the May 28 hearing. Several invited witnesses were unable to testify at the May 28 hearing. These witnesses were:

Mark White, Alliance for Consumer Choice of Energy Supply (ACCESS)

Bob Bolen, Texas Utilities Shareholders Alliance

The following witnesses also testified on Stranded Costs:

Mike Williams, Texas Electric Cooperatives

Robert W. Bryant, Golden Spread Electric Cooperative

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Tom "Smitty" Smith, representing Texas Public Citizen members

Upon completion of Stranded Costs testimony and the witnesses' response to Committee members' questions, the Chairman called Panel 1 on Governmental Units. The panelists were:

Tobin Harvey, General Services Commission
Tom Merka, Texas Department of Criminal Justice
Charles Sippital, Texas A&M University
Ed White, Texas Youth Commission
Ray Werth, School Business Administrator, Brenham School Districts

The following persons registered as resource witnesses on Governmental Units but did not wish to testify:

Charles W. Richards, Texas Youth Commission, Austin, Texas
Art Hinojosa, Texas Youth Commission, Austin, Texas

Following the panelists' testimony and response to members' questions, at 11:55 a.m. the Chairman recessed the hearing until 12:45 p.m.

At 12:55 p.m. the Committee reconvened, and Chairman Sibley called Panel 2 to testify on System Reliability. These panelists were:

Sam Jones, Electric Reliability Council of Texas
Judy Walsh, Commissioner, Texas Public Utilities Commission
Dan Wilkerson, Bryan Utilities
Tom Baker, Texas Utilities

Upon completion of the panelists' testimony and response to Committee members' questions, the Chairman called Panel 3 on Property Tax Issues. The members of Panel 3 were:

Dennis Deegear, Capitol Appraisal Group, Inc.
H. Tab Weaver, Deloitte & Touche Property Tax Services
Marc Moseley, Texas Utilities

Following testimony from Panel 3 and response to Committee members' questions, the Chairman advised that public testimony would commence and called the first witness. All witnesses, including invited witnesses, are listed in the order of appearance.

Phillip Johnson, Assistant Professor, Texas Tech University, Lubbock, Texas
Kathleen Magruder, representing Enron Corp., Houston, Texas

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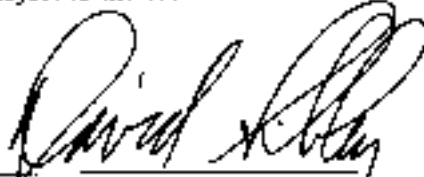
Stephanie Kroger, representing Texas Coalition for Competitive Electricity, Midland, Texas
Tom "Smitty" Smith, representing Texas Public Citizen members, Austin, Texas

The following witnesses registered to testify but were unable to remain at the hearing until called:

Erbin Keith, representing National Association of Energy Service Companies, Houston, Texas
A. D. Patton, Professor/Consultant, representing himself, College Station, Texas
Monte Akers, representing Texas Municipal League, Austin, Texas
Rick Levy, representing Texas AFL-CIO, Austin, Texas

Robert L. Wright, representing Texas Industrial Energy Consumers, Victoria, Texas, and Steve Schaeffer, representing Houston Lighting & Power, Houston, Texas, registered as resource witnesses but did not wish to testify.

There being no further business, at 4:40 p.m. Chairman Sibley moved that the Committee stand recessed subject to the call of the Chairman. Without objection, it was so ordered.



Senator David Sibley, Chairman



Barbara Henderson, Clerk

WITNESS LIST

Electric Utility Restructuring (Interim) Committee
September 29, 1998-9:30A

Governmental Units

On: Parvey, Tobin (General Services Com.), Austin
Merka, Tom (Tx.Dept.of Crim.Justice), Huntsville
Sippial, Charles (Texas A&M), College Station
Werth, Ray (School Districts), Brenham
White, Ed (Texas Youth Commission), Austin

Registering, but not testifying:

On: Hinojosa, Art (Texas Youth Commission), Austin
Richardson, Charles (Texas Youth Commission), Austin

Property Tax Issues

On: Deegear, Dennis (Capitol Appraisal Group), Austin
Mosciy, Marc (AECT), Dallas
Weaver, Tab (self), Austin

Public Testimony

On: Johnson, Phillip (self), Lubbock
Kroger, Stephanie (Tx.Coalition.forComp.Elec), Midland
Magruder, Kathleen (Rayon Corp.), Houston
Smith, Tom "Smitty" (Public Citizen), Austin

Registering, but not testifying:

On: Akers, Monte (Tx.Municipal League), Austin
Keith, Erbin (Nt.Assoc.of Engr.Servc), Houston
Levy, Rick (TX.AFL-CIO), Austin
Patton, A.D. (self), College Station
Schaeffer, Steve (Houston Lighting&Power), Houston
Wright, Robert (Tx.Indstrial Engr. (onsmr), Victoria

stranded Costs

For: Bolen, Bob (TU Sharehldr's Alliance), Fort Worth
On: Bryant, Robert (Golden Spread Elec. Coop), Amarillo
Smith, Tom "Smitty" (Public Citizen), Austin
White, Marc (ACCESS), Houston
Williams, Mike (Texas Electric Corp.), Austin

System Reliability

On: Baker, Thomas (Assoc. of Elec. Comp. of Tx), Dallas
Jones, Sam (ERCOT), Austin
Walsh, Judy (PUC), Austin
Wilkerson, Dan (TPPA), Bryan

APPENDIX B

Glossary of Electric Utility Terms

A Directory of Resources

Prepared by the Research Division
of the
Texas Legislative Council

Published by the
Texas Legislative Council
Austin, Texas

Lieutenant Governor Bob Bullock, Chairman
Speaker James E. "Pete" Loney, Vice Chairman
Robert L. Kelly, Executive Director
March 1997

Glossary of Electric Utility Terms

Prepared by Mary Colletti and Erin T. Davis

Glossary

The following is a list of terms and definitions commonly used in discussions concerning the electric utility industry and electric deregulation.

Access charge: A charge levied for the right to send electricity over another company's transmission and distribution lines. It can be levied against either the power supplier or the receiving customer. (See also **Wires charge**.)

Alternative dispute resolution (ADR): A process utilized by the PUC to reduce litigation regarding utility regulation.

Ancillary services: The coordinated bundle of services necessary to support the transmission of energy.

Available but not needed capacity: The total capacity of main generating units that are operable but not considered necessary to carry load and that cannot be connected to load within 30 minutes.

Average cost: The total revenue requirement of a utility divided by the utility's sales. Average cost typically includes the costs of existing power plants, transmission and distribution lines, and other facilities used by a utility to serve its customers. It also includes operating and maintenance, tax, and fuel expenses.

Average revenue per kilowatt hour (KWH) sold: The total monthly revenue divided by the corresponding total monthly sales in kilowatt hours for each sector (residential, commercial, industrial, or other) and geographic area.

Avoidable generating unit: A proposed power plant or set of power plants in a utility's commission-approved generation expansion plan that may be eliminated from the plan or deferred due to a guaranteed commitment of energy provided to the utility by a qualifying facility.

Avoided cost: The incremental costs to an electric utility of electric energy or capacity, or both, which, but for the purchase from the qualifying facility or qualifying facilities, the utility would generate itself or purchase from another source.

Base load: The minimum amount of electric power delivered or required over a given period of time at a steady rate.

Base load capacity: Large generating units, often coal or nuclear fueled, that are designed to operate at high capacity around the clock.

Base-load plant: A plant, usually housing high-efficiency steam-electric units, that is normally operated to take all or part of the base load of a system and that consequently produces electricity at an essentially constant rate and runs continuously. These units are operated to maximize system mechanical and thermal efficiency and minimize system operating costs.

Base rate: The portion of a customer's bill that is attributable to a set level of expenses plus return on invested capital. The base rate is fixed during rate proceedings.

Bilateral contract: A direct contract between the power producer and user or broker outside of a centralized power pool or POOLCO. (See also **Power pool** and **POOLCO**.)

Buy through: An agreement between a utility and a customer to import power when the customer's service would otherwise be interrupted.

Capability: The maximum load, or amount of electric power, that a generating unit, generating station, or other electrical apparatus can carry under specified conditions for a given time period without exceeding approved limits of temperature and stress.

Capacity: The amount of electric power that a generating unit, generating station, or electric system can deliver as determined by the manufacturer's nameplate or testing.

Capacity margin: Total installed capacity in excess of peak load, or reserve margin, divided by total installed capacity. Capacity margin = (reserve margin) / (1 + reserve margin).

Capacity release: A secondary market for capacity that a customer has contracted for but that is not being used by the customer.

Capital cost method (\$/KW): Expresses the costs of constructing new generating capacity, purchasing the equivalent power, or implementing demand-side options in dollars per kilowatt. This is considered an inadequate cost comparison method because it ignores the KWII saved by a demand-side option and the variable production costs of supply. (See also **Demand-side management program**.)

Captive customer: A customer who does not have a realistic alternative in buying power from the local utility, even if that customer has the legal right to buy from competitors.

Certificate of convenience and necessity (CCN): The PUC certification required to establish a new regulated utility. Certification is contingent on proof that the additional service will meet an existing need in a geographic area.

Circuit: A conductor or a system of conductors through which electric current flows.

Cogeneration: The use of steam, heat, or resultant energy from an industrial, commercial, or manufacturing plant or process for the generation of electricity. Cogeneration can be technically and economically attractive for industries that use large and constant amounts of steam, such as pulp, paper, chemical, and petrochemical industries. The steam generated in the manufacturing process is captured and used to turn a turbine to generate electricity.

Cogenerator: A generating facility that produces electricity and another form of useful thermal energy, such as heat or steam, used for industrial, commercial, heating, or cooling purposes. To receive status as a qualifying facility (QF), the facility must produce electric energy and another form of useful thermal energy through the sequential use of energy and meet certain ownership, operating, and efficiency criteria established by the FERC. (See also **Qualifying facility**.)

Coincidental demand: The sum in watts of two or more demands that occur in the same time interval.

Coincidental peak load: The sum of two or more peak loads that occur in the same time interval.

Combined cycle: An electric generating technology in which electricity is produced from otherwise lost waste heat exiting from one or more gas turbines in the electric generating unit. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for use by a steam turbine in the production of electricity. This process increases the efficiency of the electric generating unit.

Combined cycle unit: An electric generating unit that consists of one or more combustion turbines and one or more boilers with a portion of the required energy input provided by the exhaust gas of the combustion turbines.

Combined pumped-storage plant: A pumped-storage hydroelectric power plant that uses both water previously pumped into storage and natural stream flow to produce electricity.

Commercial sector: Generally defined as nonmanufacturing business establishments, including

hotels, motels, restaurants, wholesale businesses, retail stores, and health, social, and educational institutions. A utility may classify as commercial service customers all customers whose demand or annual use exceeds some specified limit. The limit may be set by the utility based on the rate schedule of the utility.

Competitive transition charge (CTC): One proposed method for utilities to recover stranded costs in a restructured market. Utilities would levy an exit fee on customers who opt out of the local utility service to purchase power from another generator. (See also **Transition costs**.)

Contract price: The price of fuels sold under a contract covering a period of one or more years. Contract prices reflect market conditions at the time the contract was negotiated and therefore remain constant throughout the life of the contract or are adjusted through escalation clauses. Generally, contract prices do not fluctuate greatly.

Cooperative utility or **Coop:** An electric utility that is legally established to be owned by and operated for the benefit of those using its service. The utility company generates, transmits, and distributes electric power to a specified area not being served by another utility. Such ventures are generally exempt from federal income tax laws. Most electric cooperatives have been initially financed by the Rural Electrification Administration, United States Department of Agriculture. There are currently 82 electric cooperatives in Texas.

Cost: The amount paid to acquire resources, such as plants and equipment, fuel, or labor services.

Cost of service: The sum of the utility's allowable expenses plus a return on invested capital.

Cost of service regulation: Current method used by the P.U.C. to regulate electric utilities; a utility may charge rates that recover all of its operating costs and an additional return on its investments in power plants, power lines, and other assets used to provide service.

Cost shifting: A process whereby regulated utilities would make up for revenues lost due to exiting customers by raising the rates of remaining customers.

Cycling (of appliances): The switching of appliances on and off at scheduled intervals to vary the time they are in use and thus reduce their contribution to peak demand. (See also **Direct load control**.)

Default provider: In a restructured electricity market, a "provider of last resort" who would be obligated to connect all customers and to provide universal service in a specific area. (See also **Provider of last resort**.)

Demand: The rate at which electric energy is generated, delivered to a point, or consumed. It is measured in watts, kilowatts (KW), megawatts (MW), or gigawatts (GW). Demand can be measured for a specific customer, a specific customer class, or the entire system.

Demand-side management (DSM) program: Utility-sponsored program, aimed at the customer side of the electric meter, intended to change customer energy usage in ways that either reduce total energy use or capacity requirements or allow the utility's assets to be used more efficiently. A DSM program can benefit all utility customers through reduced fuel costs, deferred capital additions, control of peak demands, improved generating efficiency, and increased system reliability.

Demonstration: The trial application or integration of a new product or service into an existing or new system to demonstrate how it interacts with the system.

Direct access: The ability of a retail customer to purchase electricity directly from the wholesale market rather than through a local distribution utility. (See also **Retail competition**, **Retail service company**, and **Retail wheeling**.)

Direct load control: The reduction in peak demand by direct utility control of customer-owned electric devices. Customers may choose to have one appliance cycled on and off at the discretion of the utility. Customers often receive a price discount for this service, as the reliability of service to a particular device is effectively decreased. (See also **Cycling**.)

Disaggregation: The functional separation of a vertically integrated utility into smaller, individually owned business units, such as generation, dispatch and control, transmission, and distribution. (See also **Functional unbundling**, **Structural unbundling**, **Unbundling**, and **Vertical integration**.)

Distributed generation: A distributed generation system involves small amounts of generation located on a utility's distribution system for the purpose of meeting local substation level peak loads and displacing the need to build additional local distribution lines.

Distribution: The process of distributing electric energy from convenient points on the transmission or bulk power system to customers.

Distribution company (DISCO): The regulated electric utility entity that constructs and maintains the distribution wires connecting the transmission grid to the final customer. The DISCO can also perform other services such as aggregating customers, purchasing power supply and transmission services for customers, billing customers and reimbursing suppliers, and offering other regulated or nonregulated energy services to retail customers. (See also **Load aggregator**.)

Distribution system: The portion of an electric system that is dedicated to delivering electric energy to an end user.

Divestiture: The stripping off of one utility function from the others by selling (spinning-off) or in some other way changing the ownership of the assets related to that function. Most commonly associated with spinning-off generation assets so that they are no longer owned by the shareholders that own the transmission and distribution assets. (See also **Horizontal divesting** and **Structural unbundling**.)

Electric rate schedule: A statement of the electric rate and the terms and conditions governing its application, including attendant contract terms and conditions that have been accepted by a regulatory body with appropriate oversight authority.

Electric utility: A corporation, person, agency, authority, or other legal entity or instrumentality that owns and operates facilities for the generation, transmission, distribution, or sale of electric energy primarily for use by the public. The term does not include exempt wholesale generators, power marketers, certain river authorities, and certain other entities described in PURA Section 2.0011.

Energy efficiency plan (EEP): A biennial report filed with the PUC by major electric utilities in Texas. It includes descriptions, data, and cost-benefit analyses for supply-side and demand-side efficiency programs.

Energy efficiency program: A program that is designed to help customers use electricity more efficiently by using less energy to perform the same function. Energy efficiency programs can be implemented by customers through conservation measures and by utilities through more efficient methods of production, transmission, and distribution.

Energy Policy Act of 1992 (EPACT): Federal legislation that created a new class of wholesale generators that are exempt from the Public Utility Holding Company Act of 1935. The act also authorized the Federal Energy Regulatory Commission to order access by eligible parties to the interconnected transmission grid.

Energy Reliability Council of Texas (ERCOT): One of nine reliability councils established in North America during the 1960s to prevent massive power failures. The area covered by the ERCOT boundary includes 80 percent of Texas, excluding the Panhandle, parts of East Texas, and the El Paso region. The ERCOT does not cross state lines and has limited interconnection facilities with other councils or power pools. The ERCOT is solely under the jurisdiction of the Texas PUC, unlike the other reliability councils, which are under FERC jurisdiction.

Energy service company (ESCO): In a restructured electricity market, companies that would provide energy efficiency services much like demand-side management programs do in the regulated utility industry.

Excess cost over market (ECOM): A method for quantifying potential stranded costs or transition costs.

Exempt wholesale generator (EWG): Electric generating facilities that produce power to be sold at wholesale rates, but do not own any transmission or distribution facilities.

Externalities: The consequences or impacts of resource decisions that are not directly accounted for in the price paid for the resource. One example of an externality is air pollution. There is no effective market mechanism for air quality; therefore, pollution emitters treat the air as free and, absent other regulatory mechanisms, do not include the cost of diminishing clean air in the prices of their products.

Federal appliance standards: Refers to the National Appliance Energy Conservation Act of 1987, which dictates minimum efficiency standards for a variety of residential and small commercial appliances.

Federal Energy Regulatory Commission (FERC): The federal commission that oversees wholesale rates and service standards for electric utilities in the United States as well as the transmission of electricity in interstate commerce. Retail utility transactions are regulated by state public utility commissions. The FERC has authority over wholesale transactions in eight of the nine electric reliability councils in the United States. The ERCOT, the only electric reliability council not under FERC authority, has its boundaries completely within the state of Texas, and, consequently, the Texas PUC has jurisdiction not only over retail electric utility transactions in the state, but also over wholesale transactions in the 80 percent of the state covered by the ERCOT.

Federal Power Act (FPA): The legislation that established guidelines for the federal regulation of interstate energy sales. It is the primary statute governing the FERC. The legislation was enacted in 1920 and substantially revised in 1935.

Federal Power Commission: The predecessor agency to the U.S. Department of Energy and FERC. The commission, created in 1920, was abolished in 1977, and its duties were divided between the Department of Energy and FERC.

FERC Order No. 888: The order issued by the Federal Energy Regulatory Commission on April 24, 1996, addressing issues of stranded costs and open transmission access for wholesale

competition. The order allows utilities under FERC jurisdiction to recover 100 percent of verifiable stranded costs attributable to a departing customer through a surcharge or exit fee. (See also **Energy Reliability Council of Texas**, **Federal Energy Regulatory Commission**, **Stranded costs**, and **Wholesale competition**.)

Forced outage: The shutdown of a generating unit, transmission line, or other facility for emergency reasons or an unanticipated breakdown of generating equipment that makes it unavailable for load.

Forward contract or Forward: A commodity bought and sold for delivery at a specific time in the future. It is differentiated from futures markets by the fact that a forward contract is a customized, non-exchange-traded, and nonregulated hedging mechanism. (See also **Futures market** and **Hedging contract**.)

Fossil-fuel plant: A plant that uses coal, petroleum, or natural gas as its source of energy.

Fuel: Any substance that can be burned to produce heat in order to generate electricity.

Fuel expenses: The costs used in the production of electricity that include buying, transporting, unloading, and handling the fuel up to the point of conversion into heat.

Fuel mix: The variety of energy sources used for producing electricity, including coal, lignite, natural gas, oil, uranium, water, and wind. The current fuel mix for utilities in Texas is 42 percent coal and lignite, 40 percent natural gas, 15 percent nuclear power, and 3 percent hydroelectric, solar, and wind power.

Functional unbundling: The unbundling of a vertically integrated utility that would put separate affiliated component companies under one corporate umbrella. Entities maintain separate physical plants, personnel, accounting, and financial operations. Each affiliate's financial performance is judged separately. (See also **Disaggregation**, **Structural unbundling**, **Unbundling**, and **Vertical integration**.)

Futures market: An arrangement through contract for the delivery of a commodity at a future time and at a price specified at the time of purchase. The price is established on an auction or market basis. Unlike a forward contract, a futures market is a standardized, exchange-traded, and government-regulated hedging mechanism. (See also **Forward contract** and **Hedging contract**.)

Gas turbine plant: A plant in which the prime mover or generator equipment is a gas turbine.

Generating company (GENCO): A regulated or nonregulated entity that operates and maintains

existing generating plants. The GENCO may own the generating plants or may interact with the short-term market for electric power on behalf of plant owners. In the context of restructuring, "GENCO" is sometimes used to describe a specialized " marketer" of electric power for the generating plants formerly owned by vertically integrated utilities.

Generating unit: Any combination of physically connected generators operating together to produce electric power.

Generation: The process of transforming other forms of energy into electric energy, or the amount of electric energy so produced, expressed in kilowatt hours.

Generator: A machine that converts mechanical energy into electric energy.

Geothermal plant: A plant in which the generator is a steam turbine driven either by steam produced from hot water or by natural steam mined from the earth.

Gigawatt (GW): One billion watts.

Gigawatt hour (GWH): One billion watt hours.

Grid: A system of interconnected power lines and generators that is managed so that the generators are dispatched as needed to meet the requirements of the customers connected to the grid at various points. "GRIDCO" is sometimes used to identify an independent company responsible for the operation of the grid.

Heat rate: A measure of efficiency for electric generating units; the amount of thermal energy measured in BTUs needed to produce a kilowatt hour of electricity.

Hedging contract: A contract that establishes future prices and quantities of electricity independent of the short-term market. (See also **Forward contract** and **Futures market**.)

Horizontal divesting: A form of divestiture in which utilities that have a monopoly in a particular area would be forced to split up ownership in that area. For example, a utility with a monopoly in electricity production would be forced to sell power generators to limit its market power in the area. (See also **Divestiture** and **Structural unbundling**.)

Hydroelectric plant: A plant in which the turbine generators are driven by falling water.

Incentive regulation (for conservation programs): A comprehensive approach to regulatory reform that recognizes the traditional disincentives to implementation of conservation programs

such as lost revenues. (See also **Performance-based ratemaking**.)

Incremental resources: The resources, either demand-side or supply-side, that are required to meet growing customer needs for energy and to replace retiring generating capacity.

Independent power producer (IPP): A private entity that operates a generation facility and sells power to electric utilities for resale to retail customers. (See also **Non-utility generator**, **Non-utility power producer**, **Qualifying facility**, and **Small power producer**.)

Independent system operator (ISO): A neutral operator responsible for maintaining instantaneous balancing of generation and load in an electric system.

Industrial sector: Generally defined as manufacturing, construction, mining, agriculture, fishing, and forestry establishments. The utility may classify customers as industrial service customers based on Standard Industrial Classification (SIC) codes or based on demand or annual usage exceeding some specified limit. The limit may be set by the utility based on the rate schedule of the utility.

Integrated resource planning (IRP): Defined in PIRA as a process to provide reliable energy service at the lowest reasonable system cost. In determining the lowest reasonable system cost, the PLC is to consider direct costs, effects on various types of customers, fuel costs and fuel mix, and the cost of compliance with environmental regulations.

Internal combustion plant: A plant in which the prime mover is an internal combustion engine. Diesel or gas-fired engines are typically used in this type of plant.

Investor-owned utility (IOU): A company owned by stockholders for profit that provides utility services. The term is used to differentiate a utility owned and operated for the benefit of the shareholders from municipally owned and operated utilities and rural electric cooperatives. There are currently nine IOUs operating in Texas.

Kilowatt (KW): One thousand watts. One kilowatt is enough power to run the average air conditioner for 15 minutes.

Kilowatt hour (KWH): One thousand watt hours.

Load: The amount of electric power required by an energy-consuming device or electric system during a specified period.

Load aggregator: An entity that puts customers together into a buying group to purchase electric

power. Vertically integrated investor-owned utilities, municipal utilities, river authorities, and rural electric cooperatives perform this function in the current electric power market. Other entities such as buyer cooperatives or brokers could perform this function in a restructured power market. (See also **Distribution company** and **Power broker**.)

Load management: The control of customer demand during on-peak periods or periods of supply shortfalls. In contrast with energy conservation, which reduces energy consumption, load management may not necessarily conserve energy because some methods of load management entail simply shifting the time of customer energy usage rather than reducing the total energy consumed.

Lost opportunity measure: A demand-side management measure that must be implemented at a specific phase in a customer's lifetime or not at all. An example would be insulating the slab in a home while it is under construction, because it is prohibitively expensive to add such insulation after the house is completed.

Marginal capacity cost: Cost per kilowatt of adding a generating unit to the system.

Marginal cost: The change in total cost caused by producing an additional unit of output. In the short term, the marginal cost would be a change in the total variable costs of operating existing system capacity. In the long term, it would be a change in all costs, including plant renewal, replacement, and expansion costs.

Megawatt (MW): One million watts.

Megawatt hour: One million watt hours.

Municipally owned utility (MOU): A provider of utility services that is owned and operated by a municipal government. There are currently 75 MOUs operating in Texas.

National Association of Regulatory Utility Commissioners (NARUC): An advisory council engaged in the regulation of utilities and carriers. The council is composed of governmental agencies of the 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands.

Non-utility generator (NUG): A generation facility owned and operated by an entity that is not defined as a utility in that jurisdictional area. (See also **Independent power producer**, **Non-utility power producer**, **Qualifying facility**, and **Small power producer**.)

Non-utility power producer: A corporation, person, agency, authority, or other legal entity or instrumentality that owns electric generating capacity and is not an electric utility. Non-utility

power producers include qualifying cogenerators and small power producers and other non-utility generators, including independent power producers, without a designated franchised service area. (See also **Independent power producer**, **Non-utility generator**, **Qualifying facility**, and **Small power producer**.)

Off-peak period: A period during which the demand on the system is at its lowest level and within the lowest defined percentage of its maximum demand.

On-peak period: A period during which energy is being delivered near or at the utility's maximum demand.

Participants test: The California benefit cost test that evaluates demand-side management programs from the perspective of the programs' participants. The benefits include reductions in utility bills, incentives paid by the utility, and any state, federal, or local tax benefits received. The costs include all out-of-pocket expenses incurred as a result of participating in the program. (See also **Societal cost test**, **Total resource cost test**, and **Utility cost test**.)

Payback: The amount of time that it takes for the savings that result from installing an efficiency measure to equal the costs associated with acquiring the efficiency measure.

Peak load: The maximum load experienced by a customer or a utility system over a given period of time.

Peaking capacity: Power-generating capacity that is used in times of maximum demand. This capacity often is delivered by units or systems that have low capital costs and high fuel costs (e.g., combustion turbines) and are designed to be operated for relatively short periods of time.

Performance-based ratemaking (PBR): Performance-based ratemaking, also referred to as "incentive regulation," has been suggested as an alternative to retail competition or as a transition from a regulated market to a deregulated market. Unlike cost-of-service rate regulation, in which utilities recover all their operating costs and a fair return on their investment, rates are based on certain performance factors. This rate-setting mechanism provides a utility with an economic incentive, in the form of increased profits, to operate in a more energy-efficient manner. Such mechanisms include targets on utility performance, price caps that set a minimum floor and a maximum ceiling for services, revenue caps that place a ceiling on the revenues to encourage utilities to reduce energy consumption, and a rate-of-return bandwidth that sets a rate of return on a utility company's investment.

POOLCO: Specifically refers to a mandatory, centrally dispatched power pool that functions as a regulated wholesale spot market. It establishes an ongoing market clearing price of electricity,

provides a system of long-term transmission compensation contracts, and offers a settlement mechanism so that buyers and sellers can reconcile imbalances between contracted and actual volumes of energy. The POOLCO model is based on an organizational and operating structure that parallels a tight power pool. (See also **Power pool**.)

Power authority: A quasi-governmental agency that performs all or some of the functions of a public utility.

Power broker: Individual or company that provides market information, matches buyers and sellers, and can aggregate customers and arrange for transmission, guaranteed power supply, and other ancillary services as needed. (See also **Load aggregator** and **Power marketer**.)

Power cost recovery factor: A charge or credit that reflects an increase or decrease in purchased power costs that is not included in base rates.

Power marketer: A person or entity that purchases electric energy for the purpose of selling the energy wholesale to regulated utilities, but that does not own generation, transmission, or distribution facilities in this state and does not have a certified service area. Power marketers are electricity "middlemen." (See also **Power broker**.)

Power pool: A voluntarily established entity whose key function is to coordinate short-term operations among members, mostly vertically integrated utilities, to maintain the stability and security of interconnected electric systems. In a loose power pool, such as ERCOT, this coordination function is handled by the members of the pool rather than through a central entity. In a tight power pool, there is a central pool entity that handles least-cost dispatch of all generating units in the pool. The coordination functions of a tight power pool include short-term operations such as aggregation and guaranteeing of power supplies from various generators, arranging exchanges of power between generators, and establishing or enforcing the rules of conduct for wholesale transactions. The pool may own, manage, or operate the transmission lines or be an independent entity that manages the transactions between entities or ownership of those lines. (See also **POOLCO**.)

Prime mover: The engine, turbine, waterwheel, or similar machine that drives an electric generator.

Provider of last resort: A legal obligation, traditionally imposed on utilities, to provide service to a customer where competitors have decided they do not want that customer's business. (See also **Default provider**.)

Public Utility Commission of Texas (PUC): The state agency that currently regulates approximately 160 electric and telecommunications utilities in Texas. The PUC provides oversight

for 100 electric utilities, including 8 investor-owned utilities, 87 electric cooperatives, and 4 river authorities. The PUC does not regulate municipally owned utilities.

Public Utility Holding Company Act of 1935 (PUHCA): This act prohibits acquisition of any wholesale or retail electric business through a holding company unless that business forms part of an integrated public utility system when combined with the utility's other electric business. The legislation also restricts ownership of an electric business by non-utility corporations.

Public Utility Regulatory Act of 1995 (PIRA or PURA 95): The Texas law that introduced changes in the wholesale power market in the state by allowing competition for wholesale power purchases. The act directed the PUC to take transitional steps to implement a competitive wholesale market for electricity in Texas, required utilities to use integrated resource planning and to open their transmission systems, and allowed unregulated wholesale suppliers to do business in Texas. The PUC is also responsible for setting rules for access to the transmission system and prices for access.

Public Utility Regulatory Policies Act of 1978 (PURPA): The federal legislation that requires utilities to buy electric power from private qualifying facilities (QFs) at an avoided cost rate. This avoided cost rate is equivalent to what it would have otherwise cost the utilities to generate or purchase that power themselves. Utilities must also provide customers who choose to self-generate a reasonably priced backup supply for power.

Pumped-storage hydroelectric plant: A plant that generates additional electric energy during peak-load periods by using water pumped into an elevated storage reservoir during off-peak periods when excess generating capacity is available. When additional generating capacity is needed, the water is released from the reservoir through a conduit to turbine generators located in a power plant at a lower level.

Qualifying facility (QF): A cogeneration facility or a small power producer as defined in PURPA. (See also **Cogenerator** and **Small power producer**.)

Rate: Includes every compensation, tariff, charge, fare, fee, deposit, toll, rental, and classification, or any of them, demanded, observed, charged, or collected, whether directly or indirectly, by any public utility for any service, product, or commodity defined in PURA and any rules, regulations, practices, or contracts affecting any such compensation, tariff, charge, fare, fee, deposit, toll, rental, or classification.

Rate base: The value of property on which a utility is permitted to earn a specified rate of return as established by the regulatory authority. Depending on the type of rate base used, it can include a mixture of the following: cash, working capital, materials and supplies, deductions for accumulated provisions for depreciation, contributions in aid of construction, customer advances

for construction, accumulated deferred income taxes, and accumulated deferred investment tax credits.

Rate minimization program: Demand-side management program that is designed to lower average rate levels by spreading fixed costs over additional energy sales.

Rate shock: A sudden rise in the price of electricity to customers.

Rate year: In a general rate case, the 12 months in which a set rate will be in effect, as approved by the PUC.

Ratemaking authority: A utility commission's legal authority to fix, modify, approve, or disapprove rates, as determined by the powers given the commission by a state legislature or by congress.

Ratepayer impact measure (RIM): A measure of what happens to customer bills or rates due to changes in utility revenues and operating costs caused by a demand-side management program. The benefits in the RIM are the savings from avoided supply costs. The costs in the RIM are the program costs incurred by the utility, the incentives paid to the participants, decreased revenues for any period when load has been decreased, and increased supply costs for any period when the load has been increased. (See also **Demand-side management program**.)

Rate-year forecast: A short-term forecast of kilowatt-hour sales projected for the rate year that is used in the calculation of the fixed fuel factor.

Real-time pricing: The instantaneous pricing of electricity based on the cost of the electricity available for use at the time the electricity is demanded by the customer.

Regional transmission group (RTG): A voluntary organization of transmission owners and users and other entities interested in coordinating transmission planning, expansion, operation, and use on a regional and interregional basis. Such groups are subject to FERC approval.

Reliability: An electric utility's ability to deliver uninterrupted power to its customers. Electric system reliability has two components: adequacy and security. Adequacy is the ability of the electric system to supply the aggregate power demand and energy requirements of the customers at all times, taking into account scheduled and unscheduled outages of system facilities. Security is the ability of the electric system to withstand sudden disturbances such as electric short circuits or unanticipated loss of system facilities.

Renewable resources: Resources that are naturally replenishable and virtually inexhaustible in

duration, not limited in the amount of energy that is available per unit of time. They include biomass, water, geothermal, solar, and wind resources.

Replacement market: Addresses only the existing equipment that reaches its retirement age and must be replaced in a given year.

Repowering: The addition of another source of power to an existing generating unit.

Reregulation: The design and implementation of regulatory practices to be applied to the remaining regulated entities after restructuring of the vertically integrated electric utility. The remaining regulated entities would be those that continue to exhibit characteristics of a natural monopoly, where imperfections in the market prevent the realization of more competitive results, and where, in light of other policy considerations, competitive results are unsatisfactory in one or more respects. Reregulation could employ the same or different regulatory practices as those used before restructuring.

Reserve Margin: The difference between capacity and expected peak load, expressed as a percentage of expected peak load.

Residential sector: Generally defined as private household establishments that consume energy primarily for space heating, water heating, air conditioning, lighting, refrigeration, cooking, and clothes drying. Apartment houses are included. Where use is both residential and commercial, the classification of an individual customer's account is based on principal use.

Restructuring: The reconfiguration of the vertically integrated electric utility. "Restructuring" usually refers to separation of the various utility functions into individually operated and owned entities. (See also **Structural unbundling**.)

Retail competition: A change that would require a complete restructuring of the electric utility industry in which vertically integrated electric utilities would split or unbundle their business into the functional areas of generation, transmission, and distribution. It is a step beyond wholesale and retail wheeling. (See also **Direct access**, **Retail service company**, and **Retail wheeling**.)

Retail sales: Sales covering electric energy supplied for residential, commercial, and industrial end-use purposes. Other small classes, such as agriculture and street lighting, are also included in this category.

Retail service company: In a restructured electricity market, a company that would provide services such as connection and disconnection, complaint resolution, billing, and metering.

Retail wheeling: A process whereby customers would be able to bypass the utility company and contract directly with a generating facility for less costly electricity. The local distribution utility would then be paid an access charge to "wheel" or transport the power to the customer. (See also **Direct access**, **Retail competition**, and **Retail service company**.)

Sales for resale: Energy supplied to other electric utilities, cooperatives, municipalities, and federal and state electric agencies for resale to ultimate customers.

Self-generation: A generation facility dedicated to serving a single retail customer, usually located on the customer's premises. The facility may be owned either directly by the retail customer or by a third party with a contractual arrangement to provide electricity to meet some or all of the customer's load.

Shoulder period: A specified period during which the demand on the system is at its second-highest level and within a second highest defined percentage of its maximum.

Small power producer (SPP): A small power production facility or producer that generates electricity using waste, renewables, or geothermal energy as a primary energy source. Fossil fuels can be used, but renewable resources must provide at least 75 percent of the total energy input. (See also **Qualifying facility**.)

Societal cost test: The benefit-cost test that evaluates demand-side management programs from a broad societal perspective. It is identical to the total resource cost test except that the benefits include beneficial externalities, and the costs include negative externalities. (See also **Participants test**, **Total resource cost test**, and **Utility cost test**.)

Southwest Power Pool (SPP): The electric reliability council covering the Panhandle and parts of East Texas. It is under the jurisdiction of the FERC.

Special contract: Any contract that provides a utility service under terms and conditions other than those listed in the utility's tariffs. For example, an electric utility may enter into an agreement with a large customer to provide electricity at a rate below the tariffed rate in order to prevent the customer from taking advantage of some other option that would result in the loss of the customer's load. This generally allows the customer to compete more effectively in its product market.

Spot purchase: A single shipment of fuel or volumes of fuel, purchased for delivery within one year. Spot purchases are often made to fulfill a certain portion of energy requirements, to meet unanticipated energy needs, or to take advantage of low fuel prices.

Steam-electric plant: A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler where fossil fuels are burned.

Stranded benefits: Public interest programs and goals that could be compromised or abandoned by a restructured electric industry. Potential "stranded benefits" might include environmental protection, fuel diversity, energy efficiency, low-income ratepayer assistance, and other types of socially beneficial programs.

Stranded costs: Past utility company investments and obligations, such as generating plants and fuel contracts, that the company cannot recover through pricing in a competitive market. These expenses are currently factored into the utility's rate-setting process and are included as part of the customer's monthly bill. (See also **FERC Order No. 888**.)

Structural unbundling: The total divestiture of different utility functions that become separate companies and compete with one another. (See also **Divestiture**, **Functional unbundling**, **Horizontal divesting**, **Unbundling**, and **Vertical integration**.)

Substation: Facility equipment that switches, changes, or regulates electric voltage.

Supply-side: Activities conducted on the utility side of the customer meter that is designed to supply electric power to customers rather than meet load through energy efficiency measures or on-site generation on the customer side of the meter.

Supply-side efficiency: Efficiency activities on the utility side of the meter, including improvements in the production, transmission, and distribution of electricity.

Supply-side resources: Resources that could meet future customer needs through increased production of electricity.

Switching station: Facility equipment used to tie together two or more electric circuits through switches. The switches are selectively arranged to permit a circuit to be disconnected or to change the electric connection between the circuits.

System loss factor: The ratio of the electric energy lost in transmission and distribution of electricity to the total electric energy supplied.

System peak demand: The greatest amount of electric power, measured in megawatts, delivered or required on a system during a specified period, usually one hour.

System peak energy: The maximum amount of electric energy, measured in megawatt hours, supplied during a specified period of relatively high system demand.

Tariff: A schedule containing all rates, tolls, charges, rules, and regulations of a utility stated separately by type or kind of service and customer class.

Test year: The most recent 12 months for which operating data for a public utility are available, commencing with a calendar quarter.

Test-year adjustments: Adjustments made to kilowatt-hour sales, kilowatt demand, and revenue in the test year for known and measurable changes, such as customer growth and abnormal weather.

Time-of-use rates (TOU): The pricing of electricity based on the estimated cost of electricity during a particular time block, as opposed to real-time pricing, which is based on actual costs that may fluctuate many times a day and are weather-sensitive. (See also **Real-time pricing**.)

Total resource cost (TRC) test: A benefit-cost test that measures the net costs of a demand-side management program as a resource option based on the total cost of the program, including the costs paid by both the utility and the participants, plus the increase in supply costs for any period in which load has been increased, and all equipment. (See also **Participants test**, **Societal cost test**, and **Utility cost test**.)

Transition costs: Stranded costs that are charged to utility customers through some type of fee or surcharge after the assets are sold or separated from the vertically integrated utility. (See also **Competitive transition charge**.)

Transmission: The movement or transfer of electric energy over interconnected groups of lines and associated equipment between points of supply and points at which the energy is transformed for delivery to customers or other electric systems. Transmission is considered to end when the energy is transformed for distribution to the customers.

Transmission company (TRANSCO): A regulated entity that owns and may construct and maintain wires used to transmit wholesale electric power. It may or may not handle the power dispatch and coordination functions. It is regulated to provide nondiscriminatory connections, comparable service, and cost recovery. The Energy Policy Act of 1992 defines a transmission company as any electric utility, qualifying cogeneration facility, qualifying small power producer, or federal power marketing agency that owns or operates electric power transmission facilities that are used for the sale of electric energy wholesale.

Transmission service: A group of services that, according to the PJEC, includes construction or enlargement of facilities, transmission over distributed facilities, control area services, scheduling resources, regulation service, provision of operating reserves, reactive power support, voltage control, and other associated services.

Transmission system: The system of high-voltage transmission lines running from utilities to transformers and distribution lines running from transformers to customers.

Turbine: A machine that generates rotary mechanical power from the energy of a stream of fluid, such as water, steam, or hot gas. Turbines convert the kinetic energy of fluids to mechanical energy through the principles of impulse and reaction.

Unbundling (of services): Dividing electric utility service into its basic components of generation, transmission, and distribution and offering each service for sale separately with separate rates. (See also **Functional unbundling**, **Structural unbundling**, and **Vertical integration**.)

Universal service: Electric service sufficient for basic needs provided to all members of the population regardless of income.

Utility cost test: A benefit-cost test that measures the net costs of a demand-side management program as a resource option based on the costs incurred by the utility (including incentive costs) and excluding any net costs incurred by the participant. The benefits for the utility cost test are the avoided supply costs incurred by the utility, the incentives paid by the customer, and any increased supply costs. (See also **Participants test**, **Societal cost test**, and **Total resource cost test**.)

Vertical integration: An arrangement whereby the same company owns all the different aspects of making, selling, and delivering a product or service. In the electric industry, it refers to the historically common arrangement whereby a utility owns its own generating plants, transmission system, and distribution lines to provide all aspects of electric service. (See also **Disaggregation**, **Divestiture**, **Functional unbundling**, **Horizontal divesting**, **Structural unbundling**, and **Unbundling**.)

Watt: The basic unit of electric power, or rate of work.

Watt hour: An electric energy unit of measure equal to one watt of power supplied to or taken from an electric circuit steadily for one hour.

Wheeling: The transmission of electricity by an entity that does not own or directly use the power it is transmitting. The term is often used colloquially as meaning transmission.

Wholesale competition: A system whereby a distributor of power would have the option to buy its power from a variety of power producers, and power producers would compete to sell their power to a variety of distribution companies. (See also **FERC Order No. 888.**)

Wholesale wheeling: Bulk transmissions of power in the wholesale market from power producers to utilities or transmission companies.

Wires charge: Refers to charges levied on power suppliers or their customers for the use of transmission or distribution wires. (See also **Access charge**)

List of Abbreviations and Acronyms

The following is a list of abbreviations and acronyms commonly used in discussions concerning the electric utility industry and electric deregulation

ACC	- Arizona Corporation Commission
ADR	- Alternative dispute resolution
AECT	- Association of Electric Companies in Texas
APS	- Arizona Public Service
BPU	- Board of Public Utilities
BTU	- British thermal unit
CAP	- Coalition for Affordable Power
CC	- Commerce Commission
CCN	- Certificate of convenience and necessity
CFC	- National Rural Utilities Cooperative Finance Corporation
CILCO	- Central Illinois Light Company
CPS	- City Public Service Board of San Antonio
CPUC	- California Public Utility Commission
CSW	- Central & Southwest Corporation
CTC	- Competitive transition charge
DISCO	- Distribution company
DPU	- Department of Public Utilities

DPUC	- Department of Public Utility Control
DSM	- Demand-side management
ECOM	- Excess cost over market
EDF	- Environmental Defense Fund
EEL	- Edison Electric Institute
EFP	- Energy efficiency plan
EMP	- Energy master plan
EPACT	- Energy Policy Act of 1992 (federal)
ERCOT	- Energy Reliability Council of Texas
ESCO	- Energy service company
ETIN	- Electronic transfer information network
EWG	- Exempt wholesale generator
FERC	- Federal Energy Regulatory Commission
FPA	- Federal Power Act
G&T	- Generation and transmission
GENCO	- Generation company
GSU	- Gulf State Utilities
GW	- Gigawatt
GWH	- Gigawatt hour
HL&P	- Houston Lighting & Power

ICC	- Illinois Commerce Commission
IOU	- Investor-owned utility
IP	- Illinois Power
IPALCO	- Indiana Power and Light Company
IPP	- Independent power producer
IRP	- Integrated resource planning
ISO	- Independent system operator
ITA	- Independent tariff administrator
IURC	- Indiana Utility Regulatory Commission
KW	- Kilowatt
KWH	- Kilowatt hour
MOU	- Municipally owned utility
MPSC	- Maryland Public Service Company
MPUC	- Minnesota Public Utilities Commission
MW	- Megawatt
MWH	- Megawatt hour
NARUC	- National Association of Regulatory Utility Commissioners
NASUCA	- National Association of Utility Consumer Advocates
NCSL	- National Conference of State Legislatures
NEES	- New England Electrical System

NEPOOL	- New England Power Pool
NOI	- Notice of Intent
NOPR	- Notice of proposed rulemaking
NOG	- Non-utility generator
OASIS	- Open access same-time information system
PBR	- Performance-based regulation
PC	- Public Citizen
PCI	- Power Company of Indiana
POOLCO	- Pool company
PSB	- Public Service Board
PSC	- Public Service Commission
PUC	- Public Utility Commission of Texas
PUHCA	- Public Utility Holding Company Act of 1935 (federal)
PURA or PURA 95	- Public Utility Regulatory Act of 1995 (Texas)
PURPA	- Public Utility Regulatory Policies Act of 1978 (federal)
QF	- Qualifying facility
RD	- Recommended decision
REA	- Rural Electrification Administration
RFP	- Request for proposals
RIM	- Ratepayer impact measure

RTG	- Regional transmission group
RUS	- Rural utilities service
SPP	- Small power producer
SPP	- Southwest Power Pool
SWEPSCO	- Southwestern Electric Power Company
T&D	- Transmission and distribution
TCA	- Texas Citizen Action
TCCE	- Texas Coalition for Competitive Electricity
TCSE	- Texas Citizens for a Sound Economy
TEC	- Association of Texas Electric Cooperatives
Texas ROSE	- Texas Ratepayers' Organization to Save Energy
TNP	- Texas-New Mexico Power Company
TOL	- Time of use rates
TPPA	- Texas Public Power Association
TRANSCO	- Transmission company
TRC test	- Total resource cost test
TU	- Texas Utilities Electric Company
UPP	- Upper Peninsula Power Company
WEPCO	- Wisconsin Electric Power Company
Wpsc	- Wisconsin Public Service Commission

- WRTA** - **Western Regional Transmission Association**
- WSCC** - **Western System Coordinating Council**
- WSPP** - **Western Systems Power Pool**
- WTU** - **West Texas Utilities**

List of Sources

1. House Committee on State Affairs Interim Report to the 75th Texas Legislature.
2. House Research Organization Focus Report, "Power Struggle: Deregulating the Electric Utility Industry."
3. National Council on Competition and the Electric Industry (a joint effort of the National Association of Regulatory Utility Commissioners and the National Conference of State Legislatures)
4. Public Utility Commission of Texas.
5. Public Utility Regulatory Act of 1995 (PURA).
6. Senate Committee on State Affairs Interim Report to the 75th Texas Legislature on the Implementation of S.B. 373.
7. United States Energy Information Administration.

APPENDIX C

Recommended Readings

"Co-Ops Prepare for World of Electricity Competition," by Robert Elder, Jr. *The Wall Street Journal*, September 23, 1998.

"The Deregulation of the Electricity Industry: A Primer," by Peter M. VanDoren. *The Cato Institute*, October 6, 1998.

"Initial Results of Grandfathered Emissions Survey" - Texas Natural Resource Conservation Commission (TNRCC)

"Market-Based Methods of Providing Renewable Energy and Energy Efficiency Programs Volumes I and II," Texas Energy Coordination Council, August 1998.

"Power Struggle: Deregulating the electricity industry." House Research Organization, December 5, 1996.

"Power Switch," by Bruce Hight. *Austin American Statesman*, October 25, 1998.

Report to the 75th Legislature: Volume I - "Electric Power Industry Scope of Competition and Potentially Stranded Investment Report," Public Utility Commission of Texas, January 1997.

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Report to the 75th Legislature: Volume III - "Potentially Stranded Investment Report: A Detailed Analysis," Public Utility Commission of Texas, January 1997.

Report to the Texas Senate Interim Committee on Electric Utility Restructuring: "Adequacy of the Transmission System and the Existence of Must-run Resources in a Retail Access Environment," Public Utility Commission of Texas, July 1998.

Report to the Texas Senate Interim Committee on Electric Utility Restructuring: "Potentially Stranded Investment (FCOM) Report: 1998 Update," Public Utility Commission of Texas, April 1998.

Report to the Texas Senate Interim Committee on Electric Utility Restructuring: "Revenues Supporting Low-Income, Energy Efficiency and Environmental Programs," Public Utility Commission of Texas, July 1998.

"Shock Therapy," *The Wall Street Journal Reports*, September 14, 1998.

State Legislative Report, The Utility Series 1-6, National Conference of State Legislatures, by Lawrence J. Hill and Matthew H. Brown, Vol. 20, Nos. 18-23, December 1995.

The Tax Implications of Electric Utility Deregulation in Texas. Office of the Comptroller, November 1998.

APPENDIX D

Reference Web Sites

Alliance for Competitive Electricity
<http://www.afce.org>

American Public Power Association
<http://www.appanet.org/ppetu/>

California Public Utilities Commission
<http://www.cpuc.ca.gov/>

Coalition for Affordable Power
<http://www.captx.org>

Edison Electric Institute
<http://www.eei.org/>

Electric Reliability Council of Texas (ERCOT)
<http://www.ercot.com>

Energy Information Administration
<http://www.eia.doe.gov/>

Federal Energy Regulatory Commission
<http://www.ferc.fed.us/>

National Association of Regulatory Utility Commissioners
<http://www.naruc.org/>

National Renewable Energy Laboratory
<http://www.nrel.gov/>

National Conference of State Legislatures
<http://www.ncsl.org/programs/energy/energy2.htm>

National Council on Competition and the Electric Industry
<http://eeed.lbl.gov/NationalCouncil/>

North American Electric Reliability Council
<http://www.nerc.com/>

Pennsylvania Public Utilities Commission
<http://puc.paonline.com/>

Public Utilities Commission of Texas
<http://www.puc.state.tx.us/>

Senate Interim Committee on Electric Utility Restructuring
<http://www.senate.state.tx.us/75/senate/commit/IC/IC10.htm>

Texas Public Power Association
<http://www.tppa.com/>

United States Department of Energy
<http://www.doe.gov/>

APPENDIX B

Municipally Owned Utilities

Austin Energy
Bartlett
Bastrop
Bellville
Boerne
Bowie
Brady
Bretham
Bridgeport
Brownfield
Brownsville PUB
Bryan Texas Utilities
Humen
Caldwell
Castroville
Coleman
College Station
Cuero
Denton
Electra
Farmersville
Flotoma
Floresville
Floydada
Fredericksburg
Garland
Garrison
Georgetown
Giddings
Goldsmith
Goldwaite
Gonzales
Granbury
Greenville Electric Utilities
Hallettsville
Hempstead
Heame
Hempball
Hondo
Jasper
Kerville PUB
Kirbyville
La Grange
Lampasas
Lexington
Liberty
Livingston
Llano
Lockhart
Lubbock
Luling
Mason
Moulton
New Braunfels Utilities
Newton
Pineland
Plains
Robstown
San Antonio City Public Service
San Augustine
San Marcos
San Saba
Sanger
Schulenburg
Seguin
Seymour
Shiner
Smithville
Tatipson
Tulia
Wacker
Weatherford
Weimar
Whitesboro
Yoakum

Investor Owned Utilities

Central Power and Light
El Paso Electric
Energy Gulf States
Houston Lighting and Power
Southwestern Electric Service
Southwestern Public Service
Southwestern Electric Power
Texas-New Mexico Power
Texas Utilities Electric
West Texas Utilities

Electric Distribution Cooperatives

Bailey County EC
Bandera EC
Bartlett EC
Belfalls EC
Bluebonnet EC
Bowie-Cass EC
Bryan Utilities
Cap Rock EC
Central Texas EC
Cherokee County ECA
CoServ Electric
Coleman County EC
Comanche County ECA
Concho Valley EC
Cooke County EC
DeWitt EC
Deaf Smith EC
Deep East Texas EC
Dickens EC
Frath County ECA
FFC Electric
Fannin County EC
Fayette EC
Fort Belknap EC
Gate City EC
Grayson-Collin EC
Greenbelt EC
Guadalupe Valley EC
HILCO EC
Hamilton County EC
Harmon EA, Inc.
Houston County EC
J-A-C Electric Co-op
JCEC
Jackson EC
Jasper-Newton EC
Kames EC
Kimble EC
LCRA
Lamar County EC
Lamb County EC
Lea County EC
Lighthouse EC
Lyntegar EC
Magic Valley EC
McCulloch EC
McGinnis Lochridge Kilgore
McLennan County EC
Medina EC
Mid-South EC
Midwest EC
Navarro County EC
Navasota Valley EC
North Plains EC
Nueces EC
Panola-Harrison EC
Pedernales EC
Rio Grande EC
Rita Blanca EC
Rusk County EC
Sam Houston EC
San Bernard EC
San Patricio EC
South Plains EC
Southwest Rural EC
Southwest Texas EC
Stamford EC
Swisher EC
LEC Treating Division
Taylor EC
Tri-County EC
Trinity Valley EC
Upshur-Rural EC
Victoria EC
Wharton County EC
Wise EC
Wood County EC

Generation and Transmission Cooperatives

Brazos EC
East Texas EC
Golden Spread EC
Mid Tex G&T
Northeast Texas EC
Rayburn Country EC
Sam Rayburn Dam EC
Sam Rayburn G&T
San Miguel EC
South Texas EC
Tex La EC

APPENDIX F

ERCOT MEMBERSHIP LIST

(82 Members)

10-5-99

Coop G&Ts & River Authorities (7)

Bluebonnet Electric Cooperative	Lower Colorado River Authority (L)	Pedernales Electric Cooperative (C)
Brazos Electric Cooperative (C)	Mexant Electric Cooperative (C)	South Texas Electric Coop (C)
Ciudadape Blanco River Authority		

Municipal G&T (6)

Yuson Energy (C)	DeLeon Municipal Utilities (C)	Sealedburg Utilities
City Public Services of San Antonio (C)	Garland Utilities (C)	Texas Municipal Power Agency (C)

Investor-Owned Utilities (4)

Central & South West Services (C)	Southwest Electric Service Company
Houston Lighting & Power Company (C)	TU Electric Company (C)

Transmission Dependent Utility (TDU) (14) Independent Power Producers (IPP) (9)

Bryan Municipal Utilities (C)	AES Despatcher, Inc. (C)
Cap Rock Electric Cooperative	Asi Enipude America Corp. (C)
City of College Station	American National Power (C)
City of Comales	Calpine Corporation (C)
City of Barksdale	Dow Chemical Company
City of Weatherford (C)	Energy Power Corporation (C)
DOW in Country	Exxon Company U.S.A.
Greenville Electric System (C)	Oxidant Chemical Corporation (C)
Jackson Electric Cooperative	Jetaska, Inc. (C)
Magic Valley Electric Cooperative	
Midwest Electric Cooperative (C)	
Public Utilities Board of Brownsville (C)	
Tex-Co Electric Cooperative	
Texas-New Mexico Power Company (C)	

Power Broker (1)

America Power, Inc.

Associate of ERCOT (1)

Comision Federal de Electricidad

Power Marketers (40)

Aluminum Company of America
Amoco Energy Trading Corp.
Aquila Power Corporation (VA)
Avista Energy, Inc.
Cargill - Alliant - LLC
Cheney Services (IL)
Citizens Power LLC (IL)
CNG Power Services Corporation
Columbia Power Marketing Corp.
Constellation Power Source
Coral Power LLC
Duke Energy LLC (IL)
Engage Energy US LP
Energy Transfer Group LLC

EnerZ Corporation
Enron Power Marketing Inc. (VA)
Entergy Power Marketing Corp. (IL)
Equitable Power Services Company
Funa Energy Services Co.
IG - Energy Corporation
Koch Power Services Inc.
LGE & E Energy Marketing Inc. (IL)
Moravia Stanley Capital Group Inc.
NP Energy Inc.
NorAm Energy Services, Inc.
OGE Energy Resources, Inc. (VA)
PacifiCorp Power Marketing Inc.

PanCanadian Energy Services (IL)
PECO Energy Company (IL)
PG&E Power Services Company (IL)
Scepter Energy Trading
Solar Power Marketing Inc.
Southern Company Energy Mktng. (IL)
Sweeney Generation Limited Partnership
Texasco Energy Services
Tractebel Energy Marketing, Inc. (IL)
Virginia Electric & Power Company
Vinc Gas & Electric, LLC
Western Power Marketers, Inc.
Williams Energy Services Company

(IL) - Voting Member

Source: <http://www.ercr.com/Board/memblist.html>

APPENDIX G

Estimated U.S. Electric Utility Average Revenue per Kilowatthour to Ultimate Consumers by Sector, Census Division, and State, Year-to-Date 1998 and 1997 (Cents)

Sector	1998		1997		1998		1997		1998		1997	
	Residential	Commercial	Residential	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial	Industrial	Commercial
North Atlantic	12.0	12.4	10.3	10.3	7.7	7.9	14.4	14.1	10.4	10.5		
Connecticut	12.0	12.1	10.3	10.3	7.7	7.9	14.4	14.1	10.4	10.5		
Maine	12.8	12.7	10.8	10.6	8.7	8.8	23.8	23.7	9.3	9.7		
Massachusetts	10.8	11.4	9.4	10.1	8.2	8.7	14.3	15.6	9.5	13.3		
New Hampshire	13.4	13.4	11.5	11.2	9.8	8.8	15.5	15.4	11.7	11.6		
Rhode Island	11.6	12.3	9.9	10.4	8.1	9.7	11.2	12.6	10.2	10.0		
Vermont	11.8	11.8	10.2	10.7	7.9	7.5	13.3	15.3	8.0	10.2		
South Atlantic	11.5	12.1	10.0	10.4	7.8	8.2	18.5	19.1	10.1	10.6		
New Jersey	11.5	12.1	10.0	10.4	7.8	8.2	18.5	19.1	10.1	10.6		
New York	14.0	14.1	11.8	12.0	8.1	8.2	8.9	9.3	10.9	11.1		
Pennsylvania	9.0	8.7	8.2	8.0	5.7	5.8	12.2	11.4	7.8	7.9		
East North Central	10.5	10.4	8.0	7.9	5.3	5.4	7.0	6.9	7.8	7.7		
Illinois	10.5	10.4	8.0	7.9	5.3	5.4	7.0	6.9	7.8	7.7		
Indiana	7.0	7.1	6.2	6.1	4.0	4.0	10.2	10.0	5.4	5.4		
Michigan	8.7	8.7	7.9	7.9	5.6	5.1	11.7	11.9	7.2	7.2		
Ohio	8.8	8.5	7.8	7.6	4.3	4.1	6.9	6.8	6.4	6.2		
Wisconsin	7.2	6.9	5.9	5.5	3.8	3.7	7.2	6.8	5.5	5.2		
West North Central	8.5	8.1	6.0	6.0	4.0	3.9	6.4	6.2	6.1	5.9		
Iowa	8.5	8.1	6.0	6.0	4.0	3.9	6.4	6.2	6.1	5.9		
Kansas	7.5	7.5	6.3	6.4	4.6	4.5	5.3	4.9	6.3	6.0		
Minnesota	7.3	7.4	6.2	6.3	4.5	4.4	6.1	7.1	5.7	5.7		
Missouri	7.1	7.1	6.0	6.0	4.4	4.5	6.1	7.2	6.1	6.1		
Nebraska	6.4	6.5	5.5	5.4	3.7	3.8	5.7	5.5	5.3	5.3		
North Dakota	6.4	6.2	5.9	6.3	4.4	4.6	4.4	4.4	5.7	5.7		
South Dakota	7.1	7.1	6.4	6.7	4.5	4.5	4.0	4.8	6.2	6.3		
South West Atlantic	9.0	9.1	7.2	7.2	4.7	4.8	13.5	12.3	6.9	7.0		
Delaware	9.0	9.1	7.2	7.2	4.7	4.8	13.5	12.3	6.9	7.0		
District of Columbia	8.0	7.9	7.5	7.2	4.4	4.2	6.7	6.5	7.4	7.2		
Florida	7.9	8.2	6.4	6.8	4.0	5.0	6.5	7.0	7.0	7.3		
Georgia	7.7	7.8	7.0	7.1	4.9	4.1	8.2	8.5	6.5	6.0		
Maryland	8.4	8.3	6.8	6.9	4.1	4.2	8.9	9.2	7.0	7.0		
North Carolina	8.0	8.1	6.3	6.4	4.8	4.7	6.9	7.1	5.5	5.5		
South Carolina	7.4	7.6	6.2	6.4	3.6	3.6	6.0	6.0	5.5	5.5		
Virginia	7.7	7.8	5.8	6.0	3.9	4.0	5.1	5.3	5.6	6.2		
West Virginia	6.0	6.0	5.5	5.5	3.6	3.7	9.4	9.1	5.0	5.0		
East South Central	6.5	6.7	6.6	6.4	4.0	3.7	6.9	7.3	5.5	5.3		
Alabama	6.5	6.7	6.6	6.4	4.0	3.7	6.9	7.3	5.5	5.3		
Kentucky	5.0	5.7	5.2	5.2	3.0	2.9	4.6	4.7	4.2	4.0		
Mississippi	7.0	7.0	6.7	6.8	4.2	4.2	6.6	6.2	5.9	5.9		
Tennessee	6.3	5.9	6.4	6.0	4.7	4.3	6.2	7.7	5.6	5.2		
West South Central	7.3	7.6	5.7	6.8	3.9	4.3	6.3	7.7	5.6	6.1		
Arkansas	7.3	7.6	5.7	6.8	3.9	4.3	6.3	7.7	5.6	6.1		

Louisiana	7.0	7.5	6.9	7.1	4.1	4.3	6.1	6.6	5.7	8.0
Oklahoma	6.6	6.6	5.5	5.6	3.9	3.6	4.8	4.6	5.4	5.3
Texas	7.5	7.6	6.6	5.8	4.0	4.1	6.4	6.2	6.0	6.1
Pacific Northwest	7.2	7.3	7.1	7.2	5.0	5.1	5.1	4.8	7.2	7.3
Arizona	8.6	8.7	7.7	7.7	5.0	5.1	5.1	4.8	7.2	7.2
Colorado	7.4	7.5	6.7	6.8	4.3	4.3	6.5	6.0	6.0	6.0
Idaho	5.2	5.1	4.3	4.2	2.7	2.6	4.7	4.6	3.5	3.6
Montana	6.0	6.5	6.0	5.9	3.3	3.3	7.3	7.6	4.9	5.1
Nevada	7.0	6.6	6.5	6.4	4.5	4.5	5.9	3.8	5.7	6.6
New Mexico	8.9	9.1	8.0	8.0	4.5	4.6	6.0	6.0	6.9	6.9
Utah	6.9	6.9	5.7	5.7	3.5	3.5	4.5	4.1	5.2	5.2
Wyoming	6.5	6.1	5.4	5.3	3.4	3.4	3.9	3.4	4.0	4.0
Pacific Northwest	7.2	7.3	7.1	7.2	5.0	5.1	5.1	4.8	7.2	7.3
California	10.4	11.4	9.5	9.6	6.3	6.4	6.6	7.6	9.1	10.0
Oregon	5.9	5.6	5.1	5.1	3.0	3.1	5.3	5.1	4.7	4.6
Washington	5.6	5.0	4.7	4.6	2.4	2.5	3.4	3.6	3.9	4.1
Pacific Northwest	7.2	7.3	7.1	7.2	5.0	5.1	5.1	4.8	7.2	7.3
Pacific Northwest	7.2	7.3	7.1	7.2	5.0	5.1	5.1	4.8	7.2	7.3
Alaska	11.6	11.1	8.1	9.5	7.4	7.3	15.1	17.1	10.0	10.2
Hawaii	14.0	14.8	12.5	13.5	9.6	10.5	12.4	13.2	11.8	12.6
U.S.	6.9	7.0	6.5	6.6	4.0	4.1	5.4	5.3	5.7	6.0

1/ Includes public street and highway lighting, other sales to public authorities, sales to railroads and railways, and interdepartmental sales.

Notes: Values for 1998 are estimates based on a cutoff mode sample; see Technical Notes for a discussion of the sample design for the Form EIA-826. Values for 1997 have been revised and are preliminary. Retail sales and net generation may not correspond exactly for a particular month for a variety of reasons (i.e., sales data may include purchases of electricity from nonutilities or imported electricity). Net generation is for the calendar month while retail sales and associated revenue accumulate from bills collected for periods of time (28 to 35 days) that vary dependent upon customer class and consumption occurring in and outside the calendar month. Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-826, "Monthly Electric Utility Sales and Revenue Report with State Distributions."

APPENDIX H

**PUBLIC UTILITY COMMISSION OF TEXAS
OFFICE OF REGULATORY AFFAIRS
ELECTRIC UTILITY BILL COMPARISON**

August 1998

TEXAS UTILITIES	RESIDENTIAL 500 kWh				RESIDENTIAL 1000 kWh				Last year's avg kWh usage paired with current rates		
	August		% Change	Rank Low-High	August		% Change	Rank Low-High	August 1997	Average Bill	Rank Low-High
	1998	1997			1998	1997					
INVESTOR OWNED	(\$)	(\$)			(\$)	(\$)			(\$)		
Central Power and Light	41.51	46.07	-7.3%	6	89.48	92.88	-1.9%	6	1,477	124.78	6
El Paso Electric	57.00	55.71	2.4%	11	109.90	109.98	-2.4%	11	503	69.52	2
Emergy Gulf States	39.24	39.24	0.0%	3	73.20	73.20	0.0%	4	1,799	127.82	7
Houston Lighting & Power	43.22	43.38	-1.4%	5	87.32	87.35	-0.7%	8	1,810	163.62	10
Southwestern Elec. Serv'n	27.85	44.32	-36.7%	1	47.98	80.32	-43.3%	1	1,420	65.28	1
Southwestern Public Service	35.95	35.54	1.1%	7	67.34	66.43	0.9%	2	1,128	74.91	3
Southwestern Elec. Power	39.83	59.39	-1.4%	4	72.87	71.77	1.5%	3	1,548	107.32	5
Texas-New Mexico Power	44.04	43.87	0.8%	8	86.45	85.71	0.8%	9	1,465	140.17	9
Texas Utilities Electric	45.31	39.37	16.0%	9	64.85	72.18	-11.0%	7	1,821	149.00	9
West Texas Utilities	42.75	41.87	2.6%	7	82.05	75.88	2.7%	5	1,179	93.25	4
Average	41.41	42.38	-2.3%		80.58	81.73	-1.4%		1,429	112.18	
COOPERATIVES											
Brewbunnell EC	39.94	39.89	-0.1%	5	71.37	71.49	-0.1%	4	1,967	64.13	4
CoServ Electric (Denton County)	44.95	45.45	-1.1%	9	81.64	82.64	-1.2%	9	2,238	172.51	10
Erath County EC	46.97	44.65	2.1%	10	85.63	93.77	-2.2%	10	1,450	121.68	7
Guadalupe Valley EC	38.79	39.23	-1.3%	3	70.07	71.07	-1.4%	3	2,141	101.49	9
Mid-South EC	40.05	36.61	9.4%	6	72.36	85.47	-10.5%	5	1,854	117.18	6
Pecosas EC	41.98	43.43	-3.8%	7	75.99	79.67	-3.7%	7	1,387	85.25	5
South Plains EC	39.19	39.56	-0.9%	4	72.88	73.13	-1.0%	6	1,162	93.14	1
Tu County EC	43.98	40.67	5.9%	8	79.96	75.12	6.4%	8	1,894	130.63	8
Uphur Rural EC	31.19	32.17	-3.2%	1	58.88	68.88	-3.6%	1	1,507	99.03	3
Victoria EC	26.49	37.06	-1.5%	2	65.46	67.58	-1.6%	2	1,332	80.04	2
Average	40.51	39.68	1.1%		73.47	72.60	1.2%		1,674	115.08	
TEXAS MUNICIPALITIES											
Austin Energy (City of Austin)	31.03	30.51	2.4%	1	77.90	75.96	1.9%	2	1,330	108.29	2
CPS (San Antonio)	34.70	33.64	2.5%	3	71.14	69.43	2.5%	3	1,674	119.50	3
Kerwin PUE	34.45	38.39	-0.3%	2	61.88	66.77	-5.6%	1	1,430	90.85	1
Average	33.36	33.51	-0.4%		70.48	70.72	-0.3%		1,482	106.81	
Texas Average (Surveyed)	39.06	40.13	-0.9%		76.17	76.32	-0.2%		1,516	112.48	
OTHER U.S. UTILITIES	500	1000									
ALTA POWER (Rimingham)	39.94	72.30						1,547	108.37	3	
DUKE ENERGY (Charlotte, NC)	40.99	76.21						954	78.43	3	
FPL (Miami)	40.63	77.88						1,285	106.07	7	
ENTERGY LA (New Orleans)	35.72	71.44						1,725	123.25	10	
NSP (Minneapolis)	45.88	83.08						649	85.63	2	
OK G&E (Oklahoma City)	40.42	74.01						1,495	131.17	6	
PG&E (San Francisco)	54.77	114.71						597	73.74	4	
PSC (Denver)	38.68	70.78						694	64.71	1	
PSE&G (Newark, NJ)	57.44	118.15						690	94.43	5	
UNION HI (St. Louis)	49.07	92.15						1,190	137.97	8	
Other U.S. Utilities Average	44.15	85.07						1,375	98.14		
U.S. AVG. (July 1, 1997)	500	1000									
	45.68	89.12									

Please direct all questions relating to the distribution of this survey to The Office of Customer Protection (512) 936-7140.

Hammer to participants: To enable us to publish the comparison on the 10th of each month, we request that your response reach us by the 8th. Thank you for your cooperation.

Data Source: Data and consultations are provided by each utility tested.

Compiled By: Electric Industry Analysis Division/Office of Regulatory Affairs
Note: U.S. Average is from the Edison Electric Institute.

Note: Central Power and Light, glide path rates effective May 1, 1998 (Doc# 14765)

**PUBLIC UTILITY COMMISSION OF TEXAS
OFFICE OF REGULATORY AFFAIRS
ELECTRIC UTILITY BILL COMPARISON**

August 1998

Texas Utilities	COMMERCIAL		INDUSTRIAL					
	7,500 kWh 30 kW	15,000 kWh 35 kW	87,000 kWh 300 kW	174,000 kWh 300 kW	145,000 kWh 500 kW	290,000 kWh 500 kW	770,000 kWh 2,500 kW	1,540,000 kWh 2,500 kW
Load Factors Demand	29.80%	59.50%	40.30%	80.60%	40.30%	80.60%	40.00%	80.00%
INVESTOR OWNED	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Central Power and Light	795.37	970.44	6,832.33	9,777.08	10,999.52	15,424.13	51,804.34	71,149.92
El Paso Electric	943.86	1,210.41	3,760.11	12,975.31	15,324.85	21,516.85	77,890.80	97,561.21
Entergy (Sub. States)	543.51	687.44	5,139.11	9,094.05	8,535.74	14,368.44	38,088.41	56,358.54
Houston Lighting & Power	611.39	829.73	5,526.07	9,282.04	10,681.91	14,389.11	40,500.00	61,310.00
Southwestern Elec. Service	380.71	681.19	3,158.42	5,456.26	5,250.58	9,091.27	25,112.50	39,518.15
Southwestern Public Service	521.40	832.69	4,077.01	7,589.83	8,329.19	12,033.88	40,883.54	50,416.10
Southwestern Elec. Power	411.81	635.37	3,975.68	6,439.76	6,513.14	10,731.27	31,024.36	53,979.72
Texas-New Mexico Power	790.52	1,059.53	6,399.39	11,180.98	13,815.40	16,450.86	50,588.67	76,835.84
Texas Utilities Electric	672.05	934.23	6,160.59	8,275.97	10,183.79	13,717.44	40,793.21	67,832.41
West Texas Utilities	876.36	826.72	5,403.34	7,782.48	9,177.74	12,971.47	47,017.40	84,081.80
Average	630.77	837.67	5,974.51	9,713.63	9,888.42	14,308.02	45,175.76	54,916.54
COOPERATIVES	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
Blinn County EC	482.08	914.16	5,078.89	8,563.29	6,404.45	14,241.48	41,461.34	70,464.56
Denham County EC	525.17	858.40	5,763.38	8,597.80	5,583.81	13,479.67	47,680.56	71,861.12
Frazer County EC	656.21	1,193.91	6,189.75	9,902.51	10,282.93	16,307.95	51,905.73	80,813.06
Guadalupe Valley EC	527.25	922.00	5,854.91	8,744.67	5,153.95	10,805.14	43,335.94	68,101.20
Mid-South EC	459.00	758.50	4,883.90	7,367.60	8,273.38	12,346.21	47,932.00	61,001.25
Pedernales EC	445.65	886.25	4,637.87	7,743.43	7,529.95	12,872.38	37,243.52	63,799.54
South Plains EC	527.60	1,077.44	6,510.99	9,507.09	10,819.16	15,811.31	53,718.58	79,514.56
Tu County EC	547.13	1,088.09	5,833.30	8,755.00	8,375.00	14,565.00	46,575.00	72,535.00
Upland-Rural EC	468.35	839.16	4,286.49	6,322.98	7,147.49	10,924.87	36,540.96	62,911.32
Victoria EC	463.16	811.32	5,183.45	7,988.91	8,605.76	13,261.51	44,320.93	68,141.38
Average	523.26	936.09	5,373.49	8,311.82	8,614.56	13,915.73	44,521.46	63,574.37
TEXAS MUNICIPALITIES	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
City of Austin Electric	736.18	979.30	6,172.14	8,714.28	10,286.90	14,523.80	51,208.40	72,326.80
CPS (San Antonio)	567.35	896.13	5,335.18	8,335.36	9,809.30	13,756.60	43,335.80	64,711.50
Kernale PUB	599.05	791.20	5,078.72	8,643.44	8,909.95	13,334.00	41,086.20	65,321.40
Average	634.19	888.54	5,528.35	8,521.03	9,334.05	13,851.13	46,240.60	67,653.23
Texas Average (Surveyed)	575.48	890.57	5,678.75	8,513.81	8,394.87	14,036.19	45,443.52	66,853.24
OTHER U.S. UTILITIES	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
A.A. POWER (Birmingham)	632.20	938.68	6,140.38	8,575.32	10,735.88	15,958.39	3,034.02	57,243.92
DUKE ENERGY (Charlotte)	522.85	874.15	5,140.22	8,698.54	8,526.78	14,645.96	37,577.05	66,712.33
EPSC (Miami)	558.02	878.34	6,092.62	9,800.31	9,823.25	15,530.35	48,712.88	76,635.67
ENTERGY LA (New Orleans)	530.65	1,056.34	5,563.45	9,398.38	9,070.48	15,411.57	50,337.05	70,490.85
NEPC (Minneapolis)	616.06	861.00	5,543.60	8,075.95	9,224.32	13,444.91	45,803.27	68,670.65
OK GAS (Oklahoma City)	727.34	948.48	6,173.63	8,327.05	10,198.80	13,785.63	33,307.56	55,519.46
PG&E (San Francisco)	819.03	1,548.55	9,349.80	13,760.33	15,585.56	22,938.98	74,303.47	107,000.70
PSC (Denver)	584.15	712.75	5,438.12	6,911.24	9,014.67	11,455.48	44,316.34	54,507.88
PSEG (Newark, NJ)	900.00	1,485.00	8,742.00	14,710.00	14,527.00	23,452.00	67,360.00	107,531.00
UNION EL (St. Louis)	631.39	1,378.30	7,564.33	11,590.99	12,484.99	19,162.73	61,179.48	84,462.58
Other U.S. Average	683.26	1,082.56	6,571.80	10,034.59	10,844.44	16,576.64	48,343.25	75,959.51

cents

* Based on KVA, assume 85% power factor

** Industrial bills based on secondary voltage. Primary voltage service incl. all cable

APPENDIX I

Renewable Resources Generating Capacity

Utility	Project Name	Location	Primary Fuel	MW	Status	Date of Operation
COA	Hornsby Bend	Austin	Bio	1.0	IO	1988
COA	TX wind pwr. prjt		Wind	10.0	IO	1995
COA	BFI	Austin	Landfill Gas	3.0	IO	1996
CPL	Small Pwr. Prdcs. <100kW	various	Wind	0.1	IO	various
EPF	<100kW	various	Sun	0.1	IO	various
HLP	<100kW	various	Wind	0.1	IO	
HLP	Uncle Ben's	Houston	Bio	1.4	IO	1984
LCRA	TX wind pwr. prjt.		Wind	25.0	IO	1995
SPS	<100kW prjts.	various	Wind	0.8	IO	various
SWEPCCO	Dean Lumber Company	Galmer	Bio	0.8	IO	1985
SWEPCCO	Snider Ind.	Marshall	Bio	5.0	IO	1983
TNP	DFW Sanitary Landfill	Lewisville	Bio	3.8	IO	1988
TU	Champion Paper	Lufkin	Bio	3.5	IO	1940
TU	City of Cleburn	Cleburn	MSW	0.9	IO	1988
TU	<100kW prjts.	various	wind/sun	0.3	IO	various
TU		Big Spring	Wind	40.0	UC	under construction
CSW		McCamey	Wind	75.0	UC	under construction
CSW			Wind	6.0	IO	
	Denison		hydro	89.0		
	Goledo Bend		hydro	80.0		
	Sam Rayburn		hydro	52.0		
	Morris Sheppard		hydro	22.6		
	Whitney		hydro	30.0		
	Buchanan		hydro	37.5		
	Roy Laks		hydro	11.5		
	Alvin Wirtz		hydro	52.0		
	Max Starke		hydro	32.0		
	Mansfield		hydro	93.0		
	Tom Miller		hydro	15.0		
	TP-1		hydro	3.6		
	Abbot		hydro	2.4		
	TP-5		hydro	2.0		
	H-4		hydro	1.9		
	H-5		hydro	2.1		
	Seguin		hydro	2.4		
	Canyon		hydro	6.0		
	City of Gonzales		hydro	1.1		
	City of New Braunfels		hydro	0.5		
	Amistad		hydro	66.0		
	Eagle Pass		hydro	9.0		
	Falcon		hydro	31.5		
			TOTAL	819.9		

Source: Public Utility Commission

APPENDIX J

Average Annual
Residential Electric Costs
(Ranked by Rate)

Source: U.S. Energy Information
Administration

STATE	BILL.	RATE (¢/KWH)	CONSUMPTION
1 HI	\$1,076.51	14.26	7550
2 NY	\$870.53	14.04	6202
3 NH	\$903.95	13.44	6725
4 ME	\$763.41	12.59	6063
5 CT	\$983.75	12.05	8164
6 NJ	\$897.46	11.99	7486
7 RI	\$725.51	11.81	6146
8 CA	\$728.92	11.33	6434
9 AK	\$928.41	11.28	8227
10 MA	\$755.38	11.27	6704
11 VT	\$803.86	11.01	7303
12 IL	\$843.23	10.34	8155
13 PA	\$874.35	9.74	8980
14 DE	\$929.93	8.97	10367
15 AZ	\$1,026.60	8.95	11586
16 NM	\$579.14	8.93	6483
17 OH	\$854.83	8.6	9945
18 MI	\$627.58	8.47	7408
19 MD	\$1,005.43	8.26	12173
20 IA	\$791.18	8.13	9735
21 NC	\$1,044.79	8.05	12973
22 FL	\$1,066.73	7.97	13481
23 KS	\$775.09	7.86	9839
24 AR	\$989.04	7.77	12696
25 TX	\$1,063.12	7.76	13692
26 GA	\$953.86	7.66	12456
27 VA	\$1,021.70	7.6	13446
28 LA	\$1,063.45	7.55	14083
29 SC	\$1,040.88	7.3	14060
30 CO	\$565.18	7.49	7545
31 MN	\$642.05	7.33	9007
32 MO	\$810.84	7.08	11421
33 MS	\$967.01	7.04	13727
34 SD	\$783.73	7	11189
35 UT	\$574.63	6.96	8259
36 NV	\$796.38	6.9	11548
37 WI	\$587.14	6.83	8539
38 IN	\$761.63	6.77	11215
39 OK	\$804.72	6.71	12001
40 AL	\$941.44	6.63	14193
41 WV	\$744.81	6.35	11679
42 NE	\$701.29	6.29	11148
43 MT	\$641.86	6.22	10315
44 ND	\$790.05	6.18	12789
45 WY	\$587.70	6.13	9593
46 TN	\$947.88	5.88	16113
47 OR	\$743.24	5.69	13051
48 KN	\$723.07	5.55	13005
49 ID	\$720.41	5.27	13673
50 WA	\$710.37	5.03	14125
U.S. Avg.	\$858.84	8.36	10275

Average Annual
Residential Electric Costs
(Ranked by Amount of Bill)

Source: U.S. Energy Information
Administration

STATE	MI.	RATE (¢/KW)	CONSUMPTION
1 HI	\$1,076.51	14.26	7550
2 FL	\$1,066.73	7.97	13381
3 LA	\$1,062.48	7.55	14085
4 TX	\$1,061.12	7.76	13692
5 SC	\$1,049.88	7.5	14000
6 NC	\$1,044.39	8.05	12973
7 AZ	\$1,036.69	8.95	11586
8 VA	\$1,021.70	7.6	13446
9 MD	\$1,005.45	8.26	12175
10 CT	\$983.75	12.05	8164
11 MS	\$967.01	7.04	15727
12 GA	\$953.86	7.66	12456
13 TN	\$947.88	5.88	16115
14 AL	\$941.44	6.63	14193
15 DE	\$939.93	8.97	10367
16 AK	\$928.41	11.28	8227
17 AR	\$909.04	7.77	11696
18 NH	\$908.95	15.44	6225
19 NJ	\$897.46	11.99	7486
20 PA	\$874.35	9.74	8480
21 NY	\$870.53	14.04	5207
22 OH	\$854.83	8.6	9945
23 IL	\$843.23	10.34	8155
24 MO	\$810.84	7.08	11451
25 OK	\$804.77	6.71	12001
26 VT	\$803.86	11.01	7307
27 NV	\$796.58	6.9	11549
28 IA	\$791.48	8.13	9735
29 SD	\$790.05	6.18	12784
30 UT	\$783.73	7	11384
31 KS	\$773.09	7.86	9839
32 ME	\$763.41	12.59	6063
33 IN	\$761.63	8.77	11745
34 MA	\$755.38	11.27	6704
35 WV	\$744.81	6.38	11679
36 OR	\$743.24	5.69	13051
37 CA	\$728.97	11.33	6434
38 RI	\$725.51	11.81	6146
39 KN	\$721.47	5.55	13080
40 ID	\$720.41	5.27	12670
41 WA	\$716.57	5.63	14125
42 NE	\$701.29	6.29	11148
43 MN	\$642.05	7.13	9067
44 MI	\$641.86	6.22	10315
45 MT	\$627.56	8.47	7408
46 WY	\$587.70	6.13	9597
47 WI	\$587.14	6.88	8539
48 NM	\$579.14	8.92	6487
49 UT	\$574.63	6.96	8259
50 CO	\$565.18	7.49	7545
U.S. Avg.	\$858.84	8.36	10275

APPENDIX K

1998 Reserve Margins

	1998		Available		Net System		Without		With		1999		1999	
	Actual Peak (MW)	Interruption (MW)	Capacity	Interruptions	Interruptions	Interruptions	Peak (MW)	Margin (%)	Projected Peak (MW)	Projected Reserve Margin (%)	Projected Reserve Shortage (MW)			
Austin	2,070	0	2,496	20.6%	20.6%	2,139	9.9%	109						
Braes	1,400	0	1,442	3.0%	3.0%	1,442	18.4%	0						
CSW - ERCOT	6,141	482	6,167	0.4%	0.4%	6,277	10.3%	270						
San Antonio	3,684	0	4,515	22.6%	22.6%	3,792	19.8%	0						
Energy	3,009	155	3,146	4.6%	4.6%	3,159	15.0%	0						
El Paso	919	79	996	8.4%	8.4%	929	19.6%	41						
ILL&P	14,248	1,365	14,160	0.8%	1.5%	14,093	13.6%	175						
J.C.R.A.	2,335	129	2,486	6.5%	12.7%	2,353	16.6%	0						
SPS	3,092	205	3,364	8.8%	16.5%	3,125	23.2%	0						
SW&PCO	2,247	60	2,509	14.3%	17.5%	2,304	14.8%	4						
TNP	1,188	13	1,286	8.2%	9.4%	1,217	6.4%	104						
T.U. Electric	21,583	1,311	22,244	4.0%	9.8%	21,334	12.5%	508						
ERCOT	52,449	3,120	54,996	4.9%	11.5%	54,386	13.4%	1,165						
Non-ERCOT	9,267	499	10,075	8.7%	14.9%	11,260	17.6%	45						

* Projected shortage relative to 15% reserve margin for projected firm demand, except I.P.I. which is based upon largest single risk plus 5%.

Source: Public Utility Commission

APPENDIX L

**Municipally Owned Utilities
(Demand / Generating Capacity)**

City	Peak Demand (MW)	Generating Capacity (MW)
Austin	1,870	2,420
Bartlett	2	0
Bastrop	11	0
Belville	12	0
Boerne	18	0
Bowie	14	0
Brady	14	0
Brenham	62	0
Bridgeport	6	0
Brownfield	18	22
Brownsville PUB	187	202
Bryan	213	350
Burnet	9	0
Caldwell	11	0
Castroville	5	0
Coleman	12	16
College Station	122	0
Cuero	20	0
Denton	227	179
Electra	5	0
Farmersville	5	0
Flatonis	5	0
Floresville	45	0
Floydada	4	7
Fredericksburg	27	0
Garland	427	430
Garrison	12	0
Georgetown	61	0
Giddings	12	0
Goldsmith	0	0
Goldthwaite	4	0
Gonzales	16	1
Granbury	14	0
Greenville	98	87
Hallettsville	9	0
Hearne	10	0
Hemphill	0	0
Hempstead	8	0
Hondo	13	40
Jasper	31	0
Kerrville PUB	111	0
Kirbyville	5	0
La Grange	14	0
Lampasas	16	0

Lexington	2	11
Liberty	25	0
Livingston	19	0
Llano	8	0
Lockhart	20	0
Luhbeck	269	242
Luling	9	0
Mason	5	0
Moulton	1	0
New Braunfels	166	5
Newton	5	0
Pineland	0	0
Plains	1	0
Robstown	21	18
San Antonio	3,356	4,515
San Augustine	8	0
San Marcos	80	0
San Saba	7	0
Sanger	8	0
Schulenburg	10	0
Seguin	50	0
Seymour	9	0
Shiner	8	0
Smithville	8	0
Timpson	8	0
Tulia	8	16
Waelter	1	11
Weatherford	58	0
Weimar	7	11
Whitesboro	7	4
Yuskum	15	0

Source: Public Utility Commission

APPENDIX M

**Texas Electric Cooperatives
(Demand / Generating Capacity)**

Cooperative	Peak Demand (MW)	Generating Capacity (MW)
H-K Electric	2	0
Bailey County	56	0
Bandera	100	0
Bartlett	30	0
Bellfalls	16	0
Bluebonnet	255	0
Bowie-Cass	137	0
Brazos	1,200	1,194
Cap Rock	127	0
Central Texas	82	0
Cherokee County	61	0
Coleman County	21	0
Comanche	36	0
Cumby Valley	40	0
Cooke County	64	0
DeWitt	18	0
Deaf Smith	108	0
Deep East Texas	146	0
Denton County	252	0
Dickens	71	0
Erath County	75	0
Fannin County	21	0
Farmers	142	0
Fayette	35	0
Fort Belknap	18	0
Gate City	6	0
Golden Spread	614	0
Grayson-Collin	82	0
Greenbelt	11	0
Guadalupe Valley	240	0
Harrison County	37	0
Hill County	63	0
Houston County	45	0
J-A-C	18	0
Jackson	35	0
Jasper-Newton	80	0
Johnson County	198	0
Karates	42	0
Kandinnan County	90	0

**Texas Electric Cooperatives
(Demand / Generating Capacity)**

Cooperative	Peak Demand (MW)	Generating Capacity (MW)
Kimble	9	0
Lamar County	30	0
Lamb County	65	0
Lea County	138	50
Lighthouse	68	0
Lynntegar	126	0
Magic Valley	175	0
McCulloch	15,056	0
McLennan County	48	0
Modina	66	75
Mid-Smuth	62	0
Mid-Tex G & T	0	0
Midwest	24	0
Navarro County	0	0
Navasota Valley	69	0
New Era	75	0
North Plains	25	0
Northeast Texas	510	115
Nueces	38	0
Panola-Harrison	0	0
Pedernales	699	0
Rayburn Country	513	0
Rio Grande	29	0
Rita Blanca	31	0
Rusk County	78	0
Sam Houston	241	0
Sam Rayburn Dam	0	0
Sam Rayburn G & T	233	55
San Bernard	63	0
San Miguel	445	391
San Patricio	29	0
South Plains	152	0
South Texas	215	51
Southwest Rural	23	0
Southwest Texas	28	0
Stamford	14	0
Swisher	56	0
Taylor	43,334	0
Tex-La	229	0

Texas Electric Cooperatives (Demand / Generating Capacity)		
Cooperative	Peak Demand (MW)	Generating Capacity (MW)
Tri-County	186	0
Trinity Valley	225	0
Upshor-Rural	168	0
Victoria	70	0
Wharton County	32	0
Wise	58	0
Wood County	90	0
Kaufman County	90	0

Source: Public Utility Commission

APPENDIX N

Public Utility Commission of Texas
 Basic Statistics on Jurisdictional Utilities
 Information from Earnings Monitoring Reports
 For the Reporting Period Ending December 31, 1997

Summary Statistics for Electric Utilities

Texas Jurisdictional Data Reported

<u>Type of Company</u>	<u>Revenues</u>	<u>Customers</u>	<u>Net Plant in Service</u>	<u>Invested Capital</u>	<u>Total Employees</u>
Electric Investor-Owned Utilities	\$14,682,107,069	6,021,261	\$33,393,560,460	\$29,529,062,386	21,093
Electric Distribution Cooperatives	\$1,693,216,921	1,260,671	\$2,911,405,375	\$3,099,775,370	5,126
Electric G & T Cooperatives	\$701,635,941	54	\$803,023,384	\$871,350,245	612
River Authorities	\$7,133,151	4	\$45,860,308	\$46,862,986	42
Total Electric Utilities	<u>\$17,084,093,022</u>	<u>7,291,990</u>	<u>\$37,353,849,527</u>	<u>\$33,517,050,987</u>	<u>26,873</u>

Public Utility Commission of Texas
 Basic Statistics on Jurisdictional Utilities
 Information from Earnings Monitoring Reports
 For the Reporting Period Ending December 31, 1997

Electric Investor-Owned Utilities

Texas Jurisdictional Data (reported)

<u>Company</u>	<u>Revenues</u>	<u>Customers</u>	<u>Net Plant in Service</u>	<u>Invested Capital</u>	<u>Total Employees</u>
Texas Utilities Electric Co.	\$6,088,662,074	2,441,446	\$16,138,229,282	\$13,607,392,168	6,053
Houston Lighting & Power Company	\$4,251,243,069	1,570,859	\$8,103,590,579	\$7,093,549,584	6,191
Central Power and Light Company	\$1,332,720,771	635,325	\$3,375,303,603	\$3,139,313,669	1,668
Gulf States Utilities Company	\$792,234,168	323,919	\$1,832,056,630	\$1,662,625,575	1,459
Southwestern Public Service Company	\$550,290,665	266,046	\$965,847,838	\$853,875,575	1,329
Texas-New Mexico Power Company	\$503,075,116	178,221	\$843,735,102	\$760,775,372	811
El Paso Electric Company	\$402,443,787	218,353	\$1,034,872,076	\$1,348,654,158	1,076
Southwestern Electric Power Company	\$376,102,248	158,557	\$702,829,377	\$597,639,854	1,529
West Texas Utilities Company	\$308,519,640	187,003	\$537,283,673	\$408,909,717	907
Southwestern Electric Service Co.	\$74,812,471	41,532	\$59,812,400	\$56,426,715	70
Totals	<u>\$14,682,102,009</u>	<u>6,021,261</u>	<u>\$53,593,560,460</u>	<u>\$29,529,062,386</u>	<u>21,693</u>

Public Utility Commission of Texas
 Basic Statistics on Jurisdictional Utilities
 Information from Earnings Monitoring Reports
 For the Reporting Period Ending December 31, 1997

Electric Distribution Cooperatives

Texas Jurisdictional Data (reported)

Company	Revenues	Customers	Net Plant in Service	Invested Capital	Total Employees
Pedernales Electric Cooperative, Inc.	\$167,982,035	120,956	\$332,058,814	\$368,643,901	476
Blucornet Electric Cooperative	\$69,312,462	57,240	\$134,088,079	\$140,138,437	257
Denton County Electric Cooperative	\$68,905,697	45,512	\$113,473,419	\$132,550,361	155
Sam Houston Electric Cooperative	\$68,131,706	55,533	\$122,169,054	\$122,248,387	142
Guadalupe Valley Electric Cooperative	\$60,829,297	36,286	\$80,049,771	\$86,662,379	593
Magie Valley Electric Cooperative	\$58,117,384	58,339	\$96,970,041	\$102,111,862	160
Trinity Valley Electric Cooperative	\$57,447,845	47,654	\$101,022,164	\$112,241,985	135
Tin-Country Electric Cooperative	\$54,247,519	57,871	\$70,525,849	\$75,644,099	121
Johnson County Electric Cooperative	\$51,687,929	33,866	\$63,722,815	\$66,709,536	79
Cap Rock Electric Cooperative, Inc.	\$51,571,335	26,478	\$104,822,664	\$111,339,964	77
Deep East Texas Electric Cooperative	\$40,443,855	34,935	\$55,667,444	\$59,751,782	111
Farmers Electric Cooperative, Inc. (The)	\$34,663,644	27,141	\$61,575,410	\$63,192,909	90
Upriver-Rural Electric Cooperative	\$34,102,481	35,107	\$65,152,887	\$66,979,934	92
Bowie-Cass Electric Cooperative, Inc.	\$33,363,686	31,274	\$69,627,301	\$71,875,681	97
South Plains Electric Cooperative	\$32,338,002	28,318	\$53,056,115	\$56,568,996	96
Lynegar Electric Cooperative, Inc.	\$32,009,473	5,415	\$53,365,850	\$56,200,979	107
Wood County Electric Cooperative	\$28,912,263	18,193	\$62,167,486	\$65,823,601	84
Medina Electric Cooperative, Inc.	\$27,901,941	21,627	\$63,072,965	\$66,091,596	130
Jasper-Newton Electric Cooperative	\$25,779,394	19,461	\$45,869,861	\$47,845,863	100
Dickens Electric Cooperative	\$24,799,256	5,098	\$23,828,794	\$24,537,707	36
San Bernard Electric Cooperative	\$24,660,782	17,116	\$50,744,390	\$54,596,195	93
Central Texas Electric Cooperative	\$23,545,471	25,445	\$51,952,687	\$53,778,214	122
Bandera Electric Cooperative, Inc.	\$23,269,428	21,937	\$48,364,385	\$47,908,305	89
Grayson-Collin Electric Cooperative	\$23,076,758	16,716	\$32,896,334	\$35,476,328	45
Deaf Smith Electric Cooperative	\$23,016,389	12,818	\$22,874,514	\$24,593,141	57
Mid-South Electric Cooperative	\$21,525,960	16,830	\$32,566,791	\$39,499,106	76
Erath County Electric Cooperative	\$21,600,184	19,442	\$32,184,987	\$34,385,733	79
Rusk County Electric Cooperative	\$20,654,393	16,833	\$40,930,220	\$42,409,154	71
Hill County Electric Cooperative	\$20,176,592	14,566	\$30,887,819	\$32,437,789	71
Cherokee County EL Cooperative Assn	\$19,954,720	15,161	\$33,474,256	\$34,679,515	58
Navasota Valley Electric Cooperative	\$19,474,536	13,666	\$29,236,591	\$29,542,383	55
Houston Co. Electric Cooperative	\$19,407,439	16,108	\$33,828,864	\$37,952,555	54
Victoria County Electric Cooperative	\$17,529,047	16,244	\$26,421,260	\$26,586,149	47
Concho County Electric Cooperative	\$16,463,890	11,666	\$14,501,415	\$15,376,078	46
Wise Electric Cooperative, Inc.	\$15,728,957	14,267	\$22,024,098	\$22,517,625	47
Lamb County Electric Cooperative	\$15,077,949	2,359	\$19,726,939	\$19,263,324	40
Navarro County Electric Cooperative	\$14,551,742	10,075	\$19,924,960	\$20,258,526	34
Nueces Electric Cooperative, Inc.	\$13,786,897	11,226	\$28,872,957	\$29,894,760	45
Taylor Electric Cooperative, Inc.	\$13,749,018	12,135	\$23,462,549	\$25,118,880	55
Lighthouse Electric Cooperative	\$13,158,224	7,303	\$18,875,111	\$19,880,284	40
Karnes Electric Cooperative, Inc.	\$13,105,056	12,956	\$23,717,647	\$24,135,958	52
Concho Valley Electric Cooperative	\$13,103,512	4,364	\$31,089,426	\$31,800,805	46
McLennan County Electric Cooperative	\$12,908,140	9,577	\$16,929,552	\$17,204,391	33
Comanche County Electric Cooperative	\$12,791,345	15,276	\$25,456,933	\$26,107,156	52

Elysian Electric Cooperative, Inc.	\$12,659,003	10,152	\$27,146,065	\$27,795,425	43
Rio Grande Electric Cooperative	\$12,651,428	9,284	\$34,381,453	\$36,854,790	68
Lea County Electric Cooperative	\$12,506,014	3,225	\$13,615,965	\$14,250,638	100
Railey County Electric Cooperative	\$12,353,268	1,834	\$16,278,236	\$17,176,858	37
Jackson Electric Cooperative, Inc.	\$11,839,531	12,063	\$18,873,022	\$19,366,505	49
San Patricio Electric Cooperative	\$11,408,193	9,495	\$22,503,389	\$23,172,061	46
Swisher Electric Cooperative, Inc.	\$10,938,136	7,180	\$13,712,018	\$14,319,026	37
Lamar County Electric Cooperative	\$10,607,950	9,491	\$23,534,200	\$24,027,730	40
Hamilton County Electric Cooperative	\$10,505,033	8,885	\$19,993,127	\$20,977,247	44
Southwest Texas Electric Cooperative	\$9,998,558	8,071	\$21,313,776	\$22,092,029	34
Midwest Electric Cooperative	\$9,904,571	3,758	\$17,678,789	\$19,758,356	58
North Plains Electric Cooperative	\$9,676,834	5,098	\$20,198,173	\$21,582,639	29
Wharton County Electric Cooperative	\$9,437,949	5,098	\$11,551,351	\$11,590,012	31
Rita Blanca Electric Cooperative	\$9,305,439	5,463	\$12,177,850	\$13,082,323	27
Borden Electric Cooperative, Inc.	\$8,015,004	6,877	\$11,505,314	\$11,877,366	23
Fannin County Electric Cooperative	\$7,696,331	6,381	\$13,551,532	\$13,732,280	22
Columbia County Electric Cooperative	\$7,592,280	8,007	\$15,851,672	\$16,234,869	33
Panola-Harrison Electric Cooperative	\$6,939,039	8,447	\$11,173,968	\$11,599,948	42
Fern Belknap Electric Cooperative	\$6,510,795	5,351	\$12,705,612	\$13,738,703	24
Dewitt County Electric Cooperative	\$6,268,416	6,691	\$15,912,419	\$16,841,097	29
J-A-C Electric Cooperative, Inc.	\$5,994,221	4,478	\$10,072,051	\$10,851,514	16
McCluskey Electric Cooperative	\$5,226,485	5,705	\$13,592,466	\$13,879,131	23
Stamford Electric Cooperative, Inc.	\$5,200,785	6,032	\$10,208,629	\$10,400,995	24
B-K Electric Cooperative	\$5,194,044	5,021	\$9,068,140	\$9,450,165	19
Belfalls Electric Cooperative, Inc.	\$4,800,831	4,722	\$7,449,656	\$7,599,826	15
Kimble Electric Cooperative, Inc.	\$4,164,490	4,612	\$11,180,220	\$11,686,854	20
Greenbelt Electric Cooperative	\$3,685,319	1,993	\$8,893,262	\$9,184,413	22
Southwest Rural Electric Assn.	\$3,506,152	2,957	\$7,669,769	\$8,343,839	27
Gate City Electric Cooperative	\$2,757,252	1,792	\$6,381,790	\$6,765,399	10
Totals	\$1,693,716,921	1,260,671	\$2,911,406,375	\$3,099,775,370	5,126

Public Utility Commission of Texas
 Basic Statistics on Jurisdictional Utilities
 Information from Earnings Monitoring Reports
 For the Reporting Period Ending December 31, 1997

Electric G & T Cooperatives

Texas Jurisdictional Data (reported)

<u>Company</u>	<u>Revenues</u>	<u>Customers</u>	<u>Net Plant in Service</u>	<u>Invested Capital</u>	<u>Total Employees</u>
Brazos Electric Power Cooperative	\$278,141,562	25	\$351,858,062	\$371,002,127	309
San Miguel Electric Cooperative	\$97,093,810	2	\$250,914,971	\$264,480,995	198
Rayburn County Electric Cooperative	\$87,438,523	5	\$25,982,955	\$36,201,466	7
Northeast Texas Electric Cooperative	\$75,731,483	6	\$64,269,441	\$72,586,308	3
South Texas Electric Cooperative	\$60,721,777	6	\$53,994,945	\$66,404,632	79
Sam Rayburn G&T, Inc.	\$51,364,674	3	\$40,086,252	\$41,203,767	8
Tex-La Electric Cooperative of Texas	\$51,144,322	7	\$17,936,758	\$20,470,949	8
Totals	<u>\$701,635,941</u>	<u>54</u>	<u>\$883,023,384</u>	<u>\$871,350,245</u>	<u>612</u>

Public Utility Commission of Texas
 Basic Statistics on Jurisdictional Utilities
 Information from Earnings Monitoring Reports
 For the Reporting Period Ending December 31, 1997

River Authorities

Texas Jurisdictional Data (reported)

Company	Revenues	Customers	Net Plant in Service	Invested Capital	Total Employees
Guadalupe Blanco River Authority	\$3,502,752	2	\$14,439,044	\$14,903,649	22
Sabine River Authority	\$3,035,991	1	\$28,421,240	\$28,776,566	14
Brazos River Authority	\$594,408	1	\$3,000,024	\$3,282,769	6
Totals	<u>\$7,133,151</u>	<u>4</u>	<u>\$45,860,308</u>	<u>\$46,962,985</u>	<u>42</u>

Municipal Utility Revenues and Customers for 1997

<u>Municipal Utility</u>	<u>Revenues</u>	<u>Customers</u>
Austin Energy	\$ 502,308,900	284,520
City of Bryan Municipal Electric System	\$ 59,440,000	26,355
City Public Service of San Antonio	\$ 840,977,000	535,123
Denton Electric System	\$ 76,352,000	32,000
Garland Power & Light	\$ 136,000,000	61,000
Greenville Electric Utility System	\$ 30,913,351	11,583
Lubbock Power & Light	\$ 60,397,000	34,088
Public Utilities Board of Brownsville	\$ 59,552,000	32,428
Weatherford Municipal Utilities System	\$ 15,887,000	9,018
	1,841,821,351	1,046,488

Note: Austin and Denton revenues are estimated

APPENDIX O

Generating Capacity Inside And Outside ERCOT			
	Utility Type	ERCOT (MW)	Non-ERCOT (MW)
Austin Energy	Muni	2,450	
Brazos Electric Cooperative	Coop	687	
Central Power & Light	IOU	4,475	
San Antonio	Muni	4,515	
Houston Lighting & Power	IOU	13,960	
T.C.R.A.	River Authority	7,328	
TU Electric	IOU	21,225	
West Texas Utilities	IOU	1,385	
Texas New Mexico Power	IOU	300	
San Miguel Electric Cooperative	Coop	391	
South Texas Electric Cooperative	Coop	46	
Medina Electric Cooperative	Coop	66	
City of Bryan	Muni	235	
City of Denton	Muni	188	
City of Greenville	Muni	102	
City of Garland	Muni	430	
Texas Municipal Power Agency	Muni	405	
City of Brownsville	Muni	163	
Sam Rayburn Municipal Power Agency	Muni		110
Lubbock Power & Light	Muni		221
Sam Rayburn G&T Cooperative	Coop		55
Northeast Texas Electric Cooperative	Coop		114
Southwestern Electric Power	IOU		2,290
Southwestern Public Service	IOU		3,171
Entergy-Gulf States	IOU		2,982
El Paso Electric	IOU		1,172
TOTAL		53,351	10,115
NOTES:			
* Only includes entities owning greater than 20MW.			
** Non-utility generating capacity not included.			
(approx. 8,650 MW Statewide, mostly in ERCOT)			

Source: Public Utility Commission